December 19, 2017

Nez Perce Tribe
c/o Mary Jane Miles, Chairman
PO Box 365
Lapwai, ID 83540

Subject: Phase I Environmental Site Assessment for the Former Blue North Mill at 283 Woodland Road, Kamiah, ID 83536

Dear Ms. Miles,

Please find the attached Phase I Environmental Site Assessment (ESA) completed for the subject property referenced above. Based on the findings and opinions of the Phase I ESA, Alta Science and Engineering, Inc. recommends a Phase II ESA at this time.

- Historical Use of the Property
- Hazardous Substances with lack of Secondary Containment
- Unidentified Containers
- Staining
- Former ASTs with Secondary Containment
- Former USTs
- Pits, Ponds, and Lagoons including the Septic System
- PCBs
- Solid Waste Disposal
- Former Oil/Water Separator
- Contamination of Soil
- Contamination of Groundwater
- Vapor Migration
- Asbestos
- Lead

Based upon the available information collected from historical databases, personal interviews, and site reconnaissance activities, Alta recommends performing a Phase II ESA.

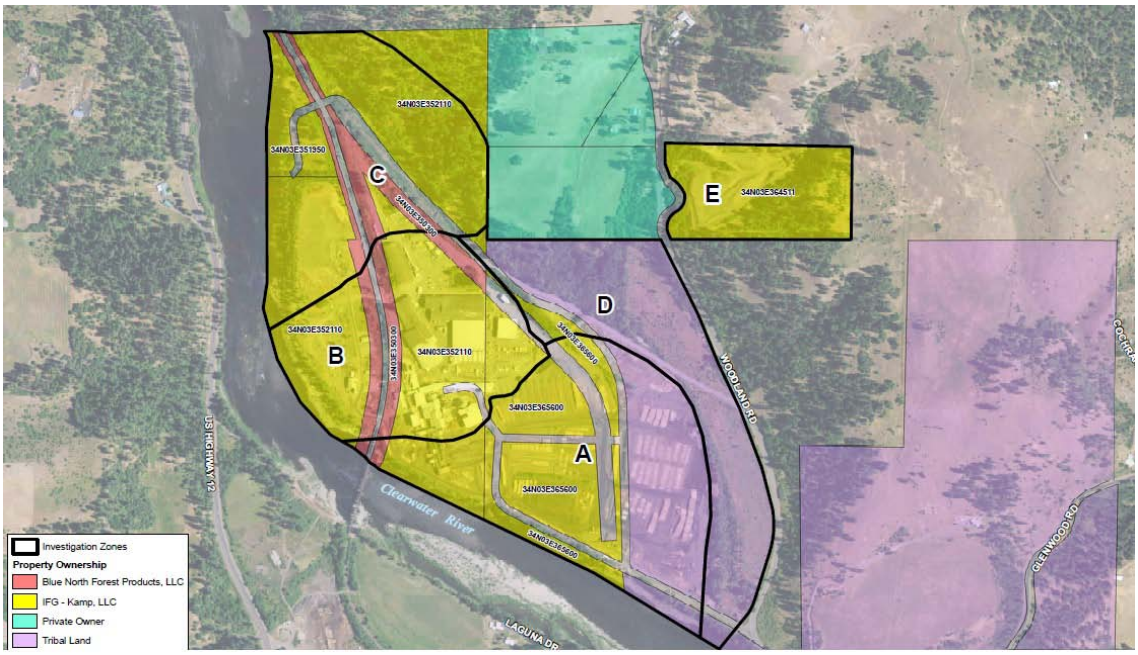
Alta recommends sampling soil and groundwater in Investigation Zones A, B, C, and E (as shown in Figure 1) to evaluate recognized environmental conditions from the historical activities of the mill site. Based upon those results, additional sampling to include soil vapor may be warranted.

Thank you for the opportunity to work on this project. We look forward to working with you on future projects. Please contact us if you need additional assistance on this project or in the future.

Sincerely,

Susan Spalinger
Principal Scientist

Alta
Science & Engineering, Inc.



Phase I Environmental Site Assessment Report

Former Blue North Mill Site, 283 Woodland Road, Kamiah, ID 83536

Prepared for: The Nez Perce Tribe
December 19, 2017

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Acronyms and Abbreviations

AHERA	Asbestos Hazard Emergency Response Act
ALLSITES	Remediation Database
Alta	Alta Science and Engineering, Inc.
amsl	above mean sea level
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
Blue North	Blue North Forest Products, LLC
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
ECHO	Enforcement & Compliance History Information
EDR	Environmental Data Resources, Inc.
ESA	Environmental Site Assessment
Farallon	Farallon Consulting, LLC
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System/Facility Registration System
FTTS	Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA) Tracking System
ICIS	Integrated Compliance Information System
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IFG	Idaho Forest Group
LLC	limited liability company
LUST	Leaking Underground Storage Tank
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCM	phase contrast microscopy
pCi/L	picoCuries per liter
PRR	public records request
RCRA	Resource Conservation and Recovery Act
TRIS	Toxic Release Inventory System
USACE	US Army Corps of Engineers
US AIRS	US Aerometric Information Retrieval System
USC	United States Code
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
UST	Underground Storage Tank

Glossary

Applicable or Relevant and Appropriate Requirements (ARARs)	Federal and state environmental laws and regulations that apply to a site cleanup under CERCLA.
Action-specific ARARs	usually technology or activity-based requirements or limitations on actions or conditions involving specific substances.
Alpha particle	a positively charged nuclear particle consisting of two neutrons and two protons, emitted with high energy (3 to 8 Me V) during some nuclear transformations.
Annual aggregate financial ability	the amount of money that would be required to pay for accidental releases that may occur within 12 months.
Area of concern	any location where hazardous substances or wastes are or may be present.
As-Is Site Plan	drawing of the existing site layout, shows property boundaries, streets bordering the site, and building locations and configurations, other site features, and includes an accurate scare and the north direction.
Barrier remediation	prevents radon from entering the enclosure.
Becquerel	international unit of measurement for the rate of nuclear transformations (per second).
Beta particle	an electrically-charged particle (either positive [positron] or negative [electron]) ejected from the nucleus of an atom during radioactive decay; has the mass of an electron, can penetrate skin up to about ¼ inch.
Brownfields	a former industrial or commercial site where future use is affected by real or perceived environmental contamination.
Caveat emptor	meaning “let the buyer beware;” without a warranty the buyer takes the risk of quality upon himself.
Comprehensive Environmental Response, Compensation and Liability Act (Superfund) (CERCLA)	The federal act passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The acts created a special tax that goes into a trust fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the Superfund program, USEPA may pay for site cleanup when responsible parties cannot be located or are unwilling or unable to perform the work. USEPA may also take legal action to force the responsible parties to clean up the site or reimburse the government for cleanup costs.
Certification (laboratories)	granted by some states to certain laboratories; ensures that laboratories meet certain minimum standards.

Chemical-specific ARARs	usually health or risk-based values or methodologies used to determine acceptable concentrations of chemicals that may be found in, or discharged to, the environment. Maximum contaminant levels (MCLs) or other water quality criteria are examples of chemical-specific ARARs.
Composite sample	a single composite sample is made up of a combination of samples.
Conditionally Exempt Small Quantity Generator (CESQG)	defined as facilities producing less than 100 kilograms of hazardous waste per calendar month (kilograms per month) or 1 kilogram or less of acutely hazardous (highly toxic) waste per calendar month; must not accumulate above 1,000 kilograms of waste at any period of time.
Contaminant of Concern (COC)	contaminant that is believed to be present at a specific site. Identifying COCs saves money, as it costs more to test for all possible contaminants than to test for a narrow range of contaminants.
Conventional pollutant	USEPA has identified five: biochemical oxygen demand, total suspended solids, pH, fecal coliform, and grease.
Critical pollutant	a pollutant for which USEPA has established, under the Clean Air Act (CAA), a national standard.
Curie	unit of measurement of the rate of nuclear transformations (per second), approximately equal to the radiation from one gram of radium.
Dilution ventilation	a method of radon remediation; increases the frequency of air exchange in an enclosure.
Direct discharge	one that is released into the “waters of the United States.”
Discharge of dredged material	generally means any addition of reintroduction of the material, either directly or indirectly, including “runoff or overflow from a contained land or water disposal area.”
Discharge of a pollutant	the Clean Water Act (CWA) defines this as any addition of a pollutant to receiving waters. Dredged material excavated or dredged from water bodies.
Due diligence	identifying and evaluating environmental liabilities and risks is also known as performing due diligence.
Eminent domain	the inherent right of the state or its designated agents to appropriate or take private property provided that the property owner receives just compensation for the taking and there has been a determination that a valid public necessity exists for the taking.
Environmental due diligence process	the process used to investigate a commercial or industrial property (usually prior to completion of a real estate transaction) for contamination by hazardous wastes or hazardous substances.

Environmental professional	ASTM standards terminology used to describe a person possessing the necessary training and experience to conduct all aspects of the ESA and also the ability to develop valid conclusion regarding the presence of recognized environmental conditions. The term is typically interchangeable with consultant, assessor, environmental assessor, engineering consultant, geologist, hydrogeologist, or certified engineering geologist.
Existing source	the construction of which commenced before publication of an applicable proposed regulation setting New Source Performance Standards for that category.
Exposed	(to radiation) the individual is subjected to airborne concentration of radionuclides with no allowance for the use of protective clothing or equipment.
Exposure assessment	the defining of exposure pathways and the calculation of the potential magnitude of exposure.
Field-constructed tanks	vertical cylinders with a capacity of greater than 50,000 gallons.
Fill material	any material used primarily for either replacing an aquatic area with dry land or filling an excavation to meeting the surrounding elevation.
First encounter ground water	the most-shallow ground water aquifer. Such an aquifer is the one most likely to be affected if surface discharges of waste have occurred.
Friable asbestos material	any material that contains more than one percent (1%) asbestos by weight, and can be crumbled, pulverized, or reduced to powder by hand pressure.
Gamma rays	electromagnetic radiation (similar to X-rays but higher in the frequency spectrum) emitted by a radioactive substance. This radiation has no charge and is the most penetrating of the radiation forms.
General permit	authorizes a type of activity as long as it meets certain standards or conditions described in the permit.
Geophysical technique	tests (including magnetometer surveys, ground penetrating radar, electrical resistivity, and seismic refraction) used to locate buried metallic objects, such as underground storage tanks (USTs) and to map groundwater pathways.
Giga	a billion.
Grab samples	uncomposited discrete samples.
Harmful quantities of oil discharge	any discharge that violates a water quality standard, or causes a film or sheen upon the surface of the water.
Hazard assessment	helps to define the potential adverse health or environmental effects associated with chemicals on site, the potential magnitude of exposure, and the frequency of exposure.

Hazard identification	the identification of those chemicals that may pose a threat to human health or the environment.
Highest and best use	the most profitable likely use to which a property can be put.
Indemnification agreement	a written promise by one party that it will not hold another party liable; also called a “hold harmless clause.”
Indirect point source discharges	discharges by industries of pollutants indirectly into U.S. waters through publically-owned treatment works (POTWs).
Individual permit	authorizes a specific individual or entity to conduct a specific activity.
Joint and several liability	imposed in cases where the harm caused is indivisible. Where there are multiple parties who are potentially responsible for the harm, but it cannot be determined with any degree of certainty which parties or defendants are responsible for which aspects of the damage.
Just compensation	is required to be paid by the Fifth Amendment to the U.S. Constitution (and counterpart state constitutions) when private property is taken (or in some states, taken or damaged). But in eminent domain cases value is defined as the highest price obtainable in the open market.
Large Quantity Generator (LQG)	defined as facilities producing more than 1,000 kilograms of hazardous waste per calendar month (kilograms per month) or more than 1 kilogram per month of acutely hazardous (highly toxic) waste per calendar month; they have no limit on the amount of hazardous waste they may accumulate on site.
Location-specific ARARs	to restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various federal and state laws include floodplains, wetlands, and locations where endangered species or historically significant cultural resources are present.
Maximum holding time	the total time a sample can be retained under proper storage conditions before analytical results are considered legally invalid.
Micro	one millionth.
New source	one for which construction began after publication of an applicable proposed regulation settings NSPS for that category.
New USTs	tanks used to contain regulated substances, and installed after December 22, 1988.
No Further Action letter	A final remediation document issued by the Department that is a determination based upon an evaluation of the historical uses and/or investigation of a site or subsite that there are no contaminants present, or that any discharged contaminants that were present have been remediated to applicable standards or remediation regulations.
Opportunity costs	those costs associated with the loss of use of the property due to remedial activities.

Polychlorinated biphenyls (PCBs)	a group of chemicals used in transformers and capacitors as an insulating material, in gas pipeline systems as a lubricant, and other purposes. Due to their toxicity and environmental persistence, sale and new use of these materials was banned in 1979. Mixtures of PCBs are often referred to as Aroclors.
Polycyclic aromatic hydrocarbon (PAH)	chemical compounds that occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning (whether fossil fuel or biomass).
Per occurrence financial ability	refers to the amount of money that must be available to pay the cost of one accidental release.
Permeability	the ability of liquid or gas to pass through.
Pesticide	any substance or mixture of substances intended to prevent, destroy, repel, or mitigate pests.
Phase I (ESA)	non-intrusive research conducted to evaluate the potential for significant onsite impacts.
Phase II (investigation)	an intrusive study of the site's soil, groundwater, or vapor to evaluate the location and extent of impacts from historical uses. A framework for identifying remediation approaches so that a cleanup strategy can be developed.
Pico	one trillionth.
Pits	floor drains that may be used to discharge hazardous wastes; also called "trenches."
Point source discharges	any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feed operation, or vessel or other floating craft, from which pollutants are or may be discharged into waters.
Pollutant	according to the Clean Waters Act (CWA), dredged soil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heating wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. See also conventional, non-conventional, and toxic pollutants.
Portable organic vapor analyzer	used to screen volatile organic compounds.
Potential to emit	calculated using the major stationary source's maximum design capacity (continuous year-round operation) following application of pollution controls.
Primary standards (for airborne pollutants)	USEPA's standards which are designed to protect human health with an adequate margin of safety.
Pristine sites	sites unaffected by any negative impact from man or nature.

Profiling	defining the subsurface features. This is used to define the lateral extent of a feature, such as a waste site, with little or no data on depth.
Proportional allocation method	involves allocating liability according to the percentage of total wastes found at the site that is clearly attributable to each potentially responsible party.
Quad map	a topographic map with an approximate scale of one inch to 2,000 feet; shows physical features such as wetlands, water bodies, roadways, mines, and buildings.
Quality assurance (QA)	a firm-wide program that establishes project policies, procedures, standards, and guidelines designed to produce an acceptable level of professional quality.
Quality control (QC) programs	establish project activities that apply the policies, procedures, standards, and guidelines designed to produce an acceptable level of professional quality.
Radioactive material	any material which emits, by spontaneous nuclear disintegration, corpuscle or electromagnetic emanations.
Radiation	includes alpha rays, beta rays, and gamma rays. Alpha and beta rays are corpuscle (particle) emanations; gamma rays are electromagnetic emanations.
Radiation area	an area accessible to personnel, in which radiation exposure could exceed 5 millirems in one hour, or 100 millirems in any five consecutive days.
Radon	a chemical element formed by the disintegration of radium; is a heavy, colorless, odorless, and radioactive gas.
Real estate value	cost approach to value involves the estimation of the replacement cost of the utility of the improvements, from which is subtracted the estimated depreciation, to which is added to the value of the land. The land value is normally obtained from the market approach value. Income approach is applicable in estimating the value of real estate that is purchased primarily for its income-producing potential. Market data approach is an appraisal process in which the estimated market value of a property is based upon prices paid in actual market transactions or upon current offering prices for similar real estate. Selected properties are compared to that under appraisal in order to arrive at an indicated value of the subject property. The various features of the comparables are considered with respect to their absence, presence, and quality in the subject property, and adjustments are made to the unit sale price of the comparable property for these major differences.
Recharge	water management systems designed to inject water collected by surface systems into ground water aquifers.
Regulated substances	1) any substance defined as a hazardous substance under CERCLA (but not including any substance regulated as hazardous waste under RCRA), and 2) petroleum.

Releases	defined by federal and most state laws as any spilling, leaking, pouring, dumping, emitting, discharging, injecting, escaping, leaching, or disposing of hazardous waste or hazardous waste constituents into the environment.
Rem	(roentgen equivalent man) a measure of ionizing radiation dosage with the same biological effect as a roentgen of X- or gamma rays.
Remedial action	the implementation of a selected remedy which often follows a remedial design; sometimes referred to as a site cleanup or a construction project.
Resource Conservation and Recovery Act (RCRA)	Federal statute that requires comprehensive regulation of hazardous waste generation, transport, treatment and disposal. New Jersey has been delegated responsibility for RCRA and has enacted a comprehensive body of regulations to administer the Act, including public hearings.
Restricted area	any area where access is controlled by the employer for the purpose of limiting employee exposure to radiation or radioactive materials.
Restricted-use pesticides	pesticides that must be applied under the supervision of a certified applicator.
Risk characterization	combines information on the potential magnitude of exposure to chemicals from the site with dose-response information derived from the “hazard assessment.” The result is a description of the potential nature and magnitude of health or environmental risk associated with each chemical on site.
Roentgen	the international unit of measurement for X-radiation or gamma radiation.
Secondary standards (for airborne pollutants)	USEPA’s standards designed to protect against environmental damage, such as damage to soils, crops, wildlife, weather, climate, and personal comfort.
Semi-volatile organic compounds (SVOCs)	a class of organic compounds that is made up of acid extractable and base neutral organic compounds. Examples of SVOCs include PAHs, phenols, and phthalates.
Small quantity generators (SQGs)	defined as facilities producing less than 1,000 kilograms of hazardous waste per calendar month (kilograms per month), which is the equivalent of about 300 gallons or about five 55-gallon drums; they can never accumulate more than 6,000 kilograms of hazardous waste on site at one time.
Soil and ground water analyses	tests used to determine the presence of surficial or subsurface contamination and concentration levels; may involve soil borings and installations of test pits and/or observation/monitoring wells.
Soil vapor surveys	surveys using gas chromatography equipment to map potential soil and groundwater contamination; soil vapor intrusion potentials.
Sophisticated surface water sampling program	consists of more samples taken at several different depths and tests of such physical parameters as pH, conductivity, presence of dissolved oxygen, and temperature.

Sounding	a radar technique used to determine the depth of a buried object at a specific location.
Strict liability	indicates that fault is not a prerequisite to determining responsibility under the statute. The purchaser may be liable for cleanup costs even if the property was contaminated prior to his or her purchase. The original owner may also be held accountable for all or part of a property's cleanup costs despite compliance with all regulations in effect at the time of property transfer.
Suction piping	piping which does not require leak detection if it has the following two main characteristics: 1) Below-grade piping is sloped so that the contents will drain back into the storage tank if the suction is released, and 2) Each suction line has only one check valve which is located directly below the suction pump.
Super lien law	provides states the authority to impose a lien on any property requiring cleanup that involves state expense. The super lien law takes precedence over all other encumbrances, including first mortgage.
Tank testing	used to identify leaks in USTs.
Tax Assessor's Map	provides legal description, property boundaries, locations, types of easement (if any), and the locations of properties bordering the subject site.
Technology-based limits	the minimum level of water pollution control technology that a discharger must apply, regardless of which water body receives the effluent discharge.
Title search	a process used to confirm legal ownership (of property).
To-be-considered materials	defined by USEPA as "non-promulgated advisories or guidance used by federal or state government that are not legally binding and do not have the status of potential ARARs." In many cleanups, TBCs will be considered along with ARARs in determining the necessary level of cleanup.
Transportation-related release	a release of a hazardous substance during transportation or storage if the stored substance is moved under manifest and has not reached its designated destination.
Trenches	floor drains which may be used to discharge hazardous wastes; also called "pits."
Underground Storage Tanks (USTs)	tanks that store regulated substances and have at least 10 percent (10%) of their volume, including the contents of connected pipes, underground.
User	American Society for Testing and Materials (ASTM) terminology for the person (usually the client) responsible for providing the data to the environmental professional.
Vadose	unsaturated zone.

Volatile organic compounds (VOCs)	A class of organic compounds that evaporate readily at room temperature. Examples of products that contain VOCs include gasoline (small carbon chains), dry cleaning fluid (solvents), and paint thinners.
Warranty	a pledge that a certain matter is true. For example, a seller may warrant that the facility has obtained all federal and state environmental permits required for continued operation.
Waste management units	physical areas of the site where hazardous wastes are generated, used, stored, or treated.
Waters of the United States (as defined by 40 CFR 230.3(o))	For the purposes of the Clean Water Act, 33 USC 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (o)(2) of this section, the term “waters of the United States” means: (i) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (ii) All interstate waters, including interstate wetlands; (iii) The territorial seas; (iv) All impoundments of waters otherwise identified as waters of the United States under this section; (v) All tributaries, as defined in paragraph (o)(3)(iii) of this section, of waters identified in paragraphs (o)(1)(i) through (iii) of this sections; (vi) All waters adjacent to a water identified in paragraphs (o)(1)(i) through (v) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters; (vii) All waters in paragraphs (o)(1)(vii)(A) through (E) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. The waters identified in each of paragraphs (o)(1)(vii)(A) through (E) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (o)(1)(vi) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus is required. (viii) All waters located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (o)(1)(i) through (v) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (o)(1)(vi) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus analysis is required.
Water quality-limited requirements	the pollution controls that dischargers in selected locations must apply to ensure their discharges do not cause violations of the water quality standards set for that receiving body.
Well-casing volume	determined by multiplying the total depth of the well from ground surface to the bottom of the water column by the cross-sectional area.

Wellhead protection areas	surface and sub-surface areas surrounding water wells or well fields supplying public water systems.
Wetlands	definition varies by state, generally one or more of the following criteria apply: 1) Whether or not the area is permanently wet during most of the year, 2) Whether or not wetlands-related submergent and emergent plants are present, and 3) Whether or not characteristic soil types are present.

EXECUTIVE SUMMARY

Findings, Opinions & Conclusions and Redevelopment Potential

Findings

Alta Science and Engineering, Inc. (Alta) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E1527-13 of the subject property located at 283 Woodland Road near Kamiah, Idaho County, Idaho, in accordance with the agreement dated November 13, 2017.

The Phase I ESA uncovered the following **findings**, which identify known or suspect recognized environmental conditions, controlled recognized environmental conditions, historical recognized environmental conditions, and de minimis conditions:

Historical Use of the Property - the site has operated as a lumber mill and lumber storage facility spanning from the 1940s to 2016. A railroad ran through the site to transport lumber to other cities. A wildfire went through the northeast 15 acres of the site in 2015. During the dismantling and decommissioning of the lumber mill in January 2017, sparks from welding caught the main mill buildings on fire.

Hazardous Substances - Hazardous substances were found in buildings and areas near buildings throughout the site. Figures 1 and 2 provide investigation zones and building numbers in Appendix A.

Investigation Zone A

- Refuse was strewn about in the southwest corner of Investigation Zone A (not shown in Figure 2), and the weighing area and the gravel road
- Unknown fill material used to fill a pond on the south central portion of the site (Farallon 2016)

Investigation Zone B

- Building 5 - burn piles
- Building 8 - lead-acid batteries, the word "corrosive" was painted on two of the tables, antifreeze and paint cans
- Building 11 - 'Activated Alumina' bags were on two pallets and were open and had spilled
- Building 12A - contained several grease and oil cans/drums
- Building 12B (interior ancillary room) - 25 empty antifreeze jugs (1-gallon jugs of "Zecol Maximum" and "Polyfreeze Gold"), tubing still attached to "Fleetguard" oil cans had staining below it on the table.
- Building 12B (fenced exterior hazardous waste material storage area) - multiple 5-gallon buckets labeled as hydraulic oil, diesel, and tractor fluid, observable shallow layer of dark sludge at the bottom of the cement containment area
- Building 13 - contained considerable garbage, one 5-gallon bucket filled with an unknown liquid and a label indicating "corrosive"
- Area north of Building 13 - 14 5-gallon buckets of various fluids (transmission fluid, flushing fluid, heavy duty degreaser, etc.), two sacks of 'sakrete'
- Building 17 - two 5-gallon cans of lubricant and a 1-gallon can of gasoline with no secondary containment
- Building 18 - aerosol and paint cans were strewn about, a light oil sheen was observed on the water in the exposed truck scale pit
- Truck Unloading Area - refuse was strewn about

Investigation Zone E

- Wood Waste Landfill Area - chipped wood waste, remains from periodic burning.
- A previous Phase I ESA (Farallon 2016) recognized potential releases of hazardous substances in connection with long-term mill operations, including a wood waste landfill.

Unidentified Containers - The interior of the Easternmost Maintenance Building (Building 13) contained one 5-gallon bucket filled with an unknown liquid and a label indicating corrosive.

Staining - The following describes observed staining.

Investigation Zone A

- Alta personnel observed oil stains on the concrete pads at the Old Log Yard Storage Area on the southeast portion of the Site.

Findings (continued)

Investigation Zone B

- Cement floor of Packing/Loading Building (Building 4), considered de minimus.
- Cement floor in Building 11, considered de minimus.
- Containment area north of Building 13 with the 14 5-gallon buckets.
- On the workbench under tubing still attached to "Fleetguard" oil cans in the ancillary room of Westernmost Maintenance Building (Building 12B), considered de minimus.
- On the southeast corner of the containment area adjacent to Building 12B.
- On the cement floor of the interior of the Maintenance Building (Building 13), considered de minimus.
- Staining and liquid pooling with sheens on the floor of Building 8.

Farallon 2016 also noted areas of significant staining near and around containers of hazardous substances and around the containment for aboveground storage tanks (ASTs; not present during this 2017 assessment).

ASTs - Formerly, a 12,000-gallon diesel containment area was located on the site. The cement containment area remains with no tanks present. This area is open-air and smelled of petroleum fuel.

Secondary Containment - Farallon 2016 identified multiple secondary containment areas in buildings and beneath covered areas on the site. No areas lacking secondary containment were identified during the 2016 assessment. During this 2017 assessment, none of the identified hazardous substances had secondary containment.

USTs - According to the Environmental Data Resources, Inc. (EDR) Radius Map Report and Farallon 2016, five underground storage tanks (USTs) were historically used at the site after installation in 1971. They were removed in the 1990s and a cleanup was initiated after a release from one UST was identified in 1994. Cleanup was completed in January 2000.

Pits, Ponds, and Lagoons - Several pits, ponds, and lagoons associated with onsite processes were observed at the site during reconnaissance. Investigation zones and building numbers reference Figures 1 and 2 in Appendix A.

Pits

- The remaining pit in the Truck Unloading Area (Investigation Zone B) had standing water and a light oil sheen.
- Three pits inside Building 14 (newer concrete-brick structure without a roof) contained standing water and garbage. Each pit was covered by metal doors labeled as high voltage.

Ponds

- Alta personnel identified stormwater detention pond that is fed by drainage ditches and discharges through the weir on the north portion of the property (Investigation Zone C).
- Farallon 2016 identified a filled log storage pond on the south central portion of the site (adjacent to the Clearwater River). This was filled with unknown fill material in the 1990s.

Lagoons

- A lined fire suppression lagoon in Investigation Zone B, adjacent to Building 8, contains standing water.
- A fenced-in lagoon in Investigation Zone B appeared dry; this may be the former sewage lagoon.

Polychlorinated Biphenyls (PCBs) - Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

Investigation Zone B

- Building 4 - unlabeled transformer units (no staining on floor below transformer box), intact fluorescent lighting tubes were noted in the ceilings (The lights were not opened to see if they had PCB ballasts).
- Buildings 6A and 6B - intact fluorescent lighting tubes were noted in the ceilings (The lights were not opened to see if they had PCB ballasts).
- Near Building 8 - two power poles, each with two transformers (stated "customer owned" and no observable blue non-PCB stickers), were located on the northwest and southeast corners of the Fire Suppression Lagoon. The transformers appeared to be in good condition.

Findings (continued)

- Truck Unloading Area - some transformers were labeled with blue non-PCB stickers.
- Building 12A - unlabeled transformer units (no staining on floor below transformer box).
- Buildings 13 and 14 - broken fluorescent lighting tubes were found on the floor.
- Building 16 - appeared to be the former transformer location; no transformers or staining were observed.
- Due to the period of operation of the mill, it is probable that PCB aroclors were present in the hydraulic oil and electrical transformers that were used during mill operations. Although it is likely the mill was heated with steam, the majority of mill equipment was likely operated using hydraulic actuators and it was common practice until 1980 to add PCB aroclors to hydraulic oil as a stabilizer and preservative.

Solid Waste Disposal - Large piles of scrap material, debris or wood waste were observed at the Site in Investigation Zones A, B, C, and E, remnants from demolition/auction and fire/salvage activities, and remaining scrap and wood waste.

Wetlands - The site is bordered by the Clearwater River to the east and south. The EDR Radius Map Report indicates that the south and north central portions of the site are within a federally designated wetland.

Septic System - Farallon 2016 identified a septic system in Investigation Zone B, adjacent to the Steam Cleaning and Wash Rack Area (Building 12A).

Oil/Water Separator - Farallon 2016 indicate that an oil/water separator was located at the Steam Cleaning and Wash Rack Area (adjacent to Building 12A). Wastewater generated from the Steam Cleaning and Wash Rack operations was directed into the oil/water separator.

Contamination of Soil

- The presence of roofing/building material debris around some buildings that may contain asbestos, deteriorating paint that may contain lead, and the existence of pits, concrete containment areas, and stained floors indicate possible sources of soil contamination. Numerous debris piles are located throughout the site that may contain hazardous materials. Although the kilns, an old wood-waste burner in the south central area, and the boiler ash stockpile are no longer on site, their emissions and waste may contain PAHs and dioxins/furans that can impact soils.
- During a short interview with a past site worker, there was indication that used oil dumping occurred on site.
- It was common practice at mill sites until 1980 to add PCB aroclors to the hydraulic oil of milling equipment and transformers as a stabilizer and preservative and these PCBs often leaked and were released to the soils.
- The soils of this area of Idaho have a higher level of background arsenic (USGS 2016). Arsenic leaches out of the stacked trees at lumber yards/mills and into the soil.
- Formerly, a 12,000-gallon diesel AST containment area was located on the site. There is a probability of petroleum contamination from spills, overflows, or other releases to the environment from this former AST.
- Previous soil contamination was identified in the area surrounding former USTs, which were removed in the 1990s. Contaminated soil was excavated during remediation activities, which was completed in January 2000.
- Building 16 was used as the transformer storage building. There is a probability of PCB contamination from leaking transformers in this area.

Contamination of Groundwater

- Groundwater contamination was identified beneath the rail spur area (Investigation Zone C) after a diesel spill in the 1990s. Cleanup was completed and the site received regulatory closure in 2000 (Farallon 2016). Five groundwater monitoring wells were installed in the vicinity of the former UST area, and quarterly monitoring occurred from 1995 through 1998. Resultant concentrations were below detection limits. USEPA issued a No Further Action determination for this former UST area in January 2000 (Farallon 2016).
- Based on wetlands on the site, site topography, and previous groundwater contamination at the site, shallow groundwater exists. Deep groundwater also exists in the granite, based on the two existing

Findings (continued)

wells at the site. Hazardous materials identified on the site, former ASTs, staining in containment areas and elsewhere, and wastewater from the oil/water separator discharged into the septic system have the potential to cause groundwater contamination via migration through the soil column.

Vapor Migration

- Given the potential for soil and possible groundwater contamination, this provides the potential impact of vapor intrusion on the subject property.
- The interiors of three buildings contained strong petroleum odors, most likely from the materials/equipment contained inside the buildings (Buildings 8, 17, and 12A).

Asbestos - Based on the age of buildings and materials observed during site reconnaissance, it is possible that asbestos containing materials are present on the site. Significant disturbance from demolition and fires may have disturbed these materials. Building numbers below reference Figure 2 in Appendix A.

- One of the office buildings (Building 2) is a mobile home-type structure with unknown roofing materials (the roofing materials may contain asbestos).
- The roofing material in the Packing/Loading Building (Building 4) is unknown and may contain asbestos. The roofing material was also found on the ground during the site reconnaissance because of demolition activities that took place in 2017.
- The Dry Shed (Building 6A and 6B) roofing material is scattered throughout the exterior grounds. It is unknown if the roofing has asbestos containing material.
- The sawmill and boiler house (Buildings 15A and 15B) is where the fire occurred in 2017. The burn piles that remain from the 2017 fire include, among other items, roofing materials that may contain asbestos.
- Farallon in 2016 indicates confirmed presence of Chrysotile and/or Amosite asbestos in certain building materials on site.

Lead - Based on the age of some of the buildings on the site, the presence of lead-based paint may be likely.

- Two office buildings (Buildings 1 and 2) had exterior peeling/chipping paint.
- Two sheds near office buildings (Buildings 3A and 3B) had exterior peeling/chipping paint.
- The Dry Sheds (Buildings 4, 5, 6A and 6B) had exterior peeling/chipping paint.
- The Fire Suppression Shed (Building 8) had exterior peeling/chipping paint.
- The Maintenance Buildings (Buildings 11, 12B, and 13) had exterior peeling/chipping paint.

Radon - Idaho County, Idaho, is classified in Zone 1 (high potential), which indicates a predicted level greater than 4 picoCuries per liter of air (pCi/L). The US Environmental Protection Agency (USEPA) "Action Level" is 4 pCi/L.

Exterior and Interior Observations - Due to the 2017 fire, the dismantling of the buildings, the neglect of the buildings, and uninvited access to the site (transients leaving refuse and fire rings and vandals leaving graffiti and destroying property), conditions of the exteriors and interiors of the buildings are poor.

Opinions

The following includes Alta's **opinions** of the impact of the findings on the subject property:

Historical Use of the Property - based on the site use as a lumber mill and lumber storage facility for nearly eight decades and the recent January 2017 fire, this is a recognized environmental condition.

Hazardous Substances - the hazardous substances found in various locations and buildings throughout the site are not properly contained, labeled, or stored. Therefore, a release to the environment is probable and could cause a recognized environmental condition.

Unidentified Containers - The unidentified container in Building 13, should the contents be released to the environment, is a recognized environmental condition.

Staining - Staining was observed throughout the site. Investigation zones and building numbers reference Figures 1 and 2 in Appendix A.

Opinions (continued)

Investigation Zone A

- Oil stains on the concrete pads at the Old Log Yard Storage Area on the southeast portion of the site is a recognized environmental condition.

Investigation Zone B

- Staining on cement floor of Packing/Loading Building (Building 4) is de minimis.
- Staining on the cement floor in Building 11 is de minimis.
- Staining in containment area north of Building 13 with the 14 5-gallon buckets is a recognized environmental condition.
- Staining on the workbench under the tubing still attached to "Fleetguard" oil cans in the ancillary room of Westernmost Maintenance Building (Building 12B) is de minimis.
- Staining on the southeast corner of the containment area adjacent to Building 12B is de minimis.
- Alta personnel observed minimal staining of the cement floor of the interior of the Maintenance Building (Building 13) and considers it to be de minimis.
- Oil stains on concrete pad in area to west, north, and east of the Boiler House (Buildings 15A and 15B) is a recognized environmental condition.
- Farallon 2016 also noted areas of significant staining near and around containers of hazardous substances and around the containment for ASTs. Alta considers this a recognized environmental condition.

ASTs - The former 12,000-gallon ASTs is a recognized environmental condition.

Secondary Containment - The identified hazardous substances did not have secondary containment and is considered a recognized environmental condition.

USTs - The cleanup of the leaking USTs is a historical recognized environmental condition.

Pits, Ponds, and Lagoons - The pits, ponds, and lagoons are recognized environmental conditions.

PCBs - Due to the period of operation of the mill, it is probable that PCB aroclors were present in the hydraulic oil and electrical transformers that were used during mill operations. Although it is likely the mill was heated with steam, the majority of mill equipment was likely operated using hydraulic actuators and it was common practice until 1980 to add PCB aroclors to hydraulic oil as a stabilizer and preservative. Therefore, this is a recognized environmental condition.

Solid Waste Disposal - Large piles of scrap material, debris, or wood waste were observed at the Site in Investigation Zones A, B, C, and E, remnants from demolition/auction and fire/salvage activities, and remaining scrap and wood waste. Based on the unknown source of some of the waste and because that waste is scattered throughout the site, this is a recognized environmental condition.

Wetlands - The wetlands are not a recognized environmental condition.

Septic System - The open sewage lagoon is a recognized environmental condition based on the ability to dump any waste into the lagoon.

Oil/Water Separator - Farallon 2016 indicates that an oil/water separator was located at the Steam Cleaning and Wash Rack Area (adjacent to Building 12A). Wastewater generated from the Steam Cleaning and Wash Rack operations was directed into the oil/water separator. This is a recognized environmental condition.

Contamination of Soil
Based on the former mill use of the site; the poor condition of the buildings' paint; the debris piles from demolition; the wood waste debris piles; the burn piles; the former kiln buildings; the former transformer building and the transformers located around the property; the pits, ponds, and lagoons; the improperly stored/contained hazardous materials; the former ASTs; and the former USTs; contamination of soil is probable. Therefore, this is a recognized environmental condition.

Contamination of Groundwater

Opinions (continued)

Based on previous groundwater contamination at the site from former leaking USTs and probable soil contamination, groundwater contamination is also probable. Therefore, this is a recognized environmental condition.

Vapor Migration
Given the potential for soil and possible groundwater contamination, this provides the potential impact of vapor intrusion on the subject property. Therefore, this is a recognized environmental condition.

Asbestos
Farallon in 2016 indicates confirmed presence of Chrysotile and/or Amosite asbestos in certain building materials on site. Based on visual inspection of the readily accessible and observable building materials of all subject property buildings, the most probable asbestos-containing materials appeared to be in stable condition (i.e., not friable). Should construction/demolition activities take place that would potentially impact any suspect asbestos-containing materials, Alta recommends an inspection be conducted following the local, state, and federal rules/guidelines to confirm construction/demolition activities do not result in a release. Should asbestos samples return positive (greater than 1% asbestos), the National Emission Standards for Hazardous Air Pollutants (NESHAP) provides regulatory requirements and guidance for asbestos abatement. Alta recommends following Occupational Safety and Health Administration (OSHA) regulations for asbestos abatement (29 Code of Federal Regulations [CFR] 1926.1101).

Lead
Based on the construction dates of the subject property's buildings, this may be a recognized environmental condition if paint samples return positive for containing lead. Alta recommends conducting an inspection following the local, state, and federal rules/guidelines to confirm construction/demolition activities do not result in release. Contractors and/or workers working on the site during construction/demolition should follow the OSHA Lead in Construction Standard 29 CFR 1926.62, which outlines worker exposure limits, personal protection requirements and employer responsibility for exposure assessment, training, housekeeping, and record keeping.

Radon
Based on the lack of basements or subsurface areas at the site, radon does not appear to be a concern. However, testing is required to determine if lead is in drinking water.

Exterior and Interior Observations - The conditions of many of the buildings on site are unsafe; however, this does not constitute a recognized environmental condition.

Conclusions and Redevelopment Potential

Alta has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located at 283 Woodland Road near Kamiah, Idaho County, Idaho in accordance with the agreement dated November 13, 2017. Any exceptions to, or deletions from, this practice are described in Sections 10.0 and 11.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for the following:

- Historical Use of the Property
- Hazardous Substances with lack of Secondary Containment
- Unidentified Containers
- Staining
- Former ASTs with Secondary Containment
- Former USTs
- Pits, Ponds, and Lagoons including the Septic System
- PCBs
- Solid Waste Disposal
- Former Oil/Water Separator
- Contamination of Soil
- Contamination of Groundwater
- Vapor Migration
- Asbestos
- Lead

Conclusions and Redevelopment Potential (continued)

Based upon the available information collected from historical databases, personal interviews, and site reconnaissance activities, Alta recommends performing a Phase II ESA.

Alta recommends sampling soil and groundwater in Investigation Zones A, B, C, and E to evaluate recognized environmental conditions from the historical activities of the mill site. Based upon those results, additional sampling to include soil vapor may be warranted.

Environmental Report Summary

Alta has performed a Phase I ESA of the above referenced property. Any exceptions to, or deletions from, this practice are described in Sections 10.0 and 11.0 of this report. A summary of the report is provided in the table below and further described in Sections 7.0 and 8.0 of this report.

Report Section		Results	Recommendations	Cost Estimate Range
5.2.1	**Hazardous Substances**	Significant Risk	Phase II	
5.2.2	**Unidentified Containers**	Potentially Sig. Risk	O&M Plan	
5.2.3	**Staining**	Potentially Sig. Risk	Phase II	
5.2.4	**Stressed Vegetation**	No Risk	None	
5.2.5	**Aboveground Storage Tanks (ASTs)**	Low-Risk	None	
5.2.6	**Lack of Secondary Containment**	Low-Risk		
5.2.7	**Underground Storage Tanks (USTs)**	Low-Risk	None	
5.2.9	**PCB Containing Equipment**	Significant Risk	Phase II	
5.2.10	**Solid Waste Disposal**	Potentially Sig. Risk	Phase II	
5.2.11	**Wetlands**	Low-Risk	None	
5.2.12	**Septic System with On-Site Drainfield**	Potentially Sig. Risk	Phase II	
5.2.13	**Oil/Water Separator**	Potentially Sig. Risk	Phase II	
5.2.14	**Dry Wells or Injection Wells**	Low-Risk	None	
5.2.15	**Contamination of Soil**	Significant Risk	Phase II	
5.2.16	**Contamination of Groundwater**	Significant Risk	Phase II	
5.2.17	**Vapor Migration**	Low-Risk	O&M Plan	
5.2.18	**Use of Pesticides on Site**	Low-Risk	None	
5.2.19.1	**Asbestos**	Potentially Sig. Risk	O&M Plan	
5.2.19.2	**Lead**	Potentially Sig. Risk	O&M Plan	
5.2.19.3	**Radon**	Low-Risk	None	
5.2.19.4	**Lead in Drinking Water**	Potentially Sig. Risk	Add. Data Gathering	
5.2.19.5	**Mold**	Low-Risk	None	
5.3	**Exterior Observations**	Significant Risk	Phase II	
5.4	**Interior Observations**	Significant Risk	Phase II	

GENERAL INFORMATION

Project Information:
Former Blue North Mill Site
Project Number:
17831

Consultant Information:
Alta Science and Engineering, Inc.
220 East 5th Street
Moscow, ID 83843
Phone: 208.882.7858
Fax: 208.883.3785
E-mail Address:
Inspection Date: 11/14/2017
Report Date: 12/15/2017

Site Information:
Former Blue North Mill Site
283 Woodland Road
Kamiah, ID 83536
County: Idaho
Latitude, Longitude: 46.242844, -116.034887
Site Access Contact: Jesse Short

Client Information:
Nez Perce Tribe
Kim Cannon
PO Box 365
Lapwai, Idaho 83540

Site Assessor

Susan Spalinger
Principal Scientist

Senior Reviewer

Dr. Robin Nimmer
Hydrogeologist

EP Certification:

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312.10.

Susan Spalinger - Principal Scientist

Rachel Gibeault - Environmental Scientist

AAI Certification:

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Susan Spalinger - Principal Scientist

Rachel Gibeault - Environmental Scientist

1.0 INTRODUCTION

The site, known as the former Blue North Mill, located at 283 Woodland Road near Kamiah, Idaho County, Idaho (hereinafter referred to as the "subject property," "target property," or "site") is the focus of this Phase I Environmental Site Assessment (ESA). See Figure 1 in Appendix A for the site layout. The Nez Perce Tribe, the client, authorized Alta Science and Engineering, Inc. (Alta) to complete this Phase I ESA on November 13, 2017. Alta performed an inspection of the site on November 14, 2017.

1.1 Purpose

The purpose of this Phase I ESA is to provide due diligence on the subject property for the Nez Perce Tribe prior to their purchase of the property. This American Society for Testing and Materials (ASTM) standard practice is intended to permit the User to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) landowner liability protection: that is, the practice that constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" (42 United States Code [USC] paragraph 9601 (35)(B)). The following conditions apply to the completion of this Phase I ESA:

- The purpose of this report is to identify recognized environmental conditions associated with the subject property and/or potential for impact from adjacent sites in conjunction with the ASTM E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.
- A recognized environmental condition is defined under the ASTM Standard as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.
- A historical recognized environmental condition is a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I ESA is conducted (for example, if there has been a change in the regulatory criteria).
- A controlled recognized environmental condition is a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.
- The ASTM E1527-13 standard practice is designed to define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of CERCLA and petroleum products.

1.2 Detailed Scope of Services

Alta conducted the Phase I ESA at the subject property in general accordance with ASTM Standard E1527-13 and included the following:

- Reviewed previous Phase I ESAs, when available,
- Reviewed regulatory files,
- Interviewed regulatory officials and personnel associated with the subject and adjoining properties,
- Visited the site, and
- Evaluated information and prepared the report provided herein.

Typically, a Phase I ESA does not include sampling or testing of air/vapor, soil, groundwater, surface water, or building materials. Alta would carry these activities out in a Phase II ESA, if required. For this Phase I ESA, Alta made no additions to the ASTM E1527-13 standard with the exception of the following: None.

1.3 Significant Assumptions

There is a possibility that even with the proper application of these methodologies, there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable and/or ascertainable from the available information. Alta believes that the information obtained from the regulatory file review and the interviews concerning the site are reliable. However, Alta cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide the client with information relating to the subject property.

1.4 Limitations and Exceptions

Along with all of the limitations set forth in various sections of the ASTM E1527-13 protocol, the accuracy and completeness of this report may be limited by the following:

- Access Limitations
- Alta personnel did not enter the boiler house and sawmill (Buildings 15A & 15B) since the structures were partially burned and unsafe to enter.
- In the westernmost maintenance building (Building 12B), only the attached ancillary room could be accessed.
- The loft of the easternmost maintenance building (Building 13) was not accessed because the stairs were not safe to walk on.
- Physical Obstructions to Observations - The area to the west, north, and east of the boiler house was heavily disturbed with debris strewn about from fire remains and demolition operations, which made it difficult to observe the condition of the ground.
- Outstanding Information Requests - Although several attempts were made to contact the State Fire Marshal's Office, the final report for the 2017 fire was not obtained. The lack of the fire report will not affect the conclusions and outcome of this Phase I ESA report.
- Historical Data Source Failure - None
- Other - None

It should be noted that this assessment did not include a review or audit of operational environmental compliance issues, or of any environmental management systems that may exist on the property. Where required, the documents listed in Appendices A through F were used as reference material for the completion of the Phase I ESA. Some of the information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, in certain instances Alta has been required to assume that the information provided is accurate.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgment of Alta based on the data obtained from the work. Due to the nature of investigation and the limited data available, Alta cannot warrant against undiscovered environmental liabilities that are beyond the scope of a Phase I ESA. A Phase I ESA is not an all encompassing investigation. It is a professional investigation with a limited scope based on reasonably obtainable information that an experienced professional practicing due care could be expected to obtain or observe and evaluate. Conclusions and recommendations presented in this report should not be construed as legal advice.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, we request that this information be brought to our attention so that we may reassess the conclusions provided herein.

1.5 Special Terms and Conditions

Authorization to perform this assessment was given by the client on November 13, 2017. Instructions as to the location of the property, site access, and an explanation of the property and facilities to be assessed were provided by the Nez Perce Tribe.

1.6 User Reliance

The information in this report was accurate to the best of Alta's knowledge on November 14, 2017 (the date of the site inspection). This report has been prepared for the sole benefit of the client. The report may not be relied upon by any other person or entity without the express written consent of Alta Science and Engineering, Inc.

2.0 SITE DESCRIPTION

2.1 Location and Site Description

The subject property is located in the Clearwater River valley in Idaho County, Idaho. Idaho County is situated in the north central part of the state between Washington and Montana. The county stretches from the Oregon/Washington state line east to Montana and from north of the Lochsa River to an area south of the Salmon River. In terms of land mass, it is one of the largest counties in the nation at 8,477 square miles (there are 26 square miles of water in the county). There are about 6,925 square miles of national forest land within the county, more than in any county (or borough) outside of Alaska. National forests (and their acreage) within the county are: Nez Perce National Forest (2,224,091 acres); Clearwater National Forest (870,807 acres); Payette National Forest (804,853 acres); Bitterroot National Forest (464,108 acres); Salmon National Forest (66,074 acres); and Wallowa National Forest (1,787 acres). The Nez Perce National Forest is located entirely within the county's borders, and is the largest national torest lying within a single county (Idaho County *Wikipedia* 2017).

Idaho County is larger than some eastern states, yet it has an estimated 2016 resident population of only 16,156 (American Fact Finder 2017). The majority of this population lives in the western one-third of the county because the eastern two-thirds are predominantly occupied by national forest lands within the Clearwater and Nez Perce National Forests. Kamiah straddles Idaho and Lewis Counties. Lewis County is a smaller county, both in terms of land mass and in population, but it reflects generally the same rural character and low population density. Historically, the economy of the area had depended upon farming, ranching, and the forest products industries (Kerby 2017).

The immediate subject property neighborhood is the valley and hillsides surrounding the Clearwater River valleys. The South Fork of the Clearwater River flows in a northerly direction out of the mountains in the Nez Perce National Forest to the south and east of the subject property. The Middle Fork of the Clearwater River runs in a westerly direction out of the mountains in the Nez Perce and Clearwater National Forests north and east of the subject property. The Middle Fork and the South Fork converge at Kooskia, 6 miles southwest of the subject property, to form the main Clearwater River, which then flows in a northwesterly direction to its confluence with the Snake River at Lewiston, Idaho, 75 miles downstream.

The Kamiah neighborhood is made up of small and large ranches, recreational ranch tracts, and rural homesites. The topography ranges from rolling benches to very steep slopes. Ground cover is a medley of hillsides, ridge tops, timbered north slopes, and draws. As one increases in elevation, open slopes give way to more timber cover and higher precipitation. There are a few small benches on the valley floor, but most of those are occupied by towns, homesites, farmsteads, or commercial uses of some sort (Kerby 2017).

The subject property is a former mill site that is located directly north across Clearwater River from Kamiah, Idaho. The GPS coordinates at the main entrance off Woodland Road are 46.242567, -116.026944. The site consists of the following Idaho County Tax Parcel numbers:

- RP 34NO3E351950 A has approximately 3.00 acres
- RP 34NO3E352110 A has approximately 56.31 acres
- RP 34NO3E365600 A has approximately 29.16 acres
- RP 34NO3E350300 A has approximately 11.02 acres
- RP 34NO3E364511 A has approximately 15.00 acres

The site consists of two non-contiguous tracts of land approximately 114.49 acres in total based upon assessment records and the legal description. The largest part (described as Investigation Zones A, B, and C below) lies along the Clearwater River and has served as the site for a sawmill operation since the 1940s (further discussed in subsection 4.3). The smaller portion (described as Investigation Zone E below) lies about one-quarter of a mile to the east along Woodland Road and has been used as a log yard waste landfill for many years. See Figure 1 in Appendix A for a layout of the site and the two tracts of land.

Investigation Zones A, B, and C
The larger mill site property is about a half of a mile north to south and approximately 1,900 feet wide at its widest spot and encloses about 99.5 acres. The property is bounded by the Clearwater River on its west and south sides, by Tribal Trust land along the southeast side, and by private land along most of the east and north lines. There is an active railroad right-of-way and railroad tracks that run through the western part of the property. The rail line here divides the property to some extent, but it also has provided a source of inexpensive transportation for finished lumber and/or logs at this location. Most of the mill site, approximately

2.1 Location and Site Description (continued)

85 acres, is nearly level land along a broad plain just above the river. About half of the site has been utilized as log storage and the other half has supported the sawmill operation and related buildings.

Investigation Zone E
The smaller property is a rectangle of about 15 acres and was excavated as a rock pit at some point in time and has since been used primarily as a waste landfill for log yard and sawmill waste. This property is about 587 feet wide measured north to south and extends east from Woodland Road about 1,125 feet. The center of this tract has little vegetation because it has been excavated and filled, but the perimeter's steeper areas were once lightly timbered and brushy. A wildfire in 2015 burned through this property and most of the vegetation here burned. There are a few trees remaining and some brush is regenerating. There are a few relatively level areas with native soil, but most of the area is on fill.

2.2 Site and Vicinity General Characteristics

Topography of the site has been determined from United States Geological Survey (USGS) 7.5' Digital Elevation Models as presented in the Environmental Data Resources, Inc. (EDR) Radius Map Report (see Appendix C).

> Investigation Zones A, B, and C (as referenced in Figure 1, Appendix A)
> Most of the mill site, approximately 85 acres, is nearly level land along a broad plain just above the river at an average elevation of about 1,175 feet above mean sea level (amsl).
>
> Investigation Zone E (as referenced in Figure 1, Appendix A)
> About half of this smaller tract of land, the area that is gentle enough to get dump trucks in and out, is covered with many thousands of yards of soil, rock, wood waste, and similar material. The rest of the site is quite steep. Elevations on this property are about 1,225 feet amsl along the west edge at the county road and range up to about 1,450 feet amsl at the highest point near the southeast corner.

The subject property is reported to be in a Federal Emergency Management Agency (FEMA) 100-year flood plain (see the FEMA firmette in Appendix A). The mill site apparently flooded in about 1948, and following that flood, the US Army Corps of Engineers (USACE) raised the dike along the north bank of the Clearwater River from the US Highway 12 bridge downstream to about the north end of the mill site. According to a former site manager, the site has not flooded since; however, when the water gets to within 5 feet of the dike, flooding begins to occur on the south side of the river where the banks are lower. The threat of this site to flood usually occurs when ice dams form downstream where the river narrows and backs up water toward Kamiah (Kerby 2017).

The target property area is listed to be within a 1-mile radius of National Wetland Inventory site as found on the US Fish and Wildlife Service (USFWS) "National Wetlands Inventory" (https://www.fws.gov/wetlands/data/mapper.html). The main type of documented wetland at the site is freshwater pond, which is the sewer lagoon in the north portion of the site and the mill pond near the southeast corner of the site. The mill pond was filled in during the 1980s. The other surrounding wetlands are "Riverine," comprising the nearby Clearwater River to the south, "Freshwater Forested/Shrub" along the north and south banks of the river just south (upstream) of the subject property, and "Freshwater Emergent" located in the river just downstream of the subject property (see the Wetlands Figure developed from the National Wetlands Inventory in Appendix A). Specific groundwater flow direction for this site is best determined using site-specific information; however, the EDR Radius Map Report did not provide such information. Groundwater flow direction was determined based on the southwest dipping topography and under the assumption that subsurface geology is laterally continuous and trends toward the Clearwater River.

The dominant soil composition at the site is named in the EDR Radius Map Report as Nicodemus and the surface soil texture is described as loam. The soil is listed as hydrologic group Class B with moderate infiltration rates. Three layers compose the dominant soil composition at the site. Layer 1 (0-22 inches) has a soil texture of loam. Layer 2 (22-29 inches) has a soil texture of very cobbly sandy loam. Layer 3 (29-59 inches) has a soil texture of extremely cobbly sand. Additional information regarding the soils surrounding the subject property can be seen in the EDR Radius Map Report.

2.2 Site and Vicinity General Characteristics (continued)

The EDR Radius Map Report revealed that Idaho County is designated by the US Environmental Protection Agency (USEPA) Map of Radon Zones as "Zone 1," which is defined as having a radon measurement greater than 4 picoCuries per liter of air (pCi/L). Zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. If more details concerning radon are desired, site-specific radon monitoring should be conducted at the site.

Sixty-one water wells were identified in the EDR physical setting source map within a 1-mile radius of the target property. Two wells were identified on the subject property. Alta researched these wells through the Idaho Department of Water Resources (IDWR) Well Driller's Report database (http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283849). Brief descriptions of these wells are provided below and copies of these well driller's reports are located in Appendix F. A more detailed list of the other wells in the vicinity of the site can be found in the EDR Radius Map Report.

- Well #1, a domestic well, was deepened by Three Rivers Timber in August 1996. The 4.5 inch diameter well was finished to a new depth of 300 feet with a screened interval from 260 to 300 feet. The static water level was reported at 30 feet below ground surface.
- Well #2 was installed by Blue North Forest Products LLC in February 2014 as a domestic well. It was installed using air rotary methods using a boring diameter of 6 inches. The well diameter is 4.5 inches and is screened from 430 feet to 470 feet with schedule 40 PVC. The well report states static water was encountered at 30 feet below ground surface but depth to first water was encountered at 430 feet below ground surface. The only reported lithology was salt/pepper granite from 300-470 feet.

2.3 Current Use of the Property

According to the Idaho County Planning and Zoning Office, the county has no zoning ordinance or building codes. Under ordinary circumstances the site would be subject to Idaho County subdivision requirements, originally adopted in 1983, which states that any division of an original parcel into five or more parcels is a subdivision. A new ordinance, Ordinance No. 59, Subdivision Regulations for Idaho County was adopted in October 2010 and amended April 23, 2013, and provides some additional clarity (Idaho County Ordinances n.d.). Since part of the property is Indian Allotment, however, it is also exempt from any land use planning ordinances imposed by local government (Kerby 2017).

The subject property is currently abandoned, and has been for the calendar year 2017. After the auction and fire/salvage activities in late 2016, the property has not been occupied or used. The site was industrial and consisted of a former mill site that was in operation from at least the 1940s until 2016. Descriptions of the key site buildings that remain on the property at the time of this Phase I ESA are described in subsection 2.4.

2.4 Description of Structures, Roads, Other Improvements on the Site

Utilities
According to the Appraiser's Report (Kerby 2017), city services are not available at the subject property. This subject property has drilled wells. According to District 2 of the Idaho Public Health Department, this property does not have records of a septic system but there are indications of a lagoon sewage pond. The other public utilities available at the site are electricity and telephone lines.

Site Access
According to the Appraiser's Report (Kerby 2017), the site is accessed by way of a longstanding non-exclusive 40-foot easement for right-of-way across tribal trust land. This county-maintained paved road runs northwesterly from Woodland Road, across tribal trust land for approximately 965 feet to the site. Woodland Grade Road is an all-season public paved road that runs by the subject property and connects to US Highway 12, about a mile east of the subject property.

Railroad
According to the Appraiser's Report (Kerby 2017), the former Burlington Northern railroad runs through Investigation Zones A, B, and C of the property and it is currently owned and operated by the Bountiful Grain and Craig Mountain Railroad while the rights-of-way appear to be owned by Blue North Forest Products, LLC. Rail service on this line connects to Lewiston.

2.4 Description of Structures, Roads, Other Improvements on the Site (continued)

Log yard
According to the former site manager, the log yard has been filled and hardened. A mill pond was filled at some point in the 1980s near the southeast corner. The fill was engineered and compacted to support heavy loads for long-term use. Initially they started to get the fill material from the smaller piece of property, but after the initial removal of rock, they decided they needed a source with better quality rock and less clay, and most of the fill material was hauled from another Kamiah area rock source (Farallon 2016).

Structures
The site is inactive and was a former lumber mill. Approximately 23 structures were located on the subject property in spring 2016 when previous owners had the mill in full operation (Farallon 2016). Currently, 17 structures (plus a number of small shed-like structures containing fire suppression piping) remain on the subject property, as shown in Figure 2 in Appendix A. Many of the structures have been demolished, burned in a fire, or have had their roof collapse due to fire suppression activities. A summary of the remaining 17 structures is presented below (building numbers reference Figure 2, Appendix A).

- Buildings 1 and 2: These two buildings were the main office buildings.
    - Building 1 is of wood frame construction with wood painted siding and concrete foundation and floor. The interior is wood walls or drywall and acoustic tile ceilings. The exterior paint is in poor condition. The roofing materials were scattered around the exterior.
    - Building 2 is a mobile home office with skirted base and low pitch metal roof. The interior is carpeted and drywalled. The exterior's paint is chipped and in poor condition. The roofing materials were scattered around the exterior.

  Buildings 3A and 3B:
    - Building 3A is the former scale house with a wood painted exterior and a corrugated metal roof. The exterior paint is peeling and in poor condition. The interior is all wood walls and ceilings with carpet flooring.
    - Building 3B is a smaller structure north of the scale house and was most probably used for storage based on shelving and old office supplies inside the building. The building has a wood painted exterior with corrugated metal roof. The exterior paint is peeling and in poor condition. The interior is painted drywall that is in good condition.
- Building 4: This structure was the old packing and loading building. It is a wood frame structure on concrete foundation and concrete piers. It has large exterior wood panels with paint in semi-poor condition. At the time of the site reconnaissance, this was an open building with a roof, one complete wall on the west, partial walls on the north and south, and a cement floor containing the end of the rail line.
- Building 5: This structure used to be the lumber stacking and planing building. This is a wood frame structure on concrete foundations and concrete piers, with cement floors and large exterior wood panels with paint in semi-poor condition. The building and roof are still intact on the north end. The roof on the southern end of the building is missing because it collapsed from the weight of water and snow after the boiler house fire.
- Buildings 6A and 6B: These are connected and similar to Buildings 4 and 5. They used to be dry sheds for lumber storage. They are wood frame structures on concrete foundations and concrete piers, with cement, gravel, or broken asphalt flooring. These buildings also have large exterior wood panels with paint in semi-poor condition.
- Building 7: This is a newer looking open structure attached to Building 6B. The kilns used to be adjacent to Building 7 on the south. This is an open sided, steel frame building with pole support uprights built on piers with cement flooring.
- Building 8: This is a fire suppression building adjacent to the fire suppression lagoon. This is a wood structure on cement foundation, with wood exterior painted panels in poor condition. Peeling paint was observed on the ground around the building. A large pump and piping remain inside the building. The interior of this building contains a strong petroleum/chemical smell, and there is liquid and staining on the inside cement floor.
- Building 11: This is an old maintenance building made of wood with corrugated metal roofing. The interior has a cement floor, and the exterior paint condition is peeling, cracking, and in poor condition.
- Building 12A: This was used as the steam cleaning and wash area. This is a metal structure on a cement foundation and flooring with underground drainage. The interior has a strong petroleum odor and still houses the generator and water treatment compression equipment. A small divided cement lagoon area is located to the north of this structure and two sewer manholes are located to the east of this structure.

2.4 Description of Structures, Roads, Other Improvements on the Site (continued)

- Building 12B: This was also an old maintenance building that contained a hazardous materials storage area on the southwest exterior corner. This is a wood structure on cement foundation, with an outer shop area on a raised cement floor. Exterior paint on wood panels is in poor condition, with multiple areas of peeling and chipping paint. The roof is corrugated metal and contains two antennas. The southeast corner has a cement crawl space area, and adjacent to the crawl space opening is an old petroleum fuel storage containment area.
- Building 13: This was an old maintenance building that contained a loft and kitchen area on the northern portion of the building. This is a wood structure on cement foundation and flooring. The exterior paint is in poor condition and flaking chips were observed on the ground. This building was the subject of an asbestos cleanup in 2017 (as described by Mr. Short of Idaho Forest Group [IFG]).
- Building 14: This building apparently was used for something electrical in nature, based on the metal panels covering the floor pits stating "high voltage". The building is a small cement block structure with no roof and has three sunken pits in the floor. Two of the three pits were observed with some standing water, but the sidewalls contained a number of conduits about 4-6 inches in diameter and some wiring.
- Buildings 15A and 15B: These buildings are the old boiler house and the sawmill and were the location of the 2017 fire. These connected buildings are constructed of masonry block with metal roofing. During the site reconnaissance, the buildings were in unsafe condition to enter; therefore, the interiors were not assessed.
- Building 16: This used to be the transformer storage building. This is a small cement walled and floor structure with no roof. There is a sunken hole in the floor of this building.
- Building 17: This is a small, two-story pump house located adjacent to the Clearwater River, with an intake valve in the lower level. It is a cement block structure with corrugated metal roofing.
- Building 18: Previously used as the scale house for weighing lumber trucks, this small wood structure has a concrete foundation with concrete flooring.
- Additional miscellaneous structures:
    - The fire suppression system and infrastructure at this site is extensive. Consequently, there are a number of detached and attached fire pumping/piping sheds throughout Investigation Zone B.
    - A small metal shed adjacent to the weir was observed in the northern-most portion of the site in Investigation Zone C.
    - A water storage tank exists in the southeastern portion of Zone C.
    - Two cement containment areas remain: one housed the old 12,000-gallon aboveground storage tank (AST) in the central-eastern portion of Zone B and another one is located north of Building 13 (past aerial photos indicate a building or structure with a roof might have existed in the same location).

2.5 Current Uses of the Adjoining Properties

Adjacent properties include the Clearwater River to the south and west and land sparsely developed with residences to the east and north. There was no visual evidence of recognized environmental conditions on abutting or nearby properties at the time of the site reconnaissance. Observations were restricted to areas readily observable from the subject property.

3.0 USER PROVIDED INFORMATION

3.1 Title Records

A Title Report and Warranty Deed was completed by First American Title in early 2017. A copy of the most recent title can be found in Appendix B as a part of the "Appraisal Report of Blue North Mill Site" completed by Western Appraisals (Kerby 2017). Blue North Forest Products, LLC (Blue North), a Washington limited liability company, operated the mill, employing about 65 workers from August 2010 until closing down in May 2016. The current title is vested in IFG-KAMP, LLC, an Idaho Limited Liability Company, who acquired the property in June 2016.

3.2 Environmental Liens or Activity and Use Limitations

No environmental liens were reported for the subject property. However, Mr. Cannon from the Nez Perce Tribe indicated that IFG placed covenants on the property to prevent future use of the site as lumber or milling operations that directly compete with IFG operations.

3.3 Specialized Knowledge

The subject property has two decreed water rights on file according to IDWR. Water rights in Idaho are subject to forfeiture after 5 or more years of non-use. IDWR has a water bank that allows water rights to be "banked" during periods of non-use. This bank stops the clock on the 5-year period while the rights are banked. However, water cannot be used during the contract period unless there is a water lease arrangement made prior to the right being banked. There is a scheduled fee for banking water rights and a scheduled lease rater for water as well.

- WR #84-04052 is an industrial and fire protection right for a total of 14.69 cubic feet per second (cfs) from the Clearwater River, tributary to the Snake River. This right has a 6/1/1947 priority date with year-round use.
- WR #84-04053 is a domestic right for 0.18 cfs, a groundwater right from a well. This is also a year-round right with a 6/1/1953 priority date.

The subject property has a county road, a power line, a telephone, and a railroad easement.

3.4 Commonly Known or Reasonably Ascertainable Information

An Alta employee submitted a public records request (PRR) to the Idaho Department of Environmental Quality (IDEQ) on December 4, 2017, regarding hazardous materials storage, generation, or handling status for the subject property. IDEQ responded on December 5, 2017, with a Resource Conservation and Recovery Act (RCRA) notification of hazardous waste activity filed by Potlatch Corporation Kamiah Unit filed in August 1980; a request from Potlatch Corporation to USEPA on December 16, 1980, that the Kamiah Plant be reclassified as a small quantity generator; a "Generator Biennial Hazardous Waste Report for 1985" received by the USEPA Waste Management Branch on February 3, 1986, changing the status of the Kamiah Plant to "out of business;" a letter dated July 8, 1996, to the Idaho Department of Health and Welfare Division of Environmental Quality from Potlatch Corporation indicating they no longer operated at the Kamiah Plant; and a RCRA Compliance Evaluation Inspection in 1997 of Three Rivers Lumber, Inc . Copies of IDEQ's files are in Appendix F.

3.5 Valuation Reduction for Environmental Issues

According to the Idaho County Assessor's Office, the value of the property has not significantly lowered or raised due to any issues, environmental or otherwise, in the past 10 years.

3.6 Reason For Performing Phase I

The Phase I ESA is being conducted as part of environmental due diligence prior to purchasing the property to determine the likely presence of recognized environmental concerns associated with the property and/or potential for impact from adjacent properties prior to the redevelopment of the property. The client

3.6 Reason For Performing Phase I (continued)

understands that the findings of this study will be used to evaluate a pending financial transaction in connection with the subject property.

3.7 Owner, Property Manager, and Occupant Information

The majority of the main mill site and the 15 acre tract to the northeast are currently owned by IFG-Kamp, LLC as shown in Figure 1 in Appendix A. Portions of the railroad rights of way are owned by Blue North Forest Products, LLC. East portions of the main mill site are Tribal Trust land.

There are no permanent occupants on this industrial site, although remains of transient fire rings were noted in the eastern portions of the site during the site reconnaissance.

3.8 Other

No other information was provided.

4.0 RECORDS REVIEW

4.1 Standard Environmental Records Sources

Alta obtained an ASTM-compliant government records radial database report for this assessment from EDR. A comprehensive list of all databases that EDR searched and criteria for being listed on each database and specific facility information are located within the EDR Radius Map Report (see Appendix C). The subsequent standard federal database listings were associated with the following properties within the 1-mile radius of the subject property: Enforcement & Compliance History Information (**ECHO**), which is a USEPA database which provides integrated compliance and enforcement information for facilities nationwide; Facility Index System/Facility Registration System (**FINDS**); Integrated Compliance Information System (**ICIS**) databases in Envirofacts regarding facilities registered with the federal enforcement and compliance and hold permits; US Aerometric Information Retrieval System (**US AIRS**); Toxic Release Inventory System (**TRIS**); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA) Tracking System (**FTTS**); Historical FIFRA/TSCA Tracking System (**HIST FTTS**); mandated by Section 312 of the Emergency Planning and Community Right-To-Know Act (EPCRA), the Tier II (2) form captures information about the types, quantities, and locations of hazardous chemicals at a given facility (**TIER 2**); underground storage tanks on Tribal land (**INDIAN UST**); and leaking underground storage tanks on Tribal land (**INDIAN LUST**). Criteria for being listed on each database and specific facility information are reviewed within the database report (see Appendix C).

The subsequent standard state database listing was associated with the following properties within the 1-mile radius of the subject property: Remediation Database (**ALLSITES**). Criteria for being listed on each database and specific facility information are reviewed within the database report (see Appendix C).

Also searched were listings within a category of information EDR classifies as "High Risk Historical Records" or HRHRs, which presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches. There were no EDR classified listings in this search.

According to the most recent EDR Radius Map Report, located in Appendix C, there are seven facility names that can be mapped on the subject property that are listed in the federal and state databases; however, each of the seven facilities is attributed to the former mill site on the subject property. Information regarding these listings is briefly described below. Additionally, the Nez Perce Indian Reservation (**INDIAN RESERV**) is located on site. This listing is a map layer searched by EDR that portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Blue North Forest Products (FMLY 3RIVERS)/(FMLY: THREE RIVERS TIMBER INC) (ICIS, US AIRS, FINDS, TRIS, ECHO) is located at the target property with listed addresses of P O BOX 757 Woodland Road, Woodland Road, and 283 Woodland Road. According to the EDR report, facility operations use chemicals listed by the USEPA as toxic. The chemicals are removed from the site for disposal. Alta also researched the facility's air program information via USEPA's Envirofacts database (https://www.epa.gov/enviro/pcs-icis-search). Currently operating at the facility are: Stratospheric Ozone Protection; Tribal Rule Not Otherwise Covered; National Emission Standards for Hazardous Air Pollutants (NESHAP; as listed in 40 CFR [Code of Federal Regulations] Part 61 Subpart M for asbestos); and a Title V Air Quality Operating Permit that was renewed in September 2013 and will expire in September 2018 (attached in Appendix C). The facility received four federal formal enforcement actions: a judicial and an administrative action on 9/8/2004 with a $500.00 penalty, and two administrative actions on 9/25/2007 with a $6,500.00 penalty. The facility received one state administrative formal enforcement action on 7/28/1992 with a $2,500.00 penalty. Several state administrative-informal notices of violation were also received on 3/10/1989, 8/20/1990, 8/16/1991, 12/11/1991, 11/23/1993, 1/26/1994, and 8/1/2007. A print out from Envirofacts is available in Appendix F.

Idaho Forest Group (FINDS, ECHO) is located at the target property with a listed address of 283 Woodland Road. IFG has an active National Pollutant Discharge Elimination System (NPDES) stormwater permit and an air emissions permit. Copies of these permits are provided in Appendix C.

Three Rivers Timber Inc. or **Three Rivers Timber** (INDIAN UST, INDIAN LUST, TIER 2, FTTS, HIST FTTS) is located at the target property with listed addresses of Woodland Road, 757 Woodland Road, and PO Box 757 Woodland Road. IDEQ provided further information upon request from Alta that showed USEPA conducted a compliance evaluation inspection regarding RCRA hazardous waste program. According to the EDR report, the facility historically operated five USTs that were installed in 1971 and have

4.1 Standard Environmental Records Sources (continued)

the current status Permanently Out of Use. All USTs at the Site were removed in the 1990s. A release from the USTs was confirmed in 1994, and a cleanup was initiated. The facility received the status Cleanup Completed on January 5, 2000.

Potlatch Corp Kamiah (ALLSITES) is located at the target property with a listed address of Woodland Road. Alta researched the facility via IDEQ's Waste Management and Remediation Division Facility Mapper (https://idaho.terradex.com/), which showed the facility Program ID #IDD009063181. IDEQ provided further information upon request from Alta that showed a notification submission in 1980 of the following hazardous waste codes: F001 (spent halogenated solvents used in degreasing -- toxic), F003 (spent non-halogenated solvents -- ignitable), and F005 (spent non-halogenated solvents -- toxic and ignitable); and the following non-listed hazardous wastes: D002 (corrosive), D003 (reactive), and D000 (toxic). In December 1980, Potlatch Corporation sent a request in to USEPA to remove the "generator" status to "small quantity generator". In 1985 Potlatch Corporation applied for a "Non-regulated" hazardous waste generator status based on the corporation not doing business at the site since March 1984. No violations were recorded for Potlatch Corporation Kamiah.

4.2 Additional Environmental Record Sources

A review of historical aerial photos, available city directories, Sanborn Fire Insurance maps (if available), and topographical maps show the subject property and surrounding properties. Details describing these environmental record sources are described in sections 4.2.1 through 4.2.4 and the environmental records can be found in Appendix B.

4.2.1 City Directories

EDR conducted a review of city directories in their digital archive; however, crossroads were not available. The information below describes the status of the subject property. Surrounding properties appear to be residential and are not listed below. A copy of the EDR city directory review is presented in Appendix B.

Target Property
2010, 2014: Blue North Forest Products LLC

4.2.2 Physical Setting Source(s)

Topographical Maps
EDR conducted a review of topographical maps. The available maps are from 1924, 1967, 1979, 1984, 1994, and 2013/14 and are presented in Appendix B. Farallon Consulting, LLC (Farallon) completed a Phase I ESA report for the subject property in 2016. Alta reviewed these historical environmental record sources along with Farallon's descriptions. Alta has determined Farallon's (2016) descriptions are complete and accurate as follows:

> ***Subject Property:*** The Site appeared to be undeveloped on the 1924 topographic map. A log storage pond formerly present on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of the fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the log storage pond represents a recognized environmental condition in connection with the Site.
>
> According to the Site representative, boiler ash generated at the site historically was stockpiled on the north-central portion of the site. Incomplete combustion of wood waste can result in concentrations of metals, dioxin/furans, and polycyclic aromatic hydrocarbons (PAHs) that can impact subsurface and surface water. The potential release of hazardous substances in connection with the boiler ash waste pile represents a recognized environmental condition in connection with the Site.
>
> According to the site representative, the site originally was operated as a lumber mill by Twin Feathers Mill in the 1940s. In the 1950s, the site was purchased by Potlach, who operated a lumber mill on the site until the 1980s. Between 1983 and 1986, lumber mill operations ceased. In 1986, Rawlins Group

4.2.2 Physical Setting Source(s) (continued)

operated the lumber mill under the name Triple R. A subsidiary of Weyerhaeuser Company purchased the site in 1992, and operated the mill until 1996. Three Rivers Timber purchased the site in 1996 and operated the lumber mill until Blue North Forest Products LLC purchased and began operating the lumber mill in approximately 2011.

Adjacent Properties: Adjacent properties appear to be undeveloped in the 1924 topographic map, with the Clearwater River south- and west-adjacent to the site. By 1967, the north- and east-adjacent properties appear to be sparsely developed with private residences surrounded by undeveloped land partially used for agricultural purposes, similar to the 2013/14 maps.

Sanborn Fire Insurance Maps
Sanborn Fire Insurance maps were unavailable (no coverage) for this area.

4.2.3 Aerial Photographs

EDR conducted a review of historical aerial photographs. The dates of the maps are 1947, 1966, 1975, 1981, 1992, 2006, 2009, and 2011, which are presented in Appendix B. Farallon completed a Phase I ESA report for the subject property in 2016. Alta reviewed these historical environmental record sources along with Farallon's descriptions. Alta has determined Farallon's (2016) descriptions are complete and accurate as follows:

Subject Property
It appears the Site was operating as a lumber mill by the 1940s and was developed with two buildings on the central portion and then surrounded by vacant land. Aerial photographs depict a wigwam-type wood-waste burner on the south-central portion of the site near the former log storage pond in approximately 1955. By 1966 and through 1975, the site appears to be developed with at least four buildings on the central portion, while the southeastern and western portions appear to be used for log storage. By 1981, the site appears to be developed with at least 12 buildings on the central and south-central portions, with vacant land on the northwestern portion, log storage occurring on the southeastern portion, and a log storage pond present on the south-central portion. By 1992 and through 1998, the site appears to be developed similar to 1981, with buildings added on the central portion, and some buildings removed from the south-central portion. Log storage historically has taken place on the southeastern and south-central portions of the site.

By 2004, the south-central portion of the site was partially used for storage, a building was added on the south-central portion, a building was added on the north-central portion, the southeastern portion was used for lumber storage, and the northwestern portion was mostly vacant land. By 2006, the site appears to be developed similar to 2004, with additional log storage on a section of the northwestern portion of the site. By 2009, the buildings on the site remain similar to 2004, although there was no log storage on the site. By 2011, the site appears to be developed similar to 2016, with approximately 23 buildings on the central and south-central portions of the site, and log storage on the south and eastern portions of the site.

Adjacent Properties
The Clearwater River is visible adjacent to the south and west of the site. By 1947, the north- and east-adjacent properties appear to be sparsely developed with private residences surrounded by undeveloped land partially used for agricultural purposes, similar to the 2011 photograph.

4.2.4 Previous Environmental Assessment Reports

Maxim Technologies, Inc. completed a Phase I ESA report dated June 30, 2003. Alta requested but did not have access to this report and does not know the findings, opinions, and conclusions resulting from this report in regards to the property.

LandAmerica Assessment Corporation completed a Phase I ESA report dated April 18, 2008. Alta requested but did not have access to this report and does not know the findings, opinions, and conclusions resulting from this report in regards to the property.

4.2.4 Previous Environmental Assessment Reports (continued)

Farallon completed a Phase I ESA report dated June 9, 2016. Alta acquired and reviewed the Farallon report that identified the following recognized environmental conditions:
The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products associated with lumber mill operations on the site,

- The known presence of asbestos in building materials at the site,
- The potential release of hazardous substances in connection with the boiler ash waste historically placed on the north-central portion of the site,
- The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the former log storage pond on the south-central portion of the site, and
- The potential release of hazardous substances in connection with historical wood waste landfilling on the eastern portion of the site.

4.3 Historical Use Information on the Property

The following summarizes the ownership history of the subject property (Farallon 2016).

- 1940s - Twin Feathers Mill operated the site as a lumber.
- 1950s to the 1980s - Potlatch purchased and operated the site as a lumber mill.
- 1983 and 1986 - During this time the lumber mill ceased operations.
- 1986 to 1992 - Rawlins Group owned the property and operated the lumber mill under the name Triple R Forest Products.
- 1992 to 1996 - Weyerhauser Corporation purchased and operated the site as a lumber mill.
- 1996 to 2008 - Three Rivers Timber operated the site as a lumber mill.
- 2010 to 2016 - Blue North Forest Products, LLC (Blue North), a Washington limited liability company, operated the mill, employing about 65 workers.
- 2016 to current - The current title is vested in IFG-KAMP, LLC, an Idaho limited liability company (LLC), which acquired the property in June 2016.

4.4 Historical Use Information on Adjoining Properties

Based on historical records reviews (described in Section 4.2), it appears the surrounding properties were historically used as rural farmland and/or residential housing.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The site reconnaissance was conducted on November 14, 2017, by Susan Spalinger, John Means, and Casey Bartrem, with Alta. The visual reconnaissance consisted of systematically observing exterior and interior portions of the property and investigating all of the remaining buildings and physical features on the site. Limiting conditions for exterior observations include the size of the site and time constraint, overgrown vegetation, and large debris piles in various areas. Due to the available site access of one day, the available daylight hours in that day, and the size of the site (about 114 acres), the team was unable to traverse the entire site using a grid or transect manner. However, Alta personnel stratified the site (see Figure 1, Appendix A) and made all efforts to systematically and visually observe all exterior portions of the site from various viewpoints if they were unable to walk it. Alta personnel did not traverse the elevated upper northeast corner of Investigation Zone C and visually observed the vegetated area north of the entrance road in Investigation Zone D from the vehicle. Limiting conditions on interior observations include entry into unstable/unsafe buildings, such as the old sawmill/boiler house (Buildings 15A and 15B, Figure 2 in Appendix A), and locked doors on southwestern-most maintenance building (12B, Figure 2). Photographs of pertinent site features identified during the site reconnaissance are included in Appendix E.

It must be noted that a property assessment functions as a screening tool for use in assessing actual or potential environmental risks. It includes limited research, a review of specified and reasonably ascertainable listings, and a site reconnaissance to identify recognized environmental conditions in general accordance with industry standards. Recognized environmental conditions are defined under the ASTM standard as "the presence or likely presence of any hazardous substances or petroleum products on a site under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property." It is not intended to be conducted as a final site investigation and/or risk assessment. Additional information may affect the conclusions of this report.

5.2 General Site Setting

The site is located just outside of the town of Kamiah, Idaho, and includes a total of five land parcels. One area is detached (Investigation Zone E) and located to the east of the other contiguous parcels (Investigation Zones A, B, C, and D). The five parcels are owned by IFG-Kamp, LLC, Blue North Forest Products, LLC, and Tribal Allotment land (see Figure 1) and include the following:

- 34NO3E351950A
- 34NO3E352110A
- 34NO3E364511A
- 34NO3E350300A
- 34NO3E365600A

The site is a former lumber mill that processed raw timber, and kiln-dried and prepared lumber for delivery. Since June 2016 when IFG-Kamp, LLC took ownership of the site, only demolition activities have taken place. Seventeen building structures remain in the central portion of the site; one small structure (old pump house; Building 17 in Figure 2, Appendix A) is located adjacent to the river towards the south. The site was undeveloped until lumber mill operations began in the 1940s; it has been used for lumber mill operations under various ownership until 2016 (Farallon 2016). A description of past activities prior to IFG-Kamp ownership is described in the 2016 Phase I ESA Report (Farallon 2016).

In general, the Alta team observed an old rail line cutting through Investigation Zone C (Figure 1) until it merged on the north end with the existing rail spur, also located in Investigation Zone C leading into the old packing/loading building (Building 4, Figure 2). Topography of the site is generally flat, except in the north eastern area where an elevation change is dramatic. A water tank was seen on top of the elevated land from below near office Building 1 (Figure 2). However, access to the water tank did not occur due to the end of daylight hours. A ditch and possible wetland areas exist in the northern portion of the site. Standing water was observed in the ditch to the east of the old remnant rail line and west of the steep face from the elevation change. A weir was also observed in the northern-most portion of the site to the east of the rail spur. Most of Investigation Zone C, the northern edge of Investigation Zone D, and part of Investigation Zone E are heavily vegetated, and the remainder of the property is unvegetated and covered with buildings, old cement foundations, and cement floors of demolished or burned buildings, debris, or wood waste piles. The

5.2 General Site Setting (continued)

eastern-most portion of the site (Investigation Zone E, Figure 1) contains the old wood-waste landfill and contains no buildings.

5.2.1 Hazardous Substances

Potentially hazardous substances were observed at several areas of the site. Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

Investigation Zone A

- Refuse, such as aerosol paint cans, pesticide cans, oil bottles, and plastic bottles, was strewn about in the southwest corner of Investigation Zone A (not shown in Figure 2), and the weighing area and the gravel road.

Investigation Zone B

- The south end of the Lumber Stacker Shed (Building 5) and the Trimmer and Planing Buildings was where the snow-pack and fire suppression water collapsed the roof in January 2017 (after the fire). The burn piles that remained from the 2017 fire contained wood, metal, cement, painted panels, roofing materials (it is unknown if roofing material contains asbestos), plastics such as polyglass, electrical, insulation, etc.
- The Fire Suppression Shed (Building 8) had numerous large lead-acid batteries remained in the shed, labeled as heavy duty interstate batteries. The word "corrosive" was painted on two of the tables. Alta personnel observed miscellaneous antifreeze and paint cans in the back portion of the shed.
- A pile of 'Activated Alumina' bags were on two pallets on the southeast corner of the Maintenance Building (Building 11) and were open and had spilled.
- The Pressure Wash Area (adjacent to Building 12A) was of cement construction and contained a drain marked "outfall to stream and dump no pollutants". North of the pressure wash shed was a divided, cement ditch area with piping and standing water. Alta personnel did not observe any sheen on the standing water. The inside of the Pressure Wash Shed (Building 12A) smelled of petroleum and contained several grease and oil cans/drums. There was a drain in the cement floor, with a pipe on the drain coming from the large piping/water treatment and Pressure Wash equipment.
- Only the attached ancillary room of the westernmost Maintenance Building (Building 12B) could be accessed by Alta personnel. This room contained more than 25 empty antifreeze jugs (1-gallon jugs of "Zecol Maximum" and "Polyfreeze Gold"). Alta personnel observed de minimis staining on the workbench under tubing still attached to "Fleetguard" oil cans. The exterior of this building had a hazardous waste material storage area sign and had a fenced, cement containment structure. Multiple 5-gallon buckets, some empty, were strewn throughout this area and labeled as hydraulic oil, diesel, and tractor fluid. Alta personnel observed a shallow layer of dark sludge at the bottom of the cement containment area. The southeast corner of this building had another cement containment area with gasoline and fueling station signs.
- The interior of the easternmost Maintenance Building (Building 13) contained considerable garbage, such as broken fluorescent lighting, plastic, wood, binders, papers, ammonia jugs, acetone cans, one 5-gallon paint bucket, and one 5-gallon bucket filled with an unknown liquid and a label indicating "corrosive".
- In the area north of the easternmost Maintenance Building (Building 13) and west of the former Green Sorter, Alta personnel observed a low-lying, cement containment area with about 14 5-gallon buckets of various fluids (transmission fluid, flushing fluid, heavy duty degreaser, etc.) and two sacks of 'sakrete'. The bottom of this containment area appeared stained and contained absorbent material.
- Two 5-gallon cans of lubricant and a 1-gallon can of gasoline with no secondary containment were also observed inside the Pump House (Building 17 on the south end of the site), which is adjacent to the Clearwater River.
- For the Scale House (Building 18), the scale equipment was removed and a light oil sheen was observed on the water in the exposed pit. Numerous aerosol and paint cans were also strewn about.
- Refuse, such as aerosol paint cans, pesticide cans, oil bottles, and plastic bottles, was strewn about the Truck Unloading Area in Investigation Zone B.

Investigation Zone E

- Material at the Wood Waste Landfill Area (Investigation Zone E) on the east portion of the site appears to be chipped wood waste from the log yard mixed with pit run rock. Periodic burning has

5.2.1 Hazardous Substances (continued)

taken place in this area. Remains from transient campfires and personal items were strewn about in this area.

A previous Phase I ESA completed in 2016 recognized potential releases of hazardous substances in connection with long-term mill operations. These included the wood waste landfill (Investigation Zone F not referenced in Figures 1 and 2), unknown fill material used to fill a pond on the south central portion of the site, the disposal of boiler ash waste, and containers of hazardous substances (including petroleum products) ranging from 1 quart to 200 gallons throughout the site. ASTs ranging from 250 to 12,000 gallons in capacity were also noted on the site. Many of these containers were no longer present during Alta personnel's reconnaissance, but previous existence of the materials represent a recognized environmental hazard.

5.2.2 Unidentified Containers

The interior of the Easternmost Maintenance Building (Building 13) contained one 5-gallon bucket filled with an unknown liquid and a label indicating corrosive.

5.2.3 Staining

Staining was observed in the following locations on the site. Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

Investigation Zone A

- Alta personnel observed oil stains on the concrete pads at the Old Log Yard Storage Area on the southeast portion of the site.

Investigation Zone B

- Tiled floor in the Scale House (Buildings 3A and 3B).
- De minimis staining on cement floor of Packing/Loading Building (Building 4).
- De minimis staining on the cement floor in Building 11.
- Staining in containment area in north of Building 11 around the 14 5-gallon buckets.
- De minimis staining on the workbench under tubing still attached to "Fleetguard" oil cans in the ancillary room of Westernmost Maintenance Building (Building 12B).
- De minimis staining on the southeast corner of the containment area adjacent to Building 12B.
- Alta personnel observed minimal staining of the cement floor of the interior of the easternmost Maintenance Building (Building 13).
- Oil stains on concrete pad in area to west, north, and east of the Boiler House (Buildings 15A and 15B).

A previous Phase I ESA in 2016 also noted areas of significant staining near and around containers of hazardous substances. This included staining around the containment for ASTs which were not present during the 2017 site reconnaissance by Alta personnel.

5.2.4 Stressed Vegetation

No unidentified stressed vegetation that constitutes evidence of a recognized environmental condition was observed at the subject property at the time of the site reconnaissance.

5.2.5 Aboveground Storage Tanks (ASTs)

No ASTs were observed on the subject property at the time of the site reconnaissance. Formerly, a 12,000-gallon diesel containment area was located on the site. The cement containment area remains with no tanks present. This area is open-air and smelled of petroleum fuel. Vegetation (such as berry vines and grasses) is growing around this cement structure and prevented Alta personnel from observing the surrounding soils. Remnants of the former railroad tracks exist between the cement containment area and the ditch (to the northeast).

5.2.6 Lack of Secondary Containment

At the time of the site reconnaissance, there was no evidence of ASTs in need of secondary containment.

The Phase I ESA conducted in 2016 identified multiple secondary containment areas in buildings and beneath covered areas on the site. No areas lacking secondary containment were identified during the 2016 assessment.

5.2.7 Underground Storage Tanks (USTs)

The subject property did not appear to contain USTs. No evidence of vent pipes, fill pipes, or access ways indicating USTs were discovered at the time of the site reconnaissance.

According to the EDR report, five USTs were historically used at the site after installation in 1971. They were removed in the 1990s and a cleanup was initiated after a release from one UST was identified in 1994. Cleanup was completed in January 2000.

5.2.8 Pits, Ponds, And Lagoons

Several pits, ponds, and lagoons associated with onsite processes were observed at the site during reconnaissance.

Pits:

- The remaining pit in the Truck Unloading Area (Investigation Zone B) had standing water and a light oil sheen.
- Three pits inside Building 14 (newer concrete-brick structure without a roof) contained standing water and garbage. Each pit was covered by metal doors labeled as high voltage. Alta personnel observed circuitry on the walls, as well as a Washington Water Power meter. Alta personnel could observe the interiors of two of the square cement pits. The walls of the pits contained multiple pipe openings for conduits (the openings for the pipes appeared to be approximately 4 or 6 inches wide), and some copper wiring.

Ponds:

- Alta personnel identified a stormwater detention pond that is fed by drainage ditches and discharges through the weir on the north portion of the property (Investigation Zone C).
- A Phase I ESA conducted in 2016 identified a filled log storage pond on the south central portion of the site (adjacent to the Clearwater River). This was filled with unknown fill material in the 1990s.

Lagoons:

- A lined fire suppression lagoon in Investigation Zone B, adjacent to Building 8, contains standing water.
- A fenced-in lagoon in Investigation Zone B appeared dry, though Alta personnel were not able to access inside the fence. Mr. Cannon thought that this was the former sewage lagoon. Brambles, grasses, and vegetation are heavy throughout this area.

5.2.9 PCB Containing Equipment

Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

<u>Investigation Zone B</u>

- Unlabeled transformer units were noted in Building 4 (no staining on floor below transformer box). Intact fluorescent lighting tubes were noted in the ceilings of Building 4. The lights were not opened to see if they had PCB ballasts.
- Intact fluorescent lighting tubes were noted in the ceilings of Buildings 6A and 6B. The lights were not opened to see if they had PCB ballasts.
- Two power poles, each with two transformers, were located on the northwest and southeast corners of the Fire Suppression Lagoon (near Building 8). The transformers appeared to be in good condition and stated "customer owned". Alta personnel did not observe any blue non-PCB stickers on these transformers.

5.2.9 PCB Containing Equipment (continued)

- Some transformers were labeled with blue non-PCB stickers, including those in the Truck Unloading Area.
- Unlabeled transformer units were noted in Building 12A (no staining on floor below transformer box).
- Broken fluorescent lighting tubes were found on the floor in Buildings 13 and 14.
- A cement building structure (Building 16) with no roof contained two holes/pits in the cement floor and appeared to be the former transformer location (wall mounted units). No transformers or staining were observed.

Due to the period of operation of the mill, it is probable that PCB aroclors were present in the hydraulic oil and electrical transformers that were used during mill operations. Although it is likely the mill was heated with steam, the majority of mill equipment was likely operated using hydraulic actuators and it was common practice until 1980 to add PCB aroclors to hydraulic oil as a stabilizer and preservative.

5.2.10 Solid Waste Disposal

Large piles of scrap material were observed at the site in Investigation Zones B and C, likely remnants from demolition/auction and fire/salvage activities. This includes roofing material, metal scrap, and concrete material. Some additional metal scrap material was observed in the northwestern portion of Investigation Zone D. No additional indications of improper disposal of solid waste were noted during site reconnaissance and no indications of improper burial activities were noted.

Large debris and scrap piles were observed throughout Investigation Zones A and B. These were from the demolition of the buildings sold in the auction and remaining scrap and wood waste from the salvage that occurred after the fire. Mr. Jesse Short of IFG (not available at the time of the site reconnaissance) indicated that a salvage company in Kamiah, Idaho, removed scrap metal and useful debris after the fire and pushed the remaining debris and scraps into piles.

5.2.11 Wetlands

The site is bordered by the Clearwater River to the east and south. The EDR Radius Map Report indicates that the south and north central portions of the site are within a federally designated wetland. Wetland plants were observed in both of these locations, in the drainage ditch along the east side of the site, and in and near the weir at the north portion of the site.

5.2.12 Septic System with On-Site Drainfield

The Phase I ESA conducted in 2016 identified a septic system in Investigation Zone B, adjacent to the Steam Cleaning and Wash Rack Area (Building 12A). Sanitary sewage is also discharged into septic systems throughout the site.

5.2.13 Oil/Water Separator

While no oil/water separators were observed on the subject property, findings from the Phase I ESA conducted in 2016 indicate that an oil/water separator was located at the Steam Cleaning and Wash Rack Area (adjacent to Building 12A). Wastewater generated from the Steam Cleaning and Wash Rack operations was directed into the oil/water separator.

5.2.14 Dry Wells or Injection Wells

No dry or injection wells were observed on the subject property at the time of reconnaissance.

Two low-lying circular cement structures with electrical outlets were located on site: one adjacent to and on the west side of Building 2, and the other on the north side and adjacent to Building 5. The caps were stuck and too difficult to remove during the site visit and their prior use is unknown.

5.2.15 Contamination of Soil

No significant staining was observed during the site reconnaissance. However, the presence of roofing/building material debris around some buildings that may contain asbestos, deteriorating paint that may contain lead, and the existence of pits, concrete containment areas, and stained floors indicate possible sources of soil contamination. Numerous debris piles and waste (such as coolant jugs) are located throughout the site that may contain hazardous materials. Although the kilns, an old wood-waste burner in the south central area, and the boiler ash stockpile are no longer on site, their emissions and waste may contain PAHs and dioxins/furans that can impact soils.

During a short interview with a past site worker, there was indication that used oil dumping occurred on site.

It was common practice at mill sites until 1980 to add PCB aroclors to the hydraulic oil of milling equipment and transformers as a stabilizer and preservative. Many times the milling equipment leaked and it is known that some of the buildings did not have concrete flooring until many decades of use. Additionally, the water used to cool the equipment (the steam that was created from this equipment cooling technique was used to heat the buildings) was dumped into the nearby cooling pond. Although this pond was backfilled with material in the 1990s, it may have PCB aroclors sorbed to the sediments at the bottom of the pond.

The soils of this area of Idaho have a higher level of background arsenic than other areas of Idaho and the trees naturally take up the arsenic into their system (USGS 2016). When the trees are stacked, watered, and then left to dry, the arsenic leaches out of the wood and into the soil underneath the wood stacks. It is common for lumber yards and mill yards to have high levels of arsenic in their soil.

Formerly, a 12,000-gallon diesel AST containment area was located on the site. The cement containment area remains with no tanks present. This area is open to the air and smelled of petroleum fuel. There is a probability of petroleum contamination from spills, overflows, or other releases to the environment from this former AST.

Previous soil contamination was identified in the area surrounding former USTs, which were removed in the 1990s. Contaminated soil was excavated during remediation activities, which was completed in January 2000.

Building 16 was used as the transformer storage building. There is a probability of PCB contamination from leaking transformers in this area.

5.2.16 Contamination of Groundwater

No records or monitoring data indicate current contamination of groundwater. However, groundwater contamination was identified beneath the rail spur area (Investigation Zone C) after a diesel spill in the 1990s. Cleanup was completed and the site received regulatory closure in 2000 (Farallon 2016). During the removal of USTs in the 1990s, soil contamination was found and removed (from the area north of Building 13). Five groundwater monitoring wells were installed in the vicinity of the former UST area, and quarterly monitoring occurred from 1995 through 1998. IDEQ later requested that the two water supply wells on site be sampled for volatile organic compounds (VOCs) and PAHs in 1999. Resultant concentrations were below detection limits. USEPA issued a No Further Action determination for this former UST area in January 2000 (Farallon 2016).

Based on wetlands on the site, site topography, and previous groundwater contamination at the site, shallow groundwater exists. Deep groundwater also exists in the granite, based on the two existing wells at the site. Hazardous materials identified on the site, former ASTs, staining in containment areas and elsewhere, and wastewater from the oil/water separator discharged into the septic system have the potential to cause groundwater contamination via migration through the soil column.

5.2.17 Vapor Migration

Given the potential for soil and possible groundwater contamination, this provides the potential impact of vapor intrusion on the subject property. In addition, the interiors of three buildings contained strong petroleum odors, most likely from the materials/equipment contained inside the buildings (Buildings 8, 17, and 12A).

5.2.18 Use of Pesticides on Site

There were no obvious signs of pesticide mixing or synthesis on the subject property at the time of the site reconnaissance that would indicate a recognized environmental condition.

5.2.19 Other Concerns

5.2.19.1 Asbestos

Based on the age of buildings and materials observed during site reconnaissance, it is possible that asbestos-containing materials are present on the site. Significant disturbance from demolition and fires may have disturbed these materials. Building numbers below reference Figure 2 in Appendix A.

- One of the office buildings (Building 2) is a mobile home-type structure with unknown roofing materials (the roofing materials may contain asbestos).
- The roofing material in the Packing/Loading Building (Building 4) is unknown and may contain asbestos. The roofing material was also found on the ground during the site reconnaissance because of demolition activities that took place in 2017.
- The Dry Shed (Building 6A and 6B) roofing material is scattered throughout the exterior grounds. It is unknown if the roofing has asbestos containing material.
- The sawmill and boiler house (Buildings 15A and 15B) is where the fire occurred in 2017. The burn piles that remain from the 2017 fire include, among other items, roofing materials that may contain asbestos.

Information in the Phase I ESA conducted by Farallon in 2016 indicates confirmed presence of Chrysotile and/or Amosite asbestos in certain building materials on site.

Should renovations or construction activities take place that would potentially impact any suspect asbestos-containing materials, an inspection should be conducted following the local, state, and federal rules/guidelines to confirm renovation/construction activities do not result in a release. Should asbestos samples return positive (greater than 1% asbestos), the NESHAP provides regulatory requirements and guidance for asbestos abatement. In lieu of applicable air clearance standards for this project, the Asbestos Hazard Emergency Response Act (AHERA) clearance standard of 0.01 fibers per cubic centimeter of air using phase contrast microscopy (PCM) will be used to determine if an abatement work area may be reoccupied by untrained personnel. Occupational Safety and Health Administration (OSHA) regulations for asbestos abatement will be strictly adhered to (29 CFR 1926.1101).

5.2.19.2 Lead

Under the "Residential Lead-Based Paint Hazard Reduction Act of 1992," also known as Title X (10), the USEPA established standards for lead-based paint hazards in most pre-1978 housing and child-occupied facilities. Based on the age of some of the buildings on the site, the presence of lead-based paint may be likely. Therefore, there is a possibility that lead-based paint may be in the soil surrounding the building from flaking/chipping/peeling exterior paint. Sampling was not performed as part of this Phase I ESA. A visual screening for paint condition was conducted at the time of the site reconnaissance. Many of the exterior painted surfaces observed were in poor condition. Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

<u>Investigation Zone B</u>

- Two office buildings (Buildings 1 and 2) had exterior peeling/chipping paint.
- The Dry Sheds (Buildings 6A and 6B) had exterior peeling/chipping paint.
- The Fire Suppression Shed (Building 8) had exterior peeling/chipping paint.
- The Maintenance Buildings (Buildings 11, 12B, and 13) had exterior peeling/chipping paint.

Should renovations or construction activities take place that would potentially impact any suspect lead-based paint, an inspection should be conducted following the local, state, and federal rules/guidelines to confirm renovation/construction activities do not result in release. Contractors and/or workers working on the site during demolition or large-scale remodeling should follow the 29 CFR 1926.62 and use lead safe work practices. The federal OSHA Lead in Construction Standard (29 CFR 1926.62) outlines worker exposure limits, personal protection requirements and employer responsibility for exposure assessment, training, housekeeping, and record keeping. OSHA's lead standard applies to all work where employees may be

5.2.19.2 Lead (continued)

exposed to lead in construction, alteration, or repair activities. This includes demolition and/or renovation of structures where lead-containing materials are present.

5.2.19.3 Radon

Radon gas is a product of the decay series that begins with uranium. Radon is produced directly from radium, which can be commonly found in bedrock that contains black shale and/or granite. Radon gas can migrate through the ground and enter buildings through porous concrete or fractures. Radon tends to accumulate in poorly ventilated basements. Long-term exposure to radon has been associated with lung cancer.

The USEPA has designated three zones of classification indicating the predicted average indoor screening level of radon per county. Idaho County, Idaho, is classified in Zone 1 (high potential), which indicates a predicted level greater than 4 pCi/L. The USEPA "Action Level" is 4 pCi/L. Based on the lack of subsurface areas and the Zone designation, radon does not appear to be a concern. However, testing is required to determine site-specific radon levels.

5.2.19.4 Lead in Drinking Water

Lead-containing-materials were banned from use in public water systems, including plumbing connection, in 1986. According to the well driller's report from IDWR, the drinking water well was deepened in 1996. No drinking water has been used on site since IFG gained ownership. Potable water testing and assessment was not performed on the subject property.

5.2.19.5 Mold

The site reconnaissance included a visual inspection for indications of water intrusions or the presence of active mold growth on readily accessible interior and exterior surfaces. However, confirmation sampling is not included in the scope of work for the Phase I ESA. Readily accessible areas of the buildings were observed for visual or olfactory indications of mold, and for areas of water damage. No obvious evidence of mold in any of the buildings located on the subject property was observed during the site reconnaissance.

5.3 Exterior Observations

The size of the site and the presence of overgrown vegetation were considered limiting conditions to observing every square foot of the exterior areas on the site.

- The fill at the Wood Waste Landfill Area (Investigation Zone E) appears to be chipped wood waste from the log yard mixed with pit run rock. Periodic burning has taken place. Remains from transient campfires and personal items were strewn about in the area.
- The ground at the Old Log Yard Storage Area (Investigation Zone A) is disturbed from past operations and demolition/salvage activities. The area contains widespread debris from demolition/salvage operations, as well as piles of demolition debris from after salvage operations and/or the fire. Alta personnel observed oil stains on the concrete pads.
- The Truck Unloading Area contains the old scale house and weighing area and a gravel road. Refuse, such as aerosol paint cans, pesticide cans, oil bottles, and plastic bottles, was strewn about. The scale equipment had been removed, and a light oil sheen was observed on the standing water in the remaining pit. The exterior of the scale house structure had corrugated metal roofing and the paint was in decent condition.
- The Boiler House (Buildings 15A and 15B) was partially burned with open walls. The exterior walls were concrete-brick with corrugated metal roofing. Alta personnel could see the upper portion of the boiler from the hole in the north exterior wall. A large sawdust pile still exists on the northeast corner of this structure.
- In Investigation Zone B, the surrounding area to the west, north, and east of the Boiler House (Former Green Sorter, Sawmill, and structure to east of the Boiler House) is heavily disturbed with debris and garbage strewn about from fire remains and demolition operations. Alta personnel observed demolished and/or burned buildings. Old cement foundations and cement pilings were still in the ground. In general, debris and garbage appeared to consist of concrete chunks, fire department

5.3 Exterior Observations (continued)

clothing, building pieces, partially burned wood and bark chips, old wiring and circuitry pieces, insulation, and roofing materials. Alta personnel observed oils stains on a remaining concrete pad. The condition of the soil is heavily disturbed (e.g., littered with debris, marked with vehicle tracks) and difficult to observe staining. Alta personnel did observe one concrete drain area located at ground surface in the area; however, they did not see any large drums or storage tanks.

- The exterior of both western Maintenance Buildings (Buildings 11 and 12B) contained peeling paint in poor condition. The exterior of Building 12B had a hazardous waste material storage area sign and had a fenced, cement containment structure. Multiple 5-gallon buckets, some empty, were strewn throughout this area and labeled as hydraulic oil, diesel, and tractor fluid. Alta personnel observed a shallow layer of dark sludge at the bottom of the cement containment area. The southeast corner of this building had another cement containment area with gasoline and fueling station signs. Personnel also observed some staining on the southeast corner of this containment area.
- In Investigation Zone B, north of Building 13 and west of the former Green Sorter, Alta personnel observed a low-lying, cement containment area with about 14 5-gallon buckets of various fluids (transmission fluid, flushing fluid, heavy duty degreaser, etc.) and two sacks of 'sakrete'. The bottom of this containment area appeared stained and contained absorbent material. According to a previous Phase I ESA report (Farallon 2016), this was the old oil storage building and area the previously contained USTs.
- The Steam Cleaning and Pressure Wash Area was of cement construction and contained a drain marked "outfall to stream and dump no pollutants". North of the pressure wash shed was a divided, cement ditch area with piping and standing water. Alta personnel did not observe any sheen on the standing water.
- The exterior paint on the Maintenance Building (Building 11) north of the Cleaning and Pressure Wash Area was in poor condition. A pile of 'Activated Alumina' bags were on two pallets on the southeast corner of this building and were open and had spilled.
- The south end of the Lumber Stacker Shed (Building 5) and the Trimmer and Planing Buildings is where the roof collapsed from the weight of snow and water to put out the fire that occurred in 2017. The burn piles that remain from the 2017 fire contain wood, metal, cement, painted panels, roofing materials (it is unknown if roofing material contains asbestos), plastics such as polyglass, electrical, insulation, etc. Cement foundations remain in this area. A well-like cement, circular structure (approximately three feet tall) exists in the ground outside the north wall of the Lumber Stacker Shed.
- The kilns in Investigation Zone B no longer exist; only piles of debris remain in this area. The large Dry Shed (Buildings 6A and 6B, adjacent to the fire suppression lagoon) has paint that is peeling and in poor condition. The Dry Shed roofing material is scattered throughout the exterior grounds and whether it is asbestos containing material is unknown. The smaller Dry Shed to the east of these buildings no longer exists. Only the cement pilings and debris (such as the roofing materials) remain strewn throughout the ground.
- A cement containment area remains on the ground where the 12,000-gallon diesel AST was formerly located in Investigation Zone B. This area is open-air and smelled of petroleum fuel. Vegetation (such as berry vines and grasses) is growing around this cement structure and prevented Alta personnel from observing the surrounding soils. Remnants of the former railroad tracks exist between the cement containment area and the ditch (to the northeast).
- The Fire Suppression Lagoon in Investigation Zone B contains standing water and appears to remain lined. Two power poles, each with two transformers, are located on the northwest and southeast corners of the lagoon. The transformers appear to be in good condition and state "customer owned". Alta personnel did not observe any blue non-PCB stickers on these transformers. The exterior of the Fire Suppression Shed (Building 8) has peeling paint in poor condition.
- Two office buildings (Buildings 1 and 2) have exterior peeling/chipping paint. Building 2 is a mobile home-type structure with unknown roofing materials (the roofing materials may contain asbestos). A large well-like cement structure exists in the ground east of Building 2. An old photocopy machine sits outside the north side of the Scale House (Building 3A).
- The roofing material of the Packing/Loading Building (Building 4) is unknown and may contain asbestos.
- Alta personnel observed an old remnant railroad line to the northeast of the Main offices in the vegetated area. A fenced-in area contained an old sewage lagoon that did not appear to contain any water. Brambles, grasses, and vegetation are heavy throughout this area. Alta personnel observed one rail tie pile and metal scrap pile in the forested, vegetated area on the northern most portion of the site nearest to the river. Alta personnel also observed a small shed and weir on the northern end, with an adjacent potential wetland area full of water.

5.4 Interior Observations

Alta personnel made the following observations of the interiors of accessible buildings throughout the site:

- The interior of the Scale House (Buildings 3A and 3B) was in disrepair, contained a circuit board on the wall, and the tiled floor was in poor condition with some staining.
- The Pump House on the south end of the site, adjacent to the Clearwater River (Building 17) was a two-level concrete-brick structure, descending to river level. There was an oil sheen observed on the standing water in the bottom level. Two 5-gallon cans of lubricant and a 1-gallon can of gasoline with no secondary containment were also observed.
- The Boiler House (Buildings 15A and 15B) was partially burned with open walls and Alta personnel were unable to enter for interior observations.
- All fire sheds that remain on site still contain piping.
- Building 14 is a concrete-brick structure that appeared to be newer but did not have a roof. It appeared to have some kind of electrical area and contained three large, square cement pits in the ground covered by metal doors labeled as 'high voltage'. Alta personnel observed circuitry on the walls, as well as a Washington Water Power meter. Alta personnel could observe the interiors of two of the square cement pits. Each pit contained some standing water and garbage; however, the walls of the pits contained multiple conduit openings (the openings for the pipes appeared to be approximately 4 or 6 inches wide), and some copper wiring. Broken fluorescent lighting, yellow plastic, and garbage were strewn across the floor.
- There were two Maintenance Buildings in the western portion of the site nearest the bend in the river:
    - The westernmost Maintenance Building (Building 12B) was locked and inaccessible with the exception of the attached ancillary room. This room contained more than 25 empty antifreeze jugs (1-gallon jugs of 'Zecol Maximum' and 'Polyfreeze Gold'). Alta personnel observed staining on the workbench under tubing still attached to 'Fleetguard' oil cans.
    - The easternmost Maintenance Building (Building 13) contained considerable garbage such as broken fluorescent lighting, ammonia jugs, acetone cans, one 5-gallon paint bucket, one 5-gallon bucket filled with an unknown liquid and a label indicating 'corrosive', plastic, wood, binders, papers, etc. One refrigerator and microwave (likely from the 1970s era) remained in the building. The stairs and floor to the loft appeared to sag and was unsafe to ascend; therefore, Alta personnel did not make observations of the loft in the northern portion of this building. Alta personnel observed minimal staining of the cement floor.
- The inside of the Pressure Wash Shed (Building 12A) smelled of petroleum and contained a few grease and oil cans/drums. There was a drain in the cement floor, with a pipe on the drain coming from the large piping/water treatment and pressure wash equipment.
- The Maintenance Building north of the Cleaning and Pressure Wash Building (Building 11) had a drain in the cement floor and contained a transformer with circuitry on the south wall. Alta personnel did not observe any staining on the floor below the transformer box.
- The south end of the Lumber Stacker Shed (Building 5) and the Trimmer and Planing Buildings is where the 2017 fire suppression activities, in combination with the snow pack, caused the roof to collapse. The interior of the north portion of the Lumber Stacker Shed contained a large cement ditch in the ground and a small rectangular ditch filled with garbage and debris.
- The kilns no longer existed; only piles of debris remained in this area.
- The large Dry Shed (Buildings 6A and 6G, adjacent to the fire suppression lagoon) had fluorescent tube lighting in the ceiling. The smaller Dry Shed to the east of Buildings 6A and 6B no longer existed. Only the cement pilings and debris (such as the roofing materials) remained strewn throughout the ground.
- The interior of the Fire Suppression Shed (Building 8) had a strong petroleum/chemical odor. The large pump/piping equipment remained inside the shed. The floor of the shed was wet with oil sheens. It was difficult to navigate around the equipment to observe the back portion of this shed. Numerous large lead-acid batteries remained in the shed and were labeled as 'heavy duty interstate batteries'. The word 'corrosive' was painted on two of the tables. Alta personnel observed miscellaneous antifreeze and paint cans in the back portion of the shed.
- There were two office buildings (Buildings 1 and 2). The interiors of both Building 1 and Building 2 were in general disrepair and contained old office furniture and supplies.
- The rail line ends inside the Packing/Loading Building (Building 4). The floor was cement with staining that Alta considers de minimis. Fluorescent light tubes were present along the ceiling. A transformer box with circuitry was located on the south wall of the building with no staining on the wood material below.
- Alta personnel also observed a small shed and weir on the northern end of the property (Investigation Zone D) but were unable to enter the buildings.

6.0 INTERVIEWS

6.1 Interview with the Owner Representative

The owner representative was not available during the site reconnaissance. Mr. Robert Boeh, Vice President of Government Affairs and Strategic Outreach for Idaho Forest Group (IFG) stated on December 4, 2017 that Mr. Jesse Short would know more about the site and the day to day operations that occurred at the site since IFG took ownership of the site. An Alta employee phone interviewed Mr. Short, Sawmill Manager, on December 4, 2017. The following paragraphs summarize information received from Mr. Short via the phone interview and follow-up emails.

IFG retained ownership of the subject property in June 2016. IFG did not use the site for industrial operations. The main activity that occurred at the subject property since IFG ownership was the auction and removal of machinery and buildings. The auction occurred in October 2016, and IFG contracted with Murphy Auction Services to supervise the removal. Any significant supplies of petroleum products were vendor-owned and were picked up by the vendors. Other unopened lubricants were sold as part of the auction/sale. Any transformers previously stored on site were sold in the auction. All underground infrastructure was abandoned and left in place. After almost everything was removed during the auction, a fire in the sawmill/boiler building occurred (Building 15 as shown in Figure 2 in Appendix A), as he recalled, in late November/early December 2016 [the actual date was January 16, 2017]. The sawmill and boiler (contained in a masonry section) were a connected building. It is assumed that the fire started from sparks left from the deconstruction of the buildings that day. The fire department was concerned about additional fires starting so they sprayed extra water, and in combination with the snow pack, the roof collapsed in the planer building (southern portion of Building 5, Figure 2). Activities that have occurred at the site since the fire include cleanup and removal of fire debris and scrap metal by a small salvage business out of Kamiah. The salvage and removal operations put other materials that could not be salvaged into piles.

Mr. Short indicated that heating/cooling at the site was not operated but he thought steam from the boiler was used to heat buildings, and the truck shop and offices had electric heat. IFG never operated a well for drinking water at the site. Power/electricity was bought from the grid. Sewer and septic was on site but Mr. Short did not know where. Mr. Short also did not know usage/existence of the fenced pit area north of the offices. Besides the salvage and demolition operations, there was no other solid waste disposal.

Mr. Short thought the two well-like circular, cement structures observed west of the office Building 2 and north of Building 5 might be for sump pumps for dewatering the site. He was able to remove a cap on one of those at one time when he was onsite, but could not see anything inside and suspected it was a place to lower a sump pump.

IFG tries to control access to the site by keeping the entrance gates locked. There is no on-site security since the fire, and they find that the locks on the gates are ripped off from time to time.

Mr. Short did not know of any dry or injection wells on site. IFG has not synthesized, mixed, or formulated chemicals on site (such as pesticides, fungicides, insecticides, or other agricultural chemicals). He did not know of any spills or accidents related to the rail spur line on the northern portion of the building.

Alta asked if Mr. Short knew what Building 14 was used for; this building appeared electrical in nature and contained three large sunken pits in the floor with piping towards the bottom of the pits and wiring near the top (observed in two of the three pits, the third pit could not be observed). Mr. Short suspected that building was used to pump water to the log yard watering system.

Mr. Short indicated that a small asbestos cleanup occurred at the mechanic shop (Building 13, Figure 2) in October 2017. He indicated this was not the only building with asbestos but that it was remediated due to known friable asbestos-containing pipe insulation on the ground. Mr. Short indicated that there are other materials with asbestos, such as boiler refractory and roofing materials.

Mr. Short stated that some storm water and fugitive emissions monitoring had to occur while the site was being decommissioned. On 12/13/17, Mr. Jim Miller of IFG further explained that Blue North was responsible to communicate the termination of the Air Operating Permit, and that the NPDES permit was transferred to IFG and is still active. No discharge exceedances of regulatory requirements have occurred from the NPDES monitoring during IFG ownership.

6.2 Interview with the Site Manager

6.0 INTERVIEWS (continued)

Mr. Kim Cannon with the Nez Perce Tribe indicated that Mr. William Mulligan was a site operations manager at that facility for a long period of time. Mr. Mulligan is now retired and the phone number found for Mr. Mulligan was no longer in service when an Alta employee attempted a phone interview on December 4, 2017.

Alternatively, the following text is excerpted from the "Appraisal Report of Blue North Mill Site Located Near Kamiah, Idaho County, Idaho."

> Don A. Kerby, with Western Appraisals, interviewed Mr. William Mulligan for the appraisal of the property in February 2017 and learned several things about the subject property that he was unable to learn elsewhere. Mr. Mulligan managed the property since the early 1970s through the Potlatch Corp and Weyerhaeuser ownerships, Three Rivers Timber and Blue North ownerships, and [at the time of the appraisal] as a consultant to the [Idaho Forest Group]. The mill site apparently flooded in about 1948, and following that flood, the US Army Corps of Engineers (USACE) raised the dike along the north bank of the Clearwater River from the US Highway 12 bridge downstream to about the north end of the mill site. The site has not flooded since, and according to Mr. Mulligan, when the water gets to within 5 feet of the dike, flooding begins to occur on the south side of the river where the banks are lower. The threat of this site to flood usually occurs when ice dams form downstream where the river narrows and backs up water toward Kamiah. The property remains in a FEMA designated 100-year flood plain [discussed further in subsection 2.2], but from a practical standpoint, there is minimal if any potential for flooding on this site.
>
> According to Mr. Mulligan, the log yard has been filled and hardened. A mill pond was filled at some point in the 1980s near the southeast corner. The fill was engineered and compacted to support heavy loads for long-term use. Initially they started to get the fill material from the smaller piece of property, but after the initial removal of rock, they decided they needed a source with better quality rock and less clay, and most of the fill material was hauled from another Kamiah area rock source.

6.3 Interview with Occupants

The site does not currently have any occupants. The subject property is currently an abandoned lumber mill site.

6.4 Interview with State Government Officials

Idaho Department of Environmental Quality

An Alta employee submitted a PRR to IDEQ on December 4, 2017, regarding hazardous materials storage, generation, or handling status for the subject property. IDEQ responded on December 5, 2017, with RCRA information for Potlatch Corporation Kamiah Unit and a RCRA Compliance Evaluation Inspection in 1997 of Three Rivers Lumber, Inc. Copies of IDEQ's files are in Appendix F.

Idaho Public Health Department - District 2

An Alta employee contacted the Health Department regarding the currently vacant mill site. An employee at the Health Department searched records related to the subject property parcels provided by Alta and thought the only records they may have would be related to septic systems. He responded via email on December 11, 2017 that there were no records regarding those properties.

6.5 Interview with Local Government Officials

Kamiah Volunteer Fire Department Chief

An Alta employee contacted the Kamiah Volunteer Fire Department via telephone. Mr. Dan Musgrave confirmed, aside from the January 2017 fire, there was a lack of environmental issues, spills, incident responses, or general calls at the site in his 38 years in the area. The January 2017 fire destroyed a single, large sawmill building and was determined to have been caused by hot work. He mentioned that Jason Blubaum, the regional Fire Investigator for the State Fire Marshal's Office, completed a final report on the 2017 fire.

An Alta employee made multiple attempts to contact Mr. Blubaum via email and phone in an attempt to obtain the official 2017 fire report, but did not get a response before the completion of this report.

Kamiah City Hall

6.0 INTERVIEWS (continued)

An Alta employee contacted the Kamiah City Hall via telephone. An employee of the office confirmed that the subject property was not within city limits and not subject to any city planning and zoning requirements. Although the site is located in Idaho County, the county does not have any planning and zoning regulations

6.6 Interview with Others

Nez Perce Tribe

Mr. Kim Cannon, Director of Land Services with the Nez Perce Tribe, met the Alta team at the site during the site reconnaissance on November 14, 2017. The Nez Perce Tribe had access to the subject property. Mr. Cannon generally described the site and former milling operations. Mr. Cannon indicated that IFG bought the subject property to purposefully dismantle competitive operations, and that IFG placed a covenant on the property so it would not be used in the future for lumber or other similar operations. Mr. Cannon stated that since IFG owned the property, they had conducted no operations except for salvage and demolition. Mr. Cannon stated there was known and suspected asbestos in some of the buildings. He also indicated that he knew there was a petroleum spill in August 1991 and a leak in January 2000. Mr. Cannon walked the site with the Alta team for most of the day, and explained what certain buildings were used for.

Former Mill Employee

An Alta employee was speaking with a former employee of the subject property, Mr. Howell, on November 16, 2017. Mr. Howell worked at the site as a mechanic for three years in the mid-1980s. He indicated that they used to take 5-gallon buckets of waste oil around the corner and dump them. Mr. Howell recalled the ground being relatively saturated. It was unclear during this conversation where on the subject property this practice occurred.

7.0 FINDINGS

Alta has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the subject property located at 283 Woodland Road near Kamiah, Idaho County, Idaho, in accordance with the agreement dated November 13, 2017.

The Phase I ESA uncovered the following **findings**, which identify known or suspect recognized environmental conditions, controlled recognized environmental conditions, historical recognized environmental conditions, and de minimis conditions:

Historical Use of the Property - the site has operated as a lumber mill and lumber storage facility spanning from the 1940s to 2016. A railroad ran through the site to transport lumber to other cities. A wildfire went through the northeast 15 acres of the site in 2015. During the dismantling and decommissioning of the lumber mill in January 2017, sparks from welding caught the main sawmill building on fire.

Hazardous Substances - Hazardous substances were found in buildings and areas near buildings throughout the site. Figures 1 and 2 provide investigation zones and building numbers in Appendix A.

Investigation Zone A
- Refuse was strewn about in the southwest corner of Investigation Zone A (not shown in Figure 2), and the weighing area and the gravel road
- Unknown fill material used to fill a pond on the south central portion of the site (Farallon 2016)

Investigation Zone B
- Building 5 - burn piles
- Building 8 - lead-acid batteries, the word "corrosive" was painted on two of the tables, antifreeze and paint cans
- Building 11 - 'Activated Alumina' bags were on two pallets and were open and had spilled
- Building 12A - contained several grease and oil cans/drums
- Building 12B (interior ancillary room) - 25 empty antifreeze jugs (1-gallon jugs of "Zecol Maximum" and "Polyfreeze Gold"), tubing still attached to "Fleetguard" oil cans had staining below it on the table.
- Building 12B (fenced exterior hazardous waste material storage area) - multiple 5-gallon buckets labeled as hydraulic oil, diesel, and tractor fluid, observable shallow layer of dark sludge at the bottom of the cement containment area
- Building 13 - contained considerable garbage, one 5-gallon bucket filled with an unknown liquid and a label indicating "corrosive"
- Area north of Building 13 - 14 5-gallon buckets of various fluids (transmission fluid, flushing fluid, heavy duty degreaser, etc.), two sacks of 'sakrete'
- Building 17 - two 5-gallon cans of lubricant and a 1-gallon can of gasoline with no secondary containment
- Building 18 - aerosol and paint cans were strewn about, a light oil sheen was observed on the water in the exposed truck scale pit
- Truck Unloading Area - refuse was strewn about

Investigation Zone E
- Wood Waste Landfill Area - chipped wood waste, remains from periodic burning
- A previous Phase I ESA (Farallon 2016) recognized potential releases of hazardous substances in connection with long-term mill operations, including a wood waste landfill.

Unidentified Containers - The interior of the Easternmost Maintenance Building (Building 13) contained one 5-gallon bucket filled with an unknown liquid and a label indicating corrosive.

Staining - The following describe observed staining.

Investigation Zone A
- Alta personnel observed oil stains on the concrete pads at the Old Log Yard Storage Area on the southeast portion of the Site.

Investigation Zone B
- Cement floor of Packing/Loading Building (Building 4), considered de minimus.
- Cement floor in Building 11, considered de minimus.

7.0 FINDINGS (continued)

- Containment area north of Building 13 with the 14 5-gallon buckets.
- On the workbench under tubing still attached to "Fleetguard" oil cans in the ancillary room of Westernmost Maintenance Building (Building 12B), considered de minimus.
- On the southeast corner of the containment area adjacent to Building 12B.
- On the cement floor of the interior of the Maintenance Building (Building 13), considered de minimus.
- Staining and liquid pooling with sheens on the floor of Building 8.

  Farallon 2016 also noted areas of significant staining near and around containers of hazardous substances and around the containment for ASTs (not present during this 2017 assessment).

ASTs - Formerly, a 12,000-gallon diesel containment area was located on the site. The cement containment area remains with no tanks present. This area is open-air and smelled of petroleum fuel.

Secondary Containment - Farallon 2016 identified multiple secondary containment areas in buildings and beneath covered areas on the site. No areas lacking secondary containment were identified during the 2016 assessment. During this 2017 assessment, none of the identified hazardous substances had secondary containment.

USTs - According to the EDR Radius Map Report and Farallon 2016, five USTs were historically used at the site after installation in 1971. They were removed in the 1990s and a cleanup was initiated after a release from one UST was identified in 1994. Cleanup was completed in January 2000.

Pits, Ponds, and Lagoons - Several pits, ponds, and lagoons associated with onsite processes were observed at the site during reconnaissance. Investigation zones and building numbers reference Figures 1 and 2 in Appendix A.

Pits
- The remaining pit in the Truck Unloading Area (Investigation Zone B) had standing water and a light oil sheen.
- Three pits inside Building 14 (newer concrete-brick structure without a roof) contained standing water and garbage. Each pit was covered by metal doors labeled as high voltage.

Ponds
- Alta personnel identified stormwater detention pond that is fed by drainage ditches and discharges through the weir on the north portion of the property (Investigation Zone C).
- Farallon 2016 identified a filled log storage pond on the south central portion of the site (adjacent to the Clearwater River). This was filled with unknown fill material in the 1990s.

Lagoons
- A lined fire suppression lagoon in Investigation Zone B, adjacent to Building 8, contains standing water.
- A fenced-in lagoon in Investigation Zone B appeared dry; this may be the former sewage lagoon.

PCBs - Investigation zones reference Figure 1 and building numbers reference Figure 2 in Appendix A.

Investigation Zone B
- Building 4 - unlabeled transformer units (no staining on floor below transformer box), intact fluorescent lighting tubes were noted in the ceilings (The lights were not opened to see if they had PCB ballasts).
- Buildings 6A and 6B - intact fluorescent lighting tubes were noted in the ceilings (the lights were not opened to see if they had PCB ballasts).
- Near Building 8 - two power poles, each with two transformers (stated "customer owned" and no observable blue non-PCB stickers), were located on the northwest and southeast corners of the Fire Suppression Lagoon. The transformers appeared to be in good condition.
- Truck Unloading Area - some transformers were labeled with blue non-PCB stickers.
- Building 12A - unlabeled transformer units (no staining on floor below transformer box).
- Buildings 13 and 14 - broken fluorescent lighting tubes were found on the floor.
- Building 16 - appeared to be the former transformer location; no transformers or staining were observed.

7.0 FINDINGS (continued)

- Due to the period of operation of the mill, it is probable that PCB aroclors were present in the hydraulic oil and electrical transformers that were used during mill operations. Although it is likely the mill was heated with steam, the majority of mill equipment was likely operated using hydraulic actuators and it was common practice until 1980 to add PCB aroclors to hydraulic oil as a stabilizer and preservative.

Solid Waste Disposal - Large piles of scrap material, debris or wood waste were observed at the Site in Investigation Zones A, B, C, and E, remnants from demolition/auction and fire/salvage activities, and remaining scrap and wood waste.

Wetlands - The site is bordered by the Clearwater River to the east and south. The EDR Radius Map Report indicates that the south and north central portions of the site are within a federally designated wetland.

Septic System - Farallon 2016 identified a septic system in Investigation Zone B, adjacent to the Steam Cleaning and Wash Rack Area (Building 12A).

Oil/Water Separator - Farallon 2016 indicate that an oil/water separator was located at the Steam Cleaning and Wash Rack Area (adjacent to Building 12A). Wastewater generated from the Steam Cleaning and Wash Rack operations was directed into the oil/water separator.

Contamination of Soil

- The presence of roofing/building material debris around some buildings that may contain asbestos, deteriorating paint that may contain lead, and the existence of pits, concrete containment areas, and stained floors indicate possible sources of soil contamination. Numerous debris piles are located throughout the site that may contain hazardous materials. Although the kilns, an old wood-waste burner in the south central area, and the boiler ash stockpile are no longer on site, their emissions and waste may contain PAHs and dioxins/furans that can impact soils.
- During a short interview with a past site worker, there was indication that used oil dumping occurred on site.
- It was common practice at mill sites until 1980 to add PCB aroclors to the hydraulic oil of milling equipment and transformers as a stabilizer and preservative and these PCBs often leaked and were released to the soils.
- The soils of this area of Idaho have a higher level of background arsenic (USGS 2016). Arsenic leaches out of the stacked trees at lumber yards/mills and into the soil.
- Formerly, a 12,000-gallon diesel AST containment area was located on the site. There is a probability of petroleum contamination from spills, overflows, or other releases to the environment from this former AST.
- Previous soil contamination was identified in the area surrounding former USTs, which were removed in the 1990s. Contaminated soil was excavated during remediation activities, which was completed in January 2000.
- Building 16 was used as the transformer storage building. There is a probability of PCB contamination from leaking transformers in this area.

Contamination of Groundwater

- Groundwater contamination was identified beneath the rail spur area (Investigation Zone C) after a diesel spill in the 1990s. Cleanup was completed and the site received regulatory closure in 2000 (Farallon 2016). Five groundwater monitoring wells were installed in the vicinity of the former UST area, and quarterly monitoring occurred from 1995 through 1998. Resultant concentrations were below detection limits. USEPA issued a No Further Action determination for this former UST area in January 2000 (Farallon 2016).
- Based on wetlands on the site, site topography, and previous groundwater contamination at the site, shallow groundwater exists. Deep groundwater also exists in the granite, based on the two existing wells at the site. Hazardous materials identified on the site, former ASTs, staining in containment areas and elsewhere, and wastewater from the oil/water separator discharged into the septic system have the potential to cause groundwater contamination via migration through the soil column.

Vapor Migration

7.0 FINDINGS (continued)

- Given the potential for soil and possible groundwater contamination, this provides the potential impact of vapor intrusion on the subject property.
- The interiors of three buildings contained strong petroleum odors, most likely from the materials/equipment contained inside the buildings (Buildings 8, 17, and 12A).

Asbestos - Based on the age of buildings and materials observed during site reconnaissance, it is possible that asbestos containing materials are present on the site. Significant disturbance from demolition and fires may have disturbed these materials. Building numbers below reference Figure 2 in Appendix A.

- One of the office buildings (Building 2) is a mobile home-type structure with unknown roofing materials (the roofing materials may contain asbestos).
- The roofing material in the Packing/Loading Building (Building 4) is unknown and may contain asbestos. The roofing material was also found on the ground during the site reconnaissance because of demolition activities that took place in 2017.
- The Dry Shed (Building 6A and 6B) roofing material is scattered throughout the exterior grounds. It is unknown if the roofing has asbestos containing material.
- The sawmill and boiler house (Buildings 15A and 15B) is where the fire occurred in 2017. The burn piles that remain from the 2017 fire include, among other items, roofing materials that may contain asbestos.
- Farallon in 2016 indicates confirmed presence of Chrysotile and/or Amosite asbestos in certain building materials on site.

Lead - Based on the age of some of the buildings on the site, the presence of lead-based paint may be likely.

- Two office buildings (Buildings 1 and 2) had exterior peeling/chipping paint.
- Two sheds near office buildings (Buildings 3A and 3B) had exterior peeling/chipping paint.
- The Dry Sheds (Buildings 6A and 6B) had exterior peeling/chipping paint.
- The Fire Suppression Shed (Building 8) had exterior peeling/chipping paint.
- The Maintenance Buildings (Buildings 11, 12B, and 13) had exterior peeling/chipping paint.

Radon - Idaho County, Idaho, is classified in Zone 1 (high potential), which indicates a predicted level greater than 4 picoCuries per liter of air (pCi/L). The USEPA "Action Level" is 4 pCi/L.

Exterior and Interior Observations - Due to the 2017 fire, the dismantling of the buildings, the neglect of the buildings, and uninvited access to the site (transients leaving refuse and fire rings and vandals leaving graffiti and destroying property), conditions of the exteriors and interiors of the buildings are poor.

8.0 OPINIONS

The following includes Alta's **opinions** of the impact of the findings on the subject property:

Historical Use of the Property - based on the site use as a lumber mill and lumber storage facility for nearly eight decades and the recent January 2017 fire, this is a recognized environmental condition.

Hazardous Substances - the hazardous substances found in various locations and buildings throughout the site are not properly contained, labeled, or stored. Therefore, a release to the environment is probable and could cause a recognized environmental condition.

Unidentified Containers - The unidentified container in Building 13, should the contents be released to the environment, is a recognized environmental condition.

Staining - Staining was observed throughout the site. Investigation zones and building numbers reference Figures 1 and 2 in Appendix A.

Investigation Zone A

- Oil stains on the concrete pads at the Old Log Yard Storage Area on the southeast portion of the site is a recognized environmental condition.

Investigation Zone B

- Staining on cement floor of Packing/Loading Building (Building 4) is de minimis.
- Staining on the cement floor in Building 11 is de minimis.
- Staining in containment area north of Building 13 with the 14 5-gallon buckets is a recognized environmental condition.
- Staining on the workbench under the tubing still attached to "Fleetguard" oil cans in the ancillary room of Westernmost Maintenance Building (Building 12B) is de minimis.
- Staining on the southeast corner of the containment area adjacent to Building 12B is de minimis.
- Alta personnel observed minimal staining of the cement floor of the interior of the easternmost Maintenance Building (Building 13) and considers it to be de minimis.
- Oil stains on concrete pad in area to west, north, and east of the Boiler House (Buildings 15A and 15B) is a recognized environmental condition.
- Farallon 2016 also noted areas of significant staining near and around containers of hazardous substances and around the containment for ASTs. Alta considers this a recognized environmental condition.

ASTs - The former 12,000-gallon ASTs is a recognized environmental condition.

Secondary Containment - The identified hazardous substances did not have secondary containment and is considered a recognized environmental condition.

USTs - The cleanup of the leaking USTs is a historical recognized environmental condition.

Pits, Ponds, and Lagoons - The pits, ponds, and lagoons are recognized environmental conditions.

PCBs - Due to the period of operation of the mill, it is probable that PCB aroclors were present in the hydraulic oil and electrical transformers that were used during mill operations. Although it is likely the mill was heated with steam, the majority of mill equipment was likely operated using hydraulic actuators and it was common practice until 1980 to add PCB aroclors to hydraulic oil as a stabilizer and preservative. Therefore, this is a recognized environmental condition.

Solid Waste Disposal - Large piles of scrap material, debris, and wood waste were observed at the site in Investigation Zones A, B, C, and E, remnants from demolition/auction and fire/salvage activities, and remaining scrap and wood waste. Based on the unknown source of some of the waste and because that waste is scattered throughout the site, this is a recognized environmental condition.

Wetlands - The wetlands are not a recognized environmental condition.

Septic System - The open sewage lagoon is a recognized environmental condition based on the ability to dump any waste into the lagoon.

8.0 OPINIONS (continued)

Oil/Water Separator - Farallon 2016 indicates that an oil/water separator was located at the Steam Cleaning and Wash Rack Area (adjacent to Building 12A). Wastewater generated from the Steam Cleaning and Wash Rack operations was directed into the oil/water separator. This is a recognized environmental condition.

Contamination of Soil
Based on the former mill use of the site; the poor condition of the buildings' paint; the debris piles from demolition; the wood waste debris piles; the burn piles; the former kiln buildings; the former transformer building and the transformers located around the property; the pits, ponds, and lagoons; the improperly stored/contained hazardous materials; the former ASTs; and the former USTs; contamination of soil is probable. Therefore, this is a recognized environmental condition.

Contamination of Groundwater
Based on previous groundwater contamination at the site from former leaking USTs and probable soil contamination, groundwater contamination is also probable. Therefore, this is a recognized environmental condition.

Vapor Migration
Given the potential for soil and possible groundwater contamination, this provides the potential impact of vapor intrusion on the subject property. Therefore, this is a recognized environmental condition.

Asbestos
Farallon in 2016 indicates confirmed presence of Chrysotile and/or Amosite asbestos in certain building materials on site. Based on visual inspection of the readily accessible and observable building materials of all subject property buildings, the most probable asbestos-containing materials appeared to be in stable condition (i.e., not friable). Should construction/demolition activities take place that would potentially impact any suspect asbestos-containing materials, Alta recommends an inspection be conducted following the local, state, and federal rules/guidelines to confirm construction/demolition activities do not result in a release. Should asbestos samples return positive (greater than 1% asbestos), the NESHAP provides regulatory requirements and guidance for asbestos abatement. Alta recommends following OSHA regulations for asbestos abatement (29 CFR 1926.1101).

Lead
Based on the construction dates of the subject property's buildings, this may be a recognized environmental condition if paint samples return positive for containing lead. Alta recommends conducting an inspection following the local, state, and federal rules/guidelines to confirm construction/demolition activities do not result in release. Contractors and/or workers working on the site during construction/demolition should follow the OSHA Lead in Construction Standard 29 CFR 1926.62, which outlines worker exposure limits, personal protection requirements and employer responsibility for exposure assessment, training, housekeeping, and record keeping.

Radon
Based on the lack of basements or subsurface areas at the site, radon does not appear to be a concern. However, testing is required to determine if lead is in drinking water.

Exterior and Interior Observations - The conditions of many of the buildings on site are unsafe; however, this does not constitute a recognized environmental condition.

9.0 CONCLUSIONS AND REDEVELOPMENT POTENTIAL

Alta has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located at 283 Woodland Road near Kamiah, Idaho County, Idaho in accordance with the agreement dated November 13, 2017. Any exceptions to, or deletions from, this practice are described in Sections 10.0 and 11.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for the following:

- Historical Use of the Property
- Hazardous Substances with lack of Secondary Containment
- Unidentified Containers
- Staining
- Former ASTs with Secondary Containment
- Former USTs
- Pits, Ponds, and Lagoons including the Septic System
- PCBs
- Solid Waste Disposal
- Former Oil/Water Separator
- Contamination of Soil
- Contamination of Groundwater
- Vapor Migration
- Asbestos
- Lead

Based upon the available information collected from historical databases, personal interviews, and site reconnaissance activities, Alta recommends performing a Phase II ESA.

Alta recommends sampling soil and groundwater in Investigation Zones A, B, C, and E to evaluate recognized environmental conditions from the historical activities of the mill site. Based upon those results, additional sampling to include soil vapor may be warranted.

10.0 DEVIATIONS

No deviations from the recommended scope of ASTM Standard E1527-13 were performed as part of this Phase I ESA with the exception of any additions noted in Section 1.2 Detailed Scope of Services.

11.0 ADDITIONAL SERVICES

No other areas of environmental concern were noted within the scope of this investigation.

12.0 REFERENCES / INFORMATION SOURCES

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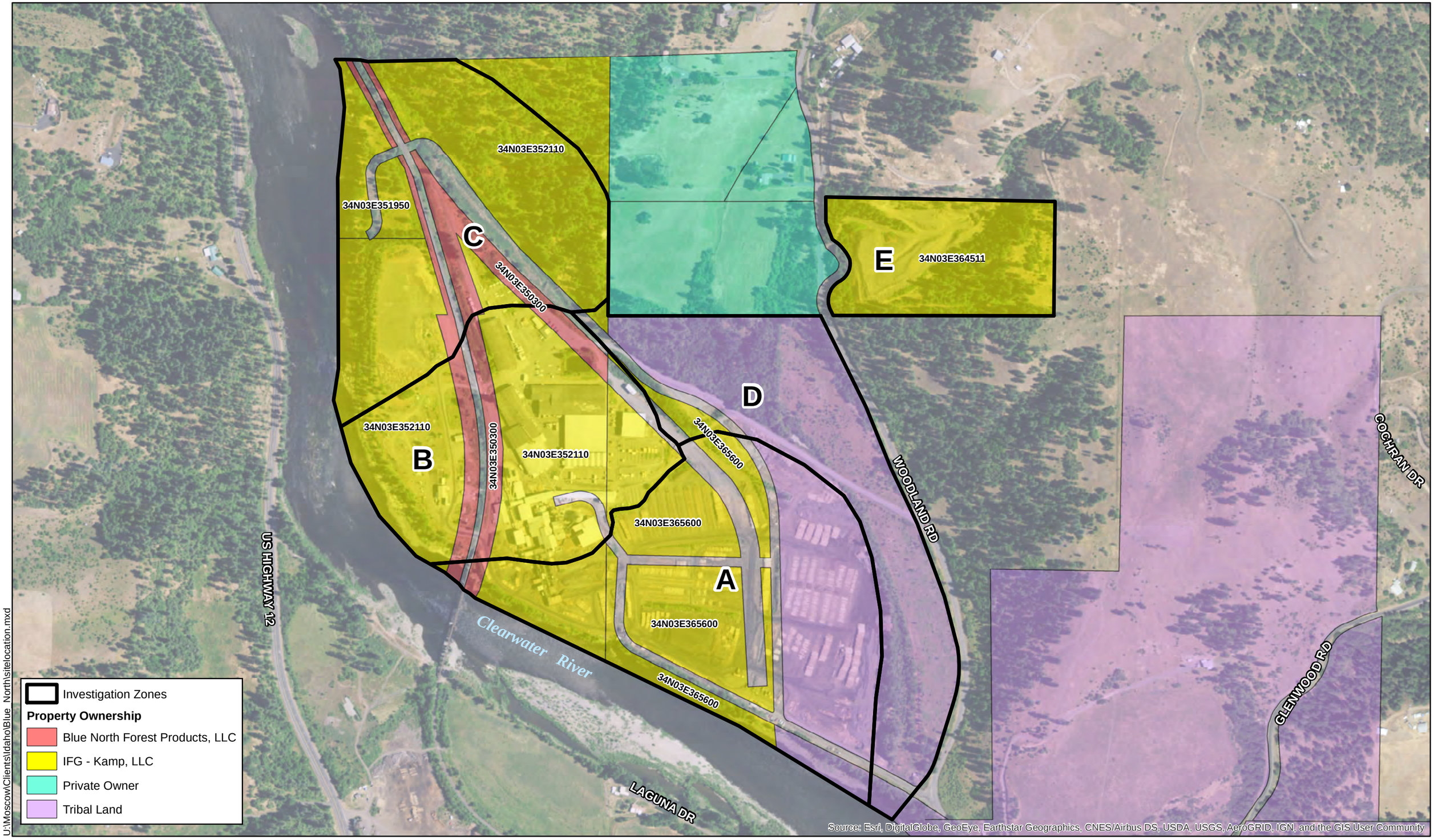
Appendix A:

Figures



U:\Moscow\Clients\Idaho\Blue_North\sitelocation.mxd

Alta Science & Engineering, Inc.

Print Date	December 14, 2017
Project Number	17831-01
Projection	NAD83 Idaho SP West feet
Project Manager	S. Spalinger
Cartographer	B. Bailey
Project Name	Former Blue North Mill Site

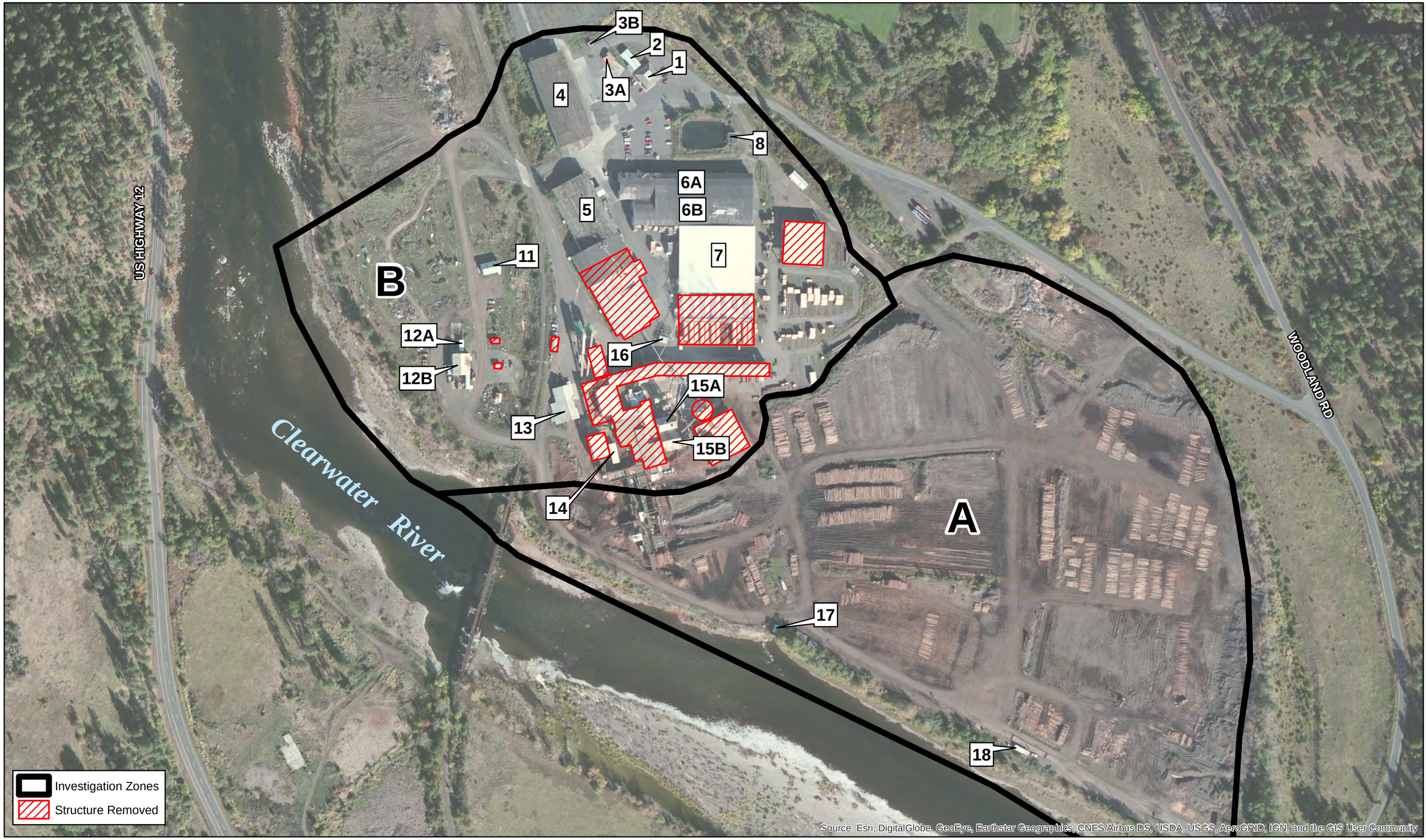
This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.

1:5,400
1 inch = 450 feet
0 200 400 Feet

N

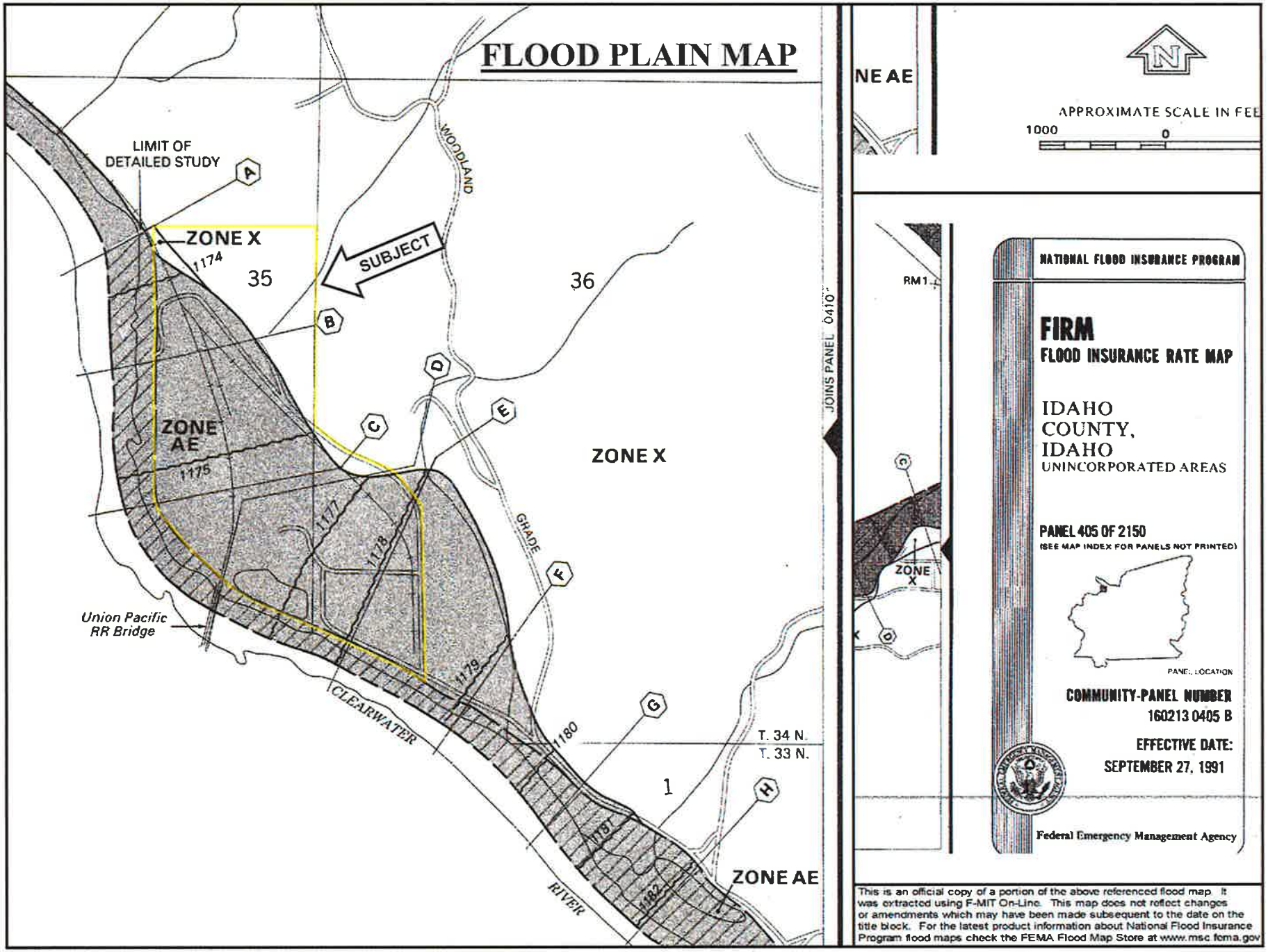
Figure 1

Properties and Investigation Zones for the Former Blue North Mill Site



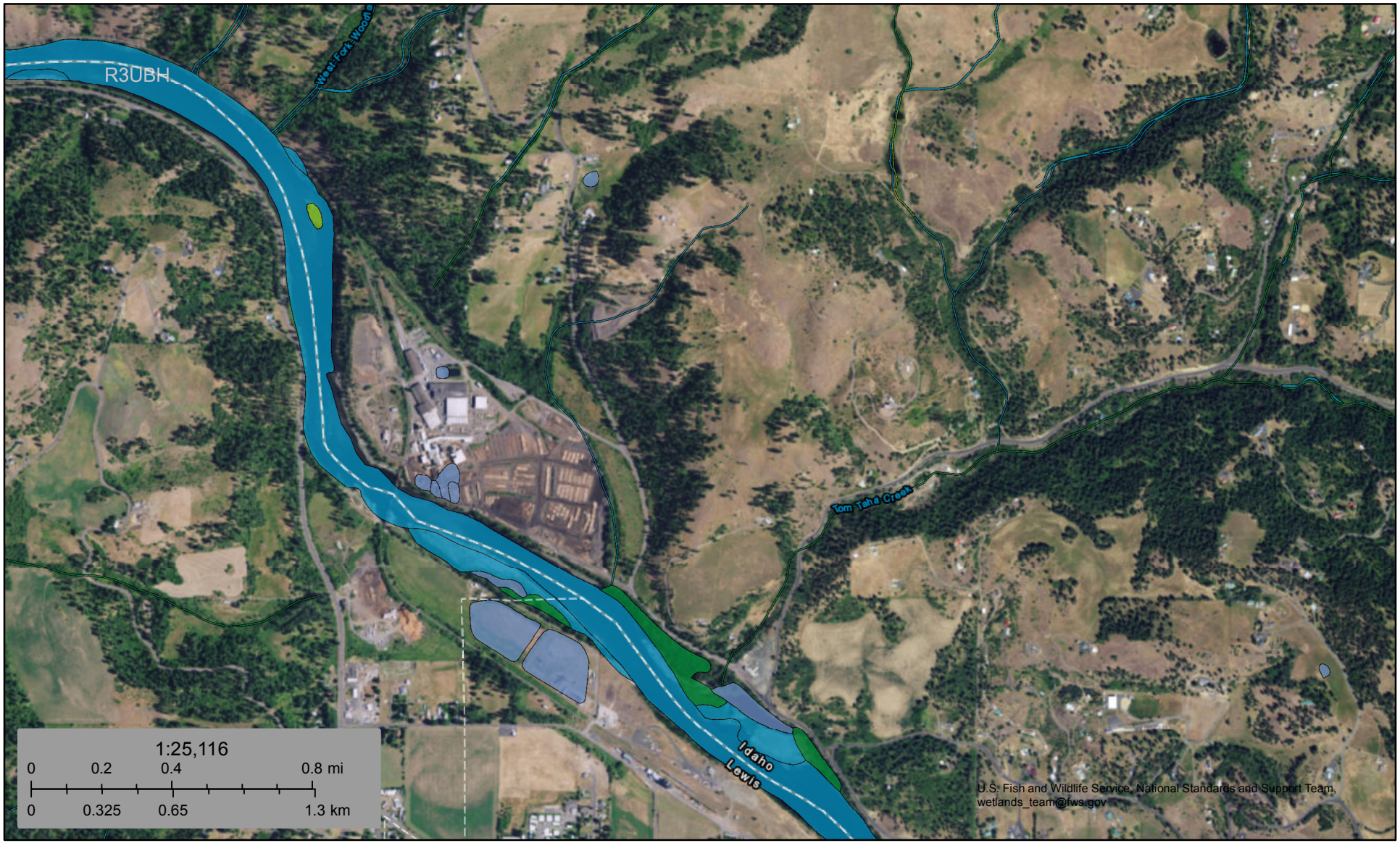
Alta Science & Engineering, Inc.

Print Date: December 15, 2017	Projection: NAD83 Idaho SP West feet	Project Name: **Former Blue North Mill Site**	This map was produced using information obtained from several different sources that have not been independently verified. These sources have also not provided information on the precision and accuracy of the data. Information on this map is not a substitute for survey data.	1:3,000 1 inch = 250 feet 0 100 200 Feet	**Figure 2** **Structures of Interest in Investigation Zones A and B**
Project Number: 17831-01	Project Manager: S. Spalinger				
	Cartographer: B. Bailey				


FLOOD PLAIN MAP
LIMIT OF DETAILED STUDY
ZONE X
1174
35
SUBJECT
36
WOODLAND
JOINS PANEL 0410
ZONE AE
1175
1177
1178
ZONE X
GHADE
Union Pacific RR Bridge
1179
CLEARWATER
1180
T. 34 N.
T. 33 N.
1
1181
1182
ZONE AE
RIVER
NE AE
APPROXIMATE SCALE IN FEE
1000
0
RM1
ZONE X
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
IDAHO COUNTY, IDAHO
UNINCORPORATED AREAS
PANEL 405 OF 2150
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
160213 0405 B
EFFECTIVE DATE:
SEPTEMBER 27, 1991
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

U.S. Fish and Wildlife Service
National Wetlands Inventory

Former Blue North Mill Site



December 18, 2017

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Idaho County,
Idaho

N

0 5 10 miles
0 8 16 kilometers
1:500,000

114°21'00"
46°40'00"
115°37'45"
46°28'25"
116°47'36"
45°51'23"
45°46'08"
116°41'06"
45°09'50"
114°43'20"

Lolo Pass
Lochsa R.
Bitterroot Lobe
Suture Zone
Clearwater R.
Kamiah
Kooskia
Middle Fork Clearwater R.
Syringa
Lowell
Selway R.
Elk City
Clearwater Mountains
Bitterroot Mountains
Salmon R.
Grangeville
Harpster
Whitebird
Orogrande
Dixie
Gospel Hump Wilderness
Atlanta Lobe
Burgdorf
Warren
Pittsburgh Landing
Lucile
Riggins
Hells Canyon
White Bird Hill
Seven Devils Mtns
Snake River
S. Fork Salmon R.
Middle Fork Salmon R.
Suture Zone

Kgd Qm Tgdd Yqra Ysp Ktq Tgs Yqw Kgdh Yam Ybe Kog YXm PzZm KJim KJif KPro KPvi Rmh RPsd RPi Tcr Tcv Jch Ts Yag Zw PzYsq Zi Qa

12 13 14 95

© Digital Atlas of Idaho, Nov. 2002
http://imnh.isu.edu/digitalatlas
Compiled by Reed Lewis,
Idaho Geological Survey
http://www.idahogeology.org

Clearwater County

Huge Clearwater County contains vast tracts of steep country drained by the North Fork of the Clearwater River, now impounded behind Dworshak Dam, and largely inaccessible. Pierce and Weippe occupy a relatively flat uplifted area between the North Fork Clearwater and the Lochsa River to the south. Lewis and Clark followed ridges north of the Lochsa as they crossed the continent in 1805 and 1806.

The northern part of the county is underlain by metamorphosed rocks of the Mesoproterozoic Belt Supergroup, folded and thrusted in the Cretaceous Sevier orogeny. No Paleozoic rocks are preserved. The Belt rocks are intruded by Cretaceous and Eocene plutons.

The southern part of the county is underlain by the northern expanse of the Bitterroot lobe of the Idaho batholith near Pierce and Headquarters, and by a complex of Eocene intrusive rocks cut by the Kelly Forks Fault. Eocene granite of the Bungalow Pluton occupies the center of the County.

On the southwest is the suture zone between North America and accreted terranes to the southwest, across the Clearwater river near Grangeville. The suture zone runs through the southwest part of Dworshak reservoir. Cretaceous to Permian Orofino Series rocks and Cretaceous orthogneiss underlie lava flows of the Columbia River basalts in much of the southwest part of the county. Miocene sediments were deposited in the upper portions of river valleys dammed by Columbia River basalts and crop out in numerous patches south of Elk River. Some of these Miocene sediments contain gold placers.

P.K. Link, 9/02

Descripton of Units for Idaho County, Idaho

Qa	Quaternary alluvial deposits
Qm	Quaternary moraine (unsorted boulders, cobbles and sand) and glaciofluvial outwash (bedded stream deposits formed from streams draining active glacial ice).
Ts	Tertiary sedimentary rocks, undifferentiated. Includes Oligocene and Eocene sedimentary rocks in east-central Idaho (Paleogene basins of Janecke). In northern and western Idaho this unit contains Miocene lake and stream deposits formed adjacent to and above the Columbia River and Weiser basalts, which formed dams in stream canyons.
Tcv	Eocene Challis Volcanic Group, volcanics and volcaniclastics; Older andesitic lavas, intermediate age dacite lava and tuff and younger rhyolite flows and tuffs; 51 to 44 Ma. (Includes Potato Hill and Kamiah volcanics of northern Idaho).
Tcr	Miocene basalt (Columbia River Basalt Group); flood basalt, extensively exposed in western Idaho; fed by fissures, many of which are near the Idaho-Oregon border. Flowed eastward up valleys cut into the Idaho mountains.
Tgs	Eocene granite, pink granite, syenite, rhyolite dikes, and rhyolitic shallow intrusive; last phase of the Challis magmatic event (46 to 44 Ma). Forms craggy scenic mountain landscape in central and northern Idaho.
Tgdd	Eocene granodiorite and dacite porphyry intrusive, also includes diorite and, in northern Idaho, minor granitic rock; intermediate phase of Challis magmatic event (50 to 46 Ma). Summit Creek stock.
Kgd	Cretaceous granitic rocks of the 2 mica suite. Idaho batholith and related plutons; granite and granodiorite that contains both muscovite and biotite. Sodium (Na) rich. Intruded between 80 and 65 Ma.
Kog	Cretaceous orthogneiss, and foliated granodiorite and granite (includes mylonitic plutonic rocks in western Idaho suture zone); deformed early phases of the Idaho batholith.
Ktg	Cretaceous tonalite and quartz diorite; hornblende and biotite bearing early phases of the Idaho batholith. Intruded about 90 to 95 Ma.

Accreted Terranes

KJim — Dioritic and gabbroic rocks of the Blue Mountains island arc terrane. Some are about 140 Ma.

KJif — Felsic plutonic rocks intruded into the accreted terranes of western Idaho. Light-colored intrusive rocks with very little potassium feldspar; includes tonalite, trondhjemite and granodiorite.

Jch — Sedimentary rocks of the Coon Hollow Formation (Wallowa Terrane).

KPvi — Island-arc volcanic and intrustive complex (probably Olds Ferry Terrane); deformed and metamorphosed island arc volcanic rocks and younger plutonic rocks: age uncertain between Permian and Cretaceous.

KPro — Riggins Group and Orofino series; metasedimentary and possible metavolcanic rocks; includes hornblende gneiss and marble; age uncertain between Permian and Cretaceous.

TrPi — Triassic and Permian intrusive rocks of the Wallowa Terrane.

TrPsd — Triassic to Permian Seven Devils Group; metavolcanic and metasedimentary rocks (Wallowa Terrane).

Paleozoic and Proterozoic Sedimentary Rocks

PzZm — Paleozoic/Neoproterozoic metasedimentary rocks, mainly quartzose sandstone (includes formation of Leaton Gulch).

PzYsq — Paleozoic/Mesoproterozoic schist and quartzite; age uncertain.

Zi — Neoproterozoic dioritic and syenitic intrusive rocks along Big Creek, west of the Middle Fork of the Salmon River; about 600 to 700 Ma.

Yam — Mesoproterozoic amphibolite; metamorphosed mafic intrusive rocks. Near Shoup, along the Main Salmon River these are 1370 Ma.

Yag — Mesoproterozoic augen gneiss and porphyritic granite; near Shoup on the Main Salmon River age is 1370 Ma.

Ybe — Belt Supergroup undivided; contains siltite, argillite, sandstone (quartzite) and minor conglomerate in Lemhi Range and near Salmon; includes Meadow Creek metamorphic sequence east of Elk City in the Clearwater River drainage.

Strongly Metamorphosed Belt Supergroup

Yqw — Quartzite and calc-silicate gneiss of the lower and middle parts of the Wallace Formation.

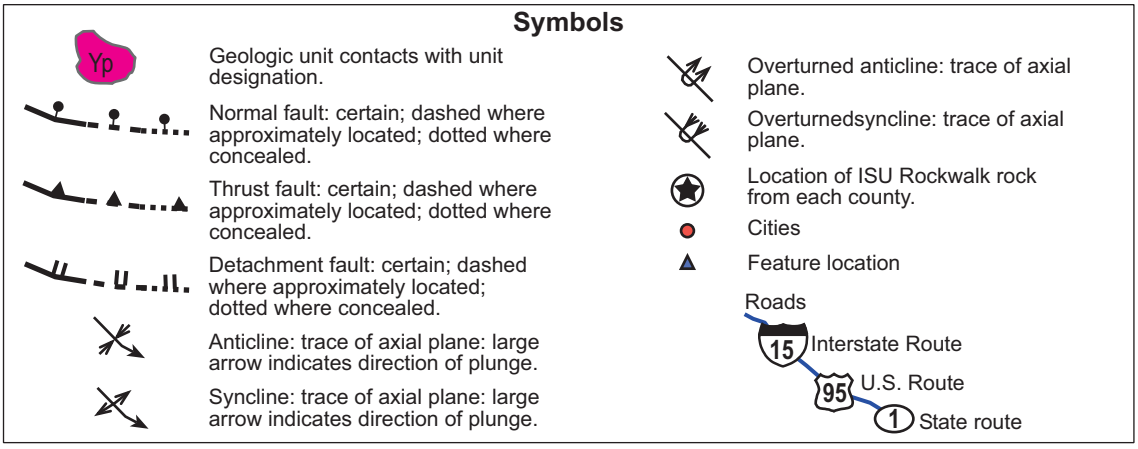
Yqra — Quartzite and schist of the Ravalli Group.

Ysp — Schist, gneiss and minor quartzite of the Prichard Formation.

Metamorphic Rocks of Uncertain Affinity, pre- and/or syn Belt Supergroup

YXm — High-grade metamorphic rocks (schist, gneiss, quartzite, calc-silicate rocks); includes Elk City metamorphic sequence and related rocks, Syringa metamorphic sequence, and Priest River metamorphic complex.

Symbols



Appendix B:

Historical Research Documentation

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536

Inquiry Number: 5111749.3
November 17, 2017

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/17/17

Site Name:

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536
EDR Inquiry # 5111749.3

Client Name:

Alta Science and Engineering, Inc.
220 E. 5th St., Ste. 325
MOSCOW, ID 83843
Contact: Rachel Gibeault

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Alta Science and Engineering, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 4C41-4D62-9CB7

PO # 17831

Project Blue Northern Mill Site

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 4C41-4D62-9CB7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Alta Science and Engineering, Inc. (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536

Inquiry Number: 5111749.4
November 17, 2017

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

11/17/17

Site Name:

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536
EDR Inquiry # 5111749.4

Client Name:

Alta Science and Engineering, Inc.
220 E. 5th St., Ste. 325
MOSCOW, ID 83843
Contact: Rachel Gibeault

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Alta Science and Engineering, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 17831

Project: Blue Northern Mill Site

Coordinates:

Latitude:	46.242844 46° 14' 34" North
Longitude:	-116.034887 -116° 2' 6" West
UTM Zone:	Zone 11 North
UTM X Meters:	574403.18
UTM Y Meters:	5121482.33
Elevation:	1172.22' above sea level

Maps Provided:

2013, 2014
1994
1979, 1984
1967
1924

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013, 2014 Source Sheets

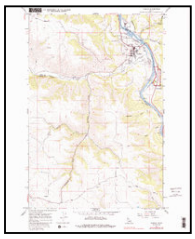
Kamiah
2013
7.5-minute, 24000

Woodland
2014
7.5-minute, 24000

1994 Source Sheets

Woodland
1994
7.5-minute, 24000
Aerial Photo Revised 1990

1979, 1984 Source Sheets



Kamiah
1979
7.5-minute, 24000
Aerial Photo Revised 1979

Woodland
1984
7.5-minute, 24000
Aerial Photo Revised 1982

1967 Source Sheets

Woodland
1967
7.5-minute, 24000
Aerial Photo Revised 1966

Kamiah
1967
7.5-minute, 24000
Aerial Photo Revised 1966

Topo Sheet Key

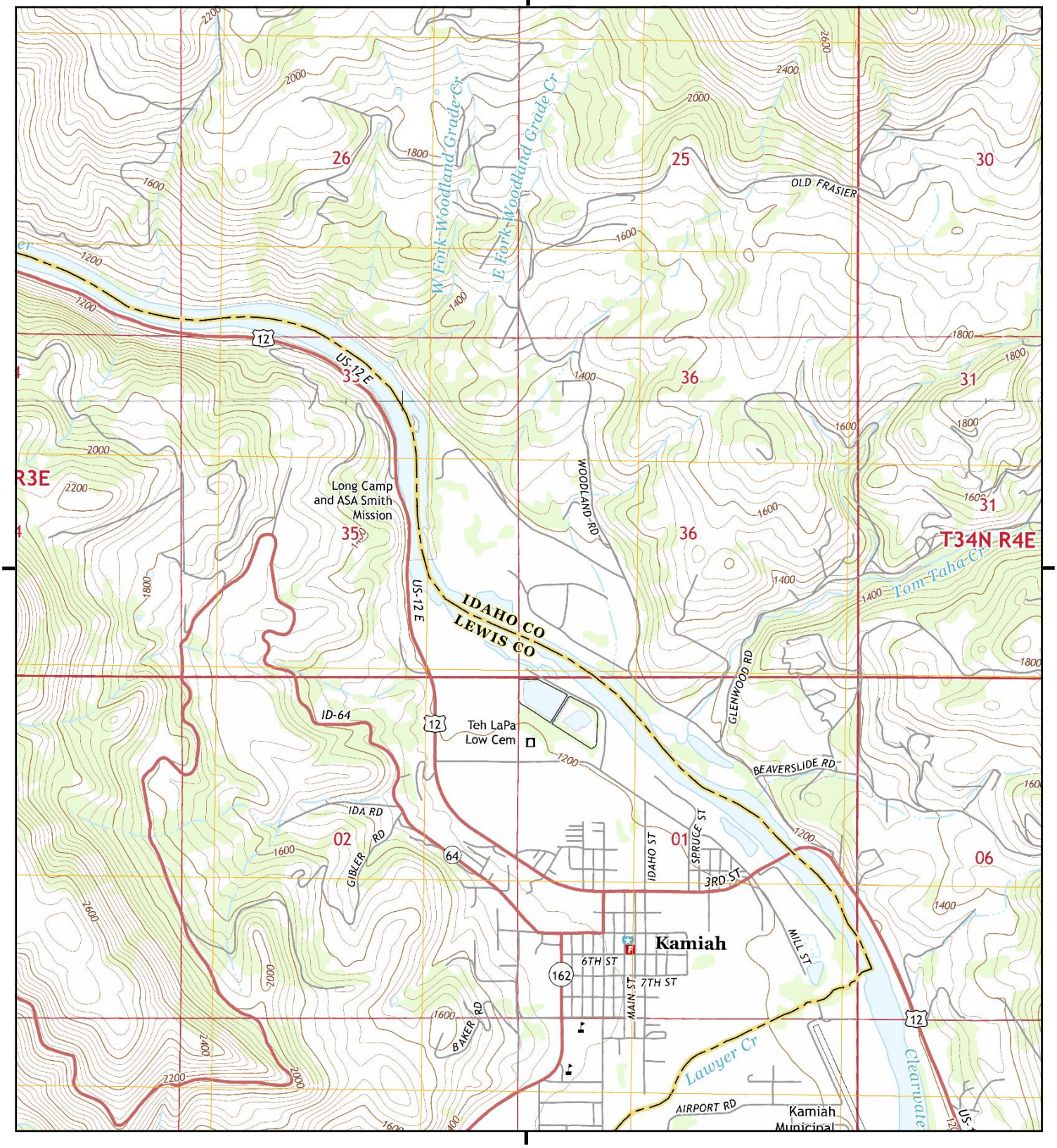
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1924 Source Sheets

Kamiah
1924
30-minute, 125000

Historical Topo Map

2013, 2014



This report includes information from the following map sheet(s).

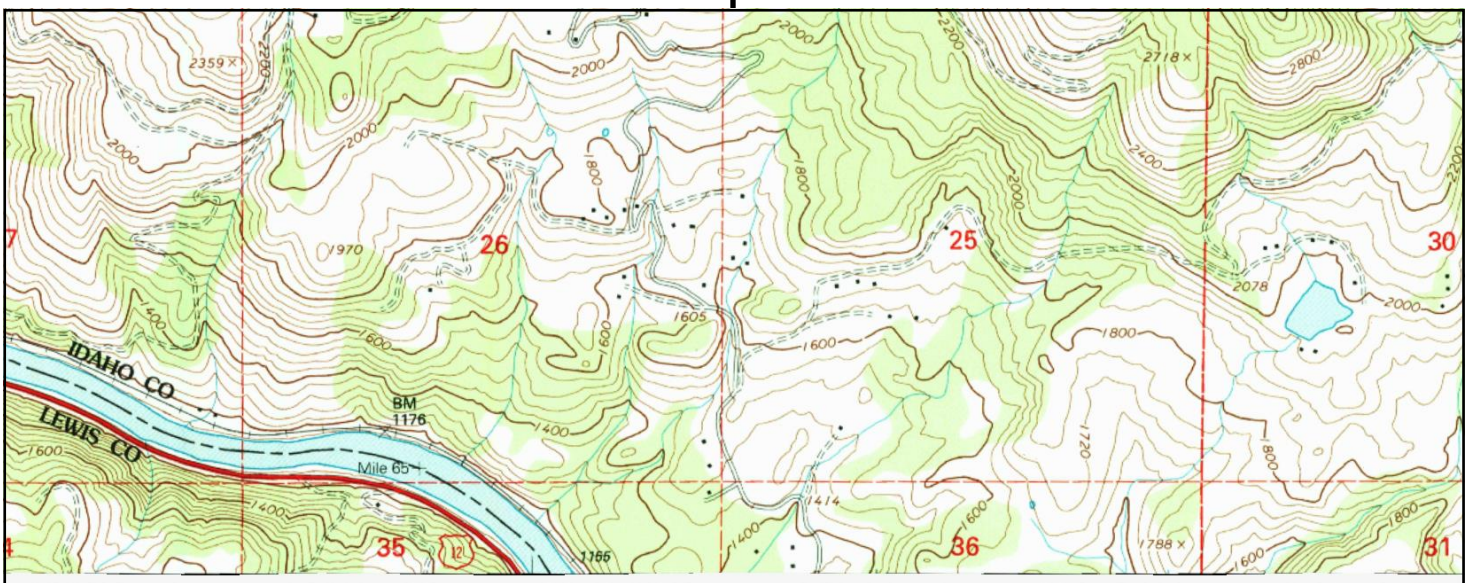
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Kamiah, 2013, 7.5-minute
N, Woodland, 2014, 7.5-minute

SITE NAME: Blue Northern Mill Site
ADDRESS: 283 Woodland Road
Kamiah, ID 83536
CLIENT: Alta Science and Engineering, Inc.

N



This report includes information from the following map sheet(s).

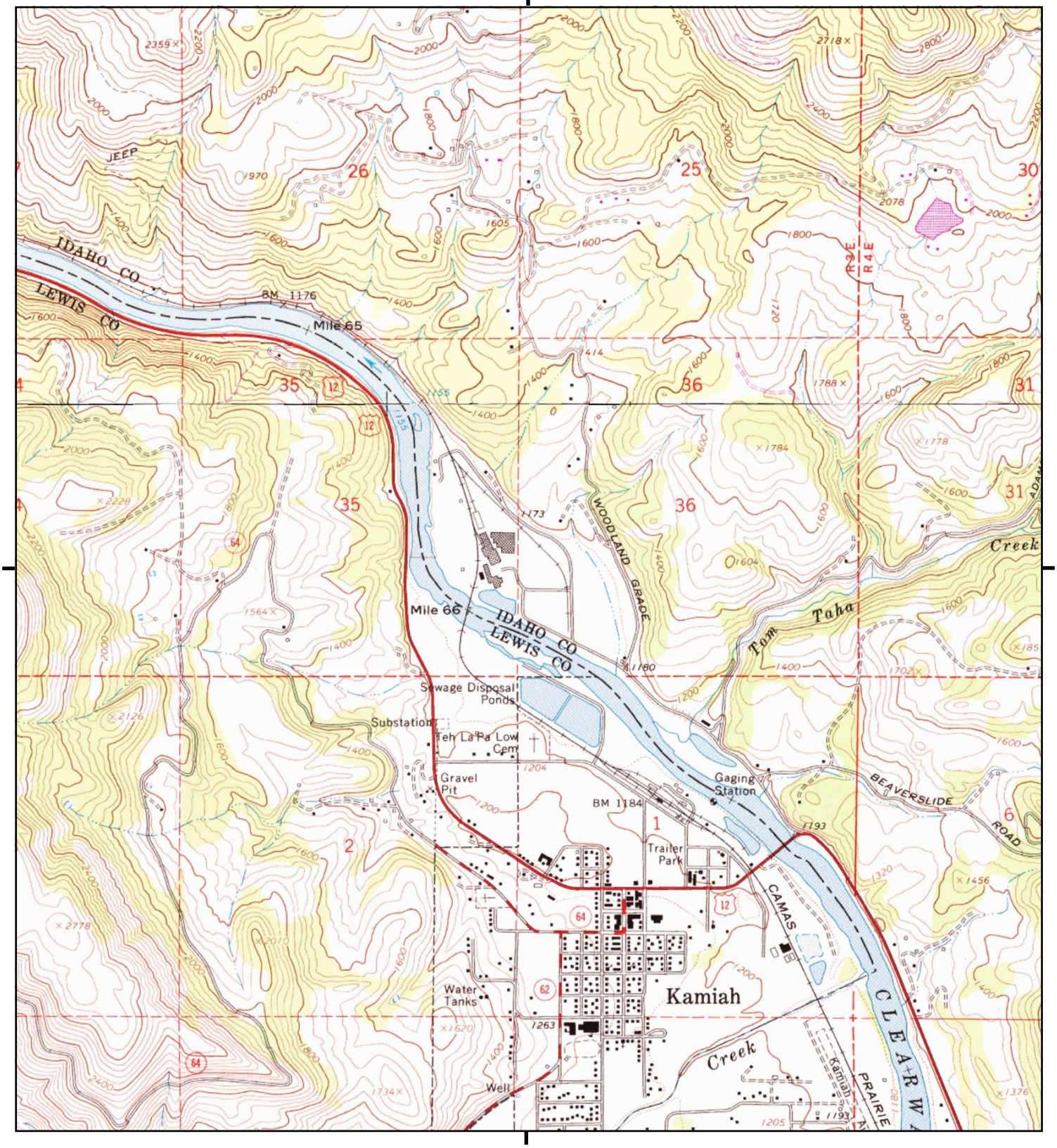
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

N, Woodland, 1994, 7.5-minute

SITE NAME: Blue Northern Mill Site
ADDRESS: 283 Woodland Road
Kamiah, ID 83536
CLIENT: Alta Science and Engineering, Inc.

N



This report includes information from the following map sheet(s).

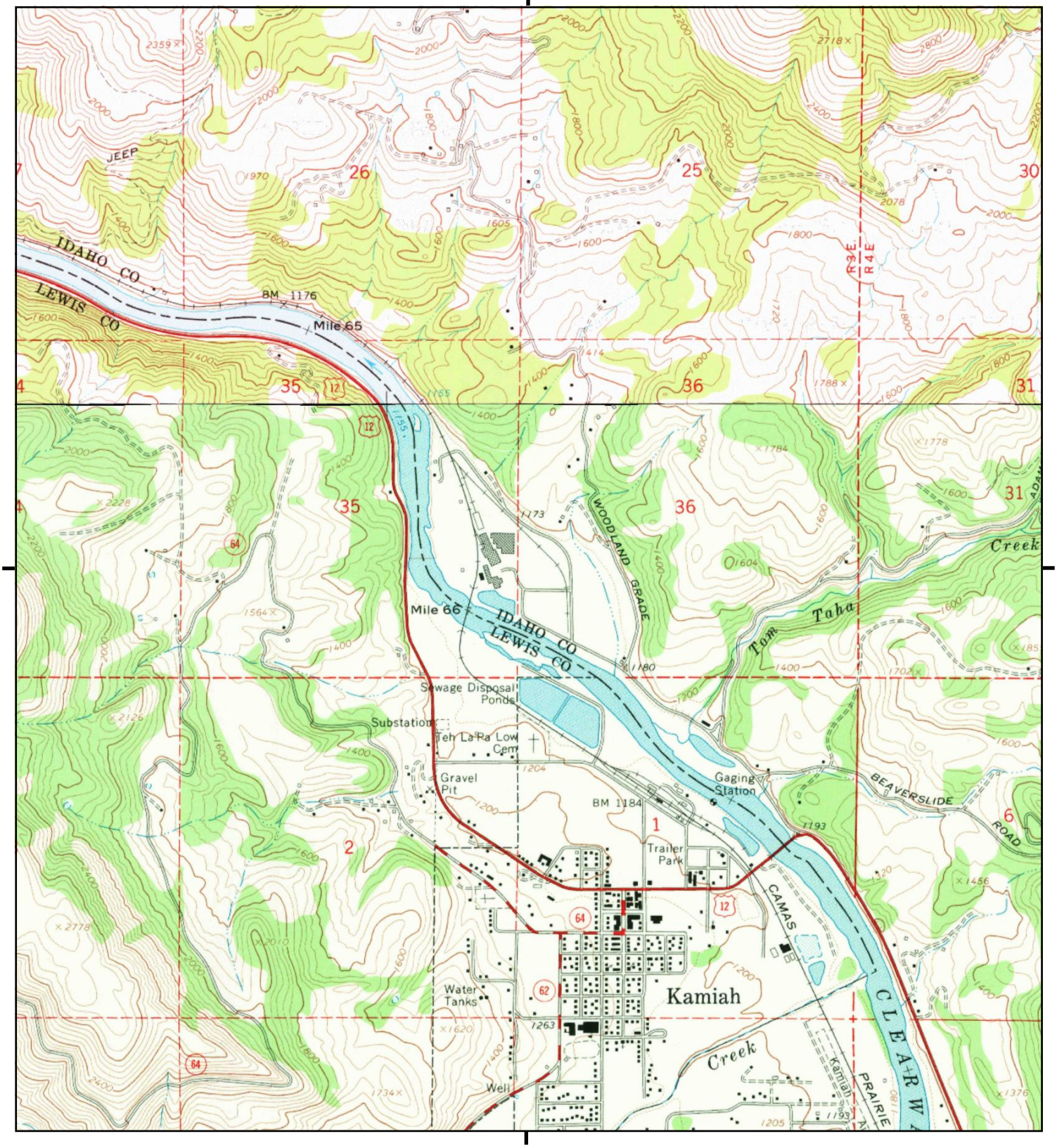
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Kamiah, 1979, 7.5-minute
N, Woodland, 1984, 7.5-minute

SITE NAME: Blue Northern Mill Site
ADDRESS: 283 Woodland Road
Kamiah, ID 83536
CLIENT: Alta Science and Engineering, Inc.

N



This report includes information from the following map sheet(s).

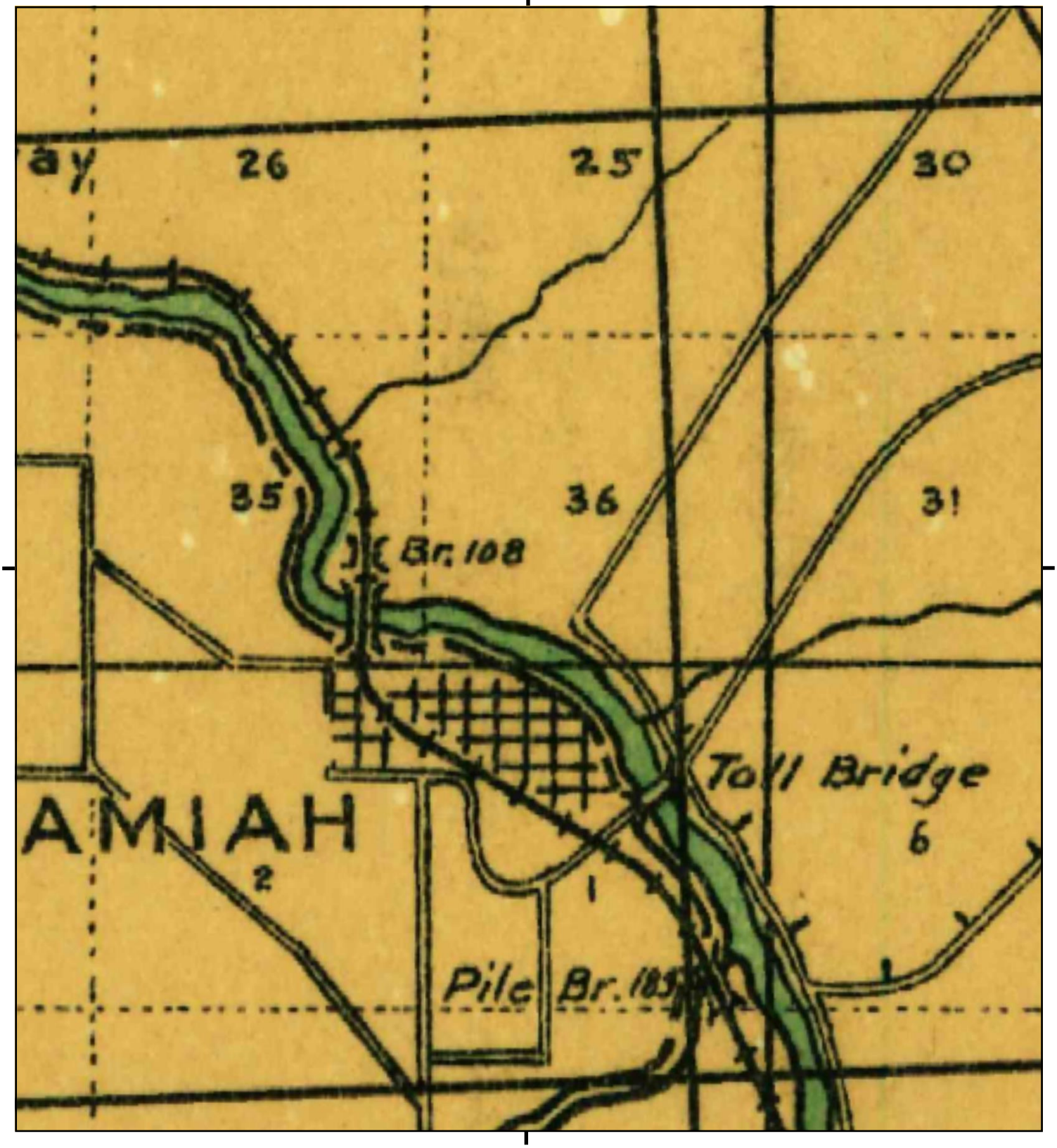
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Kamiah, 1967, 7.5-minute
N, Woodland, 1967, 7.5-minute

SITE NAME: Blue Northern Mill Site
ADDRESS: 283 Woodland Road
Kamiah, ID 83536
CLIENT: Alta Science and Engineering, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Kamiah, 1924, 30-minute

SITE NAME: Blue Northern Mill Site
ADDRESS: 283 Woodland Road
Kamiah, ID 83536
CLIENT: Alta Science and Engineering, Inc.

N

Blue Northern Mill Site

283 Woodland Road

Kamiah, ID 83536

Inquiry Number: 5111749.9

November 17, 2017

The EDR Aerial Photo Decade Package

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Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

11/17/17

Site Name:

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536
EDR Inquiry # 5111749.9

Client Name:

Alta Science and Engineering, Inc.
220 E. 5th St., Ste. 325
MOSCOW, ID 83843
Contact: Rachel Gibeault

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2011	1"=500'	Flight Year: 2011	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1992	1"=750'	Flight Date: June 23, 1992	USGS
1981	1"=500'	Flight Date: August 22, 1981	USDA
1975	1"=1000'	Flight Date: September 09, 1975	USGS
1966	1"=750'	Flight Date: July 18, 1966	USGS
1947	1"=750'	Flight Date: August 08, 1947	USGS

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INQUIRY #: 5111749.9
YEAR: 2011
= 500'
N
EDR

INQUIRY #: 5111749.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 5111749.9

YEAR: 2006

= 500'

N

EDR

INQUIRY #: 5111749.9

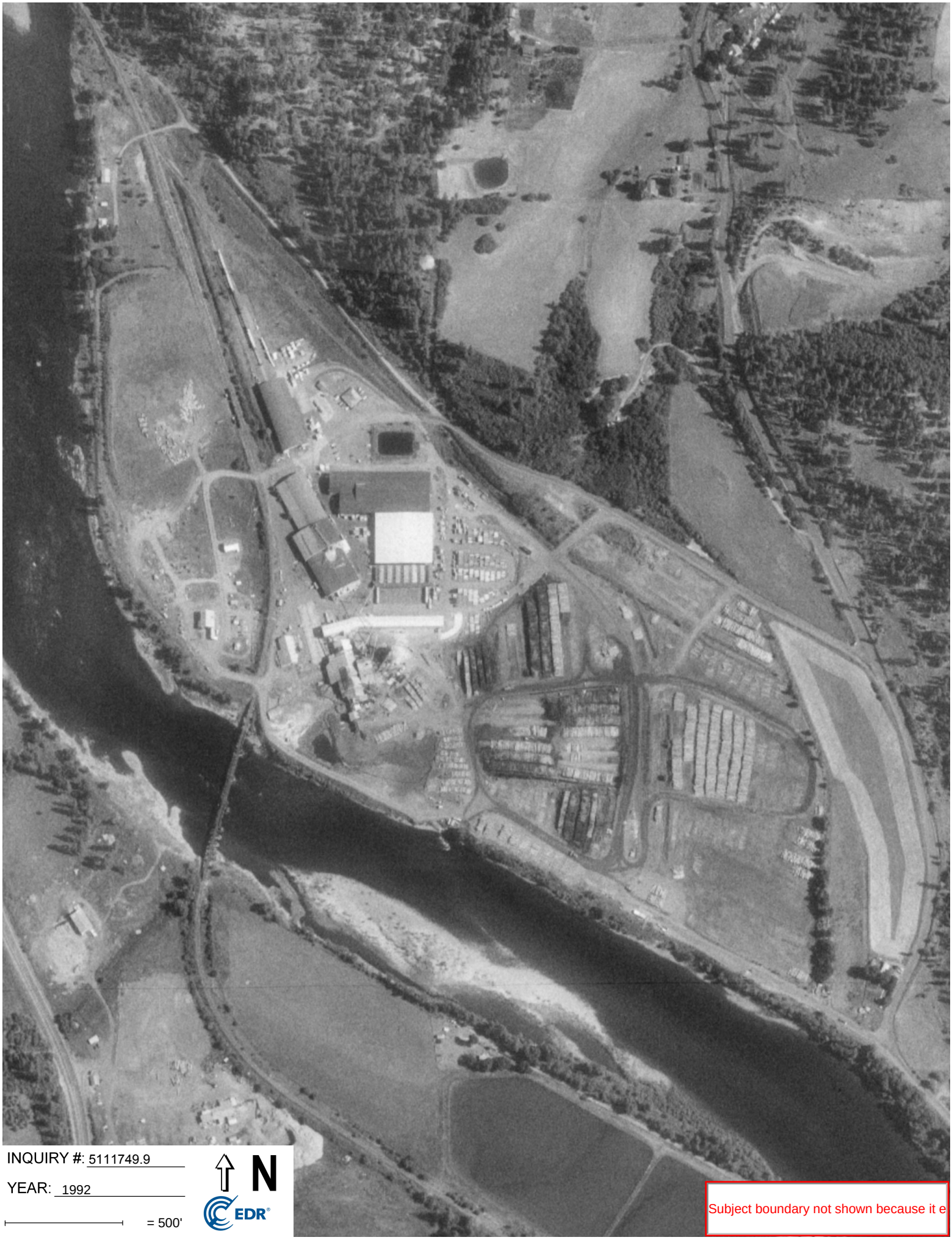
YEAR: 1992

= 750'

N

EDR

Subject boundary not shown because it e



INQUIRY #: 5111749.9

YEAR: 1992

= 500'

N

EDR

Subject boundary not shown because it e

INQUIRY #: 5111749.9

YEAR: 1981

= 500'

N

EDR

INQUIRY #: 5111749.9

YEAR: 1975

= 1000'

N

EDR

Subject boundary not shown because it e

INQUIRY #: 5111749.9

YEAR: 1966

= 750'

N

EDR

Subject boundary not shown because it e

INQUIRY #: 5111749.9

YEAR: 1947

= 750'

N

EDR

Subject boundary not shown because it e

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536

Inquiry Number: 5111749.5
November 20, 2017

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by
infoUSA®

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☐	☐	EDR Digital Archive
2000	☐	☐	EDR Digital Archive
1995	☐	☐	EDR Digital Archive
1992	☐	☐	EDR Digital Archive

FINDINGS

TARGET PROPERTY STREET

283 Woodland Road
Kamiah, ID 83536

Year	*CD Image*	*Source*	
WOODLAND RD			
2014	pg A2	EDR Digital Archive	
2010	pg A4	EDR Digital Archive	
2005	-	EDR Digital Archive	Target and Adjoining not listed in Source
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

WOODLAND RD 2014

283	BLUE NORTH FOREST PRODUCTS LLC
339	JAY, DONALD D
342	THACKER, ALLAN
344	OCCUPANT UNKNOWN,
346	OCCUPANT UNKNOWN,
353	KRIES, DAVID L
365	KUESTER, FRED R
367	LAMM, CHARLES P
374	KNIGHT, CARRI
377	OCCUPANT UNKNOWN,
419	BENTLEY, BARBARA R
433	ALLMONS FLOOR CARE
	STEIGER, CASEY M
435	OCCUPANT UNKNOWN,
437	OCCUPANT UNKNOWN,
439	COULTER, CRYSTLE
441	WHEELER, DALLON J
485	CV LAWN CARE
	MASSEY, KIFF M
486	ALLEN C ENGEN REVOCABLE TRUST
	OCCUPANT UNKNOWN,
487	MASSEY, MARISSA
516	MARTIN, CHRIS J
524	WINTERRINGER, MIKE A
532	OCCUPANT UNKNOWN,
549	HATCH, LETICIA R
557	BREWER, BILL H
688	SIMLER, CHARLES W
	TOMS TIRES THOMAS OSWOLD
724	OCCUPANT UNKNOWN,
770	OCCUPANT UNKNOWN,
772	KINZER, DARYL J
1605	KOLLER, MICHAEL A
1640	LEDESMA, WILFREDO
1657	HUNT, GEORGE P
1775	OCCUPANT UNKNOWN,
1859	F&M GIFTS UNLIMITED
	SKILES, MORRIS A
1861	BATES, PHIL B
1872	FRANCH, RUSSELL W
1874	HARRIS, CLIFF A
1909	PITCHER, RAQUEL
1913	PITCHER, DON L
1969	SCHEU, IRENE V
1979	OCCUPANT UNKNOWN,
1993	DAVIS, KEVIN
	WOODLAND FRIENDS CHURCH
2017	MILLS, JASON L
2043	WEAVER, WILLIAM E
2049	YOUNGQUIST, DANIEL P

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

WOODLAND RD 2014 (Cont'd)

2064 OCCUPANT UNKNOWN,
2125 LARUE, LEVI
2156 HONSINGER, MARY
2165 OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

WOODLAND RD 2010

283	BLUE NORTH FOREST PRODUCTS LLC
339	JAY, DONALD D
342	THACKER, ALLAN
344	SELL, JOHN
353	OCCUPANT UNKNOWN,
365	GEORGIA WILLIAMS LAMM LLC
	OCCUPANT UNKNOWN,
367	LAMM, CHARLES P
374	ELLENBERG, CLARA J
433	ALLMONS FLOOR CARE
435	BRINK, DALE D
437	WOMACK, WILLIAM D
485	CV LAWN CARE
	STEWART, LEE H
487	OCCUPANT UNKNOWN,
516	MARTIN, CHRIS J
524	WINTERRINGER, CLYDE W
532	BREWER, LAURA A
549	OCCUPANT UNKNOWN,
557	BREWER, BILL H
	WINTERRINGER CLYDE WILLIAM
688	SIMLER, JAMES L
	TOMS TIRES THOMAS OSWOLD
724	OCCUPANT UNKNOWN,
770	OCCUPANT UNKNOWN,
772	OCCUPANT UNKNOWN,
1605	KOLLER, MICHAEL A
1657	HUNT, GEORGE P
1775	OCCUPANT UNKNOWN,
1859	F&M GIFTS UNLIMITED
	SKILES MORRIS A
	SNYDER, CONNIE
1861	BATES, PHIL B
1872	FRANCH, RUSSELL
1874	HARRIS, CLIFF
1913	PITCHER, DON L
1969	BUCK, IRENE
1979	ELLIOTT, JOHN
1993	ESPINOLA, SHARON M
	HANCOCK LAKEHOUSE
2017	CRUME, DONAVON
2043	WEAVER, WILLIAM E
2049	OCCUPANT UNKNOWN,
2064	OCCUPANT UNKNOWN,
2125	SPENCE, RICHARD L
2156	HONSINGER, MARY
2165	ERICKSON, JENNY L
	HERBS 4 LIFE DISCOUNT VITAMINS

IDAHO FOREST
— GROUP —

4447 East Chilco Road Athol, ID 83801 IdahoForestGroup.com 208.762.2917

Aaron Miles Sr.
Natural Resources
Nez Perce Tribe
PO Box 305
Lapwai, Id 83540

Re: Former Blue North Site – Kamiah

Attached for your information and use is a copy of Don Kerby's appraisal.

Our appraisal analysts have reviewed the document and provide the additional clarifications to arrive at our estimate of Fair Market Value.

1) The most relevant comparison appears to be the $10,250/acre confidential sale which had no improvements, building or water rights.

2) We believe quantitative adjustments are warranted when market data is available
   a) Building (see page 87) - $557,670 – $150,000 potential cleanup costs = $407,670. Round to $400,000.
   b) Water Rights – $10,723 acre feet per year @ current uniform rate of $17/acre-foot = $182,302. Round to $180,000. This not to divert value. Should enhance the salmon fishery.

114.5 @ $10,250 Land	=	$1,174,000
Building Value		$400,000
Water Rights		$180,000
Fair Market Value		$1,754,000

We continue to believe that the Nez Perce Tribe is the best owner of this property because of the historical/cultural importance. Therefore, we offer this property at a price of $1.7 million cash, equivalent stumpage or mutually agreed upon terms.

We would like to agree upon a realistic timeframe, process and action plan to get us to a mutually agreeable closing as soon as practical. Please get back to me with your thoughts as soon as you have had an opportunity to digest.

Bob

Robert E Boeh
VP Government Affairs/Strategic Outreach
Idaho Forest Group

APPRAISAL REPORT OF
BLUE NORTH MILL SITE

LOCATED NEAR
KAMIAH
IDAHO COUNTY, IDAHO

OWNED BY
IFG – KAMP, LLC

APPRAISED FOR
MR. ROBERT E. BOEH
VP GOVERNMENT AFFAIRS/STRATEGIC OUTREACH
IDAHO FOREST GROUP
P.O. BOX 220
LACLEADE, ID 83841

APPRAISAL DATE
FEBRUARY 14, 2017

APPRAISED BY
DON A. KERBY
WESTERN APPRAISALS
1012 MAIN STREET
LEWISTON, ID 83501

March 9, 2017

Western Appraisals
A DIVISION OF CLEARWATER VIEW, INC.

Mr. Robert E. Boeh
VP Government Affairs/Strategic Outreach
Idaho Forest Group
P.O. Box 220
Laclede, ID 83841

RE: Appraisal Report of Blue North Mill Site
Located Near Kamiah, in Idaho County, Idaho

Dear Mr. Boeh:

At your request, I have completed an appraisal of the above-referenced property. The accompanying appraisal report is completed in compliance with the reporting standards set forth under Standard 2-2a, of the *Uniform Standards of Professional Appraisal Practice* (USPAP). Additional supporting documentation is retained in the appraisal file.

The report presents my findings in the local market and the most probable market value for the subject property, as it existed on the effective date of this appraisal. This letter serves as a brief summary of the conclusions contained in the report and is not intended to stand alone. Additional details are shown in the accompanying appraisal report, which contains 89 pages, and the Appendix.

I have personally inspected the subject property and all comparable data utilized in the report. My value estimate has been independently determined without prejudice or bias and is based on fee simple title.

My estimate of the fee simple market value for the subject property, as it existed on February 14, 2017, is ---------- **$1,200,000**.

Thank you for the opportunity to be of service. If you have further questions regarding this appraisal, please do not hesitate to contact me.

Sincerely,

WESTERN APPRAISALS

Don A. Kerby, Appraiser

DAK/dlh

1012 Main Street
Lewiston, Idaho 83501

(208) 746-9891
(208) 746-9895 FAX

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APPENDIX

Comparable Sale Write-ups
Title Report & Warranty Deed
Easements & Assignments
Water Rights
Soils Data for Mill Site
Soils Data for 15 Acre Parcel
Appraiser's Experience and Qualifications

SUMMARY OF SALIENT FACTS AND IMPORTANT CONCLUSIONS

1. **OWNER:** IFG – Kamp, LLC, an Idaho Limited Liability Company

2. **PURPOSE OF APPRAISAL:** The purpose of this appraisal is to estimate the market value of the subject property.

3. **INTENDED USE OF APPRAISAL:** It is my understanding the Client intends to use this appraisal and report in management and potential marketing decisions with regard to this property.

4. **ESTATE TO BE APPRAISED:** Fee title subject to the reservations and restrictions of record.

5. **LEGAL DESCRIPTION:** The legal description is lengthy and is contained in the body of the report.

6. **SUBJECT PROPERTY:** The subject property parcel consists of two non-contiguous but proximate tract of land totaling 114.5 acres, located about a half mile north of Kamiah, Idaho along the north bank of the Clearwater River. The property is a mix of near level bench along the river and rolling to steep sloping hills above the river bench. This land has served as the mill site and log yard for a sawmill for most of the last 70+ years.

7. **IMPROVEMENTS:** The property is improved with numerous sawmill related structures, most of which are very large special purpose buildings associated with the sawmill. All of the buildings are older structures, 35 years old or more.

8. **ZONING:** The subject property is located in Idaho County, which currently has no zoning ordinance.

9. **EASEMENTS:** Typical utility and right-of-way easements exist on the property. There is also an easement to the railroad that bisects the property, which is considered a mutually beneficial condition.

10. **ASSESSED VALUES AND TAXES:** The 2016 assessed value is $1,163,416 and 2016 taxes are $4,667.46.

11. **LEASES:** There are no leases currently in place.

12. **HIGHEST AND BEST USE:** An industrial site or combination of commercial/industrial and residential development.

13. **DATE OF VALUATION:** The effective date of valuation is February 14, 2017.

14. **INDICATED VALUE:** My estimate of the fee simple market value of the subject property, as it existed on the date of appraisal, is ---------- **$1,200,000**.

SECTION I

CONDITIONS AND CERTIFICATION

A. CONTINGENT AND LIMITING CONDITIONS

The certification of the Appraiser appearing in this appraisal report is subject to the following conditions and to such other specific and limiting conditions as are set forth by the Appraiser in this report.

1. The Appraiser assumes no responsibility for matters of a legal nature affecting the property appraised or the title thereto, nor does the Appraiser render any opinion as to the title, which is assumed to be marketable. The property is appraised as though under responsible ownership.

2. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. The Appraiser has made no survey of the property.

3. The Appraiser is not required to give testimony or appear in court because of having made this appraisal with reference to the property in question, unless arrangements have been previously made.

4. The distribution of the total valuation in this report between land and improvements applies only under the existing or stated program of utilization. The separate valuations for land and buildings may be invalid and should not be used in any other appraisal comparison or other use.

5. The Appraiser assumes that there are no hidden or inapparent conditions of the property, subsoil, or structures which would render it more or less valuable. The Appraiser assumes no responsibility for such conditions or for engineering which might be required to discover such factors.

6. Information, estimates, and opinions furnished to the Appraiser and contained in this report were obtained from sources considered reliable and believed to be true and correct.

7. Disclosure of this appraisal report is governed by the *Bylaws and Regulations* of the professional appraisal organizations with which the Appraiser is affiliated.

8. Neither all nor any part of the contents of this report or copy thereof (including conclusions as to property value, the identity of the Appraiser, professional designations, reference to any professional appraisal organizations, or the firm with which he is connected) shall be used for any purposes by anyone but the client shown in this report without the previous written consent of the Appraiser, nor shall it be conveyed by anyone to the public through advertising, public relations, news, sales, or other media without written consent and approval of the Appraiser.

9. The final value concluded in this report is based on the parameters stated herein and limited to the current character of the subject property, unless otherwise stated. Any changes in the property's character or the market within which it exists, including but not limited to physical, functional, economic, political, and/or financial factors, may affect the value conclusion.

10. In this appraisal assignment, the existence of potentially hazardous material used in the construction, renovation, or maintenance of the building or naturally occurring on the site, such as the presence of asbestos, urea-formaldehyde foam insulation, hazardous waste, radon, or termites, which may or may not be present on the property, were not observed during the appraisal inspection; nor do I have any knowledge of the existence of such material on or in the property. The Appraiser, however, is not qualified to detect such substances. The existence of any of these materials or condition or any other potentially hazardous waste material may have an affect on the value of the property. I urge the client to retain qualified experts in these fields if so desired.

11. This Appraisal Report is prepared to comply with the reporting requirements set forth under Standard Rule 2-2a of the *Uniform Standards of Professional Appraisal Practice*. As such, it might not include full discussions of the data, reasoning, and analyses that were used in the appraisal process to develop the Appraiser's opinion of value. Supporting documentation concerning the data, reasoning, and analyses is retained in the Appraiser's file. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The Appraiser is not responsible for unauthorized use of this report.

B. CERTIFICATION

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest with respect to the parties involved.

4. I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment

5. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

6. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

7. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

8. The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which include the *Uniform Standards of Professional Appraisal Practice*. As of the date of this report, I have completed the continuing education program for Practicing Affiliates of the Appraisal Institute.

9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

10. I have made a personal inspection of the property that is the subject of this report.

11. No one provided significant real property appraisal assistance to the person signing this certification.

Don A. Kerby, Appraiser

DATE: March 9, 2017

SECTION II

GENERAL DATA

A. PURPOSE OF APPRAISAL

The purpose of this appraisal is to estimate market value of the subject property as of the date of this appraisal.

Market value, as used in this report, is defined as: "The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and both acting in what they consider their own best interest;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale." [1]

B. INTENDED USE AND USER OF THE APPRAISAL

This report has been prepared at the specific request of the Client, Mr. Robert Boeh, VP Government Affairs/Strategic Outreach for Idaho Forest Group (IFG). It is my understanding the Client intends to use this appraisal and report in management and potential marketing decisions with regard to this property. Other potential Intended Users of this report include other agents or officers of IFG. Use of this report either in part or in its entirety by anyone other than the Intended Users for any purpose other than specified is not authorized.

[1] Federal Register, Volume 55, No. 163, August 22, 1990, pages 34228 and 34229, also known as the Financial Institutions

B. EXPOSURE TIME

Rural industrial properties often require extended exposure periods to find a buyer that is both interested and qualified. The sales that I have considered in this analysis had exposure periods of less than 6 months and as great as 5 years. I estimate a reasonable exposure period for this property is 2 years or less.

C. ESTATE TO BE APPRAISED

The estate to be appraised is fee simple title. The appraisal does not include valuation of any personal property items or leasehold improvements which may or may not be located on or utilizing access on or across portions of the subject property.

D. SCOPE OF APPRAISAL AND SUMMARY OF THE APPRAISAL PROBLEM

The subject property and most of the comparable data were personally inspected. Some of the more geographically distant comparable sales were not viewed recently but at a minimum were carefully investigated including analysis of Google Earth and/or ESRI online mapping and aerial photos. The market area was thoroughly researched for comparable sales and other pertinent market data through several county courthouses, local and regional realtors, other appraisers, lenders, and private individuals. All pertinent data was analyzed in accordance with professional standards in order to produce a meaningful appraisal report for the subject property. The appraisal report itself is a summary narrative report, completed in compliance with the Standard 2-2a reporting requirements of *Uniform Standards of Professional Appraisal Practice* (USPAP). Additional supporting documentation is retained in the appraisal file.

The subject property is an industrial site in a county that has no zoning. It is also located in an area designated as a flood zone. One of the significant appraisal problems is sorting out the highest and best use of this site. It has been used in an industrial capacity for many years, and although it has characteristics that make it desirable for numerous industrial or commercial uses, the property lies in a flood zone area that may hamper what can and cannot be done on the property. Significant time and effort was spent analyzing land

use possibilities, flood plain issues, water rights, and environmental issues that pertain to the site. The basic appraisal problem is to find sufficient market data to provide a credible estimate of market value for the property as of the appraisal date on February 14, 2017. Sales data for large sites visually, legally, and proximally similar to the subject are quite difficult to find, thus, the market area is expanded to a regionally based market study, including parts of north and north-central Idaho, eastern Washington, and northeast Oregon.

One of the unique appraisal problems was identifying and quantifying environmental and flood risks on this property. I found it almost impossible to get people from regulatory agencies (FEMA, EPA, DEQ, USACE) to talk definitively about this site. One of my most useful and knowledgeable sources was an interview with Mr. William Mulligan who has a longtime (45+ year) history in management of this mill site. He provided me with a good history and his knowledge of specific aspects of the property that helped answer many of the questions that surfaced as I learned about the property.

E. DATE OF APPRAISAL

The subject property was initially inspected on the ground on January 24, 2017. The property was inspected again on February 14, 2017. The effective date of this appraisal is February 14, 2017, and all comparable data have been adjusted to this period in time.

F. VALUATION METHODS

The most professional and dependable techniques, as advanced by the Appraisal Institute, have been used throughout this appraisal report. The accepted methods of valuation are the Cost, Income, and Sales Comparison approaches.

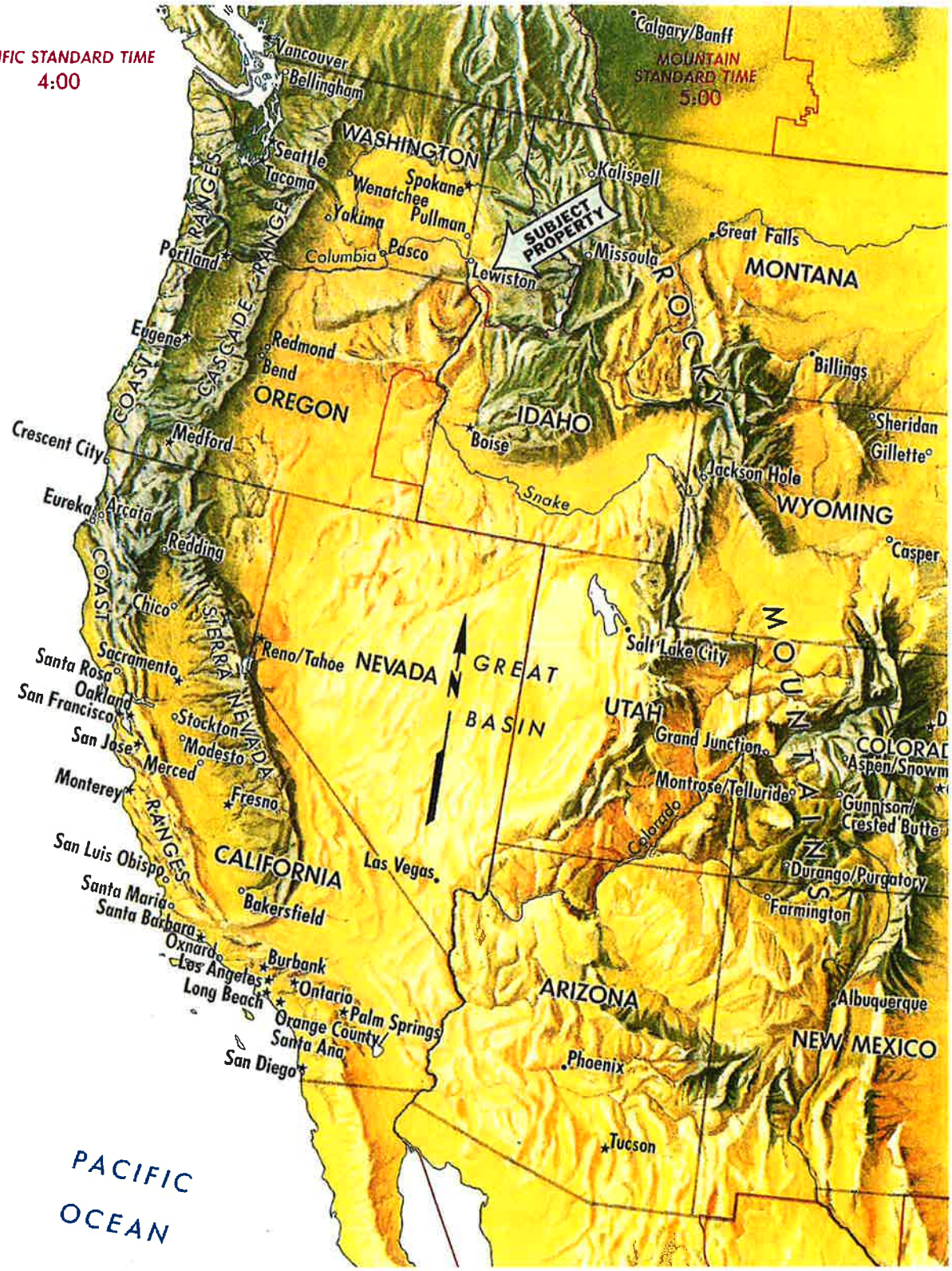
The **Cost Approach** is typically completed on improved properties. The subject property has structural improvements of value, and the Cost Approach is considered and analyzed in the appraisal report.

A traditional **Income Approach** to value will not be utilized, as this property, an old sawmill site has been dismantled and in transition from its long term industrial use as a sawmill to some as yet unknown use. There is no reasonably reliable way to forecast income on this property to provide an income stream to base a income analysis. It is likely that the site will be used again, but there is no clear climax use, other than to say that it is unlikely to be used as a sawmill at any point in the foreseeable future. Completion of an income approach would not enhance the reliability of the value estimate so it was not further considered.

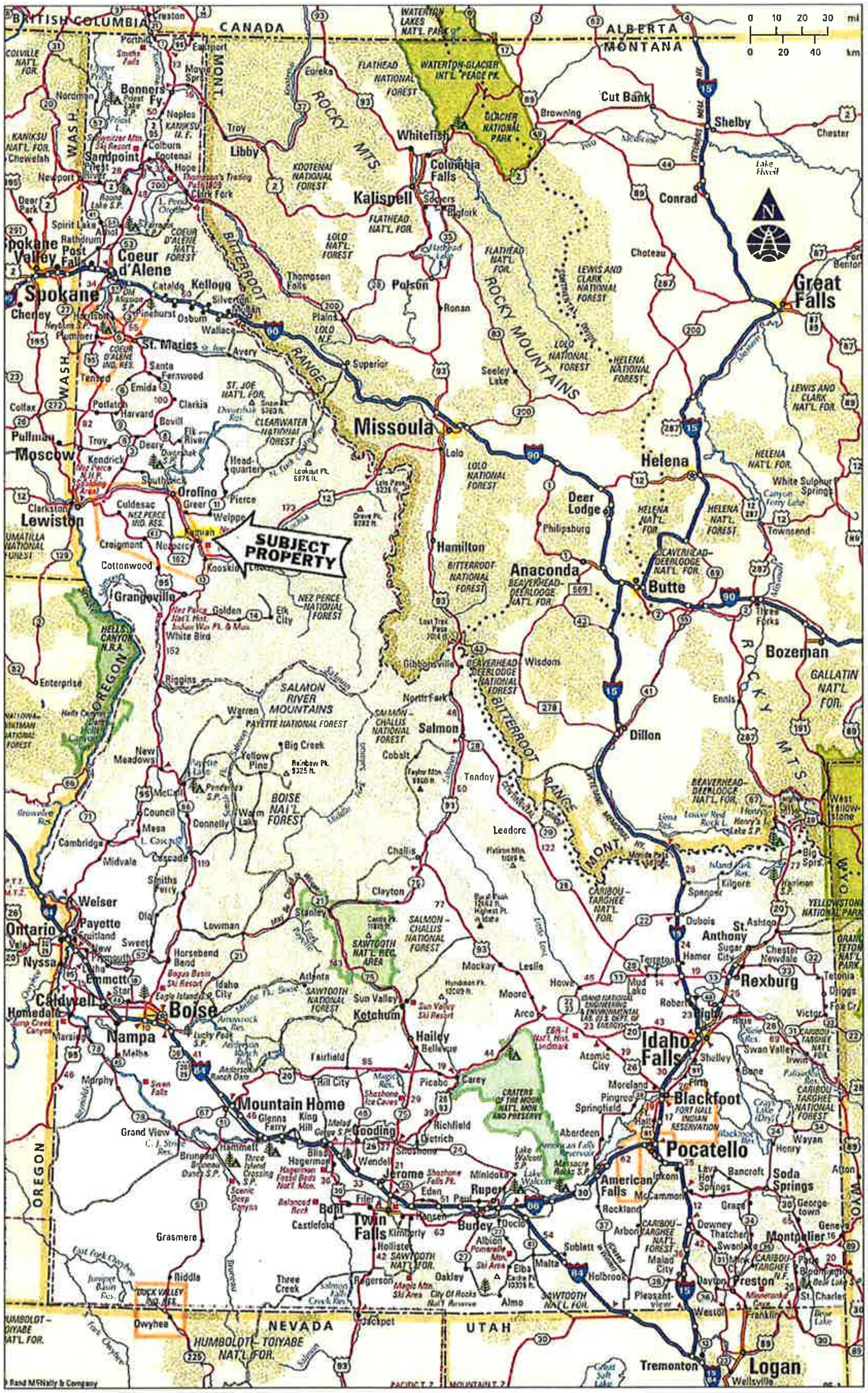
The **Sales Comparison Approach** is the preferred approach to value on properties such as the subject. There are limited sales available; however, this approach will be the primary method of valuation within the appraisal.

G. AREA MAPS

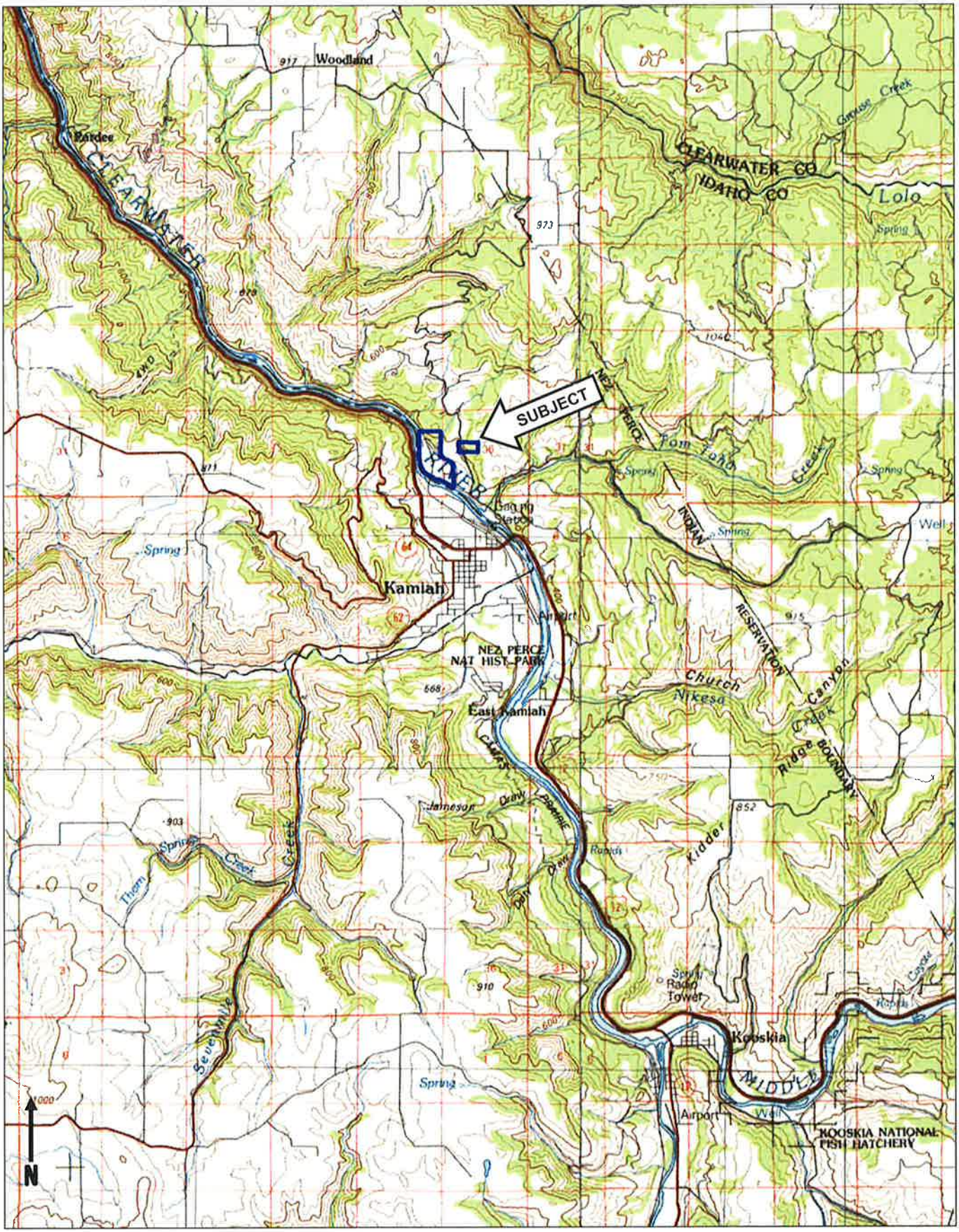
REGIONAL MAP



AREA MAP


SUBJECT PROPERTY
BRITISH COLUMBIA
CANADA
ALBERTA
MONTANA
WASH.
OREGON
NEVADA
UTAH
WYO.
ROCKY MTS.
BITTERROOT RANGE
ROCKY MOUNTAINS
SALMON RIVER MOUNTAINS
Spokane
Coeur d'Alene
Sandpoint
Bonners Fy.
Kellogg
St. Maries
Moscow
Pullman
Lewiston
Clarkston
Orofino
Kamiah
Nezperce
Kooskia
Craigmont
Cottonwood
Grangeville
White Bird
Riggins
New Meadows
McCall
Council
Cambridge
Weiser
Payette
Ontario
Nyssa
Emmett
Caldwell
Boise
Nampa
Mountain Home
Twin Falls
Jerome
Burley
Rupert
Pocatello
Idaho Falls
Blackfoot
Rexburg
American Falls
Preston
Logan
Tremonton
Ketchum
Sun Valley
Hailey
Challis
Salmon
Missoula
Kalispell
Whitefish
Columbia Falls
Polson
Hamilton
Anaconda
Butte
Helena
Deer Lodge
Dillon
Bozeman
Great Falls
Shelby
Conrad
Cut Bank
Libby
Grand View
Grasmere
Riddle
Owyhee
Tendoy
Leadore
Rand McNally & Company

VICINITY MAP



H. AREA AND NEIGHBORHOOD DATA

1. AREA

The subject is located in the Clearwater River valley, just north of Kamiah, in Idaho County, Idaho. Idaho County is situated in the north central part of the state, between Washington and Montana. The county stretches from the Oregon/Washington line east to Montana and from north of the Lochsa River to an area south of the Salmon River. In terms of land mass, it is one of the largest counties in the nation at 8,485 square miles. Idaho County is larger than some eastern states, yet it has an estimated resident population of only 16,267. The majority of this population lives in the western one-third of the county, because the eastern two-thirds are predominantly occupied by national forest lands within the Clearwater and Nez Perce National Forests. Kamiah straddles Idaho and Lewis Counties. Lewis County is a smaller county, both in terms of land mass and in population, but it reflects generally the same rural character and low population density.

Historically, the economy of the area had depended upon farming, ranching, and the forest products industry. There is a rich diversity of landscapes consisting of farms, forest, mountains, and steep, winding river corridors. The climate of is pleasant but diverse. In the western part of the county, including all of Lewis County, the summers are warm and dry. Temperatures seldom exceed 100 degrees Fahrenheit. Evenings are typically cool. Winters are moderately cold with daytime temperatures ranging from 30 to 40 degrees. Temperatures can drop to 20 degrees or more below zero in late December and January, but they rarely remain there for more than a two-week period. Precipitation comes in the winter and spring in the form of snow and rain. Precipitation varies from 22 inches on the prairies to over 30 inches in the mountainous areas. The eastern portion of the area is at a higher elevation and winter weather is severe.

The area appeals to a wide range of people as a place to live because of its diversity of landscape, its moderate climate, and because of the presence of large blocks of national forest and other public ownership. In spite of its appeal as a place to live, the population has changed very little in the last two decades. From 1990 to 2000 the population of Idaho County increased only 12.7 percent, or 1,743 people. The 2010 census data show the Idaho County population at 16,267, a 4.9% increase over the last decade. Census population estimates for July 2015 indicate the population at 16,272, almost no change from 2010.

Statewide population increases from 1990 to 2000 were 28.5%, 21.1% from 2000 to 2010, and 5.6% from 2010 to 2015. Lewis County has similar statistics with less than 2% growth from 2000 to 2010 and a slight decline from 2010 to 2015. One of the major limitations of growth is the distinct lack of non-farm employment opportunities. The forest products industry was the major source of non-farm employment until the 1990s. Most of the raw sawlogs and pulp the industry relied upon came from national forest lands. Changes in policy by the federal government during the 1990s, together with the establishment of designated wilderness areas within the national forest, removed millions of board feet of potentially merchantable wood from harvest. As a direct result of these actions, a number of area sawmills were forced to close or reduce their outputs.

Longtime residents employed directly by the area sawmills, together with those employed in support industries such as logging, machinery sales or repair, road building, engineers, etc., were forced to seek employment elsewhere. So, while people have been migrating into north-central Idaho counties, there has been an offsetting migration out of the area as well. Most individuals moving to this area are retired, self-employed, or able to support themselves through occupations that do not require their presence at a specific jobsite on a day-to-day basis. From 2000, demand for rural homesites tended to increase significantly through the middle of 2008, and, like most rural areas, has seen very little real estate market activity over the last 8 years of economic doldrums.

While the countywide populations have increased only modestly since 1990, most communities have remained stable or have declined in population. Grangeville, the Idaho County seat, is the largest community and the commercial hub of Idaho County. Its population is essentially unchanged from 1990. The same is true for Nezperce, the Lewis County seat. Population trends for the counties and the major communities are summarized here:

POPULATION DATA

LOCATION	1990	2000	2010	2015
Idaho County	13,768	15,511	16,267	16,272
Cottonwood	822	944	900	921
Elk City	No Data Available			
Grangeville	3,226	3,228	3,141	3,155
Kooskia	692	675	607	606
Riggins	443	410	419	418
Lewis County	3,516	3,747	3,821	3,789
Craigmont	542	556	501	493
Kamiah	1,157	1,160	1,295	1,273
Nezperce	453	523	466	468
Reubens	46	72	71	71
Winchester	262	308	340	339

Source: U.S. Census Bureau (2015 data is from census estimates)

Area Realtors indicated that interest in rural property remains low in comparison to the previous 10-year period. They blame an extended weak national and local economy and the collapse of the McCall/Cascade real estate boom that was in part fueled by the development of the now bankrupt Tamarack Ski Resort near Cascade. Rural homes and cabins apparently have taken the biggest hit in this market and there does seem to still be demand for vacant tracts of land in most size classes. Many of the potential buyers are not year-round residents, so they do not show up in population statistics. This area has long been a place where people have "getaways" due to its sparse population, wide expanse of public land, and lax planning and zoning regulations.

Economically speaking, this area has suffered the loss of a lot of jobs in recent times. The Blue North sawmill, which occupied the subject property, closed in May 2016 and 65 people were laid off. The Tri-Pro Forest Products mill near Orofino closed a few months later eliminating 40 jobs. Unemployment figures for the counties as of December 2016 were:

Idaho County	5.2%
Lewis County	7.2%
Clearwater County	7.5%

I am not sure the unemployment statistics really portray a true picture of this economy, because by the time these statistics were published, many of the workers had moved to other areas or had taken jobs where they had a long commute. In either case, they are not counted in the workforce; thus, the employment statistics are probably worse than they show in the chart above. Kamiah, Idaho County, and the Clearwater valley are all reeling to some extent from the recent loss of 105 sawmill jobs plus related service providers that fed off the mills. Economic development agencies have grant money available to attract and support new industries and there are state tax credits for the creation of new jobs. As a result of this, at least in Clearwater County, they have been able to draw in some manufacturers to start-up businesses and improve the jobs' picture to some extent. That is the hope in these communities, that they can somehow draw new business entities to the area who appreciate the work ethic present in the people and bring more employment opportunities to replace what has been lost.

2. NEIGHBORHOOD

The immediate subject neighborhood is the valley and hillsides surrounding the Clearwater River valleys. The South Fork of the Clearwater River flows in a northerly direction out of the mountains in the Nez Perce National Forest to the south and east of the subject property. The Middle Fork of the Clearwater River runs in a westerly direction out of the mountains in the Nez Perce and Clearwater National Forests north and east of the subject property. The Middle Fork and the South Fork converge at Kooskia, six (6) miles southwest of the subject, to form the main Clearwater River, which then flows in a northwesterly direction to its confluence with the Snake River at Lewiston, Idaho, 75 miles downstream.

This neighborhood is made up of small and large ranches, recreational ranch tracts, and rural homesites. The topography ranges from rolling benches to very steep slopes. Ground cover is somewhat of a mosaic of open hillsides, ridge tops, timbered north slopes, and draws. As one increases in elevation, open slopes give way to more timber cover and higher precipitation. Most of the properties on the hillsides have nice views of the river valleys or surrounding mountains. There are a few small benches on the valley floor, but most of those are occupied by towns, homesites, farmsteads, or commercial uses of some sort. The climate in this neighborhood is relatively mild. The elevation at Kamiah is approximately 1,200 feet above sea level, and the hills rise sharply to the Camas Prairie plateau, which is approximately 3,000 feet in elevation. Winters are relatively mild in the protected valley setting. Wildlife, both big game and non-game animals, are fairly

abundant in the area as well. Between the scenic attributes, mild climate, wildlife attributes, and sparse population, the area has seen substantial increased pressures from out-of-state residents.

Idaho County has no zoning ordinance or building codes so it is easy to subdivide and develop land, but there is not a lot of small lot subdivision occurring. Most of the properties that are purchased stay in relatively large parcels because the out-of-area buyers purchase them for the open space. At the same time, they are speculating that they can be subdivided someday or that they will continue to increase in value. Prices paid are what one would expect a developer to pay for a property to subdivide, but rural subdivisions occur only occasionally. This market has slowed considerably from what it was prior to the onset of recession, but it has not seen drastic across-the-board drops seen in many markets. There certainly are more properties available, longer marketing periods, and fewer sales occurring, but prices have held at least near what they were prior to the recession.

Highway transportation throughout the area is provided by U.S. Highway 12, which is the main east-west route through this portion of Idaho connecting Missoula, Montana, and Lewiston, Idaho; and by State Highway 13, which connects U.S. Highway 12 at Kooskia with the city of Grangeville and U.S. Highway 95. Numerous county paved and gravel roads also connect these roads. Rail transportation is available via the Bountiful Grain and Craig Mountain Railroad that runs along the Clearwater River, mostly on opposite sides of the river as Highway 12. The railroad connects to Lewiston where there are river shipping options at the ports and other rail routes downstream.

The neighborhood for rural industrial properties must be expanded considerably. Industrial sites like the subject are few and far between in the immediate area, but small towns with similar demographics exist all over the Inland Northwest and I have looked to those areas for comparable data. Former industrial sites converted to other uses exist in many of the larger communities in the region; as an example, former mill sites on the shore of the Spokane River are in the process of being developed into high-end commercial and residential sites. I do not believe that this is a good comparison because Coeur d'Alene is a recreational destination with a much higher population, higher mean incomes, better employment statistics, and so on. Kamiah simply does not have the high dollar appeal and demand that is present at places like Post Falls, Coeur d'Alene, Sandpoint, or other similar communities so data from those areas are not further considered.

SECTION III

SUBJECT DATA

A. LOCATION

The subject property is located along Woodland Road directly north across the river from Kamiah, Idaho. Directions from Kamiah are: drive east on Highway 12 across the Kamiah Bridge, immediately after crossing the bridge, turn left onto Woodland Road and continue for about 1¼ mile, turn left onto the main access road into the mill, continue northwesterly for nearly ½ mile to the office building on the north end of the sawmill site. The GPS coordinates at main entrance road off Woodland Road are 46° 14' 33.24" N, 116° 01' 37.90" W.

This property is accessed by way of a longstanding non-exclusive easement for right-of-way across tribal trust land. The easement is a 40' right of way that runs northwesterly from the Woodland road, a county maintained paved road, across tribal trust land for approximately 965 feet to the subject property. A copy of the easement and various assignments is contained in the appendix of the report.

B. LEGAL DESCRIPTION

The legal description of the subject property is:

PARCEL 1: (MILLSITE)
Township 34 North, Range 3 East, Boise Meridian, Idaho County, Idaho
Section 35:
That portion of Government Lots 14 and 15, more particularly described as follows
Commencing at a point on the East line of Section 35, which is 615 feet South of the quarter section corner common to Sections 35 and 36;
Thence West 730.5 feet to the West boundary of the Northern Pacific Railway Right of Way;
Thence following the West boundary as follows:
Northwesterly 300 feet on the arc of a 1°30' curve and N.17°42'W., 764.5 feet;
Thence West 268 feet to the high water line of the Middle Fork of the Clearwater River;
Thence Southerly and Easterly along said high water line 2905 feet, more or less, to the point of intersection of said high water line with the East line of said Section 35;
Thence North along said East line 1110 feet, more or less, to the POINT OF BEGINNING
LESS the Railroad Right of Way.

AND
The South 206 feet of the North 615 feet of said Government Lot 15 lying East of the Railroad Right of Way.

AND
The North 409 feet of said Government Lot 15 lying East of the Railroad Right of Way;

AND
That part of said Government Lot 14 lying East of the Railroad Right of Way.

AND
The North 920 feet of said Government Lot 14 lying West of the Railroad Right of Way.
LESS any part lying South of centerline of Sixth Street of the vacated plat of Townsite, Idaho County, Idaho.

Section 36: Part of the SW¼ described as follows:
Commencing at the section corner common to Sections 35 and 36, Township 34 North, Range 3 East, Boise Meridian, and Sections 1 and 2, Township 33 North, Range 3 East, Boise Meridian, said point being marked by a brass cap monument;
Thence North 911.80 feet along the West line of said Section 36 to the POINT OF BEGINNING;
Thence continue North 1513.52 feet along said line to a point of the South right of way line of road easement "A" to Allotment 182-1557-B;
Thence, S.72°00'E., 58 38 feet along said line;
Thence S.54°14'56"E., 215.76 feet;
Thence S.68°38'40"E., 301.62 feet along said line;
Thence S.57°28'50"E., 401.49 feet along said line;
Thence South 1476.33 feet;
Thence N.61°29'17"W., 572.14 feet;
Thence N.65°20'22"W., 382.21 feet to the POINT OF BEGINNING.

PARCEL 2:
Township 34 North, Range 3 East, Boise Meridian, Idaho County, Idaho
Section 36: That part of the S½NW¼ more particularly described as follows:
BEGINNING at the SW corner of the NW¼ of said Section 36 and running thence 35 and 5/9th rods North along the West line of said NW¼ to a point;
Thence East and parallel with the South line of said NW¼ a distance of 160 rods, more or less, to the East line of said NW¼;
Thence South along the East line of said NW¼, 35 and 5/9th rods, more or less, to the SE corner of said NW¼;
Thence West along the South line of said NW¼, 160 rods, more or less, to the PLACE OF BEGINNING.
LESS that portion of said property West of the Woodland County Road;
ALSO LESS the East 371.5 feet.

C. OWNERSHIP HISTORY

According to the Owners Title Insurance Policy #5011400-1454379e provided by Inland Title and Escrow, LLC, title is vested in IFG-KAMP, LLC, an Idaho Limited Liability Company. IFG-KAMP, LLC, acquired the property in June of 2016 from Blue North Forest Products, LLC, a Washington limited liability company, according to Idaho County Warranty Deed #504527.

Blue North had acquired the property out of receivership in 2010 for $2.65 million dollars after Three Rivers Timber, who had operated the mill for many years closed down and left the facility vacant in 2008. Blue North operated the mill, employing about 65 workers from August 2010 until closing down in May of 2016.

It is my understanding that IFG –KAMP, LLC, purchased Blue North Forest Products, LLC's assets for a total of $8 million, which included the land, buildings, sawmill equipment, inventory, rolling stock, log contracts, pending timber sales, decked logs and other hard to quantify items. The internal allocation to land and buildings following clean-up and salvage was $1,985,000 according to IFG management.
A number of potential buyers have indicated interest and two offers have been received for the subject property. All of the offers were made this summer and fall and were assuming that the sawmill and several of the associated buildings were dismantled and removed from the premises.

-An offer was made by a local wood reclamation business for $1,100,000 for the entire 115 acres. These buyers were offering $10,000 in earnest money to be deposited and stated that they would like to close in January of 2017. The buyers were willing to sign a non-compete agreement with IFG.

-An offer was made by a local cedar product processor, also for $1,100,000 for the entire property. This offer indicated that they wanted to purchase some particular pieces of rolling stock, the contents of two of the maintenance shops, both sets of platform scales, and the right of first refusal to purchase cedar product from IFG.

-The Nez Perce Tribe has expressed significant interest in the property, but have not tendered a formal offer.

The two formal offers were made prior to IFG holding an auction to dispose of the sawmill equipment, rolling stock, and other items. IFG had indicated that they would not consider offers less than $1.1 million, and at that time, potential buyers really did not know what would be remaining following the auction. It appears that these were offers made to match the minimum price indicated by IFG, with an understanding that most of the buildings and some of the personal property would remain. These potential buyers may or may not offer this much today knowing that all of the sawmill equipment, rolling stock, personal property, and so forth were sold off and knowing that the Planer building roof collapsed. IFG may go back to these bidders and negotiate unless they strike an agreement with the Nez Perce Tribe.

USPAP requires that I analyze previous sales and recent offers to purchase the property. In my view, neither IFG's purchase of the property nor the late summer 2016 offers are really very good indicators of value for the property in its current state. The IFG purchase was an internal allocation of a portion of a much larger sale that included various other assets. The offers made by prospective buyers were based upon a different flavor of property than what existed as of the date of this appraisal. So, while I have certainly considered and analyzed those indicators, I do not find them to be good direct comparisons for the subject property as it existed on February 14, 2017.

D. SUBJECT PHOTOGRAPHS

Photographs were taken on January 24 and February 14, 2017, by Mr. Don A. Kerby.

Photograph No. 1: Northerly view of the subject mill site from the south side of the river.

Photograph No.2: Southeasterly view of the subject mill site from US Hwy 12.

Photograph No. 3: Southeasterly view of central portion of mill site and railroad bridge from US Hwy 12.

Photograph No. 4: Northerly view along east property line on main access road.

Photograph No. 5: Northwesterly view along northeast edge of mill site and steep hill.

Photograph No. 6: Southeasterly view from water tank site.

Photograph No. 7: Southwesterly view from water tank site.

Photograph No. 8: Northwesterly view toward the northwest property corner.

Photograph No. 9: Northerly view along the east line to the northeast property corner.

Photograph No. 10: Log yard area in the southeast corner.

Photograph No. 11: Log yard area.

Photograph No. 12: Southeasterly (upriver) view from the southeast corner.

Photograph No. 13: Northwesterly (downriver) view from the southeast corner.

Photograph No. 14: Northwesterly view from the southeast property corner.

Photograph No. 15: Northerly view from the southeast property corner.

Photograph No. 16: Upstream view at the intake location.

Photograph No. 17: Northerly view from the pump house.

Photograph No. 18: Northerly view along the railroad right-of-way.

Photograph No. 19: Southerly view along railway and bridge.

Photograph No. 20: Southeasterly view of land west of railroad right-of-way.

Photograph No. 21: Southerly view along west edge of sawmill site.

Photograph No. 22: Upstream view along the river at the northwest property corner.

Photograph No. 23: Southerly view along the railroad from the north line.

Photograph No. 22: Easterly view up the steep hill at the north line.

Photograph No. 24: Southerly view along the railroad north of the sawmill site.

Photograph No. 25: Hillside area in the northeast corner.

Photograph No. 26: Southeasterly view of the drainage ditch near the north end.

15 ACRE PARCEL

Photograph No. 27: Easterly view along the north line.

Photograph No. 28: Southerly view along Woodland Road.

Photograph No. 29: Northerly view along Woodland Road from southwest corner.

Photograph No. 30: Easterly view up the access road at the intersection with Woodland Road.

Photograph No. 31: Southwesterly view across the center of the property.

Photograph No. 32: Northeasterly view toward the northeast property corner.

Photograph No. 33: Northerly view of Bldg. 10, main office; Bldg. 11, trailer; and Bldg. 12, scale office.

Photograph No. 34: Northwesterly view of Bldg. 10, main office.

Photograph No. 35: Northwesterly view of Bldg. 5, shipping shed.

Photograph No. 36: Westerly view of Bldg. 4, planer building (section C).

Photograph No. 37 North end of Bldg. 4, planer building (section C).

Photograph No. 38: View of Bldg. 2, rough, dry lumber storage.

Photograph No. 39: Southerly view of Bldg. 2, rough, dry lumber storage.

Photograph No. 40: Bldg. 9, small shop.

Photograph No. 41: Bldg. 8, truck shop and pressure wash shed.

Photograph No. 42: View of the south side of Bldg. 8, truck shop.

Photograph No. 43: Northerly view of Bldg. 7, boiler.

Photograph No. 44: Westerly view of Bldg. 7, boiler.

Photograph No. 45: Westerly view of Bldg. 3, rough, dry lumber storage.

Photograph No. 46: Southwesterly view of Bldg. 3 and dry kilns.

Photograph No. 47: Southeasterly view of Bldg. 1, open-sided steel-frame building.

Photograph No. 48: View of water storage reservoir.

Photograph No. 49: Water storage tank along the east line.

Photograph No. 50: Interior of water storage tank.

Photograph No. 51: Pump house at river intake location.

Photograph No. 52: Interior view of electric pump motors.

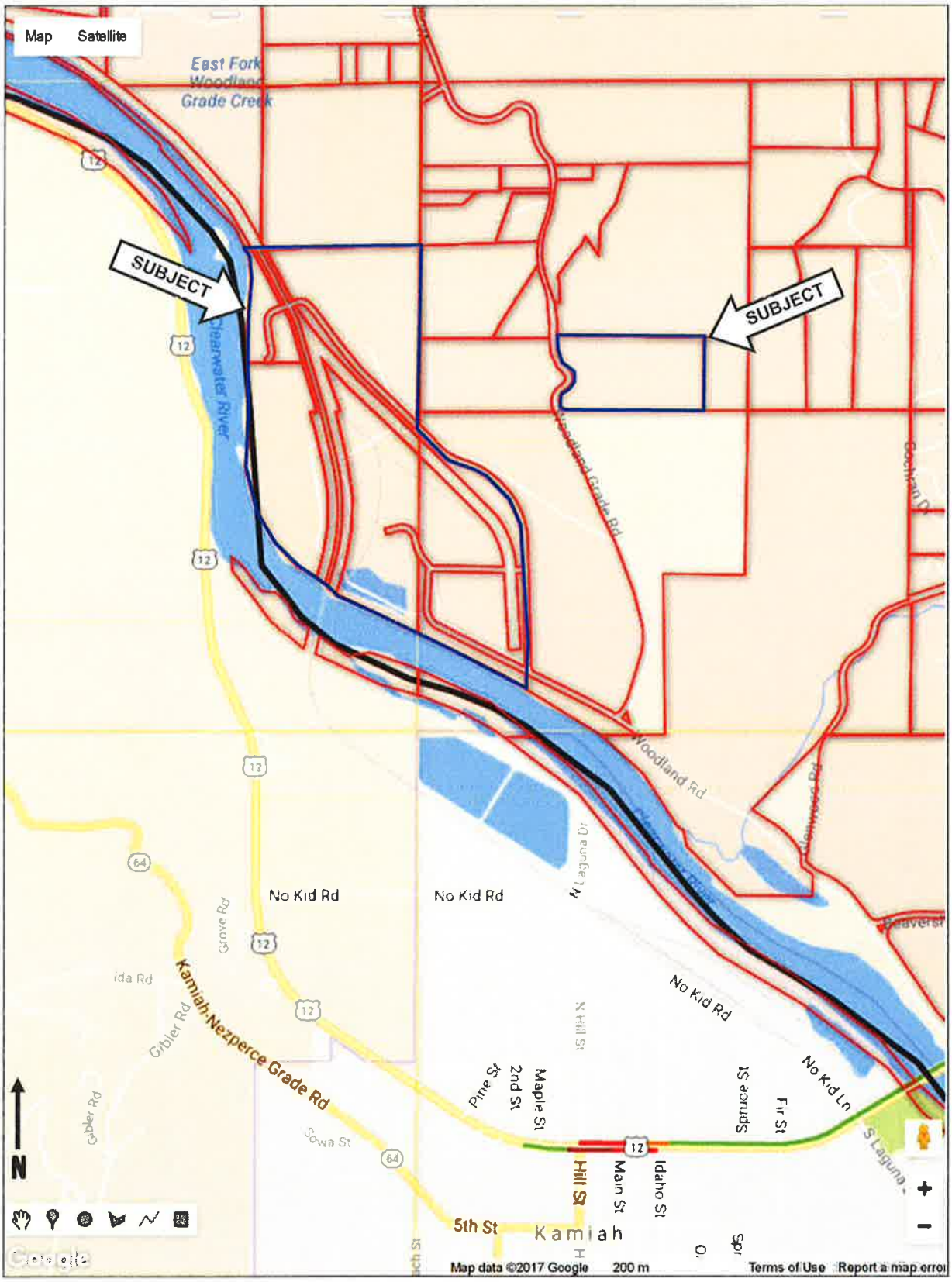
Photograph No. 53: River intake.

Photograph No. 54: Old scale house and salvaged platform at southern tip of property.

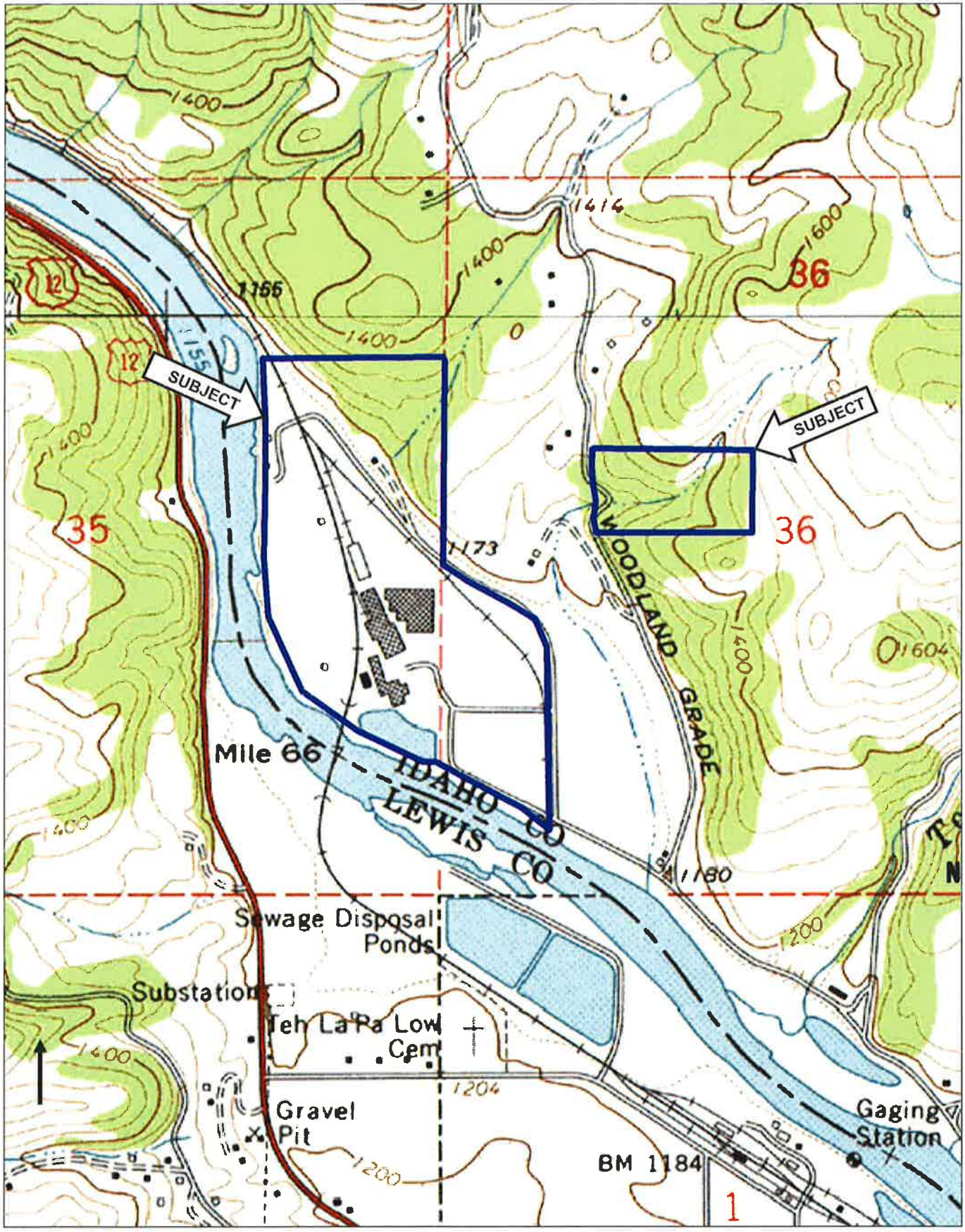
Photograph No. 55: Salvaged Scale platform.

E. SUBJECT MAPS

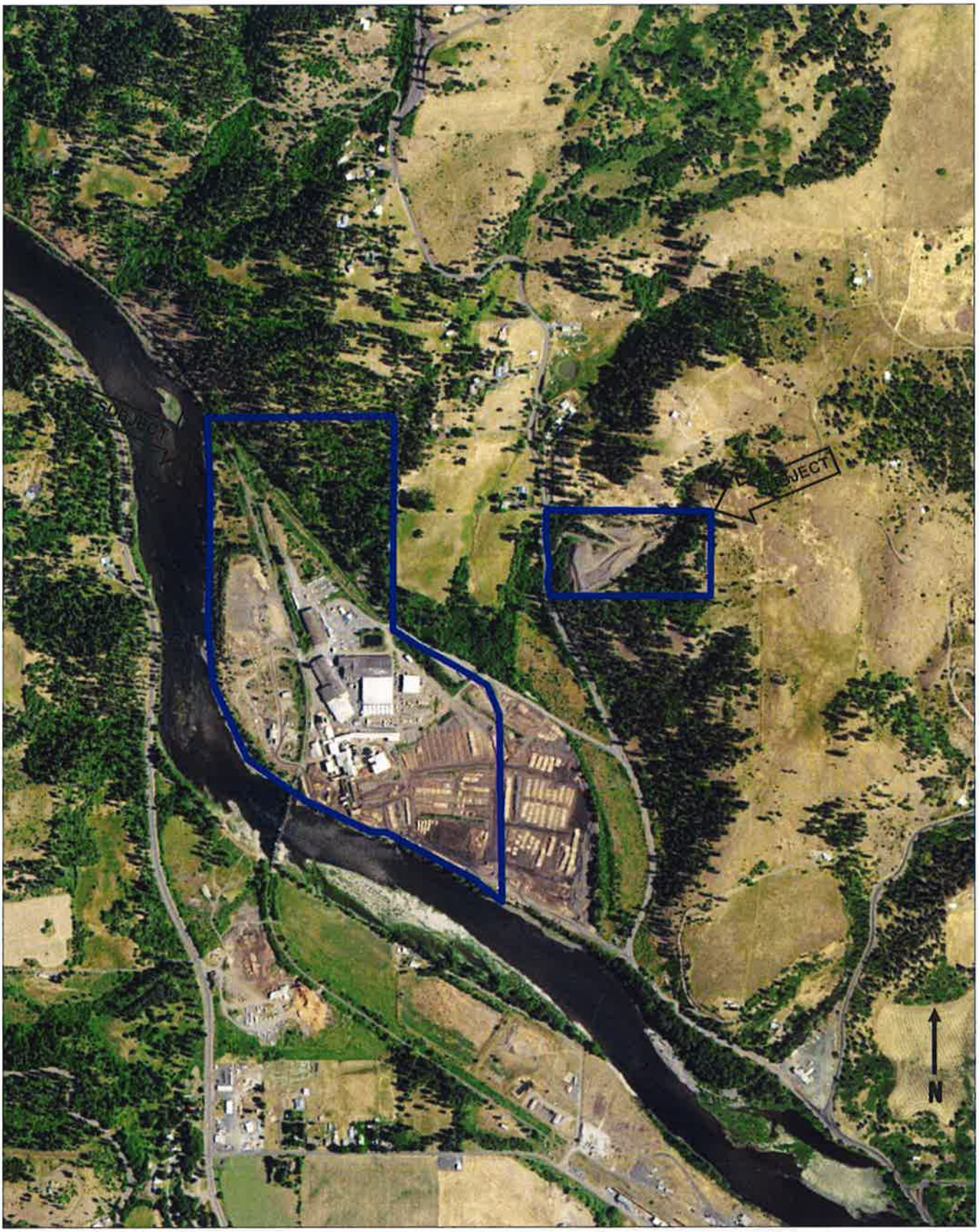
ASSESSOR'S MAP

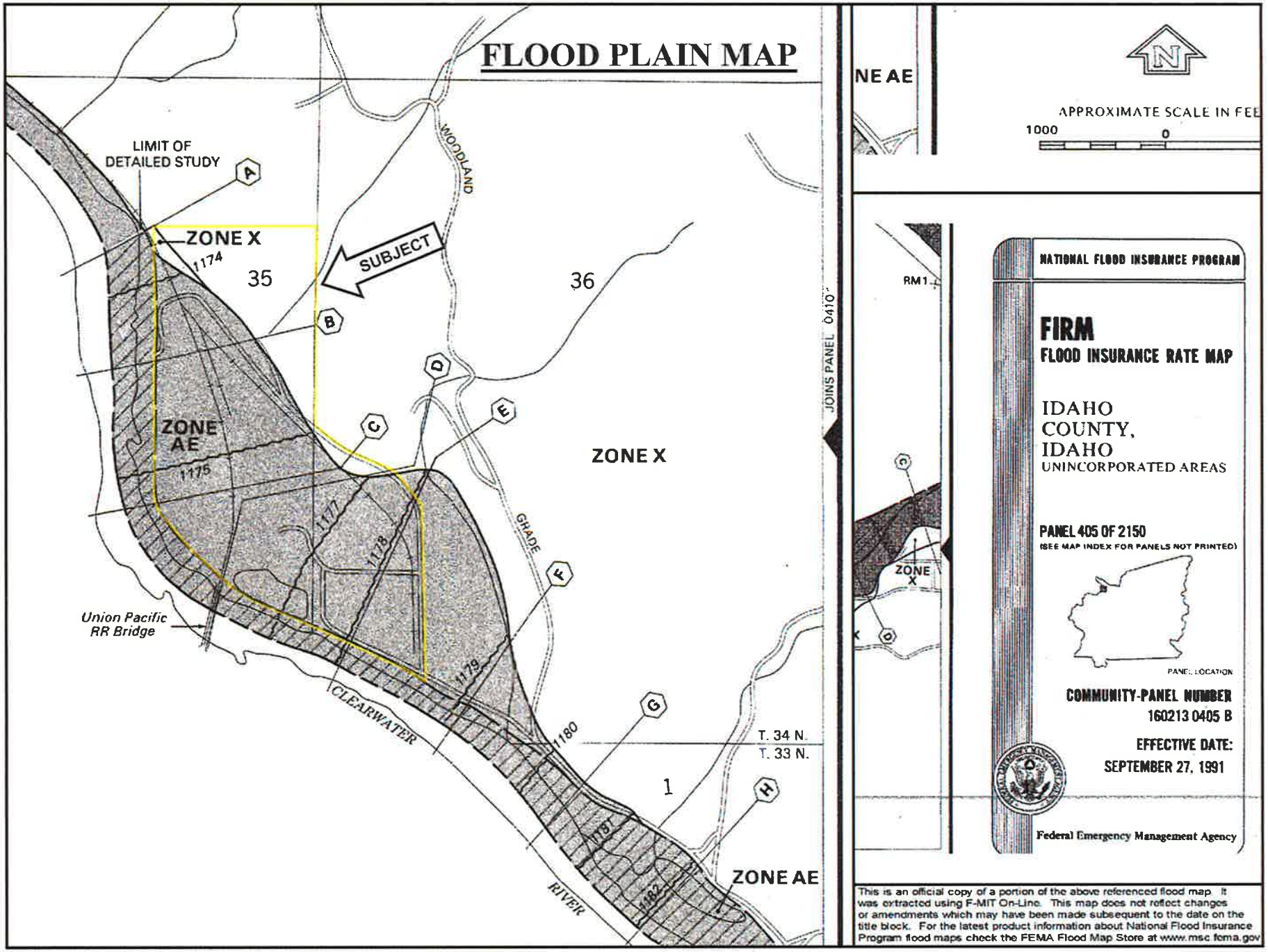


TOPOGRAPHY MAP



AERIAL PHOTO




FLOOD PLAIN MAP
LIMIT OF DETAILED STUDY
ZONE X
1174
35
SUBJECT
36
WOODLAND
JOINS PANEL 0410
ZONE AE
1175
1177
1178
ZONE X
GHADE
Union Pacific RR Bridge
1179
CLEARWATER
1180
T. 34 N.
T. 33 N.
1
1181
1182
ZONE AE
RIVER
NE AE
APPROXIMATE SCALE IN FEE
1000
0
RM1
ZONE X
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
IDAHO COUNTY, IDAHO
UNINCORPORATED AREAS
PANEL 405 OF 2150
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
160213 0405 B
EFFECTIVE DATE:
SEPTEMBER 27, 1991
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

F. NARRATIVE DESCRIPTION

1. LAND

The subject property consists of two non-contiguous parcels of land approximately 114.5 acres in total based upon assessment records and the legal description. The largest part lies along the river and has served as the site for a sawmill operation for many decades. The smaller portion lies about ¼ mile to the east along Woodland Road and has been used as a log yard waste landfill for many years.

The larger mill site property is about ½ mile north to south and 1,900' wide at its widest spot and encloses about 99.5 acres. The property is bounded by the Clearwater River on its west and south side, by Tribal Trust land along the southeast side, and by private land along most of the east and north lines. There is an active railroad right of way and railroad tracks that run through the western part of the property. The rail line here divides the property to some extent, but it also has provided a source of comparatively inexpensive transportation for finished lumber and/or logs at this location for decades.

Most of the mill site, about 85 acres, is nearly level land along a broad plain just above the river at an average elevation of about 1,175 foot. About half of the site has been utilized as log storage area and the other half supported the sawmill operation and related buildings. There is about 15 acres of land, all in the northeast corner, that slopes steeply up the hill to a maximum elevation of about 1,400 feet. The steeper land was once timbered and brushy, but was logged in recent years and involved in a wildfire last year, thus, the vegetation remaining is fairly sparse.

According to the Idaho County Soil Survey report, the soils on this property are Nicodemus loam, 0 to 7 percent slopes, and Gwin-Mehlhorn stony loams, 12 to 45 percent slopes. The Nicodemus soil is on the bench along the river and is a deep, well-drained loam soil underlain with very cobbly sandy loam soils. Since this property has been used as a log yard, the native soils have fill and log yard waste mixed in. The Gwin-Mehlhorn soils are located on the steep slopes and are shallower, well-drained stony loam soils underlain by clay loam and bedrock. Copies of the soil reports are contained in the Appendix.

I interviewed Mr. William Mulligan who has a long-term understanding of this site, having managed it more or less continuously since the early 1970s through the Potlatch Corp and Weyerhaeuser ownerships, Three Rivers Timber and Blue North ownerships, and now as a consultant to IFG. From that interview I learned several things about the subject property that I was unable to learn elsewhere. The mill site apparently flooded in about 1948, and following that flood, the USACE raised the dike along the north bank of the Clearwater River from the U.S. Highway 12 bridge downstream to about the north end of the mill site. The site has not flooded since, and according to Mr. Mulligan, when the water gets to within 5 feet of the dike, flooding begins to occur on the south side of the river where the banks are lower. The threat of this site to flood usually occurs when ice dams form downstream where the river narrows and backs up water toward Kamiah. The property remains in a FEMA designated 100 year flood plain, but from a practical standpoint, there is minimal if any potential for flooding on this site.

The log yard area has been filled and hardened. A mill pond was filled at some point in the 1980s near the southeast corner. According to Mr. Mulligan, the fill was engineered and compacted to support heavy loads for long-term use. Initially they started to get the fill material from the smaller piece of property, but after the initial removal of rock, they decided they needed a source with better quality rock and less clay, and most of the fill material was hauled from another Kamiah area rock source.

Please refer to preceding maps and photographs for additional detail.

The smaller property is a rectangle of about 15 acres in size and was excavated as a rock pit at some point in time and has since been used primarily as a waste landfill for log yard and sawmill waste. This property is about 587 feet wide measured north to south and extends east from Woodland Road about 1,125 feet. About half of the site, the area that is gentle enough to get dump trucks in and out, is covered with many thousands of yards of soil, rock, wood waste, and similar material. The rest of the site is quite steep. Elevations on this property are about 1,225 feet along the west edge at the county road and range up to about 1,450 feet at the highest point near the southeast corner. The center of this site has little vegetation because it has been excavated and filled, but the perimeter steeper areas were once lightly timbered and brushy. A wildfire in 2015 burned through this property and most of the vegetation here burned. There are a few trees remaining and some brush is regenerating, but it is not a particularly attractive property.

There are a few relatively level areas with native soil that are likely suitable for building, but most of the area is on fill and constructing buildings on uncontrolled fill is not typically recommended.

According to the Idaho County soil survey report, the soils are primarily Melhorn-Gwin loams, 25 to 65 percent slope and Jacknife silt loam, 7 to 12 percent slope. The soil survey indicates that these are moderately deep, well-drained silt loam and stony loams soils underlain with gravelly or stony clay loam subsoils and bedrock. This site has been manipulated significantly with the removal of rock and subsequent dumping of log yard waste, such that the soil survey is not very reliable. There are still some areas of native soil and solid ground, but much of the site is uncontrolled fill and is most likely not buildable in those areas. The detailed soil survey report is contained in the Appendix of this report.

The subject property does not have any city services available to it. In the rural area, water is typically obtained from drilled wells or developed springs, and sewage is disposed of using either conventional septic systems with drain fields or lagoon systems. This subject has drilled wells and a lagoon sewage pond. The only other public utilities available are electricity and telephone lines that are available on this property.

Woodland Grade Road is an all-season public paved road that runs by the subject and connects to U.S. Highway 12, about a mile east of the subject. The former BN railroad runs through the property, currently owned and operated by the Bountiful Grain and Craig Mountain Railroad. Rail service on this line connects to Lewiston where there are other shipping options available. The subject property has sidings and loadout areas designed to utilize the rails.

2. IMPROVEMENTS

All of the subject buildings are located on the Mill Site parcel. There are several former sawmill buildings. Following is a description of those buildings.

Building 1, Open Sided Lumber Shed – 120' x 120' x 24' high (14,400 sq ft). Open sided, steel frame building built on concrete piers. Gravel floor, clear-span web steel uprights, and low pitch gable style web

steel trusses, sheet metal roof. Heavy duty construction. Sound, solid building easily adaptable to multiple uses.

Building 2, Rough Dry Lumber Storage – 320' x 150' with 42' x 75' extension, 24' high (51,150 sq ft). Heavy wood post and beam structure built on concrete piers with painted plywood and metal siding. Arched truss roof with layered tar roof. Pole uprights on 20' x 24' and 26' centers, not clear-span. Asphalt floor. Solid building, but roof is in poor condition and damaged uprights have been replaced with steel or newer wood supports. Building is sprinkled throughout.

Building 3, Rough Dry Lumber Storage – 190' x 230' x 25' high (43,700 sq ft). Open sided, steel frame building with pole support uprights built on piers, not clear-span construction. Low pitch trussed roof with sheet metal roof cover, concrete floor. This is a solid building and adaptable to multiple uses.

Building 4, Planer Building. This structure is comprised of three sections, one of which had recently collapsed under heavy snow load and the others remain intact. Section A is collapsed and in the process of being removed. Section B – 150' x 100' x 26' high (15,000 sq ft). Heavy wood frame structure on concrete foundation and piers, concrete floor, partial painted plywood siding. Arched roof trusses on 20' centers with partial clear-span interior. Layered tar roof. Section C – 200' x 75' with 200'x 38' lean-to on south side (22,600 sq ft). Same construction as Section B. Lean-to portion has pit floor (4' deep) below planer equipment. Part of this building was heavily damaged from winter snow load. Section C has one damaged truss but was inspected by an engineer and the building is certified sound. This is a big heavy duty building that could be adapted as well.

Building 5, Finished Shipping – 260' x 75' x 24' high with 260' x 20' lean-to north side (24,700 sq ft). Heavy wood post construction on concrete foundation and piers, concrete floor. Open sided on north, painted plywood siding on other sides. Arched roof with layered tar roofing. This is a good, heavy, solid building adaptable to various uses. Building is sprinkled throughout.

Building 6, Dry Kiln – each 68' x 30' x 14' high (2,040 sq ft each). There are 7 of these side by side and 3 have been salvaged with 4 remaining intact. They all have the same construction, with heavy concrete foundations and floors, masonry block construction with insulated roof panels and a gable roof with metal

covers. They all have rails built into the floor to move loads of lumber in and out. These are special purpose buildings without much adaptability and 3 of them are partially demolished.

Building 7, Boiler Housing – 60' x 55', 55' x 40', 28' x 32' (6,396 sq ft). This is a two story, heavy masonry block building designed specifically to house the wood-fired boilers, electrical plant, and electrical shop. The buildings themselves are specialty design, with heavy concrete floors, heavy masonry walls, with metal roofs in poor condition. These buildings are not easily adapted to alternate use.

Building 8, Truck Shop – 55' x 50' x 16' high (2,750 sq ft). Concrete foundation and heavy floor, wood frame construction and wood siding, gable-style roof with galvanized metal cover. Slider doors on each end. 11' x 40' dock-high storage shed attached to south side, 10' x 25' fuel storage lean-to on west side. Lean-to has fuel containment compartments built into the foundation. Exterior needs paint.

Building 8A, Pressure Wash Shed – 30' x 12' (360 sq ft). Concrete foundation and floor, wood frame walls, insulated and wood sided, galvanized metal shed roof. This building houses hot water pressure wash equipment for washing heavy equipment. There is also a 90' x 22' graded slab and a 12' x 50' settlement basin to collect dirt/oil/debris from washing.

Building 9, Small Shop – 53' x 30' x 15' high (1,590 sq ft). Concrete foundation and floor, heavy wood frame construction with wood siding, gable-style roof with galvanized cover. Slider doors on front and south side. Simple, solid, rectangular shop building. Roof is in poor condition and exterior needs paint.

Building 10, Office – 52' x 48' (2,496 sq ft). Concrete foundation and floor, wood frame construction with wood siding. Hip roof design with flat roof center section, composite shingle, and built-up roof cover. Interior has center reception/clerical area with private offices on the outside perimeter. One bathroom and small kitchen area. Interior finishes are 70's and 80's vintage with drywall and acoustic tile ceilings, drywall and wood walls, carpet and vinyl floors. Average condition throughout.

Building 11, Office Trailer – 60' x 25' (1,500 sq ft). Mobile home office with skirted base. Inexpensive construction, wood frame with T-111 siding, low pitch metal roof. Interior has several offices with

composite panel ceilings, composite and drywall walls, and carpet floors. Fair to average condition throughout.

Building 12, Scale office – 20' x 24' (480 sq ft). Concrete foundation and floor, all open interior with wood ceilings and walls, and carpet floors. Houses electronics for 10' x 80' platform truck scale outside.

This property has an extensive water distribution system designed for fire protection in the log yard area and inside of lumber storage buildings. There is a pump plant located along the river where water is pumped from the river and either sprinkled with big gun impact sprinklers or pumped up the hill to a large round concrete reservoir. From there water is gravity fed back to a 1.6 million gallon lagoon with another pumping plant that supplies water to overhead sprinklers in the lumber storage buildings. This is an elaborate water distribution set up and it is my understanding that the fire suppression system inside the lumber storage buildings is in workable condition, but the pump plant and delivery lines that bring water from the river to the log yard and to the reservoir are in poor condition with numerous big leaks. The basic infrastructure is still there, but many repairs are necessary.

Sewage disposal on the site is by way of a lagoon system. I understand that all of the waste water from drains, rest rooms, sinks, and so forth make their way to a fenced lagoon that is located about 300 feet north of the scale office.

Storm water and waste water flows away from the site through drainage ditches and eventually into the river near the north end. There is a big natural spring that comes out of the hillside above the mill site, which feeds into the drainage way and dilutes the waste water coming off the site to some extent. Apparently the presence of this spring keeps water flowing, continuously flushing the drainage. Its presence has assisted in the monitoring of the quality of water running off the site and EPA records indicate that the standards for waste water quality have never been exceeded (based upon statements in the Phase 1 ESA and interview with Bill Mulligan).

There are other buildings on this property. At the time of my first inspection, the subject property had recently experienced a fire in the old sawmill and a collapsed roof on the east end of the Planer building. The sawmill, a big steel frame building that was used for waste wood materials, and other structures were in

the process of being dismantled as they had been purchased at auction last fall. As a result of a long and difficult winter, the contractor was behind schedule. It is my understanding that those buildings belong to the contractor who will remove them as soon as he is able.

G. ENVIRONMENTAL STATEMENT

Historically, the subject property has been utilized as a site for a sawmill, and as such, various fuels, lubricants, solvents and other chemicals have been used at least for at least the last 70 years. In my inspection of the property, I observed places where above ground storage tanks had been or still were in place, full and empty cans, jugs, drums and totes, all of which appeared to have been appropriately housed in designated locations. I did not note any specific signs that made me suspect environmental contamination.

A Phase 1 Environmental Assessment Report was provided to me in the course of my work. This report was prepared for Idaho Forest Group LLC, by Farallon Consulting on June 9, 2016. This report discusses a lot of potential sources of hazardous substances on this property and it discusses some specific incidents and previously identified problems that seem to have been remediated. It does not identify any specific serious current problems. It identifies the following recognized conditions:

- The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products associated with lumber mill operations on the Site;
- The known presence of asbestos in building materials at the Site;
- The potential release of hazardous substances in connection with the boiler ash waste pile historically placed on the north-central portion of the Site;
- The potential release of hazardous substances in connection with the unknown source and content of material used to fill the former log storage pond on the south-central portion of the Site; and
- The potential release of hazardous substances in connection with historical wood waste landfilling on the eastern portion of the Site.

I am not an expert in the identification of hazardous materials, but based upon what is I saw in my inspection and the information presented in this report, this site does not seem to possess any really alarming environmental problems. There are some unknowns here, but they are not significantly different from those found on any number of other long-term industrial sites. Perhaps the known presence of asbestos in several of the buildings is the most concerning condition and that is not an urgent problem. Disposing of the

asbestos in a proper manner is something that someone will have to deal with sooner or later, but if those buildings continue to be used, it might not need to be dealt with for 20 years or more. Thus, the appraisal assumes there is no serious environmental contamination present on the property. An informed purchaser of an industrial site should and would expect some concern for spillage of various petroleum products, or releases from uncontrolled fill, and wood waste material as is present here, but it is not more significant that what an informed purchaser would expect. Should the reader of this report require further investigation into this matter, a more detailed environmental assessment is recommended.

H. ASSESSED VALUES AND TAXES

The subject property is assessed as follows:

2016 Assessed Value and Taxes			
Parcel Number	Total Acres	Assessed Value	Taxes
RP34N03E350300A	11.02	$27,585	$85.48
RP34N03E351950A	3.00	$7,425	$23.00
RP34N03E352110A	56.31	$1,011,685	$4,186.78
RP34N03E364511A	15.00	$44,550	$148.56
RP34N03E365600A	29.16	$72,171	$223.64
Totals:	**114.49**	**$1,163,416**	**$4,667.46**

I. ZONING/LAND DIVISION

The subject property lies in Idaho County. Idaho County currently has no zoning, therefore, is not subject to zoning regulations. Under ordinary circumstances it would be subject to Idaho County subdivision requirements. The Idaho County Subdivision Ordinance, originally adopted in 1983, states that any division of an original parcel into five or more parcels is a subdivision. A new ordinance, Ordinance No. 59, Subdivision Regulations for Idaho County, was adopted in October 2010 and provides some additional clarity. Since this is an Indian Allotment, it is also exempt from any land use planning ordinances imposed by local government. So, there really are no land controls on this property.

J. FLOOD ZONE DESIGNATION

The subject lies along the Clearwater River and according the FEMA Flood Insurance Rate Map, Panel 160213 0405B, much of the subject property lies in a Zone AE. This indicates that the property is within a 100 year flood hazard area with base elevations determined. The base flood elevations vary from 1,174' at the north end to 1,179' at the south end. The elevations of this property appear to range between 1,160' and 1,185', based upon Google Earth mapping and USGS 7.5 min topographic map. According to all sources that I have consulted, the last time this property flooded was in the 1940s. Sometime following that event a dike was built from the south end to the railroad tracks, and the raised elevation of the railroad together with the dike has prevented any flooding. Nonetheless, FEMA has this designated as a flood area and any new structures that are built will have to be built 1' above flood elevation to be eligible for flood insurance as I understand the rules.

In reality this property has not flooded in over 72 years and probably will not flood again due to the dike that has been built. The dike is not a "federally controlled levee" and is not recognized as such, but it is in place and apparently has prevented flooding for many years. The flood status exists here, but I expect that like a lot of similar sites, the cost of purchasing flood insurance is simply a cost to do business. It may be possible to complete some elevation surveys to demonstrate that the property is out of the flood plain, but it might get expensive to do the type of engineering study that FEMA may require to remove a flood plain designation.

K. WATER RIGHTS

The subject has two decreed water rights on file according to the Idaho Department of Water Resources (IDWR).

WR #84-04052 is an industrial and fire protection right for a total of 14.69 CFS from the Clearwater River, tributary to the Snake River. This right has a 6/1/1947 priority date with year-round use.

WR #84-04053 is a domestic right for 0.18 CFS, a groundwater right from a well. This is also a year-round right with a 6/1/1953 priority date.

These are substantial water rights that have been used more or less continuously for the sawmill operation for several decades. My inquiries with the IDWR indicate that continuing the rights in their present capacity would certainly be permitted and that changing the use of the right to a different industrial use is likely, although if it somehow enlarged the water right in some way, it might not be permitted. There also might be some way to move the right to another location within the basin for another use, but again, public hearings would be required and anything that increases or enlarges the water right is not likely to be permitted.

Water rights in Idaho are subject to forfeiture after 5 or more years of non-use, so if the water rights go unused, they are likely no longer valid. IDWR has a water bank that allows water rights to be "banked" during periods of non-use. The bank essentially stops the clock on the 5 year period while the rights are banked. Water cannot be used during the contract period unless there is a water lease arrangement made prior to the right being banked. There is a scheduled fee for banking water rights and a scheduled lease rate for water as well. This is not regularly employed in this region because it is usually used in conjunction with irrigation water rights that are much more common in more arid areas of the state where irrigation is common.

L. EASEMENTS

Typical utility and right-of-way easements exist on the property. There are county road, power line, and telephone rights-of-way that impact this property. All of these easements appear to benefit the property and are not perceived as an adverse condition.

There is an easement to the railroad which bisects the subject property. This is a mutually beneficial condition. Industrial sites with access to rail are viewed positively and nothing about the railroad easement is seen as an adverse condition at this point.

M. LEASES

To the best of my knowledge there are no leases in effect on any part of the subject property. The sawmill equipment, building, and a couple of other buildings were sold at auction and the buyer was still in the process of removing these items. The buyer has been delayed by a difficult winter among other things and according to IFG will be granted extensions to finish salvaging and removing the items.

SECTION IV

VALUATION PROCESS

A. HIGHEST AND BEST USE AS IF VACANT AND READY TO BE PUT TO ITS HIGHEST AND BEST USE

Highest and best use, as used in this report, is defined as: "The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value." The four criteria that highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

The first test of highest and best use is legal permissibility. The subject property lies in Idaho County, which currently has no zoning ordinance; therefore, from a legal standpoint, there are almost no constraints on the property, other than state and federal statutes. The county does have a subdivision ordinance; however, it is relatively easy and inexpensive to plat a subdivision in this county. Therefore, it could be subdivided into lots as small as the developer desires. The only real constraints on lot size are health department regulations, which specify that a dwelling unit can be constructed only if there is sufficient space to site a septic system (normally one acre or larger) and since this property lies along the river, setback regulations for septic systems would have to be followed. All of the historical uses of the subject property are legally permissible. Those uses include agricultural and grazing uses, a sawmill site, and residential uses, as well as recreational use, such as fishing, hunting and hiking, and a host of other potential uses.

The second test of highest and best use is physical possibility. The subject property is comprised of two proximate, but non-contiguous blocks of land near Kamiah. In terms of physical restrictions, the most severe limitation is some steep slopes on both parcels. Both parcels have legal access either directly from the county road or by way of an easement. The larger mill site has the advantage of having the railroad pass through it and have developed load-out spurs adjacent to the railroad line.

Both parcels have significant areas that have been filled and are likely to have questionable stability for construction of buildings. Certainly there are areas that could be built upon on both parcels, but without significant study of individual sites, there are likely to be large areas that are not well suited for placement of any kind of structures.

Most of the property near the river lies in a 100 year flood plain. This property was diked nearly 70 years ago and according to all sources, has not flooded since the dike was raised, still it remains in a FEMA flood plain, and no one at FEMA seems interested in exploring whether or not it is still appropriate to call this a flood plain area. One thing is for certain, if a lender is involved in any structures, they will require an elevation survey to ascertain that the ground floor is at least 1foot above the base flood elevation and flood insurance must be maintained. This is not a requirement for property that is not financed with federally related funds, so an owner with cash could build on this property without obtaining flood insurance. In the past, and on similar industrial sites, the added cost of flood insurance has just been viewed as a cost to do business. The real risk of floods on this property seems really very minimal, but flood insurance will be necessary for anyone who requires financing. The predominant uses seen in this area include single-family rural homesite development, livestock grazing, hay production, timber production, recreation, various industrial uses and governmental uses, all of which are physically possible on the subject property.

The third test of highest and best use is financial feasibility. Generally speaking, in transitional areas such as the subject, where historical uses are being replaced by recreational, residential, or other related uses, buyers do not acquire properties purely on an immediate financial basis. This property is different from most of the local sales because it has historically and likely will continue to be used in a commercial or industrial use. There are very few local comparisons of this type of property available in any marketing period. On a regional basis there are numerous rural industrial site examples that at least resemble this property. There are sawmills, concrete plants, pulp mills, fiber or log storage yards, ammunition and/or firearm manufacturers, biomass sites, fertilizer plants, and a host of other potential industrial uses.

The most likely alternate use of this site is some sort of residential development that would take advantage of the river frontage. I do think that there is some potential for that use, even if it is limited to only part of the property, but there are large areas of mostly uncontrolled fill which would require extraordinary design if one intended to develop the property into housing. In addition to that, there is limited demand for new housing in the Kamiah area, even if it is housing that fronts along the Clearwater River. 115 acres is a lot of land to absorb in a weak residential market. Residential use of some sort may be legally and physically possible, and possibly even financially feasible. All of these uses are present in the regional marketplace and apparently are at least somewhat financially feasible, based upon an individual purchaser/investor's desire or intended use.

The final test of highest and best use is maximum profitability. There are a variety of reasons why people purchase both large and small properties in this market; If this property were just a vacant bench along the river and above the flood zone elevation, I think that there is little doubt that the climax use of the subject property would likely be recreational or residential homesites developed to the maximum density that the market would bear. If this property were located next to a town with higher population density then residential development would be a likely highest and best use.

The property's historical use as a sawmill coupled with the flood plain issues tend to limit the appeal as a residential development. There is simply insufficient demand and too many environmental issues, a flood plain designation, and areas of fill that would have to be dealt with in order for an investor to recognize this property as a prime development site. Industrial users have a higher tolerance for the kind of risks that this property possesses. The biggest question is what is the ideal use of the property. It is unlikely that it would be redeveloped back to a sawmill. The last two attempts at that failed on this site, and the region-wide trend is for older smaller mills to be redeveloped. In a place like Coeur d' Alene, Post Falls, Sandpoint, or other large population base or recreational destination, mill sites along watercourses have been redeveloped into upscale residential areas with docks and marinas. In less populated areas, they are normally redeveloped into various different types of industrial or commercial sites or some combination of commercial/industrial and residential development. This site has the benefit of rail access, which would allow transport of finished goods by rail to Lewiston where other rail or barge facilities are available. It also has a substantial industrial water right that is likely convertible to some other industrial use. I cannot say with any degree of certainty what the ideal industrial use for this site may be, but in my view, the site is large enough that it is likely a single buyer would not occupy the entire site. They may divide it up and resell portions or lease out portions to other users.

After careful consideration of the four tests of highest and best use, it is my opinion that the highest and best use is an industrial site or combination of commercial/industrial and residential development.

B. HIGHEST AND BEST USE AS IMPROVED

The subject property is improved with a number of buildings that were formerly used in connection with a sawmill. There are office buildings that are easily adaptable to a variety of occupancies and there are very large lumber storage sheds that are also adaptable to other uses. These large buildings have issues of their own; the planer building and a couple of lumber storage building all contain asbestos in their roofs, and someday there will be a significant cost to dispose of that roofing material. IFG estimates that the cost to dispose of the asbestos if the planer building were demolished is about $150,000. That amounts to over $6.50 per sq. ft. These buildings are all sound structures that may be usable for many years, perhaps decades, before the time comes when someone has to abate the asbestos. The planer building also has varied floor heights that compromise its utility for other purposes to some extent. Almost all of the buildings have significant physical deterioration and really need some repairs and paint, but they are generally very stout, strong buildings which may or may not have a practical alternative use. Buildings like these can be re-used as is as storage warehouses, converted to shops or manufacturing spaces, or some similar use. In reality, their value contribution is likely only a fraction of the cost to replace them with a similar structure. Still, they are not just worthless liabilities and some enterprising investor is likely to purchase them along with the land willing to gamble that he can put them to use or find someone to lease them.

I do not think that the presence of the buildings changes the highest and best use, but it may alter the potential user's ideas because there are very large, existing buildings that can be used as is or modified for a specific use. Again, I cannot specify the ideal use of this property as improved, but it is my opinion that the highest and best use is an industrial site or combination of commercial/industrial and residential development.

C. SALES COMPARISON APPROACH

The Sales Comparison Approach is the primary method of valuation in this appraisal. This approach is based upon the Principle of Substitution, which implies that a prudent person will not pay more to buy a property than it would cost to buy a substitute property. In this approach, the subject property is compared to other similar properties that have sold or are offered for sale. Data for generally comparable properties are used and adjustments are made to the sales in order to equate them to the subject to demonstrate the most probable price for which the subject property should sell. The Sales Comparison Approach employs direct comparisons with other transactions based on a common unit of comparison; in this case, price per acre.

Within the immediate area, there really are no comparable sales or listings that are truly comparable to the subject on an overall basis. There are sales of small industrial properties inside or adjacent to the city of Kamiah, sales of farmland with residential development potential near Kamiah, and even some small rural commercial/industrial sites. There are no large site sales with the kind of attributes and use potential present on the subject. Since there are no sales that are just like the subject, I am forced to use the data that is available and form my opinion of value from that data. Because there are no perfect comparisons, I have considered a large number of potentially comparable sales initially. I expanded my sales search to include similar areas in north-central Idaho, as well as southeastern Washington and northeastern Oregon. Initially, I considered in excess of 30 comparable sales, some of which were old enough that I decided to exclude them from further consideration. Following is a summary of the sales that I have considered with sale dates occurring between December of 2009 and the present time:

COMPARABLE SALES SUMMARY								
No.	Subject	1	2	3	4	5	6	7
Name	Blue North Mill Site	Confid	Columbia Pulp	NW Biomass	Confid Offer	Wallowa FP	Twin City Foods	Seekins
Location	Kamiah		Lyons Ferry	Potlatch	N ID	Wal owa OR	Lewiston	Lewiston
Price			$565,000	$96,010	Confid	$600,000	$435,792	$710,000
Date		Spring 2012	Current Option	Sep-15	Current	Jun-13	Jan-10	Aug-13
Size (Ac.)	114.50	60 +/-	449.00	10.00	40+/-	77.21	24.11	40.20
Overall $/Ac.		$10,250	$1,258	$9,601	$6,000	$7,771	$18,075	$17,662
Improvement Allocation		$0	$0	$0	$0	$240,000	$0	$0
Land Allocation: Overall $/ac		$10,243	$1,258	$9,601	$6,000	$4,663	$18,075	$17,662
Usable Land $/ac 100 acres		$13,885	$9,000	$9,601	$6,000	$4,663	$18,075	$17,662
Surplus Land $/ac 14.5 acres		$1,000	$500					

COMPARABLE SALES SUMMARY (Continued from above)							
No.	Subject	8	9	10	11	12	L1
Name	Blue North Mill Site	Blue North	IFG	Confid	Uhlenkott	Ben Paul	Cataldo List
Location	Kamiah	Kamiah	Kamiah		Grangeville	Grangeville	Cataldo ID
Price		$2,650,000	$1,985,000		$550,000	$450,000	$375,000
Date		Aug-10	Sep-06	Spring 2016	Dec-09	Mar-10	Current
Size (Ac.)	114.50	114.50	114.50	30 +/-	109.31	58.33	46.08
Overall $/Ac.		$23,144	$17,336	$5,052	$5,032	$7,715	$8,138
Improvement Allocation		$2,265,000	$500,000	$0	$0	$187,000	$0
Land Allocation: Overall $/ac		$3,362	$5,178	$5,156	$5,032	$5,026	$8,138
Usable Land $/ac 100 acres							
Surplus Land $/ac 14.5 acres							

While I do not think all of these sales are truly comparable, it is important to consider all data that might pertain to the subject and it is important that the reader understand the extent of the market data. The sales display a wide range in price, varying from $96,000 to $2,650,000 in terms of gross price, or in terms of unit pricing, $1,258 per acre on the low end to $23,144 per acre on the high end. Gross price is not an accurate measure because there is significant variability in size amongst the sales. Even the unit pricing is somewhat misleading, because some of these sales have significant improvement or personal property components that skew the overall price per acre. For example, Sale 8, Blue North, is a previous sale of the subject from August of 2010 that included over $1.5 million in sawmill equipment, rolling stock, and personal property. Without those items the overall unit price is more like $9,914 per acre.

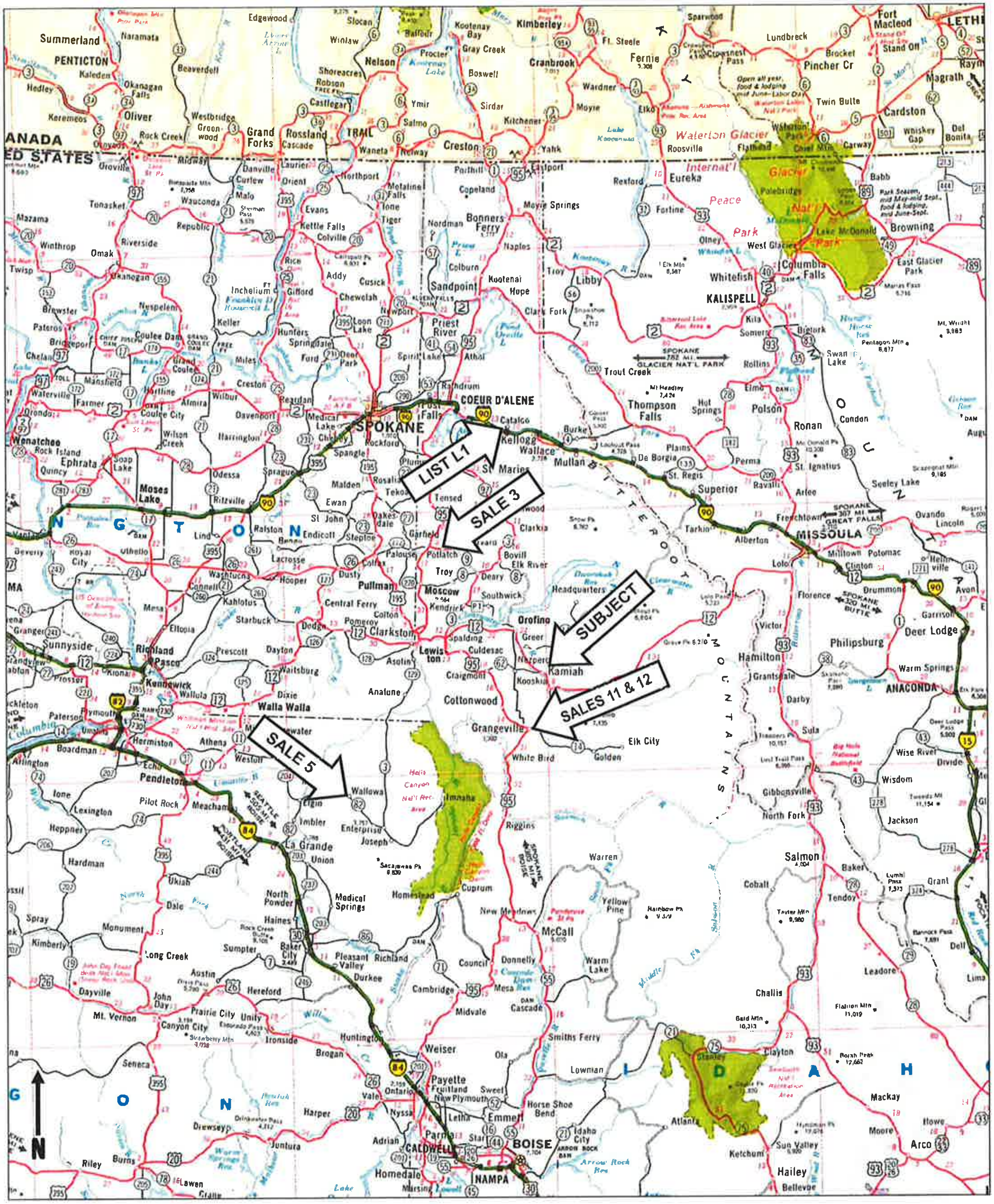
In the chart above the sales are not arrayed in any particular order. Generally, as I analyze the sales, those with the highest unit price ($/ac) are the smaller sales, those with higher degrees of immediate commercial or industrial use potential, or those with significantly valuable improvements. Without considering Sale 8 again, the next highest sale is Sale 6, Twin City Foods at $18,075 per acre. This sale is adjacent to the Port of Lewiston and had most of the infrastructure present for immediate development. This property will require some excavation, but it is all close to Lewiston and none of it is within a flood zone. It is also only 24 acres in size, thus, is superior to the subject in almost every way. The next highest sale is Sale 7, Seekins, at $17,662/ac which is a 40-acre site adjacent to the Lewiston Airport and the Port of Lewiston's Southport industrial area. This sale had all of the city infrastructure available and continues to expand with various manufacturers relocating or expanding in that area. The higher examples are all much superior to the subject and easily eliminated as true comparisons for the subject property. There simply is no way that the subject property, a site of 100 usable acres with minimal infrastructure, near a small rural community and a flood plain designation has market value at the level of these generally smaller, more desirable and superior sales. In my opinion the subject property has market value at a level significantly less than $17,662/ac.

On the other end of the spectrum, Sale 2, Columbia Pulp, is a site that is under contract for $1,258/ac but only 10% of the site is really usable industrial land and that part of the property is allocated at a price of $9,000/ac while the surplus land is allocated at only $500/ac. Likewise, the land allocation on Sale 8 at $3,362/ac is likely much less than it should be, because that sale of the subject was a negotiated sale from a motivated receiver following a bankruptcy.

That leaves the middle group of transactions that range from $5,052 per acre up to $10,250 per acre that I believe is the appropriate valuation range for this subject property. There are eight transactions in that grouping and I believe that while none of these is an ideal match for the subject, they all offer some reasonable comparisons. The sales are separated from the higher and lower indications as shown in the following chart. A Sales Index Map showing the location of each sale in relation to the subject is shown on the page following the chart. Individual sale write-ups for these comparisons are contained in the Appendix of the report.

COMPARABLE SALES SUMMARY									
No.	Subject	1	3	4	5	10	11	12	L1
Name	Blue North Mill Site	Confid	NW Biomass	Confid Offer	Wallowa FP	Confid	Uhlenkott	Ben Paul	Cataldo List
Location	Kamiah		Potlatch	N ID	Wallowa OR		Grangeville	Grangeville	Cataldo ID
Price			$96,010	Confid	$600,000		$550,000	$450,000	$375,000
Date		Spring 2012	Sep-15	Current	Jun-13	Spring 2016	Dec-09	Mar-10	Current
Size (Ac.)	114.50	60 +/-	10.00	40+/-	77.21	30 +/-	109.31	58.33	46.08
Overall $/Ac.		$10,250	$9,601	$6,000	$7,771	$5,052	$5,032	$7,715	$8,138
Improvement Allocation		$0	$0	$0	$240,000	$0	$0	$187,000	$0
Land Allocation: Overall $/ac		$10,243	$9,601	$6,000	$4,663	$5,156	$5,032	$5,026	$8,138
Usable Land $/ac 100 acres		$13,885	$9,601	$6,000	$4,663				
Surplus Land $/ac 14.5 acres		$1,000							

SALES INDEX MAP



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COMPARABLE SALES DISCUSSION

The market data is rather dissimilar and there are few classic market pairings that can be made with this data. Things that seem to influence prices in this market typically include sale conditions, date of sale, location, zoning, availability of infrastructure, property size, topography, and soil characteristics. Sale conditions are typical on all of the sales. None were sold by unduly motivated sellers, nor were there any extenuating circumstances or highly motivated buyers.

The dates of sale range from late 2009 through early 2016. There is nothing in this set of data that demonstrates a significant decline or increase for rural commercial/industrial property in this time frame. There has never been what I would consider substantial demand for rural commercial/rural industrial property in this region. Occasionally someone steps in with a specific use on a specific site, but more often the purchases are somewhat speculative, therefore, values do not ramp up significantly as they might in an urban area. I have no basis to make a quantifiable adjustment for date of sale on any of these sales. I do believe the market has been comparatively stable throughout this time period. Even so, I do not rely as heavily on the older sales as I do the newer ones, but no specific adjustments are made.

Location differences are apparent on the higher priced properties that I have already eliminated. Several sales are located near or inside the city of Lewiston with clear zoning regulations and complete infrastructure present on each of those sales. Location differences are far less obvious in the nine sales displayed above. Sale 1 is relatively near to Lewiston, so it clearly has a locational advantage. Again, there is not consistent and significant enough data to make a quantifiable location adjustment to the sales.

Zoning is an important attribute amongst industrial sales in certain counties. All of the sales that occurred in Idaho County have no zoning – the buyers of those properties are able to do just about whatever they want because there is no zoning code. Most of the sales have zoning that allows for a wide variety of uses, and commercial or industrial uses along highways are typically permitted without much discussion. Again, I am unable to extract a quantifiable adjustment to the sales using the data available. I can only opine that one sale is inferior, superior, or equal to another in terms of zoning.

The physical characteristics of the sales versus the subject are substantial and include availability of infrastructure, property size, topography, and soil types. Once again, this is all fairly subjective in terms of making adjustments to the data. Clearly size is an important criterion. There is a tremendous difference in price per acre when comparing large sites to small sites. However, in the eight market examples arrayed above, the site size varies from 10 acres to 110 acres, and the size differential is much harder to isolate. In fact, it is probably less important than are other characteristics.

Sale 1 – Confidential 1 is a spring 2012 sale of 60 +/- acres of near level land along a north Idaho river near a large population base. This property was formerly used as a sawmill site and had a big log yard and sawmill buildings at one time. The property is mostly located out of the flood zone and has a small quantity of steep land south and west of the highway. This property was purchased to develop at some point in the future. The property is similar to the subject in the fact that it sits along the river and has rail service running through the property. This sale is better located as it is close to a significant population base, superior for size, and inferior for zoning. The sale did not have any structural improvements and is slightly inferior in that regard. On an overall basis, it indicates a value slightly greater than $10,250/ac.

Sale 3 – Northwest Biomass is part of an old Potlatch Corp mill site at Potlatch, Idaho. The city of Potlatch sold this 10-acre site in September of 2015 to a buyer who is just now completing construction of a biomass facility where they intend to manufacture wood pellets. This property is slightly superior for location in Potlatch. It is similar in zoning, much superior for size as it is a small site, and superior for infrastructure and soils as the city utilities were available and the site was not fill. The sale did not have any structural improvements and is much inferior in that regard. The sale is is slightly inferior overall and indicates a value greater than $9,601/ac.

Confidential Pending Sale 4 – N. ID is a current offer on a 40 +/- acre mill site. The potential buyer intends to construct a commercial biomass facility on this site. The offer is contingent on upgrading several miles of rail so that the manufacturer can load bulk industrial pellets directly into rail cars. This is a slightly superior location, has similar zoning, is a smaller thus superior site, small town infrastructure is available to the site, and most of the area is out of the flood zone. The topography and soils are level throughout and it is somewhat superior in this regard as well. This sale has no structural improvements, thus, is inferior to the subject. On an overall basis, it is inferior to the subject and indicates a value much greater than $6,000/ac.

Sale 5 – Wallowa FP is a June 2013 sale of a 77.21-acre former sawmill site near Wallowa, Oregon. The buyer worked with an Oregon Economic development agency and developed a biomass facility on the site using existing buildings and adding some new structures. This property is similarly located, is only slightly smaller, has similar zoning and infrastructure, and the terrain is slightly superior to the subject. The sale had some similar improvements, but not quite to the level present on the subject. On an overall basis, this sale is inferior to the subject and provides a value indication greater than $7,771/ac.

Sale 10 – Confidential 2 is a March 2016 sale of a 30 +/- acre former mill site purchased by an investor buyer who had undisclosed ideas for the site. This property lies along a small North Idaho river and has no rail service. It is a smaller site, thus, is superior for size. The location is inferior to the subject and the zoning is similar. Most of this property was located in the flood plain and it had similar fill and topographical qualities. This sale had minor structural improvements that were much inferior to those on the subject. The sale is inferior to the subject on an overall basis, leaving a value indication much greater than $5,052/ac

Sale 11 – Uhlenkott is the December 2009 sale of 109.31 acres of farmland located adjacent north of the Grangeville airport. This property was purchased in a 1031 exchange with the buyer speculating that he could resell at either a higher price or trade into something else. The property was outside the city, but was adjacent to the airport and some of the market participants were speculating that the airport might purchase the property or it could be developed into some sort of airport-related housing development. Neither of these things developed and the property is still undeveloped. No city infrastructure is available to this property. The property has a little superior location being next to Grangeville, similar size, zoning, and infrastructure, but is superior in topography. This property has no structural improvements, thus, is inferior that regard. On an overall basis, the sale is inferior to the subject indicating a value much greater than $5,032/ac.

Sale 12 – Ben Paul is the March 2010 sale of 58.33 acres adjacent to the Bennett Forest Industries sawmill (now Idaho Forest Group) at Grangeville. This was marginal farm and grazing land with a nice home purchased by the sawmill to expand their operations. The buyers simultaneously sold the home and 5 acres. This property was slightly superior for location near Grangeville. It is similar in zoning and infrastructure.

It was a little smaller and had better terrain overall thus is superior. The sale had improvements but they were not as extensive as those on the subject thus are inferior. On an overall basis, this property was inferior to the subject and provides a value indication greater than $7,715/ac.

Listing 1 – Cataldo is the current offering of a 46 acre former sawmill site along the Coeur d'Alene River. This property has been on the market for a few years and has not sold, thus is likely overpriced. It has known lead contamination issues from the Superfund site designation on that river and most of it lies in the flood plain. This area has considerably higher recreation influence and the river frontage is an attraction to residents of the Spokane/CDA area. So, the listing is superior in location, size, and terrain, similar for infrastructure, but is inferior for its lack of structural improvements. On an overall basis, the sale provides a value indication greater than $8,138/ac.

The foregoing comparisons are shown in the following Comparable Sales Grid.

SALES COMPARISON GRID

No.	Subject	1	3	4	5	10	11	12	L1
Name	Blue North Mill Site	Confid	NW Biomass	Confid Offer	Wallowa FP	Confid	Uhlenkott	Ben Paul	Cataldo List
Location	Kamiah		Potlatch	N ID	Wallowa OR		Grangeville	Grangeville	Cataldo ID
Date		Spring 2012	Sep-15	Current	Jun-13	Spring 2016	Dec-09	Mar-10	current
Size (Ac.)	114.50	60 +/-	10.00	40+/-	77.21	30 +/-	109.31	58.33	46.08
Adjustments									
Overall $/Ac.		$10,250	$9,601	$6,000	$7,771	$5,052	$5,032	$7,715	$8,138
Terms									
Adj. Price		$10,250	$9,601	$6,000	$7,771	$5,052	$5,032	$7,715	$8,138
Time		Sim	Sim	Sim	Sim	Sim	Sim	Sim	Sim
Adj									
Time Adj. Price		$10,250	$9,601	$6,000	$7,771	$5,052	$5,032	$7,715	$8,138
Phsycial Characteristics:									
Location		Sup	Sl Sup	Sl Sup	Sim	Sl inf	Sup	Sup	Sup
Zoning		Inf	Sim	Sim	Sim	Sim	Sim	Sim	Sim
Size		Sl sup	Sup	Sl Sup	Sim	Sup	Sim	Sl Sup	Sl Sup
Infrastructure		Sim	Sup	Sup	Sim	Sim	Sim	Sim	Sim
Topog/Soils		Sim	Sup	Sup	Sup	Sup	Sup	Sup	Sup
Improvememnts		Inf	Inf	Inf	Sl Inf	Inf	Inf	Inf	Inf
Overall		Sl Inf	Sl Inf	Inf	Inf	Inf	Inf	Sl Inf	Sl Inf
		Sl Gr than	Sl Gr than	Gr than	Gr Than	Gr Than	Gr Than	Gr than	Gr than
Ind. Value ($/Ac.)		**$10,250**	**$9,601**	**$6,000**	**$7,771**	**$5,052**	**$5,032**	**$7,715**	**$8,138**

SUMMARY

After qualitative analysis of the sales, two sales points to a value much greater than $5,052 per acre, three examples indicate value greater than $8,138 per acre, and two sales suggests value near or slightly greater than $10,250 per acre. There is no one sale that I am able to say is better than all of the others, but Sales 1 and Sale 5 are in my view the best comparisons in most regards to the subject. After careful analysis of all the available data, my best estimate of market value of the subject property on an overall basis is ---------- $10,500 per acre

Subject Property: 114.5 acres @ $10,500 per acre ---------- $1,202,250
Rounded ---------- $1,200,000

D. COST APPROACH

The Cost Approach is a valuation technique which relies upon a market value estimate for land, considered as if vacant, plus a depreciated replacement cost estimate for the improvements.

1. LAND VALUE

There really are not any other sales that are useful for evaluating the value of the subject land beyond those sales that are presented in the Sales Comparison analysis. Those sales, which are arrayed on page 74, show land value indications on industrial sites that vary from about $3,362/ac up to $18,075/ac. The sales that appear most comparable to the subject have land value indications ranging between $4,663 and $10,250/ac. The sales on the high end of that range include Sales 1, 2, and 4 which are generally closer to population centers, much smaller, entirely out of the flood plain or a combination and are in my mind clearly superior to this subject property land. There are several sales with land values indicated at between $5,000/ac and $6,000/ac for mostly flat and usable land. The best land on the subject resembles the sales within this range. Given the proximity of the subject to the Clearwater River, U.S. Highway 12, and easy access to rail, I am inclined to estimate that land class at the top at that range at $6,000/ac.

The subject also has a small quantity of land that is considerably steeper with much more limited utility and that class of land is represented by two of the sales at between $500/ac and $1,000/ac. The lower end of that range is represented by a property that was mostly steep land and the upper end represented by a very comparable property with a small quantity of steep land. Because of that, I am inclined to conclude the steeper land on the subject at $1,000/ac.

LAND VALUE ESTIMATE CALCULATION:

100 Acres @ $6,000/Ac	$600,000
14.5 Acres @$1,000/Ac	$14,500
Total Land Value	$614,500

2. IMPROVEMENTS VALUE

The subject has numerous older sawmill buildings, most of which are at least 40 years old. All of these buildings have significant physical depreciation as well as functional depreciation. Most of them were built specifically to benefit a sawmill operation, and while they may be adaptable to other uses, they all suffer significant depreciation from a variety of sources. A traditional cost approach would calculate the replacement cost new (RCN) of the subject improvements then apply a market extracted depreciation rate to the buildings. It is apparent from past sales of the subject property as well as other former sawmill sites that these buildings contribute only a very small fraction of their replacement costs. Calculating depreciation with any precision at all is nearly impossible on buildings like this, so traditional cost approach methodology is not really a useful analysis in this case.

The previous sale of the subject property in 2010, while purchased out of receivership, indicates the subject improvements at: 284,520 sq ft of buildings at $2.64 per sq ft or $750,000. The most recent sale of the subject in 2016, which is part of a much larger sale of other assets and contracts, is allocated at $500,000 for buildings or about $1.75 per sq ft. The former Wallowa Forest Products mill site sold and that buyer allocated about $240,000 for buildings. This sale included two newer structures that contributed $20-$35 per sq ft and the old sawmill buildings ate $3.87 per sq ft. Other older sawmill site sales will show similar buildings contributing comparatively low contributions on these types of buildings.

There is not a lot of recent evidence, but based upon what is presented above, the subject buildings have some, but not a great deal of value. As of the date of this appraisal there are 193,422 sq feet of buildings standing on this property. The office building and scale office are older, but still good quality structures that are easily adaptable to other tenancies and are likely to contribute a higher price than the very large sawmill buildings and lumber sheds.

A few of the buildings have enough structural or environmental issues associated with them, that even though they may have some utility to them, they probably do not contribute much if any value. The dry kilns have been partially salvaged and while there are 4 of them that are still intact and might be utilized, 3 are partially dismantled. The Boiler buildings are really in relatively poor condition but have been left in place because the boilers might be valuable to someone. The block walls in the boiler building have some

asbestos, I am told and if they are demolished, will have to be hauled to an approved site. The Planer building and some of the other buildings have asbestos in the roof covering. Part of this building collapsed under heavy winter snow. IFG indicated to me that they had a price estimate of $150,000 to haul off the roofing for this building alone. The part of the building that remains intact may have some utility for someone, but this particular building, for a number of reasons probably contributes little to no value overall. Pumping plants, water storage, and distribution systems on the property are reportedly in poor condition and need significant repair, thus, are not included as a line item to value. I acknowledge that they are present, possibly useful for alternate uses, but like in the sale analyses, they probably do not contribute much overall. The same can be said for several small sheds, the old scale house and other unlisted improvements.

The following is my best estimation of value for the various buildings that remain on the subject property:

Improvement	Size	$/Sq Ft	Total $
Steel Lumber Shed	14,400	$4.00	$57,600
Wood RDL Shed	51,150	$3.00	$153,450
Steel RDL Shed	43,700	$3.00	$131,100
Planer Bldg	37,600	$0.00	$0
Finished shipping	24,700	$4.00	$98,800
Dry Kilns 4 left	8,160	$0.00	$0
Boiler House	6,396	$0.00	$0
Truck Shop	2,750	$4.00	$11,000
Small Shop	1,590	$4.00	$6,360
Office	2,496	$35.00	$87,360
Scale Office	480	$25.00	$12,000
Misc Sheds/Site Impts			$0
Totals	**193,422**		**$557,670**

Total Improvement Contribution ---------- $557,670

COST APPROACH SUMMARY:

Contribution of Improvements ---------- $557,670

Land Value Estimate ---------- 614,500

TOTAL ---------- $1,172,170

Rounded ---------- **$1,170,000**

E. RECONCILIATION

In this appraisal assignment, each of the three approaches to the appraisal process was thoroughly considered.

Following are conclusions from each of the value conclusions:

Sales Comparison Approach ---------- $1,200,000
Cost Approach ---------- $1,170,000

The Sales Comparison Approach was completed considering several sales within the subject region. None of the sales are perfect matches for the subject property; however, they are the best comparisons available from this region. The data is complete and relatively recent. It is applicable to the subject but there is considerable variability in the data. The analysis is entirely a qualitative analysis. The data simply does not lend itself to a more simple quantitative adjustment process. The approach is not precise, but uses the best data available and does a reasonably good job of bracketing a final value conclusion.

The cost approach was also completed. It is not a traditional cost approach where the improvement replacement cost is estimated, appropriate depreciation subtracted and the resulting improvement value added to the land value. In the cost approach, the sales from sales comparison analysis were analyzed strictly to determine the value allocated to land types and applied to the subject land types. There are a few indications that provide improvement contributions on buildings like the subject. It is clear from all sources that the buildings on this subject contribute only a fraction of what it would cost to replace them, but even at that, there are so many large buildings that the final amount of contribution is still significant. Data from the sales comparison approach are used in the formation of the cost approach, but it is analyzed in a different way and still results in a conclusion that is not significantly different.

A traditional Income Approach is not applicable and was not completed because the annual income producing ability of this property in its present state is nearly impossible to predict. As a defunct and salvaged sawmill site there really is no immediate income stream. I am certain that I could make attempts to forecast alternate income streams from all or part of the property, but I do not believe that it would be

accurate or reflective of the market. I did not feel that the available data would produce a credible value estimate using the income approach so I did not consider it further.

Both the Sales Comparison Approach and income approaches are completed, with relatively similar results. The comparable sales data is, in my opinion, sufficient to provide a credible value estimate. Analysis using the cost approach is very supportive of that approach. This is a pretty limited market and there are very few sales available for use in direct comparison. Differences between the sales are not easily quantified, but even so, the sales comparison evidence is strong. I have relied primarily upon the sales comparison approach and secondarily on the cost approach.

After careful consideration of the available market data, my opinion of market value of the subject property, as it existed on February 14, 2017, is ---------- **$1,200,000**.

This appraisal is limited by and subject to the statements included in the Certification and Contingent and Limiting Conditions in the first section of this report.

APPENDIX

COMPARABLE SALE WRITE-UPS

Land Sale No. 3 **Sale Name:** NORTHWEST BIOMASS **Sale Date:** 09-28-2015

Sale Price: $96,010 **Land Size:** 10 Acres

Seller: City of Potlatch **Buyer:** Northwest Biomass, LLC

Legal Description: Tax #7368 & Tax #7369 located in the W2SE4 of Sec 1, T41N, R5W, BM, Latah County. Assessor's Parcel No. RPP00000018410 & RPP00000018421

Use at Sale: Part of Former Potlatch Mill Site **City:** Potlatch

Highest & Best Use: Industrial Site **County:** Latah

Verified: City of Potlatch **Info Source:** City Clerk & Appraiser

PROPERTY DESCRIPTION

Location: West Edge of City of Potlatch **Access:** Gravel 6th Street

Topography: Level **Water:** City

Utilities: Electricity & Telephone **Zoning:** I-Industrial

SALE PRICE BREAKDOWN

LAND:	Tot. Contr.
Industrial: 10 Acres @ $9,601/acre	$96,010

Sale Terms: Cash to Seller **Excise Tax:** N.A. **Sale Instrument:** WD 574943 CWD 580484

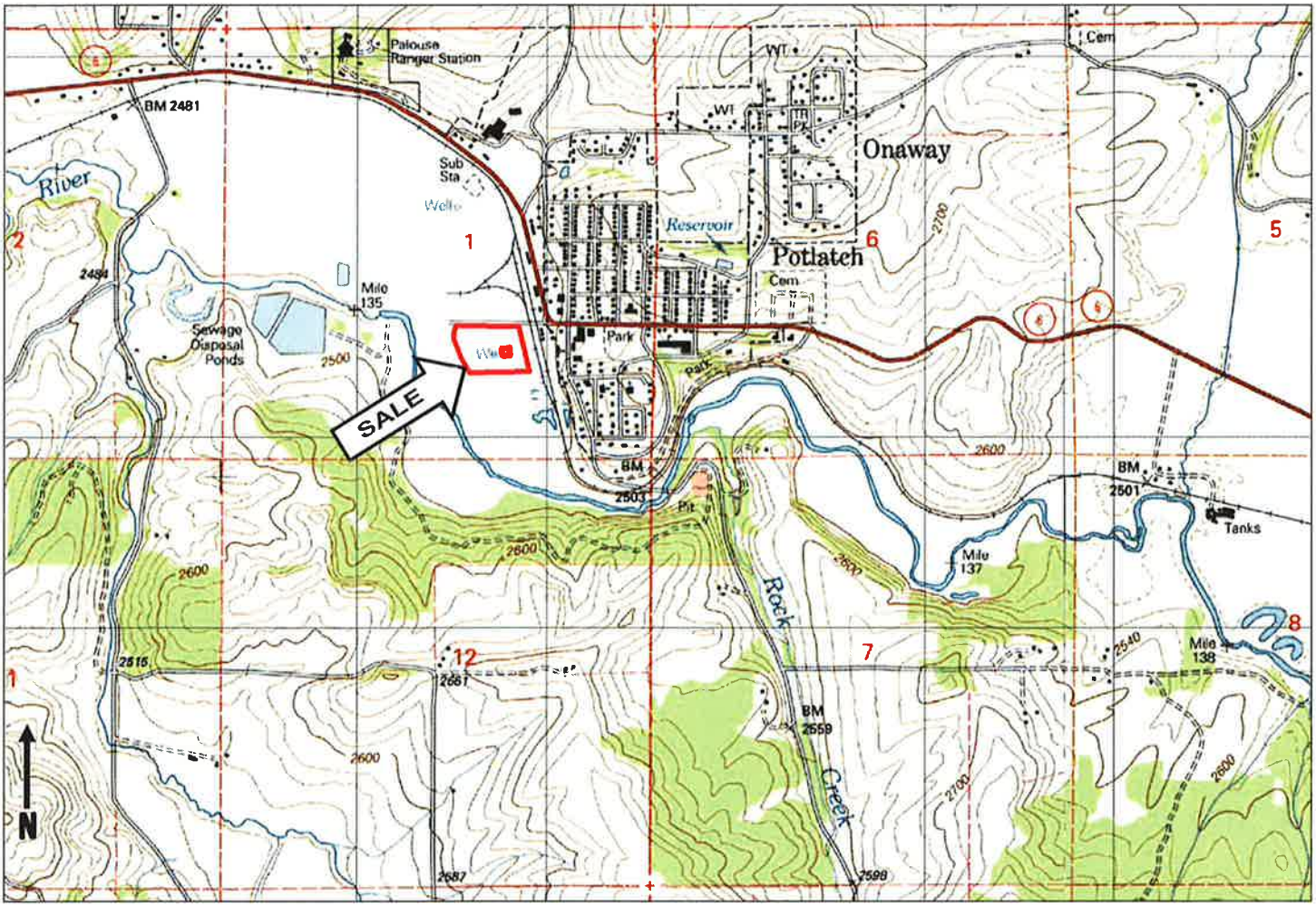
Additional Information: Property is located on the west side of railroad tracks and south of 6th Street extension. Access is from 6th Street which extends west across the railroad tracks and borders the north side of the property. The road consists of one lane and is partially graveled. Soils are Hampson silt loam, 0% to 3% slopes and occupy the entire site. This soil is deep and moderately well drained with a seasonal high water table of 36 to 60 inches.

This property was part of the old Potlatch mill site and was donated to the City for economic development. The City had a gun manufacturer who initially wanted to locate and that fell apart after the donation. The City offered the property for sale and received two bids, accepting the high bid at $96,010. Buyer will construct a pellet manufacturing plant.

Date Viewed: 02-10-2017 **Photo Taken:** 02-10-2017

Sale Ref. # 692 **Orig. File** ID/Idaho Co/Blue North **Appraiser:** Don A. Kerby

Northwest Biomass



Sale No.: 5 **Sale Name:** WALLOWA FOREST PRODUCTS MILL SITE **Sale Date:** 06-28-2013

Sale Price: $600,000 **Land Size:** 77.21 Acres

Seller: Wallowa County Land Acquisition LLC **Impr Size:** 6000 SF / 1500 SF

Buyer: Integrated Biomass

Legal Description: Map #01N420000, Tax Lot #2201; Map #01N420000, Tax Lot #2201.

Use at Sale: Vacated Mill Site **City:** Wallowa

Highest & Best Use: Industrial Redevelopment **County:** Wallowa Co.

Verified: David Schmidt, President, Integrated Biomass **Info Source:** Newspaper Article Assessor

PROPERTY DESCRIPTION

Location: 75100 Lower Diamond Lane, 2.5 Miles NW of Wallowa **Access:** County Road

Topography: Near Level **Water:** Well

Utilities: Telephone & Electricity **Zoning:** M-1

SALE PRICE BREAKDOWN

	$/Unit
Overall: $600,000 Divided by 77.21 Acres	$7,771/Acre

IMPROVEMENTS:	Contribution
Shop: Blt. 2003, 2,400 SF @ $20.00/SF	$48,000
Office: Blt. 2003, 1,700 SF @ $35.00/SF	$59,500
Planer Shed: 14,000 SF }	
Dry Shed: 18,200 SF } 34,200 SF @ $3.87/SF	$132,500
Boiler Bldg: 2,000 SF }	
	$240,000

LAND:	Contribution
Industrial Site: 77.21 Acres @ $4,663/Acre	**$360,000**

Sale Terms: Cash to Seller **Excise Tax:** N/A **Sale Instrument:** WD 69555

Rent and Addt'l Info: Wallowa County Land Acquisition bought for $600,000 in Jan. 2012 (WD 66681) held for a year and then sold to Integrated Biomass. The site had previous environmental issues. The peat bog was cleaned out in the 1990s. The buyer indicated that the shop and office were nice, well kept buildings, and the old sawmill buildings were big with some utility but not valuable. The new buyer has developed a biomass facility, manufacturing industrial wood pellets, fire wood, and poles.

Date Viewed

11-23-15

Sale Ref. #

1707

Photo Taken:

Using internet aerial

Orig. File

ID/Idaho Co/Blue North

Appraiser:

Don A. Kerby

Wallowa Forest Products Mill Site

Sale No.: 11 **Sale Name:** UHLENKOTT **Sale Date:** 12-09

Sale Price: $550,000 **Land Size:** 109.31 Acres

Seller: Shamrock Development, LLC **Impr Size:** None

Buyer: Timothy & E. Arlene Uhlenkott Family Trust

Legal Description: T30N, R3E - Sec. 18: N2NE4, NE4NW4, Less Assessor's Tax No. 430.

Use at Sale: Farmland **City:** Rural

Highest & Best Use: Development Potential **County:** Idaho

Verified: Bob Blewett, Selling Broker & Tim Uhlenkott **Info Source:** Appraisal

PROPERTY DESCRIPTION

Location: 0.5 Mile North of Grangeville **Access:** Day Road

Topography: Near Level **Cover:** Grass, Crops

Soil: Nez Perce silt loam, 2% to 7% slope, and Fenn silty clay, 2% to 7% slope **Water:** Stream

Utilities: Electricity and Telephone Available Nearby **Zoning:** None

SALE PRICE BREAKDOWN

		$/Unit
Overall:	$550,000 Divided by 109.31 Acres	$5,032/Acre
IMPROVEMENTS:		**Contribution**
	None at time of sale	N/A
		Contribution
LAND:	Dev. Potential: 109.31 Acres @ $5,032/Acre	$550,000

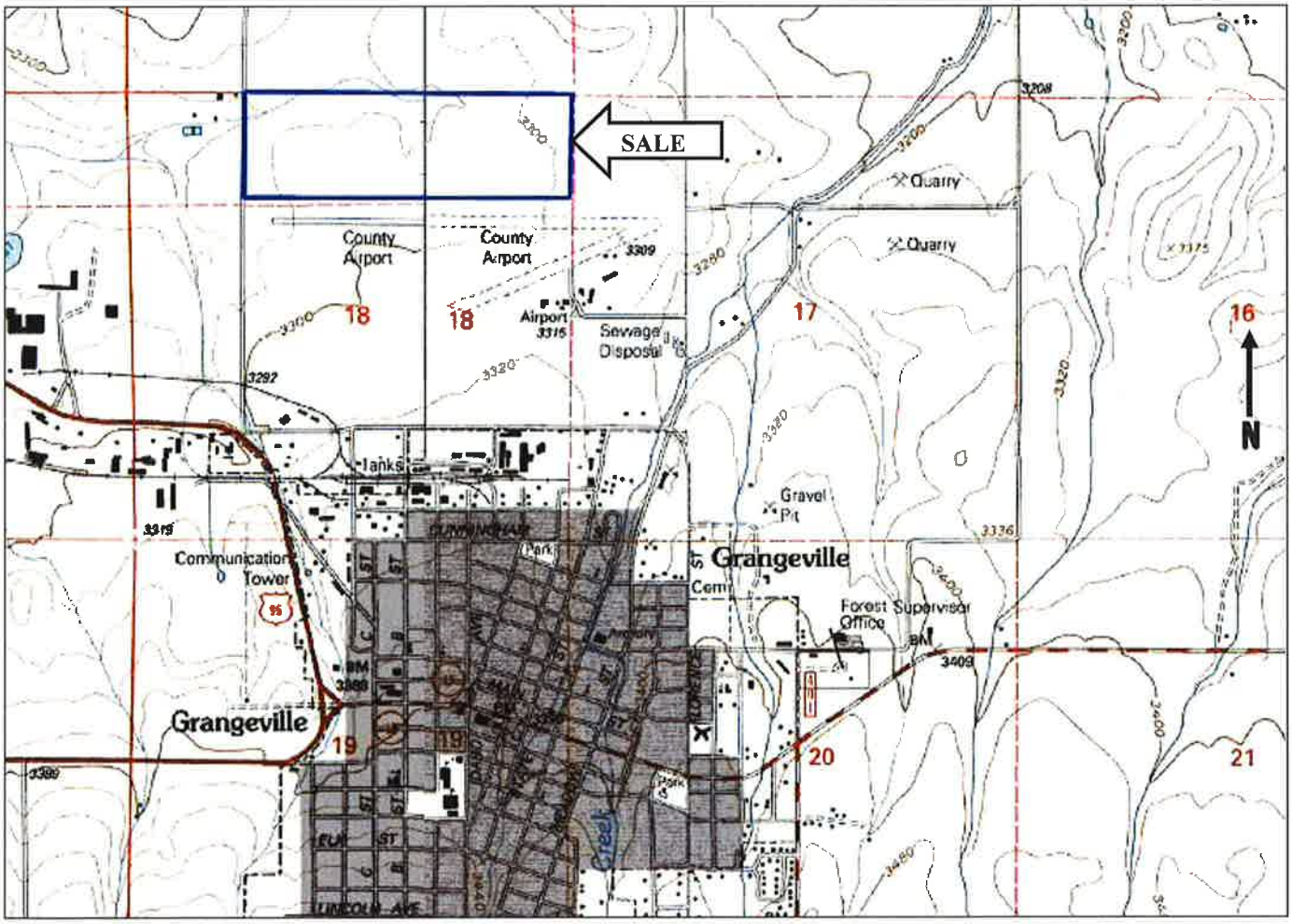
Sale Terms: 1031 Exchange **Excise Tax:** N/A **Sale Instrument:** WD 470244

Additional Information: Purchased by local farmer/investor on speculation that property could be developed or resold.

Date Viewed: 02-15-10 **Photo Taken:** 02-15-10

Sale Ref. # 3691 **Orig. File** Appraisal **Appraiser:** Don A. Kerby

Shamrock to Uhlenkott



Sale No.: 12 **Sale Name:** PAUL **Sale Date:** 03-01-10

Sale Price: $450,000 **Land Size:** 58.33 Acres

Seller: Ben Paul **Impr Size:** Various

Buyer: Idaho Forest Group

Legal Description: Part NE1/4NE1/4 of Sec. 13, T30N, R2E. Part NW1/4NW1/4 of Sec. 18, T30N, R3E.

Use at Sale: Large, Rural Homesite **City:** Rural

Highest & Best Use: Rural Homesite Development **County:** Idaho

Verified: Seller, Ben Paul **Info Source:** Seller & County Records

PROPERTY DESCRIPTION

Location: 17 Paul Lane **Access:** Day Road

Topography: Gentle Slope **Cover:** Crops & Grass

Soil: Silt Loam / Silty Clay Loam **Water:** Well, Long Haul Creek

Utilities: Telephone & Electricity **Zoning:** None

SALE PRICE BREAKDOWN

		$/Unit
Overall:	$450,000 Divided by 58.33 Acres	$7,715/Acre
IMPROVEMENTS:		**Contribution**
	Nice, Modern SFR & Outbuildings with 6.003 Acres	$187,000
		Contribution
LAND:	Residential Dev. Potential: 52.326 Acres @ $5,026/Acre	$263,000

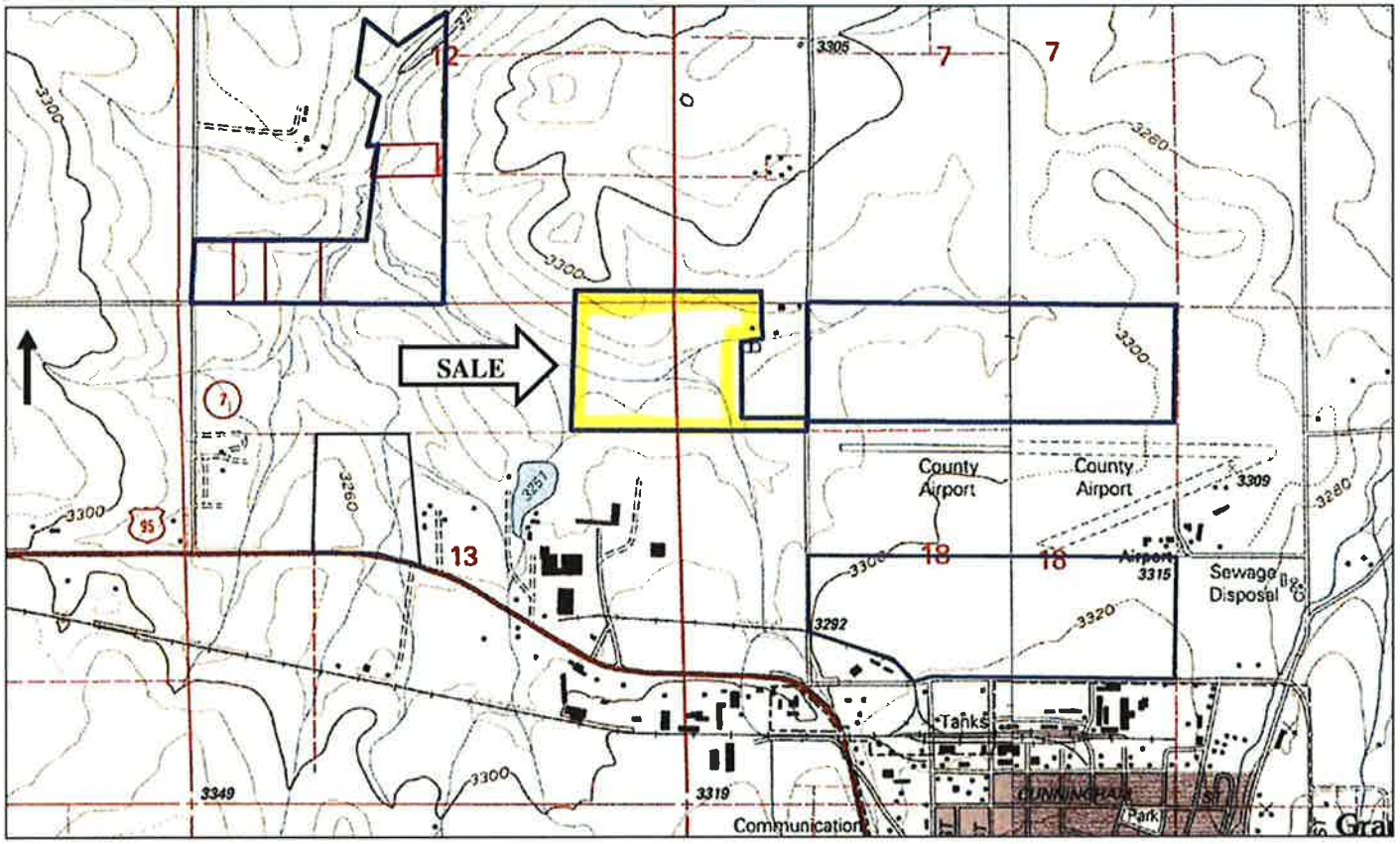
Sale Terms: Cash to Seller **Excise Tax:** N/A **Sale Instrument:** WD

Additional Information: Property was purchased by Idaho Forest Group to expand operations. Property was offered on the open market. Buyer simultaneously resold the house and 6.003 acres at $187,000; thus, the sale is analyzed as a 52.326-acre land sale.

Date Viewed: 02/25/10 **Photo Taken:** 02/25/10

Sale Ref. # 3335 **Orig. File** Idaho County/Uhlenkott Property **Appraiser:** Don A. Kerby

Paul to Idaho Forest Group



List No.: L1 **List Name:** CATALDO SITE **List Date:** Current
List Price: $375,000 **Land Size:** 45.08 Acres
Seller: Frankovich Family Rev Lvg Trust **Impr Size:** None

Legal Description: T48N, R1W BM- Sec. 5: Gov't Lots 5 & 13 S of Hwy. Sec 6: Gov't Lot 9 S of Hwy. AIN #134421 & AIN #116417

City: Cataldo
Use at List Date: Vacant Former Industrial Site **County:** Kootenai
Highest & Best Use: Recreation/ Homesite Development **Info Source:** Jeff Scott, Windermere

PROPERTY DESCRIPTION

Location: 18320 S. Hwy #3, Cataldo **Access:** State Hwy 3
Topography: Gently Undulating **Water:** Coeur d' Alene River
Utilities: Electricity & Telephone Available **Zoning:** Ag

SALE PRICE BREAKDOWN

	$/Unit
Overall: $375,000 Divided by 45.08 Acres	$8,319/Acre

IMPROVEMENTS:	Contribution
No improvements of value	N.A.

LAND:	Contribution
Uplands: 31.08 Acres @ $11,000/Acre	$341,880
Wetlands: 15 Acres @ $2,208/Acre	$33,120
	$375,000

Rent and Addt'l Info: This is a current listing of a former mill site near Cataldo along the Coeur d' Alene River. The property is all in the flood plain and has known lead contamination. Any building sites would need to be raised up 10 feet with uncontaminated material. There are also wetland delineations on about 15 acres that cannot be disturbed. There are uncontrolled fill areas, concrete foundations, and wood debris on site. Property has 5,000 feet on river and qualifies for two dock permits.

Date Viewed:
02-10-17

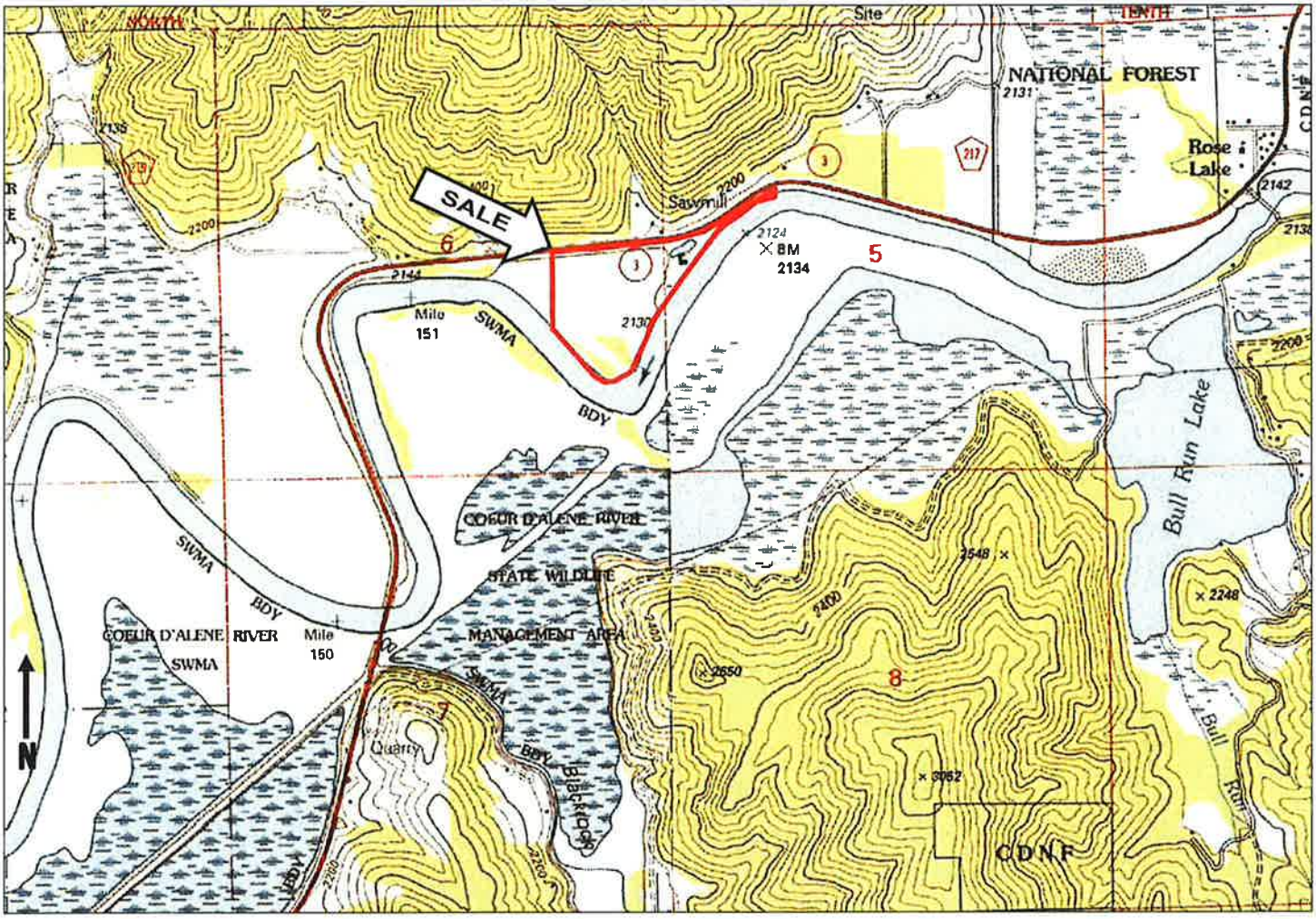
Sale Ref. #
1710

Photo Taken:
02-10-17

Orig. File
ID/Idaho Co/Blue North

Appraiser:
Don A. Kerby

Cataldo List



TITLE REPORT
AND WARRANTY DEED

First American Title™	Owner's Policy of Title Insurance
	ISSUED BY First American Title Insurance Company
Owner's Policy	POLICY NUMBER 5011400-1454379e

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at the address shown in Section 18 of the Conditions.

COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B, AND THE CONDITIONS, **FIRST AMERICAN TITLE INSURANCE COMPANY**, a Nebraska corporation (the "Company") insures, as of Date of Policy and, to the extent stated in Covered Risks 9 and 10, after Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. This Covered Risk includes but is not limited to insurance against loss from
   (a) A defect in the Title caused by
      (i) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
      (ii) failure of any person or Entity to have authorized a transfer or conveyance;
      (iii) a document affecting Title not properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
      (iv) failure to perform those acts necessary to create a document by electronic means authorized by law;
      (v) a document executed under a falsified, expired, or otherwise invalid power of attorney;
      (vi) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
      (vii) a defective judicial or administrative proceeding.
   (b) The lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
   (c) Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
3. Unmarketable Title.
4. No right of access to and from the Land.

(Covered Risks Continued on Page 2)

In Witness Whereof, First American Title Insurance Company has caused its corporate name to be hereunto affixed by its authorized officers as of Date of Policy shown in Schedule A.

First American Title Insurance Company

Dennis J. Gilmore
President

Jeffrey S. Robinson
Secretary

For Reference:

File #: 23541

Issued By:

Inland Title and Escrow, LLC
524 West Main Street
Grangeville, ID 83530

(This Policy is valid only when Schedules A and B are attached)

This jacket was created electronically and constitutes an original document

File No.: 23541 6453

PARCEL 1: (MILLSITE)
Township 34 North, Range 3 East, Boise Meridian, Idaho County, Idaho
Section 35:
That portion of Government Lots 14 and 15, more particularly described as follows:
Commencing at a point on the East line of Section 35, which is 615 feet South of the quarter section corner common to Sections 35 and 36;
Thence West 730.5 feet to the West boundary of the Northern Pacific Railway Right of Way;
Thence following the West boundary as follows:
Northwesterly 300 feet on the arc of a 1°30' curve and N.17°42'W., 764.5 feet;
Thence West 268 feet to the high water line of the Middle Fork of the Clearwater River;
Thence Southerly and Easterly along said high water line 2905 feet, more or less, to the point of intersection of said high water line with the East line of said Section 35;
Thence North along said East line 1110 feet, more or less, to the POINT OF BEGINNING.
LESS the Railroad Right of Way.

AND
The South 206 feet of the North 615 feet of said Government Lot 15 lying East of the Railroad Right of Way.

AND
The North 409 feet of said Government Lot 15 lying East of the Railroad Right of Way;

AND
That part of said Government Lot 14 lying East of the Railroad Right of Way.

AND
The North 920 feet of said Government Lot 14 lying West of the Railroad Right of Way.
LESS any part lying South of centerline of Sixth Street of the vacated plat of Townsite, Idaho County, Idaho.

Section 36: Part of the SW¼ described as follows:
Commencing at the section corner common to Sections 35 and 36, Township 34 North, Range 3 East, Boise Meridian, and Sections 1 and 2, Township 33 North, Range 3 East, Boise Meridian, said point being marked by a brass cap monument;
Thence North 911.80 feet along the West line of said Section 36 to the POINT OF BEGINNING;
Thence continue North 1513.52 feet along said line to a point of the South right of way line of road easement "A" to Allotment 182-1557-B;
Thence, S.72°00'E., 58.38 feet along said line;
Thence S.54°14'56"E., 215.76 feet;
Thence S.68°38'40"E., 301.62 feet along said line;
Thence S.57°28'50"E., 401.49 feet along said line;
Thence South 1476.33 feet;
Thence N.61°29'17"W., 572.14 feet;
Thence N.65°20'22"W., 382.21 feet to the POINT OF BEGINNING.

PARCEL 2:
Township 34 North, Range 3 East, Boise Meridian, Idaho County, Idaho

First American Title™	Owner's Policy of Title Insurance
	ISSUED BY First American Title Insurance Company
Schedule B	POLICY NUMBER 5011400-1454379e

File No.: 23541 6453

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interest, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title including discrepancies, conflicts in boundary lines, shortage in area, or any other facts that would be disclosed by an accurate and complete land survey of the land, and that are not shown in the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under(a), (b), or (c) are shown by the public records.
6. Any liens, or rights to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.
7. 2016 Taxes are an accruing lien, not yet due or payable.
8. Paragraphs 1 and 2 of the Exclusions from coverage are expressly extended to include those laws, ordinances or regulations of an Indian tribe or nation.

   Public Records as defined in this policy do not include records of an Indian tribe or nation, or any other repository of Indian Land Resources including, but not limited to The Bureau of Indian Affairs Land Title and Records office.
9. Subject to liens for any taxes deferred by virtue of the designation of the insured property, or any portion thereof, as Forest Lands as provided in Section 63-17001, et. seq., Idaho Code. (affects part of Parcel 1)
10. Lack of a right of access to and from said lands West of the Railroad Right of Way (Main Track). If access is by way of a crossing permit it is subject to the terms and conditions of said permit and any reversionary interest, possibility of reverter, power of termination, right of first refusal, or similar interest, of the United States of America, or any other person or entity in that portion of said land lying within the right-of-way granted to the railroad by the United States. (affects part Parcel 1)
11. Any claim arising from the difference in the mean high water line of the Clearwater River and the meander line as shown by the Original Government Survey, and also excepting any accretion or avulsion changes of the ordinary high water line. (affects part of Parcel 1)
12. All matters, covenants, conditions, restrictions, easements and any rights, interests or claims which may exist by reason thereof, disclosed by the recorded and subsequently vacated PLAT of Townsite, recorded February 10, 1905 in Book 1 of Plats at page 48, and the Record of SURVEYS listed below, but deleting any covenant, condition or restriction indicating a preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status, or national origin to the extent such covenants,

504527

Instrument # 504527
IDAHO COUNTY, IDAHO,
5-10-2016 04:16:45 PM No. of Pages: 6
Recorded for : INLAND TITLE
KATHY M. ACKERMAN Fee: 25.00
Ex-Officio Recorder Deputy

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:

IFG - Kamp, LLC
687 Canfield Avenue, Suite 100
Coeur d'Alene, ID 83815
Attn: Scott Atkison

RECEIVED
JUN 29 2016
IDWR / NORTH

(Space Above For Recorder's Use)

WARRANTY DEED

For ten dollars ($10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, BLUE NORTH FOREST PRODUCTS, LLC, a Washington limited liability company ("**Grantor**"), whose address is 2930 Westlake Avenue North, Suite 300, Seattle, Washington 98109, conveys, grants and warrants to IFG - KAMP, LLC, an Idaho limited liability company ("**Grantee**"), whose address is 687 Canfield Avenue, Suite 100, Coeur d'Alene, ID 83815, and its successors and assigns forever, the following described real property in Idaho County, Idaho (the "**Property**"):

See attached **Exhibit A**.

SUBJECT TO the matters listed on attached **Exhibit B**.

This conveyance shall include any and all estate, right, title, interest, appurtenances, tenements, hereditaments, reversions, remainders, easements, rents, issues, profits, rights-of-way and water rights in anyway appertaining to the Property (including without limitation State of Idaho Water Rights 84-4052 and 84-4053) herein described as well as in law and in equity. The Grantor covenants to the Grantee that Grantor is the owner in fee simple of the Property; that the Property is free from all encumbrances, excepting those listed on attached **Exhibit B**, and that Grantor will warrant and defend the same from all lawful claims except for those listed on **Exhibit B**.

[*Signatures and Acknowledgment on following page(s)*]

[Signature Page to Warranty Deed]

DATED this 6 day of ~~May~~ JUNE, 2016.

GRANTOR: BLUE NORTH FOREST PRODUCTS, LLC,
a Washington limited liability company

By: _____

Name: MICHAEL F. BURNS

Title: Member / Manager

STATE OF WASHINGTON)
) ss.
County of KING)

ON THIS 6th day of ~~May~~ June, 2016, before me, Celeste E. Bouck, a Notary Public in and for said State, personally appeared Michael F. Burns, an individual, known or identified to me to be the Member and a Manager of Blue North Forest Products, LLC, the limited liability company that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument on behalf of said limited liability company.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Signature: Celeste E Bouck

Name (Print): Celeste E. Bouck

NOTARY PUBLIC in and for the State of Washington, residing at Seattle.
My appointment expires: June 1, 2018

Notary Public
State of Washington
CELESTE E BOUCK
My Appointment Expires Jun 1, 2018

11. All matters, covenants, conditions, restrictions, easements and any rights, interests or claims which may exist by reason thereof, disclosed by the Record of Survey recorded October 12, 2011 as Instrument Number 481149, but deleting any covenant, condition or restriction indicating a preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status, or national origin to the extent such covenants, conditions or restrictions violate 42 USC 3604(c).

12. Terms and conditions of the easements described in "Parcel 1" set forth on Exhibit A of this Deed, and any matters arising on account of the location of such easements being within the original boundaries of the Nez Perce Indian Reservation, and being subject to any laws, taxes, codes, or regulations, including those for limitation or duration, established by the Tribe and 25 C.F.R. § 169, et seq..

EASEMENTS AND ASSIGNMENTS

460493

TRACT: Nez Perce 1557-A
Nez Perce 1557-B

E A S E M E N T

182 11407

KNOW ALL MEN BY THESE PRESENTS:

That the United States of America, acting by and through the Superintendent, Northern Idaho Agency, Bureau of Indian Affairs, Department of the Interior, Lapwai, Idaho 83540, hereinafter referred to as "Grantor", under general delegation of authority contained in Secretarial Order (10 BIAM 2), and 10 BIAM 3.1 and 10 BIAM 12, Part 2, Section 2.16, January 27, 1970, and pursuant to the provisions of the Act of February 5, 1948 (62 Stat. 17, 25 U.S.C. 323-328), and Part 169, Title 25 Code of Federal Regulations, in consideration of TWELVE THOUSAND, TWO HUNDRED AND TWENTY FIVE DOLLARS ($12,225.00), does hereby grant to POTLATCH CORPORATION, hereinafter referred to as "Grantee", a non-exclusive easement for a right-of-way for the following purposes, Specifically: the right to enter upon the hereinafter described land, build, fill, level, grade, drain, pave, maintain, repair, and rebuild a public road including incidental purposes consistent therewith, together with such bridges, culverts, ramps, and improvements as may be necessary, on, over, under, and across the land embraced within the right-of-way, situated on the following described land located within the Nez Perce Indian Reservation, County of Idaho, State of Idaho:

Easement A - Being a road right-of-way, 40.00 feet in width, located in Allotment No. 1557-B, Section 36, T. 34 N., R. 3 E., B.M., Idaho County, Idaho, more particularly described as follows:

Commencing at the West ¼ Corner of said Section 36; thence South along the West line of said Section 36, a distance of 177.12 feet to the Point of Beginning;
thence South 72°00' East 68.00 feet;
thence South 54°14'56" East 216.96 feet;
thence South 68°38'40" East 300.49 feet;
thence South 57°28'50" East 379.89 feet to the East line of said Allotment No. 1557-B;
thence South 47.44 feet along the said East line;
thence North 57°28'50" West 401.49 feet;
thence North 68°38'40" West 301.62 feet;
thence North 54°14'56" West 215.76 feet;
thence North 72°00' West 58.38 feet to the said West line of Section 36;
thence North along the said West line a distance of 42.06 feet to the point of beginning, containing 0.8963 acres, a total distance of 976.10 feet in length.

I certify that this is a true & accurate
copy of the Original Document

Acting Superintendent APR 14 2008
Northern Idaho Agency

Instrument # 460493
IDAHO COUNTY, IDAHO,
2008-04-15 11:20:27 No. of Pages: 11
Recorded for : INLAND TITLE CO
ROSE E. GEHRING Fee: 33.00
Ex-Officio Recorder Deputy

AND ALSO - Easement B

Being a road right-of-way, 40.00 feet in width, located in Allotment No. 1557-A, Section 36, T. 34 N., R. 3 E., B.M., Idaho County, Idaho, more particularly described as follows;

Commencing at the West ¼ Corner of said Section 36, from which the Southwest Corner of said Section 36 bears South 2644.43 feet;
thence South 52°57'36" East 1064.98 feet to a point on the West line of said Allotment No. 1557-A, being the Point of Beginning;
thence South 57°28'50" East 380.68 feet;
thence South 61°03'50" East 479.75 feet to the westerly right of way line of the Woodland County Road;
thence South 27°03'50" East along the said westerly right of way line, a distance of 71.54 feet;
thence North 61°03'50" West 540.27 feet;
North 57°28'50" West 356.48 feet to the said West line of Allotment No. 1557-A;
thence North 47.44 feet along the said West line to the Point of beginning, containing 0.8069 acres, being a total of 878.59 feet in length.

This easement is subject to any prior valid existing right or adverse claim and is without limitation as to tenure, so long as said easement shall be actually used for the purpose above specified; PROVIDED, that this right-of-way may be terminated in whole or in part by the Grantor for any of the following causes upon thirty (30) days written notice and failure of the Grantee within said notice period to correct the basis of termination (25 CFR, 169.20):

A. Failure to comply with any term or condition of the grant, or the applicable regulations.

B. A non-use of the right-of-way for a consecutive two-year period for the purpose for which it was granted.

C. An abandonment of the right-of-way.

D. Failure of the Grantee, upon completion of the construction, to file with the Grantor an Affidavit of Completion pursuant to 25 CFR 169.16.

E. Failure to comply and abide by the Stipulation submitted with the Application per 25 CFR 169.5.

F. Failure to notify the Grantor in advance and to obtain and execute instruments acceptable to the Grantor when a successor and/or assign of the Grantee is to be effected. As long as this tract remains in a trust status, if acceptable instruments are not prepared and approved by the Bureau of Indian Affairs, only the last Grantor of record will be recognized and held responsible for compliance with the condition of this easement.

The condition of this easement shall extend to and be binding upon and shall inure to the benefit of the successors, and assigns of the Grantee.

182 11407
86 JAN 9 P3:11

IN WITNESS WHEREOF, Grantor has executed this grant of easement this 30th day of December, 1985.

THE UNITED STATES OF AMERICA

By: _____
Superintendent

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
NORTHERN IDAHO AGENCY
LAPWAI, ID 83540-0277

182 11407

STATE OF Idaho)
) SS:
COUNTY OF Nez Perce)

On this 30th day of December, 1905, before me, the undersigned Notary Public in and for said State, personally appeared E. L. Marsen, known to me to be the Superintendent of the Northern Idaho Agency, Bureau of Indian Affairs, who executed the within instrument of behalf of the United States of America therein named, and acknowledged to me that the said United States of America executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Patricia A. Matheny
Notary Public in and for the
State of Idaho
Residing at Lapwai
My Commission expires Lifetime

I certify that this a true & accurate
copy of the Original Document
Acting Superintendent
Northern Idaho Agency
APR 14 2008

182 11407

STIPULATION

Pursuant to the application of the undersigned dated December 20, 1985 for a access road Right-of-Way across Nez Perce 1557-A Allotment of Harrison Kipkippalikan the undersigned agrees to conform and abide by rules and regulations of the Department of the Interior set forth in 25 CFR, Section 161, and expressly agrees to the following:

(a) To construct and maintain the right-of-way in a workmanlike manner.

(b) To pay promptly all damages and compensation in addition to the deposit made pursuant to 161.14, determined by the Secretary to be due the landowners and authorized users and occupants of the land on account of the survey, granting, construction and maintenance of the right-of-way.

(c) To indemnify the landowners and authorized users and occupants against any liability for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the applicant, his employees, contractors and their employees, or subcontractors and their employees.

(d) To restore the lands as nearly as may be possible to their original condition upon the completion of construction to the extent compatible with the purpose for which the right-of-way was granted.

(e) To clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project.

(f) To take soil and resource conservation and protection measures, including weed control, on the land covered by the right-of-way.

(g) To do everything reasonably within its power to prevent and suppress fires on or near the lands to be occupied under the right-of-way.

(h) To build and repair such roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect

Form 5-5403
(Sept. 1958)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

182 11407

STATEMENT OF OWNERS OF ALLOTTED INDIAN LANDS TO ACCOMPANY APPLICATION FOR RIGHT-OF-WAY

Northern Idaho Agency, _____, 19___.

Allotment No. NP 1557-A Allottee Harrison Kipkippalikan

Description NE¼SW¼, the east 7.12 chains of the NW¼SW¼, W½ of Lot 2, and the east 7.12 chains of Lot 1 in Sec. 36, T. 34 N., R. 3 E., Boise Meridian, Idaho County, Idaho, cont. 82.30 acres, m/l

The undersigned, owners of said land, hereby (do ___ not) consent to the granting of a

access road right-of-way thereover, as contemplated by the

application of Potlatch Corporation, Post Office Box 1016, Lewiston, Idaho 83501 upon the following terms and conditions (for the reasons given below):

Without payment of damages.

On payment of cash damages as determined by Superintendent upon completion.

Other terms or comment: Tenure of grant is without limitation. Grantor

agrees to accept as compensation, a one time payment of $6,600.00

Witness:	Owners:
Steven Rondeau	x Charles Kipp
Arthur E. Schultz	Charles Kipp (Kip Kip Palikan) 1/2
Arthur E. Schultz	x Blanche Kipp Gould
	Blanche Kipp Gould 1/2

N. B.—Delete inapplicable provisions. Submit original only.

INTERIOR—PORTLAND, OREGON

Form 5-5403
(Sept. 1958)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

182 11407

STATEMENT OF OWNERS OF ALLOTTED INDIAN LANDS TO ACCOMPANY APPLICATION FOR RIGHT-OF-WAY

Northern Idaho Agency, _____, 19__

Allotment No. NP 1557-B Allottee Harrison Kipkippalikan

Description The west 12.88 chains of the NW¼SW¼, and the west 12.88 chains of Lot 1, Sec. 36, T. 34 N., R. 3 E., Boise Meridian, Idaho County, Idaho, cont. 38.00 acres, m/l.

The undersigned, owner of said land, hereby (do ____ not) consent to the granting of a access road right-of-way thereover, as contemplated by the application of Potlatch Corporation, Post Office Box 1016, Lewiston, Idaho 83501 upon the following terms and conditions (for the reasons given below):

Without payment of damages. On payment of cash damages as determined by Superintendent upon completion.

Other terms or comment: Tenure of grant is without limitation. Grantor agrees to accept as compensation, a one time payment of $5,625.00.

Witness:

Arthur E. Schultz

Owners:

x Blanche Kipp Gould

Blanche Kipp Gould 1/1

N. B.—Delete inapplicable provisions. Submit original only.

STIPULATION 182 11407

Pursuant to the application of the undersigned dated December 20, 1985 for a access road Right-of-Way across Nez Perce 1557-B Allotment of Harrison Kipkippalikan the undersigned agrees to conform and abide by rules and regulations of the Department of the Interior set forth in 25 CFR, Section 161, and expressly agrees to the following:

(a) To construct and maintain the right-of-way in a workmanlike manner.

(b) To pay promptly all damages and compensation in addition to the deposit made pursuant to 161.14, determined by the Secretary to be due the landowners and authorized users and occupants of the land on account of the survey, granting, construction and maintenance of the right-of-way.

(c) To indemnify the landowners and authorized users and occupants against any liability for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the applicant, his employees, contractors and their employees, or subcontractors and their employees.

(d) To restore the lands as nearly as may be possible to their original condition upon the completion of construction to the extent compatible with the purpose for which the right-of-way was granted.

(e) To clear and keep clear the lands within the right-of-way to the extent compatible with the purpose of the right-of-way; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project.

(f) To take soil and resource conservation and protection measures, including weed control, on the land covered by the right-of-way.

(g) To do everything reasonably within its power to prevent and suppress fires on or near the lands to be occupied under the right-of-way.

(h) To build and repair such roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect

the works constructed, maintained, or operated under the right-of-way.

(i) That upon revocation or termination of the right-of-way, the applicant shall so far as is reasonable possible, restore the land to its original condition.

(j) To at all times keep the Secretary informed of its address, and in case of corporations, of the address of its principal place of business and of the names and addresses of its principal officers.

(k) That the applicant will not interfere with the use of the lands by or under the authority of the landowners for any purpose not inconsistent with the primary purpose for which the right-of-way is granted.

(l) CERTIFICATION RE: NEPA OF 1969 Applicant hereby certifies that provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.) have been met and the data compiled for NEPA compliance will be retained on file by the Applicant and made available upon request.

This stipulation is binding upon the successors and assigns of the undersigned and will be attached to and become a part of the application and approved right-of-way.

POTLATCH CORPORATION
Name of Applicant

BY: J. R. Morris
J. R. Morris Vice-President
Title

ATTEST:

G. E. Pfautsch
G. E. Pfautsch Asst. Secretary
Title

DATE: Dec. 20, 1985

Right of Way Description

Being a road right-of-way, 40.00 feet in width, located in Allotment No. 1557-A, Section 36, T. 34 N., R. 3 E., B.M., Idaho County, Idaho, more particularly described as follows;

Commencing at the West ¼ Corner of said Section 36, from which the Southwest Corner of said Section 36 bears South 2644.43 feet;
thence South 52°57'36" East 1064.98 feet to a point on the West line of said Allotment No. 1557-A, being the Point of Beginning;
thence South 57°28'50" East 380.68 feet;
thence South 61°03'50" East 479.75 feet to the westerly right of way line of the Woodland County Road;
thence South 27°03'50" East along the said westerly right of way line, a distance of 71.54 feet;
thence North 61°03'50" West 540.27 feet;
North 57°28'50" West 356.48 feet to the said West line of Allotment No. 1557-A;
thence North 47.44 feet along the said West line to the point of beginning, containing 0.8069 acres, being a total of 878.59 feet in length.

Stephen M. Brooks, RLS 955

Right-of-Way Description

Being a road right-of-way, 40.00 feet in width, located in Allotment No. 1557-B, Section 36, T. 34 N., R. 3 E., B.M., Idaho County, Idaho, more particularly described as follows;

Commencing at the West ¼ Corner of said Section 36; thence South along the West line of said Section 36, a distance of 177.12 feet to the Point of Beginning;
thence South 72°00' East 68.00 feet;
thence South 54°14'56" East 216.96 feet;
thence South 68°38'40" East 300.49 feet;
thence South 57°28'50" East 379.89 feet to the East line of said Allotment No. 1557-B;
thence South 47.44 feet along the said East line;
thence North 57°28'50" West 401.49 feet;
thence North 68°38'40" West 301.62 feet;
thence North 54°14'56" West 215.76 feet;
thence North 72°00' West 58.38 feet to the said West line of Section 36;
thence North along the said West line a distance of 42.06 feet to the point of beginning, containing 0.8963 acres, a total distance of 976.10 feet in length.

Stephen M. Brooks

Stephen M. Brooks, RLS 955

NIA R/W 375.323

GRANT AND ASSIGNMENT OF EASEMENT 162 11443

THIS INDENTURE, Made and entered into this 14th day of January, 1986, by and between POTLATCH CORPORATION, a Delaware corporation, hereinafter referred to as "Grantor/Assignor", and RAWLINGS CONSTRUCTION COMPANY, INC., a Montana corporation, hereinafter referred to as "Grantee/Assignee",

WITNESSETH:

WHEREAS, Grantor/Assignor is the holder of a non-exclusive easement which is the subject matter of that certain Easement dated December 30, 1985, by and between the United States of America, acting by and through the Superintendent Northern Idaho Agency Bureau of Indian Affairs, Department of Interior, Lapwai, Idaho, as grantor, and Potlatch Corporation as grantee, the original of said Easement being attached hereto as Exhibit "A" and incorporated by reference herein and which more particularly describes the real property situate in Idaho County, Idaho, that is the subject matter thereof,

NOW, THEREFORE, Grantor/Assignor, for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, receipt of which is acknowledged, does by these presents grant and convey, and transfer and assign to Grantee/Assignee all of Grantor/Assignor's right, title and interest in and to the aforedescribed Easement, subject to all of the terms, conditions and stipulations thereof which Grantee/-Assignee agrees to assume and perform.

I certify that this is a true & accurat copy of the Original Document.

APR 14 2008

Acting Superintendent
Northern Idaho Agency

Instrument # 460494
IDAHO COUNTY, IDAHO,
2008-04-15 14:20:27 No. of Pages: 4
Recorded for : INLAND TITLE CO
ROSE E. GEHRING
Ex-Officio Recorder Deputy
Fee: 12.00

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by its duly authorized officers the day and year hereinabove first written.

POTLATCH CORPORATION

Attest:

By _____
Vice President

_____
Assistant Secretary

RAWLINGS CONSTRUCTION COMPANY, INC.

Attest:

By _____
Vice President

_____
Secretary

STATE OF IDAHO)
) ss.
County of Nez Perce)

On this 24th day of January, 1986, before me, the undersigned, a Notary Public in and for said state, personally appeared J. R. MORRIS and GEORGE E. PFAUTSCH, known to me to be the Vice President and Assistant Secretary of Potlatch Corporation, the corporation that executed the within instrument, and acknowledged to me that they executed the same for and on behalf of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

_____
Notary Public for the State of Idaho
Residing at Lewiston therein.
My Commission expires: 4/11/91

STATE OF Montana)
) ss.
County of Missoula)

On this 14th day of ~~January~~ FEBRUARY, 1986, before me, the undersigned, a Notary Public in and for said state, personally appeared C. CRAIG RAWLINGS, known to me to be the Vice President of Rawlings Construction Company, Inc., the corporation that executed the within instrument, and acknowledged to me that he executed the same for and on behalf of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Linnea Eversole
Notary Public for the State of MT
Residing at Missoula therein.
My Commission expires: 10-31-87

STATE OF Montana)
) ss.
County of Missoula)

On this 14th day of ~~January~~ FEBRUARY, 1986, before me, the undersigned, a Notary Public in and for said state, personally appeared MICHAEL B. RAWLINGS, known to me to be the Secretary of Rawlings Construction Company, Inc., the corporation that executed the within instrument, and acknowledged to me that he executed the same for and on behalf of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Linnea Eversole
Notary Public for the State of MT
Residing at Missoula therein.
My Commission expires: 10-31-87

APPROVAL OF BUREAU OF INDIAN AFFAIRS

The within and foregoing grant and assignment of Easement by Potlatch Corporation to Rawlings Construction Company, Inc., is hereby approved by the United States of America, acting by and through the Superintendent, Northern Idaho Agency, Bureau of Indian Affairs, Department of the Interior, Lapwai, Idaho.

DATED this 18th day of June, 1986.

UNITED STATES OF AMERICA

By Victor E. Sisson Jr.
Superintendent
U. S. Department of the Interior
Bureau of Indian Affairs, Northern
Idaho Agency, Lapwai, Idaho.

STATE OF IDAHO)
) ss.
County of Nez Perce)

On this 18th day of ~~January~~ June, 1986, before me, the undersigned Notary Public in and for the State of Idaho, personally appeared Victor E. Sisson Jr., known to me to be the Superintendent of the Northern Idaho Agency, Bureau of Indian Affairs, who executed the within instrument on behalf of the United States of America therein named, and acknowledged to me that the said United States of America executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Notary Public for the State of Idaho
Residing at Lapwai therein.
My Commission expires: 12-12-91

RECEIVED OR FILED
BUREAU OF INDIAN AFFAIRS
PORTLAND AREA OFFICE
182 11443
86 JUN 23 A10:50
TITLES & RECORDS
SECTION

RECEIVED OR FILED
BUREAU OF INDIAN AFFAIRS
PORTLAND AREA OFFICE
182 11443
86 JUN 23 P1:28
TITLES & RECORDS
SECTION

460495 NIA File 375.323

MODIFICATION TO EASEMENT

It is hereby agreed by and between Superintendent, Northern Idaho Agency, Bureau of Indian Affairs, Department of the Interior, Grantor, and RAWLINGS CONSTRUCTION COMPANY, INCORPORATED, Grantee/Assignee, that right-of-way covering Easement A containing 0.8963 acres and Easement B containing 0.8069 acres, be modified to change the name of the Assignee to Triple R Forest Products Company, a subsidiary and Montana corporation of Rawlings Construction Company, Incorporated.

This modification does not change any of the terms, conditions, or stipulations except as specifically set forth herein.

GRANTOR

Superintendent, Northern Idaho Agency

GRANTEE/ASSIGNEE
RAWLINGS CONSTRUCTION COMPANY, INCORPORATED

By _____
Title

APPROVED

Superintendent
Northern Idaho Agency
Date: AUG 12 1986

[illegible] FILED
[illegible] OF INDIAN AFFRS.
PORTLAND, AREA OFFICE
182 11554
86 AUG 26 A 9:40

I certify that this is a true & accurate copy of the Original Document.

Acting Superintendent APR 14 2008
Northern Idaho Agency

BRANCH OF
TITLES & RECORDS
SECTION

Instrument # 460495
IDAHO COUNTY, IDAHO
2008-04-15 11:28:27 No. of Pages: 3
Recorded for : INLAND TITLE CO
ROSE E. GEHRING Fee: 9.00
Ex-Officio Recorder Deputy

162 11554

STATE OF IDAHO)
)
COUNTY OF NEZ PERCE)

On this 12th day of August, 1986, before me, the undersigned Notary Public in and for the County and State aforesaid, personally appeared Gordon E. Cannon known to me to be the Superintendent, Northern Idaho Agency, Lapwai, Idaho who executed the Modification to Easement as his free and voluntary act and deed for the use and purpose therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my seal on the day and year in this certificate first above written.

Notary Public in and for the
State of Idaho
Residing at Lapwai

My Commission expires 12/12/91

182 11554

STATE OF IDAHO)
)
COUNTY OF NEZ PERCE)

On this 11th day of Aug., 1986, before me, the undersigned Notary Public in and for the County and State aforesaid, personally appeared Patricia J. Rawlings known to me to be the President of RAWLINGS CONSTRUCTION COMPANY, INCORPORATED who executed the Modification to Easement as his free and voluntary act and deed for the use and purpose therein mentioned.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my seal on the day and year in this certificate first above written.

Notary Public in and for the
State of IDAHO
Residing at LEWISTON

My Commission expires LIFE

Place LTRO
Stamp here

182-15970

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Northern Idaho Agency
Post Office Box 277
Lapwai, ID 83540

TAKE PRIDE IN AMERICA

IN REPLY REFER TO
REAL ESTATE SERVICES

MODIFICATION OF EASEMENT

It is hereby agreed by and between Acting Superintendent, Northern Idaho Agency, Bureau of Indian Affairs, Department of the Interior, Grantor, and TRIPLE R FOREST PRODUCTS COMPANY (now out of business), Grantee/Assignee, that right-of-way covering Easement A containing 0 8963 acres and Easement B containing 0 8069 acres, be modified to change the name of the Assignee to BLUE NORTH FOREST PRODUCTS, LLC

The modification does not change any of the terms, conditions, or stipulations except as specifically set forth herein

GRANTOR

Michael Mongeau
Acting Superintendent, Northern Idaho Agency

GRANTEE/ASSIGNEE

Wm. E. Mulligan
William E Mulligan, Chief Operations Manager
Blue North Forest Products, LLC

APPROVED

Michael Mongeau
Acting Superintendent, Northern Idaho Agency
Northern Idaho Agency
Date 5/19/16

Place LTRO
Stamp here

ASSIGNMENT AND ASSUMPTION OF EASEMENT

This Assignment and Assumption of Easement is made effective June 10, 2016 (the "**Effective Date**") by Blue North Forest Products, LLC, a Washington limited liability company ("**Assignor**") to IFG-Kamp, LLC, an Idaho limited liability company ("**Assignee**").

Assignor is the current grantee and holder of, an Easement originally granted by the Bureau of Indian Affairs, Department of Interior, dated December 30, 1985, and recorded April 15, 2008, as Instrument No. 460493, as assigned by Grant and Assignment of Easement recorded April 15, 2008 as Instrument No. 460494, as modified by Modification of Easement recorded April 15, 2008 as Instrument No. 460495, as further modified by Modification of Easement recorded June 8, 2016 as Instrument No. 504480, Records of Idaho County, Idaho (the "**Easement**").

WHEREAS, on June 10, 2016, Assignor conveyed to Assignee the land accessed by the Easement.

NOW, THEREFORE:

Assignor hereby assigns to Assignee the Easement and all of its rights thereunder. Assignee hereby assigns and agrees to perform the obligations under the Easement arising after the Effective Date.

IN WITNESS WHEREOF, the parties have executed this Assignment.

Assignor:

Blue North Forest Products, LLC,
a Washington limited liability company

By: Bill Mulligan
Name: Bill Mulligan
Title: Operating Manager

Assignee:

IFG-Kamp, LLC, an Idaho limited liability company
By: Idaho Forest Group LLC, a Delaware limited liability company, it sole member

By:
Name: Louis Tamlisson
Title: Manager

Approved and Consented to:

Deborah Two Hatchet
Acting Superintendent, Northern Idaho Agency,
Bureau of Indian Affairs, Department of Interior

Date: 11-28-16

WATER RIGHTS

State of Idaho
DEPARTMENT OF WATER RESOURCES
Northern Region • 7600 N. Mineral Drive, Suite 100 • Coeur d'Alene, Idaho 83815-7763
Phone: (208) 762-2800 • Fax: (208) 762-2819 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

August 5, 2016

IFG – KAMP, LLC
687 CANFIELD AVE
STE 100
COEUR D ALENE ID 83815

Re: Change of Ownership for Water Right/Permit No(s): 84-4052 & 84-4053

Dear Water Right Holder(s):

The Department acknowledges the receipt of correspondence changing ownership of the above referenced water right(s) to you. The Department has modified its records to reflect this change in ownership and has enclosed a computer-generated report for your records.

Updating the ownership record for a water right does not reconfirm the validity of the right. When processing an ownership change notice, the department does not review the history of water use to determine if the right has been forfeited through five years or more of non-use. To read more about water right forfeiture, including how to protect a water right from forfeiture, please see § 42-222 and §42-223, Idaho Code.

Also note that as of July 1, 1996, water right owners are required to report any change of water right ownership and any change of mailing address of the owner of a water right, to the Department. Notice of the change must be provided to the Department within 120 days of the change. Water right forms are available from any office of the Department, or at www.idwr.idaho.gov.

If you have any questions concerning the enclosed information, please feel free to contact me at (208) 762-2800.

Sincerely,

Natalie Steading

Natalie Steading
Technical Records Specialist I

Enclosure(s)

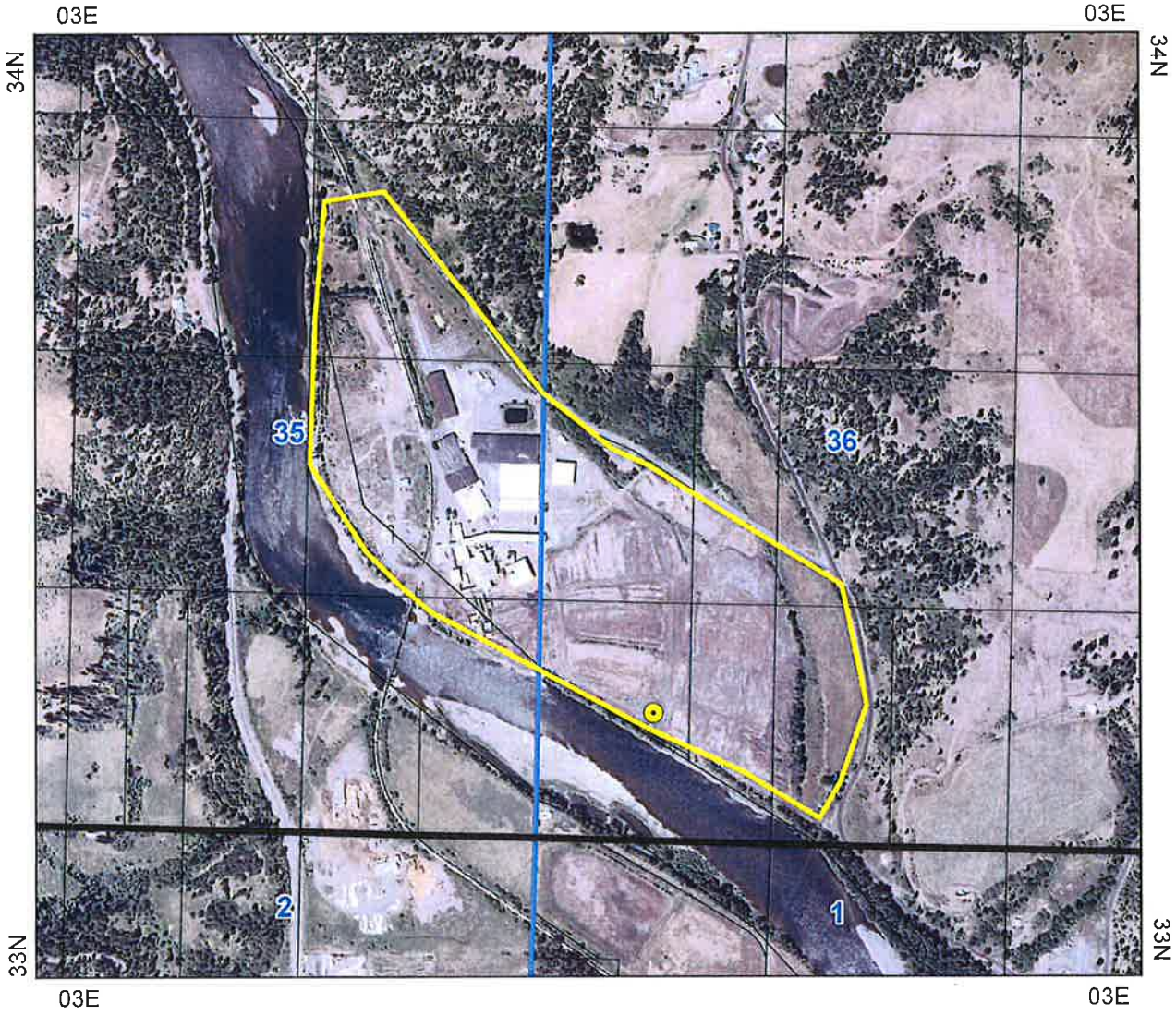
State of Idaho
Department of Water Resources

Water Right

84-4052

FIRE PROTECTION

The map depicts the place of use for the water use listed above and point(s) of diversion of this right as currently derived from interpretations of the paper records and is used solely for illustrative purposes. Discrepancies between the computer representation and the permanent document file will be resolved in favor of the actual water right documents in the water right file.



Point of Diversion
Place Of Use Boundary
Townships
PLS Sections
Quarter Quarters

0 0.1 0.2 0.4 Miles

N

Map produced on February 23, 2017

2005 MAY 18 PM 02:00
DISTRICT COURT - SRBA
TWIN FALLS CO., IDAHO
FILED _____

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA)
) PARTIAL DECREE PURSUANT TO I R C P. 54(b) FOR
Case No. 39576)
) Water Right 84-04053

NAME AND ADDRESS: THREE RIVERS TIMBER, INC
BOX 757
KAMIAH, ID 83536

SOURCE: GROUND WATER

QUANTITY: 0.18 CFS

PRIORITY DATE: 06/01/1953

POINT OF DIVERSION: T34N R03E S35 LOT 15 (NESE) Within Idaho County

PURPOSE AND PERIOD OF USE:

PURPOSE OF USE	PERIOD OF USE	QUANTITY
Domestic	01-01 TO 12-31	0.18 CFS

PLACE OF USE: Domestic — Within Idaho County

T34N R03E S35	LOT 14	(SENE)	LOT 15 (NESE)
S36		NESW	NWSW
	LOT 5	(SWSW)	LOT 2 (SESW)

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE I C. SECTION 42-1412(6).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R C P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules

John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

2005 MAY 18 PM 02:00
DISTRICT COURT - SRBA
TWIN FALLS CO . IDAHO
FILED _____

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA	)	PARTIAL DECREE PURSUANT TO I.R.C.P. 54(b) FOR
Case No. 39576	)	Water Right 84-04052
	)	

NAME AND ADDRESS: THREE RIVERS TIMBER, INC
BOX 757
KAMIAH, ID 83536

SOURCE: CLEARWATER RIVER TRIBUTARY: SNAKE RIVER

QUANTITY: 14.69 CFS

PRIORITY DATE: 06/01/1947

POINT OF DIVERSION: T34N R03E S36 LOT 5 (SWSW) Within Idaho County

PURPOSE AND PERIOD OF USE:

PURPOSE OF USE	PERIOD OF USE	QUANTITY
Industrial	01-01 TO 12-31	0.56 CFS
Fire Protection	01-01 TO 12-31	14.13 CFS

PLACE OF USE:

Industrial — Within Idaho County

T34N R03E S35	LOT 14	(SENE)	LOT 15	(NESE)
S36		NESW		NWSW
	LOT 5	(SWSW)	LOT 2	(SESW)

Fire Protection — Within Idaho County

T34N R03E S35	LOT 14	(SENE)	LOT 15	(NESE)
S36		NESW		NWSW
	LOT 5	(SWSW)	LOT 2	(SESW)

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. I.C. SECTION 42-1412(6).

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With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.

John M. Melanson
Presiding Judge of the
Snake River Basin Adjudication

SOILS DATA FOR MILL SITE

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kooskia Area, Idaho County, Idaho

February 24, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:6,140 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kooskia Area, Idaho County, Idaho
Survey Area Data: Version 10, Sep 16, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 3, 2010—Jul 5, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Kooskia Area, Idaho County, Idaho (ID618)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
GmD	Gwin-Mehlhorn stony loams, 12 to 45 percent slopes	24.2	22.8%
JaB	Jacknife silt loam, 7 to 12 percent slopes	0.0	0.0%
JaC	Jacknife silt loam, 12 to 25 percent slopes	0.5	0.5%
NcA	Nicodemus loam, 0 to 7 percent slopes	81.4	76.7%
Totals for Area of Interest		**106.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas.* Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kooskia Area, Idaho County, Idaho

GmD—Gwin-Mehlhorn stony loams, 12 to 45 percent slopes

Map Unit Setting

National map unit symbol: 55bl
Elevation: 1,600 to 5,000 feet
Mean annual precipitation: 14 to 28 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Gwin and similar soils: 55 percent
Mehlhorn and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gwin

Setting

Landform: Canyons
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess and/or colluvium over bedrock derived from basalt and/or greenstone

Typical profile

A - 0 to 8 inches: stony loam
Bt - 8 to 18 inches: very cobbly silty clay loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 12 to 45 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Mehlhorn

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over bedrock derived from basalt and/or igneous rock

Typical profile

A - 0 to 10 inches: stony loam
Bt - 10 to 28 inches: clay loam
R - 28 to 38 inches: bedrock

Properties and qualities

Slope: 12 to 45 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

JaB—Jacknife silt loam, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 55bv
Elevation: 1,200 to 3,000 feet
Mean annual precipitation: 22 to 26 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Jacknife and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jacknife

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or alluvium and colluvium derived from basalt

Typical profile

A - 0 to 18 inches: silt loam
Bt1 - 18 to 26 inches: silty clay loam
Bt2 - 26 to 60 inches: silty clay

Properties and qualities

Slope: 7 to 12 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

JaC—Jacknife silt loam, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 55bw
Elevation: 1,200 to 3,000 feet
Mean annual precipitation: 22 to 26 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Jacknife and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jacknife

Setting

Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess and/or alluvium and colluvium derived from basalt

Typical profile

A - 0 to 18 inches: silt loam
Bt1 - 18 to 26 inches: silty clay loam
Bt2 - 26 to 60 inches: silty clay

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

NcA—Nicodemus loam, 0 to 7 percent slopes

Map Unit Setting

National map unit symbol: 55cq
Elevation: 1,100 to 1,500 feet
Mean annual precipitation: 18 to 27 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Nicodemus and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nicodemus

Setting

Landform: Terraces
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess over mixed alluvium

Typical profile

A - 0 to 22 inches: loam
2C - 22 to 30 inches: very cobbly sandy loam
3C - 30 to 60 inches: extremely cobbly sand

Properties and qualities

Slope: 0 to 7 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Hydric soil rating: No

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SOILS DATA FOR 15 ACRE PARCEL

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kooskia Area, Idaho County, Idaho

February 24, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

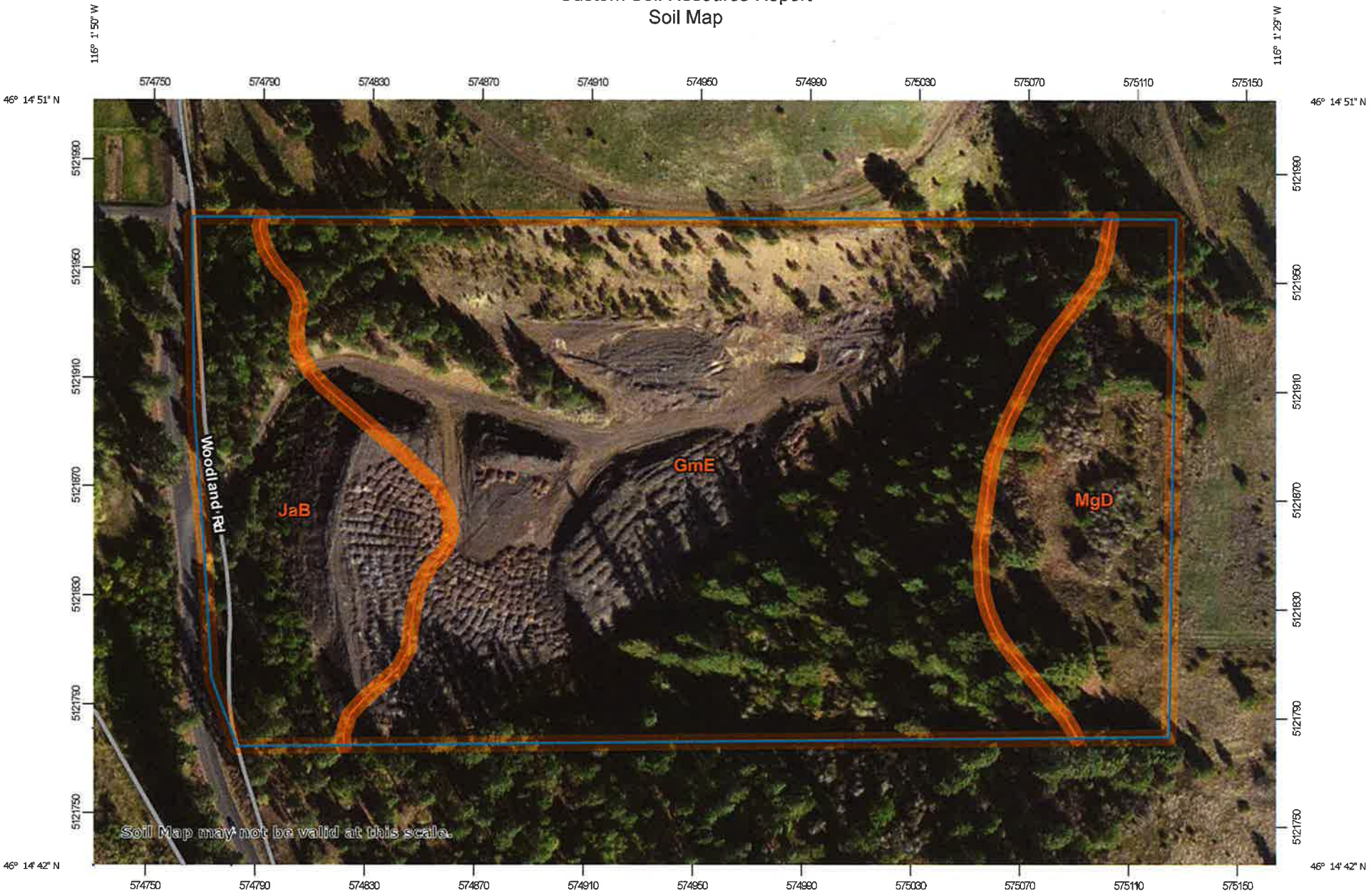
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,980 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kooskia Area, Idaho County, Idaho
Survey Area Data: Version 10, Sep 16, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 3, 2010—Jul 5, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Kooskia Area, Idaho County, Idaho (ID618)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
GmE	Gwin-Mehlhorn stony loams, 45 to 65 percent slopes	11.6	68.3%
JaB	Jacknife silt loam, 7 to 12 percent slopes	2.9	16.9%
MgD	Mehlhorn-Gwin loams, 25 to 45 percent slopes	2.5	14.8%
Totals for Area of Interest		**16.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kooskia Area, Idaho County, Idaho

GmE—Gwin-Mehlhorn stony loams, 45 to 65 percent slopes

Map Unit Setting

National map unit symbol: 55bm
Elevation: 1,600 to 5,000 feet
Mean annual precipitation: 14 to 28 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Gwin and similar soils: 65 percent
Mehlhorn and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gwin

Setting

Landform: Canyons
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess and/or colluvium over bedrock derived from basalt and/or greenstone

Typical profile

A - 0 to 8 inches: stony loam
Bt - 8 to 18 inches: very cobbly silty clay loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 45 to 65 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Mehlhorn

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loess over bedrock derived from basalt and/or igneous rock

Typical profile

A - 0 to 10 inches: stony loam
Bt - 10 to 28 inches: clay loam
R - 28 to 38 inches: bedrock

Properties and qualities

Slope: 45 to 60 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

JaB—Jacknife silt loam, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 55bv
Elevation: 1,200 to 3,000 feet
Mean annual precipitation: 22 to 26 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Jacknife and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jacknife

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or alluvium and colluvium derived from basalt

Typical profile

A - 0 to 18 inches: silt loam
Bt1 - 18 to 26 inches: silty clay loam
Bt2 - 26 to 60 inches: silty clay

Properties and qualities

Slope: 7 to 12 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

MgD—Mehlhorn-Gwin loams, 25 to 45 percent slopes

Map Unit Setting

National map unit symbol: 55cl
Elevation: 900 to 5,000 feet
Mean annual precipitation: 14 to 28 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Mehlhorn and similar soils: 55 percent
Gwin and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mehlhorn

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loess over bedrock derived from basalt and/or igneous rock

Typical profile

A - 0 to 10 inches: loam
Bt - 10 to 28 inches: gravelly clay loam
R - 28 to 38 inches: bedrock

Properties and qualities

Slope: 25 to 45 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Gwin

Setting

Landform: Ridges
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess and/or colluvium over bedrock derived from basalt and/or greenstone

Typical profile

A - 0 to 8 inches: loam
Bt - 8 to 18 inches: very cobbly silty clay loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 25 to 45 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

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APPRAISER'S EXPERIENCE AND QUALIFICATIONS

APPRAISER'S EXPERIENCE AND QUALIFICATIONS

NAME: Don A. Kerby, President of Western Appraisals

HOME ADDRESS: 19315 Kerby Lane
Lenore ID 83541
(208)276-3343

EDUCATION:

Lapwai High School - 1981
University of Idaho, BS (Agriculture Mechanization with Plant Science and Agriculture Business Emphasis)
American Society of Farm Managers and Rural Appraisers (ASFMRA) Courses:

- A-10 Fundamentals of Rural Appraisal, Welches, OR
- A-20 Principles of Rural Appraisal, Spokane, WA
- A-30 Advanced Rural Appraisal, Kennewick, WA
- A-12 Standards of Professional Appraisal Practice and Code of Ethics, Clarkston, WA
- Valuation of Conservation Easements, Billings, MT

Appraisal Institute Courses:

- 101 Introduction to Appraising Real Property, Denver, CO
- 1BA Capitalization Theory and Techniques Part A, Portland, OR
- 1BB Capitalization Theory and Techniques Part B, Portland, OR
- 410 Standards of Professional Appraisal Practice Part A, San Diego, CA
- 420 Standards of Professional Appraisal Practice Part B, Spokane, WA
- 430 Standards of Professional Appraisal Practice Part C, Helena, MT
- 550 Advanced Applications, Boulder, CO
- 540 Report Writing and Valuation Analysis, Tempe, AZ
- Uniform Appraisal Standards for Federal Land Acquisitions, Seattle, WA
- Federal Land Exchanges, Phoenix, AZ
- National USPAP Update Course, Every two years various location
- Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book), Seattle, WA

Other: Various Appraisal Institute and ASFMRA Seminars

LICENSES, CERTIFICATIONS & ASSOCIATIONS:

Washington State General Certified Appraiser #1100334
Idaho State General Certified Appraiser - #120
Associate Member Appraisal Institute
Candidate Member American Society of Farm Managers and Rural Appraisers
Idaho State Ad Valorem Certified Evaluator

EMPLOYMENT:

February 1992 to Present: Western Appraisals, Owner and President -- Private fee appraisals and consulting involving commercial, agricultural, rural/recreational, residential, and other types of real property. Cherrylane Ranches, Inc., President/manager, farm, pasture, and timberlands in north central Idaho.

December 1989 to February 1992: Farm Credit Services -- Staff Appraiser in Lewiston, Idaho; Mount Vernon, Washington; and Missoula, Montana. Conducted rural and suburban appraisal work for agriculture lending institutions in north central Idaho, eastern and western Washington, and western Montana. Primarily appraised farms and ranches including dryland agriculture, irrigated lands, dairy farms, cattle ranches, orchards, and timberlands and many properties with heavy residential, commercial, and recreational influences. Other properties appraised include commercial processing facilities, greenhouses, equestrian facilities, and residential properties.

October 1986 to December 1989: Farm Credit Services -- Credit Officer/Appraiser in Lewiston, Idaho. Compilation and approval of agriculture loans for operating money, equipment purchases, real estate purchase, and new construction.

Summer 1986: Idaho Crop Improvement Association Crop Inspector for Idaho State Seed Certification Program, North Idaho Region - Post Falls, Idaho. Inspection of seed crops for Idaho State Seed Certification Program.

FARALLON CONSULTING

Washington
Issaquah | Bellingham | Seattle
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Portland | Bend | Baker City
California
Oakland | Sacramento | Irvine

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT

Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 1638-001

For:
Idaho Forest Group, LLC
687 Canfield Avenue, Suite 100
Coeur d'Alene, Idaho 83815

June 9, 2016

Prepared by:

Lyndsey Needham, G.I.T.
Project Geologist

Reviewed by:

Tina Huff, R.E.P.A.
Principal Regulatory Specialist

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ENVIRONMENTAL PROFESSIONALS' STATEMENT

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as established in Part 312.10 of Title 40 of the Code of Federal Regulations (40 CFR 312.10) and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

Name	Lyndsey Needham, G.I.T.	Name	Tina Huff, R.E.P.A.
Title	Project Geologist	Title	Principal Regulatory Specialist

EXECUTIVE SUMMARY

Farallon Consulting, L.L.C. (Farallon) has prepared this Phase I Environmental Site Assessment (Phase I ESA) Report for the Blue North Forest Products LLC property at 283 Woodland Road in Kamiah, Idaho (herein referred to as the Site). The Phase I ESA was conducted by Ms. Lyndsey Needham and was reviewed and approved by Ms. Tina Huff. Both are experienced Environmental Professionals in the field of Phase I ESAs and related environmental investigations.

This Phase I ESA Report was prepared for Idaho Forest Group, LLC in accordance with the letter regarding Proposal for Phase I Environmental Site Assessment, Blue North Lumber, Kamiah, Idaho dated April 6, 2016, prepared by Farallon. The scope of work for this Phase I ESA is consistent with ASTM International Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13). ASTM E1527-13 is intended to assist the user in satisfying one of the requirements to qualify for protection from potential liability under the Comprehensive Environmental Response, Compensation, and Liability Act as the innocent landowner, contiguous property owner, or bona fide prospective purchaser. ASTM E1527-13 constitutes "all appropriate inquiry" into the previous ownership, uses, and environmental conditions of a property consistent with good commercial or customary practice, as defined in Section 9601(35)(B) of Title 42 of the U.S. Code.

There were no deviations from ASTM E1527-13 during the completion of this Phase I ESA, with the exception of reviewing asbestos sampling data collected at the Site by others and providing a professional opinion regarding potential impacts to the Site per the request of Idaho Forest Group, LLC. Limiting conditions encountered during the completion of the Phase I ESA were the presence of equipment, stored materials, and overgrown vegetation on exterior portions of the Site that prevented Farallon from observing the entire ground surface of the Site, and the presence of equipment and stored materials in the Site buildings that prevented Farallon from observing the entire interior floor surfaces. Based on information obtained from the Site representative, these limiting conditions are not expected to hinder the conclusions of this report.

The purpose of the Phase I ESA was to identify, as practicable, recognized environmental conditions on or proximate to the Site that have caused and/or may cause an adverse environmental condition. This Phase I ESA Report provides the results of investigation into past and present ownership and uses of the Site, consistent with good commercial and/or customary practice.

The Site consists of the following Idaho County Tax Parcel Nos.:

- RP 34NO3E351950 A;
- RP 34NO3E352110 A;
- RP 34NO3E364511 A;
- RP 34NO3E365600 A;
- PP/PP 000009701 A;

- PP/PP 000009702 A;
- RP 34NO3E350300 A; and
- PP/PP 000009700 A

The Site totals 114 acres of land developed with approximately 23 structures. The Site is operated by Blue North Forest Products LLC, who processes raw timber into varying dimensions of lumber, and kiln-dries and packages the lumber for delivery. The Site consists of: log process areas that include debarking, a sawmill, and a planer mill; kilns; log yards; a scrap storage yard; maintenance buildings; open and closed log and lumber storage areas; offices; hog-fueled fired boilers; and warehouse/storage areas. The main lumber operations occupy approximately 34 acres of land on the central portion of the Site. Approximately 40 acres of the Site consist of log yards and the scrap storage yard. The remaining portions of the Site are vegetated and undeveloped, with the exception of a wood waste landfill on the eastern portion of the Site. Surface water from impermeable surfaces on the developed portion of the Site is conveyed to two ditches (east and west) that were constructed to receive surface water. Stormwater in the ditches is conveyed to a lined stormwater detention pond, and discharges over a weir into the Clearwater River under a National Pollutant Discharge Elminiation System Permit.

Other structures on the Site include fenced-off electrial transformers, a rail spur, a hog fuel shed, a fire suppression building, a steam cleaning/wash rack area with an oil-water separator, a 160,000-gallon concrete water-holding tank, and lagoons. The Site is accessed from Woodland Road to the east. According to the Idaho County Assessor, the Site owner is Blue North Forest Products LLC, a privately owned lumber mill.

Wastewater generated from steam cleaning/wash rack operations adjacent to the maintenance shop on the southern portion of the Site is directed into a recirculating oil-water separator. Solids and debris are filtered from the wastewater. The majority of the water is recirculated and reused; a minor volume of water is discharged to a septic system adjacent to this area. The recirculating system reportedly was installed in the 1990s. Details regarding steam cleaning and wash rack operations prior to the 1990s were not located. The potential release of hazardous substances in connection with long-term lumber mill operations represents a recognized environmental condition on connection with the Site.

A wood waste landfill is present on the eastern portion of the Site. Hazardous substances often are associated with wood waste landfilling. According to the Site representative, wood waste has not been placed in the landfill since Blue North Forest Products LLC has occupied the Site, and wood waste is sold to off-Site parties. No records regarding waste placed in the wood waste landfill for the past several years were located. No records or monitoring data regarding potentially contaminated leachate migrating to groundwater at the Site were located. The potential release of hazardous substances in connection with the wood waste landfill represents a recognized environmental condition in connection with the Site.

At the time of the site reconnaissance, Farallon observed various hazardous substances and new and used petroleum products stored throughout the Site in containers ranging from 1-quart to 200-gallon totes, and in aboveground storage tanks (ASTs) ranging from 250- to 12,000-gallon capacity. The materials included: motor oils, lubricants, hydraulic fluids, gasoline, batteries, degreasers, cleaners, paints, and diesel used for equipment/vehicle fueling, various maintenance activities, and the fire suppression system; boiler chemicals such as water softeners and conditioners and oils for the boiler and associated steam and cooling systems; and vehicle motor oil, petroleum products, and hydraulic fluid for the log process areas and storage yards. The materials generally appeared to be properly labeled and stored within secondary containment in buildings or beneath covered areas, although areas of significant staining were observed in and around containers or ASTs in various locations throughout the Site, and in localized areas throughout the scrap storage yard. Based on information provided by the Site representative, materials generally have been stored in the same locations for 40 to 50 years, or when mill operations first began. The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products represents a recognized environmental condition in connection with the Site.

Historically, the Site appeared to be undeveloped on the 1924 topographic map reviewed. By the 1940s when lumber mill operations began, the Site appeared to be developed with two buildings on the central portion of the Site, surrounded by vacant land. Additional buildings were constructed throughout the central portion of the Site through the 1990s. Log storage historically has taken place on the southeastern and south-central portions of the Site. A former log storage pond on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of the fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the log storage pond represents a recognized environmental condition in connection with the Site. Additional structures were constructed on the central portion of the Site up until the mid-2000s. The Site has remained relatively unchanged since that time. City directory listings for the Site address included Blue North Forest Products LLC as the occupant of the Site.

Aerial photographs reviewed depicted a “wigwam-type” wood-waste burner on the south-central portion of the Site near the former log storage pond in approximately 1955. According to the Site representative, boiler ash generated at the Site historically was stockpiled on the north-central portion of the Site. Incomplete combustion of wood waste can result in concentrations of metals, dioxin/furans, and polycyclic aromatic hydrocarbons that can impact subsurface and surface water. The potential release of hazardous substances in connection with the boiler ash waste pile represents a recognized environmental condition in connection with the Site.

Farallon was provided with a Phase I ESA report dated June 30, 2003 prepared for the Site by Maxim Technologies, Inc. (2003 Phase I report), and a Phase I ESA report dated April 18, 2008 prepared for the Site by LandAmerica Assessment Corporation (2008) (2008 Phase I report). The Site layout and use described in the 2003 and 2008 Phase I reports are similar to those of the present, with the exceptions that the original saw mill has not operated since 2010, and planer machinery has been electric since 2014. According to the 2003 and 2008 Phase I reports, the Site

has operated as a lumber mill since the 1940s. A release of petroleum hydrocarbons occurred while a previous tenant occupied the Site in the 1990s. Petroleum impacts from a release of diesel fuel in the area of the rail spur were detected in groundwater beneath that area. The petroleum contamination reportedly was cleaned up, and the Site received regulatory closure in 2000. The 2003 and 2008 Phase I reports considered the diesel spill a historical recognized environmental condition in connection with the Site, with no other recognized environmental conditions reported.

Farallon was provided with a previous letter regarding bulk sampling analysis for asbestos at the Site prepared by Mountain Laboratories dated May 20, 2016. Based on the information provided, building materials, including tar paper, thermal systems insulation, and boiler brick, were sampled and analyzed to determine the asbestos type and total percentage of asbestos. Chrysotile and/or Amosite asbestos totaling 7 to 75 percent were detected in 6 of the 11 thermal systems insulation samples collected. Asbestos was not detected in the one tar paper sample or two boiler brick samples collected. The known presence of asbestos in building materials at the Site represents a recognized environmental condition in connection with the Site.

Adjacent properties at the time of Farallon's site reconnaissance included the Clearwater River to the south and west, and undeveloped land sparsely developed with residences to the east and north. Historically, adjacent properties appeared undeveloped on the 1924 topographic map, with the Clearwater River south- and west-adjacent to the Site. By 1947, the north- and east-adjacent properties appeared sparsely developed with private residences surrounded by undeveloped land partially used for agricultural purposes, similar to the present. Adjacent properties were not listed in the city directories reviewed.

The Environmental Data Resources, Inc. (EDR) database report prepared for the Site (EDR report) identified Blue North Forest Products LLC in the FINDS, TRIS, and ECHO databases. According to the EDR report, Blue North Forest Products LLC's operations use chemicals listed by the U.S. Environmental Protection Agency (EPA) as toxic. The chemicals reportedly are removed from the Site for off-Site disposal. The Site has an active stormwater industrial permit and an air emissions permit, with no reported violations. The EDR report listed Three Rivers Timber, Inc., a former occupant of the Site, in various other regulatory databases. The database listings for Three Rivers Timber, Inc. indicated that a release to the subsurface from a former underground storage tank that was used to contain diesel fuel at the Site had occurred. Subsurface impacts were remediated, and the release received regulatory closure in 2000. The former release at the Site represents a historical recognized environmental condition in connection with the Site. Because the Site is on Nez Perce Tribal Trust Land, Farallon contacted EPA Region 10 to request a review of regulatory files for the Site. Regulatory files for the Site were not available for review prior to completion of this Phase I ESA Report. The unavailability of regulatory files for the Site is a data gap for this Phase I ESA Report. Because regulatory files could include pertinent information regarding the current regulatory status of the Site, this data gap may hinder the conclusions of this report.

Based on review of the Site history, interviews with persons knowledgeable about the Site, reconnaissance of the Site, and review of regulatory agency lists, this Phase I ESA identified the following recognized environmental conditions in connection with the Site:

- The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products associated with lumber mill operations on the Site;
- The known presence of asbestos in building materials at the Site;
- The potential release of hazardous substances in connection with the boiler ash waste historically placed on the north-central portion of the Site;
- The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the former log storage pond on the south-central portion of the Site; and
- The potential release of hazardous substances in connection with historical wood waste landfilling on the eastern portion of the Site.

1.0 INTRODUCTION

This Phase I Environmental Site Assessment (Phase I ESA) Report was prepared by Farallon Consulting, L.L.C. (Farallon) for the Blue North Lumber property at 283 Woodland Road in Kamiah, Idaho (herein referred to as the Site) (Figure 1). This section discusses the project authorization, and the qualifications of the Environmental Professionals conducting and reviewing the Phase I ESA work. Also included in this section are the project purpose, objective, scope of services, deviations, limiting conditions, and data gaps.

1.1 PROJECT AUTHORIZATION

This Phase I ESA Report was prepared for Idaho Forest Group, LLC in accordance with the letter regarding Proposal for Phase I Environmental Site Assessment, Blue North Lumber, Kamiah, Idaho dated April 6, 2016, prepared by Farallon. The scope of work for this Phase I ESA is consistent with ASTM International Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13).

1.2 PROFESSIONAL QUALIFICATIONS

The Phase I ESA was conducted by Ms. Lyndsey Needham and was reviewed and approved by Ms. Tina Huff. Both have an understanding of surface and subsurface environmental conditions and the processes used to evaluate these conditions, and the ability to develop opinions regarding conditions indicative of a release or threatened release of hazardous substances and petroleum products. These Environmental Professionals have developed and performed all appropriate inquiry, in conformance with the standards and practices set forth in Part 312 of Title 40 of the Code of Federal Regulations. The professional qualifications of Mss. Needham and Huff are provided in Appendix A.

1.3 PROJECT PURPOSE AND OBJECTIVE

The purpose of the Phase I ESA was to identify, as practicable, recognized environmental conditions on the Site and within the appropriate study area that have caused and/or may cause an adverse environmental impact. ASTM E1527-13 is intended to permit a user to satisfy one of the requirements to qualify for protection from potential liability under the Comprehensive Environmental Response, Compensation, and Liability Act as the innocent landowner, contiguous property owner, or bona fide prospective purchaser. ASTM E1527-13 constitutes "all appropriate inquiry" into the previous ownership, uses, and environmental conditions of a property consistent with good commercial or customary practice, as defined in Section 9601(35)(B) of Title 42 of the U.S. Code.

The objective of the Phase I ESA was to perform an appropriate inquiry into past and present ownership and uses of the Site, consistent with good commercial and/or customary practice. This Phase I ESA Report is to be used as a risk management tool to meet all appropriate inquiry

requirements and the Comprehensive Environmental Response, Compensation, and Liability Act liability defense. The Phase I ESA does not guarantee that there are no impacts to the Site.

For the purpose of this Phase I ESA Report, the term "recognized environmental condition" is defined as the presence or likely presence of any hazardous substance or petroleum product in, on, or at the Site due to releases to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. The term is not intended to include "de minimis conditions" that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of the applicable governmental agencies.

The term "controlled recognized environmental condition" is defined as a recognized environmental condition resulting from a past release of a hazardous substance or petroleum product that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in-place subject to implementation of required controls.

The term "historical recognized environmental condition" is defined as a past release of any hazardous substance or petroleum product that has occurred in connection with the Site and has been addressed to the satisfaction of the applicable regulatory authority, without subjecting the Site to any required controls.

1.4 PROJECT SCOPE OF SERVICES

This Phase I ESA Report has been prepared in accordance with the scope of work presented in ASTM E1527-13 and the letter regarding Proposal for Phase I Environmental Site Assessment, Blue North Lumber, Kamiah, Idaho dated April 6, 2016, prepared by Farallon.

The scope of work for this Phase I ESA included a records review, literature research and review, a site reconnaissance, interviews with individuals familiar with the Site, interviews with local governmental officials, and preparation of this report.

1.5 DEVIATIONS

There were no deviations from ASTM E1527-13 during the completion of this Phase I ESA, with the exception of reviewing asbestos sampling data collected at the Site by others and providing a professional opinion regarding potential impacts to the Site per the request of Idaho Forest Group, LLC.

1.6 LIMITING CONDITIONS

Limiting conditions encountered during the completion of the Phase I ESA were the presence of equipment, stored materials, and overgrown vegetation on exterior portions of the Site that prevented Farallon from observing the entire ground surface of the Site, and the presence of

equipment and stored materials in the Site buildings that prevented Farallon from observing the entire interior floor surfaces. Based on information obtained from the Site representative, these limiting conditions are not expected to hinder the conclusions of this report.

1.7 DATA GAPS

Data gaps may affect the ability to identify recognized environmental conditions and Farallon's ability to render opinions and conclusions for presentation in the Phase I ESA Report. Farallon did not identify significant data gaps during the completion of this Phase I ESA, with the exception of the unavailability of potentially pertinent information from regulatory agencies regarding the current regulatory status of the Site. This data gap may hinder the conclusions of this report.

2.0 SITE OVERVIEW

This section includes an overview of the Site location, improvements, and operations. A description of adjacent and surrounding land use also is provided.

2.1 SITE LOCATION

The Site is northwest of the intersection of Woodland Road and Woodland Grade Road, at 283 Woodland Road in Kamiah, Idaho County, Idaho. The location is in an industrial area approximately 1 mile north of downtown Kamiah. The Site vicinity is shown on Figure 1.

2.2 SITE DESCRIPTION

The Site consists of the following Idaho County Tax Parcel Nos.:

- RP 34NO3E351950 A;
- RP 34NO3E352110 A;
- RP 34NO3E364511 A;
- RP 34NO3E365600 A;
- PP/PP 000009701 A;
- PP/PP 000009702 A;
- RP 34NO3E350300 A; and
- PP/PP 000009700 A

The Site totals 114 acres of land developed with approximately 23 structures. The Site is operated by Blue North Forest Products LLC, who processes raw timber into varying dimensions of lumber, and kiln-dries and packages the lumber for delivery. The Site consists of: log process areas that include debarking, a sawmill, kilns, and a planer mill; log yards; a scrap storage yard; maintenance buildings; open and closed log and lumber storage areas; offices; hog-fueled fired boilers; and warehouse/storage areas. The main lumber operations occupy approximately 34 acres of land on the central portion of the Site. Approximately 40 acres of the Site consist of log yards and the scrap storage yard. The remaining portions of the Site are vegetated and undeveloped, with the exception of a wood waste landfill on the eastern portion of the Site. Surface water from impermeable surfaces on the developed portion of the Site is conveyed to two ditches (east and west) that were constructed to receive surface water. Stormwater in the ditches is conveyed to a lined stormwater detention pond, and discharges over a weir into the Clearwater River. According to the Idaho County Assessor, the Site owner is Blue North Forest Products LLC, a privately owned lumber mill.

Other structures on the Site include fenced-off electrial transformers, a rail spur, a hog fuel shed, a fire suppression building, a steam cleaning/wash rack area with an oil-water separator, 160,000-gallon concrete water holding tank, and lagoons.

The southeastern portion of the Site is used for log storage and delivery, and is accessed from the easternmost entrance to the Site off Woodland Road. The western portion of the Site is undeveloped land with the two drainage ditches and ponds, and is accessible only from within the Site. A rail spur north of the buildings connects to a double-rail track that bisects the Site. The spur splits from the main line on the western end, and ingresses approximately 0.25 mile south onto the Site to the packaging/loading building.

A wood waste landfill is present on the eastern portion of the Site. Hazardous substances often are associated with wood waste landfilling. According to the Site representative, wood waste has been sold to off-Site parties since Blue North Forest Products LLC has occupied the Site, and is not landfilled on the Site. No records regarding waste placed in the wood waste landfill for the past several years were located. No records or monitoring data regarding potentially contaminated leachate migrating to groundwater at the Site were located. The potential release of hazardous substances in connection with the wood waste landfill represents a recognized environmental condition in connection with the Site.

A plan map of the Site is shown on Figure 2. Additional details pertaining to the Site are provided in Section 8.2, Site Reconnaissance Observations. Site photographs are presented in Appendix B.

2.3 SITE OPERATIONS

The Site currently is owned and operated by Blue North Forest Products LLC, which processes raw timber into varying dimensions of lumber, and kiln-dries and packages the lumber for delivery. Raw logs are delivered by log trucks to the Site, where they are sorted, debarked, and processed into lumber by sawing the green logs. Once cut, the lumber is sorted, stickered for air flow, and dried in the dry kilns. Dried lumber is routed through the planer mill, and then stored on the Site until being shipped to market. Wood by-products (e.g., bark, sawdust, chips, shavings) are used as fuel for the two Site boilers, which produce non-contact steam for drying lumber in the kilns. Excess wood by-products are sold to Clearwater Paper or other off-Site parties.

2.4 ADJACENT AND SURROUNDING LAND USE

Adjacent properties at the time of Farallon's site reconnaissance included the Clearwater River to the south and west, and undeveloped land sparsely developed with residences to the east and north. No visual evidence of recognized environmental conditions was observed on abutting or nearby properties during the site reconnaissance. Observations were restricted to areas readily observable from the Site, and to public rights-of-way within an approximately 0.25-mile radius of the Site.

3.0 PHYSICAL SETTING

The physical setting of the Site, including topography, geology, and hydrogeology, is described in this section. Farallon's assessment of sensitive receptors in the area also is discussed.

3.1 TOPOGRAPHY

Farallon reviewed the U.S. Geological Survey (USGS) topographic map for Kamiah, Idaho dated 2014 provided by Environmental Data Resources, Inc. (EDR). The map depicts the Site at an elevation of approximately 1,175 feet above mean sea level. The Site topography is relatively flat, with a slight slope down to the southwest toward the south- and west-adjacent Clearwater River. Regional topography is hilly, with the Clearwater River valley transecting the region from the northwest to the southeast.

3.2 GEOLOGY AND HYDROGEOLOGY

The Site is underlain by Nicodemus loam, which consists of fine sandy loam to approximately 22 inches below ground surface (bgs) overlying mixed alluvial sand, gravel, and cobblestone channel and flood plain deposits of the Clearwater River from approximately 22 to 60 inches bgs. The Nicodemus loam overlies Tertiary-aged granitic rocks of the Idaho Batholith. Nicodemus loam is moderately well-drained; the depth to water is approximately 24 to 42 inches bgs. The Site is within the Clearwater Embayment area of the Columbia Plateau Regional Aquifer System. Groundwater in the Columbia Plateau Regional Aquifer System occurs in basalt deposits and overlying sediments. Groundwater at the Site likely occurs in alluvial sediments underlying the Site. Shallow groundwater flow direction typically can be estimated by examination of surface topography or by nearby surface water bodies. Based on the surface topography at the Site and the south- and west-adjacent Clearwater River, shallow groundwater flow at the Site is expected to flow to the southwest. Farallon cannot determine the actual direction of groundwater flow or depth to groundwater at the Site without the installation of monitoring wells.

3.3 SENSITIVE RECEPTORS

Farallon conducted a limited assessment of sensitive receptors on or in the vicinity of the Site that was confined to visually apparent features such as surface water bodies (e.g., low-lying wet areas, streams, ponds) and residential and recreational areas. Farallon's assessment of sensitive receptors included a review of readily ascertainable information relating to the presence of private, semiprivate, public, and industrial water supply wells.

According to The EDR Radius Map Report with GeoCheck prepared for the Site dated April 8, 2016 (EDR report), the south- and north-central portions of the Site are within a federally designated wetland. Two private water-supply wells were identified within 0.25 miles southeast and northwest of the Site. The water bodies nearest the Site were identified as Tom Taha Creek approximately 0.4 mile southeast of the Site, and the Clearwater River south- and west-adjacent

to the Site. According to the Site representative, a domestic water-supply well that services the Site is present north of the kilns.

4.0 USER-PROVIDED INFORMATION

Farallon understands that the user of this report, Idaho Forest Group, LLC, is seeking to follow the standards set forth in ASTM E1527-13 to complete an environmental assessment of the Site. The user has specific responsibilities for fulfilling ASTM E1527-13 requirements to help identify the possibility of recognized environmental conditions in connection with the Site. These responsibilities do not require the technical expertise of an Environmental Professional, and were not performed by the Environmental Professional who conducted the Phase I ESA at the Site.

To facilitate fulfillment of the ASTM E1527-13 requirements identified below, Farallon provided Idaho Forest Group, LLC with a copy of the *Phase I ESA User Questionnaire* (User Questionnaire) to complete. The User Questionnaire is provided in Appendix C of this Phase I ESA Report.

4.1 TITLE AND LIEN RECORDS

Idaho Forest Group, LLC indicated that it was not aware of environmental liens against the Site.

4.2 EXPERIENCE AND SPECIALIZED KNOWLEDGE

Idaho Forest Group, LLC indicated that it has no experience or specialized knowledge regarding the Site.

4.3 COMMONLY KNOWN INFORMATION

Idaho Forest Group, LLC indicated that it is not aware of commonly known information that would lead to identification of recognized environmental conditions in connection with the Site.

4.4 PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT USERS

Idaho Forest Group, LLC will rely on this Phase I ESA Report.

4.5 PREVIOUS ENVIRONMENTAL STUDIES

Farallon was provided with a Phase I ESA report dated June 30, 2003 prepared for the Site by Maxim Technologies, Inc. (2003 Phase I report), and a Phase I ESA report dated April 18, 2008 prepared for the Site by LandAmerica Assessment Corporation (2008 Phase I report). The Site layout and use described in the 2003 and 2008 Phase I reports are similar to those of the present, with the exceptions that the original saw mill has not operated since 2010, and planer machinery has been electric since 2014. According to the 2003 and 2008 Phase I reports, the Site has operated as a lumber mill since the 1940s. Weyerhaeuser Company purchased the Site in 1992, and operated the lumber mill until 1996. During Weyerhaeuser's ownership of the Site, petroleum hydrocarbons from a diesel spill in the area of the rail spur were detected in groundwater beneath that area. The petroleum contamination reportedly was cleaned up, and the Site received regulatory closure in 2000. The 2003 and 2008 Phase I reports considered the diesel spill a historical recognized

environmental condition in connection with the Site, with no other recognized environmental conditions reported.

Additional information regarding the former spill is provided in Section 6.1, On-Site Listings.

Farallon was provided with a previous letter regarding bulk sampling analysis for asbestos at the Site prepared by Mountain Laboratories dated May 20, 2016. Based on the information provided, building materials, including tar paper, thermal systems insulation (TSI), and boiler brick, were sampled and analyzed to determine the asbestos type and total percentage of asbestos. Chrysotile and/or Amosite asbestos totaling 7 to 75 percent were detected in 6 of the 11 TSI samples collected. Asbestos was not detected in the one tar paper sample or two boiler brick samples collected. The known presence of asbestos in building materials at the Site represents a recognized environmental condition in connection with the Site.

5.0 SITE BACKGROUND AND HISTORY

Farallon reviewed the following historical sources during the completion of this Phase I ESA:

- Aerial photographs of the Kamiah, Idaho area dated 1947, 1966, 1975, 1981, 1992, 1998, 2009, and 2011 obtained from EDR; and dated 1992, 1998, 2004, 2006, 2009, 2011, and 2013 obtained from Google Earth;
- Polk City Directories of Kamiah, Idaho dated 1999, 2008, and 2013 obtained from EDR; and
- USGS topographic maps of Kamiah, Idaho dated 1924, 1967, 1979, 1984, 2013, and 2014 obtained from EDR.

A search for Sanborn Fire Insurance Maps resulted in notification that there was no coverage for the Site.

Farallon is not responsible for the accuracy or completeness of the historical sources reviewed. The historical sources documented were reasonably ascertainable and practically reviewable during the completion of this Phase I ESA.

5.1 SITE

The Site appeared to be undeveloped on the 1924 topographic map. By the 1940s, the Site was operated as a lumber mill, and appeared to be developed with two buildings on the central portion, surrounded by vacant land. By 1966 and through 1975, the Site appeared to be developed with at least four buildings on the central portion, while the southeastern and western portions appeared to be used for log storage. By 1981, the Site appeared to be developed with at least 12 buildings on the central and south-central portions, with vacant land on the northwestern portion, log storage occurring on the southeastern portion, and a log storage pond present on the south-central portion. By 1992 and through 1998, the Site appeared to be developed similar to 1981, with buildings added on the central portion, and some buildings removed from the south-central portion. Log storage historically has taken place on the southeastern and southcentral portions of the Site. A log storage pond formerly present on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of the fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the log storage pond represents a recognized environmental condition in connection with the Site.

By 2004, the south-central portion of the Site was partially used for storage, a building was added on the south-central portion, a building was added on the north-central portion, the southeastern portion was used for lumber storage, and the northwestern portion was mostly vacant land. By 2006, the Site appeared to be developed similar to 2004, with additional log storage on a section of the northwestern portion. By 2009, the buildings on the Site remained similar to 2004, although there was no log storage on the Site. By 2011, the Site appeared to be developed similar to the

present, with approximately 23 buildings on the central and south-central portions of the Site, and log storage on the south and eastern portions of the Site.

Aerial photographs depicted a "wigwam-type" wood-waste burner on the south-central portion of the Site near the former log storage pond in approximately 1955. According to the Site representative, boiler ash generated at the Site historically was stockpiled on the north-central portion of the Site. Incomplete combustion of wood waste can result in concentrations of metals, dioxin/furans, and polycyclic aromatic hydrocarbons (PAHs) that can impact subsurface and surface water. The potential release of hazardous substances in connection with the boiler ash waste pile represents a recognized environmental condition in connection with the Site.

According to the Site representative, the Site originally was operated as a lumber mill by Twin Feathers Mill in the 1940s. In the 1950s, the Site was purchased by Potlach, who operated a lumber mill on the Site until the 1980s. Between 1983 and 1986, lumber mill operations ceased. In 1986, Rawlins Group operated the lumber mill under the name Triple R. A subsidiary of Weyerhaeuser Company purchased the Site in 1992, and operated the mill until 1996. Three Rivers Timber purchased the Site in 1996 and operated the lumber mill until Blue North Forest Products LLC purchased and began operating the lumber mill in approximately 2011.

5.2 ADJACENT PROPERTIES

Adjacent properties appeared to be undeveloped in the 1924 topographic map, with the Clearwater River south- and west-adjacent to the Site. By 1947, the north- and east-adjacent properties appeared to be sparsely developed with private residences surrounded by undeveloped land partially used for agricultural purposes, similar to the present. Adjacent properties were not listed in the city directories reviewed.

6.0 REGULATORY REVIEW

EDR conducted a review of environmental regulatory agency database listings to identify reported environmental issues related to the Site and facilities in the Site vicinity. Farallon used the greater of each approximate minimum search distance from the Site for each of the referenced federal and state environmental databases, as specified in ASTM E1527-13.

Farallon reviewed the results from the EDR report to note reported facilities in the vicinity of the Site that were considered to have a potential to adversely impact the Site (i.e., are known to have resulted in or are expected to result in a recognized environmental condition). Reported facilities identified in the EDR report were evaluated with respect to the nature and extent of a given release, the distance of the reported facility from the Site, the stratigraphy of soils, the expected soil permeability, and the topographic position of a reported facility with respect to known or expected local and/or regional groundwater flow direction.

The descriptions of the databases searched, the complete database names for the abbreviations used in this Phase I ESA Report, and the associated search distances from the Site are provided in the EDR report presented in Appendix D.

6.1 ON-SITE LISTINGS

Blue North Forest Products, LLC at 283 Woodland Road, located on the Site, was identified in the FINDS, TRIS, and ECHO databases. According to the EDR report, facility operations use chemicals listed by the U.S. Environmental Protection Agency (EPA) as toxic. The chemicals are removed from the Site for disposal. The facility has an active stormwater industrial permit and an air emissions permit, with no reported violations.

Three Rivers Timber at Woodland Road, located on the Site, was identified in the INDIAN LUST, INDIAN UST, FTTS, HIST FTTS, and TIER databases. According to the EDR report, the facility historically operated five underground storage tanks (USTs) that were installed in 1971 and have the current status "Permanently Out of Use." According to the Site representative, all USTs at the Site were removed in the 1990s. A release from the USTs was confirmed in 1994, and a cleanup was initiated. The facility received the status "Cleanup Completed" on January 5, 2000. Based on the information provided in the EDR report and the current "Cleanup Completed" regulatory status, this former release represents a historical recognized environmental condition in connection with the Site.

Blue North Forest Products (FMLY 3Rivers) at PO Box 757 Woodland Road, located on the Site, was identified in the US AIRS, ECHO, and FINDS databases. According to the EDR report, the facility operates under an air permit, with no reported violations.

Because the Site is on Nez Perce Tribal Trust Land, Farallon contacted EPA Region 10 to request a review of regulatory files for the Site. Regulatory files for the Site were not available for review prior to completion of this Phase I ESA Report. The unavailability of regulatory files for the Site is a data gap for this Phase I ESA Report. Because regulatory files could include pertinent information regarding the current regulatory status of the Site, this data gap may hinder the conclusions of this Phase I ESA Report. Additional information regarding the Site is provided in Section 4.5, Previous Environmental Studies.

6.2 ADJACENT AND OTHER FACILITY LISTINGS

There were no listings for adjacent or other facilities in the EDR report.

6.3 UNMAPPABLE LISTINGS

There were no unmappable listings in the EDR report.

7.0 INTERVIEWS

Farallon conducted interviews with individuals familiar with the Site, and contacted relevant local governmental agencies to obtain additional Site information. The responses from the parties contacted are provided below.

7.1 INTERVIEW WITH SITE REPRESENTATIVE

During the site reconnaissance, Farallon interviewed Mr. Herb Haven of Blue North Forest Products LLC, owner and occupant of the Site, on April 8, 2016. The following information was obtained from this interview:

- No USTs are on the Site. USTs previously present at the Site were removed in the 1990s. Subsurface impacts were remediated, and the Site received regulatory closure in 2000.
- An air permit for the Site through EPA Region 10 currently is active.
- EPA Region 10 conducts an annual inspection of the Site. There currently are no outstanding violations.
- Two stormwater-runoff ditches on the Site (east and west) have a single-point discharge through a weir before discharging to the Clearwater River. Stormwater is monitored and sampled on a regular basis in accordance with the Stormwater Pollution Prevention Plan dated 2015. There have been no discharge exceedances of regulatory requirements.
- Hazardous substances and petroleum products are stored throughout the Site. The majority of the products are stored in the oil storage building and the Maintenance Buildings, and in the vicinity of the scrap storage yard and the steam cleaning/wash rack area. Various aboveground storage tanks (ASTs) and containers are stored in the mill process buildings and fire suppression building. These materials have been stored in the same areas since mill operations began.
- A log storage pond formerly present on the south-central portion of the Site was filled in the 1990s. The source of fill material is unknown.
- Wood waste generated on the Site is either burned in the boilers or sold to off-Site parties. Wood waste is no longer placed in the wood waste landfill on the eastern portion of the Site.
- Boiler ash historically has been stockpiled on the north-central portion of the Site.
- A domestic water well that services the buildings on the Site is present north of the kilns.
- Two mill operations are present on the Site in the central portion of the Site. The original lumber mill has been out of service since 2010.
- The planer was converted to electric in 2014.

- Transformers on the Site are owned by Blue North Forest Products LLC and do not contain polychlorinated biphenyls (PCBs).
- Electricity at the Site is provided by Avista.
- Septic systems are present throughout the Site.
- The rail spur on the Site connects to the BNSF rail line that continues to Lewiston, Idaho.
- The steam cleaning/wash rack area adjacent to the West-Central Maintenance Building discharges wastewater through a recirculating oil-water separator. Sludge is periodically removed and transported off the Site for disposal. Very little wastewater is discharged to this septic system.
- A 160,000-gallon concrete AST on the hillside north of the Site is used to hold water. The water backfills the lagoon that is used for fire suppression.

Mr. Haven stated that he had not been made aware of any pending, threatened, or past:

- Litigation relevant to hazardous substances or petroleum products in, on, or from the Site;
- Administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site; or
- Notices from a governmental entity regarding violations of environmental laws or liability relating to hazardous substances or petroleum products.

7.2 INTERVIEW WITH FIRE DEPARTMENT

Farallon contacted the Nez Perce County Fire Department on April 12, 2016 regarding previous and current ASTs and USTs at the Site. A representative of the Nez Perce County Fire Department indicated that the Department had no records for the Site.

7.3 INTERVIEW WITH CITY

Farallon contacted the City of Kamiah on April 12, 2016 to inquire whether notices of violations and/or reported hazardous spills at the Site were on file, and regarding previous and current ASTs and USTs at the Site. No response from the City of Kamiah was received prior to completion of this Phase I ESA Report.

7.4 INTERVIEW WITH HEALTH DEPARTMENT

Farallon contacted the Public Health Idaho North Central District on April 12, 2016 to inquire whether notices of violations and/or reported hazardous spills at the Site were on file. No response from the Public Health Idaho North Central District was received prior to completion of this Phase I ESA Report.

7.5 INTERVIEW WITH U.S. ENVIRONMENTAL PROTECTION AGENCY

Because the Site is on Nez Perce Tribal Trust Land, Farallon contacted EPA Region 10 on April 8, 2016 to inquire whether notices of violations and/or reported hazardous spills at the Site were on file. Regulatory files for the Site were not available for review prior to completion of this Phase I ESA Report. The unavailability of regulatory files for the Site is a data gap for this Phase I ESA Report. Because regulatory files could include pertinent information regarding the current regulatory status of the Site, this data gap may hinder the conclusions of this Phase I ESA Report.

7.6 INTERVIEW WITH IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

Farallon contacted the Idaho Department of Environmental Quality (IDEQ) on April 8, 2016. According to a representative of IDEQ, the Site previously was under IDEQ oversight in and prior to the 1990s; however, the Site currently is under the oversight of EPA Region 10. All environmental files pertaining to the Site were transferred to EPA Region 10.

7.7 INTERVIEW WITH NEZ PERCE TRIBE

Farallon contacted the Nez Perce Tribe to request records for the Site on April 8, 2016. The Nez Perce tribe provided Farallon with documents pertaining to the Site on June 1, 2016. According to the records reviewed, Triple R Forest Products, previously operators at the Site, installed three USTs in 1971. The tank capacities were 1,000, 1,500, and 2,000 gallons. The tanks were used to store gasoline, diesel, and used oil. The USTs were removed from the Site in July 1990. A site assessment was completed during removal of the USTs and diesel contamination was discovered in soil immediately below the USTs. The USTs were located in an area described as north of the maintenance oil storage shed on the Site. On April 18, 1994, excavation of petroleum-contaminated soil was initiated. Soil samples collected during soil excavation confirmed the presence of gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes contamination in soil. Soil contamination was reported to have extended vertically to a depth of 10 to 12 feet below ground surface. Approximately 329 cubic yards of soil were excavated from the former UST area and disposed of off the Site. The lateral extent of the soil excavation was limited by the railroad to the west, the oil storage shed to the south, and a water main to the north and east. Residual contamination extended beneath the oil storage shed and the water main. Test pits were advanced south of the oil storage shed and northeast of the water main. Petroleum contamination was not present in the soil samples collected from each of the test pits.

On July 13, 1994, the United States Environmental Protection Agency (EPA) sent a letter to Weyerhauser Corporation (the operators at the Site at that time) requesting additional site characterization work at the Site, including a site characterization report and corrective action plan. In October 1994, Wyatt-Jaykim Engineers prepared a Site Characterization and Corrective Action Plan for the Site summarizing additional site characterization work that was initiated in August 1994. Angled borings were advanced beneath the oil storage building, railroad, and water main to assess residual contamination. Total petroleum hydrocarbons were detected at concentrations exceeding EPA cleanup levels in the soil samples collected from beneath the railroad. In addition,

five groundwater monitoring wells were placed in the vicinity of and down-gradient of the former UST excavation to assess groundwater contamination. Benzene was detected at low levels in three of the five groundwater samples collected from the groundwater monitoring wells. Based on the low levels of contaminants in groundwater, an enhanced natural attenuation bioventing system was recommended as the remediation system for the Site. The bioventing system consisted of injecting air into coarse backfill in the excavated former UST area.

Installation of the remediation system began in November 1994 and operation of the remediation system began in April 1995. Quarterly groundwater and remediation system monitoring began in 1995 and continued through 1998.

In 1999, per request of IDEQ, two water supply wells for the Site were sampled for volatile organic compounds and polycyclic aromatic hydrocarbons. Volatile organic compounds and polycyclic aromatic hydrocarbons were not detected at concentrations exceeding the practical quantitation limits in each of the water samples collected from the water supply wells. On January 5, 2000, EPA determined that the release of petroleum products from the leaking USTs no longer posed a threat to human health or the environment and issued a No Further Action determination for the former UST area. The former release in connection with the USTs represents a historical recognized environmental condition in connection with the Site.

8.0 SITE RECONNAISSANCE

Farallon conducted a site reconnaissance on April 8, 2016 to observe the Site for physical evidence of recognized environmental conditions. The methodology used for the site reconnaissance and the observations made during the reconnaissance are discussed below. A description of the Site is provided in Section 2.2, Site Description. Photographs taken during the site reconnaissance are presented in Appendix B.

8.1 SITE RECONNAISSANCE METHODOLOGY

Farallon completed a walk throughout accessible areas of the Site and inspected accessible interior portions of the Site buildings. There were no deviations from ASTM E1527-13 during the completion of the Phase I ESA. Limiting conditions encountered during the completion of the Phase I ESA were the presence of equipment, stored materials, and overgrown vegetation on exterior portions of the Site that prevented Farallon from observing the entire ground surface of the Site, and the presence of equipment and stored materials in the Site buildings that prevented Farallon from observing the entire interior floor surfaces. Based on information obtained from the Site representative, these limiting conditions are not expected to hinder the conclusions of this report.

8.2 SITE RECONNAISSANCE OBSERVATIONS

Weather conditions at the time of the reconnaissance were sunny, with a temperature of approximately 80 degrees Fahrenheit. No weather-related Site-access restrictions were encountered during the reconnaissance.

The Site consists of the following Idaho County Tax Parcel Nos.:

- RP 34NO3E351950 A;
- RP 34NO3E352110 A;
- RP 34NO3E364511 A;
- RP 34NO3E365600 A;
- PP/PP 000009701 A;
- PP/PP 000009702 A;
- RP 34NO3E350300 A; and
- PP/PP 000009700 A

The Site totals 114 acres of land developed with approximately 23 structures. The Site is operated by Blue North Forest Products LLC, who processes raw timber into varying dimensions of lumber, and kiln-dries and packages the lumber for delivery. The Site consists of: log process areas that include debarking, a sawmill, and a planer mill; log yards; a scrap storage yard; maintenance

buildings; open and closed log and lumber storage areas; offices; hog-fueled fired boilers; and warehouse/storage areas. The main lumber operations occupy approximately 34 acres of land on the central portion of the Site. Approximately 40 acres of the Site consist of log yards and the scrap storage yard. The remaining portions of the Site are vegetated and undeveloped.

8.2.1 Interior Observations

Farallon's observations of the interior of the Site buildings during the site reconnaissance are documented in the table below. Comments pertaining to notable interior observations follow in Section 8.2.2. Photographs taken during the site reconnaissance are provided in Appendix B.

INTERIOR OBSERVATIONS	YES	NO
Odor	X	
Heating/Cooling System	X	
Drain(s) and/or Sump(s)	X	
Staining and/or Corrosion	X	
Storage Tank(s), Vent Pipe(s), Fuel Port(s), and/or Fill Pipes	X	
Clarifier(s)		X
Discharge Area		X
Drum(s) and/or Other Container(s)	X	
Pool(s) of Liquid		X
Automobile Lift(s)		X
Monitoring Well(s)		X
Hazardous Material(s) and/or Petroleum Product(s)	X	
Hazardous Waste		X

8.2.2 Interior Observation Comments

Odor

Farallon noted a petroleum odor in the maintenance buildings and the oil storage building. The odor appeared to be from the storage and handling of large quantities of petroleum products.

Heating/Cooling System

The majority of the lumber processing buildings are heated with steam, which is generated from two boilers. The office building is heated with natural gas.

Drain(s) and/or Sump(s)

Floor drains were observed in the fire suppression building. The discharge point of the floor drains is unknown. The Site representative stated that there have been no releases to the drains. Farallon did not observe evidence of staining or releases in or around the drains.

Staining and/or Corrosion

Farallon observed various hazardous substances and new and used petroleum products stored throughout the maintenance buildings, the oil storage building, and the fire suppression building in containers ranging from 1-quart to 200-gallon totes, and in ASTs ranging from 250- to 500-gallon capacity. The materials included: new and used motor oils, lubricants, hydraulic fluids, gasoline, batteries, degreasers, cleaners, paints, and diesel used for equipment/vehicle fueling, various maintenance activities, and the fire suppression equipment. Farallon observed various-sized ASTs and containers used to contain oils and lubricants in the mill processing buildings. In general, materials appeared to properly labeled and stored within secondary containment in buildings; areas of significant staining were observed in and around containers or ASTs at the maintenance buildings, oil storage building, and fire suppression building. A maintenance pit was observed in the West-Central Maintenance Building. No floor drains are present in the pit; significant staining was observed. Based on information provided by the Site representative, these materials have been stored in the same locations for approximately 40 to 50 years when lumber mill operations first began. The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products represents a recognized environmental condition in connection with the Site.

Storage Tank(s), Vent Pipe(s), Fuel Port(s), and/or Fill Pipes

Farallon observed ASTs ranging in size from 250 to 500 gallons in the maintenance buildings, the oil storage building, and the fire suppression building that were used to contain various motor oils and lubricants. Staining was observed in the vicinity of the ASTs as discussed above. Farallon observed various-sized ASTs used to contain oils and lubricants in the mill processing buildings.

Drum(s) and/or Other Container(s)

Farallon observed various hazardous substances and new and used petroleum products stored throughout the Site in containers ranging from 1 quart to 200 gallons. The materials included: motor oils, lubricants, hydraulic fluids, gasoline, batteries, degreasers, cleaners, paints, and diesel used for equipment/vehicle fueling, and maintenance and fire suppression equipment; boiler chemicals such as water softeners and conditioners and oils for the boiler and associated steam and cooling systems; and vehicle motor oil, petroleum products, and hydraulic fluid for the log process areas and storage yards. The materials generally appeared to properly labeled and stored within secondary containment in buildings or beneath covered areas, although areas of significant staining were observed in and around containers as discussed above.

Hazardous Material(s) and/or Petroleum Product(s)

Farallon observed various hazardous substances and new and used petroleum products stored throughout interior Site buildings in containers and ASTs as discussed above.

8.2.3 Exterior Observations

Farallon's observations of the exterior of the Site during the site reconnaissance are documented in the table below. Comments pertaining to notable exterior observations follow in Section 8.2.4. Photographs taken during the site reconnaissance are provided in Appendix B.

EXTERIOR OBSERVATIONS	YES	NO
Odor		X
Staining and/or Corrosion	X	
Storage Tank(s), Vent Pipe(s), and/or Fuel Port(s)	X	
Drum(s) and/or Other Container(s)	X	
Pool(s) of Liquid		X
Hazardous Material(s) and/or Petroleum Product(s)	X	
Hazardous Waste		X
Pit(s), Pond(s), and/or Lagoon(s)	X	
Stressed Vegetation		X
Landfilling and Evidence of Dumping	X	
Wastewater	X	
Domestic Water	X	
Water Well(s)	X	
Septic/Sewer System	X	
Stormwater	X	
Transformer(s)	X	
Significant Amount of Fill Material	X	

8.2.4 Exterior Observation Comments

Staining and/or Corrosion

At the time of the site reconnaissance, Farallon observed various hazardous substances and new and used petroleum products stored adjacent to the maintenance shops and the oil storage building in containers ranging from 5 to 55 gallons. The materials generally appeared to properly labeled and stored within secondary containment and beneath covered areas, although areas of significant

staining were observed in and around containers. Farallon observed a 12,000-gallon AST used to contain diesel fuel on the north-central portion of the Site. The AST is situated within secondary containment and covered. Staining was observed in the vicinity of the fuel pump for that AST. A 250-gallon AST used to contain gasoline was observed along the exterior wall of the West-Central Maintenance Building. De minimis staining was observed in the vicinity of the AST, which was within secondary containment and covered. A 1,000-gallon waste oil AST, 200-gallon totes, 55-gallon drums, and a 250-gallon heating oil AST were observed along the exterior wall of the West-Central Maintenance Building. These ASTs and containers were situated within secondary covered containment, although significant staining and evidence of pooling was observed within the containment, in addition to significant staining observed on the ground surface outside the containment. Based on information provided by the Site representative, these materials have been stored in the same locations for approximately 40 to 50 years. Farallon observed localized staining in the scrap storage yard area. The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products represents a recognized environmental condition in connection with the Site.

Storage Tank(s), Vent Pipe(s), and/or Fuel Port(s)

Farallon observed several ASTs throughout the Site as discussed above.

Drum(s) and/or Other Container(s)

Farallon observed various hazardous substances and new and used petroleum products stored adjacent to the maintenance buildings and the oil storage building in containers ranging from 5 to 200 gallons as discussed above.

Hazardous Material(s) and/or Petroleum Product(s)

At the time of the site reconnaissance, Farallon observed various hazardous substances and new and used petroleum products stored adjacent to the maintenance shops and the oil storage building in containers ranging from 5 to 200 gallons, and in ASTs ranging from 250 to 12,000 gallons. The materials generally appeared to properly labeled and stored within secondary containment or beneath covered areas, although areas of significant staining were observed in and around containers as discussed above.

Pit(s), Pond(s), and/or Lagoon(s)

Farallon observed two lagoons on the Site, including a fire suppression lagoon that has a capacity of 1 million gallons of water on the north-central portion of the Site, and a sewage lagoon on the northern portion of the Site. No evidence of releases of spills were observed.

A log storage pond formerly present on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source of material that was used to fill the log storage pond represents a recognized environmental condition in connection with the Site.

Landfilling and Evidence of Dumping

A wood waste landfill is present on the eastern portion of the Site. Hazardous substances often are associated wood waste landfilling. According to the Site representative, wood waste has not been placed in the landfill since Blue North Forest Products LLC has occupied that Site, and wood waste is sold to off-Site parties. No records or monitoring data regarding potentially contaminated leachate migrating to groundwater at the Site were located. The potential release of hazardous substances in connection with the wood waste landfill represents a recognized environmental condition in connection with the Site.

Aerial photographs depicted a "wigwam-type" wood waste burner on the south-central portion of the Site near the former log storage pond in approximately 1955. According to the Site representative, boiler ash generated at the Site historically has been stockpiled on the north-central portion of the Site. Incomplete combustion of wood waste can result in concentrations of metals, dioxin/furans, and PAHs that can impact subsurface and surface water. The potential release of hazardous substances in connection with the boiler ash waste pile represents a recognized environmental condition for the Site.

Wastewater

Wastewater generated from steam cleaning/wash rack operations adjacent to the West-Central Maintenance Building on the southern portion of the Site is directed into a recirculating oil-water separator. Solids and debris are filtered from the wastewater. The majority of the water is recirculated and used again; minor amounts of water is discharged to a septic system adjacent to this area. The recirculating system reportedly was installed in the 1990s. Details regarding steam cleaning and wash rack operations prior to the 1990s were not located. The potential release of hazardous substances in connection with long-term lumber mill operations represents a recognized environmental condition in connection with the Site.

Domestic Water

Domestic water is supplied by an on-Site water well adjacent to the kilns, as discussed below.

Water Well(s)

Domestic water is supplied by an on-Site water well adjacent to the kilns. The date of well installation and the depth of the well are unknown. According to the 2008 Phase I ESA, a source water assessment report was prepared by the Idaho Department of Environmental Quality in February 2003. The report described the public drinking water system at the Site, the boundaries of the zones of water contributions, and the associated potential contaminated sources within the boundaries. Concentrations of arsenic, barium, chromium, fluoride, nickel, sodium, and nitrate were detected at concentrations less than maximum contaminant levels. The well serves approximately 100 people through 9 connections.

Septic/Sewer System

Sanitary sewage is discharged to septic systems throughout the Site.

Stormwater

Surface water from impermeable surfaces of the developed portion of the Site is conveyed to two ditches (east and west) that were constructed to receive surface water. Stormwater in the ditches is conveyed to a lined stormwater detention pond, and discharges over a weir into the Clearwater River under a National Pollutant Discharge Elimination System Permit. A Stormwater Pollution Control Plan is in place, and was last updated in 2015. According to the Site representative, stormwater is sampled on a regular basis, and there have been no exceedances from the levels set by EPA Region 10.

Transformer(s)

Transformers are present in an enclosed area on the central portion of the Site. According to the Site representative, the transformers are owned by Blue North Forest Products LLC and do not contain PCBs. Avista, a local utility company, provides power to the transformers.

Significant Amount of Fill Material

A former log storage pond on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of the fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the log storage pond represents a recognized environmental condition in connection with the Site. Additional structures were constructed on the central portion of the Site up until the mid-2000s. The Site has remained relatively unchanged since that time.

9.0 FINDINGS AND OPINIONS

A wood waste landfill is present on the eastern portion of the Site. Hazardous substances often are associated with wood waste landfilling. According to the Site representative, wood waste has not been placed in the landfill since Blue North Forest Products LLC has occupied the Site, and wood waste is sold to off-Site parties. No records for waste placed in the wood waste landfill for the past several years were located. No records or monitoring data regarding potentially contaminated leachate migrating to groundwater at the Site were located. The potential release of hazardous substances in connection with the wood waste landfill represents a recognized environmental condition in connection with the Site.

At the time of the site reconnaissance, Farallon observed various hazardous substances and new and used petroleum products stored throughout the Site in containers ranging from 1-quart to 200-gallon totes, and in ASTs ranging from 250- to 12,000-gallon capacity. According to the site representative, wood waste has not been placed in the landfill since Blue North Forest Products LLC has occupied that Site and wood waste is sold to offsite parties. The materials included: motor oils, lubricants, hydraulic fluids, gasoline, batteries, degreasers, cleaners, paints, and diesel used for equipment/vehicle fueling, various maintenance operations, and the fire suppression equipment; boiler chemicals such as water softeners and conditioners and oils for the boiler and associated steam and cooling systems; and vehicle motor oil, petroleum products, and hydraulic fluid for the log process areas and storage yards. The materials generally appeared to properly labeled and stored within secondary containment in buildings or beneath covered areas. Areas of significant staining were observed in and around containers or ASTs at the maintenance buildings, the oil storage building, and the fire suppression building, in addition to localized areas throughout the scrap storage yard. Based on information provided by the Site representative, these materials have been stored in the same locations for approximately 40 to 50 years when lumber mill operations first began. The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products represents a recognized environmental condition in connection with the Site.

Farallon was provided with a previous letter regarding bulk sampling analysis for asbestos at the Site prepared by Mountain Laboratories dated May 20, 2016. Based on the information provided, building materials, including tar paper, TSI, and boiler brick, were sampled and analyzed to determine the asbestos type and total percentage of asbestos. Chrysotile and/or Amosite asbestos totaling 7 to 75 percent were detected in 6 of the 11 TSI samples collected. Asbestos was not detected in the one tar paper sample or two boiler brick samples collected. The known presence of asbestos in building materials at the Site represents a recognized environmental condition in connection with the Site.

Wastewater generated from steam cleaning/wash rack operations adjacent to the West-Central Maintenance Building on the southern portion of the Site is directed into a recirculating oil-water separator. Solids and debris are filtered from the wastewater. The majority of the water is recirculated and used again; minor amounts of water is discharged to a septic system adjacent to

this area. The recirculating system reportedly was installed in the 1990s. Details regarding steam cleaning and wash rack operations prior to the 1990s were not located. The potential release of hazardous substances in connection with long-term lumber mill operations represents a recognized environmental condition in connection with the Site.

Log storage historically has taken place on the southeastern and south-central portions of the Site. A log storage pond formerly present on the south-central portion of the Site adjacent to the Clearwater River was filled during the early 1990s. The source of fill is unknown; the fill could contain hazardous substances. The potential release of hazardous substances in connection with the unknown source and content of the material used to fill the log storage pond represents a recognized environmental condition in connection with the Site.

Aerial photographs depicted a "wigwam-type" wood waste burner on the south-central portion of the Site near the former log storage pond in approximately 1955. According to the Site representative, boiler ash generated at the Site has historically has been stockpiled on the north-central portion of the Site. Incomplete combustion of wood waste can result in concentrations of metals, dioxin/furans, and PAHs that can impact subsurface and surface water. The potential release of hazardous substances in connection with the boiler ash waste pile represents a recognized environmental condition in connection with the Site.

The EDR report identified Blue North Forest Products, LLC in the FINDS, TRIS, and ECHO databases. According to the EDR report, Blue North Forest Products LLC's operations use chemicals listed by EPA as toxic. The chemicals reportedly are removed from the Site for off-Site disposal. The Site has an active stormwater industrial permit and an air emissions permit, with no reported violations. The EDR report listed Three Rivers Timber, Inc., a former occupant of the Site, in various other regulatory databases. The database listings for Three Rivers Timber, Inc. indicated that a release to the subsurface from a former underground storage tank that was used to contain diesel fuel at the Site had occurred. Subsurface impacts were remediated, and the release received regulatory closure in 2000. The former release at the Site represents a historical recognized environmental condition in connection with the Site. Because the Site is on Nez Perce Tribal Trust Land, Farallon contacted EPA Region 10 to request a review of regulatory files for the Site. Regulatory files for the Site were not reviewed due to the time and/or cost constraints of this Phase I ESA. Because regulatory files could potentially include pertinent information regarding the current regulatory status of the Site, this data gap may hinder the conclusions of this report.

10.0 CONCLUSIONS

Farallon conducted a Phase I ESA for the Blue North Forest Products LLC property at 283 Woodland Road in Kamiah, Idaho in conformance with the scope and limitations of ASTM E1527-13. Any exceptions to or deletions from this practice are described in Section 1.5, Deviations.

This assessment identified the following recognized environmental conditions in connection with the Site:

- The potential release of hazardous substances in connection with the long-term storage and handling of hazardous substances and petroleum products associated with lumber mill operations on the Site;
- The known presence of asbestos in building materials at the Site;
- The potential release of hazardous substances in connection with the boiler ash waste pile historically placed on the north-central portion of the Site;
- The potential release of hazardous substances in connection with the unknown source and content of material used to fill the former log storage pond on the south-central portion of the Site; and
- The potential release of hazardous substances in connection with historical wood waste landfilling on the eastern portion of the Site.

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12.0 LIMITATIONS

12.1 GENERAL LIMITATIONS

The conclusions contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location. The conclusions contained herein are subject to the following inherent limitations:

- **Accuracy of Information.** Farallon obtained, reviewed, and evaluated certain information used in this report/assessment from sources that were believed to be reliable. Farallon's conclusions, opinions, and recommendations are based in part on such information. Farallon's services did not include verification of its accuracy or authenticity. Should the information upon which Farallon relied prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.
- **Reconnaissance and/or Characterization.** Farallon performed a reconnaissance and/or characterization of the Site that is the subject of this report/assessment to document current conditions. Farallon focused on areas deemed more likely to exhibit hazardous materials conditions. Contamination may exist in other areas of the Site that were not investigated or were inaccessible. Site activities beyond Farallon's control could change at any time after the completion of this report/assessment.

For the foregoing reasons, Farallon cannot and does not warrant or guarantee that the Site is free of hazardous or potentially hazardous substances or conditions, or that latent or undiscovered conditions will not become evident in the future. Farallon's observations, findings, and opinions can be considered valid only as of the date of the report hereof.

This report/assessment has been prepared in accordance with the contract for services between Farallon and Idaho Forest Group, LLC, and currently accepted industry standards. No other warranties, representations, or certifications are made.

12.2 LIMITATION ON RELIANCE BY THIRD PARTIES

Reliance by third parties is prohibited. This report/assessment has been prepared for the exclusive use of Idaho Forest Group, LLC to address the unique needs of Idaho Forest Group, LLC at the Blue North Forest Products LLC property at a specific point in time. Services have been provided to Idaho Forest Group, LLC in accordance with a contract for services between Farallon and Idaho Forest Group, LLC and generally accepted environmental practices for the subject matter at the time this report was prepared.

No other party may rely on this report unless Farallon agrees in advance to such reliance in writing. Any use, interpretation, or reliance upon this report/assessment by anyone other than Idaho Forest Group, LLC is at the sole risk of that party, and Farallon will have no liability for such unauthorized use, interpretation, or reliance.

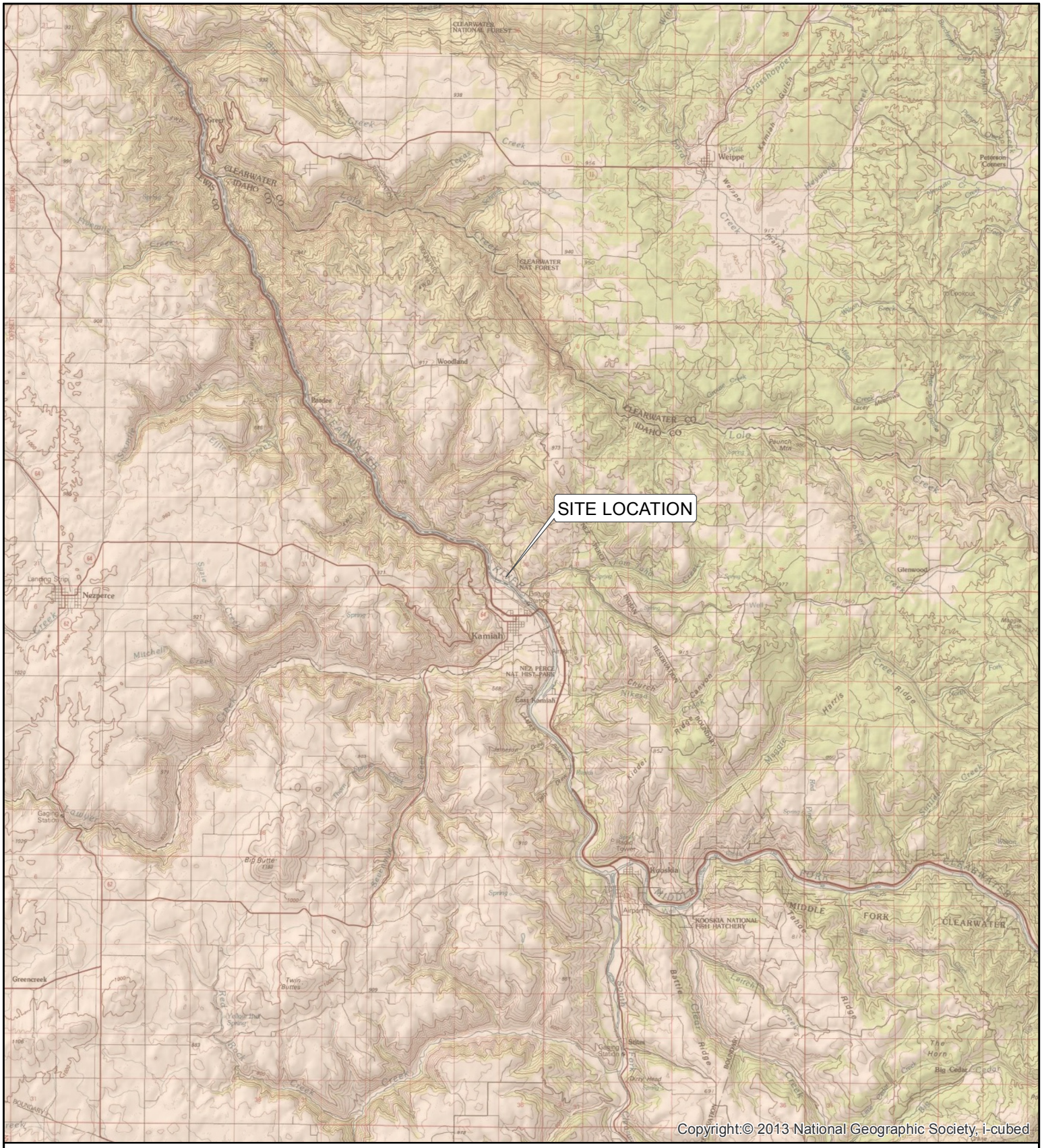
Do not rely on this report/assessment if:

- It was not prepared for you;
- It was not prepared for your project;
- It was not prepared for your specific Site; or
- It was not prepared under an approved scope of work for which you are under contract with Farallon.

FIGURES

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Farallon PN: 1638-001



N

SOURCE: National Geographic TOPO! series

FARALLON CONSULTING

Quality Service for Environmental Solutions | farallonconsulting.com

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 1

SITE VICINITY MAP
BLUE NORTH FOREST PRODUCTS LLC
KAMIAH, IDAHO

FARALLON PN: 1638-001

Drawn By: pgarvin | Checked By: TH | Date: 5/6/2016 | Disc Reference:

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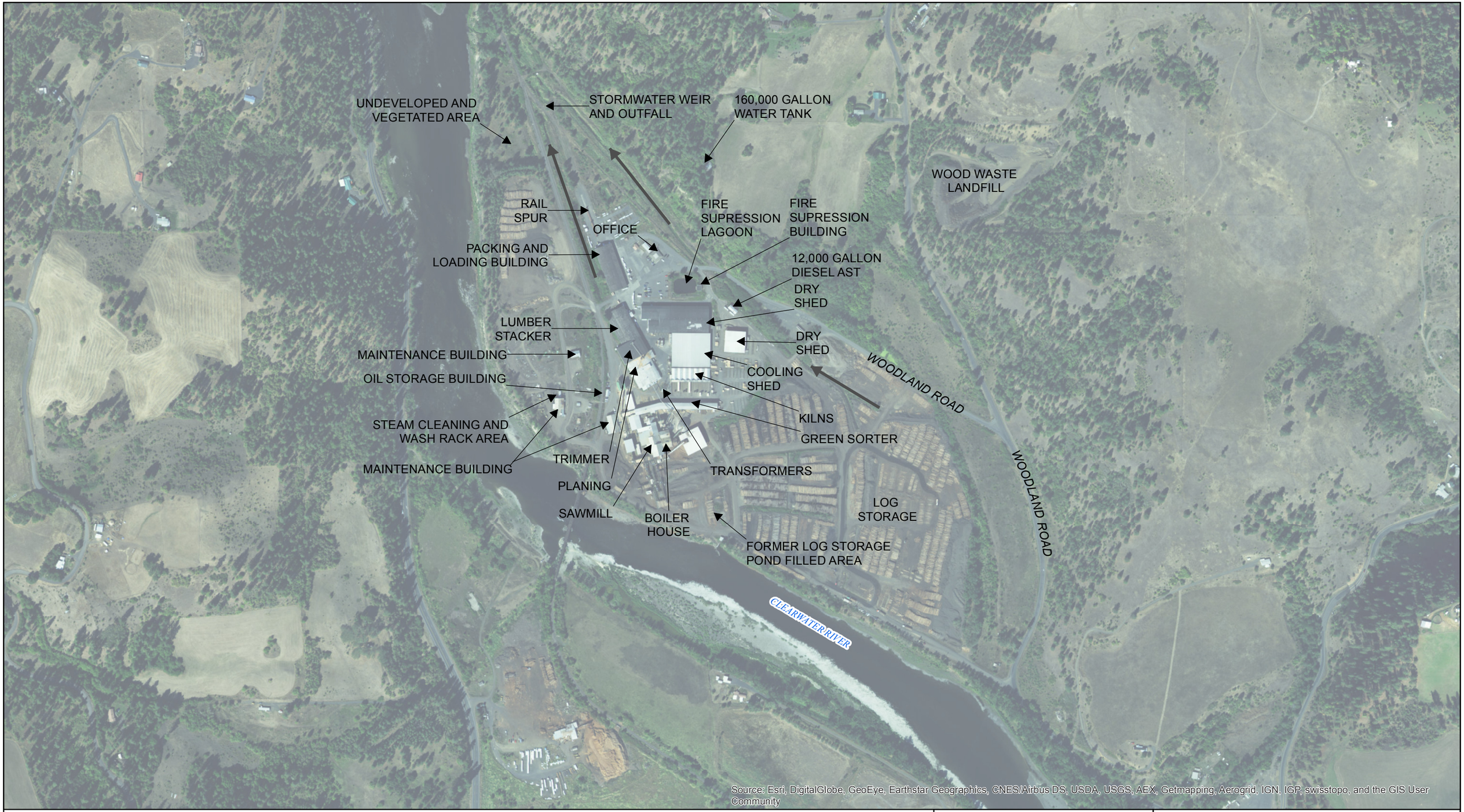

LEGEND

STORMWATER DRAINAGE DITCH AND DIRECTION OF FLOW

NOTE:
AST = ABOVEGROUND STORAGE TANK

0 500

Scale in feet

N

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Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 2

SITE PLAN
BLUE NORTH FOREST PRODUCTS LLC
KAMIAH, IDAHO

FARALLON PN: 1638-001

Drawn By: pgarvin Checked By: TH Date: 5/6/2016 Disc Reference: 0269-031.MXD

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APPENDIX A
PROFESSIONAL QUALIFICATIONS

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Farallon PN: 1638-001

LYNDSEY NEEDHAM, G.I.T. MS Geology, BS Geology
Project Geologist 8 years experience

Ms. Needham has 8 years of experience as a Project Geologist supporting Phase I Environmental Site Assessments (ESAs) and soil, groundwater, and surface water sampling throughout the state of Washington. As an International Code Council-certified Washington State Site Assessor, she has experience performing site assessments and fulfilling soil and groundwater sampling requirements associated with the closure of aboveground storage tanks and underground storage tanks (USTs) used to store petroleum products. Ms. Needham has assisted clients with property transaction due diligence throughout Washington and Oregon by preparing Phase I ESA Reports. Ms. Needham also has experience managing, formatting, and submitting data into the Ecology Environmental Information Management System.

TINA M. HUFF BA Environmental Studies
Principal Regulatory Specialist 16 years experience

Ms. Huff has a broad range of experience with environmental due diligence and regulatory requirements. She manages and conducts environmental due diligence for property transactions, including Phase I ESAs, risk assessment audits, environmental compliance audits, and Phase II Site Investigations throughout the western United States. She is Asbestos Hazard Emergency Response Act-certified for asbestos, and has completed training for ASTM E1527-13 Phase I ESA protocol and for mold in construction. Ms. Huff has certificates in Dangerous Waste Management and Occupational Safety and Health Administration Compliance.

APPENDIX B
SITE PHOTOGRAPHS

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Farallon PN: 1638-001

SITE PHOTOGRAPHS
Phase I Environmental Site Assessment
Blue North Forest Products
Kamiah, Idaho
Farallon PN: 1638-001

Photograph 1: Entrance to Site, looking southeast.

Photograph 2: Site office and trailer, looking southeast.

Photograph 3: Central portion of Site, looking northeast.

Photograph 4: Fire suppression building, with diesel aboveground storage tank (AST) and batteries.

Photograph 5: Interior of fire suppression control room, with staining.

Photograph 6: Inside bermed area of 12,000-gallon diesel AST, with significant staining.

Photograph 7: Twelve-thousand-gallon diesel AST, with significant staining.

Photograph 8: Fuel pump for 12,000-gallon diesel AST, with significant staining.

Photograph 9: Dry shed.

Photograph 10: Interior of dry shed.

Photograph 11: Interior of cooling shed, looking south at dry kilns.

Photograph 12: Storage shed in central portion of Site.

Photograph 13: Storage sheds on western portion of Site.

Photograph 14: Hog fuel storage.

Photograph 15: Boiler interior.

Photograph 16: Boiler chemicals.

Photograph 17: West-Central Maintenance Building.

Photograph 18: West-Central Maintenance Building with exterior oil AST.

Photograph 19: AST, totes, and drum storage adjacent to West-Central Maintenance Building, with significant staining.

Photograph 20: Significant staining and petroleum storage inside West-Central Maintenance Building.

Photograph 21: Significant staining in maintenance pit inside West-Central Maintenance Building.

Photograph 22: Petroleum spill inside West-Central Maintenance Building.

Photograph 23: Hazardous substance and petroleum storage inside West-Central Maintenance Building.

Photograph 24: Gasoline AST along West-Central Maintenance Building.

Photograph 25: Interior of South-Central Maintenance Building.

Photograph 26: Parts washer in South-Central Maintenance Building.

Photograph 27: Mill operations, looking south.

Photograph 28: Mill log yard, looking southeast.

Photograph 29: Mill process area followed by log storage yard, looking east.

Photograph 30: Mill process area, looking south.

Photograph 31: Mill process buildings, looking northeast.

Photograph 32: Mill interior.

Photograph 33: Mill interior.

Photograph 34: Oil AST inside mill process building.

Photograph 35: Petroleum storage inside oil storage building.

Photograph 36: Fifty-five-gallon drums of petroleum-related products inside oil storage building.

Photograph 37: Significant staining inside oil storage building.

Photograph 38: Significant staining inside oil storage building.

Photograph 39: Wash rack and steam cleaning area.

Photograph 40: Scrap storage yard on western portion of Site.

Photograph 41: Scrap storage yard on western portion of Site.

Photograph 42: Packing and loading building, looking south.

Photograph 43: Propane AST adjacent to storage sheds on west-central portion of Site.

Photograph 44: Rail spur on northern portion of Site.

Photograph 45: Rail spur and west drainage ditch, looking south.

Photograph 46: Stormwater outfall on northern portion of Site.

Photograph 47: Stormwater weir on northern portion of Site.

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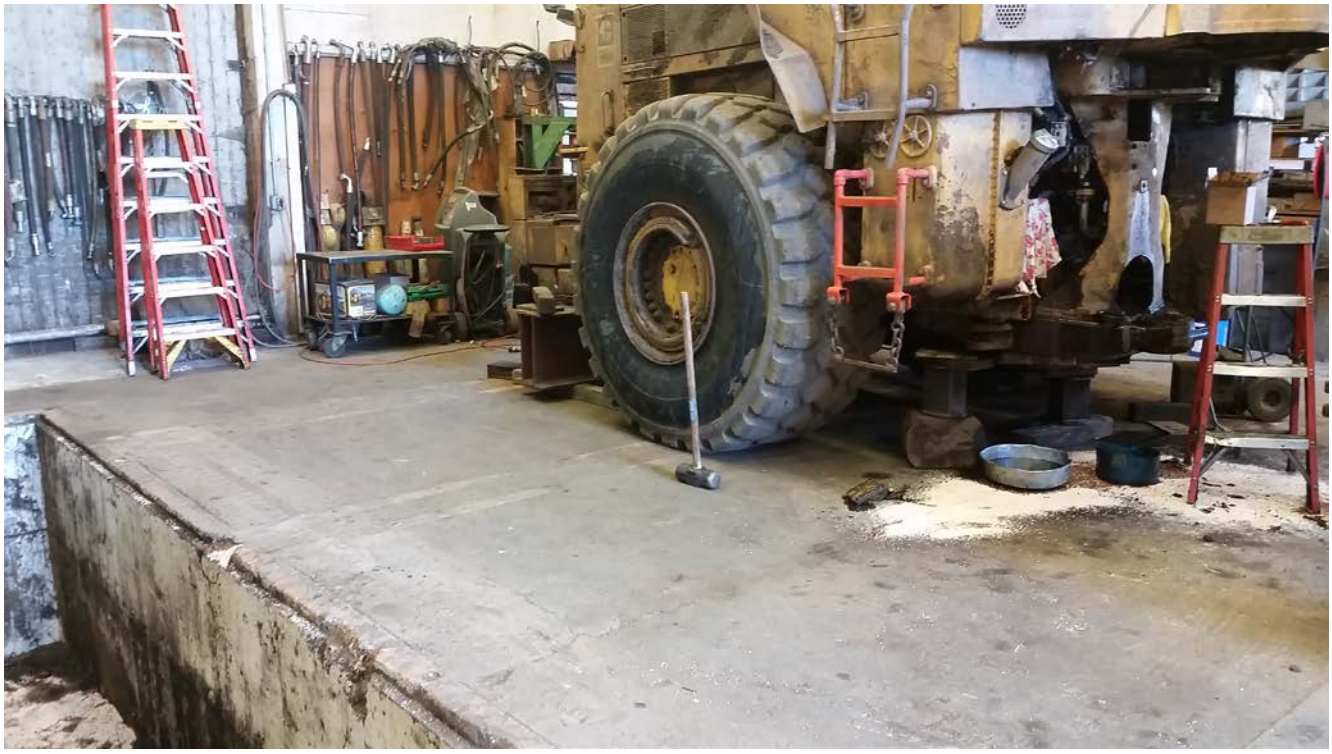
Photograph 20: Significant staining and petroleum storage inside West-Central Maintenance Building.

Photograph 21: Significant staining in maintenance pit inside West-Central Maintenance Building.



Photograph 22: Petroleum spill inside West-Central Maintenance Building.

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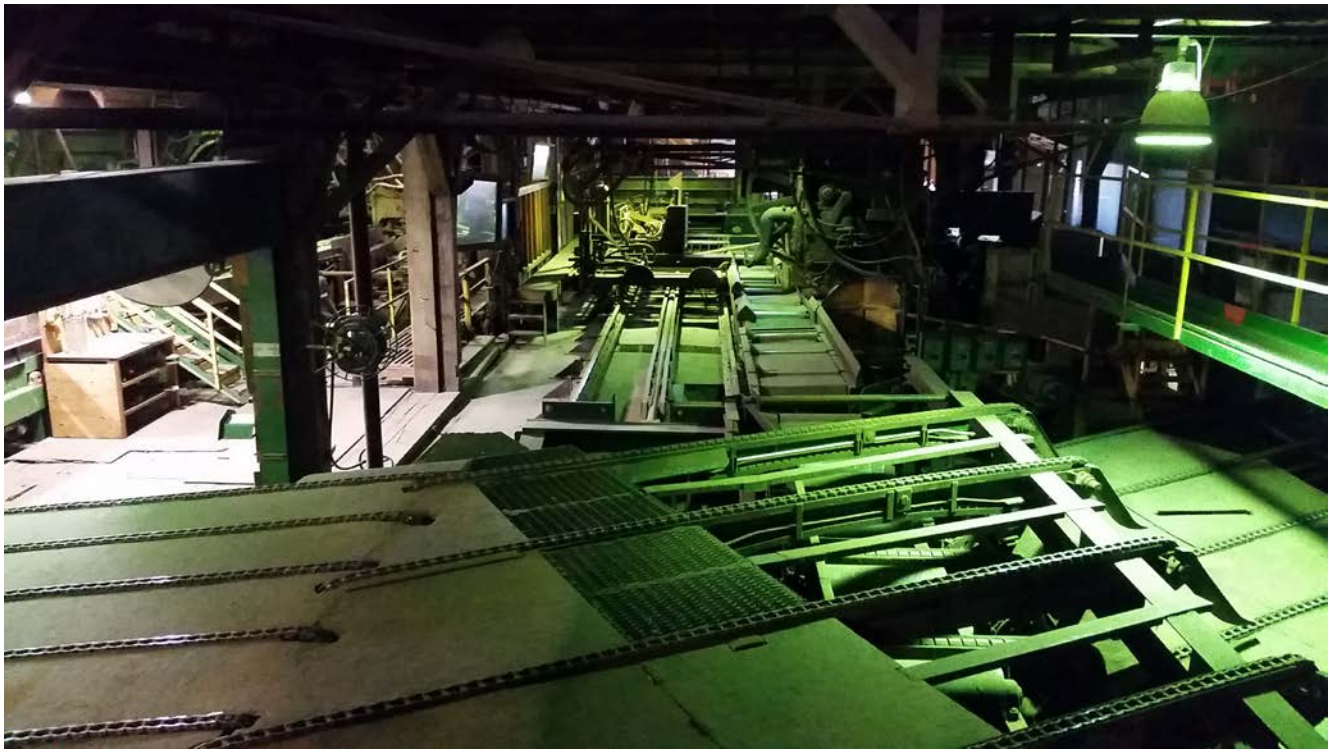

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Photograph 45: Rail spur and west drainage ditch, looking south.

Photograph 46: Stormwater outfall on northern portion of Site.

Photograph 47: Stormwater weir on northern portion of Site.

APPENDIX C
USER QUESTIONNAIRE

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Farallon PN: 1638-001

PHASE I ENVIRONMENTAL SITE ASSESSMENT
USER QUESTIONNAIRE

To qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001, the Phase I Environmental Site Assessment (Phase I ESA) Report user must provide the following information (if available) to the environmental professional (Farallon Consulting, L.L.C.). Failure to provide this information could result in the determination that "all appropriate inquiry" has not been completed.

Date: May 5

■ PROJECT/SITE INFORMATION

Client Name: IDaho Forest Group			Client Telephone: 2087622999
Client Address: 687 Canfield; suite 100, coeur d'Alene, ID 83815			
Asset #: Blue North	Project/Site Name: Kamiah, Idaho mill		
Project Street Address: Kamiah			
City: Kamiah	County: Idaho	State: Idaho	Zip:

Why is this Phase I ESA required?

Property Transaction:

☐ Sale	☒ Purchase	☐ Exchange	☐ Other

Comments:

■ PROPERTY USE & SPECIFICATIONS

☐ Single-Family Residential	☐ Vacant or Undeveloped Land
☐ Multi-Family Residential #Units:	☐ Agricultural (S*pecify type)*:
☐ Commercial Office	☒ Industrial (S*pecify type)*: lumber mill
☐ Commercial Retail	☐ Other (S*pecify type)*:

Provide a general Site description:has been a lumber mill for past 60+ years. Originally a site where the Nez Perce tribe camped and where Lewis and Clark's expidition camped when travelling through area.

Legal description/plat plan/boundary survey available? ☐ Yes ☐ No ☒ Already provided

Current Property Status: ☐ Vacant ☒ Occupied ☐ Improved ☐ Unimproved

Total Property Size: Original Construction Date:

Total # of Buildings: Was Construction Phased? ☒ Yes ☐ No ☐ Unknown

Total Sq. Ft. of Buildings: Date(s) of Renovation(s)/Phases:

Does Site have an undeveloped area equal to 1 acre or more? ☐ Yes ☐ No

Are any bodies of water on or immediately adjacent to the Site? ☒ Yes ☐ No If Yes, describe:
Comments:
CLearwater River runs adjacent to site

Potable water source at Site? ☒ On-Site well ☐ Utility (*Specify provider)*

Wastewater discharge at Site? ☐ Septic Tank/Drainfield ☐ Sanitary Sewer ☐ Other (Specify):

Building plans available at the Site? ☐ Yes ☐ No ☐ Unknown ☐ Already provided

■ OWNERS

Current Owner(s): Blue North Forest Products

Previous Owner(s): THree Rivers Timber

■ OCCUPANTS/TENANTS

Current Occupant(s)/Tenant(s) and operations: Blue North Forest Products. Lumber mill

Previous Occupant(s)/Tenant(s) and operations: Three Rivers Timber. Lumber Mill

■ PREVIOUS PROPERTY USES

Describe previous use(s) of the Site: Lumber operation for past 60+ years.

■ PREVIOUS INVESTIGATIONS

Has any previous environmental investigation been conducted at Site? ☒ Yes ☐ No ☐ Unknown

If Yes, note type and describe: ☒ Phase I ESA ☐ Asbestos ☐ Lead Paint ☐ Lead in Water

☐ Radon ☐ Wetlands ☐ Indoor Air ☐ UST/AST ☐ Other (*Specify type below)*

Comments:

■ ON-SITE ENVIRONMENTAL CONDITIONS

Are you aware of any of the following environmental conditions at the Site, either current or former?

Environmental Condition/Issue	Response	Comment if Yes Response
Aboveground Storage Tank	☐ Yes ☐ No	
Underground Storage Tank	☐ Yes ☐ No	
Hazardous/Toxic Substance	☐ Yes ☐ No	
Stored Chemical	☐ Yes ☐ No	
Chemical Spill/Release	☐ Yes ☐ No	
Dump Area/Landfill	☒ Yes ☐ No	wood waste debris area
Waste Treatment System	☐ Yes ☐ No	
Wastewater Discharge	☐ Yes ☐ No	
Air Stack/Vent/Odor	☒ Yes ☐ No	air permit for dry kilns and boiler
Indoor Air Quality Complaint	☐ Yes ☐ No	

Floor Drain/Sump	☐ Yes ☐ No	
Pit, Pond, Lagoon	☐ Yes ☐ No	
Stained Soil/Vegetation Impact	☐ Yes ☐ No	

Other specialized knowledge of an environmental condition or issue at the Site?

■ ADDITIONAL ON-SITE ENVIRONMENTAL CONDITIONS

Are you aware of any of the following environmental conditions on the Site, either current or former?

Environmental Condition/Issue	Response	Comment if Yes Response
Pesticide/Herbicide Use	☐ Yes ☐ No	
Polychlorinated Biphenyls	☐ Yes ☐ No	
Electrical Transformer	☒ Yes ☐ No	electrical for power to operation
Hydraulic Lift	☒ Yes ☐ No	tilt hoist for lumber stacker and unstacker
Elevator	☐ Yes ☐ No	
Drycleaner Business	☐ Yes ☐ No	
Asbestos	☒ Yes ☐ No	dry kilns and boiler
Lead Paint	☐ Yes ☐ No	
Lead Piping/Lead in Water	☐ Yes ☐ No	
Elevated Radon Level	☐ Yes ☐ No	
Fluorescent Light Fixture	☐ Yes ☐ No	
Wetland, Flooding	☐ Yes ☐ No	
Unique Wildlife Species	☐ Yes ☐ No	
Archeological Resource	☐ Yes ☐ No	
Historic/National Landmark	☒ Yes ☐ No	nez perce tribe camp spot, lewis and clark expecition
Oil/Gas Well	☐ Yes ☐ No	
Water Well	☐ Yes ☐ No	
Environmental Cleanup	☐ Yes ☐ No	
Environmental Permit	☒ Yes ☐ No	operation as lumber mill

■ OFF-SITE ENVIRONMENTAL CONDITIONS

On adjoining property, are there any: Gasoline Stations? ☐ Yes ☐ No Drycleaners? ☐ Yes ☐ No

Are you aware of any other environmental conditions or concerns on adjacent or nearby properties? ☐ Yes ☒ No

Comments

(1) Environmental cleanup liens that have been filed or recorded against the Site (Part 312.25 of Title 40 of the Code of Federal Regulations [40 CFR 312.25])

Are you aware of any environmental cleanup liens against the Site that have been filed or recorded under federal, tribal, state, or local law?

no

(2) Activity and land use limitations that are in place at the Site or that have been filed or recorded in a registry (40 CFR 312.26)

Are you aware of any activity and land use limitation (such as engineering controls, land use restrictions, or institutional controls) that are in place at the Site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

no

(3) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28)

As the user of the Phase I ESA Report, do you have any specialized knowledge or experience related to the Site or nearby properties? For example, are you involved in the same line of business as the current or former occupant(s) of the Site or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

no

(4) Relationship of the purchase price to the fair market value of the Site if it were not contaminated (40 CFR 312.29)

Does the purchase price being paid for this Site reasonably reflect the fair market value of the Site? If you conclude that there is a difference between the purchase price and the fair market value, have you considered whether the lower purchase price is because contamination is known or believed to be present at the Site?

yes

(5) Commonly known or reasonably ascertainable information about the property (40 CFR 312.30)

Are you aware of commonly known or reasonably ascertainable information about the Site that would help Farallon Consulting, L.L.C. to identify conditions indicative of a chemical or other release or threatened release? For example, as user of the Phase I ESA Report:

Do you know the past use(s) of the Site? (If yes, please specify.)

it has been used as a lumber mill for past 60+ years

Do you know of a specific chemical(s) present at the Site, or present at one time? (If yes, please specify.)

Do you know of a chemical and/or other spill(s) or release(s) that have taken place at the Site? (If yes, please specify.)

no

Do you know of any environmental cleanup(s) that have taken place at the Site? (If yes, please specify.)

no

(6) The degree of obviousness of the presence or likely presence of contamination at the Site, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31)

As the user of the Phase I ESA Report, based on your knowledge and experience related to the Site, is there any obvious indicator(s) that point to the presence or likely presence of contamination at the Site? (If yes, please specify.)

no

Identify all parties who will rely on the Phase I ESA Report, including:

Name of Business: Idaho Forest Group, LLC

Name of Contact: Scott Atkison

Address: 687 Canfield, Suite 100; Coeur d'Alene, ID 83815

Telephone Number: 2087622999

E-mail Address: scotta@idfg.com

Has any party that will rely on the Phase I ESA Report required services beyond the standard ASTM E1527-13? (For example, an asbestos, lead-based paint, lead in drinking water, or wetlands investigation) (If yes, please specify.)

no

Who is the Site contact, and how can the contact be reached?

Name of Business: Blue North Forest Products

Name of Contact: Bill Mulligan

Address:

Telephone Number: 2088697262

E-mail Address: billmulligan@hotmail.com

Are there any special terms and conditions that must be agreed upon by Farallon Consulting, L.L.C.? (If yes, please specify.)

no

APPENDIX D
ENVIRONMENTAL DATABASE REPORT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
Blue North Forest Products LLC
283 Woodland Road
Kamiah, Idaho

Farallon PN: 1638-001

Blue North Lumber
283 Woodland Road
Kamiah, ID 83536

Inquiry Number: 4586471.2s
April 08, 2016

The EDR Radius Map™ Report with GeoCheck®

Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

283 WOODLAND ROAD
KAMIAH, ID 83536

COORDINATES

Latitude (North):	46.2425030 - 46° 14' 33.01''
Longitude (West):	116.0337780 - 116° 2' 1.60''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	574491.4
UTM Y (Meters):	5121227.5
Elevation:	1173 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5992379 KAMIAH, ID
Version Date:	2013
North Map:	5996982 WOODLAND, ID
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20110818, 20110807
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
283 WOODLAND ROAD
KAMIAH, ID 83536

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	BLUE NORTH FOREST PR	283 WOODLAND ROAD	TRIS, FINDS		TP
A2	BLUE NORTH FOREST PR	283 WOODLAND ROAD	ECHO		TP
Reg	NEZ PERCE INDIAN RES		INDIAN RESERV	Same	1 ft.
A3	THREE RIVERS TIMBER	WOODLAND RD	INDIAN LUST, INDIAN UST	Higher	1 ft.
A4	THREE RIVERS TIMBER	757 WOODLAND RD	FTTS, HIST FTTS	Higher	1 ft.
A5	BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	US AIRS	Higher	1 ft.
B6	BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	ECHO	Lower	1 ft.
B7	BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	FINDS	Lower	1 ft.
A8	THREE RIVERS TIMBER,	WOODLAND ROAD	TIER 2	Higher	1 ft.
A9	THREE RIVERS TIMBER	PO BOX 757 WOODLAND	FTTS, HIST FTTS	Higher	1 ft.
A10	THREE RIVERS TIMBER	WOODLAND ROAD	TIER 2	Higher	1 ft.

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
BLUE NORTH FOREST PR 283 WOODLAND ROAD KAMIAH, ID 83536	TRIS TRIS ID: 8353WBLNRT283WD FINDS Registry ID:: 110058087136	8353WBLNRT283WD
BLUE NORTH FOREST PR 283 WOODLAND ROAD KAMIAH, ID 83536	ECHO	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

EXECUTIVE SUMMARY

Federal RCRA generators list

RCRA-LQG ---- RCRA - Large Quantity Generators
RCRA-SQG ---- RCRA - Small Quantity Generators
RCRA-CESQG ---- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---- Land Use Control Information System
US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROL ---- Sites with Institutional Controls

Federal ERNS list

ERNS ---- Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS ---- This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---- Solid Waste Landfills

State and tribal leaking storage tank lists

LAST ---- Leaking Aboveground Storage Tanks
LUST ---- Leaking Underground Storage Tank Sites

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
UST ---- Registered Underground Storage Tanks in Idaho

State and tribal institutional control / engineering control registries

INST CONTROL ---- Sites with Institutional Controls Restricting Use

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing
VCP ---- Voluntary Cleanup Program Sites

State and tribal Brownfields sites

BROWNFIELDS ---- Brownfields Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF ---- Idaho Historical Landfills
SWTIRE ---- Waste Tire Collection Sites
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
ALLSITES ---- Remediation Database
CDL ---- Clandestine Drug Labs
US CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS ---- Spills Data
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US MINES ---- Mines Master Index File
AIRS ---- Permitted Sources & Emissions Listing

EXECUTIVE SUMMARY

DRYCLEANERS..... Drycleaner Listing
Financial Assurance..... Financial Assurance Information Listing
UIC..... Underground Injection Wells Database Listing
FUELS PROGRAM..... EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

INDIAN LUST: A listing of leaking underground storage tank locations on Indian Land.

A review of the INDIAN LUST list, as provided by EDR, and dated 10/27/2015 has revealed that there is 1 INDIAN LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	***WOODLAND RD***	***0 - 1/8 (0.000 mi.)***	***A3***	***8***

State and tribal registered storage tank lists

INDIAN UST: A listing of underground storage tank locations on Indian Land.

A review of the INDIAN UST list, as provided by EDR, and dated 10/20/2015 has revealed that there is 1 INDIAN UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	*WOODLAND RD*	*0 - 1/8 (0.000 mi.)*	*A3*	*8*

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FTTS: FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act) over the previous five years. To maintain currency, EDR contacts the Agency on a quarterly basis.

A review of the FTTS list, as provided by EDR, and dated 04/09/2009 has revealed that there are 2 FTTS sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	*757 WOODLAND RD*	*0 - 1/8 (0.000 mi.)*	*A4*	*10*
THREE RIVERS TIMBER	*PO BOX 757 WOODLAND*	*0 - 1/8 (0.000 mi.)*	*A9*	*29*

HIST FTTS: A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

A review of the HIST FTTS list, as provided by EDR, and dated 10/19/2006 has revealed that there are 2 HIST FTTS sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	*757 WOODLAND RD*	*0 - 1/8 (0.000 mi.)*	*A4*	*10*
THREE RIVERS TIMBER	*PO BOX 757 WOODLAND*	*0 - 1/8 (0.000 mi.)*	*A9*	*29*

INDIAN RESERV: This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

A review of the INDIAN RESERV list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 INDIAN RESERV site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NEZ PERCE INDIAN RES		0 - 1/8 (0.000 mi.)	0	8

EXECUTIVE SUMMARY

US AIRS: The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

A review of the US AIRS list, as provided by EDR, and dated 10/20/2015 has revealed that there is 1 US AIRS site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	0 - 1/8 (0.000 mi.)	A5	10

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/20/2015 has revealed that there is 1 FINDS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	0 - 1/8 (0.000 mi.)	B7	27

TIER 2: A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

A review of the TIER 2 list, as provided by EDR, and dated 12/31/2011 has revealed that there are 2 TIER 2 sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER, Facility Id: FATR20075RBMB3026C55 Facility Id: FATR20086CP9QS03HEFK	WOODLAND ROAD	0 - 1/8 (0.000 mi.)	A8	27
THREE RIVERS TIMBER Facility Id: FATR200651TH4C003ST2	WOODLAND ROAD	0 - 1/8 (0.000 mi.)	A10	29

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 09/20/2015 has revealed that there is 1 ECHO site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	0 - 1/8 (0.000 mi.)	B6	27

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4586471.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

County Boundary

Power transmission lines

National Wetland Inventory

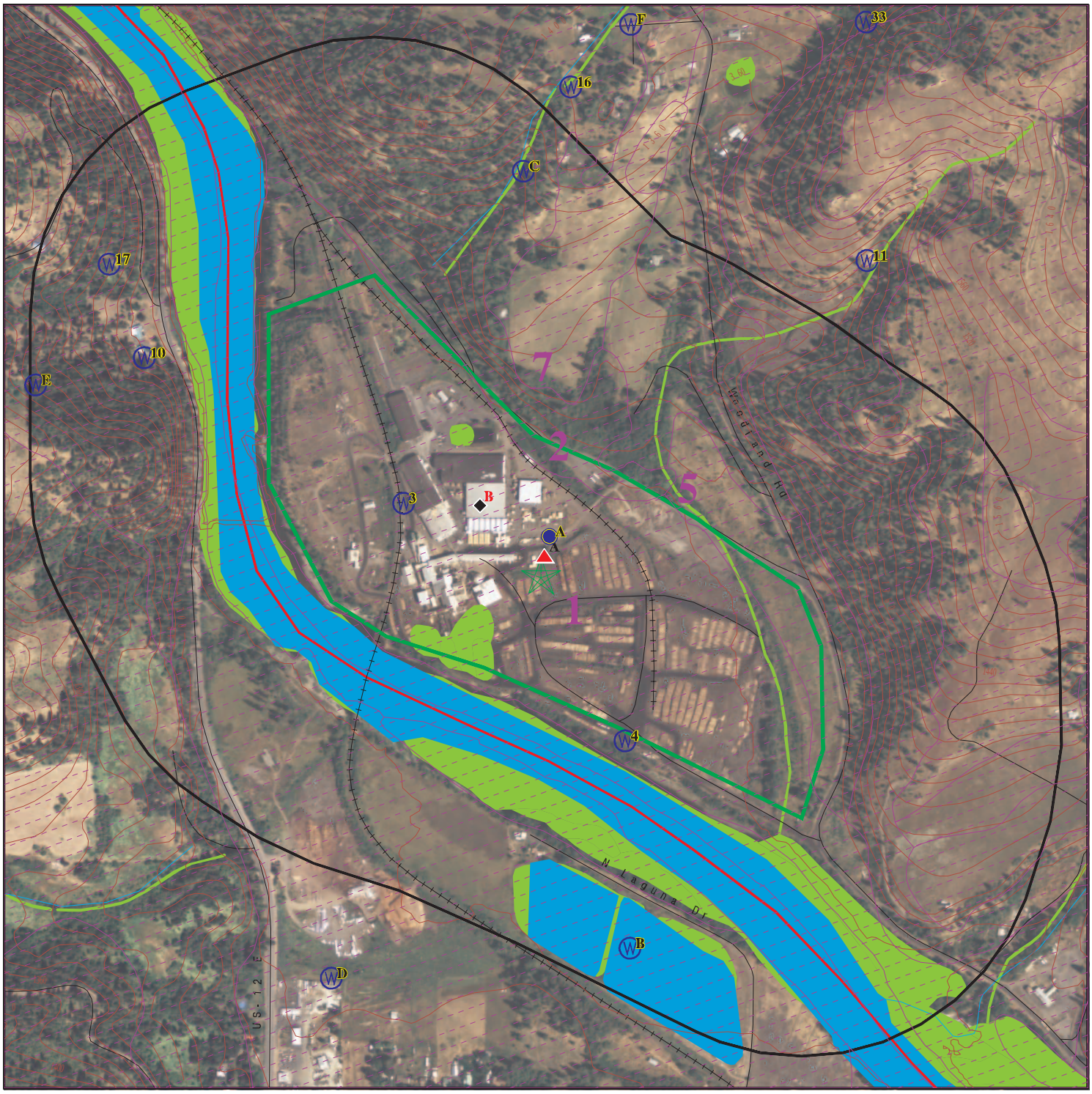
State Wetlands

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Blue North Lumber	CLIENT:	Farallon Consulting, LLC
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Lyndsey Needham
LAT/LONG:	46.242503 / 116.033778	INQUIRY #:	4586471.2s
		DATE:	April 08, 2016 8:17 am

DETAIL MAP - 4586471.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

County Boundary

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Blue North Lumber	CLIENT:	Farallon Consulting, LLC
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Lyndsey Needham
LAT/LONG:	46.242503 / 116.033778	INQUIRY #:	4586471.2s
		DATE:	April 08, 2016 8:18 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LAST	0.500		0	0	0	NR	NR	0
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		1	0	0	NR	NR	1
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		1	0	NR	NR	NR	1
State and tribal institutional control / engineering control registries								
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
HIST LF	0.500		0	0	0	NR	NR	0
SWTIRE	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
ALLSITES	0.500		0	0	0	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
SPILLS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001	1	0	NR	NR	NR	NR	1
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		2	NR	NR	NR	NR	2
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		2	NR	NR	NR	NR	2
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		1	NR	NR	NR	NR	1
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		1	NR	NR	NR	NR	1
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001	1	1	NR	NR	NR	NR	2
AIRS	0.001		0	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
TIER 2	0.001		2	NR	NR	NR	NR	2
UIC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001	1	1	NR	NR	NR	NR	2
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		3	12	0	0	0	0	15

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

A1
Target Property
BLUE NORTH FOREST PRODUCTS, LLC
283 WOODLAND ROAD
KAMIAH, ID 83536
TRIS 1017793061
FINDS 8353WBLNRT283WD

Site 1 of 8 in cluster A

Actual: 1173 ft.

TRIS:

Click this hyperlink while viewing on your computer to access
1 additional US_TRIS: record(s) in the EDR Site Report.

FINDS:

Registry ID: 110058087136

Environmental Interest/Information System
US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

A2
Target Property
BLUE NORTH FOREST PRODUCTS
283 WOODLAND ROAD
KAMIAH, ID 83536
ECHO 1018072013
N/A

Site 2 of 8 in cluster A

Actual: 1173 ft.

ECHO:
Envid: 1018072013
Registry ID: 110058087136
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110058087136

IND RES
Region
NEZ PERCE INDIAN RESERVATION
NEZ PERCE INDIAN RESERVAT (County), ID
INDIAN RESERV CIND100117
N/A

< 1/8
1 ft.

INDIAN RESERV:
Feature: Indian Reservation
Name: Nez Perce Indian Reservation
Agency: BIA
State: ID

A3
< 1/8
1 ft.
THREE RIVERS TIMBER INC
WOODLAND RD
KAMIAH, ID 83536
INDIAN LUST 1009394735
INDIAN UST N/A

Site 3 of 8 in cluster A

Relative: Higher

Actual: 1173 ft.

Indian LUST:
Region: 10
Facility ID: 2400088
Facility Status: Confirmed Release
Status Date: 1994-05-01 00:00:00
Lust Closed Date: 2000-01-05 00:00:00

THREE RIVERS TIMBER INC (Continued) **1009394735**

Tribe Name: Nez Perce

Region: 10
Facility ID: 2400088
Facility Status: Cleanup Initiated
Status Date: 1994-07-13 00:00:00
Lust Closed Date: 2000-01-05 00:00:00
Tribe Name: Nez Perce

Region: 10
Facility ID: 2400088
Facility Status: Cleanup Completed
Status Date: 2000-01-05 00:00:00
Lust Closed Date: 2000-01-05 00:00:00
Tribe Name: Nez Perce

Indian UST:
Region: 10
Facility ID: 2400088
Tank ID: 5
Alternate Tank ID: 5
Installation Date: Not reported
Tank Status: Permanently Out of Use
Content: Diesel
Federally Regulated: True
Owner Name: Three Rivers Timber, Inc.

Region: 10
Facility ID: 2400088
Tank ID: 4
Alternate Tank ID: 4
Installation Date: Not reported
Tank Status: Permanently Out of Use
Content: Gasoline
Federally Regulated: True
Owner Name: Three Rivers Timber, Inc.

Region: 10
Facility ID: 2400088
Tank ID: 3
Alternate Tank ID: 3
Installation Date: 1/1/1971
Tank Status: Permanently Out of Use
Content: Used Oil
Federally Regulated: True
Owner Name: Three Rivers Timber, Inc.

Region: 10
Facility ID: 2400088
Tank ID: 1
Alternate Tank ID: 1
Installation Date: 1/1/1971
Tank Status: Permanently Out of Use
Content: Gasoline
Federally Regulated: True
Owner Name: Three Rivers Timber, Inc.

THREE RIVERS TIMBER INC (Continued) **1009394735**

Region:	10
Facility ID:	2400088
Tank ID:	2
Alternate Tank ID:	2
Installation Date:	1/1/1971
Tank Status:	Permanently Out of Use
Content:	Diesel
Federally Regulated:	True
Owner Name:	Three Rivers Timber, Inc.

A4 **THREE RIVERS TIMBER INC** **FTTS** **1007296534**
757 WOODLAND RD **HIST FTTS** **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 4 of 8 in cluster A

Relative: Higher

Actual: 1173 ft.

FTTS INSP:

Inspection Number:	1998051413535 1
Region:	10
Inspection Date:	05/14/98
Inspector:	HOYLES
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	1998051413535 1
Region:	10
Inspection Date:	Not reported
Inspector:	HOYLES
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

A5 **BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS** **US AIRS** **1004471039**
P O BOX 757, WOODLAND RD **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 5 of 8 in cluster A

Relative: Higher

Actual: 1173 ft.

US AIRS (AFS):

Envid:	1004471039
Region Code:	10
County Code:	ID061
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
D and B Number:	Not reported
Facility Site Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Primary SIC Code:	2421
NAICS Code:	999999

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Default Air Classification Code: MAJ
Facility Type of Ownership Code: TRB
Air CMS Category Code: OTL
HPV Status: Not reported

US AIRS (AFS):
Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: 40 CFR Part 63 Area Sources
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: CFC Tracking (CAA Title VI)
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: CFC Tracking (CAA Title VI)
Activity Date: 2008-05-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: CFC Tracking (CAA Title VI)
Activity Date: 2011-09-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Default Air Classification Code: MAJ
Air Program: CFC Tracking (CAA Title VI)
Activity Date: 2013-09-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: CFC Tracking (CAA Title VI)
Activity Date: 2014-09-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Federal Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2012-09-19 00:00:00
Activity Status Date: 2012-10-09 16:47:12
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2013-09-17 00:00:00
Activity Status Date: 2013-09-20 16:32:18
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: New Source Performance Standards
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: New Source Performance Standards
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2006-03-21 00:00:00
Activity Status Date: 2006-03-31 12:04:24
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2008-05-14 00:00:00
Activity Status Date: 2008-06-11 17:30:00
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2010-09-16 00:00:00
Activity Status Date: 2010-10-13 11:06:40
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2011-09-27 00:00:00
Activity Status Date: 2011-10-06 17:41:48
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2012-09-19 00:00:00

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status Date: 2012-10-09 16:47:12
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2013-09-17 00:00:00
Activity Status Date: 2013-09-20 16:32:18
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-09-16 00:00:00
Activity Status Date: 2010-10-13 11:06:40
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-09-19 00:00:00
Activity Status Date: 2012-10-09 16:47:12
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-09-17 00:00:00
Activity Status Date: 2013-09-20 16:32:18
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1977-06-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1978-08-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1980-07-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1980-08-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1983-03-03 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1983-04-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1984-01-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1988-07-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-05-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1990-06-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-07-30 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-08-21 00:00:00

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1993-09-09 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1995-03-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1995-12-07 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1997-08-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1998-06-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1999-04-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1999-11-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-07-28 00:00:00
Activity Status Date: 1992-07-28 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-03-10 00:00:00
Activity Status Date: 1989-03-10 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1990-08-20 00:00:00
Activity Status Date: 1990-08-20 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-08-16 00:00:00
Activity Status Date: 1991-08-16 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-12-11 00:00:00
Activity Status Date: 1991-12-11 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1993-11-23 00:00:00
Activity Status Date: 1993-11-23 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-01-26 00:00:00
Activity Status Date: 1994-01-26 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Permit Programs
Activity Date: 2007-10-01 00:00:00
Activity Status Date: 2007-10-01 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Closed

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: The Mandatory Greenhouse Gas Reporting Rule
Activity Date: 2015-06-09 00:00:00

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	Not reported
Activity Status Date:	2007-09-25 00:00:00
Activity Group:	Case File
Activity Type:	Case File
Activity Status:	Resolved
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	2008-10-09 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Information Request
Activity Status:	Not reported
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	2015-03-16 00:00:00
Activity Status Date:	2015-09-10 12:18:10
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	2015-06-09 00:00:00
Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2002-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2004-05-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-05-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-09-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-09-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-09-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2013-09-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-09-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-09-25 00:00:00
Activity Status Date: 2007-09-25 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status: Final Order Issued

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-08-01 00:00:00
Activity Status Date: 2007-08-01 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2002-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2004-05-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110010026453
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2004-09-08 00:00:00

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Status Date:	2004-09-08 00:00:00
Activity Group:	Enforcement Action
Activity Type:	Administrative - Formal
Activity Status:	Final Order Issued
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110010026453
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Tribal Rule Not Otherwise Covered
Activity Date:	2004-09-08 00:00:00
Activity Status Date:	2004-09-08 00:00:00
Activity Group:	Enforcement Action
Activity Type:	Judicial
Activity Status:	Closed

B6 **BLUE NORTH FOREST PRODUCTS** **ECHO** **1018094777**
P O BOX 757, WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 1 of 2 in cluster B

Relative: **Lower**

Actual: **1171 ft.**

ECHO:

Envid:	1018094777
Registry ID:	110063931544
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110063931544

B7 **BLUE NORTH FOREST PRODUCTS** **FINDS** **1017798644**
P O BOX 757, WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 2 of 2 in cluster B

Relative: **Lower**

Actual: **1171 ft.**

FINDS:

Registry ID: 110063931544

Environmental Interest/Information System
AIR EMISSIONS CLASSIFICATION UNKNOWN

A8 **THREE RIVERS TIMBER, INC.** **TIER 2** **S109116391**
WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID**
1 ft.

Site 6 of 8 in cluster A

Relative: **Higher**

Actual: **1173 ft.**

TIER 2:

Report Year:	2008
Facility ID:	FATR20086CP9QS03HEFK
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported

THREE RIVERS TIMBER, INC. (Continued) **S109116391**

Date Signed:	2/27/2009
Dike or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	3/5/2009
Fees Total:	Not reported
Mailing Address:	3306 Michael Dr.
Mailing City,St,Zip:	Clakston, WA 99403
Mailing Country:	USA
Latitude:	46.14630
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	116.02138
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2008
Submitted By:	Herb Hazen
Fire District:	Not reported
Mail District:	Not reported
Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported
Validation:	This facility passed all validation checks.

Report Year:	2007
Facility ID:	FATR20075RBMB3026C55
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported
Date Signed:	2/29/2008
Dike or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	5/19/2008
Fees Total:	Not reported
Mailing Address:	931 Seventh Ave.
Mailing City,St,Zip:	Lewiston, ID 83501
Mailing Country:	USA
Latitude:	46.14630
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	116.02138
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2007
Submitted By:	Herb Hazen, President
Fire District:	Not reported
Mail District:	Not reported

THREE RIVERS TIMBER, INC. (Continued) **S109116391**

Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported
Validation:	This facility passed all validation checks.

A9 **THREE RIVERS TIMBER INC** **FTTS 1009524895**
PO BOX 757 WOODLAND RD **HIST FTTS N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 7 of 8 in cluster A

Relative: Higher
Actual: 1173 ft.

FTTS INSP:

Inspection Number:	200205231642 1
Region:	10
Inspection Date:	05/23/02
Inspector:	BOYS
Violation occurred:	No
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	200205231642 1
Region:	10
Inspection Date:	Not reported
Inspector:	BOYS
Violation occurred:	No
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

A10 **THREE RIVERS TIMBER** **TIER 2 S108664459**
WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID**
1 ft.

Site 8 of 8 in cluster A

Relative: Higher
Actual: 1173 ft.

TIER 2:

Report Year:	2006
Facility ID:	FATR200651TH4C003ST2
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported
Date Signed:	3/27/2007
Dike or Other Safeguard:	Not reported
Failed Validation:	T
Date Modified:	6/26/2007
Fees Total:	Not reported
Mailing Address:	PO Box 757 Woodland Road

THREE RIVERS TIMBER (Continued) **S108664459**

Mailing City,St,Zip:	Kamiah, ID 83536
Mailing Country:	USA
Latitude:	Not reported
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	Not reported
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2006
Submitted By:	Randy S Sandberg, Authorized Representative
Fire District:	Not reported
Mail District:	Not reported
Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported
Validation:	Not reported

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/06/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: N/A

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Landfills

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/09/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 208-334-5860
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/06/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 03/08/2016
Number of Days to Update: 60

Source: Department of Environmental Quality
Telephone: 208-373-0130
Last EDR Contact: 04/07/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

LAST: Leaking Aboveground Storage Tanks

A listing of leaking aboveground storage tank locations.

Date of Government Version: 06/20/2011
Date Data Arrived at EDR: 06/22/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0347
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

UST: Registered Underground Storage Tanks in Idaho
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 01/06/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 03/08/2016
Number of Days to Update: 60
Source: Department of Environmental Quality
Telephone: 208-373-0130
Last EDR Contact: 04/07/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

INST CONTROL: Sites with Institutional Controls Restricting Use

Sites included in the Remediation Sites database that have institutional controls stricting use.

Date of Government Version: 12/10/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 60

Source: Department of Environmental Quality
Telephone: 208-373-0347
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Sites

The Idaho Legislature created the Idaho land Remediation Act, DEQ's Voluntary Cleanup Program, to encourage innovation and cooperation between the state, local communities and private parties working to revitalize properties with hazardous substance or petroleum contamination.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/09/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 208-373-0495
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Inventory

Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. With the help of Idaho Counties, Cities, Economic Development Districts, Urban Renewal Entities, developers and brokers, DEQ is developing a comprehensive, statewide inventory of Brownfields.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/09/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 208-373-0495
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Landfill / Solid Waste Disposal Sites

HISTORICAL LANDFILL: Idaho Historical Landfills
A listing of older landfills. The listing has not been updated since July 1997.

Date of Government Version: 07/10/1997
Date Data Arrived at EDR: 02/21/2002
Date Made Active in Reports: 03/27/2002
Number of Days to Update: 34

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: No Update Planned

SWTIRE: Waste Tire Collection Sites
A listing of registered waste tire collection sites.

Date of Government Version: 03/15/2002
Date Data Arrived at EDR: 09/16/2004
Date Made Active in Reports: 11/02/2004
Number of Days to Update: 47

Source: Department of Environmental Quality
Telephone: 208-373-0416
Last EDR Contact: 02/15/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

ALLSITES: Remediation Database

Idaho's remediation database is a compilation of data on all the state and delegated federal remediation programs operated by the DEQ. Programs included are AST, Brownfield, ER, General Remediation, LUST, Mining, Miscellaneous, RCRA, Solid Waste, UST and VCP.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/09/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 36

Source: Department of Environmental Quality
Telephone: 208-373-0309
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

CDL 2: Clandestine Drug (Meth) Laboratory Site Property List

A listing of clandestine drug lab site locations.

Date of Government Version: 01/26/2015
Date Data Arrived at EDR: 03/11/2015
Date Made Active in Reports: 03/20/2015
Number of Days to Update: 9

Source: Dept of Health & Welfare
Telephone: 208-334-5500
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

These are labs in which the Idaho State Police have investigated.

Date of Government Version: 07/22/2010
Date Data Arrived at EDR: 10/01/2010
Date Made Active in Reports: 10/29/2010
Number of Days to Update: 28

Source: Idaho State Police
Telephone: 208-884-7000
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

SPILLS: Spills Data

A listing of hazardous materials spills, releases or accidents as reported to the State of Idaho's central Communications Center.

Date of Government Version: 06/20/2011
Date Data Arrived at EDR: 06/22/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/06/2013
Number of Days to Update: 62

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/26/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/07/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/07/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2015
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (206) 553-1200
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AIRS: Permitted Sources & Emissions Listing
Permit and emissions inventory data.

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 12/30/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 15

Source: Department of Environmental Quality
Telephone: 208-373-0253
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Listing
A listing of drycleaner locations.

Date of Government Version: 07/06/2009
Date Data Arrived at EDR: 07/13/2009
Date Made Active in Reports: 07/28/2009
Number of Days to Update: 15

Source: Department of Environmental Quality
Telephone: 208-373-0211
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

Date of Government Version: 11/12/2015
Date Data Arrived at EDR: 11/20/2015
Date Made Active in Reports: 01/14/2016
Number of Days to Update: 55

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 10/05/2015
Date Data Arrived at EDR: 10/07/2015
Date Made Active in Reports: 11/18/2015
Number of Days to Update: 42

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

TIER 2: Tier 2 Data Listing
A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 06/19/2012
Number of Days to Update: 25

Source: Bureau of Homeland Security
Telephone: 208-422-3040
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Database Listing
Deep and shallow underground injection wells locations.

Date of Government Version: 01/25/2016
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 03/08/2016
Number of Days to Update: 41

Source: Department of Water Resources
Telephone: 208-287-4932
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Idaho.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Idaho.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care List
Source: Department of Health and Welfare
Telephone: 208-332-7205

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Water Resources
Telephone: 208-287-4800

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BLUE NORTH LUMBER
283 WOODLAND ROAD
KAMIAH, ID 83536

TARGET PROPERTY COORDINATES

Latitude (North):	46.242503 - 46° 14' 33.01''
Longitude (West):	116.033778 - 116° 2' 1.60''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	574491.4
UTM Y (Meters):	5121227.5
Elevation:	1173 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5992379 KAMIAH, ID
Version Date:	2013
North Map:	5996982 WOODLAND, ID
Version Date:	2014

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

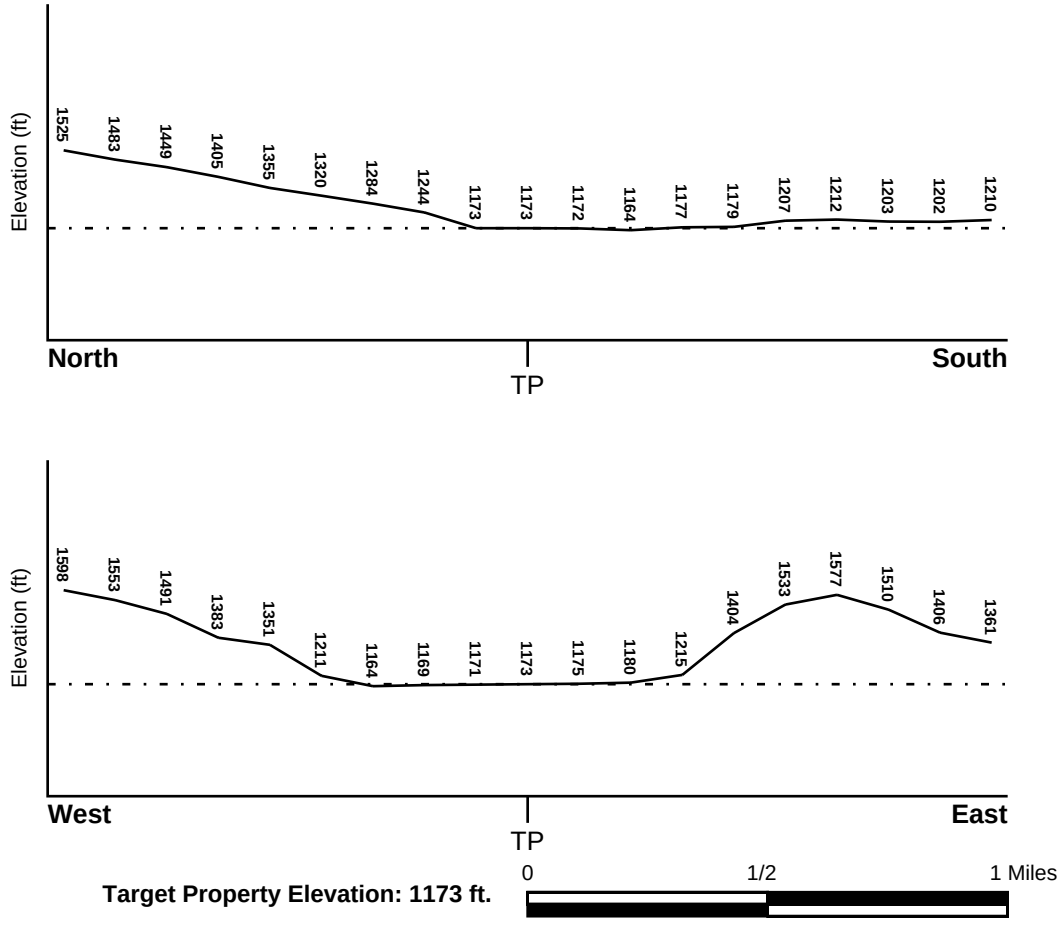
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1173 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
IDAHO, ID	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

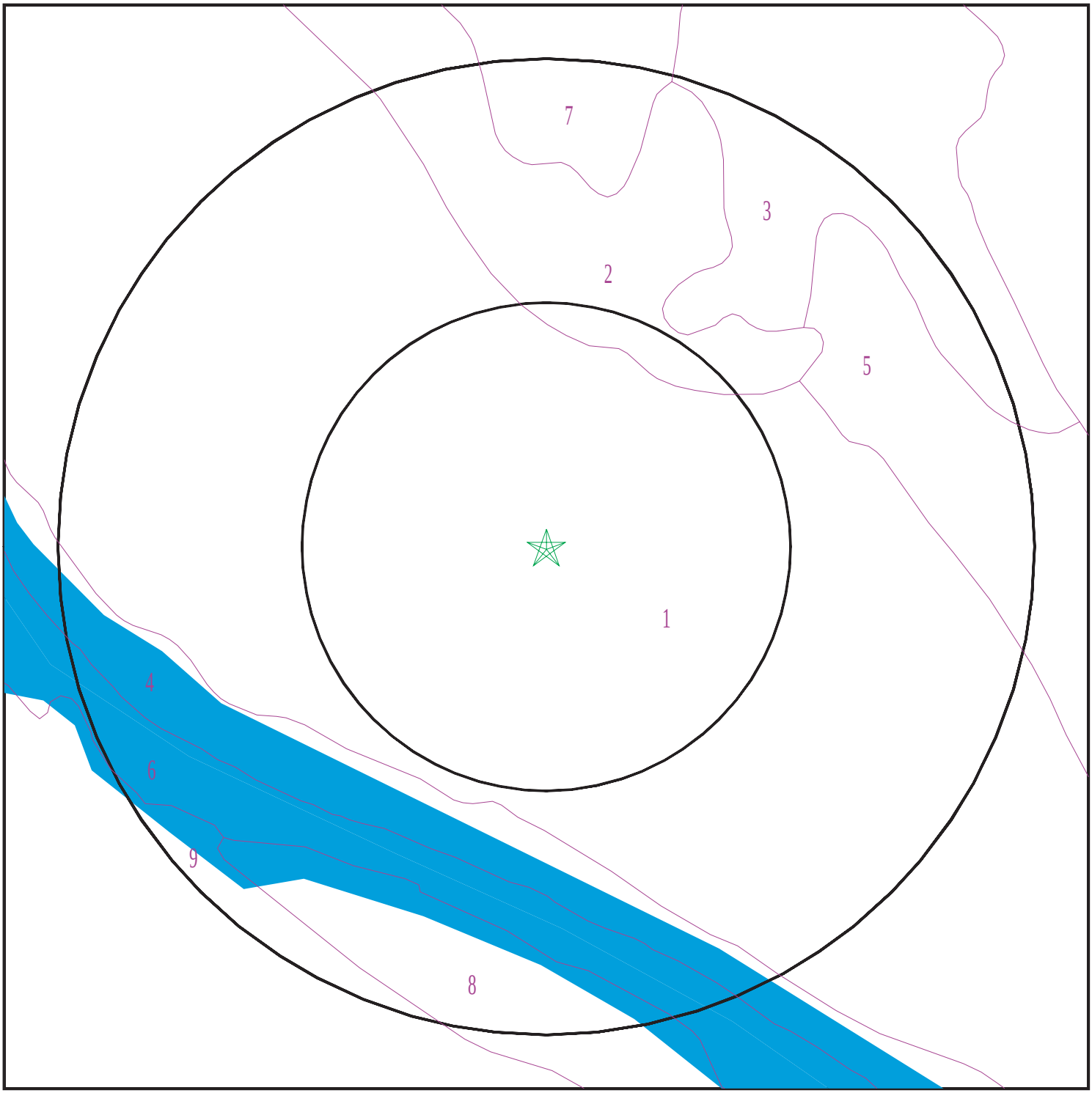
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4586471.2s



SITE NAME:	Blue North Lumber	CLIENT:	Farallon Consulting, LLC
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Lyndsey Needham
LAT/LONG:	46.242503 / 116.033778	INQUIRY #:	4586471.2s
		DATE:	April 08, 2016 8:18 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Nicodemus

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 84 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	loam	Not reported	Not reported	Max: 42 Min: 14	Max: 6.5 Min: 6.1
2	22 inches	29 inches	very cobbly sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 6.5 Min: 5.6
3	29 inches	59 inches	extremely cobbly sand	Not reported	Not reported	Max: 141 Min: 42	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: Gwin

Soil Surface Texture: very stony loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 38 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	very stony loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	7 inches	18 inches	very cobbly silty clay loam	Not reported	Not reported	Max: 4 Min: 1.4	Max: 7.3 Min: 6.6
3	18 inches	22 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 3

Soil Component Name: Jacknife

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	18 inches	25 inches	silty clay loam	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	25 inches	59 inches	silty clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6

Soil Map ID: 4

Soil Component Name: Water

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 5

Soil Component Name: Jacknife variant

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 6.5 Min: 5.1
2	18 inches	61 inches	loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6

Soil Map ID: 6

Soil Component Name: Water

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 7

Soil Component Name: Jacknife

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	18 inches	25 inches	silty clay loam	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6
3	25 inches	59 inches	silty clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6

Soil Map ID: 8

Soil Component Name: Bridgewater

Soil Surface Texture: extremely gravelly sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	extremely gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel.	Max: 42.34 Min: 14.11	Max: 7.3 Min: 6.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	16 inches	33 inches	extremely gravelly loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 42.34 Min: 4	Max: 7.8 Min: 6.6
3	33 inches	59 inches	extremely gravelly loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141.14 Min: 141	Max: 7.8 Min: 6.6

Soil Map ID: 9

Soil Component Name: Uhlig

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4	Max: 7.3 Min: 6.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	14 inches	38 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4	Max: 7.3 Min: 6.6
3	38 inches	68 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 14.11	Max: 7.8 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000293094	0 - 1/8 Mile NNE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

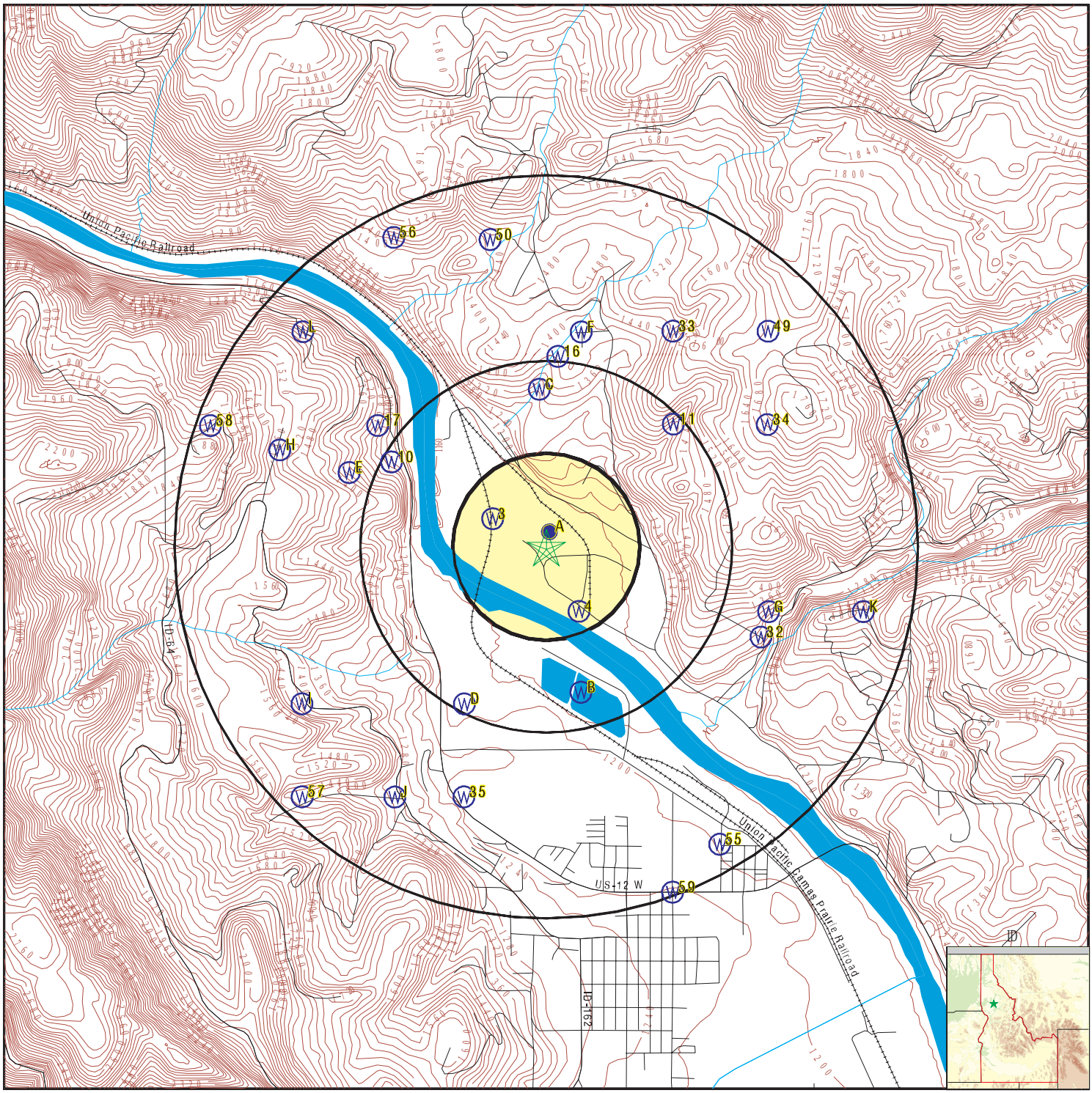
MAP ID	WELL ID	LOCATION FROM TP
A2	ID8000000017201	0 - 1/8 Mile NNE
3	ID8000000017200	1/8 - 1/4 Mile WNW
4	ID8000000017547	1/8 - 1/4 Mile SSE
B5	ID8000000163383	1/4 - 1/2 Mile SSE
C6	ID8000000017617	1/4 - 1/2 Mile North
C7	ID8000000018119	1/4 - 1/2 Mile North
C8	ID8000000018164	1/4 - 1/2 Mile North
B9	ID8000000016659	1/4 - 1/2 Mile SSE
10	ID8000000127859	1/4 - 1/2 Mile WNW
11	ID8000000147890	1/4 - 1/2 Mile NE
D12	ID8000000016364	1/4 - 1/2 Mile SSW
D13	ID8000000015936	1/4 - 1/2 Mile SSW
D14	ID8000000016933	1/4 - 1/2 Mile SSW
D15	ID8000000016451	1/4 - 1/2 Mile SSW
16	ID8000000017418	1/2 - 1 Mile North
17	ID8000000016715	1/2 - 1 Mile NW
E18	ID8000000017212	1/2 - 1 Mile WNW
E19	ID8000000017213	1/2 - 1 Mile WNW
E20	ID8000000016075	1/2 - 1 Mile WNW
E21	ID8000000016317	1/2 - 1 Mile WNW
E22	ID8000000017216	1/2 - 1 Mile WNW
E23	ID8000000017217	1/2 - 1 Mile WNW
E24	ID8000000017214	1/2 - 1 Mile WNW
E25	ID8000000017215	1/2 - 1 Mile WNW
F26	ID8000000017671	1/2 - 1 Mile North
F27	ID8000000016670	1/2 - 1 Mile North
F28	ID8000000148829	1/2 - 1 Mile North
F29	ID8000000017691	1/2 - 1 Mile North
G30	ID8000000075490	1/2 - 1 Mile ESE
G31	ID8000000158936	1/2 - 1 Mile ESE
32	ID8000000161229	1/2 - 1 Mile ESE
33	ID8000000166193	1/2 - 1 Mile NNE
34	ID8000000017307	1/2 - 1 Mile ENE
35	ID8000000016067	1/2 - 1 Mile SSW
H36	ID8000000016160	1/2 - 1 Mile WNW
H37	ID8000000017185	1/2 - 1 Mile WNW
I38	ID8000000015978	1/2 - 1 Mile WSW
I39	ID8000000015979	1/2 - 1 Mile WSW
I40	ID8000000017024	1/2 - 1 Mile WSW
J41	ID8000000015529	1/2 - 1 Mile SSW
J42	ID8000000016240	1/2 - 1 Mile SSW
J43	ID8000000015249	1/2 - 1 Mile SSW
J44	ID8000000015328	1/2 - 1 Mile SSW
J45	ID8000000111977	1/2 - 1 Mile SSW
J46	ID8000000127788	1/2 - 1 Mile SSW
J47	ID8000000016371	1/2 - 1 Mile SSW
J48	ID8000000016637	1/2 - 1 Mile SSW
49	ID8000000017711	1/2 - 1 Mile NE
50	ID8000000017036	1/2 - 1 Mile North
K51	ID8000000017780	1/2 - 1 Mile ESE
K52	ID8000000017807	1/2 - 1 Mile ESE
L53	ID8000000092109	1/2 - 1 Mile NW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
L54	ID8000000165187	1/2 - 1 Mile NW
55	ID8000000155964	1/2 - 1 Mile SSE
56	ID8000000156090	1/2 - 1 Mile NNW
57	ID8000000016872	1/2 - 1 Mile SW
58	ID8000000015974	1/2 - 1 Mile WNW
59	ID8000000069491	1/2 - 1 Mile SSE

PHYSICAL SETTING SOURCE MAP - 4586471.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME:	Blue North Lumber	CLIENT:	Farallon Consulting, LLC
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Lyndsey Needham
LAT/LONG:	46.242503 / 116.033778	INQUIRY #:	4586471.2s
		DATE:	April 08, 2016 8:18 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
NNE
0 - 1/8 Mile
Higher | **FED USGS** | **USGS40000293094**

Org. Identifier:	USGS-ID		
Formal name:	USGS Idaho Water Science Center		
Monloc Identifier:	USGS-461435116015701		
Monloc name:	34N 03E 36CBCB1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	17060306	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	46.2430833
Longitude:	-116.0335833	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1170.
Vert measure units:	feet	Vertacc measure val:	20.
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19940805	Welldepth:	300
Welldepth units:	ft	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2001-05-24	12.56	

A2
NNE
0 - 1/8 Mile
Higher | **ID WELLS** | **ID8000000017201**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	470	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283849		
Permitid:	871136		
Metaltagnu:	D0061711	Currentsta:	Driller Report
Constructi:	01-AUG-96		
Owner:	BLUE NORTH FOREST		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	SW		
Govlotnum:	0		

Welladdres:	WOODLAND ROAD 1 MILE NW OF KAMIAH ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	30		
Casingdiam:	6		
Casingdept:	300		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283849		
Spatialdat:	490760		
Site id:	ID8000000017201		

3
WNW **ID WELLS** **ID8000000017200**
1/8 - 1/4 Mile
Lower

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283848		
Permitid:	743782		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	06-AUG-94		
Owner:	WEYERHAEUSER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	18		
Casingdiam:	8		
Casingdept:	58		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283848		
Spatialdat:	101077		
Site id:	ID8000000017200		

4
SSE **ID WELLS** **ID8000000017547**
1/8 - 1/4 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284195		
Permitid:	743363		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	18-FEB-74		
Owner:	HANZ MC FARRON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	10		
Casingdiam:	6		
Casingdept:	176		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284195		
Spatialdat:	101451		
Site id:	ID8000000017547		

B5
SSE
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000163383**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	400	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	430981		
Permitid:	861713		
Metaltagnu:	D0059426	Currentsta:	Driller Report
Constructi:	12-AUG-11		
Owner:	INDIAN HEALTH SERVICE		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	1		
Qqq:	NE	Qq:	NW
Quarter:	NW		
Govlotnum:	0		

Welladdres:	WEST ON WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	2		
Casingdiam:	6		
Casingdept:	0		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=430981		
Spatialdat:	469788		
Site id:	ID8000000163383		

C6
North
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000017617**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284265		
Permitid:	743433		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	13-JUL-77		
Owner:	DAVID KRIES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	30		
Staticwate:	0		
Casingdiam:	6		
Casingdept:	105		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284265		
Spatialdat:	101303		
Site id:	ID8000000017617		

C7
North
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000018119**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284767		
Permitid:	743152		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-DEC-99		
Owner:	RED JAY		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	20		
Casingdiam:	6		
Casingdept:	55		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284767		
Spatialdat:	101303		
Site id:	ID8000000018119		

C8
North
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000018164**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284812		
Permitid:	743197		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	14-OCT-69		
Owner:	JESSIE M OLNEY		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	3		
Staticwate:	90		
Casingdiam:	6		
Casingdept:	188		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284812		
Spatialdat:	101303		
Site id:	ID8000000018164		

B9
SSE **ID WELLS** **ID8000000016659**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	204	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283307		
Permitid:	861401		
Metaltagnu:	D0059358	Currentsta:	Field Inspection
Constructi:	07-AUG-98		
Owner:	SANDRA DAVIS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	33N	Range :	03E
Section:	1		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	1ST HOUSE PAST DABCO SHOP		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283307		
Spatialdat:	101439		
Site id:	ID8000000016659		

10
WNW **ID WELLS** **ID8000000127859**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	405	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	395185		
Permitid:	824540		
Metaltagnu:	D0035470	Currentsta:	Field Inspection
Constructi:	15-SEP-04		
Owner:	MOSLEY S DAVIS		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	3270 HWY 12		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	100		
Casingdiam:	8		
Casingdept:	405		
Datasource:	GPS - Downloaded		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=395185		
Spatialdat:	359055		
Site id:	ID8000000127859		

11
NE
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000147890**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	260	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	415364		
Permitid:	845272		
Metaltagnu:	D0051642	Currentsta:	Driller Report
Constructi:	09-FEB-07		
Owner:	WILMA BENTLEY		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	NW		
Govlotnum:	0		

Welladdres:	HCR BOX 5 WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	8		
Casingdept:	130		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=415364		
Spatialdat:	408878		
Site id:	ID8000000147890		

D12
SSW **ID WELLS** **ID8000000016364**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283012		
Permitid:	744485		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	16-AUG-77		
Owner:	HAROLD CLONINGER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	40		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283012		
Spatialdat:	100925		
Site id:	ID8000000016364		

D13
SSW **ID WELLS** **ID8000000015936**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282584		
Permitid:	744790		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	25-JUN-89		
Owner:	JIM MEFFORD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	8		
Staticwate:	20		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282584		
Spatialdat:	100925		
Site id:	ID8000000015936		

D14
SSW
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000016933**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283581		
Permitid:	744270		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-APR-71		
Owner:	EMMETT L WILKINS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	21		
Casingdiam:	6		
Casingdept:	52		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283581		
Spatialdat:	100925		
Site id:	ID8000000016933		

D15
SSW **ID WELLS** **ID8000000016451**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283099		
Permitid:	744571		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	17-JAN-80		
Owner:	MARION BOHANAN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	29		
Casingdiam:	6		
Casingdept:	59		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283099		
Spatialdat:	100925		
Site id:	ID8000000016451		

16
North **ID WELLS** **ID8000000017418**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284066		
Permitid:	743975		
Metaltagnu:	D0003576	Currentsta:	Field Inspection
Constructi:	16-MAR-98		
Owner:	FRED KUESTER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	SW	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	3/4 MILE UP WOODLAND GRADE ROAD, HCR 11 BOX 4		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	31		
Casingdiam:	6		
Casingdept:	128		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284066		
Spatialdat:	353159		
Site id:	ID8000000017418		

17
NW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016715**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	585	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283363		
Permitid:	781189		
Metaltagnu:	D0022509	Currentsta:	Driller Report
Constructi:	03-OCT-99		
Owner:	GALE WICKS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		

Welladdres:	8" WAIVER		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	200		
Staticwate:	298		
Casingdiam:	8		
Casingdept:	585		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283363		
Spatialdat:	100624		
Site id:	ID8000000016715		

E18
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017212**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283860		
Permitid:	866395		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283860		
Spatialdat:	100491		
Site id:	ID8000000017212		

E19
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017213**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283861		
Permitid:	866396		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283861		
Spatialdat:	100491		
Site id:	ID8000000017213		

E20
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016075**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282723		
Permitid:	744927		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	02-MAY-91		
Owner:	ELBERT S HENDREN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	14		
Casingdiam:	8		
Casingdept:	33		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282723		
Spatialdat:	100491		
Site id:	ID8000000016075		

E21
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016317**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282965		
Permitid:	744438		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	22-SEP-77		
Owner:	POTLATCH CORP		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	15	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	40		
Staticwate:	18		
Casingdiam:	6		
Casingdept:	49		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282965		
Spatialdat:	100491		
Site id:	ID8000000016317		

E22
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017216**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283864		
Permitid:	866399		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283864		
Spatialdat:	100491		
Site id:	ID8000000017216		

E23
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017217**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283865		
Permitid:	866400		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		

Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283865		
Spatialdat:	100491		
Site id:	ID8000000017217		

E24
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017214**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283862		
Permitid:	866397		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283862		
Spatialdat:	100491		
Site id:	ID8000000017214		

E25
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017215**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283863		
Permitid:	866398		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283863		
Spatialdat:	100491		
Site id:	ID8000000017215		

F26
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017671**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284319		
Permitid:	743487		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-OCT-78		
Owner:	PHIL LAMM		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	2		
Staticwate:	90		
Casingdiam:	6		
Casingdept:	103		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284319		
Spatialdat:	101490		
Site id:	ID8000000017671		

F27
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016670**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283318		
Permitid:	744008		
Metaltagnu:	D0005460	Currentsta:	Driller Report
Constructi:	07-OCT-98		
Owner:	ARTHUR HUBBARD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	LAGOON ROAD		
Lot:	3	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	18		
Casingdiam:	6		
Casingdept:	58		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283318		
Spatialdat:	101490		
Site id:	ID8000000016670		

F28
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000148829**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	185	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	416305		
Permitid:	846251		
Metaltagnu:	D0051719	Currentsta:	Driller Report
Constructi:	24-APR-07		
Owner:	JOE ELLENBERG		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6.5		
Staticwate:	0		
Casingdiam:	8		
Casingdept:	138		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=416305		
Spatialdat:	101490		
Site id:	ID8000000148829		

F29
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017691**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284339		
Permitid:	743507		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-FEB-79		
Owner:	PHIL LAMM		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	215		
Casingdiam:	6		
Casingdept:	220		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284339		
Spatialdat:	101490		
Site id:	ID8000000017691		

G30
ESE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000075490**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	380	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	342449		
Permitid:	770500		
Metaltagnu:	D0017652	Currentsta:	Driller Report
Constructi:	27-AUG-01		
Owner:	INDIAN HEALTH SERVICES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	BEAVERSLIDE AREA		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	190		
Casingdiam:	6		
Casingdept:	380		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=342449		
Spatialdat:	102132		
Site id:	ID8000000075490		

G31
ESE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000158936**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	300	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	426501		
Permitid:	856938		
Metaltagnu:	D0056261	Currentsta:	Driller Report
Constructi:	11-JUN-09		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	2.5		
Staticwate:	180		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=426501		
Spatialdat:	102132		
Site id:	ID8000000158936		

32
ESE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000161229**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	500	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	428822		
Permitid:	859416		
Metaltagnu:	D0058009	Currentsta:	Driller Report
Constructi:	12-JUL-10		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		

Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	500		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=428822		
Spatialdat:	468352		
Site id:	ID8000000161229		

33
NNE **ID WELLS** **ID8000000166193**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	300	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	433804		
Permitid:	867431		
Metaltagnu:	D0061217	Currentsta:	Driller Report
Constructi:	05-NOV-12		
Owner:	RIVER RIDGE HOLDING LLC		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	2 MILES UP WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	230		
Casingdiam:	8		
Casingdept:	295		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=433804		
Spatialdat:	472552		
Site id:	ID8000000166193		

34
ENE **ID WELLS** **ID8000000017307**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283955		
Permitid:	743866		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	24-OCT-95		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	115		
Casingdiam:	6		
Casingdept:	53		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283955		
Spatialdat:	102142		
Site id:	ID8000000017307		

35
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016067**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282715		
Permitid:	744919		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-OCT-91		
Owner:	DEAN SIMLER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SE
Quarter:	NE		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	50		
Casingdiam:	8		
Casingdept:	70		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282715		
Spatialdat:	100908		
Site id:	ID8000000016067		

H36
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016160**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282808		
Permitid:	745005		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	09-NOV-92		
Owner:	IRL HIX		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	SW	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	2.5 MIL HWY ST 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	410		
Casingdiam:	8		
Casingdept:	72		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282808		
Spatialdat:	100201		
Site id:	ID8000000016160		

H37
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017185**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283833		
Permitid:	743768		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	06-JUN-94		
Owner:	RICHARD G ISHMAEL		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	SW	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	1 MI S OF KAMIAH		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	200		
Casingdiam:	8		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283833		
Spatialdat:	100201		
Site id:	ID8000000017185		

I38
WSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015978**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282626		
Permitid:	744832		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	26-APR-90		
Owner:	JESSIE SCRIBNER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	76		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282626		
Spatialdat:	100257		
Site id:	ID8000000015978		

I39
WSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015979**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282627		
Permitid:	744833		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-APR-90		
Owner:	LOU CLEGHORN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	50		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282627		
Spatialdat:	100257		
Site id:	ID8000000015979		

I40
WSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017024**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283672		
Permitid:	744361		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-MAR-74		
Owner:	FRANK JOHNSON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	56		
Casingdiam:	6		
Casingdept:	76		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283672		
Spatialdat:	100257		
Site id:	ID8000000017024		

J41
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015529**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282177		
Permitid:	745099		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	19-SEP-93		
Owner:	JUSTIN JENNINGS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		

Welladdres:	GIBLER ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	30		
Staticwate:	109		
Casingdiam:	8		
Casingdept:	107		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282177		
Spatialdat:	100654		
Site id:	ID8000000015529		

J42
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016240**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282888		
Permitid:	745080		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	09-JUL-94		
Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	GIBLER RD.		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	218		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282888		
Spatialdat:	100654		
Site id:	ID8000000016240		

J43
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015249**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	281897		
Permitid:	745559		
Metaltagnu:	D0003016	Currentsta:	Field Inspection
Constructi:	27-JUN-97		
Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	ABOUT 1 MILE ON GIBBLER ROAD LEFT HAND SIDE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	60		
Staticwate:	25		
Casingdiam:	8		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=281897		
Spatialdat:	100654		
Site id:	ID8000000015249		

J44
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015328**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	281976		
Permitid:	745628		
Metaltagnu:	D0003365	Currentsta:	Field Inspection
Constructi:	22-APR-98		
Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		

Welladdres:	ABOUT 1 MILE ON GIBBLER ROAD, RIGHT HAND SIDE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	50		
Casingdiam:	8		
Casingdept:	76		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=281976		
Spatialdat:	100654		
Site id:	ID8000000015328		

J45
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000111977**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	280	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	379220		
Permitid:	808425		
Metaltagnu:	D0033259	Currentsta:	Driller Report
Constructi:	30-OCT-03		
Owner:	CAROL WERHAN		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	3391 IDA RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	200		
Casingdiam:	8		
Casingdept:	280		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=379220		
Spatialdat:	100654		
Site id:	ID8000000111977		

J46
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000127788**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	130	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	395114		
Permitid:	824469		
Metaltagnu:	D0035359	Currentsta:	Driller Report
Constructi:	16-SEP-04		
Owner:	PHILLIP YOUNG		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	HWY 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	65		
Casingdiam:	8		
Casingdept:	117		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=395114		
Spatialdat:	100654		
Site id:	ID8000000127788		

J47
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016371**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283019		
Permitid:	744492		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	18-AUG-77		
Owner:	HOWARD NELSON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	10		
Casingdiam:	6		
Casingdept:	156		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283019		
Spatialdat:	100654		
Site id:	ID8000000016371		

J48
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016637**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283285		
Permitid:	744756		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	23-DEC-88		
Owner:	SIG GROVE		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	97		
Casingdiam:	6		
Casingdept:	113		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283285		
Spatialdat:	100654		
Site id:	ID8000000016637		

49
NE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017711**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284359		
Permitid:	743527		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	12-JUL-79		
Owner:	LOUIS GRITTNER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	105		
Casingdiam:	6		
Casingdept:	80		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284359		
Spatialdat:	102156		
Site id:	ID8000000017711		

50
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017036**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283684		
Permitid:	743633		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-DEC-99		
Owner:	CLAYTON HOLLINGSWORTH		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	26		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		

Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283684		
Spatialdat:	101097		
Site id:	ID8000000017036		

K51
ESE **ID WELLS** **ID8000000017780**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284428		
Permitid:	743595		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	17-OCT-86		
Owner:	PORTLAND AREA INDIAN HEALTH SERVICES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	5		
Staticwate:	100		
Casingdiam:	6		
Casingdept:	85		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284428		
Spatialdat:	102419		
Site id:	ID8000000017780		

K52
ESE **ID WELLS** **ID8000000017807**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	634	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284455		
Permitid:	771730		
Metaltagnu:	D0019191	Currentsta:	Driller Report
Constructi:	26-OCT-01		
Owner:	DELBERT COOPER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	BEAVERSLIDE RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	.5		
Staticwate:	150		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284455		
Spatialdat:	102419		
Site id:	ID8000000017807		

L53
NW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000092109**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	420	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	359255		
Permitid:	788209		
Metaltagnu:	D0022882	Currentsta:	Driller Report
Constructi:	26-OCT-02		
Owner:	KAREN SMITH		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		

Welladdres:	3321 B HWY 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	320		
Casingdiam:	8		
Casingdept:	420		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=359255		
Spatialdat:	282997		
Site id:	ID8000000092109		

L54
NW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000165187**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	500	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	432793		
Permitid:	863686		
Metaltagnu:	D0060910	Currentsta:	Driller Report
Constructi:	21-JUN-12		
Owner:	HARTY SCHMAEHL		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	HWY 12 MP 164 3 MILES WEST OF KAMIAH		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	18		
Staticwate:	287		
Casingdiam:	6		
Casingdept:	500		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=432793		
Spatialdat:	282997		
Site id:	ID8000000165187		

55
SSE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000155964**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	250	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	423485		
Permitid:	853761		
Metaltagnu:	D0055657	Currentsta:	Driller Report
Constructi:	10-DEC-08		
Owner:	CARL OATMAN		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	33N	Range :	03E
Section:	1		
Qqq:	Not Reported	Qq:	SE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	BEAVER SLIDE RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	60		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=423485		
Spatialdat:	417864		
Site id:	ID8000000155964		

56
NNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000156090**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	380	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	423613		
Permitid:	853913		
Metaltagnu:	D0055332	Currentsta:	Driller Report
Constructi:	14-APR-09		
Owner:	DUANE A MORRIS		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	26		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		

Welladdres:	2 MILES UP WOODLAND RD ON LEFT		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	5		
Staticwate:	170		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=423613		
Spatialdat:	417910		
Site id:	ID8000000156090		

57
SW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016872**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283520		
Permitid:	744209		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-JUN-69		
Owner:	CLARENCE ROSS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7.5		
Staticwate:	67		
Casingdiam:	6		
Casingdept:	151		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283520		
Spatialdat:	100246		
Site id:	ID8000000016872		

58
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015974**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282622		
Permitid:	744828		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	26-JAN-90		
Owner:	STEVE STUART		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	120		
Casingdiam:	8		
Casingdept:	20		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282622		
Spatialdat:	99921		
Site id:	ID8000000015974		

59
SSE **ID WELLS** **ID8000000069491**
1/2 - 1 Mile Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	39	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	336449		
Permitid:	764453		
Metaltagnu:	D0005805	Currentsta:	Field Inspection
Constructi:	22-MAY-00		
Owner:	PETROLEUM STORAGE TANK FUND		
Apptype:	Not Reported		
Welluse:	Monitoring		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	1		
Qqq:	Not Reported	Qq:	NE
Quarter:	SW		
Govlotnum:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Welladdres:	THIRD & IDAHO STREETS		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	2		
Casingdept:	30		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=336449		
Spatialdat:	101794		
Site id:	ID8000000069491		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: ID Radon

Radon Test Results

Zipcode	Test Date	Floor	Result
83536	6/14/2005 0:00	1	7.60
83536	6/14/2005 0:00		8.30
83536	1/3/2006 0:00	0	9.80
83536	3/27/2006 0:00	3	2.00
83536	12/23/2006 0:00	1	0.90
83536	12/26/2006 0:00	0	1.40
83536	12/23/2006 0:00	0	1.20
83536	1/27/2007 0:00	3	5.80
83536	2/13/2007 0:00	0	8.40
83536	2/13/2007 0:00	1	3.50
83536	5/9/2008 0:00	1	3.10
83536	2/14/2008 0:00	1	2.30
83536	4/14/2008 0:00	3	30.70
83536	4/3/2008 0:00	3	4.20
83536	4/11/2008 0:00	1	1.20
83536	3/14/2008 0:00	0	1.70
83536	3/12/2009 0:00	3	1.10
83536	4/6/2009 0:00	0	7.70
83536	1/15/2010 0:00	1	2.40
83536		0	267.00
83536	10/31/2001 0:00	1	3.90
83536	11/6/2001 0:00	0	1.70
83536	11/7/2001 0:00	1	0.30
83536	3/10/2003 0:00	0	26.60
83536	3/8/2003 0:00	0	3.10
83536	3/6/2003 0:00	1	0.30
83536	3/7/2003 0:00	1	2.60
83536	3/8/2003 0:00	1	1.10
83536	1/22/2004 0:00		3.10

Federal EPA Radon Zone for IDAHO County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for IDAHO COUNTY, ID

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.610 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.788 pCi/L	62%	38%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Water Resources
Telephone: 208-287-4800

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Permitted Wells
Wells permitted or licensed by Idaho Department of Water Resources
Agency: Department of Water Resources
Phone: 208-287-4800

Water Level Monitoring Wells
This dataset shows the locations of monitoring wells.
Agency: Department of Water Resources
Phone: 208-287-4800

OTHER STATE DATABASE INFORMATION

RADON

State Database: ID Radon
Source: Department of Health & Welfare
Telephone: 208-332-7319
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

Appendix C:

Regulatory Records Documentation

Blue Northern Mill Site
283 Woodland Road
Kamiah, ID 83536

Inquiry Number: 5111749.2s
November 17, 2017

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

283 WOODLAND ROAD
KAMIAH, ID 83536

COORDINATES

Latitude (North):	46.2428440 - 46° 14' 34.23''
Longitude (West):	116.0348870 - 116° 2' 5.59''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	574405.4
UTM Y (Meters):	5121264.0
Elevation:	1173 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5992379 KAMIAH, ID
Version Date:	2013
North Map:	5996982 WOODLAND, ID
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20150701
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
283 WOODLAND ROAD
KAMIAH, ID 83536

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	ICIS		TP
A2	BLUE NORTH FOREST PR	P O BOX 757, WOODLAN	US AIRS		TP
A3	IDAHO FOREST GROUP	283 WOODLAND RD	FINDS, ECHO		TP
A4	BLUE NORTH FOREST PR	283 WOODLAND RD	TRIS, FINDS, ECHO		TP
A5	BLUE NORTH FOREST PR	WOODLAND ROAD	ICIS		TP
Reg	NEZ PERCE RESERVATIO		INDIAN RESERV	Same	1 ft.
B6	THREE RIVERS TIMBER	WOODLAND RD.	INDIAN LUST, INDIAN UST	Higher	1 ft.
B7	THREE RIVERS TIMBER,	WOODLAND ROAD	TIER 2	Higher	1 ft.
A8	POTLATCH CORP KAMIAH	WOODLAND RD	ALLSITES	Lower	1 ft.
B9	THREE RIVERS TIMBER	WOODLAND ROAD	TIER 2	Higher	1 ft.
B10	THREE RIVERS TIMBER	757 WOODLAND RD	FTTS, HIST FTTS	Higher	1 ft.
B11	THREE RIVERS TIMBER	PO BOX 757 WOODLAND	FTTS, HIST FTTS	Higher	1 ft.

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
BLUE NORTH FOREST PR P O BOX 757, WOODLAN KAMIAH, ID 83536	ICIS FRS ID:: 110058087136	N/A
BLUE NORTH FOREST PR P O BOX 757, WOODLAN KAMIAH, ID 83536	US AIRS Database: US AIRS (AFS), Date of Government Version: 10/12/2016 EPA plant ID:: 110010026453	N/A
IDAHO FOREST GROUP 283 WOODLAND RD KAMIAH, ID 83536	FINDS Registry ID:: 110069603138 ECHO	N/A
BLUE NORTH FOREST PR 283 WOODLAND RD KAMIAH, ID 83536	TRIS TRIS ID: 8353WBLNRT283WD FINDS Registry ID:: 110058087136 ECHO	8353WBLNRT283WD
BLUE NORTH FOREST PR WOODLAND ROAD KAMIAH, ID 83536	ICIS FRS ID:: 110058087136	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

EXECUTIVE SUMMARY

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS ---------- This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Landfills

State and tribal leaking storage tank lists

LUST ---------- Leaking Underground Storage Tank Sites
LAST ---------- Leaking Aboveground Storage Tanks

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing

UST ---------- Registered Underground Storage Tanks in Idaho

State and tribal institutional control / engineering control registries

INST CONTROL ---------- Sites with Institutional Controls Restricting Use

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Sites

State and tribal Brownfields sites

BROWNFIELDS ---------- Brownfields Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWTIRE ---------- Waste Tire Collection Sites
HIST LF ---------- Idaho Historical Landfills
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
CDL ---------- Clandestine Drug Labs
US CDL ---------- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---------- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
SPILLS ---------- Spills Data
SPILLS 90 ---------- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---------- RCRA - Non Generators / No Longer Regulated
FUDS ---------- Formerly Used Defense Sites
DOD ---------- Department of Defense Sites
SCRD DRYCLEANERS ---------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---------- Financial Assurance Information
EPA WATCH LIST ---------- EPA WATCH LIST

2020 COR ACTION 2020 Corrective Action Program List
TSCA Toxic Substances Control Act
SSTS Section 7 Tracking Systems
ROD Records Of Decision
RMP Risk Management Plans
RAATS RCRA Administrative Action Tracking System
PRP Potentially Responsible Parties
PADS PCB Activity Database System
MLTS Material Licensing Tracking System
COAL ASH DOE Steam-Electric Plant Operation Data
COAL ASH EPA Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER PCB Transformer Registration Database
RADINFO Radiation Information Database
DOT OPS Incident and Accident Data
CONSENT Superfund (CERCLA) Consent Decrees
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
UXO Unexploded Ordnance Sites
DOCKET HWC Hazardous Waste Compliance Docket Listing
FUELS PROGRAM EPA Fuels Program Registered Listing
AIRS Permitted Sources & Emissions Listing
DRYCLEANERS Drycleaner Listing
Financial Assurance Financial Assurance Information Listing
UIC Underground Injection Wells Database Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historic Auto Stations
EDR Hist Cleaner EDR Exclusive Historic Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

INDIAN LUST: A listing of leaking underground storage tank locations on Indian Land.

A review of the INDIAN LUST list, as provided by EDR, has revealed that there is 1 INDIAN LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	***WOODLAND RD.***	***0 - 1/8 (0.000 mi.)***	***B6***	***33***
Database: INDIAN LUST R10, Date of Government Version: 10/07/2016				

State and tribal registered storage tank lists

INDIAN UST: A listing of underground storage tank locations on Indian Land.

A review of the INDIAN UST list, as provided by EDR, has revealed that there is 1 INDIAN UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	***WOODLAND RD.***	***0 - 1/8 (0.000 mi.)***	***B6***	***33***
Database: INDIAN UST R10, Date of Government Version: 04/25/2017				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

ALLSITES: Idaho's remediation database is a compilation of data on all the state and delegated federal remediation programs operated by the DEQ.

A review of the ALLSITES list, as provided by EDR, and dated 09/05/2017 has revealed that there is 1 ALLSITES site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
POTLATCH CORP KAMIAH Facility Id: 2011BAZ5242	WOODLAND RD	0 - 1/8 (0.000 mi.)	A8	36

Other Ascertainable Records

FTTS: FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act) over the previous five years. To maintain currency, EDR contacts the Agency on a quarterly basis.

A review of the FTTS list, as provided by EDR, has revealed that there are 2 FTTS sites within

approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	***757 WOODLAND RD***	***0 - 1/8 (0.000 mi.)***	***B10***	***37***
Database: FTTS INSP, Date of Government Version: 04/09/2009				
THREE RIVERS TIMBER	***PO BOX 757 WOODLAND***	***0 - 1/8 (0.000 mi.)***	***B11***	***37***
Database: FTTS INSP, Date of Government Version: 04/09/2009				

HIST FTTS: A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

A review of the HIST FTTS list, as provided by EDR, has revealed that there are 2 HIST FTTS sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER	***757 WOODLAND RD***	***0 - 1/8 (0.000 mi.)***	***B10***	***37***
Database: HIST FTTS INSP, Date of Government Version: 10/19/2006				
THREE RIVERS TIMBER	***PO BOX 757 WOODLAND***	***0 - 1/8 (0.000 mi.)***	***B11***	***37***
Database: HIST FTTS INSP, Date of Government Version: 10/19/2006				

INDIAN RESERV: This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

A review of the INDIAN RESERV list, as provided by EDR, and dated 12/31/2014 has revealed that there is 1 INDIAN RESERV site within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NEZ PERCE RESERVATIO		0 - 1/8 (0.000 mi.)	0	33

TIER 2: A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

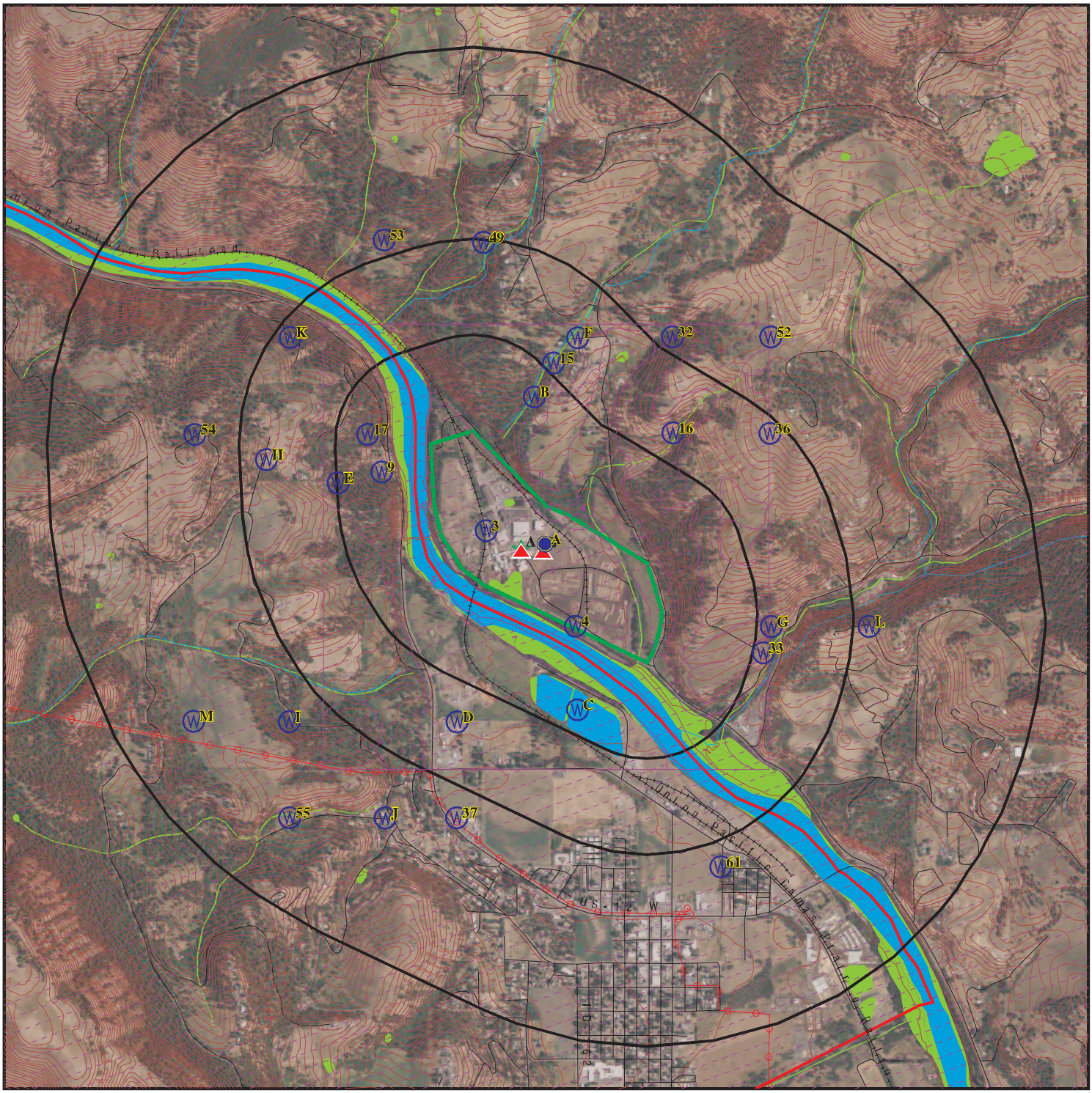
A review of the TIER 2 list, as provided by EDR, and dated 12/31/2011 has revealed that there are 2 TIER 2 sites within approximately 0.001 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THREE RIVERS TIMBER, Facility Id: FATR20075RBMB3026C55 Facility Id: FATR20086CP9QS03HEFK	WOODLAND ROAD	0 - 1/8 (0.000 mi.)	B7	34
THREE RIVERS TIMBER Facility Id: FATR200651TH4C003ST2	WOODLAND ROAD	0 - 1/8 (0.000 mi.)	B9	36

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

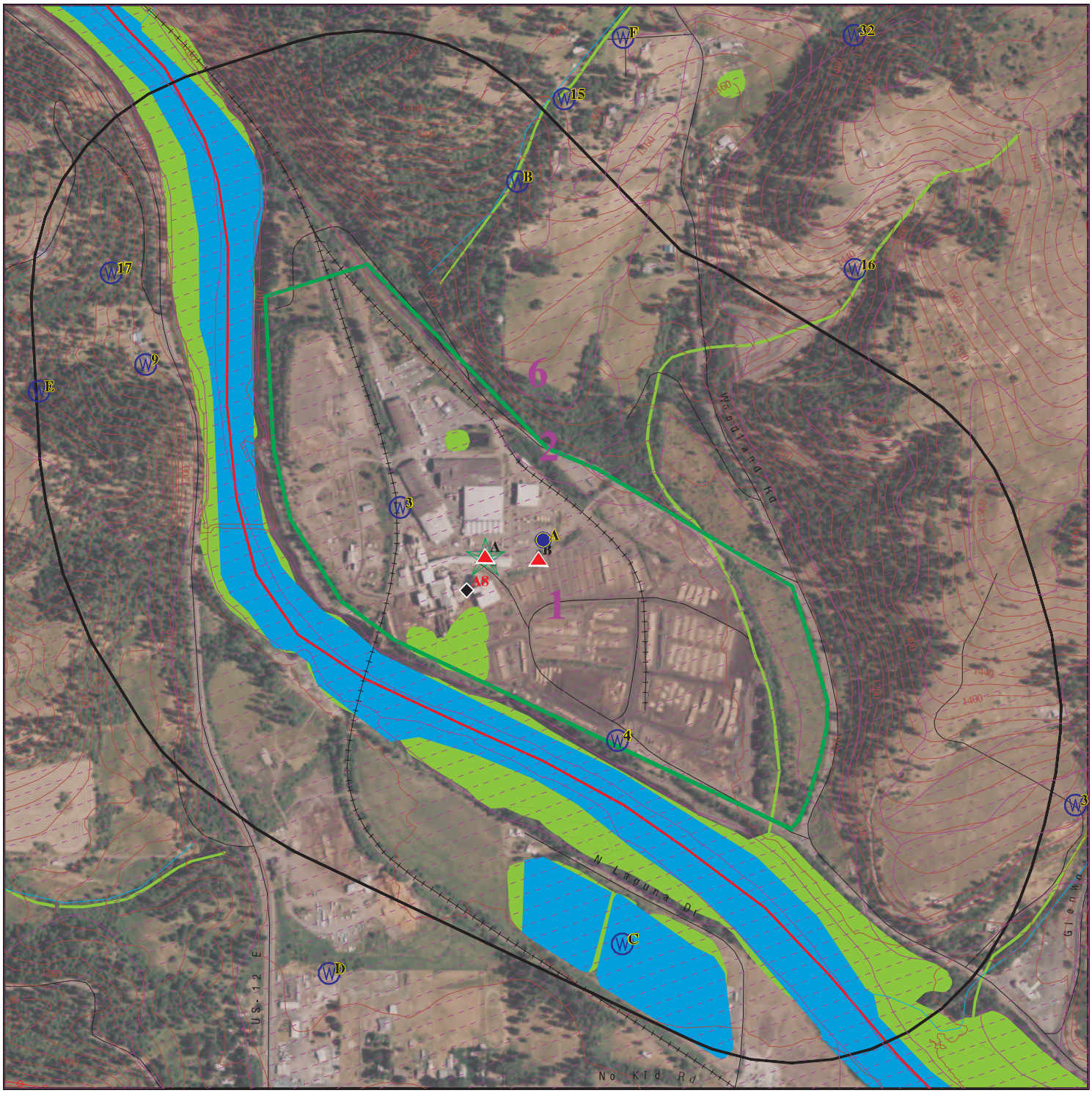
OVERVIEW MAP - 5111749.2S



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Blue Northern Mill Site	CLIENT:	Alta Science and Engineering, Inc.
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Rachel Gibeault
LAT/LONG:	46.242844 / 116.034887	INQUIRY #:	5111749.2s
		DATE:	November 17, 2017 6:14 pm

DETAIL MAP - 5111749.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

County Boundary

Power transmission lines

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Blue Northern Mill Site	CLIENT:	Alta Science and Engineering, Inc.
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Rachel Gibeault
		INQUIRY #:	5111749.2s
LAT/LONG:	46.242844 / 116.034887	DATE:	November 17, 2017 6:14 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		1	0	0	NR	NR	1
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		1	0	NR	NR	NR	1
State and tribal institutional control / engineering control registries								
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWTIRE	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
ALLSITES	0.500		1	0	0	NR	NR	1
CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
SPILLS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001	1	0	NR	NR	NR	NR	1
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001	2	0	NR	NR	NR	NR	2
FTTS	0.001		2	NR	NR	NR	NR	2
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		2	NR	NR	NR	NR	2
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		1	NR	NR	NR	NR	1
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001	1	0	NR	NR	NR	NR	1
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	2	0	NR	NR	NR	NR	2
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001	2	0	NR	NR	NR	NR	2
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	0.001		0	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
TIER 2	0.001		2	NR	NR	NR	NR	2
UIC	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		8	10	0	0	0	0	18

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

A1
Target
Property

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS — **ICIS** **1018311996**
P O BOX 757, WOODLAND RD — **N/A**
KAMIAH, ID 83536

Site 1 of 6 in cluster A

Actual:
1173 ft.

ICIS:

Enforcement Action ID:	ID000A00001606100000100045
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100045
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	Notice of Violation
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NOV
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported

Enforcement Action ID:	ID000A00001606100000100036
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100036
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	Notice of Violation
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NOV
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported

Enforcement Action ID:	ID000A00001606100000100027
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100027
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	Administrative Order
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	SCAAAO
Facility SIC Code:	2421

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1018311996**

Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: ID000A0000160610000100020
FRS ID: 110058087136
Action Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100020
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536
Enforcement Action Type: Notice of Violation
Facility County: LEWIS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 2421
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: ID000A0000160610000100018
FRS ID: 110058087136
Action Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100018
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536
Enforcement Action Type: Notice of Violation
Facility County: LEWIS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 2421
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: ID000A0000160610000100016
FRS ID: 110058087136
Action Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100016
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536
Enforcement Action Type: Notice of Violation
Facility County: LEWIS
Program System Acronym: AIR

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1018311996**

Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 2421
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: ID000A0000160610000100012
FRS ID: 110058087136
Action Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100012
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536
Enforcement Action Type: Notice of Violation
Facility County: LEWIS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 2421
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: 10-2007-A003
FRS ID: 110058087136
Action Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100079
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536
Enforcement Action Type: CAA 113D1 Action For Penalty
Facility County: LEWIS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Formal
EA Type Code: 113D1
Facility SIC Code: 2421
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 46.225833
Longitude in Decimal Degrees: -116.018333
Permit Type Desc: Not reported
Program System Acronym: 100000001606100001
Facility NAICS Code: 999999
Tribal Land Code: Not reported

Enforcement Action ID: 10-2007-0203
FRS ID: 110058087136
Action Name: THREE RIVERS TIMBER
Facility Name: BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address: P O BOX 757, WOODLAND RD
KAMIAH, ID 83536

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1018311996**

Enforcement Action Type:	CAA 113D1 Action For Penalty
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	113D1
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported
Enforcement Action ID:	10-2004-A002
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100065
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	Civil Judicial Action
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Judicial
EA Type Code:	CIV
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported
Enforcement Action ID:	10-2004-A001
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100064
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	CAA 113D1 Action For Penalty
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	113D1
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported
Enforcement Action ID:	10-000F000160610000100075
FRS ID:	110058087136
Action Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS 160610000100075

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1018311996**

Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Facility Address:	P O BOX 757, WOODLAND RD KAMIAH, ID 83536
Enforcement Action Type:	Notice of Violation
Facility County:	LEWIS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NOV
Facility SIC Code:	2421
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.225833
Longitude in Decimal Degrees:	-116.018333
Permit Type Desc:	Not reported
Program System Acronym:	100000001606100001
Facility NAICS Code:	999999
Tribal Land Code:	Not reported

A2 Target Property **BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS** **US AIRS** **1004471039**
P O BOX 757, WOODLAND RD **N/A**
KAMIAH, ID 83536

Site 2 of 6 in cluster A

Actual: 1173 ft.

US AIRS (AFS):

Envid:	1004471039
Region Code:	10
County Code:	ID061
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
D and B Number:	Not reported
Facility Site Name:	BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS
Primary SIC Code:	2421
NAICS Code:	999999
Default Air Classification Code:	MAJ
Facility Type of Ownership Code:	TRB
Air CMS Category Code:	OTL
HPV Status:	Not reported

US AIRS (AFS):

Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	40 CFR Part 63 Area Sources
Activity Date:	2015-06-09 00:00:00
Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active

Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Federal Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Date:	2015-06-09 00:00:00
Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	MACT Standards (40 CFR Part 63)
Activity Date:	2012-09-19 00:00:00
Activity Status Date:	2012-10-09 16:47:12
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	MACT Standards (40 CFR Part 63)
Activity Date:	2013-09-17 00:00:00
Activity Status Date:	2013-09-20 16:32:18
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	MACT Standards (40 CFR Part 63)
Activity Date:	2014-09-29 00:00:00
Activity Status Date:	2014-09-29 18:00:19
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	MACT Standards (40 CFR Part 63)
Activity Date:	2015-06-09 00:00:00
Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: New Source Performance Standards
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: New Source Performance Standards
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2006-03-21 00:00:00
Activity Status Date: 2006-03-31 12:04:24
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2008-05-14 00:00:00
Activity Status Date: 2008-06-11 17:30:00
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2010-09-16 00:00:00
Activity Status Date: 2010-10-13 11:06:40
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2011-09-27 00:00:00
Activity Status Date: 2011-10-06 17:41:48
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2012-09-19 00:00:00
Activity Status Date: 2012-10-09 16:47:12
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2013-09-17 00:00:00
Activity Status Date: 2013-09-20 16:32:18
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2014-09-29 00:00:00
Activity Status Date: 2014-09-29 18:00:19
Activity Group: Compliance Monitoring

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2015-10-06 00:00:00
Activity Status Date: 2015-11-06 13:01:49
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-03-03 13:30:54
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Operating Permits
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-04-11 14:33:09
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Date:	2010-09-16 00:00:00
Activity Status Date:	2010-10-13 11:06:40
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2012-09-19 00:00:00
Activity Status Date:	2012-10-09 16:47:12
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2013-09-17 00:00:00
Activity Status Date:	2013-09-20 16:32:18
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2014-09-29 00:00:00
Activity Status Date:	2014-09-29 18:00:19
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	1977-06-22 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1978-08-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1980-07-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1980-08-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1983-03-03 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1983-04-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1984-01-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1988-07-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-05-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1990-06-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-07-30 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-08-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1993-09-09 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Date: 1995-03-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1995-12-07 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1997-08-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1998-06-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1999-04-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1999-11-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-07-28 00:00:00
Activity Status Date: 1992-07-28 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-03-10 00:00:00
Activity Status Date: 1989-03-10 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1990-08-20 00:00:00
Activity Status Date: 1990-08-20 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-08-16 00:00:00
Activity Status Date: 1991-08-16 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-12-11 00:00:00
Activity Status Date: 1991-12-11 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1993-11-23 00:00:00
Activity Status Date: 1993-11-23 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-01-26 00:00:00
Activity Status Date: 1994-01-26 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Permit Programs
Activity Date: 2007-10-01 00:00:00
Activity Status Date: 2007-10-01 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Closed

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2008-05-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2011-09-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection
Activity Date: 2013-09-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Stratospheric Ozone Protection

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Date:	2014-09-29 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	The Mandatory Greenhouse Gas Reporting Rule
Activity Date:	2015-06-09 00:00:00
Activity Status Date:	2015-07-02 16:00:42
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	Not reported
Activity Status Date:	2007-09-25 00:00:00
Activity Group:	Case File
Activity Type:	Case File
Activity Status:	Resolved
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	2008-10-09 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Information Request
Activity Status:	Not reported
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136
Air Operating Status Code:	OPR
Default Air Classification Code:	MAJ
Air Program:	Title V Permits
Activity Date:	2015-03-16 00:00:00
Activity Status Date:	2015-09-10 12:18:10
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Active
Region Code:	10
Programmatic ID:	AIR 100000001606100001
Facility Registry ID:	110058087136

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2015-06-09 00:00:00
Activity Status Date: 2015-07-02 16:00:42
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-03-03 13:30:54
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-04-11 14:33:09
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2002-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2004-05-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-05-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-09-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-09-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-09-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2013-09-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-09-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-09-25 00:00:00
Activity Status Date: 2007-09-25 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-08-01 00:00:00
Activity Status Date: 2007-08-01 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Activity Date: 2015-10-06 00:00:00
Activity Status Date: 2015-11-06 13:01:49
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-03-03 13:30:54
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-02-29 00:00:00
Activity Status Date: 2016-04-11 14:33:09
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2002-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2004-05-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136

BLUE NORTH FOREST PRODUCTS (FMLY 3RIVERS (Continued) **1004471039**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2006-03-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2004-09-08 00:00:00
Activity Status Date: 2004-09-08 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 10
Programmatic ID: AIR 100000001606100001
Facility Registry ID: 110058087136
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Tribal Rule Not Otherwise Covered
Activity Date: 2004-09-08 00:00:00
Activity Status Date: 2004-09-08 00:00:00
Activity Group: Enforcement Action
Activity Type: Judicial
Activity Status: Closed

A3 **IDAHO FOREST GROUP** **FINDS** **1018394652**
Target **283 WOODLAND RD** **ECHO** **N/A**
Property **KAMIAH, ID 83536**

Site 3 of 6 in cluster A

Actual:
1173 ft.

FINDS:

Registry ID: 110069603138

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

IDAHO FOREST GROUP (Continued) **1018394652**

ECHO:
Envid: 1018394652
Registry ID: 110069603138
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110069603138

A4 **BLUE NORTH FOREST PRODUCTS** **TRIS 1017793061**
Target **283 WOODLAND RD** **FINDS 8353WBLNRT283WD**
Property **KAMIAH, ID 83536** **ECHO**

Site 4 of 6 in cluster A

Actual:
1173 ft.

TRIS:

Click this hyperlink while viewing on your computer to access
1 additional US_TRIS: record(s) in the EDR Site Report.

FINDS:

Registry ID: 110058087136

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

AIR EMISSIONS CLASSIFICATION UNKNOWN

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

COMPLIANCE AND EMISSIONS REPORTING

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

AIR MAJOR

BLUE NORTH FOREST PRODUCTS (Continued) **1017793061**

AIR PROGRAM - RESERVATION

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1017793061
Registry ID:	110058087136
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110058087136

A5 **BLUE NORTH FOREST PRODUCTS (FMLY: THREE RIVERS TIM** **ICIS** **1016074949**
Target Property **WOODLAND ROAD** **N/A**
KAMIAH, ID 83536

Site 5 of 6 in cluster A

Actual: 1173 ft.

ICIS:

Enforcement Action ID:	10-2004-0230
FRS ID:	110058087136
Action Name:	Three Rivers Timber, Inc.
Facility Name:	BLUE NORTH FOREST PRODUCTS (FMLY: THREE RIVERS TIMBER INC
Facility Address:	WOODLAND ROAD KAMIAH, ID 83536
Enforcement Action Type:	CAA 113D1 Action For Penalty
Facility County:	LEWIS
Program System Acronym:	ICIS
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	113D1
Facility SIC Code:	Not reported
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	46.27944
Longitude in Decimal Degrees:	-116.01564
Permit Type Desc:	Not reported
Program System Acronym:	6680455
Facility NAICS Code:	Not reported
Tribal Land Code:	R182

IND RES **NEZ PERCE RESERVATION** **INDIAN RESERV** **CIND200180**
Region **N/A**
, ID
< 1/8
1 ft.

INDIAN RESERV:
Feature: Indian Reservation
Name: Nez Perce Reservation
Agency: BIA

B6 **THREE RIVERS TIMBER INC.** **INDIAN LUST** **1009394735**
WOODLAND RD. **INDIAN UST** **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 1 of 5 in cluster B

Relative:
Higher

Actual:
1173 ft.

Indian LUST:
Region: 10
Facility ID: 2400088
Facility Status: Cleanup Completed
Status Date: 2000-01-05 00:00:00
Lust Closed Date: 2000-01-05 00:00:00
Tribe Name: Nez Perce

Region: 10
Facility ID: 2400088
Facility Status: Confirmed Release
Status Date: 1994-05-01 00:00:00
Lust Closed Date: 2000-01-05 00:00:00
Tribe Name: Nez Perce

Region: 10
Facility ID: 2400088
Facility Status: Cleanup Initiated
Status Date: 1994-07-13 00:00:00
Lust Closed Date: 2000-01-05 00:00:00
Tribe Name: Nez Perce

Indian UST:
Region: 10
Facility ID: 2400088
Tank ID: 5
Alternate Tank ID: 5
Installation Date: Not reported
Tank Status: Permanently Out of Use
Content: Petroleum : Diesel
Federally Regulated: True
Owner Name: Three Rivers Timber, Inc.
Latitude: 46.24494295
Longitude: 116.03566902

Region: 10
Facility ID: 2400088
Tank ID: 4
Alternate Tank ID: 4
Installation Date: Not reported
Tank Status: Permanently Out of Use
Content: Petroleum : Gasoline

THREE RIVERS TIMBER INC. (Continued) **1009394735**

Federally Regulated:	True
Owner Name:	Three Rivers Timber, Inc.
Latitude:	46.24494295
Longitude:	116.03566902
Region:	10
Facility ID:	2400088
Tank ID:	3
Alternate Tank ID:	3
Installation Date:	1/1/1971
Tank Status:	Permanently Out of Use
Content:	Petroleum : Used Oil
Federally Regulated:	True
Owner Name:	Three Rivers Timber, Inc.
Latitude:	46.24494295
Longitude:	116.03566902
Region:	10
Facility ID:	2400088
Tank ID:	2
Alternate Tank ID:	2
Installation Date:	1/1/1971
Tank Status:	Permanently Out of Use
Content:	Petroleum : Diesel
Federally Regulated:	True
Owner Name:	Three Rivers Timber, Inc.
Latitude:	46.24494295
Longitude:	116.03566902
Region:	10
Facility ID:	2400088
Tank ID:	1
Alternate Tank ID:	1
Installation Date:	1/1/1971
Tank Status:	Permanently Out of Use
Content:	Petroleum : Gasoline
Federally Regulated:	True
Owner Name:	Three Rivers Timber, Inc.
Latitude:	46.24494295
Longitude:	116.03566902

B7 **THREE RIVERS TIMBER, INC.** **TIER 2** **S109116391**
WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID**
1 ft.

Site 2 of 5 in cluster B

Relative:
Higher

Actual:
1173 ft.

TIER 2:

Report Year:	2008
Facility ID:	FATR20086CP9QS03HEFK
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported
Date Signed:	2/27/2009
Dike or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	3/5/2009
Fees Total:	Not reported

THREE RIVERS TIMBER, INC. (Continued) **S109116391**

Mailing Address:	3306 Michael Dr.
Mailing City,St,Zip:	Clakston, WA 99403
Mailing Country:	USA
Latitude:	46.14630
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	116.02138
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2008
Submitted By:	Herb Hazen
Fire District:	Not reported
Mail District:	Not reported
Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported
Validation:	This facility passed all validation checks.

Report Year:	2007
Facility ID:	FATR20075RBMB3026C55
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported
Date Signed:	2/29/2008
Dike or Other Safeguard:	Not reported
Failed Validation:	Not reported
Date Modified:	5/19/2008
Fees Total:	Not reported
Mailing Address:	931 Seventh Ave.
Mailing City,St,Zip:	Lewiston, ID 83501
Mailing Country:	USA
Latitude:	46.14630
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	116.02138
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2007
Submitted By:	Herb Hazen, President
Fire District:	Not reported
Mail District:	Not reported
Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported

THREE RIVERS TIMBER, INC. (Continued) **S109116391**

Validation: This facility passed all validation checks.

A8 **POTLATCH CORP KAMIAH** **ALLSITES** **S113714340**
WOODLAND RD **N/A**
< 1/8 **KAMIAH, ID**
1 ft.

Site 6 of 6 in cluster A

Relative:
Lower

Actual:
1171 ft.

ALLSITES:

Facility Id:	2011BAZ5242
Site ID:	RCRA Hazardous Waste Site
All Programs for site:	RCRA Hazardous Waste Site
Latitude/Longitude:	46.242309 / -116.035296

B9 **THREE RIVERS TIMBER** **TIER 2** **S108664459**
WOODLAND ROAD **N/A**
< 1/8 **KAMIAH, ID**
1 ft.

Site 3 of 5 in cluster B

Relative:
Higher

Actual:
1173 ft.

TIER 2:

Report Year:	2006
Facility ID:	FATR200651TH4C003ST2
Facility Department:	Not reported
Facility Country:	USA
All Chemicals Same as Last Yr:	Not reported
Date Signed:	3/27/2007
Dike or Other Safeguard:	Not reported
Failed Validation:	T
Date Modified:	6/26/2007
Fees Total:	Not reported
Mailing Address:	PO Box 757 Woodland Road
Mailing City,St,Zip:	Kamiah, ID 83536
Mailing Country:	USA
Latitude:	Not reported
Lat/Long Location Description:	Not reported
Lat/Long Method:	Not reported
Longitude:	Not reported
Number of Employees:	Not reported
Site Coord Abbreviation:	Not reported
Site Map:	Not reported
State Fire District Required:	Not reported
State ID:	Not reported
State ID Required:	Not reported
State Label Code:	ID2006
Submitted By:	Randy S Sandberg, Authorized Representative
Fire District:	Not reported
Mail District:	Not reported
Mail City:	Not reported
Mail State:	Not reported
Mail County:	Not reported
Mail Zip:	Not reported
Notes:	Not reported
Validation:	Not reported

B10 **THREE RIVERS TIMBER INC** **FTTS** **1007296534**
757 WOODLAND RD **HIST FTTS** **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 4 of 5 in cluster B

Relative: Higher

Actual: 1173 ft.

FTTS INSP:

Inspection Number:	1998051413535 1
Region:	10
Inspection Date:	05/14/98
Inspector:	HOYLES
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	1998051413535 1
Region:	10
Inspection Date:	Not reported
Inspector:	HOYLES
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

B11 **THREE RIVERS TIMBER INC** **FTTS** **1009524895**
PO BOX 757 WOODLAND RD **HIST FTTS** **N/A**
< 1/8 **KAMIAH, ID 83536**
1 ft.

Site 5 of 5 in cluster B

Relative: Higher

Actual: 1173 ft.

FTTS INSP:

Inspection Number:	200205231642 1
Region:	10
Inspection Date:	05/23/02
Inspector:	BOYS
Violation occurred:	No
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	200205231642 1
Region:	10
Inspection Date:	Not reported
Inspector:	BOYS
Violation occurred:	No
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, Region
Legislation Code:	TSCA
Facility Function:	User

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/08/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 99

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/06/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/21/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 77

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/28/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 70

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/08/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/10/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/30/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/10/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/30/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: N/A

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Landfills

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-334-5860
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 07/05/2017
Date Data Arrived at EDR: 07/07/2017
Date Made Active in Reports: 09/18/2017
Number of Days to Update: 73

Source: Department of Environmental Quality
Telephone: 208-373-0130
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

LAST: Leaking Aboveground Storage Tanks

A listing of leaking aboveground storage tank locations.

Date of Government Version: 06/20/2011
Date Data Arrived at EDR: 06/22/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0347
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/07/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/07/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Varies

UST: Registered Underground Storage Tanks in Idaho
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 07/05/2017
Date Data Arrived at EDR: 07/07/2017
Date Made Active in Reports: 09/18/2017
Number of Days to Update: 73
Source: Department of Environmental Quality
Telephone: 208-373-0130
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

INST CONTROL: Sites with Institutional Controls Restricting Use

Sites included in the Remediation Sites database that have institutional controls stricting use.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0347
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites
The Idaho Legislature created the Idaho land Remediation Act, DEQ's Voluntary Cleanup Program, to encourage innovation and cooperation between the state, local communities and private parties working to revitalize properties with hazardous substance or petroleum contamination.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 8
Source: Department of Environmental Quality
Telephone: 208-373-0495
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Inventory
Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. With the help of Idaho Counties, Cities, Economic Development Districts, Urban Renewal Entities, developers and brokers, DEQ is developing a comprehensive, statewide inventory of Brownfields.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 8
Source: Department of Environmental Quality
Telephone: 208-373-0495
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/19/2017
Date Data Arrived at EDR: 06/20/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 87
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/20/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Landfill / Solid Waste Disposal Sites

SWTIRE: Waste Tire Collection Sites
A listing of registered waste tire collection sites.

Date of Government Version: 03/15/2002
Date Data Arrived at EDR: 09/16/2004
Date Made Active in Reports: 11/02/2004
Number of Days to Update: 47

Source: Department of Environmental Quality
Telephone: 208-373-0416
Last EDR Contact: 11/08/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: No Update Planned

HISTORICAL LANDFILL: Idaho Historical Landfills
A listing of older landfills. The listing has not been updated since July 1997.

Date of Government Version: 07/10/1997
Date Data Arrived at EDR: 02/21/2002
Date Made Active in Reports: 03/27/2002
Number of Days to Update: 34

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 02/02/2009
Next Scheduled EDR Contact: 05/04/2009
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/30/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/20/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 07/13/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 30

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/30/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: No Update Planned

ALLSITES: Remediation Database

Idaho's remediation database is a compilation of data on all the state and delegated federal remediation programs operated by the DEQ. Programs included are AST, Brownfield, ER, General Remediation, LUST, Mining, Miscellaneous, RCRA, Solid Waste, UST and VCP.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0309
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

CDL 2: Clandestine Drug (Meth) Laboratory Site Property List

A listing of clandestine drug lab site locations.

Date of Government Version: 07/03/2017
Date Data Arrived at EDR: 09/07/2017
Date Made Active in Reports: 09/18/2017
Number of Days to Update: 11

Source: Dept of Health & Welfare
Telephone: 208-334-5500
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

These are labs in which the Idaho State Police have investigated.

Date of Government Version: 07/22/2010
Date Data Arrived at EDR: 10/01/2010
Date Made Active in Reports: 10/29/2010
Number of Days to Update: 28

Source: Idaho State Police
Telephone: 208-884-7000
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/13/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 30

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/30/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

SPILLS: Spills Data

A listing of hazardous materials spills, releases or accidents as reported to the State of Idaho's central Communications Center.

Date of Government Version: 06/20/2011
Date Data Arrived at EDR: 06/22/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 8

Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/06/2013
Number of Days to Update: 62

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/25/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 11/27/2017
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/10/2017
Date Data Arrived at EDR: 05/17/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 121

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/09/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/22/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/23/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 8

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2017
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/08/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/26/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/03/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 78

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/02/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/30/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/01/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/01/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (206) 553-1200
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2016
Date Data Arrived at EDR: 06/02/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 133

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 261

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/17/2017
Date Data Arrived at EDR: 08/17/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 29

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/17/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

AIRS: Permitted Sources & Emissions Listing

Permit and emissions inventory data.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 06/27/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 80

Source: Department of Environmental Quality
Telephone: 208-373-0253
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Listing
A listing of drycleaner locations.

Date of Government Version: 07/06/2009
Date Data Arrived at EDR: 07/13/2009
Date Made Active in Reports: 07/28/2009
Number of Days to Update: 15
Source: Department of Environmental Quality
Telephone: 208-373-0211
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 05/04/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 134
Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 10/26/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 08/11/2017
Date Made Active in Reports: 09/18/2017
Number of Days to Update: 38
Source: Department of Environmental Quality
Telephone: 208-373-0502
Last EDR Contact: 09/27/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Varies

TIER 2: Tier 2 Data Listing
A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 06/19/2012
Number of Days to Update: 25
Source: Bureau of Homeland Security
Telephone: 208-422-3040
Last EDR Contact: 10/20/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

UIC: Underground Injection Wells Database Listing
Deep and shallow underground injection wells locations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 08/11/2017
Date Made Active in Reports: 09/18/2017
Number of Days to Update: 38
Source: Department of Water Resources
Telephone: 208-287-4932
Last EDR Contact: 11/02/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Idaho.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Idaho.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care List

Source: Department of Health and Welfare
Telephone: 208-332-7205

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Department of Water Resources
Telephone: 208-287-4800

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BLUE NORTHERN MILL SITE
283 WOODLAND ROAD
KAMIAH, ID 83536

TARGET PROPERTY COORDINATES

Latitude (North):	46.242844 - 46° 14' 34.24''
Longitude (West):	116.034887 - 116° 2' 5.59''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	574405.4
UTM Y (Meters):	5121264.0
Elevation:	1173 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5992379 KAMIAH, ID
Version Date:	2013
North Map:	5996982 WOODLAND, ID
Version Date:	2014

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

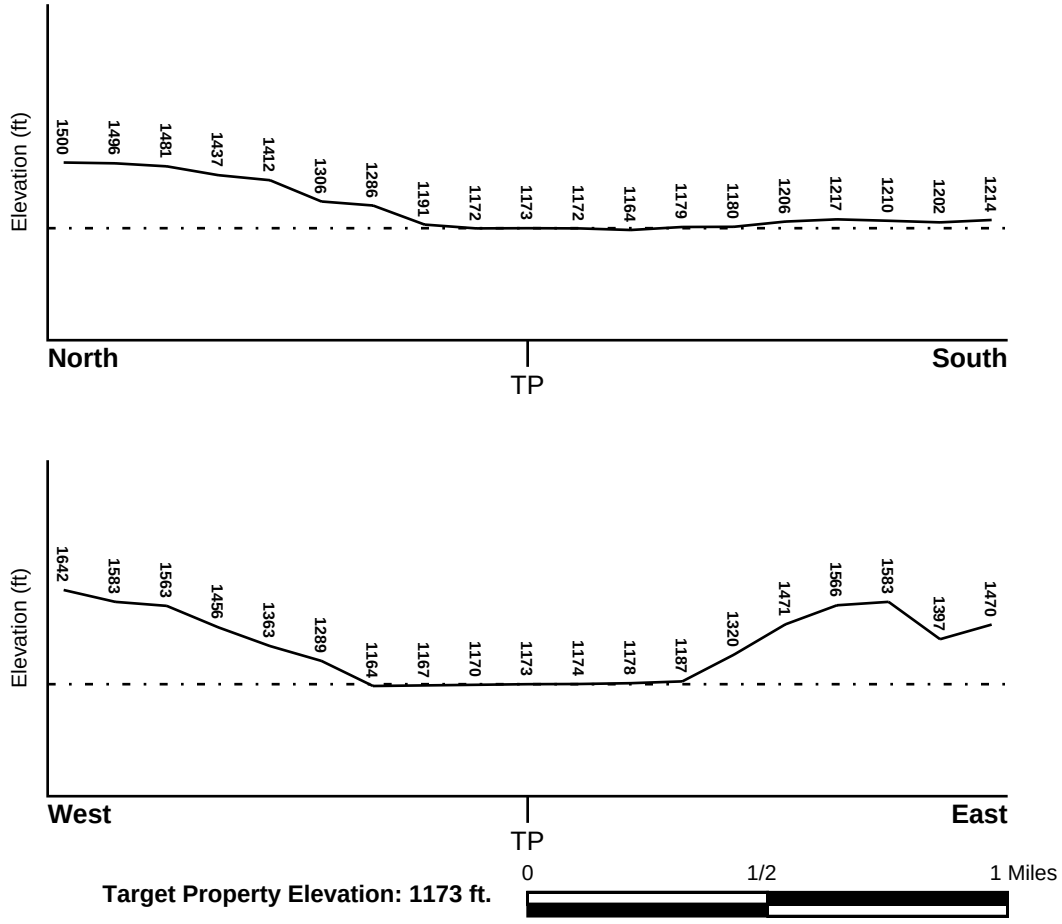
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1173 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
Not Reported	

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

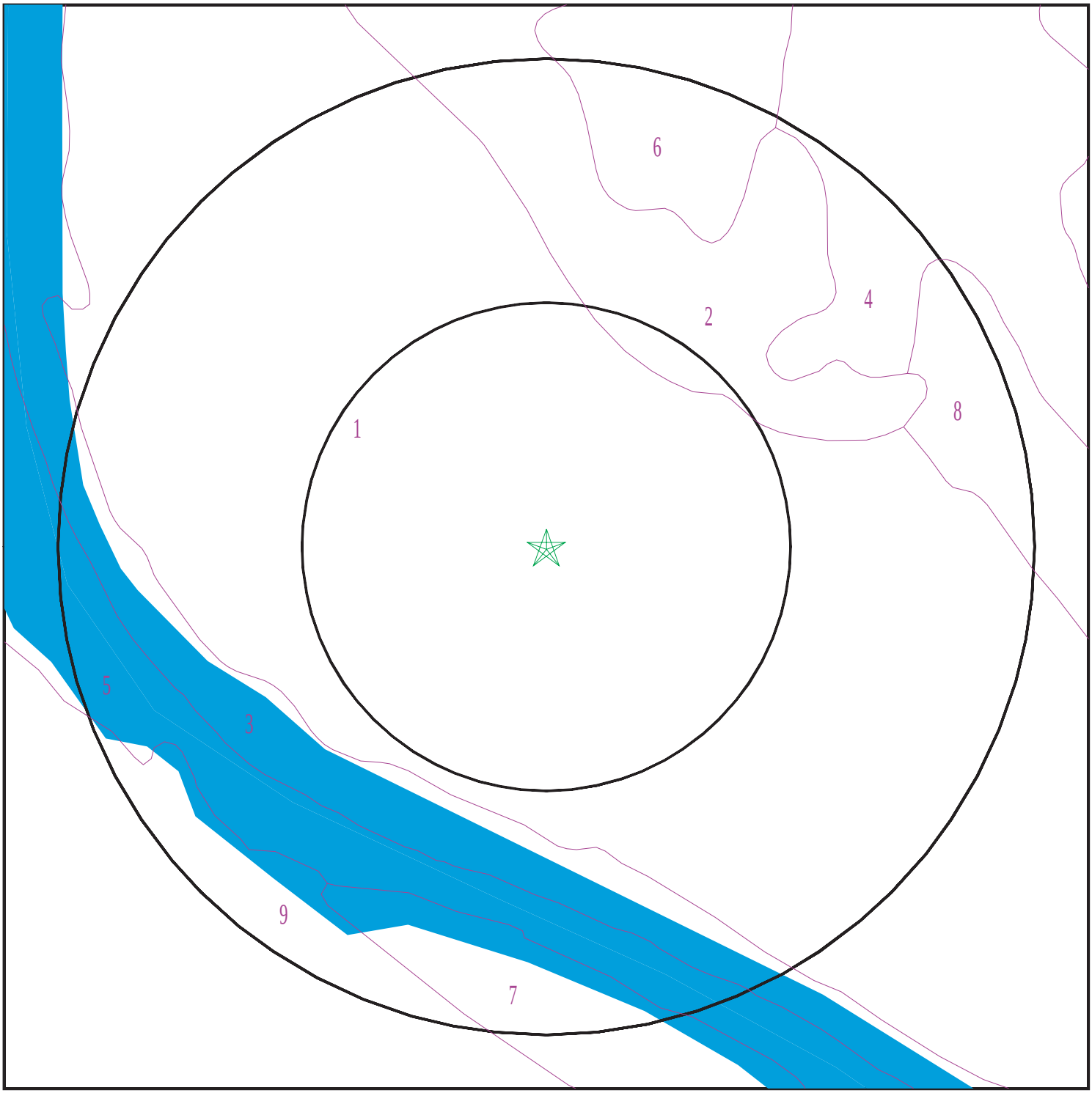
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5111749.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Blue Northern Mill Site	CLIENT:	Alta Science and Engineering, Inc.
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Rachel Gibeault
LAT/LONG:	46.242844 / 116.034887	INQUIRY #:	5111749.2s
		DATE:	November 17, 2017 6:14 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Nicodemus

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 84 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	loam	Not reported	Not reported	Max: 42 Min: 14	Max: 6.5 Min: 6.1
2	22 inches	29 inches	very cobbly sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 6.5 Min: 5.6
3	29 inches	59 inches	extremely cobbly sand	Not reported	Not reported	Max: 141 Min: 42	Max: 7.3 Min: 6.1

Soil Map ID: 2

Soil Component Name: Gwin

Soil Surface Texture: very stony loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 38 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	very stony loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	7 inches	18 inches	very cobbly silty clay loam	Not reported	Not reported	Max: 4 Min: 1.4	Max: 7.3 Min: 6.6
3	18 inches	22 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 3

Soil Component Name: Water

Soil Surface Texture: very stony loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 4

Soil Component Name: Jacknife

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	18 inches	25 inches	silty clay loam	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6
3	25 inches	59 inches	silty clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6

Soil Map ID: 5

Soil Component Name: Water

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 6

Soil Component Name: Jacknife

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 6.6
2	18 inches	25 inches	silty clay loam	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6
3	25 inches	59 inches	silty clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6

Soil Map ID: 7

Soil Component Name: Bridgewater

Soil Surface Texture: extremely gravelly sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	extremely gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel.	Max: 42.34 Min: 14.11	Max: 7.3 Min: 6.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	16 inches	33 inches	extremely gravelly loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 42.34 Min: 4	Max: 7.8 Min: 6.6
3	33 inches	59 inches	extremely gravelly loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141.14 Min: 141	Max: 7.8 Min: 6.6

Soil Map ID: 8

Soil Component Name: Jacknife variant

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 6.5 Min: 5.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	18 inches	61 inches	loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6

Soil Map ID: 9

Soil Component Name: Uhlig

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4	Max: 7.3 Min: 6.1
2	14 inches	38 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4	Max: 7.3 Min: 6.6
3	38 inches	68 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 14.11	Max: 7.8 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000293094	0 - 1/8 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

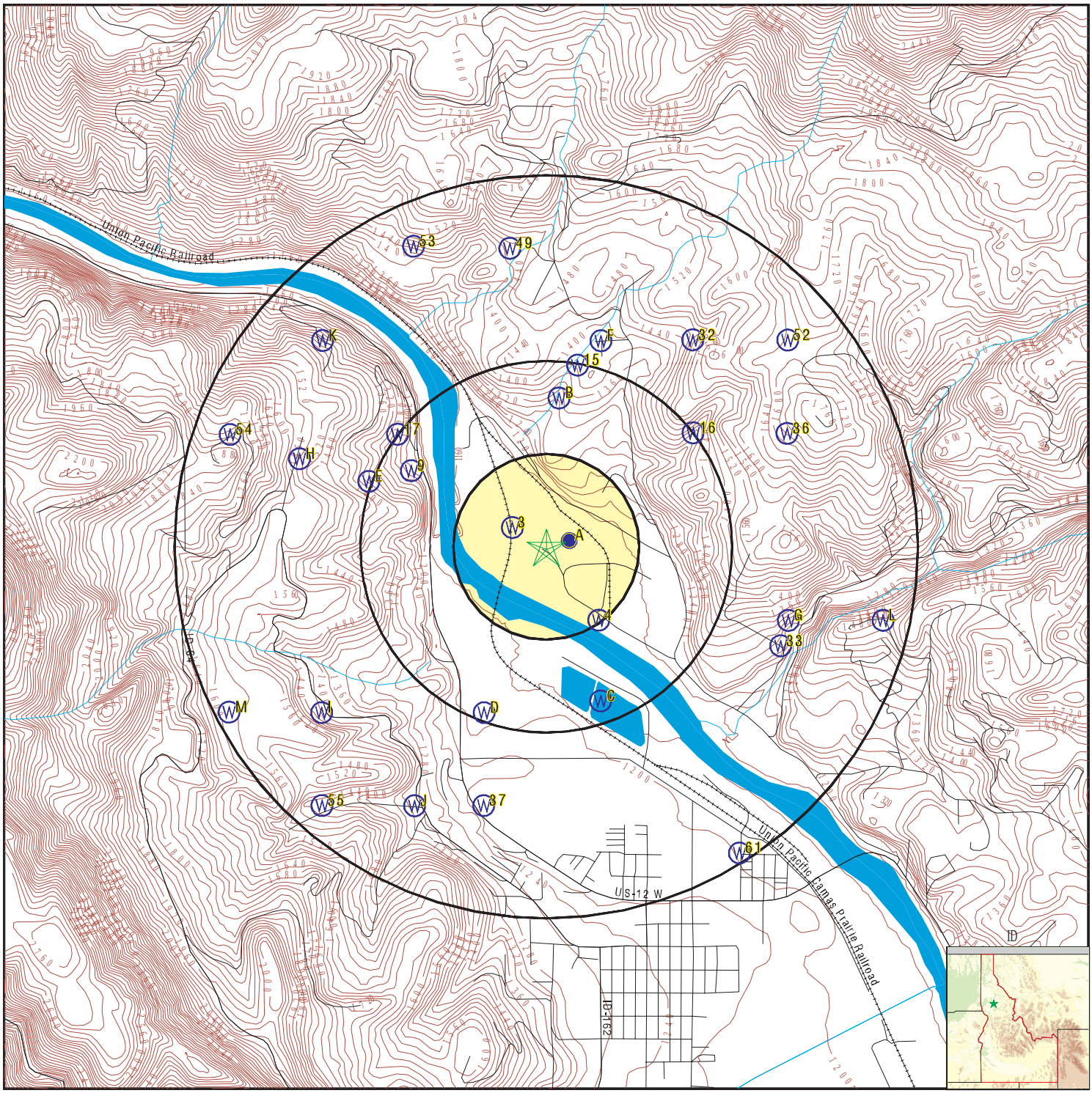
MAP ID	WELL ID	LOCATION FROM TP
A1	ID8000000017201	0 - 1/8 Mile ENE
3	ID8000000017200	0 - 1/8 Mile WNW
4	ID8000000017547	1/8 - 1/4 Mile SE
B5	ID8000000017617	1/4 - 1/2 Mile North
B6	ID8000000018119	1/4 - 1/2 Mile North
B7	ID8000000018164	1/4 - 1/2 Mile North
C8	ID8000000163383	1/4 - 1/2 Mile SSE
9	ID8000000127859	1/4 - 1/2 Mile WNW
C10	ID8000000016659	1/4 - 1/2 Mile SSE
D11	ID8000000016364	1/4 - 1/2 Mile SSW
D12	ID8000000015936	1/4 - 1/2 Mile SSW
D13	ID8000000016933	1/4 - 1/2 Mile SSW
D14	ID8000000016451	1/4 - 1/2 Mile SSW
15	ID8000000017418	1/4 - 1/2 Mile North
16	ID8000000147890	1/2 - 1 Mile NE
17	ID8000000016715	1/2 - 1 Mile NW
E18	ID8000000017212	1/2 - 1 Mile WNW
E19	ID8000000017213	1/2 - 1 Mile WNW
E20	ID8000000016075	1/2 - 1 Mile WNW
E21	ID8000000016317	1/2 - 1 Mile WNW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
E22	ID8000000017216	1/2 - 1 Mile WNW
E23	ID8000000017217	1/2 - 1 Mile WNW
E24	ID8000000017214	1/2 - 1 Mile WNW
E25	ID8000000017215	1/2 - 1 Mile WNW
F26	ID8000000017671	1/2 - 1 Mile NNE
F27	ID8000000016670	1/2 - 1 Mile NNE
F28	ID8000000148829	1/2 - 1 Mile NNE
F29	ID8000000017691	1/2 - 1 Mile NNE
G30	ID8000000075490	1/2 - 1 Mile ESE
G31	ID8000000158936	1/2 - 1 Mile ESE
32	ID8000000166193	1/2 - 1 Mile NE
33	ID8000000161229	1/2 - 1 Mile ESE
H34	ID8000000016160	1/2 - 1 Mile WNW
H35	ID8000000017185	1/2 - 1 Mile WNW
36	ID8000000017307	1/2 - 1 Mile ENE
37	ID8000000016067	1/2 - 1 Mile SSW
I38	ID8000000015978	1/2 - 1 Mile SW
I39	ID8000000015979	1/2 - 1 Mile SW
I40	ID8000000017024	1/2 - 1 Mile SW
J41	ID8000000015529	1/2 - 1 Mile SSW
J42	ID8000000016240	1/2 - 1 Mile SSW
J43	ID8000000015249	1/2 - 1 Mile SSW
J44	ID8000000015328	1/2 - 1 Mile SSW
J45	ID8000000111977	1/2 - 1 Mile SSW
J46	ID8000000127788	1/2 - 1 Mile SSW
J47	ID8000000016371	1/2 - 1 Mile SSW
J48	ID8000000016637	1/2 - 1 Mile SSW
49	ID8000000017036	1/2 - 1 Mile North
K50	ID8000000092109	1/2 - 1 Mile NW
K51	ID8000000165187	1/2 - 1 Mile NW
52	ID8000000017711	1/2 - 1 Mile NE
53	ID8000000156090	1/2 - 1 Mile NNW
54	ID8000000015974	1/2 - 1 Mile WNW
55	ID8000000016872	1/2 - 1 Mile SW
L56	ID8000000017780	1/2 - 1 Mile ESE
L57	ID8000000017807	1/2 - 1 Mile ESE
M58	ID8000000015952	1/2 - 1 Mile WSW
M59	ID8000000016334	1/2 - 1 Mile WSW
M60	ID8000000155897	1/2 - 1 Mile WSW
61	ID8000000155964	1/2 - 1 Mile SSE

PHYSICAL SETTING SOURCE MAP - 5111749.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME:	Blue Northern Mill Site	CLIENT:	Alta Science and Engineering, Inc.
ADDRESS:	283 Woodland Road Kamiah ID 83536	CONTACT:	Rachel Gibeault
LAT/LONG:	46.242844 / 116.034887	INQUIRY #:	5111749.2s
		DATE:	November 17, 2017 6:14 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
ENE
0 - 1/8 Mile
Higher

ID WELLS **ID8000000017201**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	470	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283849		
Permitid:	871136		
Metaltagnu:	D0061711	Currentsta:	Driller Report
Constructi:	01-AUG-96		
Owner:	BLUE NORTH FOREST		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	SW		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD 1 MILE NW OF KAMIAH ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	30		
Casingdiam:	6		
Casingdept:	300		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283849		
Spatialdat:	490760		
Site id:	ID8000000017201		

A2
ENE
0 - 1/8 Mile
Higher

FED USGS **USGS40000293094**

Org. Identifier:	USGS-ID		
Formal name:	USGS Idaho Water Science Center		
Monloc Identifier:	USGS-461435116015701		
Monloc name:	34N 03E 36CBCB1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	17060306	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	46.2430833
Longitude:	-116.0335833	Sourcemap scale:	24000

Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1170.
Vert measure units:	feet	Vertacc measure val:	20.
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19940805	Welldepth:	300
Welldepth units:	ft	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2001-05-24	12.56	

3
WNW **ID WELLS** **ID8000000017200**
0 - 1/8 Mile
Lower

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283848		
Permitid:	743782		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	06-AUG-94		
Owner:	WEYERHAEUSER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	18		
Casingdiam:	8		
Casingdept:	58		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283848		

Spatialdat:	101077
Site id:	ID8000000017200

4
SE **ID WELLS** **ID8000000017547**
1/8 - 1/4 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284195		
Permitid:	743363		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	18-FEB-74		
Owner:	HANZ MC FARRON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	10		
Casingdiam:	6		
Casingdept:	176		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284195		
Spatialdat:	101451		
Site id:	ID8000000017547		

B5
North **ID WELLS** **ID8000000017617**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284265		
Permitid:	743433		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	13-JUL-77		

Owner:	DAVID KRIES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	30		
Staticwate:	0		
Casingdiam:	6		
Casingdept:	105		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284265		
Spatialdat:	101303		
Site id:	ID8000000017617		

B6
North **ID WELLS** **ID8000000018119**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284767		
Permitid:	743152		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-DEC-99		
Owner:	RED JAY		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	20		
Casingdiam:	6		
Casingdept:	55		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284767		

Spatialdat:	101303
Site id:	ID8000000018119

B7
North **ID WELLS** **ID8000000018164**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284812		
Permitid:	743197		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	14-OCT-69		
Owner:	JESSIE M OLNEY		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	3		
Staticwate:	90		
Casingdiam:	6		
Casingdept:	188		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284812		
Spatialdat:	101303		
Site id:	ID8000000018164		

C8
SSE **ID WELLS** **ID8000000163383**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	400	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	430981		
Permitid:	861713		
Metaltagnu:	D0059426	Currentsta:	Driller Report
Constructi:	12-AUG-11		

Owner:	INDIAN HEALTH SERVICE		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	1		
Qqq:	NE	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	WEST ON WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	2		
Casingdiam:	6		
Casingdept:	0		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=430981		
Spatialdat:	469788		
Site id:	ID8000000163383		

9
WNW **ID WELLS** **ID8000000127859**
1/4 - 1/2 Mile Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	405	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	395185		
Permitid:	824540		
Metaltagnu:	D0035470	Currentsta:	Field Inspection
Constructi:	15-SEP-04		
Owner:	MOSLEY S DAVIS		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	3270 HWY 12		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	100		
Casingdiam:	8		
Casingdept:	405		
Datasource:	GPS - Downloaded		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=395185		

Spatialdat:	359055
Site id:	ID8000000127859

C10
SSE **ID WELLS** **ID8000000016659**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	204	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283307		
Permitid:	861401		
Metaltagnu:	D0059358	Currentsta:	Field Inspection
Constructi:	07-AUG-98		
Owner:	SANDRA DAVIS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	33N	Range :	03E
Section:	1		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	1ST HOUSE PAST DABCO SHOP		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283307		
Spatialdat:	101439		
Site id:	ID8000000016659		

D11
SSW **ID WELLS** **ID8000000016364**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283012		
Permitid:	744485		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	16-AUG-77		

Owner:	HAROLD CLONINGER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	40		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283012		
Spatialdat:	100925		
Site id:	ID8000000016364		

D12
SSW **ID WELLS** **ID8000000015936**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282584		
Permitid:	744790		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	25-JUN-89		
Owner:	JIM MEFFORD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	8		
Staticwate:	20		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282584		

Spatialdat:	100925
Site id:	ID8000000015936

D13
SSW **ID WELLS** **ID8000000016933**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283581		
Permitid:	744270		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-APR-71		
Owner:	EMMETT L WILKINS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	21		
Casingdiam:	6		
Casingdept:	52		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283581		
Spatialdat:	100925		
Site id:	ID8000000016933		

D14
SSW **ID WELLS** **ID8000000016451**
1/4 - 1/2 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283099		
Permitid:	744571		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	17-JAN-80		

Owner:	MARION BOHANAN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	29		
Casingdiam:	6		
Casingdept:	59		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283099		
Spatialdat:	100925		
Site id:	ID8000000016451		

15
North
1/4 - 1/2 Mile
Higher

ID WELLS **ID8000000017418**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284066		
Permitid:	743975		
Metaltagnu:	D0003576	Currentsta:	Field Inspection
Constructi:	16-MAR-98		
Owner:	FRED KUESTER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	SW	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	3/4 MILE UP WOODLAND GRADE ROAD, HCR 11 BOX 4		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	31		
Casingdiam:	6		
Casingdept:	128		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284066		

Spatialdat:	353159
Site id:	ID8000000017418

16
NE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000147890**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	260	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	415364		
Permitid:	845272		
Metaltagnu:	D0051642	Currentsta:	Driller Report
Constructi:	09-FEB-07		
Owner:	WILMA BENTLEY		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	HCR BOX 5 WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	8		
Casingdept:	130		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=415364		
Spatialdat:	408878		
Site id:	ID8000000147890		

17
NW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016715**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	585	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283363		
Permitid:	781189		
Metaltagnu:	D0022509	Currentsta:	Driller Report
Constructi:	03-OCT-99		

Owner:	GALE WICKS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	8" WAIVER		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	200		
Staticwate:	298		
Casingdiam:	8		
Casingdept:	585		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283363		
Spatialdat:	100624		
Site id:	ID8000000016715		

E18
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017212**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283860		
Permitid:	866395		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283860		

Spatialdat: 100491
Site id: ID8000000017212

E19
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017213**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283861		
Permitid:	866396		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283861		
Spatialdat:	100491		
Site id:	ID8000000017213		

E20
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016075**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282723		
Permitid:	744927		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	02-MAY-91		

Owner:	ELBERT S HENDREN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	14		
Casingdiam:	8		
Casingdept:	33		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282723		
Spatialdat:	100491		
Site id:	ID8000000016075		

E21
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016317**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282965		
Permitid:	744438		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	22-SEP-77		
Owner:	POTLATCH CORP		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	15	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	40		
Staticwate:	18		
Casingdiam:	6		
Casingdept:	49		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282965		

Spatialdat: 100491
Site id: ID8000000016317

E22
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017216**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283864		
Permitid:	866399		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283864		
Spatialdat:	100491		
Site id:	ID8000000017216		

E23
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017217**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283865		
Permitid:	866400		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		

Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283865		
Spatialdat:	100491		
Site id:	ID8000000017217		

E24
WNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017214**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283862		
Permitid:	866397		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283862		

Spatialdat:	100491
Site id:	ID8000000017214

E25
WNW **ID WELLS** **ID8000000017215**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283863		
Permitid:	866398		
Metaltagnu:	Not Reported	Currentsta:	Permit
Constructi:	30-DEC-99		
Owner:	ENVIRONMENTAL WEST EXPLORATION INC		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	Not Reported
Quarter:	Not Reported		
Govlotnum:	0		
Welladdres:	WOODLAND ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283863		
Spatialdat:	100491		
Site id:	ID8000000017215		

F26
NNE **ID WELLS** **ID8000000017671**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284319		
Permitid:	743487		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-OCT-78		

Owner:	PHIL LAMM		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	2		
Staticwate:	90		
Casingdiam:	6		
Casingdept:	103		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284319		
Spatialdat:	101490		
Site id:	ID8000000017671		

F27
NNE **ID WELLS** **ID8000000016670**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283318		
Permitid:	744008		
Metaltagnu:	D0005460	Currentsta:	Driller Report
Constructi:	07-OCT-98		
Owner:	ARTHUR HUBBARD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	LAGOON ROAD		
Lot:	3	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	18		
Casingdiam:	6		
Casingdept:	58		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283318		

Spatialdat:	101490
Site id:	ID8000000016670

F28
NNE **ID WELLS** **ID8000000148829**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	185	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	416305		
Permitid:	846251		
Metaltagnu:	D0051719	Currentsta:	Driller Report
Constructi:	24-APR-07		
Owner:	JOE ELLENBERG		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6.5		
Staticwate:	0		
Casingdiam:	8		
Casingdept:	138		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=416305		
Spatialdat:	101490		
Site id:	ID8000000148829		

F29
NNE **ID WELLS** **ID8000000017691**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284339		
Permitid:	743507		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-FEB-79		

Owner:	PHIL LAMM		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	215		
Casingdiam:	6		
Casingdept:	220		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284339		
Spatialdat:	101490		
Site id:	ID8000000017691		

G30
ESE **ID WELLS** **ID8000000075490**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	380	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	342449		
Permitid:	770500		
Metaltagnu:	D0017652	Currentsta:	Driller Report
Constructi:	27-AUG-01		
Owner:	INDIAN HEALTH SERVICES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	BEAVERSLIDE AREA		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	190		
Casingdiam:	6		
Casingdept:	380		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=342449		

Spatialdat: 102132
Site id: ID8000000075490

G31
ESE **ID WELLS** **ID8000000158936**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	300	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	426501		
Permitid:	856938		
Metaltagnu:	D0056261	Currentsta:	Driller Report
Constructi:	11-JUN-09		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	2.5		
Staticwate:	180		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=426501		
Spatialdat:	102132		
Site id:	ID8000000158936		

32
NE **ID WELLS** **ID8000000166193**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	300	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	433804		
Permitid:	867431		
Metaltagnu:	D0061217	Currentsta:	Driller Report
Constructi:	05-NOV-12		

Owner:	RIVER RIDGE HOLDING LLC		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	2 MILES UP WOODLAND RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	12		
Staticwate:	230		
Casingdiam:	8		
Casingdept:	295		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=433804		
Spatialdat:	472552		
Site id:	ID8000000166193		

33
ESE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000161229**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	500	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	428822		
Permitid:	859416		
Metaltagnu:	D0058009	Currentsta:	Driller Report
Constructi:	12-JUL-10		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	500		
Datasource:	GPS - Manually Entered		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=428822		

Spatialdat:	468352
Site id:	ID8000000161229

H34
WNW **ID WELLS** **ID8000000016160**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282808		
Permitid:	745005		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	09-NOV-92		
Owner:	IRL HIX		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	SW	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	2.5 MIL HWY ST 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	410		
Casingdiam:	8		
Casingdept:	72		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282808		
Spatialdat:	100201		
Site id:	ID8000000016160		

H35
WNW **ID WELLS** **ID8000000017185**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283833		
Permitid:	743768		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	06-JUN-94		

Owner:	RICHARD G ISHMAEL		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	SW	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	1 MI S OF KAMIAH		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	200		
Casingdiam:	8		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283833		
Spatialdat:	100201		
Site id:	ID8000000017185		

36
ENE **ID WELLS** **ID8000000017307**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283955		
Permitid:	743866		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	24-OCT-95		
Owner:	DEWAYNE ELLENWOOD		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	WOODLAND GRADE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	115		
Casingdiam:	6		
Casingdept:	53		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283955		

Spatialdat: 102142
Site id: ID8000000017307

37
SSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016067**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282715		
Permitid:	744919		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-OCT-91		
Owner:	DEAN SIMLER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	50		
Casingdiam:	8		
Casingdept:	70		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282715		
Spatialdat:	100908		
Site id:	ID8000000016067		

I38
SW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015978**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282626		
Permitid:	744832		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	26-APR-90		

Owner:	JESSIE SCRIBNER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	76		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282626		
Spatialdat:	100257		
Site id:	ID8000000015978		

I39
SW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015979**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282627		
Permitid:	744833		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-APR-90		
Owner:	LOU CLEGHORN		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	50		
Casingdiam:	6		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282627		

Spatialdat: 100257
Site id: ID8000000015979

I40
SW **ID WELLS** **ID8000000017024**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283672		
Permitid:	744361		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	20-MAR-74		
Owner:	FRANK JOHNSON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	56		
Casingdiam:	6		
Casingdept:	76		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283672		
Spatialdat:	100257		
Site id:	ID8000000017024		

J41
SSW **ID WELLS** **ID8000000015529**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282177		
Permitid:	745099		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	19-SEP-93		

Owner:	JUSTIN JENNINGS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	GIBLER ROAD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	30		
Staticwate:	109		
Casingdiam:	8		
Casingdept:	107		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282177		
Spatialdat:	100654		
Site id:	ID8000000015529		

J42
SSW **ID WELLS** **ID8000000016240**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282888		
Permitid:	745080		
Metaltagnu:	Not Reported	Currentsta:	Field Inspection
Constructi:	09-JUL-94		
Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	GIBLER RD.		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	40		
Casingdiam:	6		
Casingdept:	218		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282888		

Spatialdat:	100654
Site id:	ID8000000016240

J43
SSW **ID WELLS** **ID8000000015249**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	281897		
Permitid:	745559		
Metaltagnu:	D0003016	Currentsta:	Field Inspection
Constructi:	27-JUN-97		
Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	ABOUT 1 MILE ON GIBBLER ROAD LEFT HAND SIDE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	60		
Staticwate:	25		
Casingdiam:	8		
Casingdept:	78		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=281897		
Spatialdat:	100654		
Site id:	ID8000000015249		

J44
SSW **ID WELLS** **ID8000000015328**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	281976		
Permitid:	745628		
Metaltagnu:	D0003365	Currentsta:	Field Inspection
Constructi:	22-APR-98		

Owner:	JERRY D TRIPLETT		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	ABOUT 1 MILE ON GIBBLER ROAD, RIGHT HAND SIDE		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	50		
Casingdiam:	8		
Casingdept:	76		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=281976		
Spatialdat:	100654		
Site id:	ID8000000015328		

J45
SSW **ID WELLS** **ID8000000111977**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	280	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	379220		
Permitid:	808425		
Metaltagnu:	D0033259	Currentsta:	Driller Report
Constructi:	30-OCT-03		
Owner:	CAROL WERHAN		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	3391 IDA RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	200		
Casingdiam:	8		
Casingdept:	280		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=379220		

Spatialdat: 100654
Site id: ID8000000111977

J46
SSW **ID WELLS** **ID8000000127788**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	130	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	395114		
Permitid:	824469		
Metaltagnu:	D0035359	Currentsta:	Driller Report
Constructi:	16-SEP-04		
Owner:	PHILLIP YOUNG		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	HWY 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	100		
Staticwate:	65		
Casingdiam:	8		
Casingdept:	117		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=395114		
Spatialdat:	100654		
Site id:	ID8000000127788		

J47
SSW **ID WELLS** **ID8000000016371**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283019		
Permitid:	744492		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	18-AUG-77		

Owner:	HOWARD NELSON		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	15		
Staticwate:	10		
Casingdiam:	6		
Casingdept:	156		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283019		
Spatialdat:	100654		
Site id:	ID8000000016371		

J48
SSW **ID WELLS** **ID8000000016637**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283285		
Permitid:	744756		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	23-DEC-88		
Owner:	SIG GROVE		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	20		
Staticwate:	97		
Casingdiam:	6		
Casingdept:	113		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283285		

Spatialdat:	100654
Site id:	ID8000000016637

49
North
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017036**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283684		
Permitid:	743633		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-DEC-99		
Owner:	CLAYTON HOLLINGSWORTH		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	26		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	0		
Casingdept:	0		
Datasource:	Digitized		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283684		
Spatialdat:	101097		
Site id:	ID8000000017036		

K50
NW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000092109**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	420	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	359255		
Permitid:	788209		
Metaltagnu:	D0022882	Currentsta:	Driller Report
Constructi:	26-OCT-02		

Owner:	KAREN SMITH		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	3321 B HWY 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	50		
Staticwate:	320		
Casingdiam:	8		
Casingdept:	420		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=359255		
Spatialdat:	282997		
Site id:	ID8000000092109		

K51
NW **ID WELLS** **ID8000000165187**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	500	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	432793		
Permitid:	863686		
Metaltagnu:	D0060910	Currentsta:	Driller Report
Constructi:	21-JUN-12		
Owner:	HARTY SCHMAEHL		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	NE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	HWY 12 MP 164 3 MILES WEST OF KAMIAH		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	18		
Staticwate:	287		
Casingdiam:	6		
Casingdept:	500		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=432793		

Spatialdat:	282997
Site id:	ID8000000165187

52
NE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017711**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284359		
Permitid:	743527		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	12-JUL-79		
Owner:	LOUIS GRITTNER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	NW
Quarter:	NE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	6		
Staticwate:	105		
Casingdiam:	6		
Casingdept:	80		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284359		
Spatialdat:	102156		
Site id:	ID8000000017711		

53
NNW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000156090**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	380	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	423613		
Permitid:	853913		
Metaltagnu:	D0055332	Currentsta:	Driller Report
Constructi:	14-APR-09		

Owner:	DUANE A MORRIS		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	26		
Qqq:	Not Reported	Qq:	SW
Quarter:	SE		
Govlotnum:	0		
Welladdres:	2 MILES UP WOODLAND RD ON LEFT		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	5		
Staticwate:	170		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=423613		
Spatialdat:	417910		
Site id:	ID8000000156090		

54
WNW **ID WELLS** **ID8000000015974**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282622		
Permitid:	744828		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	26-JAN-90		
Owner:	STEVE STUART		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	34N	Range :	03E
Section:	35		
Qqq:	Not Reported	Qq:	SW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7		
Staticwate:	120		
Casingdiam:	8		
Casingdept:	20		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282622		

Spatialdat:	99921
Site id:	ID8000000015974

55
SW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016872**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	283520		
Permitid:	744209		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	30-JUN-69		
Owner:	CLARENCE ROSS		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	SE
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	7.5		
Staticwate:	67		
Casingdiam:	6		
Casingdept:	151		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=283520		
Spatialdat:	100246		
Site id:	ID8000000016872		

L56
ESE
1/2 - 1 Mile
Higher

ID WELLS **ID8000000017780**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284428		
Permitid:	743595		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	17-OCT-86		

Owner:	PORTLAND AREA INDIAN HEALTH SERVICES		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	84		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	5		
Staticwate:	100		
Casingdiam:	6		
Casingdept:	85		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284428		
Spatialdat:	102419		
Site id:	ID8000000017780		

L57
ESE **ID WELLS** **ID8000000017807**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	634	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	284455		
Permitid:	771730		
Metaltagnu:	D0019191	Currentsta:	Driller Report
Constructi:	26-OCT-01		
Owner:	DELBERT COOPER		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	34N	Range :	03E
Section:	36		
Qqq:	Not Reported	Qq:	SE
Quarter:	SE		
Govlotnum:	0		
Welladdres:	BEAVERSLIDE RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	.5		
Staticwate:	150		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=284455		

Spatialdat:	102419
Site id:	ID8000000017807

M58
WSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000015952**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282600		
Permitid:	744806		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	02-NOV-89		
Owner:	MICHAEL OREN BLUE		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	0		
Staticwate:	0		
Casingdiam:	8		
Casingdept:	257		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282600		
Spatialdat:	99879		
Site id:	ID8000000015952		

M59
WSW
1/2 - 1 Mile
Higher

ID WELLS **ID8000000016334**

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	0	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	282982		
Permitid:	744455		
Metaltagnu:	Not Reported	Currentsta:	Driller Report
Constructi:	15-NOV-77		

Owner:	MICHAEL OREN BLUE		
Apptype:	Not Reported		
Welluse:	Not Reported		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	Not Reported		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	5		
Staticwate:	260		
Casingdiam:	6		
Casingdept:	160		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=282982		
Spatialdat:	99879		
Site id:	ID8000000016334		

M60
WSW **ID WELLS** **ID8000000155897**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	340	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	423417		
Permitid:	853689		
Metaltagnu:	D0055594	Currentsta:	Driller Report
Constructi:	21-OCT-08		
Owner:	RANDY EUER		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	LEWIS		
Township:	33N	Range :	03E
Section:	2		
Qqq:	Not Reported	Qq:	NW
Quarter:	NW		
Govlotnum:	0		
Welladdres:	3267 HWY 64		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	293		
Casingdiam:	6		
Casingdept:	338		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=423417		

Spatialdat:	99879
Site id:	ID8000000155897

61
SSE **ID WELLS** **ID8000000155964**
1/2 - 1 Mile
Higher

Wellnumber:	Not Reported	Wateruse:	Not Reported
Wateruse2:	Not Reported	Completion:	Not Reported
Totaldepth:	250	Elevation:	Not Reported
X:	0		
Y:	0		
Quad:	Not Reported	Link :	Not Reported
Wellid:	423485		
Permitid:	853761		
Metaltagnu:	D0055657	Currentsta:	Driller Report
Constructi:	10-DEC-08		
Owner:	CARL OATMAN		
Apptype:	Not Reported		
Welluse:	Domestic-Single Residence		
Basinnumbe:	85		
Countyname:	IDAHO		
Township:	33N	Range :	03E
Section:	1		
Qqq:	Not Reported	Qq:	SE
Quarter:	NE		
Govlotnum:	0		
Welladdres:	BEAVER SLIDE RD		
Lot:	Not Reported	Block :	Not Reported
Subdivisio:	Not Reported		
Production:	10		
Staticwate:	60		
Casingdiam:	6		
Casingdept:	0		
Datasource:	QQ		
Diversionn:	Not Reported		
Welldocs:	http://www.idwr.idaho.gov/apps/appsWell/RelatedDocs.asp?WellID=423485		
Spatialdat:	417864		
Site id:	ID8000000155964		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: ID Radon

Radon Test Results

Zipcode	Test Date	Floor	Result
83536	6/14/2005 0:00	1	7.60
83536	6/14/2005 0:00		8.30
83536	1/3/2006 0:00	0	9.80
83536	3/27/2006 0:00	3	2.00
83536	12/23/2006 0:00	1	0.90
83536	12/26/2006 0:00	0	1.40
83536	12/23/2006 0:00	0	1.20
83536	1/27/2007 0:00	3	5.80
83536	2/13/2007 0:00	0	8.40
83536	2/13/2007 0:00	1	3.50
83536	5/9/2008 0:00	1	3.10
83536	2/14/2008 0:00	1	2.30
83536	4/14/2008 0:00	3	30.70
83536	4/3/2008 0:00	3	4.20
83536	4/11/2008 0:00	1	1.20
83536	3/14/2008 0:00	0	1.70
83536	3/12/2009 0:00	3	1.10
83536	4/6/2009 0:00	0	7.70
83536	1/15/2010 0:00	1	2.40
83536		0	267.00
83536	10/31/2001 0:00	1	3.90
83536	11/6/2001 0:00	0	1.70
83536	11/7/2001 0:00	1	0.30
83536	3/10/2003 0:00	0	26.60
83536	3/8/2003 0:00	0	3.10
83536	3/6/2003 0:00	1	0.30
83536	3/7/2003 0:00	1	2.60
83536	3/8/2003 0:00	1	1.10
83536	1/22/2004 0:00		3.10

Federal EPA Radon Zone for IDAHO County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for IDAHO COUNTY, ID

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.610 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.788 pCi/L	62%	38%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Water Resources
Telephone: 208-287-4800

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Permitted Wells
Wells permitted or licensed by Idaho Department of Water Resources
Agency: Department of Water Resources
Phone: 208-287-4800

Water Level Monitoring Wells
This dataset shows the locations of monitoring wells.
Agency: Department of Water Resources
Phone: 208-287-4800

OTHER STATE DATABASE INFORMATION

RADON

State Database: ID Radon
Source: Department of Health & Welfare
Telephone: 208-332-7319
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Permit Number: R10T5100100
Issued: September 30, 2013
Effective: September 30, 2013
Expiration: September 30, 2018
Replaces: R10T5ID0003
AFS Plant I.D. Number: 16-061-00001

Title V Air Quality Operating Permit

Permit Renewal No. 1

In accordance with the provisions of Title V of the Clean Air Act (42 U.S.C. 7401 *et seq.*), 40 CFR Part 71 and other applicable rules and regulations,

Blue North Forest Products, LLC

is authorized to operate air emission units and to conduct other air pollutant emitting activities in accordance with the conditions listed in this permit. This source is authorized to operate in the following location:

Location: Nez Perce Reservation
Woodland Road
Kamiah, Idaho
Latitude: 46.246 N, Longitude: 116.035 W

Responsible Official: Herb Hazen
Vice President, Manufacturing and Sales
Blue North Forest Products, LLC
P.O. Box 757
Kamiah, Idaho 83536-0757
Phone: 208.935.2547, Fax: 208.935.2540
Email: hjhazen22@hotmail.com

Owner: Michael F. Burns
2930 Westlake Avenue North, Suite 300
Seattle, Washington 98109-1968
Phone: 206.352.9324

The United States Environmental Protection Agency (EPA) has also developed a statement of basis that describes the bases for conditions contained in this permit.

Donald A. Dossett

Donald A. Dossett, P.E., Manager
Air Permits and Diesel Unit
Office of Air, Waste and Toxics
U.S. EPA, Region 10

9/30/13

Date

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1. Source Information and Emission Units

The Blue North Forest Products, LLC (BNFP or permittee) facility is a sawmill that produces dry dimensional lumber from logs. The emission units are listed in Table 1.

Table 1: Emission Units (EU) & Control Devices

EU ID	Emission Unit Description	Control Device[1]
BLR-1	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
BLR-2	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
ENG-1	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.	None
ENG-2	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995.	None
KLN	Seven 64-foot double-track lumber drying kilns. Indirectly heated. Kilns No. 2 through 6 automated. Kilns No. 1 and 7 not automated. 16 dry bulbs and 2 wet bulbs per kiln.	None
CYC	Five wood residual cyclones. W4 – planer mill shavings cyclone. H1 – planer mill chipped trim ends hog cyclone. W3 – Atlas fuel bin cyclone. W5 – shavings cyclone on top of shavings/sawdust bin. T1 – saw mill trimmer sawdust cyclone on top of shavings/sawdust bin.	None.
BIN	Five wood residual bins. GS – green sawdust bin. GC – green chip bin. AF – Atlas fuel bin. SS – shavings and green trimmer sawdust bin. HF – hog fuel bin.	None.
SMI	Sawmill operations inside a building. This activity includes, but is not limited to, hogging, sawing, chipping, shaving and mechanical transfer of wood residuals.	Inside building
SMO	Sawmill operations outside a building. This activity includes, but is not limited to, debarking, hogging, sawing, chipping, mechanical transfer of wood residuals and hog fuel storage pile.	None.
PT	Plant traffic generating fugitive emissions along paved and unpaved roads.	Watering

[1] The multiclone is required to be used by this permit.

2. Standard Terms and Conditions

2.1. Terms not otherwise defined in this permit have the meaning assigned to them in the referenced regulations. The language of the cited regulation takes precedence over paraphrasing except the text of terms specified pursuant to any of the following sections is directly enforceable: section 304(f)(4) of the Federal Clean Air Act (CAA), 40 CFR §§ 71.6(a)(3)(i)(B and C), 71.6(a)(3)(ii), and 71.6(b), or any other term specifically identified as directly enforceable.

Compliance with the Permit

2.2. The permittee must comply with all conditions of this Part 71 permit. All terms and conditions of this permit are enforceable by EPA and citizens under the Clean Air Act. Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [40 CFR § 71.6(a)(6)(i)]

2.3. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR § 71.6(a)(6)(ii)]

Permit Shield

2.4. Compliance with the terms and conditions of this permit shall be deemed compliance with the applicable requirements specifically listed in this permit as of the date of permit issuance. [40 CFR § 71.6(f)(1)]

2.5. Nothing in this permit shall alter or affect the following:

2.5.1. The provisions of section 303 of the Clean Air Act (emergency orders), including the authority of EPA under that section;

2.5.2. The liability of a permittee for any violation of applicable requirements prior to or at the time of permit issuance;

2.5.3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Clean Air Act; or

2.5.4. The ability of EPA to obtain information under section 114 of the Clean Air Act. [40 CFR § 71.6(f)(3)]

Other Credible Evidence

2.6. For the purpose of submitting compliance certifications in accordance with Condition 3.49 of this permit, or establishing whether or not a person has violated or is in violation of any requirement of this permit, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.
[Section 113(a) and 113(e)(1) of the CAA, 40 CFR §§ 51.212, 52.12, 52.33, 60.11(g) and 61.12]

Emergency Provisions

2.7. In addition to any emergency or upset provision contained in any applicable requirement, the permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency. To do so, the permittee shall demonstrate the

affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

2.7.1. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

2.7.2. The permitted facility was at the time being properly operated;

2.7.3. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and

2.7.4. The permittee submitted notice of the emergency to EPA within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of Condition 3.48 of this permit, concerning prompt notification of deviations.

[40 CFR §§ 71.6(g)(2), (3) and (5)]

2.8. In any enforcement proceeding, the permittee attempting to establish the occurrence of an emergency has the burden of proof. [40 CFR § 71.6(g)(4)]

2.9. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [40 CFR § 71.6(g)(1)]

Permit Actions

2.10. This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR § 71.6(a)(6)(iii)]

2.11. The permit may be reopened by EPA and the permit revised prior to expiration under any of the circumstances described in 40 CFR § 71.7(f). [40 CFR § 71.7(f)]

Permit Expiration and Renewal

2.12. Nothing in this permit shall alter or affect the following: This permit shall expire on the expiration date on page one of this permit or on an earlier date if the source is issued a Part 70 or Part 71 permit by a permitting authority under an EPA approved or delegated permit program. [40 CFR § 71.6(a)(11)]

2.13. Expiration of this permit terminates the permittee's right to operate unless a timely and complete permit renewal application has been submitted at least six months, but not more than 18 months, prior to the date of expiration of this permit. [40 CFR §§ 71.5(a)(1)(iii), 71.7(b) and 71.7(c)(1)(ii)]

2.14. If the permittee submits a timely and complete permit application for renewal, consistent with 40 CFR § 71.5(a)(2), but EPA has failed to issue or deny the renewal permit, then all the terms and conditions of the permit, including any permit shield granted pursuant to 40 CFR § 71.6(f) shall remain in effect until the renewal permit has been issued or denied. This permit shield shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by EPA any additional information identified as being needed to process the application. [40 CFR §§ 71.7(c)(3) and 71.7(b)]

Off-Permit Changes

2.15. The permittee is allowed to make certain changes without a permit revision, provided that the following requirements are met:

2.15.1. Each change is not addressed or prohibited by this permit;

2.15.2. Each change meets all applicable requirements and does not violate any existing permit term or condition;

2.15.3. The changes are not changes subject to any requirement of 40 CFR Parts 72 through 78 or modifications under any provision of Title I of the Clean Air Act;

2.15.4. The permittee provides contemporaneous written notice to EPA of each change, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11), that describes each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change;

2.15.5. The changes are not covered by a permit shield provided under 40 CFR § 71.6(f) and Conditions 2.4 and 2.5 of this permit; and

2.15.6. The permittee keeps a record describing all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes.

[40 CFR §71.6(a)(12)]

Emissions Trading and Operational Flexibility

2.16. The permittee is allowed to make a limited class of changes under section 502(b)(10) of the Clean Air Act within this permitted facility that contravene the specific terms of this permit without applying for a permit revision, provided:

2.16.1. The changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions);

2.16.2. The changes are not modifications under any provision of Title I of the Clean Air Act;

2.16.3. The changes do not violate applicable requirements;

2.16.4. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

2.16.5. The permittee sends a notice to EPA, at least 7 days in advance of any change made under this provision, that describes the change, when it will occur and any change in emissions and identifies any permit terms or conditions made inapplicable as a result of the change and the permittee attaches each notice to its copy this permit; and

2.16.6. The changes are not covered by a permit shield provided under 40 CFR § 71.6(f) and Conditions 2.4 and 2.5 of this permit. [40 CFR § 71.6(a)(13)(i)]

2.17. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. [40 CFR § 71.6(a)(8)]

Severability

2.18. The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force. [40 CFR §71.6(a)(5)]

Property Rights

2.19. This permit does not convey any property rights of any sort, or any exclusive privilege. [40 CFR §71.6(a)(6)(iv)]

3. General Requirements

General Compliance Schedule

3.1. For applicable requirements with which the source is in compliance, the permittee will continue to comply with such requirements. [40 CFR §§ 71.6(c)(3) and 71.5(c)(8)(iii)(A)]

3.2. For applicable requirements that will become effective during the permit term, the permittee shall meet such requirements on a timely basis. [40 CFR §§ 71.6(c)(3) and 71.5(c)(8)(iii)(B)]

Inspection and Entry

3.3. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow EPA or an authorized representative to perform the following:

3.3.1. Enter upon the permittee's premises where a Part 71 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

3.3.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

3.3.3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

3.3.4. As authorized by the Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [40 CFR § 71.6(c)(2)]

Open Burning Restrictions

3.4. Except as exempted in 40 CFR § 49.131(c), the permittee shall not openly burn, or allow the open burning of, the following materials:

3.4.1. Garbage;

3.4.2. Dead animals or parts of dead animals;

3.4.3. Junked motor vehicles or any materials resulting from a salvage operation;

3.4.4. Tires or rubber materials or products;

3.4.5. Plastics, plastic products, or styrofoam;

3.4.6. Asphalt or composition roofing, or any other asphaltic material or product;

3.4.7. Tar, tarpaper, petroleum products, or paints;

3.4.8. Paper, paper products, or cardboard other than what is necessary to start a fire or that is generated at single-family residences or residential buildings with four or fewer dwelling units and is burned at the residential site;

3.4.9. Lumber or timbers treated with preservatives;

3.4.10. Construction debris or demolition waste;

3.4.11. Pesticides, herbicides, fertilizers, or other chemicals;

3.4.12. Insulated wire;

3.4.13. Batteries;

3.4.14. Light bulbs;

3.4.15. Materials containing mercury (e.g., thermometers);

3.4.16. Asbestos or asbestos-containing materials;

3.4.17. Pathogenic wastes;

3.4.18. Hazardous wastes; or

3.4.19. Any material other than natural vegetation that normally emits dense smoke or noxious fumes when burned. [40 CFR §§ 49.131(c) and (d)(1)]

3.5. Open burning shall be conducted as follows:

3.5.1. All materials to be openly burned shall be kept as dry as possible through the use of a cover or dry storage;

3.5.2. Before igniting a burn, noncombustibles shall be separated from the materials to be openly burned to the greatest extent practicable;

3.5.3. Natural or artificially induced draft shall be present, including the use of blowers or air curtain incinerators where practicable;

3.5.4. To the greatest extent practicable, materials to be openly burned shall be separated from the grass or peat layer; and

3.5.5. A fire shall not be allowed to smolder. [40 CFR § 49.131(e)(1)]

3.6. Except for exempted fires set for cultural or traditional purposes, a person shall not initiate any open burning when:

3.6.1. The Regional Administrator has declared a burn ban; or

3.6.2. An air stagnation advisory has been issued or an air pollution alert, warning or emergency has been declared by the Regional Administrator.
[40 CFR §§ 49.131(d)(2), (d)(3) and (e)(2), and 49.137(c)(4)(i)]

3.7. Except for exempted fires set for cultural or traditional purposes, any person conducting open burning when such an advisory is issued or declaration is made shall either immediately extinguish the fire, or immediately withhold additional material such that the fire burns down.
[40 CFR §§ 49.131(e)(3) and 49.137(c)(4)(ii)]

3.8. Nothing in this section exempts or excuses any person from complying with applicable laws and ordinances of local fire departments and other governmental jurisdictions.
[40 CFR § 49.131(d)(4)]

Visible Emissions Limits

3.9. Except as provided for in Conditions 3.10 and 3.11, the visible emissions from any air pollution source that emits, or could emit, particulate matter or other visible air pollutants shall not exceed 20% opacity, averaged over any consecutive six-minute period. Compliance with this emission limit is determined as follows:

3.9.1. Using EPA Reference Method 9 found in Appendix A of 40 CFR part 60; or

3.9.2. Alternatively, using a continuous opacity monitoring system that complies with Performance Specification 1 found in Appendix B of 40 CFR part 60. [40 CFR §§ 49.124(d)(1) and (e)]

3.10. The requirements of Condition 3.9 do not apply to open burning, agricultural activities, forestry and silvicultural activities, non-commercial smoke houses, sweat houses or lodges, smudge pots, furnaces and boilers used exclusively to heat residential buildings with four or fewer dwelling units, or emissions from fuel combustion in mobile sources. [40 CFR § 49.124(c)]

3.11. Exceptions to the visible emission limit in Condition 3.9 include:

3.11.1. The visible emissions from an air pollution source may exceed the 20% opacity limit if the owner or operator of the air pollution source demonstrates to the Regional Administrator's satisfaction that the presence of uncombined water, such as steam, is the only reason for the failure of an air pollution source to meet the 20% opacity limit.

3.11.2. The visible emissions from an oil-fired boiler or solid fuel-fired boiler that continuously measures opacity with a continuous opacity monitoring system (COMS) may exceed the 20% opacity limit during start-up, soot blowing, and grate cleaning for a single period of up to 15 consecutive minutes in any eight consecutive hours, but must not exceed 60% opacity at any time. [40 CFR §§ 49.124(d)(2) and (3)]

Fugitive Particulate Matter Requirements and Recordkeeping

3.12. Except as provided for in Condition 3.17, the permittee shall take all reasonable precautions to prevent fugitive particulate matter emissions and shall maintain and operate all pollutant-emitting activities to minimize fugitive particulate matter emissions. Reasonable precautions include, but are not limited to the following:

3.12.1. Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, grading of roads, or clearing of land;

3.12.2. Application of asphalt, oil (but not used oil), water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces that can create airborne dust;

3.12.3. Full or partial enclosure of materials stockpiles in cases where application of oil, water, or chemicals is not sufficient or appropriate to prevent particulate matter from becoming airborne;

3.12.4. Implementation of good housekeeping practices to avoid or minimize the accumulation of dusty materials that have the potential to become airborne, and the prompt cleanup of spilled or accumulated materials;

3.12.5. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;

3.12.6. Adequate containment during sandblasting or other similar operations;

3.12.7. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and

3.12.8. The prompt removal from paved streets of earth or other material that does or may become airborne. [40 CFR §§ 49.126(d)(1) and (2)]

3.13. Once each calendar year, during typical operating conditions and meteorological conditions conducive to producing fugitive dust, the permittee shall survey the facility to determine the sources of fugitive particulate matter emissions. For new sources or new operations, a survey shall be conducted within 30 days after commencing operation.

3.13.1. The permittee shall record the results of the survey, including the date and time of the survey and identification of any sources of fugitive particulate matter emissions found; and

3.13.2. If sources of fugitive particulate matter emissions are present, the permittee shall determine the reasonable precautions that will be taken to prevent fugitive particulate matter emissions. [40 CFR §§ 49.126(e)(1)(i) and (ii)]

3.14. The permittee shall prepare, and update as necessary following each survey, a written plan that specifies the reasonable precautions that will be taken and the procedures to be followed to prevent fugitive particulate matter emissions, including appropriate monitoring and recordkeeping.

3.14.1. For construction or demolition activities, a written plan shall be prepared prior to commencing construction or demolition. [40 CFR §§ 49.126(e)(1)(iii) and (iv)]

3.15. The permittee shall implement the written plan, and maintain and operate all sources to minimize fugitive particulate matter emissions. [40 CFR §§ 49.126(e)(1)(iii) and (iv)]

3.16. Efforts to comply with this section cannot be used as a reason for not complying with other applicable laws and ordinances. [40 CFR § 49.126(e)(3)]

3.17. The requirements of Conditions 3.12 through 3.16 do not apply to open burning, agricultural activities, forestry and silvicultural activities, sweat houses or lodges, non-commercial smoke houses, or activities associated with single-family residences or residential buildings with four or fewer dwelling units. [40 CFR § 49.126(c)]

Other Work Practice Requirements and Recordkeeping

3.18. The permittee shall comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR Part 68 no later than the latest of the following dates:

3.18.1. Three years after the date on which a regulated substance, present above the threshold quantity in a process, is first listed under 40 CFR § 68.130; or

3.18.2. The date on which a regulated substance is first present above a threshold quantity in a process. [40 CFR § 68.10]

3.19. Except as provided for motor vehicle air conditioners (MVACs) in 40 CFR Part 82, Subpart B, the permittee shall comply with the stratospheric ozone and climate protection standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

3.19.1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR § 82.156.

3.19.2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR § 82.158.

3.19.3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR § 82.161.

3.19.4. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to 40 CFR § 82.166. ("MVAC-like appliance" is defined at 40 CFR § 82.152.)

3.19.5. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR § 82.156.

3.19.6. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR § 82.166. [40 CFR Part 82, Subpart F]

3.20. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the MVAC, the permittee must comply with all the applicable requirements for stratospheric ozone and climate protection as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. [40 CFR Part 82, Subpart B]

3.21. The permittee shall comply with 40 CFR Part 61, Subpart M for asbestos removal and disposal when conducting any renovation or demolition at the facility. [40 CFR Part 61, Subpart M]

General Testing and Associated Recordkeeping and Reporting

3.22. In addition to the specific testing requirements contained in the emission unit sections of this permit, the permittee shall comply with the generally applicable testing requirements in Conditions 3.23 through 3.30 whenever conducting a performance test or emission factor derivation test required by this permit unless specifically stated otherwise in this permit. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.23. Test Notification. The permittee shall provide EPA at least 30 days prior notice of any performance test, except as otherwise specified in this permit, to afford EPA the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay in conducting the scheduled performance test, the permittee shall notify EPA as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with EPA by mutual agreement. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.24. Test Plan. The permittee shall submit to EPA a source test plan 30 days prior to any required testing. The source test plan shall include and address the following elements:

3.24.1. Purpose and scope of testing;

3.24.2. Source description, including a description of the operating scenarios and mode of operation during testing and including fuel sampling and analysis procedures;

3.24.3. Schedule/dates of testing;

3.24.4. Process data to be collected during the test and reported with the results, including source-specific data identified in the emission unit sections of this permit;

3.24.5. Sampling and analysis procedures, specifically requesting approval for any proposed alternatives to the reference test methods, and addressing minimum test length (e.g., one hour, 8 hours, 24 hours, etc.) and minimum sample volume;

3.24.6. Sampling location description and compliance with the reference test methods;

3.24.7. Analysis procedures and laboratory identification;

3.24.8. Quality assurance plan;

3.24.9. Calibration procedures and frequency;

3.24.10. Sample recovery and field documentation;

3.24.11. Chain of custody procedures;

3.24.12. Quality assurance/quality control project flow chart;

3.24.13. Data processing and reporting;

3.24.14. Description of data handling and quality control procedures; and

3.24.15. Report content and timing. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.25. Facilities for performing and observing the emission testing shall be provided that meet the requirements of 40 CFR 60.8(e) and Reference Method 1 (40 CFR Part 60, Appendix A). [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.26. Unless EPA determines in writing that other operating conditions are representative of normal operations or unless specified in the emission unit sections of this permit, the source shall be operated at a capacity of at least 90% but no more than 100% of maximum during all tests. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.27. Only regular operating staff may adjust the processes or emission control devices during or within 2 hours prior to the start of a source test. Any operating adjustments made during a source test, that are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.28. Each source test shall follow the reference test methods specified by this permit and consist of at least three (3) valid test runs.

3.28.1. If the reference test method yields measured pollutant concentration values at an oxygen concentration other than specified in the emission standard, the permittee shall correct the measured pollutant concentration to the oxygen concentration specified in the emission standard by using the following equation:

$$PC_X = PC_M \times \frac{(20.9 - X)}{(20.9 - Y)}$$

Where: PC_X = Pollutant concentration at X percent;
PC_M = Pollutant concentration as measured;
X = The oxygen concentration specified in the standard; and
Y = The measured average volumetric oxygen concentration.
[40 CFR § 71.6(a)(3)(i)(B)]

3.28.2. Source test emission data shall be reported as the arithmetic average of all valid test runs and in the terms of any applicable emission limit, unless otherwise specified in the emission unit sections of this permit. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.29. Test Records. For the duration of each test run (unless otherwise specified), the permittee shall record the following information:

3.29.1. All data which is required to be monitored during the test in the emission unit sections of this permit; and

3.29.2. All continuous monitoring system data which is required to be routinely monitored in the emission unit sections of this permit for the emission unit being tested. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.30. Test Reports. Emission test reports shall be submitted to EPA within 45 days of completing any emission test required by this permit along with items required to be recorded in Condition 3.29 above. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

General Recordkeeping

3.31. Monitoring Records. The permittee shall keep records of required monitoring information that include the following:

3.31.1. The date, place, and time of sampling or measurements;

3.31.2. The date(s) analyses were performed;

3.31.3. The company or entity that performed the analyses;

3.31.4. The analytical techniques or methods used;

3.31.5. The results of such analyses; and,

3.31.6. The operating conditions as existing at the time of sampling or measurement.

[40 CFR § 71.6(a)(3)(ii)(A)]

3.32. Off-Permit Change Records. The permittee shall keep a record describing all off-permit changes allowed to be made under Condition 2.15 that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes. [40 CFR §71.6(a)(12)]

3.33. Open Burning Records. For any open burning allowed under Conditions 3.4 through 3.8, the permittee shall document the following:

3.33.1. The date that burning was initiated;

3.33.2. The duration of the burn;

3.33.3. The measures taken to comply with each provision of Condition 3.5; and

3.33.4. The measures taken to ensure that materials prohibited in Condition 3.4 were not burned. [40 CFR § 71.6(a)(3)(i)(B)]

3.34. Fee Records. The permittee shall retain in accordance with the provisions of Condition 3.35 of this permit, all work sheets and other materials used to determine fee payments. Records shall be retained for five years following the year in which the emissions data is submitted.

[40 CFR § 71.9(i)]

3.35. Records Retention. The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [40 CFR §§ 71.6(a)(3)(ii)(B), 49.126(e)(1)(v) and 49.130(f)(2)]

General Reporting

3.36. Additional Information. The permittee shall furnish to EPA, within a reasonable time, any information that EPA may request in writing to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish to EPA copies of records that are required to be kept pursuant to the terms of the permit, including information claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR Part 2, Subpart B.

[40 CFR §§ 71.6(a)(6)(v) and 71.5(a)(3)]

3.37. Corrections. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. [40 CFR § 71.5(b)]

3.38. Off-Permit Change Report. The permittee shall provide contemporaneous written notice to EPA of each off-permit change allowed to be made under Condition 2.15, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11). The written notice shall describe

each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change; [40 CFR §71.6(a)(12)]

3.39. Section 502(b)(10) Change Report. The permittee is required to send a notice to EPA at least 7 days in advance of any section 502(b)(10) change allowed to be made under Condition 2.16. The notice must describe the change, when it will occur and any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy of this permit. [40 CFR § 71.6(a)(13)(i)(A)]

3.40. Address. Unless otherwise specified in this permit, any documents required to be submitted under this permit, including reports, test data, monitoring data, notifications, compliance certifications, fee calculation worksheets, and applications for renewals and permit modifications shall be submitted to the EPA address below. A copy of each document submitted to EPA that does not contain confidential business information shall be sent to the Tribal address below:

Original documents go to EPA at:	Copies go to Tribe at:
Part 71 Air Quality Permits U.S. EPA - Region 10, AWT-107 1200 Sixth Avenue, Suite 900 Seattle, WA 98101-3140	Air Quality Coordinator Nez Perce Tribe P.O. Box 365 Lapwai, ID 83540-0365

[40 CFR §§ 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

Part 71 Emission and Fee Reporting

3.41. Part 71 Annual Emission Report. No later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA an annual report of actual emissions for the preceding calendar year. [40 CFR § 71.9(h)(1)]

3.41.1. "Actual emissions" means the actual rate of emissions in tons per year of any "regulated pollutant (for fee calculation)," as defined in 40 CFR § 71.2, emitted from a Part 71 source over the preceding calendar year. Actual emissions shall be calculated using each emissions unit's actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. [40 CFR § 71.9(c)(6)]

3.41.2. Actual emissions shall be computed using methods required by the permit for determining compliance, such as monitoring or source testing data. [40 CFR § 71.9(h)(3)]

3.41.3. Actual emissions shall include fugitive emissions. [40 CFR § 71.9(c)(1)]

3.42. Part 71 Fee Calculation Worksheet. Based on the annual emission report required in Condition 3.41 and no later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA a fee calculation worksheet (blank forms provided by EPA) and a photocopy of each fee payment check (or other confirmation of actual fee paid). [40 CFR §§ 71.9(c)(1), 71.9(e)(1) and 71.9(h)(1)]

3.42.1. The annual emissions fee shall be calculated by multiplying the total tons of actual emissions of each "regulated pollutant (for fee calculation)," emitted from the source by the presumptive emission fee (in dollars/ton) in effect at the time of calculation. The presumptive emission fee is revised each calendar year and is available from EPA prior to the start of each calendar year. [40 CFR § 71.9(c)(1)]

3.42.2. The permittee shall exclude the following emissions from the calculation of fees:

3.42.2.1 The amount of actual emissions of each regulated pollutant (for fee calculation) that the source emits in excess of 4,000 tons per year;

3.42.2.2 Actual emissions of any regulated pollutant (for fee calculation) already included in the fee calculation; and

3.42.2.3 The insignificant quantities of actual emissions not required to be listed or calculated in a permit application pursuant to 40 CFR § 71.5(c)(11). [40 CFR § 71.9(c)(5)]

3.43. Part 71 Annual Fee Payment. No later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA full payment of the annual permit fee based on the fee calculation worksheet required in Condition 3.42. [40 CFR §§ 71.9(a), 71.9(c)(1) and 71.9(h)(1)]

3.43.1. The fee payment and a completed fee filing form shall be sent to:

U.S.EPA
FOIA and Miscellaneous Payments
Cincinnati Finance Center
P. O. Box 979078
St Louis, MO 63197-9000

[40 CFR § 71.9(k)(2)]

3.43.2. The fee payment shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of the U.S. Environmental Protection Agency. [40 CFR § 71.9(k)(1)]

3.43.3. The permittee, when notified by EPA of additional amounts due, shall remit full payment within 30 days of receipt of an invoice from EPA. [40 CFR § 71.9(j)(2)]

3.43.4. If the permittee thinks an EPA assessed fee is in error and wishes to challenge such fee, the permittee shall provide a written explanation of the alleged error to EPA along with full payment of the EPA assessed fee. [40 CFR § 71.9(j)(3)]

3.43.5. Failure of the permittee to pay fees in a timely manner shall subject the permittee to assessment of penalties and interest in accordance with 40 CFR § 71.9(l). [40 CFR § 71.9(l)]

3.44. The annual emission report and fee calculation worksheet (and photocopy of each fee payment check), required in Conditions 3.41 and 3.42, shall be submitted to EPA at the address listed in Condition 3.40 of this permit.[1] [40 CFR § 71.9(k)(1)]

3.45. The annual emission report and fee calculation worksheet (and photocopy of each fee payment check), required in Conditions 3.41 and 3.42, shall be certified by a responsible official in accordance with Condition 3.50 of this permit. [40 CFR § 71.9(h)(2)]

Annual Registration

3.46. The permittee shall submit an annual registration report that consists of estimates of the total actual emissions from the air pollution source for the following air pollutants: PM, PM_{10}, $PM_{2.5}$, SO_X, NO_X, CO, VOC, lead and lead compounds, ammonia, fluorides (gaseous and particulate), sulfuric acid mist, hydrogen sulfide, total reduced sulfur (TRS), and reduced sulfur compounds, including all calculations for the estimates. Emissions shall be calculated using the actual

[1] The permittee should note that an annual emissions report, required at the same time as the fee calculation worksheet by 40 CFR § 71.9(h), has been incorporated into the fee calculation worksheet.

operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.

[40 CFR §§ 49.138(e)(3)(xii), (e)(4) and (f)]

3.46.1. The emission estimates required by Condition 3.46 shall be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Regional Administrator. Any emission estimates submitted to the Regional Administrator shall be verifiable using currently accepted engineering criteria. The following procedures are generally acceptable for estimating emissions from air pollution sources:

3.46.1.1 Source-specific emission tests;

3.46.1.2 Mass balance calculations;

3.46.1.3 Published, verifiable emission factors that are applicable to the source;

3.46.1.4 Other engineering calculations; or

3.46.1.5 Other procedures to estimate emissions specifically approved by the Regional Administrator. [40 CFR §§ 49.138(e)(4) and (f)]

3.46.2. The annual registration report shall be submitted with the annual emission report and fee calculation worksheet required by Conditions 3.41 and 3.42 of this permit. The permittee may submit a single combined report provided that the combined report clearly identifies which emissions are the basis for the annual registration report, the part 71 annual emission report, and the part 71 fee calculation worksheet. All registration information and reports shall be submitted on forms provided by the Regional Administrator. [40 CFR §§ 49.138(d) and (f)]

Periodic and Deviation Reporting

3.47. Semi-Annual Monitoring Report. The permittee shall submit to EPA reports of any required monitoring for each six month reporting period from July 1 to December 31 and from January 1 to June 30. All reports shall be submitted to EPA and shall be postmarked by the 45th day following the end of the reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with Condition 3.50. [40 CFR § 71.6(a)(3)(iii)(A)]

3.48. Deviation Report. The permittee shall promptly report to EPA, by telephone or facsimile, deviations from permit conditions, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be made using the following numbers:

Telephone: (206) 553-1331
Facsimile: (206) 553-0110
Attn: Part 71 Deviation Report

[40 CFR § 71.6(a)(3)(iii)(B)]

3.48.1. For the purposes of Conditions 3.47 and 3.48, deviation means any situation in which an emissions unit fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or record keeping required by this permit. For a situation lasting more than 24 hours, each 24-hour period is considered a separate deviation. Included in the meaning of deviation are any of the following:

3.48.1.1 A situation where emissions exceed an emission limitation or standard;

3.48.1.2 A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;

3.48.1.3 A situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit (including indicators of compliance revealed through parameter monitoring);

3.48.1.4 A situation in which any testing, monitoring, recordkeeping or reporting required by this permit is not performed or not performed as required;

3.48.1.5 A situation in which an exceedance or an excursion, as defined in 40 CFR Part 64, occurs; and

3.48.1.6 Failure to comply with a permit term that requires submittal of a report. [40 CFR § 71.6(a)(3)(iii)(C)]

3.48.2. For the purpose of Condition 3.48 of the permit, prompt is defined as any definition of prompt or a specific time frame for reporting deviations provided in an underlying applicable requirement as identified in this permit. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:

3.48.2.1 For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence;

3.48.2.2 For emissions of any regulated pollutant excluding those listed in Condition 3.48.2.1 above, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours of the occurrence; or

3.48.2.3 For all other deviations from permit requirements, the report shall be submitted with the semi-annual monitoring report required in Condition 3.47. [40 CFR § 71.6(a)(3)(iii)(B)]

3.48.3. Within 10 working days of the occurrence of a deviation as provided in Condition 3.48.2.1 or 3.48.2.2 above, the permittee shall also submit a written notice, which shall include a narrative description of the deviation and updated information as listed in Condition 3.48, to EPA, certified consistent with Condition 3.50 of this permit. [40 CFR §§ 71.6(a)(3)(i)(B) and (iii)(B)]

Annual Compliance Certification

3.49. The permittee shall submit to EPA a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, postmarked by February 28 of each year and covering the permit or permits in effect during the previous calendar year. The compliance certification shall be certified as to truth, accuracy, and completeness by a responsible official consistent with Condition 3.50 of this permit. [40 CFR § 71.6(c)(5)]

3.49.1. The annual compliance certification shall include the following:

3.49.1.1 The identification of each permit term or condition that is the basis of the certification;

3.49.1.2 The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during

the certification period. Such methods and other means shall include, at a minimum, the methods and means required in this permit. If necessary, the permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Clean Air Act, which prohibits knowingly making a false certification or omitting material information; and

3.49.1.3 The status of compliance with each term and condition of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 occurred.

[40 CFR § 71.6(c)(5)(iii)]

Document Certification

3.50. Any document required to be submitted under this permit shall be certified by a responsible official as to truth, accuracy, and completeness. Such certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. [40 CFR §§ 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

Permit Renewal

3.51. The permittee shall submit a timely and complete application for permit renewal at least six months, but not more than 18 months, prior to the date of expiration of this permit.

[40 CFR §§ 71.5(a)(1)(iii), 71.7(b) and 71.7(c)(1)(ii)]

3.52. The application for renewal shall include the current permit number, a description of permit revisions and off-permit changes that occurred during the permit term and were not incorporated into the permit during the permit term, any applicable requirements that were promulgated and not incorporated into the permit during the permit term, and other information required by the application form. [40 CFR §§ 71.5(a)(2) and 71.5(c)(5)]

4. Facility-Specific Requirements

Fees and Emission Reports Due Date

4.1. Unless otherwise specified, fees and emission reports required by this permit are due annually on November 15. [40 CFR §§ 71.9(a) and 71.9(h)]

Fuel Sulfur Limits

4.2. The permittee shall not sell, distribute, use, or make available for use any solid fuel that contains more than 2.0 percent sulfur by weight. [40 CFR § 49.130(d)(7)]

4.2.1. Compliance with the sulfur limit is determined using ASTM method E775-87(2004). [40 CFR § 49.130(e)(3)]

4.3. The permittee shall not sell, distribute, use, or make available for use any ASTM Grade 2 distillate fuel oil that contains more than 0.5 percent sulfur by weight. [40 CFR § 49.130(d)(4)]

4.3.1. Compliance with the sulfur limit is determined using ASTM methods D2880-03, D4294-03, D6021-96(2001). [40 CFR § 49.130(e)(1)]

Fuel Sulfur Monitoring and Recordkeeping

4.4. The permittee shall keep records showing that only wood is combusted in the boilers. [40 CFR § 49.130(f)(1)(iii)]

4.5. The permittee shall obtain, record, and keep records of the percent sulfur by weight from the vendor for each purchase of fuel oil. If the vendor is unable to provide this information, then obtain a representative grab sample for each purchase and test the sample using the reference method. [40 CFR § 49.130(f)(1)(i)]

Visible and Fugitive Emission Monitoring and Recordkeeping

4.6. Except as provided for in Condition 4.13, once each calendar quarter, the permittee shall visually survey each emission unit and any other pollutant emitting activity for the presence of visible emissions or fugitive emissions of particulate matter.

4.6.1. The observer conducting the visual survey must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting and wind, and the presence of uncombined water on the visibility of emissions (see 40 CFR part 60, Appendix A, Method 22).

4.6.2. For the surveys, the observer shall select a position that enables a clear view of the emission point to be surveyed, that is at least 15 feet, but not more than 0.25 miles, from the emission point, and where the sunlight is not shining directly in the observer's eyes.

4.6.3. The observer shall observe emissions from each potential emission point for at least 15 seconds.

4.6.4. Any visible emissions or fugitive emissions of particulate matter other than uncombined water shall be recorded as a positive reading associated with the emission unit or pollutant emitting activity.

4.6.5. Surveys shall be conducted while the facility is operating, and during daylight hours. [40 CFR § 71.6(a)(3)(i)(B)]

4.7. If the observation conducted under Condition 4.6 identifies any visible emissions or fugitive emissions of particulate matter, the permittee shall:

4.7.1. Immediately upon conclusion of the visual observation in Condition 4.6, investigate the source and reason for the presence of visible emissions or fugitive emissions; and

4.7.2. As soon as practicable, take appropriate corrective action. [40 CFR § 71.6(a)(3)(i)(B)]

4.8. If the corrective actions undertaken pursuant to Condition 4.7.2 do not eliminate the visible or fugitive emissions, the permittee shall within 24 hours of the initial survey conduct a visible emissions observation of the emission point in question, for thirty minutes, using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

4.9. If any of the visible emissions observations required in Condition 4.8 or 4.10 indicate visible emissions greater than 20% opacity, the permittee shall conduct daily visible emissions observations, for thirty minutes, of the emission point in question until two consecutive daily observations indicate visible emissions of 20% opacity or less. [40 CFR § 71.6(a)(3)(i)(B)]

4.10. If the Method 9 visible emissions observation required in Condition 4.8, or if two consecutive daily observations required by Condition 4.9 indicate visible emissions of 20% opacity or less, the permittee shall conduct weekly visible emissions observations of the emission point for three additional weeks. [40 CFR § 71.6(a)(3)(i)(B)]

4.11. The permittee shall maintain records of the following:

4.11.1. Details of each visual survey or visible emissions observation, including date, time, observer and results for each emission unit and any other pollutant emitting activity;

4.11.2. Date, time and type of any investigation conducted pursuant to Condition 4.7.1;

4.11.3. Findings of the investigation, including the reasons for the presence of visible emissions or fugitive emissions of particulate matter;

4.11.4. Date, time and type of corrective actions taken pursuant to Condition 4.7.2;

4.11.5. Results of any Method 9 visible emissions observations conducted on the source of visible or fugitive emissions, and pursuant to Conditions 4.8 through 4.10.

[40 CFR § 71.6(a)(3)(i)(B)]

4.12. Any observation of visible emissions in excess of 20% opacity is a deviation and subject to the provisions of Conditions 3.47 and 3.48. [40 CFR § 71.6(a)(3)(i)(B)]

4.13. The requirements of Conditions 4.6 through 4.12 shall not apply to emissions from boilers BLR-1 and BLR-2. [40 CFR § 71.6(a)(3)(i)(B)]

Open Burning, Agricultural Burning, Forestry and Silvicultural Burning Permits

4.14. The permittee shall apply for and obtain a permit for any open burning, agricultural burning, or forestry and silvicultural burning. The permittee shall submit an application to the Nez Perce Tribe for each proposed burn, and shall comply with the provisions of 40 CFR 49.132, 40 CFR 49.133 and/or 40 CFR 49.134, as applicable. [40 CFR 49.132, 40 CFR 49.133, 40 CFR 49.134]

Facility-Wide HAP Emission Limits and Work Practice Requirements

4.15. HAP emissions from this facility shall not exceed 24 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) for the previous eleven months. Monthly HAP emissions (tons) shall be determined by multiplying appropriate emission factors (lb/unit) by the recorded monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

4.15.1. Hydrogen chloride emission factors shall be based on the most recent fuel sampling results. [Permit No. R10NT500901]

4.16. Emissions of any single HAP from this facility shall not exceed 9 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) for the previous eleven months. Monthly emissions of any single HAP (tons) shall be determined by multiplying appropriate emission factors (lb/unit) by the recorded monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

4.16.1. Hydrogen chloride emission factors shall be based on the most recent fuel sampling results. [Permit No. R10NT500901]

Facility-Wide HAP Monitoring and Recordkeeping Requirements

4.17. Each month, the permittee shall calculate and record facility-wide monthly and rolling 12-month total emissions (tons) for all HAP-emitting activities at the facility. [Permit No. R10NT500901]

4.18. Prior to the first fuel analysis being conducted as required in Condition 5.5.4 and 6.5.4, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to boilers BLR-1 and BLR-2 for use in emission calculations. [40 CFR § 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

4.19. The permittee shall track and record the operations and production for each HAP-emitting activity at the facility, such that facility-wide HAP emissions can be calculated on a monthly and 12-month basis. [Permit No. R10NT500901]

4.20. The permittee shall maintain records of emission calculations and parameters used to calculate emissions for at least five years. [Permit No. R10NT500901]

Facility-Wide HAP Reporting Requirements

4.21. Once each year, on or before November 15, the permittee shall, along with the annual registration required in Condition 3.46, submit to EPA a report containing the twelve monthly rolling 12-month emissions calculations for the previous calendar year. [R10NT500901]

4.21.1. The report shall contain a description of all emissions estimating methods used, including emission factors and their sources, assumptions made and production data. [R10NT500901]

NESHAP Subpart JJJJJJ Work Practice and Emission Reduction Measures

4.22. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up. The permittee shall conduct a performance tune-up of boilers BLR-1 and BLR-2 no later than March 21, 2014, and biennially or every 5 years thereafter depending upon whether the boiler has an oxygen trim system that maintains an optimum air-to-fuel ratio subject to the following:
[40 CFR §§ 63.11196(a)(1), 63.11201(b), 63.11210(c), 63.11223(a) through (c) and Table 2 to Subpart JJJJJJ of Part 63]

4.22.1. If the boiler does not have an oxygen trim system that maintains an optimum air-to-fuel ratio, each performance tune-up shall be conducted no more than 25 months after the previous tune-up. [40 CFR § 63.11223(b)]

4.22.2. If the boiler has an oxygen trim system that maintains an optimum air-to-fuel ratio, each performance tune-up shall be conducted no more than 61 months after the previous tune-up. [40 CFR § 63.11223(c)]

4.22.3. If the boiler is not operating on the required date for a tune-up, the tune-up shall be conducted within 30 days of startup. [40 CFR § 63.11223(b)(7)]

4.22.4. Conduct the tune-up while combusting biomass. [40 CFR § 63.11223(a)]

4.22.5. Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly. The inspection may be delayed until the next scheduled boiler shutdown, not to exceed 36 months from the previous inspection. [40 CFR § 63.11223(b)(3)]

4.22.6. Optimize total emissions of CO. This optimization shall be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the boiler is subject. [40 CFR §§ 63.11223(b)(4)]

4.23. NESHAP Subpart JJJJJJ Energy Assessment for Boilers BLR-1 and BLR-2 and Their Energy Use Systems. The permittee shall satisfy Condition 4.23.1 or 4.23.2 no later than March 21, 2014:
[40 CFR § 63.11196(a)(3), 63.11201(b), 63.11210(c) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1. Have a one-time energy assessment performed or amended in accordance with Condition 4.24 and as follows:
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1.1 The energy assessment (and in the case of an amendment; the underlying assessment) shall be completed on or after January 1, 2008.
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1.2 An energy assessment performed after February 1, 2013 shall be conducted by a qualified energy assessor. [Table 2 to Subpart JJJJJJ of Part 63]

4.23.2. Operate under an energy management program compatible with ISO 50001 that includes boilers BLR-1 and BLR-2.
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.24. NESHAP Subpart JJJJJJ One-Time Energy Assessment Requirements for Boilers BLR-1 and BLR-2 and Their Energy Use Systems. If the permittee elects to have a one-time energy assessment performed or amended to comply with Condition 4.23, the assessment (or amended assessment) shall include the following:
[40 CFR § 63.11201(b), 40 CFR § 63.11237 and Table 2 to Subpart JJJJJJ of Part 63]

4.24.1. An on-site evaluation up to 8 technical labor hours in duration (but may be longer at the discretion of the permittee) that includes the following: [40 CFR § 63.11237]

4.24.1.1 A visual inspection of the boiler system;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.2 An evaluation of operating characteristics of the boiler system, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.3 An inventory of major energy use systems consuming energy from the boiler and which are under control of the permittee;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.4 A review of available architectural and engineering plans, facility operating and maintenance procedures and logs, and fuel usage;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.2. A list of major energy conservation measures that are within the permittee's control;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.3. A list of the energy savings potential of the energy conservation measures identified, and [Table 2 to Subpart JJJJJJ of Part 63]

4.24.4. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.
[Table 2 to Subpart JJJJJJ of Part 63]

4.25. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 General Duty Requirement. At all times, the permittee must operate and maintain the boiler , including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to EPA that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR § 63.11205(a)]

NESHAP Subpart JJJJJJ Monitoring and Recordkeeping Requirements

4.26. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up Monitoring. The permittee shall measure and record the concentration of CO in parts per million, by volume, and O_2 in volume percent, in the boiler's effluent stream before and after the performance tune-up conducted to satisfy Condition 4.22. Measurements may be either on a dry or wet basis, as long as

it is the same basis before and after the performance tune-up is performed. Measurements may be taken using a portable CO analyzer. [40 CFR § 63.11223(b)(5)]

4.27. NESHAP Subpart JJJJJJ Recordkeeping for Compliance – Boilers BLR-1 and BLR-2 and Their Energy Use Systems. The permittee shall maintain the following records: [40 CFR § 63.11225(c)]

4.27.1. A copy of each notification and report submitted to comply with NESHAP Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status submitted to EPA. [40 CFR §§ 63.10(b)(2)(xiv) and 63.11225(c)(1)]

4.27.2. Records identifying the boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. [40 CFR § 63.11225(c)(2)(i)]

4.27.3. A copy of the energy assessment report for the boiler and its energy use systems. [40 CFR § 63.11225(c)(2)(iii)]

4.28. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Recordkeeping for General Duty Requirement. The permittee shall maintain the following records: [40 CFR § 63.11225(c)]

4.28.1. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment. [40 CFR § 63.11225(c)(4)]

4.28.2. Records of actions taken during periods of malfunction to minimize emissions in accordance with Condition 4.25, including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. [40 CFR § 63.11225(c)(5)]

4.29. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Recordkeeping for Use of Non-Hazardous Secondary Materials as Fuels. The permittee shall maintain the following records:

4.29.1. If the boiler combusts non-hazardous secondary materials that have been determined not to be a solid waste pursuant to 40 CFR § 241.3(b)(1), the permittee shall keep a record which documents how the secondary material meets each of the legitimacy criteria under 40 CFR § 241.3(d)(1).

4.29.2. If the boiler combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR § 241.3(b)(4), the permittee shall keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR § 241.2 and each of the legitimacy criteria in 40 CFR § 241.3(d)(1).

4.29.3. If the boiler combusts a fuel that received a non-waste determination pursuant to the petition process submitted under 40 CFR § 241.3(c), the permittee shall keep a record that documents how the fuel satisfies the requirements of the petition process.

4.29.4. If the boiler combusts non-hazardous secondary materials as fuel per 40 CFR §241.4, the permittee shall keep records documenting that the material is a listed non-waste under 40 CFR § 241.4(a). [40 CFR § 63.11225(c)(2)(ii)]

NESHAP Subpart JJJJJJ Reporting Requirements

4.30. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up Reporting. Maintain on-site and submit to EPA as part of the reporting satisfying Conditions 4.32 and 4.33, as applicable, the following information for each performance tune-up conducted to satisfy Condition 4.22: [40 CFR § 63.11223(b)(6)]

4.30.1. The concentration of CO in the boiler's effluent stream in parts per million, by volume, and O_2 in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. [40 CFR § 63.11223(b)(6)(i)]

4.30.2. A description of any corrective action taken as a part of the tune-up of the boiler. [40 CFR § 63.11223(b)(6)(ii)]

4.31. NESHAP Subpart JJJJJJ Initial Notification Requirement. The permittee shall submit an Initial Notification to EPA no later than January 20, 2014, and the notification shall provide the following information:
[40 CFR §§ 63.9(b), 63.11225(a)(2), 63.11235 and Table 8 to NESHAP JJJJJJ of Part 63]

4.31.1. The name and address of the owner or operator; [40 CFR § 63.9(b)(2)(i)]

4.31.2. The address (i.e., physical location) of the affected source; [40 CFR § 63.9(b)(2)(ii)]

4.31.3. An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date; [40 CFR § 63.9(b)(2)(iii)]

4.31.4. A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and [40 CFR § 63.9(b)(2)(iv)]

4.31.5. A statement of whether the affected source is a major source or an area source. [40 CFR § 63.9(b)(2)(v)]

4.32. NESHAP Subpart JJJJJJ Notification of Compliance Status. The permittee shall submit a Notification of Compliance Status to EPA no later than July 19, 2014, and the notification shall be signed by the permittee's responsible official certifying its accuracy and attesting to whether the source has complied with NESHAP JJJJJJ. The notification shall provide the following information: [40 CFR §§ 63.9(h)(1), 63.11214(b) and (c), and 63.11225(a)(4)]

4.32.1. The methods that were used to determine compliance; [40 CFR § 63.9(h)(2)(i)(A)]

4.32.2. The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods; [40 CFR § 63.9(h)(2)(i)(C)]

4.32.3. A statement by the permittee as to whether the boiler has complied with NESHAP Subpart JJJJJJ or other requirements. [40 CFR § 63.9(h)(2)(i)(G)]

4.32.4. The statement, "This facility complies with the requirements in 40 CFR § 63.11214 to conduct an initial tune-up of the boiler." [40 CFR § 63.11225(a)(4)(ii)]

4.32.5. The statement, "This facility has had an energy assessment performed according to § 63.11214(c)." [40 CFR § 63.11225(a)(4)(iii)]

4.32.6. The statement, "No secondary materials that are solid waste were combusted in any affected unit." [40 CFR § 63.11225(a)(4)(v)]

4.33. NESHAP Subpart JJJJJJ Annual Compliance Certification Report. Each year, the permittee shall prepare by March 1 and submit to EPA by March 15 an Annual Compliance Certification Report for the previous calendar year. The report shall be signed by the permittee's responsible official and provide the following information: [40 CFR § 63.11225(b)]

4.33.1. Company name and address. [40 CFR §63.11225(b)(1)]

4.33.2. Statement by a responsible official, with the official's name, title, phone number, email address and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of NESHAP Subpart JJJJJJ. [40 CFR §63.11225(b)(2)]

4.33.3. The statement, "This facility complies with the requirements in 40 CFR § 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler." [40 CFR §63.11225(b)(2)(i)]

4.33.4. The statement, "No secondary materials that are solid waste were combusted in any affected unit." [40 CFR §63.11225(b)(2)(i)(ii)]

4.33.5. A description of any deviations from the applicable requirements during the previous calendar year, the time periods during which the deviations occurred, and the corrective actions taken. [40 CFR § 63.11225(b)(3)]

4.34. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Notification of Combustion of Solid Waste. The permittee shall provide 30 days prior notice to EPA of the date upon which combusting of solid waste will commence or recommence in the boiler. The notification shall identify the following: [40 CFR § 63.11225(f)]

4.34.1. The name of the owner or operator of the boiler, the location of the boiler, identification of the boiler as a boiler that will commence combusting solid waste, and the date of the notice. [40 CFR § 63.11225(f)(1)]

4.34.2. The currently applicable subcategory listed at 40 CFR § 63.11200. [40 CFR § 63.11225(f)(2)]

4.34.3. The date on which the permittee became subject to the currently applicable emission limits. [40 CFR § 63.11225(f)(3)]

4.34.4. The date upon which the permittee will commence combusting solid waste**.** [40 CFR § 63.11225(f)(4)]

4.35. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Notification of Fuel Switch, Physical Change or Permit Limit. The permittee shall provide notice to EPA if the permittee switched fuels or made a physical change to the boiler and the fuel switch or change resulted in (a) the applicability of a different subcategory of NESHAP JJJJJJ listed at 40 CFR § 63.11200, (b) the boiler becoming subject to NESHAP Subpart JJJJJJ, or (c) the boiler switching out of NESHAP Subpart JJJJJJ due to a change to 100 percent natural gas. Notice shall also be provided if EPA issues a permit limit to the permittee that results in the permittee being subject to NESHAP Subpart JJJJJJ. Notice shall be provided within 30 days of the change, and the notification shall identify the following: [40 CFR § 63.11225(g)]

4.35.1. The name of the owner or operator of the boiler, the location of the boiler, identification of the boiler as a boiler that has switched fuels, was physically changed, or took a permit limit, and the date of the notice. [40 CFR § 63.11225(g)(1)]

4.35.2. The date upon which the fuel switch, physical change, or permit limit occurred. [40 CFR § 63.11225(g)(2)]

Monitoring for Modifications to the Facility – Employing PSD's Actual to Projected Actual Test

4.36. Where there is a reasonable possibility (as defined in 40 CFR § 52.21(r)(6)(vi)) that a project (other than projects at a source with a PAL) that is not a part of a major modification may result in a significant emissions increase of any regulated NSR pollutant and the permittee elects to use the method specified in 40 CFR § 52.21(b)(41)(ii)(a) through (c) for calculating projected actual emissions, the permittee shall perform the following:

4.36.1. Before beginning actual construction of the project, document and maintain a record of the following information.

4.36.1.1 A description of the project.

4.36.1.2 Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project.

4.36.1.3 A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under 40 CFR § 52.21(b)(41)(ii)(c) and an explanation for why such amount was excluded, and any netting calculations, if applicable.

4.36.2. Monitor the emission of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions unit identified in Condition 4.36.1.2; and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity or potential to emit of that regulated NSR pollutant at such emissions unit. [40 CFR § 52.21(r)(6)]

Reporting for Modifications to the Facility – Employing PSD's Actual to Projected Actual Test

4.37. If monitoring and recordkeeping is required in Condition 4.36, the permittee shall report to EPA when the annual emissions, in tons per year, from the project identified in Condition 4.36.1.1 exceed the baseline actual emissions as documented and maintained pursuant to Condition 4.36.1.3 by a significant amount (as defined in 40 CFR § 52.21(b)(23)) for that regulated NSR pollutant , and when such emissions differ from the preconstruction projection as documented and maintained pursuant to Condition 4.36.1.3. Such report shall be submitted to EPA within 60 days after the end of such year. The report shall contain the following.

4.37.1. The name, address and telephone number of the major stationary source.

4.37.2. The annual emissions as calculated pursuant to Condition 4.36.2.

4.37.3. Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection). [40 CFR § 52.21(r)(6)]

5. Unit-Specific Requirements – BLR–1 (Hog Fuel-Fired Boiler No. 1)

BLR-1 Emission Limits and Work Practice Requirements

5.1. FARR Particulate Matter Limit. Particulate matter emissions from the boiler stack shall not exceed an average of 0.46 grams per dry standard cubic meter (0.2 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

5.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(2) and (e)]

5.2. FARR Sulfur Dioxide Emission Limit. Sulfur dioxide emissions from the boiler stack shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

5.2.1. Compliance with the SO_2 limit is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60,

appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60.
[40 CFR §§ 49.129(d)(1) and (e)]

5.3. At all times that the boiler operates, the boiler exhaust shall be directed to the multiclone.
[40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

5.4. The multiclone shall be maintained in good operating condition and shall be operated at all times that the boiler is operational. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

BLR-1 Testing Requirements

5.5. Initial Particulate Matter Test. No later than 120 days after issuance of this permit, the permittee shall measure particulate matter emissions from the boiler stack using the test method specified in Condition 5.1.1.

5.5.1. Testing shall be conducted at a minimum of one load condition; that load condition being one in which the boiler is generating steam at a load reflecting the highest sustained load (M lb steam/hr) generally observed since the facility was re-started in August 2010.

5.5.2. During each source test run, the permittee shall measure the visible emissions from the boiler stack for the duration of each particulate matter test run using the procedures specified in Condition 3.9.1.

5.5.3. During each source test run, the permittee shall record the values (and time recorded) of the parameters specified in Condition 5.8. For monitoring devices that do not have continuous recording devices, the recorded values must consist of no fewer than 3 values recorded per test run.

5.5.4. During each source test run, the permittee shall collect composite fuel samples. The permittee shall estimate and record the percentages of bark, species of wood and material less than 1/8 inch in each composite fuel sample. The permittee shall determine and record the boiler fuel-heat-input-to-steam-output ratio (MMBtu/M lb steam) using the procedures specified in Appendix A to this permit (below). Prior to the first fuel analysis being conducted, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to the boiler for emission calculations.
[40 CFR § 71.6(a)(3)(i)(B)]

5.6. Periodic Particulate Matter Test. The permittee shall measure particulate matter emissions from the boiler stack using the procedures specified in Condition 5.5 as follows:

If testing required in Condition 5.5 results in measured particulate matter emissions …	**Additional particulate matter testing shall be conducted …**
≥ 90% of the emission limit in Condition 5.1 for any load condition	Once per calendar year, between December 1 and March 31
≥ 75% but < 90% of the emission limit in Condition 5.1 for any load condition	Once per two calendar years, between December 1 and March 31
< 75% of the emission limit in Condition 5.1 for any load condition	Once per four calendar years, between December 1 and March 31

[40 CFR § 71.6(a)(3)(i)(B)]

BLR-1 Monitoring and Recordkeeping Requirements

5.7. Periodic Visible Emission Monitoring. The permittee shall measure visible emissions from the boiler stack within one month after this permit is issued for one hour using the procedures specified in Condition 3.9.1 and subsequently as specified in the following table.

If the most recent visible emission measurement results in measured opacity of …	**Additional visible emissions measurements shall be conducted …**
One or more 6-minute average > 20% opacity	Once per day, until two consecutive daily measurements are ≤ 20%
One or more 6-minute average ≥ 10% opacity	Once per month, with consecutive tests at least 10 days apart, until three consecutive monthly measurements are < 10%
All 6-minute averages < 10% opacity	Once per calendar quarter, with consecutive tests at least 30 days apart

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

5.8. Within 60 days of issuance of this permit, the permittee shall install, calibrate, operate and maintain equipment necessary to measure and record:

5.8.1. Steam production (lb/hr) - continuous measurement/display, recorded at least once per hour with at least 90% monthly data capture;

5.8.2. Steam pressure (psig) - continuous measurement/display, recorded at least once per month;

5.8.3. Boiler excess oxygen downstream of the combustion chamber (%) - continuous measurement/display, recorded at least once per day with at least 90% monthly data capture;

5.8.4. Pressure drop across the multiclone (inches of water) - continuous measurement/display, recorded at least once per day with at least 90% data capture.

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

5.9. Procedure to Define Multiclone Pressure Drop and Visible Emissions Excursions. No later than 45 days after conducting testing pursuant to Condition 5.5, the permittee shall define excursions for multiclone pressure drop and visible emissions. The level at which an excursion will be deemed to occur shall be based upon testing conducted pursuant to Condition 5.5 and the following criteria:

5.9.1. If the permittee conducts testing at one load condition (M lb steam/hr), the excursion levels for all operating loads shall be determined as follows:

If particulate matter testing required in Condition 5.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
≥ 90% of the emission limit in Condition 5.1	Average pressure drop observed over three test runs	Average opacity observed over 3 test runs
≥ 75% but < 90% of the emission limit in Condition 5.1	95 percent of the average pressure drop observed over	110 percent of the average opacity observed

If particulate matter testing required in Condition 5.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
	three test runs	over 3 test runs
≥ 50% < 75% of the emission limit in Condition 5.1	90 percent of the average pressure drop observed over three test runs	125 percent of the average opacity observed over 3 test runs
< 50% of the emission limit in Condition 5.1	80 percent of the average pressure drop observed over three test runs	150 percent of the average opacity observed over 3 test runs

5.9.2. If the permittee conducts testing at more than one load condition (M lb steam/hr), excursion levels shall be determined as follows:

5.9.2.1 Apply the criteria in Condition 5.9.1 separately to test results for each load condition;

5.9.2.2 Excursion levels for a particular load condition shall apply to operating loads that are equal to or less than the particular one tested, but only to the extent that the operating load is greater than all other load conditions undergoing testing (if any) between 0 lb steam/hr and the particular load condition. [40 CFR § 64.6(c)]

5.10. The permittee shall ensure that the monitoring equipment required by Condition 5.8 meets the following performance, operational and maintenance criteria:

5.10.1. Measurement locations that provide for obtaining data that are representative of the emissions or parameters being monitored. [40 CFR § 64.3(b)(1)]

5.10.2. Quality assurance and control practices, considering manufacturer recommendations, that are adequate to ensure the continuing validity of the data. [40 CFR § 64.3(b)(3)]

5.10.3. Maintaining necessary parts for routine repairs of the monitoring equipment. [40 CFR § 64.7(b)]

5.10.4. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), continuous operation of the monitoring equipment (or collecting data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [40 CFR § 64.7(c)]

5.10.5. Until the permittee provides notice of the establishment of excursion levels pursuant to Condition 5.18, an excursion is defined as a one-hour average exhaust stack opacity

greater than 5%. Thereafter, an excursion is any multiclone pressure drop or exhaust stack opacity value beyond the levels established pursuant to Condition 5.9.
[40 CFR §§ 64.1 and 64.6(c)(2)]

5.10.6. An exceedance is defined as any measured emission of PM which exceeds an emission limit specified in Condition 3.9 or 5.1. [40 CFR §§ 64.1 and 64.6(c)(2)]

5.11. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [40 CFR § 64.7(d)(1)]

5.12. The permittee shall develop and implement a quality improvement plan (QIP) in accordance with 40 CFR § 64.8 if EPA Region 10 determines, pursuant to 40 CFR § 64.7(d)(2), that the permittee has not used acceptable procedures in response to an excursion or exceedance.
[40 CFR §§ 64.7(d)(2) and 64.8(a)]

5.13. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [40 CFR § 64.7(e)]

5.14. The recordkeeping requirements of Condition 3.35 shall apply to monitoring conducted to satisfy Conditions 5.8 through 5.13. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR § 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Instead of paper records, the permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR § 64.9(b)]

5.15. The permittee shall sample and analyze the wood fuel for chloride content no less frequently than quarterly to determine a hydrogen chloride emission factor (lb/MMBtu).

5.15.1. Sampling and analysis procedures to determine chloride content in the wood fuel shall follow the procedures specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below). The results of the analyses shall be used to determine a hydrogen chloride emission factor (lb/MMBtu) for the boiler as specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below).
[Permit No. R10NT500901 and 40 CFR § 71.6(c)(1)]

BLR-1 Reporting Requirements

5.16. The reports required by Condition 3.47 and 3.48 shall include the following:

5.16.1. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions and exceedances, as applicable, and the corrective actions taken;

5.16.2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

5.16.3. A description of the actions taken to implement a QIP during the reporting period as specified in § 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.[40 CFR § 64.9(a)(2)]

5.17. The report required by Condition 3.46 shall include copies of all laboratory results relied upon to calculate HCl emission factors and shall list the sampling and analytical methods employed. [40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

5.18. At the time the permittee submits a report for the testing conducted pursuant to Condition 5.5 but no later than 45 days after having completed the testing, the permittee shall notify EPA of the establishment of excursion levels for multiclone pressure drop and visible emissions. The notice shall present the excursion levels and an explanation of how the values were derived. [40 CFR § 64.6(c)(2)]

6. Unit-Specific Requirements – BLR–2 (Hog Fuel-Fired Boiler No. 2)

BLR-2 Emission Limits and Work Practice Requirements

6.1. FARR Particulate Matter Limit. Particulate matter emissions from the boiler stack shall not exceed an average of 0.46 grams per dry standard cubic meter (0.2 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

6.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(2) and (e)]

6.2. FARR Sulfur Dioxide Emission Limit. Sulfur dioxide emissions from the boiler stack shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

6.2.1. Compliance with the SO_2 limit is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

6.3. At all times that the boiler operates, the boiler exhaust shall be directed to the multiclone. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

6.4. The multiclone shall be maintained in good operating condition and shall be operated at all times that the boiler is operational. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

BLR-2 Testing Requirements

6.5. Initial Particulate Matter Test. No later than 120 days after issuance of this permit, the permittee shall measure particulate matter emissions from the boiler stack using the test method specified in Condition 6.1.1.

6.5.1. Testing shall be conducted at a minimum of one load condition; that load condition being one in which the boiler is generating steam at a load reflecting the highest sustained load (M lb steam/hr) generally observed since the facility was re-started in August 2010.

6.5.2. During each source test run, the permittee shall measure the visible emissions from the boiler stack for the duration of each particulate matter test run using the procedures specified in Condition 3.9.1.

6.5.3. During each source test run, the permittee shall record the values (and time recorded) of the parameters specified in Condition 6.8. For monitoring devices that do not have continuous recording devices, the recorded values must consist of no fewer than 3 values recorded per test run.

6.5.4. During each source test run, the permittee shall collect composite fuel samples. The permittee shall estimate and record the percentages of bark, species of wood and material less than 1/8 inch in each composite fuel sample. The permittee shall determine and record the boiler fuel-heat-input-to-steam-output ratio (MMBtu/M lb steam) using the procedures specified in Appendix A to this permit (below). Prior to the first fuel analysis being conducted, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to the boiler for emission calculations.

[40 CFR § 71.6(a)(3)(i)(B)]

6.6. Periodic Particulate Matter Test. The permittee shall measure particulate matter emissions from the boiler stack using the procedures specified in Condition 6.5 as follows:

If testing required in Condition 6.5 results in measured particulate matter emissions …	**Additional particulate matter testing shall be conducted …**
≥ 90% of the emission limit in Condition 6.1 for any load condition	Once per calendar year, between December 1 and March 31
≥ 75% but < 90% of the emission limit in Condition 6.1 for any load condition	Once per two calendar years, between December 1 and March 31
< 75% of the emission limit in Condition 6.1 for any load condition	Once per four calendar years, between December 1 and March 31

[40 CFR § 71.6(a)(3)(i)(B)]

BLR-2 Monitoring and Recordkeeping Requirements

6.7. Periodic Visible Emission Monitoring. The permittee shall measure visible emissions from the boiler stack within one month after this permit is issued for one hour using the procedures specified in Condition 3.9.1 and subsequently as specified in the following table.

If the most recent visible emission measurement results in measured opacity of …	**Additional visible emissions measurements shall be conducted …**
One or more 6-minute average > 20% opacity	Once per day
One or more 6-minute average ≥ 10% opacity	Once per month, with consecutive tests at

	least 10 days apart
All 6-minute averages < 10% opacity	Once per calendar quarter, with consecutive tests at least 30 days apart

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

6.8. Within 60 days of issuance of this permit, the permittee shall install, calibrate, operate and maintain equipment necessary to measure and record:

6.8.1. Steam production (lb/hr) - continuous measurement/display, recorded at least once per hour with at least 90% monthly data capture;

6.8.2. Steam pressure (psig) - continuous measurement/display, recorded at least once per month;

6.8.3. Boiler excess oxygen downstream of the combustion chamber (%) - continuous measurement/display, recorded at least once per day with at least 90% monthly data capture;

6.8.4. Pressure drop across the multiclone (inches of water) - continuous measurement/display, recorded at least once per day with at least 90% data capture.

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

6.9. Procedure to Define Multiclone Pressure Drop and Visible Emissions Excursions. No later than 45 days after conducting testing pursuant to Condition 6.5, the permittee shall define excursions for multiclone pressure drop and visible emissions. The level at which an excursion will be deemed to occur shall be based upon testing conducted pursuant to Condition 6.5 and the following criteria:

6.9.1. If the permittee conducts testing at one load condition (M lb steam/hr), the excursion levels for all operating loads shall be determined as follows:

If particulate matter testing required in Condition 6.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
≥ 90% of the emission limit in Condition 6.1	Average pressure drop observed over three test runs	Average opacity observed over 3 test runs
≥ 75% but < 90% of the emission limit in Condition 6.1	95 percent of the average pressure drop observed over three test runs	110 percent of the average opacity observed over 3 test runs
≥ 50% < 75% of the emission limit in Condition 6.1	90 percent of the average pressure drop observed over three test runs	125 percent of the average opacity observed over 3 test runs
< 50% of the emission limit in Condition 6.1	80 percent of the average pressure drop observed over three test runs	150 percent of the average opacity observed over 3 test runs

6.9.2. If the permittee conducts testing at more than one load condition (M lb steam/hr), excursion levels shall be determined as follows:

6.9.2.1 Apply the criteria in Condition 6.9.1 separately to test results for each load condition;

6.9.2.2 Excursion levels for a particular load condition shall apply to operating loads that are equal to or less than the particular one tested, but only to the extent that the operating load is greater than all other load conditions undergoing testing (if any) between 0 lb steam/hr and the particular load condition. [40 CFR § 64.6(c)]

6.10. The permittee shall ensure that the monitoring equipment required by Condition 6.8 meets the following performance, operational and maintenance criteria:

6.10.1. Measurement locations that provide for obtaining data that are representative of the emissions or parameters being monitored. [40 CFR 64.3(b)(1)]

6.10.2. Quality assurance and control practices, considering manufacturer recommendations, that are adequate to ensure the continuing validity of the data. [40 CFR 64.3(b)(3)]

6.10.3. Maintaining necessary parts for routine repairs of the monitoring equipment. [40 CFR § 64.7(b)]

6.10.4. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), continuous operation of the monitoring equipment (or collecting data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [40 CFR § 64.7(c)]

6.10.5. Until the permittee provides notice of the establishment of excursion levels pursuant to Condition 6.18, an excursion is defined as a one-hour average exhaust stack opacity greater than 5%. Thereafter, an excursion is any multiclone pressure drop or exhaust stack opacity value beyond the levels established pursuant to Condition 6.9. [40 CFR § 64.1 and 64.6(c)(2)]

6.10.6. An exceedance is defined as any measured emission of PM which exceeds an emission limit specified in Condition 3.9 or 6.1. [40 CFR § 64.1 and 64.6(c)(2)]

6.11. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [40 CFR § 64.7(d)(1)]

6.12. The permittee shall develop and implement a quality improvement plan (QIP) in accordance with 40 CFR § 64.8 if EPA Region 10 determines, pursuant to 40 CFR § 64.7(d)(2), that the permittee has not used acceptable procedures in response to an excursion or exceedance.
[40 CFR §§ 64.7(d)(2) and 64.8(a)]

6.13. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [40 CFR § 64.7(e)]

6.14. The recordkeeping requirements of Condition 3.35 shall apply to monitoring conducted to satisfy Conditions 6.8 through 6.13. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR § 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Instead of paper records, the permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR § 64.9(b)]

6.15. The permittee shall sample and analyze the wood fuel for chloride content no less frequently than quarterly to determine a hydrogen chloride emission factor (lb/MMBtu).

6.15.1. Sampling and analysis procedures to determine chloride content in the wood fuel shall follow the procedures specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below). The results of the analyses shall be used to determine a hydrogen chloride emission factor (lb/MMBtu) for the boiler as specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below).
[Permit No. R10NT500901 and 40 CFR § 71.6(c)(1)]

BLR-2 Reporting Requirements

6.16. The reports required by Condition 3.47 and 3.48 shall include the following:

6.16.1. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions and exceedances, as applicable, and the corrective actions taken;

6.16.2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

6.16.3. A description of the actions taken to implement a QIP during the reporting period as specified in § 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.[40 CFR § 64.9(a)(2)]

6.17. The report required by Condition 3.46 shall include copies of all laboratory results relied upon to calculate HCl emission factors and shall list the sampling and analytical methods employed.
[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

6.18. At the time the permittee submits a report for the testing conducted pursuant to Condition 6.5 but no later than 45 days after having completed the testing, the permittee shall notify EPA of the establishment of excursion levels for multiclone pressure drop and visible emissions. The notice shall present the excursion levels and an explanation of how the values were derived.
[40 CFR § 64.6(c)(2)]

7. Unit Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)

ENG-1 Emission Limits and Work Practice Requirements

7.1. Particulate matter emissions from the stack of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

7.1.1. Compliance with the particulate matter limit in Condition 7.1 is determined using EPA Reference Method 5 (see 40 CFR part 60, appendix A).
[40 CFR §§ 49.125(d)(1) and (e)]

7.2. Sulfur dioxide emissions from the stack of this emission unit shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

7.2.1. Compliance with the SO_2 limit in Condition 7.2 is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

7.3. At all times the permittee shall be in compliance with NESHAP Subpart ZZZZ requirements that apply to the permittee. [40 CFR § 63.6605(a)]

7.4. The permittee shall change the oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR § 63.6603(a) and Row 4.a. of Table 2d to Subpart ZZZZ of Part 63]

7.4.1. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 7.4 as follows:

7.4.1.1 The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content.

7.4.1.2 The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.

7.4.1.3 If all these condemning limits are not exceeded, the engine owner or operator is not required to change the oil.

7.4.1.4 If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the

engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

7.5. The permittee shall inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.b. of Table 2d to Subpart ZZZZ of Part 63]

7.6. The permitee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.c. of Table 2d to Subpart ZZZZ of Part 63]

7.7. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements pursuant to Conditions 7.4, 7.5 and 7.6, or if performing the management practice would otherwise pose an unacceptable risk under federal, state, or local law, the management practice shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. [Footnote 2 of Table 2d to Subpart ZZZZ of Part 63]

7.8. Except as provided for in Condition 7.10, the permittee shall not operate the engine for more than 100 hours per calendar year for the following purposes: [40 CFR § 63.6640(f)(2)]

7.8.1. Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine; and [40 CFR § 63.6640(f)(2)(i)]

7.8.2. Other non-emergency situations. [40 CFR § 63.6640(f)(4)]

7.9. The permittee may operate the engine for up to 50 hours per calendar year in non-emergency situations other than the activities listed in Condition 7.8.1, but only to the extent allowed by Condition 7.8. [40 CFR §§ 63.6640(f)(2) and (4)]

7.10. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency engines beyond 100 hours per calendar year. [40 CFR § 63.6640(f)(2)(i)]

7.11. During periods of startup, the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
[40 CFR § 63.6625(h) and Table 2d to Subpart ZZZZ of Part 63]

7.12. At all times the permittee shall operate and maintain the engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emission does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR § 63.6605(b)]

7.13. The permittee shall operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's emission-related written operation and maintenance instruction, or alternatively, the permittee shall develop and follow its own maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions

[40 CFR §§ 63.6625(e), 40 CFR § 63.6640(a) and Row 9 of Table 6 to Subpart ZZZZ of Part 63]

ENG-1 Monitoring and Recordkeeping Requirements

7.14. The first time each calendar year that the engine is operated during daylight hours in a non-emergency situation, the permittee shall conduct at least one 6-minute visible emissions observation of the engine stack using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

7.15. If the permittee utilizes an oil analysis program pursuant to Condition 7.4.1, the owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

7.16. The permittee shall install a non-resettable hour meter if one is not already installed.
[40 CFR § 63.6625(f)]

7.16.1. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter.

7.16.2. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR § 63.6655(f)]

7.17. The permittee shall keep records to show continuous compliance with Condition 7.13.
[40 CFR § 63.6655(d)]

7.18. The permittee shall keep records of the maintenance conducted on the engine in order to demonstrate that the permittee operated and maintained the engine and after-treatment control device (if any) according to the permittee's own maintenance plan. [40 CFR § 63.6655(e)]

ENG-1 Reporting Requirements

7.19. The permittee shall comply with the applicable NESHAP Subpart A general provisions listed in Table 8 to Subpart ZZZZ of Part 63.
[40 CFR §§ 63.6665 and Table 8 to Subpart ZZZZ of Part 63]

7.19.1. The requirement to submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) does not apply.
[40 CFR § 63.6645(a)(5)]

7.20. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 any failure to perform timely management practices as required by Conditions 7.4, 7.5 and 7.6 for reasons afforded by Condition 7.7. Report also the federal, state or local law under which the risk was deemed unacceptable.
[40 CFR §§ 71.6(a)(3)(iii)(A) and footnote 2 of Table 2d to Subpart ZZZZ of Part 63)]

7.21. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 each instance in which the permittee did not meet the requirements in Table 8 to 40 CFR 63, Subpart ZZZZ. [40 CFR §§ 63.6640(e) and 71.6(a)(3)(iii)(A)]

7.22. The permittee shall report all deviations as defined in 40 CFR Part 63, Subpart ZZZZ in the semi-annual monitoring report required by Condition 3.47. [40 CFR § 63.6650(f)]

8. Unit Specific Requirements – ENG-2 (Emergency Backup Engine No. 2)

ENG-2 Emission Limits and Work Practice Requirements

8.1. Particulate matter emissions from the stack of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

8.1.1. Compliance with the particulate matter limit in Condition 8.1 is determined using EPA Reference Method 5 (see 40 CFR part 60, appendix A).
[40 CFR §§ 49.125(d)(1) and (e)]

8.2. Sulfur dioxide emissions from the stack of this emission unit shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

8.2.1. Compliance with the SO_2 limit in Condition 8.2 is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

8.3. At all times the permittee shall be in compliance with NESHAP Subpart ZZZZ requirements that apply to the permittee. [40 CFR § 63.6605(a)]

8.4. The permittee shall change the oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR § 63.6603(a) and Row 4.a. of Table 2d to Subpart ZZZZ of Part 63]

8.4.1. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 8.4 as follows:

8.4.1.1 The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content.

8.4.1.2 The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.

8.4.1.3 If all these condemning limits are not exceeded, the engine owner or operator is not required to change the oil.

8.4.1.4 If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

8.5. The permittee shall inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.b. of Table 2d to Subpart ZZZZ of Part 63]

8.6. The permitee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 CFR § 63.6603(a) and Row 4.c. of Table 2d to Subpart ZZZZ of Part 63]

8.7. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements pursuant to Conditions 8.4, 8.5 and 8.6, or if performing the management practice would otherwise pose an unacceptable risk under federal, state, or local law, the management practice shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. [Footnote 2 of Table 2d to Subpart ZZZZ of Part 63]

8.8. Except as provided for in Condition 8.10, the permittee shall not operate the engine for more than 100 hours per calendar year for the following purposes: [40 CFR § 63.6640(f)(2)]

8.8.1. Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine; and [40 CFR § 63.6640(f)(2)(i)]

8.8.2. Other non-emergency situations. [40 CFR § 63.6640(f)(4)]

8.9. The permittee may operate the engine for up to 50 hours per calendar year in non-emergency situations other than the activities listed in Condition 8.8.1 but only to the extent allowed by Condition 8.8. [40 CFR §§ 63.6640(f)(2) and (4)]

8.10. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency engines beyond 100 hours per calendar year. [40 CFR § 63.6640(f)(2)(i)]

8.11. During periods of startup, the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
[40 CFR § 63.6625(h) and Table 2d to Subpart ZZZZ of Part 63]

8.12. At all times the permittee shall operate and maintain the engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emission does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR § 63.6605(b)]

8.13. The permittee shall operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's emission-related written operation and maintenance instruction, or alternatively, the permittee shall develop and follow its own maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions
[40 CFR §§ 63.6625(e), 40 CFR § 63.6640(a) and Row 9 of Table 6 to Subpart ZZZZ of Part 63]

ENG-2 Monitoring and Recordkeeping Requirements

8.14. The first time each calendar year that the engine is operated during daylight hours, the permittee shall conduct at least one 6-minute visible emissions observation of the engine stack using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

8.15. If the permittee utilizes an oil analysis program pursuant to Condition 8.4.1, the owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the

analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

8.16. The permittee shall install a non-resettable hour meter if one is not already installed.
[40 CFR § 63.6625(f)]

8.16.1. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter.

8.16.2. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR § 63.6655(f)]

8.17. The permittee shall keep records to show continuous compliance with Condition 8.13.
[40 CFR § 63.6655(d)]

8.18. The permittee shall keep records of the maintenance conducted on the engine in order to demonstrate that the permittee operated and maintained the engine and after-treatment control device (if any) according to the permittee's own maintenance plan. [40 CFR § 63.6655(e)]

ENG-2 Reporting Requirements

8.19. The permittee shall comply with the applicable NESHAP Subpart A general provisions listed in Table 8 to Subpart ZZZZ of Part 63.
[40 CFR §§ 63.6665 and Table 8 to Subpart ZZZZ of Part 63]

8.19.1. The requirement to submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) does not apply.
[40 CFR § 63.6645(a)(5)]

8.20. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 any failure to perform timely management practices as required by Conditions 8.4, 8.5 and 8.6 for reasons afforded by Condition 8.7. Report also the federal, state or local law under which the risk was deemed unacceptable.
[40 CFR §§ 71.6(a)(3)(iii)(A) and footnote 2 of Table 2d to Subpart ZZZZ of Part 63)]

8.21. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 each instance in which the permittee did not meet the requirements in Table 8 to 40 CFR 63, Subpart ZZZZ. [40 CFR §§ 63.6640(e) and 71.6(a)(3)(iii)(A)]

8.22. The permittee shall report all deviations as defined in 40 CFR Part 63, Subpart ZZZZ in the semi-annual monitoring report required by Condition 3.47. [40 CFR § 63.6650(f)]

9. Unit-Specific Requirements – KLN (Lumber Drying Kilns)

KLN Emission Limits and Work Practice Requirements

9.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

9.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

KLN Monitoring and Recordkeeping Requirements

9.2. The permittee shall determine the monthly volume of lumber dried (bf/month) in the lumber kilns according to species of lumber and maximum drying temperature of each batch.

9.2.1. For each kiln charge, track the species and volume of lumber dried (bf) and the maximum dry bulb temperature (ºF) of heated air entering the lumber stack. [40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

10. Unit-Specific Requirements – CYC (Wood Residual Cyclones)

CYC Emission Limits and Work Practice Requirements

10.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

10.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

11. Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

SMI Emission Limits and Work Practice Requirements

11.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

11.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

Appendix A: Boiler Fuel-Heat-Input-To-Steam-Output Ratio

Last Revised September 2013

1. During each emission test run:
   - Measure average stack gas flow (dscfm) using Reference Method 2
   - Measure average steam flow rate (mlbsteam/hr) using boiler monitoring equipment

2. Sample Fuel
   - Take 3 composite samples (composed of three approximately 2-pound individual samples) using 63.7521(c); all samples shall be collected at a location that most accurately represents the fuel being burned; if not sampling during a stack test, individual belt or screw feeder samples, described in 63.7521(c)(1)(ii), shall be separated by a 30 minute period

3. Homogenize Fuel Sample
   - Subdivide and homogenize each composite sample using 63.7521(d) until sample passes 0.5 mm screen

4. Determine Fuel Moisture
   - Determine moisture content (%, wet basis) of three composite samples using ASTM E871-82R06; time analysis such that samples used for moisture analysis represents moisture content of samples introduced to oxygen bomb; do not average the three sample results
   - For converting heat content or ultimate analysis % to dry basis, use the following:
     - (value, wet basis) / (1 - %moisture) = (value, dry basis)

5. Determine Fuel Heat Content (aka Gross Calorific Value or High Heat Value)
   - Determine gross calorific value (Btu/lb, wet basis) for each composite sample using ASTM E711-87R04; do not average the three sample results; convert GCV results to be on dry basis

6. Perform Ultimate Analysis (for each composite sample)
   - Determine ash content (%, dry basis) using ASTM D1102-84R07
   - Determine C (%, wet basis) using ASTM E777-87R04; convert to dry basis
   - Determine H (%, wet basis) using ASTME777-87R04; convert to dry basis
   - Determine N (%, wet basis) using ASTM E778-87R04; convert to dry basis
   - Determine S (%, wet basis) using ASTM E775-87R04; convert to dry basis
   - Calculate O (%, dry basis) using ash, C, H, N and S results (%, dry basis) and ASTM E870-82R06

7. Calculate Hogged Fuel F-Factor (for each composite sample)
   - Calculate F-factor (dscf/mmBtu) using results from ultimate analysis (dry basis) and GCV (dry basis) using equation 19-13 in 40 CFR 60 App A, RM19

8. Calculate Conversion Factor
   - Determine fuel heat input rate (mmBtu/hr) using average stack flow rate and percent oxygen (dry) for each run and F-factor for each composite sample:
     (dscf/min) ((20.9 - $\%O_2$)/20.9) x (60 min/hr) / (dscf/mmBtu) = (mmBtu/hr)
   - Determine input/output ratios (mmBtu/mlbsteam) by dividing the fuel heat input rate (mmBtu/hr) for each composite by the steam flow rate (mlbsteam/hr) for each run
   - Average the input/output ratio (mmBtu/mlbsteam) for the three samples/runs

Appendix B: HCl Emission Factor Procedure for Hogged Fuel

Last Revised December 2008

1. Sample Fuel
   - Take 3 composite samples (composed of three approximately 2-pound individual samples) using 40 CFR 63.7521(c); all samples shall be collected at a location that most accurately represents the fuel being burned; if not sampling during a stack test, individual belt or screw feeder samples, described in 40 CFR 63.7521(c)(1)(ii), shall be separated by a 30 minute period

2. Homogenize Sample
   - Subdivide and homogenize each composite sample using 40 CFR 63.7521(d) until sample passes 0.5 mm screen; approximately 50 grams of sample are needed for each moisture analysis, 1 gram of sample is needed for each oxygen bomb, and 2 grams of sample are needed for ash analysis

3. Determine Moisture Content
   - Determine moisture content (%, wet basis) of three composite samples using ASTM E871-82R06; time analysis such that samples used for moisture analysis represents moisture content of samples introduced to oxygen bomb; do not average the three sample results

4. Prepare Sample for Heat Content and Chlorine Content Analysis
   - Prepare three composite samples using SW-846-5050; this sample preparation can be performed simultaneously with heat content analysis (ASTM E711); alternatively, ASTM E776-87R04 can be used in place of both SW-846-5050 and SW-846-9056/9056A; do not combine composite samples before or after sample preparation

5. Determine Heat Content (aka Gross Calorific Value or High Heat Value)
   - Determine gross calorific value (Btu/lb, wet basis) of three composite samples using ASTM E711-87R04; do not average the three sample results
   - Convert GCV results to be on a dry basis:
     (GCV, wet basis) / (1 - %moisture) = (GCV, dry basis)

6. Determine Chlorine Content
   - Analyze bomb combustate for each composite sample for Cl (mg/L, wet basis) using SW-846-9056 or SW-846-9056A (alternatively, use ASTM E776-87R04 in place of SW-846-5050 and SW-846-9056/9056A)
   - Convert Cl mg/L (wet basis) to Cl ug/g (wet basis) using SW-846-5050 (eq. 1)

7. Determine Average HCl Emission Factor
   - Convert Cl (ug/g, wet basis) to HCl (lb/mmBtu, dry basis) for each composite sample:
     (Cl ug/g, wet basis) / (1 -%moisture) x (36.5 g HCl / 35.5 g Cl) / ($1x10^6$ ug/g) / (GCV Btu/lb, dry basis) x ($1x10^6$ Btu/mmBtu) = (HCl lb/mmBtu)
   - Determine HCl emission factor (HCl lb/mmBtu) by averaging the HCl results from the three composite samples.

United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Permit Number: R10T5100100
Issued: September 30, 2013
Effective: September 30, 2013
Expiration: September 30, 2018
Replaces: R10T5-ID-00-03
AFS Plant I.D. Number: 16-061-00001

Statement of Basis

Title V Air Quality Operating Permit
Permit Renewal No. 1

Permit Writer: Dan Meyer

Blue North Forest Products, LLC

Nez Perce Reservation
Kamiah, Idaho

Purpose of Permit and Statement of Basis

Title 40 Code of Federal Regulations Part 71 establishes a comprehensive air quality operating permit program under the authority of Title V of the 1990 amendments to the federal Clean Air Act. The air quality operating permit is an enforceable compilation of all of the applicable air pollution requirements that apply to an existing affected air emissions source. The permit is developed via a public process, may contain additional new requirements to improve monitoring of existing requirements, and contains procedural and prohibitory requirements related to the permit program itself. The permit is valid for 5 years and may be renewed.

This document, the statement of basis, summarizes the legal and factual basis for the permit conditions in the air quality operating permit to be issued to Blue North Forest Products, LLC (referred to herein as BNFP, facility, source, or permittee). Unlike the air quality operating permit, this document is not legally enforceable. This statement of basis summarizes the emitting processes at the facility, air emissions, permitting and compliance history, the statutory or regulatory provisions that relate to the subject facility, and the steps taken to provide opportunities for public review of the permit. The permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the permittee from the requirements of the permit.

Table of Contents

1. EPA Authority to Issue Title V Permits

On July 1, 1996, EPA adopted regulations (see 61 Federal Register (FR) 34202) codified at 40 Code of Federal Regulations (CFR) Part 71 setting forth the procedures and terms under which the Agency would administer a federal operating permit program. These regulations were updated on February 19, 1999 (64 FR 8247) to incorporate EPA's approach for issuing federal operating permits to affected stationary sources in Indian Country.

As described in 40 CFR 71.4(a), EPA will implement a Part 71 program in areas where a state, local, or Tribal agency has not developed an approved Part 70 program. Unlike states, Indian Tribes are not required to develop operating permit programs, though EPA encourages Tribes to do so. See, for example, Indian Tribes: Air Quality Planning and Management (63 FR 7253, February 12, 1998) (also known as the "Tribal Authority Rule"). Therefore, within Indian Country, EPA will administer and enforce a Part 71 federal operating permit program for stationary sources until the governing Indian Tribe receives EPA's approval to administer its own operating permit program.

2. Facility Information

2.1 Location

The BNFP facility is located along the east side of the Clearwater River directly north of Kamiah , Idaho in the southeast quadrant of the Nez Perce Reservation. The facility is located within the exterior boundaries of the 1863 Nez Perce Reservation and is in Indian Country as defined in 40 CFR Part 71.

2.2 Nez Perce Reservation

The Nez Perce Reservation is in northern Idaho. In 1855, Governor Stevens concluded a treaty with the Nez Perce Tribe recognizing tribal rights to an immense tract of country consisting of some 7.5 million acres. A new treaty in 1863 reduced the reservation to its current size of approximately 760,000 acres located in northern Idaho. Today there are 15 communities located within the boundaries of the reservation. Based on 1986 data, the population is estimated at about 11,400 within the incorporated communities. Another 5,000 to 6,000 people live in the rural areas. Tribal enrollment is approximately 3,300 members with 1,000 members living off the reservation.

The Nez Perce Tribe operates under a constitution that was approved in 1958. The Tribe's constitution provides that a nine member Nez Perce Tribal Executive Committee is the governing body.

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2.3 Facility Description

The primary operation at the privately-owned 34-acre facility is the production of dimensional lumber from raw logs. The BNFP facility has debarkers and saws, kilns for drying lumber, a planer, wood chippers, a bark hog, various storage bins and two hog fuel-fired boilers (to supply steam to the kilns). The site includes a log yard, shops, offices, and open and covered storage areas. There are no chemical

wood preservative or gluing operations. Logs are received and stored in the log yard. The process of cutting the logs into lumber includes debarking, sawing, chipping, kiln drying, planing, and packaging for shipping.

The manufacturing process is comprised of the following steps. The raw logs are delivered to the site, stockpiled, debarked, cut to length, and then rough sawn into lumber. The lumber is stickered, kiln dried, planed, graded, bundled, sold and shipped out. There are two debarking lines based on the diameter of the logs. Currently only the small log line is operational. The bark or hog is ground into a manageable size, approximately 1.5 inches, and conveyed to the boiler house. Extra hog fuel is sold to Clearwater Paper in Lewiston (formerly Potlatch Corporation). Some bark is sold for 'beauty bark'. Douglas fir and white fir are the primary species processed at the mill. They usually run less than 10% ponderosa pine and they do not process cedar. The Douglas fir has higher BTU than the white fir; therefore, they prefer to sell the white fir fuel and utilize the Douglas fir bark and shavings on-site. The bark is stored under a roof for approximately two weeks before being mixed with dry shavings and fed into the boiler. When stockpiled, the bark starts to heat, drying the fuel out, resulting in a more consistent fuel. Planner shavings and chips are also used as fuel for the boiler or sold to Clearwater Paper or to a pellet plant for horse bedding. The shavings are stored in a bin. Rough lumber is sorted by moisture (weight) to load the kilns efficiently for energy conservation. One species of lumber is loaded in the kiln at a time. The drying time is 24-120 hours depending on the species and time of year.

The facility runs a shift per day with 58 total employees, 40 working in the yard. Everyone works a 40 hour week. Logs are supplied from US Forest Service sales, State of Idaho lands, industrial landowners like Potlatch, and private foresters. About 90% of their product is 2 by stock lumber and of that 60% is white fir and 40% is Douglas fir. The other 10% of their product is ponderosa pine, 1 by stock. They do not process cedar. Annually they process approximately 60 million board feet. All the green chips and sawdust generated are sold. They use bark and shavings as fuel for their boiler. The mill has two debarking and planer lines, one for large diameter logs and the other for small diameter logs. They are only using the small diameter side and that the average log diameter being processed is 7.5 inches in diameter. They take logs down to 4.5 inches in diameter.

The air pollution emission units and control devices that exist at the facility are listed in Table 2-1 below by emission unit identification (EU ID). None of the emission units vent through a stack shared with another emission unit. Installation dates for each emission unit, to the extent known, are listed because they are important in determining applicability of federal PSD, NSPS and MACT standards (see further discussion in Section 4). Capacities are listed for several emission units based on the best information available from the applicant. Those control devices that are required by rule or this permit are so noted.

Table 2-1 – Emission Units (EU) & Control Devices

EU ID	Emission Unit Description	Control Device[1]
BLR-1	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
BLR-2	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone

EU ID	Emission Unit Description	Control Device[1]
ENG-1	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.	None
ENG-2	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995.	None
KLN	Seven 64-foot double-track lumber drying kilns. Indirectly heated. Kilns No. 2 through 6 automated. Kilns No. 1 and 7 not automated. 16 dry bulbs and 2 wet bulbs per kiln. Annual capacity equals 174,000 mbf lumber. Installed?	None
CYC	Five wood residual cyclones. W4 – planer mill shavings cyclone. H1 – planer mill chipped trim ends hog cyclone. W3 – Atlas fuel bin cyclone. W5 – shavings cyclone on top of shavings/sawdust bin. T1 – saw mill trimmer sawdust cyclone on top of shavings/sawdust bin.	None.
BIN	Five wood residual bins. GS – green sawdust bin. GC – green wood chip bin. AF – Atlas fuel bin. SS – shavings and green trimmer sawdust bin. HF – hog fuel bin.	None.
SMI	Sawmill operations inside a building. This activity includes, but is not limited to, hogging, sawing, chipping, shaving and mechanical transfer of wood residuals.	Inside building
SMO	Sawmill operations outside a building. This activity includes, but is not limited to, debarking, hogging, sawing, chipping, mechanical transfer of wood residuals and hog fuel storage pile.	None.
PT	Plant traffic generating fugitive emissions along paved and unpaved roads.	Watering

[1] The multiclone is required to be used by this permit.

An emission unit or activity qualifies as an insignificant emission unit (IEU) if it is an activity type listed in 40 CFR 71.5(c)(11)(i) or emits less than 2 tons per year of any regulated air pollutant excluding HAPs [40 CFR 71.5(c)(11)(ii)(A)] and less than 1000 pounds per year of any HAP or the de minimis HAP level established under Section 112(g), whichever is lower [40 CFR 71.5(c)(11)(ii)(B)]. BNFP has noted in its renewal application a list of IEUs similar to the one from its previous Title V permit. The updated list of IEUs are shown in Table 2-2 below.

Table 2-2 – Insignificant Emission Units (IEU)

EU ID	Emission Unit Description
IEU-1	500 gallon gasoline tank and fueling
IEU-2	12,000 gallon diesel tank and fueling
IEU-3	Wood residue pile
IEU-4	Log feed decks
IEU-5	Sawmill building vents
IEU-6	Sorter building vents
IEU-7	Powerhouse vents

EU ID	Emission Unit Description
IEU-8	Planner building vents
IEU-9	Lumber storage shed vents
IEU-10	Fire station roof vents
IEU-11	Lumber shipping
IEU-12	Log storage

2.4 Local Air Quality and Attainment Status

Local Air Quality and Attainment Status: Northern Idaho, including the Nez Perce Reservation, attains the national ambient air quality standard (NAAQS) for $PM_{2.5}$, and is "unclassified" for all other criteria pollutants. An area is unclassifiable when there is insufficient monitoring data to determine compliance with the NAAQS. The State of Idaho operates continuous $PM_{2.5}$ monitors at three locations near the Nez Perce Reservation, in the towns of Lewiston, Moscow, and Grangeville. The 2010-2012 24-hour $PM_{2.5}$ design values for these monitors are, respectively, 18 micrograms per cubic meter ($\mu g/m^3$), 16 $\mu g/m^3$, and 14 $\mu g/m^3$. These values are substantially below the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$, and demonstrate that the surrounding area is in compliance with the $PM_{2.5}$ NAAQS. Monitoring for $PM_{2.5}$ is also being conducted by the Nez Perce Tribe at three locations on the Nez Perce Reservation in Kamiah, Lapwai and Reubens. Data from these monitors indicate that both the 24-hour and annual $PM_{2.5}$ design values on the reservation are well below the $PM_{2.5}$ NAAQS.

2.5 Permitting, Construction and Compliance History

The facility currently owned by Blue North Forest Products, LLC was previously owned by Three Rivers Timber (TRT). Previous to that, the mill was owned by Weyerhaeuser, by Rawlins Construction/Triple R Forest Products Limited Partnership, and by Potlatch Corporation. The mill was reportedly built in the late 1950s and owned by the Potlatch Corporation until it was shut down in March 1984. Potlatch subsequently sold the mill to Rawlins Construction Company in January 1986. Rawlins transferred the mill to Triple R Forest Products, a Montana limited partnership, with Rawlins as general partner, and Weyerhaeuser Company as the limited partner. Operation of the mill resumed in November/December 1986 with normal production beginning in January 1987. In March 1988, Weyerhaeuser Company purchased Rawlins' general partnership. The limited partnership structure was formally dissolved in February 1993 leaving Weyerhaeuser in full ownership. Three Rivers Timber purchased the mill from Weyerhaeuser in 1994. TRT operated the facility until it closed in November 2008. In April 2010 the mill was auctioned but did not sell. Mill equipment and other assets were to be sold piecemeal, prior to Michael Burns purchasing the mill on June 21, 2010. The BFNP mill started operations on August 30, 2010. Restart of the mill did not trigger PSD review based upon EPA review conducted May 2011.

A chronological summary of permit activities for BNFP is presented in Table 2-3 below.

Table 2-3 – Clean Air Act Permitting History

Date	Permit No.	Action
08/23/02	R10T5-ID-00-03	EPA issues initial Title V permit.
09/27/07	R10NT500900	EPA issues non-Title V permit to limit HAP emissions to less than major source threshold levels to avoid Plywood and Composite Wood Products MACT and any other major source MACT to come.
04/07/06 – 04/07/07	R10T5-ID-00-03	Title V permit renewal application due to EPA.
04/07/07	R10T5-ID-00-03	EPA receives TRT Title V permit renewal application.
010/07/07	R10T5-ID-00-03	Title V permit expires but is administratively extended because TRT submitted a timely permit renewal application.

Date	Permit No.	Action
12/08/10	R10T5-ID-00-03	BNFP submits Title V permit renewal application.
09/30/11	R10T5-ID-00-03	BNFP submits amendment to Title V permit renewal application.
07/26/13	R10T5010100	Pre-draft Title V permit renewal is sent to BNFP and Nez Perce Tribe for initial review.
08/21/13 – 09/20/13	R10T5100100	Public comment period for draft Title V permit renewal.

The Nez Perce Tribe Air Quality Program has inspected the facility each year for the past three years. There is no record of any notice of violation having been issued to BNFP for Clean Air Act violations stemming from those inspections. However, the inspection reports suggest that the facility is not complying with Condition 3.3 of its non-Title V permit, R10NT500900, as only two composite samples are being collected and analyzed quarterly. The permittee is required to sample and analyze three composite samples quarterly. Also, the inspection reports suggest that the facility is not complying with (a) 40 CFR § 49.126(e)(1)(i) requirement to, "Document the results of the (annual fugitive dust) survey, including the date and time of the survey and identification of any sources of fugitive particulate matter emissions found" and (b) 40 CFR § 49.126(e)(1)(iii) requirement to "prepare, and update as necessary following each (annual fugitive dust) survey, a written plan that specifies the reasonable precautions that will be taken and the procedures to be followed to prevent fugitive particulate matter emissions, including appropriate monitoring and recordkeeping."

3. Emission Inventory

3.1 Emission Inventory Basics

An emission inventory generally reflects either the "actual" or "potential" emissions from a source. Actual emissions generally represent a specific period of time and are based on actual operation and controls. Potential emissions, referred to as potential to emit (PTE), generally represent the maximum capacity of a source to emit a pollutant under its physical and operational design, taking into consideration regulatory restrictions, but only required control devices. PTE is often used to determine applicability to several EPA programs, including Title V, PSD and Section 112 (MACT).

Emissions can be broken into two categories: point and fugitive. Fugitive emissions are those which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Examples of fugitive emissions are roads, piles that are not normally enclosed, wind blown dust from open areas, and those activities that are normally performed outside buildings. Point sources of emissions include any emissions that are not fugitive.

The equation below represents the general technique for estimating emissions (in tons per year) from each emission unit at the facility. Emissions are calculated by multiplying an emission factor by an operational parameter. To estimate actual emission, BNFP will need to track the actual operational rates. Note that emission factors may be improved over time. For those estimation techniques that require substantial site-specific parameter tracking, such as piles and roads, emissions associated with a defined operational rate can be estimated to establish a set ratio that can be used to multiply by the actual operational rate in future years, significantly simplifying the annual inventory effort. All of the techniques and site-specific parameters and assumptions should be reviewed each year before estimating emissions to be sure they remain appropriate.

$$E = EF \times OP \times K$$

Where:

E = pollutant emissions in tons/year

EF = emission factor (see Appendix A to this Statement of Basis)
OP = operational rate (or capacity for PTE)
K = 1 ton/2000 lbs for conversion from pounds per year to tons per year

3.2 Potential to Emit (PTE)

BNFP completed and submitted EPA Part 71 Operating Permit Form EMISS for all emission units as part of its Title V permit renewal application. Form EMISS lists actual and potential emissions. BNFP submitted calculations supporting Form EMISS. EPA has documented the facility PTE in Appendix A. In some instances, EPA revised the emission estimates provided by BNFP to more accurately reflect potential emissions from the facility. A summary of BNFP's PTE is presented in Table 3-1 below. Note that while fugitive emissions are included in Table 3-1, fugitive emissions are not always used to determine program applicability as explained in more detail in Section 4.1 of this Statement of Basis.

Table 3-1 – BNFP Potential to Emit[1]

	PTE in tons per year										
Pollutant[2]	**BLR-1**	**BLR-2**	**ENG-1**	**ENG-2**	**KLN**	**CYC**	**BIN**	**IMA**	**OMA**	**PT**	**Total**
CO	83.3	83.3	0.4	0.4	0						167.4
Pb	0	0	0	0	0						0
NO_X	68.0	68.0	2.0	2.0	0						140
PM	57.2	57.2	0.1	0.1	4.4	0	0	0	0	0	119
PM_{10}	59.6	59.6	0.1	0.1	4.4	0	0	0	0	106.9	230.7
$PM_{2.5}$	59.6	59.6	0.1	0.1	4.4	0	0	0	0	14.0	137.8
SO_2	166.3	166.3	0.2	0.2	0						333
VOC	3.2	3.2	0.2	0.2	331.4		0				338.2
GHG (CO_2e)[3]	29,324	29,324	73	73	0						58,794
Plant-wide Total HAP[4]											24
Plant-wide Single HAP[4]											9

[1] Fugitive emissions are included in this table but may not always be used in applicability determinations (see Section 4.1)

[2] CO = carbon monoxide; Pb = lead; NO_X = oxides of nitrogen; PM = particulate matter; PM_{10} = particulate matter with diameter 10 microns or less; $PM_{2.5}$ = particulate matter with diameter 2.5 microns or less; SO_2 = sulfur dioxide; VOC = volatile organic compounds; GHG = greenhouse gases; HAP = hazardous air pollutants [see Clean Air Act, Section 112(b)]; plant-wide total HAP = all HAPs totaled; plant-wide single HAP = highest individual HAP

[3] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

[4] HAP PTE is capped by plant-wide emission limits created in a FARR Non-Title V permit

The PTE estimates for the facility generally assume all units operate 8760 hours per year, with the exception being the engines ENG-1 and ENG-2. Because these engines are intended only to operate in the event of an emergency to suppress a fire should electricity not be available, their potential emissions are calculated assuming 500 hours of annual operation. The boilers' (BLR-1 and BLR-2) potential PM emissions were calculated assuming emission rates equal to the applicable FARR PM emission limit for wood-fired boiler stacks of 0.2 gr/dscf at 7% O_2. This is equivalent to about 0.4 lb/MMBtu. The permit requires the facility to vent boilers' exhausts to their respective multiclones at all times to achieve compliance with the PM limit. The boilers' potential sulfur dioxide emissions are based on the applicable FARR combustion source stack SO_2 emission limit of 500 ppm. Although boilers' HAP PTE was estimated by employing AP-42 emission factors, individual and total HAP emissions have been limited facility-wide to less than major source threshold levels at the request of BNFP so as to avoid MACT standards that apply to major sources. The boilers' potential greenhouse gas emissions were estimated

employing emission factors appearing in the Mandatory Greenhouse Gas Reporting Rule (40 CFR 98) pursuant to March 2011 EPA guidance document entitled, "PSD and Title V Permitting Guidance for Greenhouse Gases." For a derivation of nearly all the emission factors employed to construct the boilers' PTE inventory, see sections of Appendix A entitled, "EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013" and "EPA Region 10 Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013."

Emission factors for the boilers are based on heat input (fuel) to the boilers. The permit requires BNFP to track steam production so as to calculate boiler heat input (firing rate) for the purpose of the emission inventory. The conversion factor applied to convert steam production to heat input must be based on the latest site specific boiler testing/sampling data. Appendix A to the permit explains the procedures for developing a boiler input-to-output ratio.

The kilns' VOC PTE was estimated by employing worst-case emission factors derived from lab-scale testing conducted largely by Professor Mike Milota at Oregon State University. Although the kilns are each subject to the applicable FARR process source stack PM emission limit of 0.1 gr/dscf, EPA did not consider the limit in determined the kilns' PM PTE because BNFP did not provide each kiln's physical capacity to vent to the atmosphere. Neither did EPA consider the applicable FARR visible emissions limit of 20% opacity because EPA could not quantify a correlation between opacity and PM emissions for the kiln exhaust vents. To estimate PM PTE, EPA employed an uncontrolled emission factor published by the Oregon Department of Environmental Quality. Although the kilns' HAP PTE was estimated by employing worst-case emission factors derived from lab-scale testing conducted largely by Professor Mike Milota at Oregon State University, individual and total HAP emissions have been limited facility-wide to less than major source threshold levels at the request of BNFP.

EPA relied largely upon AP-42, ODEQ guidance, an Oregon State University draft technical report, 1977 and 1978 EPA technical documents along with engineering judgment to estimate PM, PM_{10} and $PM_{2.5}$ potential emissions resulting from traditional sawmill activities like log debarking, sawing, chipping, hogging, mechanical and pneumatic conveyance of wood residuals and loading and unloading wood residuals. EPA did not consider the FARR visible emissions limit of 20% opacity that applies to all these activities because EPA could not quantify a correlation between opacity and PM emissions. Neither did EPA consider the FARR rule for limiting fugitive PM emissions largely because the permit we are issuing does not contain sufficient testing, monitoring, recordkeeping and reporting to support the use of controlled emission factors.

BNFP is expected to use the emission factors and calculation methods presented in Appendix A unless BNFP demonstrates that a more appropriate emission factor or calculation method should be used (e.g., results of more recent source testing or sampling, revised emission factors published in AP-42, etc.). It is important to emphasize that to the extent BNFP relies on any type of emission control technique to estimate emissions used to determine annual fees, or the applicability of a regulatory program, use of the technique must be fully documented and verifiable.

4. Regulatory Analysis and Permit Content

EPA is required by 40 CFR Part 71 to include in this Title V permit all emission limitations and standards that apply to the facility, including operational, monitoring, testing, recordkeeping and reporting requirements necessary to assure compliance. This section explains which air quality regulations apply to this facility and how those requirements are addressed in the permit.

Located within Indian Country, the BNFP sawmill is subject to federal air quality regulations, but is not subject to state air quality regulations. EPA does not consider any permits issued by Idaho to the BNFP facility to be applicable requirements. The facility could be subject to tribal air quality regulations;

however, the Tribe has not gone through the process of obtaining authorization to be treated in the same manner as states under 40 CFR §§ 49.6 and 49.7 (Tribal Authority Rule) and obtaining approval of air quality regulations as a "Tribal Implementation Plan." Therefore, Tribal air quality regulations, if any, are not federally enforceable and do not meet the definition of "applicable requirement" under 40 CFR Part 71. As such, there are no Tribal air quality regulations in the BNFP Title V permit.

EPA relied on information provided in BNFP's Title V permit application and on supplementary information provided by BNFP to determine the requirements that are applicable to the sawmill. Future modifications to the mill could result in additional requirements.

4.1 Federal Air Quality Requirements

Title V Operating Permit Program. Title V of the Clean Air Act and the implementing regulation found in 40 CFR part 71 require major sources (as well as a selection of non-major sources) of air pollution to obtain operating permits and form the legal bases for this permit. A source is major if it has the potential to emit 100 tons per year or more of any air pollutant subject to regulation, 25 tons per year or more of hazardous air pollutants (totaled) or 10 tons per year or more of any single hazardous air pollutant (see 40 CFR 71.2). BNFP's sawmill is a major source subject to Title V because it has the potential to emit more than 100 tons per year of CO, NO_X, PM_{10}, $PM_{2.5}$, SO_2 and VOC not counting fugitive emissions (see Table 1 and Appendix A). While PM emissions also exceed 100 tons per year, EPA does not consider PM a regulated pollutant for Title V applicability purposes. Greenhouse gas potential emissions do not exceed the 100,000 ton-per-year CO_2 equivalent threshold to qualify as a pollutant subject to regulation.

The Title V operating permit serves as a comprehensive compilation of the air quality requirements that are applicable to a source. The permit also must assure compliance, so source-specific testing, monitoring, recordkeeping and reporting have been added where EPA believes it is necessary, as explained in Section 4.3 (Permit Conditions) of this Statement of Basis below.

Compliance Assurance Monitoring (CAM). CAM applies at time of initial Title V permit issuance for emission units that (a) are subject to an emission limit, (b) employ a control device to comply with the limit, and (c) have post-control PTE equal to or greater than the major source threshold defined in Title V (generally, 100 tons per year). See 40 CFR Part 64. Each of the boilers at BNFP (a) is subject to a PM emission limit, (b) employs a multiclone to comply with the limit, but (c) does not have post-control PTE equal to or greater than 100 tpy.[1] Each boiler, however, does have pre-control PTE equal to or greater than 100 tpy.[2] CAM applies at the time of Title V permit renewal for emission units like the BNFP boilers that satisfy criteria (a) and (b) above and that have pre-control PTE equal to or greater than the major source threshold defined in Title V. The boilers must be in compliance with CAM at permit renewal and may also be required to submit a CAM plan if a significant change is made to the unit prior to renewal. The multiclones that control particulate matter emissions from the boilers are the only control devices at the sawmill.

Prevention of Significant Deterioration (PSD). Under the PSD pre-construction permitting program found in Part C of the Clean Air Act and 40 CFR 52.21, no "major stationary source" or "major modification" to a major stationary source can begin actual construction without first obtaining a PSD permit. The PSD

[1] Each Boiler's Post-Control PTE Calculations. 57.2 tpy PM = (31.7 MMBtu/hr) X (0.412 lb PM/MMBtu) X (8760 hr/yr) X (ton/2000 lb), where 31.7 MMBtu/hr equals heat input capacity of each boiler and 0.412 lb PM/MMBtu is approximately equal to applicable FARR PM emission limit.

[2] Each Boiler's Pre-Control PTE Calculations. The calculation to estimate each boiler's PM potential emission not considering multiclone is as follows: (56 tons per year) X [1 / (1 - 0.6)] = 140 tons. The value "56 tons per year" is extracted from BNFP Part 71 permit renewal application and is based upon stack test results reflecting post-control emissions. The value "0.6" reflects an estimated 60 percent PM control efficiency for a multiclone. EPA carried out this calculation back in 2002 to determine each boiler's potential to emit in the absence of the FARR PM limit in support of issuance of initial Part 71 permit to TRT.

program has been changed over the years, but in general, a major stationary source for purposes of the PSD program is a source with a PTE of more than 250 tons per year of any PSD pollutant. A modification is major if it results in emission increases greater than defined significance levels. Historical reviews of potential PSD projects are difficult due to the lack of specific details about the sources, their emissions and the various applicability requirements in previous PSD programs.

Based on the information available today, EPA is not aware of any modifications that would have been subject to PSD. EPA is not aware of any other modifications to the facility and does not draw any conclusions regarding compliance with past permitting requirements for this facility. Therefore, no permit shield is implied or explicit for past new source review or PSD requirements.

New Source Performance Standards (NSPS). Four NSPS subparts may apply to each boiler (a steam generating unit): 40 CFR 60, Subparts D (Fossil-Fuel-Fired Steam Generators), Da (Electric Utility Steam Generating Units), Db (Industrial-Commercial-Institutional Steam Generating Units) and Dc (Small Industrial-Commercial-Institutional Steam Generating Units). Subparts D, Da and Db do not apply because the heat capacity of each boiler is 31.7 MMBtu/hr, comfortably below the applicability thresholds of 100 (NSPS Db) and 250 MMBtu/hr (NSPS D and Da). Subpart Dc does not apply because each boiler was constructed well before the June 9, 1989 cutoff. EPA has no record of either boiler being reconstructed or undergoing a modification such that Subpart Dc is now applicable.

National Emission Standards for Hazardous Air Pollutants (NESHAP). With a few exceptions, MACT standards promulgated under 40 CFR Part 63 apply to "major sources" of HAP. Section 112(a)(1) and 40 CFR 63.2 define a "major source" as a stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls in the aggregate, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP. There are at least two MACT standards that might be applicable to BNFP operations if major for HAP: Subparts DDDDD (Industrial, Commercial and Institutional Boilers and Process Heaters at Major Sources) and DDDD (Plywood and Composite Wood Products Manufacture – includes lumber kilns). The compliance dates for the two MACT standards are January 31, 2016 and October 1, 2007, respectively.

Potential HAP emissions (in the absence of enforceable PTE limits) from BNFP operations are approximately 54 tons per year. See emissions inventory in Appendix A. On September 27, 2007, EPA issued a non-Title V permit limiting HAP emissions to less than major source thresholds to the former owner of the facility TRT. That permit has recently been administratively amended to reflect new ownership of the mill. Requirements from that non-Title V permit have been incorporated into this Title V permit renewal, and EPA is creating additional testing, monitoring, recordkeeping and reporting requirements at this time to assure compliance. With enforceable limits on HAP emissions from BNFP in place, the facility is considered a minor (aka area) HAP source, thereby avoiding major source MACT standards that might otherwise apply.

EPA has recently finalized a MACT standard that applies to boilers at area HAP sources. The regulation is codified at 40 CFR 63, Subpart JJJJJJ - Industrial, Commercial, and Institutional Boilers for Area Sources, and each boiler at BNFP is an affected source (biomass boiler). BNFP is required to conduct an energy assessment and tune the boiler before March 21, 2014. Thereafter, BNFP is required to tune the boiler either every two or five years depending upon whether an oxygen trim system is being employed to control combustion in the boiler. BNFP intends to install and begin employing an oxygen trim system in each boiler beginning around October 1, 2013. If BNFP's plans are successful, the next boiler tune-up beyond the first will not be required until five years later.

Another MACT standard that applies to area HAP sources (as well as major HAP sources) is MACT Subpart ZZZZ - National Emission Standards for Reciprocating Internal Combustion Engines. Each of

BNFP's emergency engines is an affected source. Among other requirements, BNFP is required to either (a) operate and maintain each engine according to the manufacturer's emission-related operation and maintenance instructions or (b) develop and follow its own maintenance plan. MACT Subpart ZZZZ also specifies a schedule for changing the engine oil and conducting inspections of certain engine components, and replacing as necessary. BNFP must limit the number of hours it operates the engines in order for certain other requirements to not apply. Compliance is required no later than May 3, 2013.

Section 111(d) and Section 129 Regulations. There are no CAA, Section 111(d) or 129 regulations that apply to the type of emission units at BNFP. Biomass combustion in the boilers is not considered solid waste or municipal waste combustion or incineration.

Federal Air Rules for Reservations (FARR). On April 8, 2005, EPA promulgated a Federal Implementation Plan (FIP) for Reservations in Idaho, Oregon and Washington. This FIP is commonly referred to as the Federal Air Rules for Reservations (FARR). EPA published the FARR rules that generally apply to Indian Reservations in EPA Region 10 in 40 CFR 49.121 to 49.139. The FARR rules that specifically apply on the 1863 Nez Perce Reservation are codified at 40 CFR 49.10401 to 49.10411. Those FARR requirements that apply to the permittee and have been included in the permit are discussed in Section 4.3 of this document. Several requirements of the FARR that are in effect on the Nez Perce Reservation do not apply to BNFP's mill. Table 4-2 below lists the FARR requirements that do not apply to the permittee and explains why.

Table 4-2 – Inapplicable FARR Requirements

Citation	Description	Reason Inapplicable
49.127	Rules that apply to wood waste burners (wigwam burners)	No wigwam burners exist at BNFP
49.128	Rules that apply to wood veneer, plywood, particleboard and hardboard manufacturing	BNFP does not produce any of the products listed
49.129(d)(2)	Limits SO_2 from process source stacks	None of BNFP's processes emit SO_2
49.130(d)(1), (3-6) and (8)	Limits amount of sulfur in coal and gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.130(e)(2) and (4)	Specifies reference methods for determining sulfur content of coal and gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.130(f)(1)(ii)	Additional requirements that apply to gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.135	Restricts emissions determined to be detrimental to human health or welfare	Actual requirements will result from EPA's determination and subsequent permits or orders that address an issue

Acid Rain Program. Title IV of the CAA created a SO_2 and NO_X reduction program found in 40 CFR Part 72. The program applies to any facility that includes one or more "affected units" that produce power. Neither of BNFP's boilers are a "unit" as defined in 40 CFR 72.2 because neither combust fossil fuels.

Mandatory Greenhouse Gas Reporting Rule. This rule requires sources above certain emission thresholds to calculate, monitor, and report greenhouse gas emissions. According to the definition of "applicable requirement" in 40 CFR 71.2, neither 40 CFR part 98, nor CAA §307(d)(1)(V), the CAA authority under which 40 CFR part 98 was promulgated, are listed as applicable requirements for the purpose of Title V permitting. Although the rule is not an applicable requirement under 40 CFR part 71, the source is not relieved from the requirement to comply with the rule separately from compliance with their part 71

operating permit. It is the responsibility of each source to determine applicability to part 98 and to comply, if necessary.

4.2 Other Federal Requirements

EPA Trust Responsibility. As part of the EPA Region 10's direct federal implementation and oversight responsibilities, EPA Region 10 has a trust responsibility to each of the 271 federally recognized Indian tribes within the Pacific Northwest and Alaska. The trust responsibility stems from various legal authorities including the U.S. Constitution, Treaties, statutes, executive orders, historical relations with Indian tribes, and in this case the Nez Perce Treaty of 1863. In general terms, EPA is charged with considering the interest of tribes in planning and decision making processes. Each office within EPA is mandated to establish procedures for regular and meaningful consultation and collaboration with Indian tribal governments in the development of EPA decisions that have tribal implications. EPA Region 10's Office of Air, Waste and Toxics has contacted the Nez Perce Tribe to invite consultation on the BNFP Title V operating permit renewal application.

Endangered Species Act (ESA). Under this act, EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. It is EPA's conclusion that the issuance of this Title V permit will not affect a listed species or critical habitat because it does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. Therefore, no additional analysis and no additional requirements will be added to this permit for ESA reasons. EPA's no-effect determination concludes EPA's obligations under Section 7 of the ESA. For more information about EPA's obligations, see the Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act, published by the FWS and NMFS (March 1998, Figure 1).

National Environmental Policy Act (NEPA). Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the Clean Air Act shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. This permit is an action taken under regulations implementing the Clean Air Act and is therefore exempt from NEPA.

National Historic Preservation Act (NHPA). As noted earlier, the issuance of this Title V permit does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. No changes to the facility are expected as a result of this permit action. Consequently, no adverse effects are expected, and further review under NHPA is not indicated.

Environmental Justice (EJ) Policy - Under Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed on February 11, 1994, EPA is directed, to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. This permit action does not allow new or additional emissions and therefore impacts. As a result, there is no information available that indicates that there are disproportionately high and adverse impacts to a minority or low-income population.

4.3 Permit Conditions

This Title V operating permit compiles all of the applicable requirements that apply to the permittee. Additional monitoring, recordkeeping and reporting requirements have been created where needed so the permit assures compliance with all of the applicable requirements. Each permit condition in the permit is explained below. The permit is organized into the following eleven sections:

Permit Section 1: Source Information and Emission Units
Permit Section 2: Standard Terms and Conditions
Permit Section 3: General Requirements
Permit Section 4: Facility-Specific Requirements
Permit Section 5: Unit-Specific Requirements – BLR-1 (Hog Fuel-Fired Boiler No. 1)
Permit Section 6: Unit-Specific Requirements – BLR-2 (Hog Fuel-Fired Boiler No. 2)
Permit Section 7: Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)
Permit Section 8: Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 2)
Permit Section 9: Unit-Specific Requirements – KLN (Lumber Drying Kilns)
Permit Section 10: Unit-Specific Requirements – CYC (Wood Residual Cyclones)
Permit Section 11: Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

Permit Section 1 – Source Information and Emission Units

This permit section contains a brief description of the facility and a list of emission units. A more detailed description of the facility can be found in Section 2 of this Statement of Basis.

Permit Section 2 – Standard Terms and Conditions

This permit section includes generic compliance terms that are required in all Title V permits, but are not subject to the annual compliance certification requirements found in Permit Condition 3.49.

Permit Condition 2.1 explains that the language in the underlying regulations takes precedence over paraphrased language in the permit. Some applicable requirements are paraphrased in the permit with the intention of clarifying the requirement, but with no intention of changing the underlying meaning of the requirement. Where there is a difference between the language in a permit and an underlying regulation, the wording in the underlying regulation should be used to interpret and implement the requirement. This permit condition also notes some underlying authorities that may have been used to create additional requirements in this permit.

Permit Conditions 2.4 and 2.5 address a general permit shield which states that compliance with the permit is deemed compliance with the applicable requirements listed in the permit. The permittee is responsible for complying with any applicable requirements that exist but have not been included in the permit. The permittee did not request a specific permit shield for any specific requirement excluded from this permit and none is being granted.

Permit Conditions 2.12 through 2.14 address the expiration of the permit and the ramifications if the permittee does or does not renew their permit. It is important to note that, if the permittee does not submit a complete and timely renewal application, the permittee's right to operate is terminated. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit. Specific requirements regarding permit renewal are in Permit Conditions 3.51 and 3.52.

Permit Conditions 2.15 through 2.17 address options for making certain physical and operational changes in the facility that do not require a permit modification. If the permittee uses any of these options, they must comply with the applicable recordkeeping requirement found in Permit Condition 3.32 and reporting requirements found in Permit Conditions 3.38 and 3.39.

Permit Section 3 – General Requirements

This permit section includes conditions that are required in all Title V permits. In some cases, facility-specific testing, monitoring, recordkeeping and reporting requirements for these permit conditions might be found in Section 4 of the permit because those requirements can vary from permit to permit. Unless otherwise specified, emission units are subject to the general requirements in Section 3 of the permit as

well as the facility-specific and unit-specific requirements in Sections 4 and 5.

Permit Conditions 3.1 and 3.2 are general compliance schedule requirements. Because EPA is not aware of any non-compliance at the time of permit issuance, there is no issue-specific compliance schedule in Section 4 of the permit. The area source boiler MACT (NESHAP Subpart JJJJJJ) is the only applicable regulation for which the initial compliance date has not yet passed. The initial notification must be submitted no later than January 20, 2014, and BNFP must comply with the applicable work practice and emission reduction measures no later than March 21, 2014. Section 4 of the permit contains all applicable NESHAP Subpart JJJJJJ requirements.

Permit Condition 3.3 requires the permittee to allow EPA-authorized representatives access to the facility and required records.

Permit Conditions 3.4 through 3.8 restrict open burning wherever the FARR applies including at industrial facilities. If the permittee performs any open burning, recordkeeping requirements specific to open burning found in Permit Condition 3.33 will apply.

Permit Condition 3.9 through 3.11 limit visible emissions, require the use of either Reference Method 9 or a continuous opacity monitoring system (COMS) for determining compliance with the limit, and provide exception to the rule. Reference Method 9 includes specific guidance for reading opacity when there is a wet plume (both attached and detached and directs the observer to take readings excluding the portion of the plume that includes uncombined water (droplets). In the vast majority of cases, the likelihood of exceeding the 20% opacity limit due to the presence of uncombined water is very low because an experienced observer would know that he/she should not read that portion of the plume. However, there are meteorological conditions that can prevent uncombined water (droplets) from completely evaporating in a plume (e.g., 100% relative humidity and a saturated plume). The provision in Permit Condition 3.11 addresses that situation. Currently, this facility does not use (and is not required to use) a COMS to monitor visible emissions.

Because testing, monitoring, recordkeeping and reporting for assuring compliance with the visible emission limit can change based on the emission unit in question, the testing, monitoring, recordkeeping and reporting requirements are contained in the facility-specific requirements in Section 4 of the permit, or in each emission unit-specific section, as appropriate. The general monitoring, recordkeeping and reporting for this requirement is the periodic visible emissions survey (plant walkthrough) specified in Permit Conditions 4.6 through 4.13.

Permit Conditions 3.12 through 3.17 restrict fugitive particulate matter emissions and require a plan be created to assure the use of reasonable precautions to prevent fugitive emissions. The plan is based on a survey of the facility and is updated annually. This annual survey can be accomplished simultaneously with the periodic visible emission survey requirement in Permit Conditions 4.6 through 4.13, as long as both requirements are fully complied with.

Permit Condition 3.18 addresses requirements in the Chemical Accident Prevention Program found in 40 CFR Part 68. This program requires sources that use or store regulated substances above a certain threshold to develop plans to prevent accidental releases. Based on information in their application, there are no regulated substances above the threshold quantities in this rule at BNFP; therefore, the facility is not currently subject to the requirement to develop and submit a risk management plan. However, this requirement is included in the permit as an applicable requirement because BNFP has an ongoing responsibility to submit a risk management plan if a substance is listed that BNFP has in quantities over the threshold amount, or if BNFP ever increases the amount of any regulated substance above the threshold quantity. Including this term in the permit minimizes the need to reopen the permit if BNFP becomes subject to the requirement to submit a risk management plan.

Permit Conditions 3.19 and 3.20 address the Stratospheric Ozone and Climate Protection Program found in 40 CFR Part 82. This program requires sources that handle regulated materials to meet certain procedural and certification requirements. There may be equipment at the facility that uses or contains chlorofluorocarbons (CFCs) or other materials regulated under this program. All air conditioning and refrigeration units must be maintained by certified individuals if they contain regulated materials.

Permit Condition 3.21 addresses asbestos demolition or renovation activity found in 40 CFR Part 61, Subpart M (NESHAP). This program requires sources that handle asbestos-containing materials to follow specific procedures. If BNFP conducts any demolition or renovation activity at their facility, they must assure that the project is in compliance with the federal rules governing asbestos, including the requirement to conduct an inspection for the presence of asbestos. This requirement is in the permit to address any demolition or renovation activity that may occur at the facility.

Permit Conditions 3.22 through 3.30 specify the procedures that must be followed whenever the permit requires emissions testing or sampling in an emission unit-specific section of the permit. If there is a conflict between these permit conditions and an emission unit-specific permit condition, the specific permit condition should be followed. Concentration-based emission limits required to be corrected to a specific oxygen concentration in the flue gas often do not contain a protocol to convert measured concentrations to specified oxygen levels. Permit Condition 3.28 provides a protocol for such a conversion.

Permit Condition 3.31 describes general recordkeeping that has been added to the permit using Part 71 authority to assure that there is good documentation for any monitoring that the permittee performs.

Permit Condition 3.32 describes recordkeeping requirements that apply only if the permittee makes off-permit changes. Certain off-permit changes are allowed in Permit Condition 2.15.

Permit Condition 3.33 describe recordkeeping requirements that apply if the permittee performs open burning. The open burning recordkeeping was added using Part 71 authority. Open burning is restricted in Permit Conditions 3.4 through 3.8.

Permit Condition 3.34 includes recordkeeping that applies to fee records including the duration that the records must be maintained. The duration is consistent with that required by Title V (see Permit Condition 3.35).

Permit Condition 3.35 sets the duration that records must be maintained. Both Title V and FARR records must be maintained for 5 years. These two requirements have been combined (streamlined) into one permit condition. If there is ever a conflict between these requirements and a more restrictive emission unit-specific permit condition, the specific permit condition should be followed.

Permit Conditions 3.36 and 3.37 require the permittee to submit or correct submitted information when requested by EPA and as needed. The permittee has an ongoing obligation to assure that all data in its Title V application is correct and to notify EPA of any errors or omissions.

Permit Condition 3.38 and 3.39 describe reporting requirements that apply only if the permittee makes off-permit changes (Permit Condition 3.38) or section 502(b)(10) changes (Permit Condition 3.39). Certain off-permit changes are allowed in Permit Condition 2.15. Section 502(b)(10) changes are allowed in Permit Conditions 2.16.

Permit Condition 3.40 includes the address for submittals to EPA Region 10. All reports and notices, except for fee payments (see Permit Condition 3.43), should be sent to this address. Copies of each document sent to EPA should be sent to the Tribal Air Quality Coordinator.

Permit Conditions 3.41 through 3.45 require submittal of an annual emission inventory (of actual emissions) and payment of fees for Part 71 purposes. These requirements refer to Permit Condition 4.1 for the actual due date by which fees and emissions must be submitted each year. The per-ton fee rate varies

each year; the permittee should contact EPA to obtain the current rate. The submittal of the emission inventory is timed to coincide with the payment of fees because annual Title V fees are based on actual emissions generated during the previous calendar year. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, the emission estimation techniques listed in this statement of basis should be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory required in Permit Condition 3.46 to be reported at the same time can be combined with the Part 71 emission inventory as long as it is clear which emissions inventory is for which purpose, because the pollutant lists for each emission inventory are slightly different.

At this time, greenhouse gases (GHG) are neither regulated air pollutants nor regulated air pollutant (for fee calculation) as those terms are defined at 40 CFR § 71.2. BNFP is not required to pay Title V fees on its GHG emissions. EPA, however, has formally proposed to regulate GHG emitted from electric utility generating units through an NSPS. In the event EPA promulgates an NSPS regulating GHG, GHG may become a regulated pollutant and regulated pollutant (for fee calculation). Right now, it is not.

Permit Condition 3.46 requires submittal of an annual emission inventory (of actual emissions) for FARR registration purposes. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, the emission estimation techniques listed in this statement of basis should be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory is required to be submitted at the same time as the Part 71 fees and emission inventory required in Permit Conditions 3.41 through 3.45. The Part 71 and FARR emission inventories can be combined as long as it is clear which emissions inventory is for which purpose, because the pollutant lists for each emission inventory are slightly different.

Permit Conditions 3.47 and 3.48 require semi-annual monitoring reports and prompt deviation reports. Determinations of deviations, continuous or intermittent compliance status, or violations of the permit are not limited to the testing or monitoring methods required by the underlying regulations or this permit. Failure to meet any permit term or permit condition, including emission standards, is considered a deviation. Other credible evidence (including any evidence admissible under the federal rules of evidence) must be considered by the source and EPA in such determinations. The timing for reporting deviations, as well as other data collected, depends on the circumstances, as explained in these permit conditions. The deadline for the semiannual monitoring report was changed from the 30th day to the 45th day following the end of the reporting period in the permit renewal in an effort by EPA to make all of the Title V permits consistent.

Permit Condition 3.49 requires an annual compliance certification. The permittee must certify compliance with the permit conditions in sections 3 through 9. The permittee does not need to annually certify compliance with the provisions in permit sections 1 or 2. Consistent with Permit Condition 2.6, however, if a permittee is aware of any information that indicates noncompliance, that information must be included in the annual compliance certification. In a year when the permit is renewed or revised, the permittee must address each permit for the time that permit was in effect. The deadline for the annual compliance certification has changed from January 30 to February 28 in the permit renewal in an effort by

EPA to make all of the Title V permits consistent. Forms for the annual compliance certifications may be obtained on the internet at:

http://www.epa.gov/air/oaqps/permits/p71forms.html.

Permit Condition 3.50 requires the permittee to certify the truth, accuracy and completeness of all documents (notices, reports, data, and etc) submitted to EPA. The certification must be signed by a responsible official as defined in 40 CFR 71.2. BNFP's responsible officials are listed on the first page of the permit. BNFP should request an administrative amendment of the permit if the responsible official for the facility changes.

Permit Conditions 3.51 through 3.52 require the permittee to submit an application for renewal and describe some of the information that must be included in the application. As explained in Permit Conditions 2.12 through 2.14, failure to submit a complete application on time terminates the permittee's right to operate. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit.

Permit Section 4 – Facility-Specific Requirements

This permit section includes applicable requirements and related testing, monitoring, recordkeeping and reporting that apply either to multiple emission units or on a facility-specific basis. Unless otherwise specified, emission units are subject to the facility-specific requirements in Section 4 of the permit as well as the general and unit-specific requirements in Sections 3 and 5 of the permit.

Permit Conditions 4.1 lists the due date for the annual fees and emission reports required in Permit Conditions 3.41 through 3.46. Note that the due date continues to be November 15.

Permit Conditions 4.2 and 4.4 limit the sulfur content of the solid fuel burned in any combustion device and specifies the method for determining compliance. The facility burns only wood waste in the boilers. The underlying rule allows the permittee to simply keep records showing that only wood waste is burned because the naturally occurring sulfur content of wood waste is normally much less than the limit of 2% by weight.

Permit Conditions 4.3 and 4.5 limit the sulfur content of the No. 2 distillate fuel oil burned in any combustion device and require recordkeeping or sampling to document compliance.

Permit Conditions 4.6 through 4.13 require a quarterly survey (also called a plant walkthrough) for visible and fugitive emissions as well as specific follow-up steps (investigation, corrective action, RM9 observation and additional recordkeeping and reporting) if visible or fugitive emissions are observed. If observed visible or fugitive emissions can not be eliminated within 24 hours, a tiered sequence of RM9 opacity observations must be performed. Observations of visible or fugitive emissions during a survey are not considered deviations; however, any resulting RM9 readings above 20% opacity are considered permit deviations pursuant to Permit Conditions 3.47 and 3.48. The annual fugitive particulate matter survey required in Permit Condition 3.13 can be accomplished simultaneously with a quarterly survey required in this permit condition as long as both requirements are fully complied with. This permit condition serves as the periodic monitoring for several fugitive and particulate matter limits found in the permit.

Permit Condition 4.14 requires permits for open burning, agricultural burning and forestry/silvicultural burning. These requirements are in effect on the Nez Perce Reservation only.

Permit Conditions 4.15 and 4.16 limit HAP emissions to below the major source thresholds of 10 tpy for any individual HAP and 25 tpy for all HAP combined. These permit conditions originated in 2007 non-Title V permit No. R10NT500900 to TRT. The facility will be treated as a minor source for NESHAP/MACT reasons as long as it complies with the limits. Because the limits are facility-wide,

compliance with the limits will be determined based on actual emission estimates using actual production data and current emission factors. The lumber kiln emission factors currently recommended were developed primarily through testing performed in a laboratory because lumber kilns are very difficult and expensive to test in the field. If there ever is a question regarding the representativeness of the kiln emission factors, it may be possible to test lumber from this specific mill in a "lab scale" kiln. In Permit Conditions 4.15.1 and 4.16.1, the second sentence of the underlying non-Title V requirement was removed because chloride sampling now exists.

Permit Conditions 4.17 through 4.19 describe the recordkeeping and calculations required to confirm compliance with the HAP limits. Recommended emission factors for the boilers are presented in Appendix A as lb/MMBtu. BNFP plans to track steam production. BNFP will need to convert the steam output (lb/hr) to heat input (mmBtu/hr) using a factor of 1.7 MMBtu/M lb steam until actual values are measured (see the required sampling and analysis in Permit Condition 5.5.3) – Permit Condition 4.18 was added for that reason.

Permit Condition 4.20 requires chloride data to be kept for 5 years, consistent with the Non-Title V permit and the Part 71 data maintenance requirements.

Permit Condition 4.21 requires the permittee to report actual HAP emissions with their annual FARR emission report. This allows all of the emission reporting to be done simultaneously for the facility.

Permit Conditions 4.22 – 4.25. EPA has placed area source boiler MACT (NESHAP Subpart JJJJJJ) requirements in the section of the permit reserved for facility-specific requirements, and not emission unit-specific requirements. This is because the area source boiler MACT requirements extend beyond just the boilers. They extend, for instance, to energy use systems like the lumber drying kilns.

BNFP combusts in boilers only material satisfying the definition of biomass as that term is defined at 40 CFR § 63.11237. Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.,* almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste as that term is defined at 40 CFR § 241.2. Because the boilers combust only biomass, it is in the NESHAP Subpart JJJJJJ biomass subcategory of boilers pursuant to 40 CFR § 63.11200(b). It is with this in mind that EPA Region 10 created permit terms reflecting NESHAP Subpart JJJJJJ requirements.

Permit Condition 4.22. Existing biomass boilers are subject to periodic tune-up management practices for PM (surrogate for urban metal HAP) and CO (surrogate for urban organic HAP) based upon finding that periodic tune-ups represent generally available control technology (GACT), (78 FR 7489, February 1, 2013). BNFP plans to install and employ on each of its boilers an oxygen trim system that consists of a flue gas oxygen monitor that automatically provides a feedback signal to the combustion air controller. An oxygen trim system, according to 40 CFR §63.11237, means a system of monitors that is used to maintain excess air at the desired level in a combustion device. Whereas boilers not employing an oxygen trim system are required to undergo a tune-up once every 2 years, the tune-up frequency is relaxed to once every 5 years for boilers employing said system. The NESHAP Subpart JJJJJJ tune-up requirements at 40 CFR § 63.11223(b)(1) and (2) related to inspection of burner and flame pattern do not apply to the BNFP boilers because the boilers do not employ any burners. Burners are typically employed to combust gas and liquid fuels along with pulverized coal. In contrast, BNFP employs a fuel chute to introduce biomass into the boilers.

Permit Conditions 4.23 and 4.24. Existing biomass boilers are subject to a beyond-the-floor control technology or GACT requirement to conduct an energy assessment, (76 FR 15573, March 21, 2011). For boilers like the BNFP boilers with an annual heat input capacity less than 0.3 trillion Btu, the duration of the energy assessment will be up to 8 on-site technical labor hours pursuant to the definition of energy assessment at 40 CFR § 63.11237.[3] This length of time may be extended at the discretion of the source. EPA has not established a minimum value for the amount of time necessary to conduct on-site technical labor.

The requirement to evaluate systems to identify energy savings opportunities extends to the boiler system and any energy use system (under the control of the source) that accounts for at least 50 percent of the boiler's energy (e.g., steam, hot water, or electricity). See definition of energy assessment at 40 CFR § 63.11237. The energy use systems serving as the basis for the percent of affected boiler energy production may be segmented by production area or energy use area as most logical and applicable to the source. The term boiler system, as defined in 40 CFR § 63.11237 means the boiler and associated components, such as feedwater systems, combustion air systems, fuel systems, blowdown systems, combustion control systems, steam systems, and condensate return systems, directly connected to and serving the energy use systems. Similarly, the term energy use system includes any of the following systems located at the Clean Air Action (CAA) Section 112 stationary source that use energy provided by the boiler: (a) process heating; compressed air systems; machine drive (motor, pumps, fans); process cooling; facility heating, ventilation, and air conditioning systems; hot water systems; building envelop; and lighting; or (b) other systems that use steam, hot water, process heat, or electricity, provided by the boiler. Energy use systems are only those systems using energy clearly produced by the boiler either (a) directly as steam or process heat, or (b) through an associated steam turbine generator in the form of electricity. The steam produced by the BNFP boilers is delivered to its lumber drying kilns.

A source operating under an energy management program compatible with ISO 50001 is not required to conduct an energy assessment. An energy management program, as defined at 40 CFR § 63.11237, means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, and energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Permit Condition 4.25. The following sentence appears in Condition 4.25, "The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved." Because the BNFP boilers are not subject to an emission limitation, there is no "level" for emissions to be reduced by. Achieving compliance with general duty to minimize emissions goes beyond complying with tune-up and energy assessment requirements of Conditions 4.22 through 4.24. Compliance with this requirement will be determined, in part, based upon inspection of records created and maintained by the permittee to comply with 40 CFR §§ 63.10(b)(2)(iii), 63.11223(b)(6) and 63.11225(c)(4) and (5).

Permit Conditions 4.26 – 4.29. BNFP is required to conduct monitoring and maintain records to document compliance with GACT work practice standards and emission reduction measures. BNFP is also required to document that when it combusts biomass that is considered a non-hazardous secondary material as that term is defined at 40 CFR § 241.2, that it is combusting a fuel and not a solid waste.[4]

[3] Each boiler's annual heat input capacity of 0.28 TBtu = (31.7 MMBtu/hr) X (8,760 hr/yr) X (1 TBtu/1x10^6 MMBtu)

[4] When EPA refers to secondary materials in this context, EPA means any material that is not the primary product of a manufacturing or commercial process, and can include post-consumer material, off-specification commercial

Permit Condition 4.26. The requirement to measure and record boiler exhaust stack CO concentration is satisfied if measurements are taken before and after the performance tune-up. It is not necessary to take measurements between interim tasks in the tune-up process.

Permit Condition 4.27. Should BNFP choose to operate in accordance with an energy management program so as to comply with Condition 4.23.2, Condition 4.27 requires BNFP to, among other things; maintain records that document BNFP's energy management program and how it is compatible with ISO 50001.

Permit Condition 4.29. The following background about the different biomass streams that could potentially be combusted in the boilers provides some context for Condition 4.29. EPA understands that BNFP only combusts in its boilers biomass generated on-site. This clean cellulosic biomass is considered a traditional fuel as those terms are defined at 40 CFR § 241.2. EPA does not know to what extent, if at all, BNFP occasionally combusts in the boilers bark that has been recovered from any unpaved log yard floor and processed back into a fuel. This material is considered a non-hazardous secondary material. It is possible that BNFP may combust biomass that is generated off-site and received at the facility via truck delivery. Whether this off-site material is considered clean cellulosic material or non-hazardous secondary material would need to be determined on a load-by-load basis.

Permit Conditions 4.29.1 and 4.29.2. These permit conditions refer to legitimacy criteria that must be satisfied in order to consider non-hazardous secondary material to be a fuel. The criteria presented at 40 CFR § 241.3(d)(1) are as follows:

> (d) Legitimacy criteria for non-hazardous secondary materials.
>
> (1) Legitimacy criteria for non-hazardous secondary materials used as a fuel in combustion units include the following:
>
> (i) The non-hazardous secondary material must be managed as a valuable commodity based on the following factors:
>
> (A) The storage of the non-hazardous secondary material prior to use must not exceed reasonable time frames;
>
> (B) Where there is an analogous fuel, the non-hazardous secondary material must be managed in a manner consistent with the analogous fuel or otherwise be adequately contained to prevent releases to the environment;
>
> (C) If there is no analogous fuel, the non-hazardous secondary material must be adequately contained so as to prevent releases to the environment;
>
> (ii) The non-hazardous secondary material must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy.
>
> (iii) The non-hazardous secondary material must contain contaminants at levels comparable in concentration to or lower than those in traditional fuels which the combustion unit is designed to burn. Such comparison is to be based on a direct comparison of the contaminant levels in the non-hazardous secondary material to the traditional fuel itself.

Permit Condition 4.29.2. This permit condition refers to the term processing, and that term has the meaning given to it by EPA at 40 CFR § 241.2. Processing means any operations that transform discarded non-hazardous secondary material into a non-waste fuel or non-waste ingredient product. Processing

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chemical products or manufacturing chemical intermediates, post-industrial material, and scrap. A non-hazardous secondary material is a secondary material that, when discarded, would not be identified as a hazardous waste under 40 CFR § 261.

includes, but is not limited to, operations necessary to: Remove or destroy contaminants; significantly improve the fuel characteristics of the material, *e.g.,* sizing or drying the material in combination with other operations; chemically improve the as-fired energy content; or improve the ingredient characteristics. Minimal operations that result only in modifying the size of the material by shredding do not constitute processing for purposes of this definition.

Permit Condition 4.29.3. This permit condition refers to a petition process whereby the Regional Administrator may grant a non-waste determination that a non-hazardous secondary material that is used as a fuel, which is not managed within the control of the generator, is not discarded and is not a solid waste when combusted pursuant to 40 CFR § 241.3(c). The criteria and process for making such non-waste determinations includes the following:

(1) Submittal of an application to the Regional Administrator for the EPA Region where the facility combusting the non-hazardous secondary material is located for a determination that the non-hazardous secondary material, even though it has been transferred to a third party, has not been discarded and is indistinguishable in all relevant aspects from a product fuel. The determination will be based on whether the non-hazardous secondary material that has been discarded, is a legitimate fuel as specified in 40 CFR § 241.3(d)(1) and on the following criteria:

   (i) Whether market participants treat the non-hazardous secondary material as a product rather than as a solid waste;

   (ii) Whether the chemical and physical identity of the non-hazardous secondary material is comparable to commercial fuels;

   (iii) Whether the non-hazardous secondary material will be used in a reasonable time frame given the state of the market;

   (iv) Whether the constituents in the non-hazardous secondary material are released to the air, water or land from the point of generation to the point just prior to combustion of the secondary material at levels comparable to what would otherwise be released from traditional fuels; and

   (v) Other relevant factors.

(2) The Regional Administrator will evaluate the application pursuant to the following procedures:

   (i) The applicant must submit an application for the non-waste determination addressing the legitimacy criteria in 40 CFR § 241.3(d)(1) and the relevant criteria in 40 CFR § 241.3(c)(1)(i) through (v). In addition, the applicant must also show that the non-hazardous secondary material has not been discarded in the first instance.

   (ii) The Regional Administrator will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be published in a newspaper advertisement or radio broadcast in the locality where the facility combusting the non-hazardous secondary material is located, and be made available on EPA's Web site.

   (iii) The Regional Administrator will accept public comments on the tentative decision for at least 30 days, and may also hold a public hearing upon request or at his discretion. The Regional Administrator will issue a final decision after receipt of comments and after the hearing (if any).

   (iv) If a change occurs that affects how a non-hazardous secondary material meets the relevant criteria contained in this paragraph after a formal non-waste determination has been granted, the applicant must re-apply to the Regional Administrator for a formal determination that the

non-hazardous secondary material continues to meet the relevant criteria and, thus is not a solid waste.

Permit Condition 4.29.4. BNFP does not combust any of the materials that EPA has listed as non-waste under 40 CFR § 241.4(a). The current list of EPA-designated non-waste materials are as follows:

(1) Scrap tires that are not discarded and are managed under the oversight of established tire collection programs, including tires removed from vehicles and off-specification tires.

(2) Resinated wood.

(3) Coal refuse that has been recovered from legacy piles and processed in the same manner as currently-generated coal refuse.

(4) Dewatered pulp and paper sludges that are not discarded and are generated and burned on-site by pulp and paper mills that burn a significant portion of such materials where such dewatered residuals are managed in a manner that preserves the meaningful heating value of the materials.

Permit Condition 4.30. The underlying NESHAP Subpart JJJJJJ requirement at 40 CFR §63.11223(b)(6) quires the permittee to track certain tune-up related information and to submit it to the EPA if requested by the Administrator. EPA is taking this opportunity to require the permittee to submit certain tune-up related information as part of notification of compliance status and annual compliance certification.

The requirement in 40 CFR § 63.11223(b)(6)(iii) to track the type and amount of fuel used over the 12 months prior to the tune-up would have appeared as an element of Permit Condition 4.30, but the requirement does not apply to the boilers because they combust only biomass. It is not physically capable of using any other type of fuel listed at 40 CFR § 63.11200.

Permit Condition 4.33. EPA is utilizing its discretion, as granted through 40 CFR § 63.11225(b), to require BNFP to submit a NESHAP Subpart JJJJJJ compliance certification report to EPA each year by March 15 for the previous year's operations. EPA is unable to require this report be submitted by February 28 as part of the annual compliance certification report required by Condition 3.49 because the underlying NESHAP Subpart JJJJJJ reporting provision specifies a submittal date no sooner than March 15.

Permit Conditions 4.36 and 4.37. The PSD regulation applicability test for modifications was changed in December 2002. The rule change resulted in a new applicable requirement for PSD major sources. Since BNFP is a PSD major source, this term is included in the operating permit. In summary, when the permittee considers a plant modification project to be exempt from PSD via the method specified in 40 CFR § 52.21(b)(41)(ii)(a-c) and there is a reasonable possibility that there will be a significant emissions increase resulting from the project, then the permittee must fulfill specified requirements related to documentation, monitoring, and notification. This term will be relevant to BNFP only when the permittee is contemplating making physical or operational changes to the facility. In those instances it is strongly recommended that the permittee contact EPA to discuss their plans and verify their assumptions.

Permit Section 5 – Unit-Specific Requirements – BLR-1 (Hog Fuel-Fired Boiler No. 1)

Permit Condition 5.1 limits the particulate matter (PM) emissions from the boiler to 0.2 gr/dscf at 7% O_2 and describes the emission testing method for determining compliance.

Permit Condition 5.2 limits the sulfur dioxide (SO_2) emissions from the boiler and describes the emission testing methods for determining compliance. As the boiler only uses wood waste as fuel, SO_2 emissions are expected to be well below the emission limit.

Permit Condition 5.3 requires the boiler exhaust to be vented to the multiclone at all times. While there is no testing to confirm it, it can be assumed that the multiclone is needed for the boiler to comply with the

particulate matter and visible emission limits. This requirement ensures the emission control device is used and will be considered when estimating PTE for the boiler.

Permit Condition 5.4 requires the boiler control device to be maintained. Consistent with the requirement to ensure boiler emissions are controlled at all times, this requires ensures the control device is operating correctly and hopefully that the boiler stays in compliance with the particulate matter and visible emission limits.

Permit Conditions 5.5 and 5.6 require measurement of particulate matter emissions. The boiler was last tested to determine PM emissions in 1993 while Weyerhaeuser was running the mill. Emissions rates approaching or exceeding the FARR PM limit were measured. BNFP indicates that it believes its emissions are much less now given the improved quality of hog fuel being combusted. The permit requires the permittee to test the boiler to determine PM emissions within 120 days of permit issuance. The schedule for additional testing after that depends on the results of that next test. During each test, visible emissions must be measured and all required periodic and compliance assurance monitoring required by the permit must be recorded. A new heat-input-to-steam-output ratio must be developed during each particulate matter test. The ratio is used to convert tracked steam production into heat input for calculating boiler emissions. Testing is required to be performed during winter months to hopefully capture worst-case emissions due to wetter fuel and higher steam demand. Because the permittee prefers to measure and track steam output rather than fuel input, during each emission test a ratio of heat input to steam output must be determined using procedures found in Appendix A to the permit. The ratio is then used to convert measured steam flows (mlb/hr) to heat input (mmBtu/hr) which can be applied to emission factors that are normally in terms of heat input (lb/mmBtu). The general emission testing requirements in Permit Conditions 3.22 through 3.30 apply to all emissions testing; except, periodic visible emission testing is only required to meet 3.27 (emission unit operation), 3.29 (records during tests) and 3.30 (test reports) of the general requirements as well as the recordkeeping required in Condition 5.5.3 (note that all particulate matter testing must follow all of Condition 5.5).

Permit condition 5.7 requires routine visible emission monitoring to satisfy compliance assurance monitoring for the visible emission limit and provides additional indication of compliance with the particulate matter limit. The frequency for each observation depends on the results of the previous observation.

Permit Condition 5.8 requires ongoing monitoring of boiler operations and multiclone pressure drop. Each of the parameters are required to be monitored (measured with a gauge indicator) continuously; however, the frequency of data recording varies. Because the permittee will base actual emissions on steam production, the permit requires continuous recording of the pounds of steam produced. Steam pressure, required to be recorded once per month, provides an indication of potential changes in boiler duty and allows an estimation of steam heat content. Boiler excess oxygen, required to be recorded once per hour, provides an indication of boiler performance with the concern that much lower oxygen levels may lead to incomplete combustion and much higher oxygen levels could cause the combustion chamber to be too cool. Pressure drop across the multiclone is generally related to control device performance (plugging or corrosion); but, is often only adequate for indicating significant changes in performance. The boiler oxygen and multiclone pressure drop readings can be useful for trouble-shooting performance problems and for tracking equipment condition trends. The permit includes a 90% data capture requirement for recordkeeping on a hourly or daily schedule – that is at least 90% percent of the data required to be measured and recorded each hour or day must be measured and recorded to comply with the permit. Data capture of less than 90% for steam production, boiler excess oxygen and multiclone pressure drop is a permit deviation. This provides relief for the more stringent monitoring/recording schedules during a given month; whereas, steam pressure must be recorded at least once each month to comply with the data capture requirement.

While BNFP is already measuring steam production and pressure, it does not currently have equipment in place to continuously measure boiler excess oxygen and the pressure drop across the multiclone. BNFP has up to 60 days after permit issuance to begin measuring these additional parameters.

Permit Condition 5.9 provides the procedure the permittee is required to follow in order to define multiclone pressure drop and opacity excursions. Levels will be based upon values observed during PM emissions testing. The closer PM emissions are to the FARR limit, the less observed values will be adjusted to account for compliant operational variability. The permittee is being given the opportunity to test at more than one load condition so as derive load-specific threshold values.

Permit Condition 5.10 requires the performance, operational and maintenance criteria from Part 64 that applies to the monitoring equipment required in Permit Condition 5.8. Excursions thresholds for multiclone pressure drop and visible emissions, specifically defined for BNFP's boiler and control equipment, will be based upon testing required by this permit. If testing shows a good margin of compliance with the particulate matter limits, excursion thresholds will be relaxed from test observations. Excursion thresholds may not be established for up to six months after permit issuance. Until the excursion thresholds have been established, an interim CAM threshold of 5% opacity will apply. While visiting the facility in June 2013, EPA permit writer observed negligible opacity in boiler stack exhaust.

Permit Condition 5.11 specifies what Part 64 requires the permittee to do when an excursion occurs.

Permit Condition 5.12 simply states EPA's option to require a quality improvement plan (QIP); this condition becomes a requirement only in the event EPA informs the permittee that a QIP is required.

Permit Condition 5.13 serves as a safeguard against incorrectly set excursion/exceedance thresholds by requiring the redefinition of the thresholds as needed.

Permit Condition 5.14 requires, consistent with Permit Condition 3.35, the maintenance of all records and supporting information.

Permit Condition 5.15 requires quarterly wood waste fuel sampling to determine the chloride content of the wood so a hydrogen chloride emission factor can be developed and used for reporting emissions. The hogged fuel sampling and chloride analytical procedures are specified in Appendix B to the permit. While the Non-Title V permit in which the sampling/analytical procedure was first required allows the permittee to request an alternative, that option has not been transferred to the Title V permit because it is EPA's policy that the methods required be specified in the permit. The permit must be revised to incorporate any alternative that is approved.

Permit Condition 5.16 requires reporting from Part 64 to be combined with the Part 71 semi-annual deviation reports required in Permit Conditions 3.47 and 3.38.

Permit Condition 5.17 requires fuel chloride analytical data to be included in the Part 71 annual compliance report required in 3.46.

Permit Condition 5.18 requires notification be given for establishment of CAM indicator levels at the same time PM testing is submitted.

Permit Section 6 – Unit-Specific Requirements – BLR-2 (Hog Fuel-Fired Boiler No. 2)

The requirements for boiler BLR-2 exactly mimic the requirements for BLR-1 exactly. See explanation of BLR-1 requirements immediately above.

Permit Section 7 – Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)

Permit Condition 7.1 limits the particulate matter (PM) emissions from the engine to 0.1 gr/dscf at 7% O_2 and describes the emission testing method for determining compliance. This is equivalent to

approximately 0.1974 lb/MMBtu. EPA's October 1996 AP-42 at Table 3.3-1 estimates an actual PM_{10} emission rate of 0.31 lb/MMBtu for diesel-fired industrial engines up to 600 hp. No unit-specific testing or monitoring is required given that BNFP only intends to operate the engine in an emergency and as needed to maintain readiness. If BNFP operates the engine for more than 100 hours per year in non-emergency situations, additional MACT ZZZZ requirements will apply. BNFP is required to track the engine's hours of operation.

Permit Condition 7.2 limits sulfur dioxide emissions and specifies the test method for determining compliance. The monitoring required in Permit Condition 4.5 to demonstrate compliance with the fuel sulfur content limit can also be used to indicate compliance with this stack concentration limit through calculations if needed, because the fuel sulfur content limit is more stringent than this limit as illustrated in SO_2 PTE calculation in Appendix A to this Statement of Basis.

Permit Conditions 7.3 through 7.13 are MACT ZZZZ requirements to properly operate and maintain an emergency engine. No fuel requirements apply. If BNFP operates the engine in non-emergency situations for more than 100 hours per year, additional requirements will apply. There is no time limit on the use of the engine in emergency situations. Compliance with MACT ZZZZ requirements must be achieved no later than May 3, 2013 pursuant to 40 CFR § 63.6595(a)(1).

Permit Condition 7.14 requires periodic visible emission monitoring to assure compliance with the facility-wide visible emission limit.

Permit Conditions 7.15 through 7.18 are MACT ZZZZ monitoring and recordkeeping requirements. BNFP is required to track hours of operation, and this provides BNFP with information useful to calculate its actual emissions.

Permit Conditions 7.19 through 7.22 are MACT ZZZZ reporting requirements. With issuance of this Title V permit, EPA is specifying when certain MACT ZZZZ reports must be submitted.

Permit Section 8 – Unit-Specific Requirements – ENG-2 (Emergency Backup Engine No. 2)

The requirements for engine ENG-2 mimic the requirements for ENG-1 exactly. See explanation of ENG-1 requirements immediately above.

Permit Section 9 – Unit-Specific Requirements – KLN (Lumber Drying Kilns)

Permit Conditions 9.1 limits particulate matter emissions and describes the test method for determining compliance. The visible and fugitive emission monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

Permit Condition 9.2 requires periodic monitoring and recordkeeping that will assure compliance with the hazardous air pollutant emission limits.

Permit Section 10 – Unit-Specific Requirements – CYC (Wood Residual Cyclones)

Permit Condition 10.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

Permit Section 11 – Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

Permit Condition 11.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission

monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

5. Public Participation

5.1 Public Notice and Comment

As required in 40 CFR 71.11(a)(5) and 40 CFR 71.8, all draft operating permits must be publicly noticed and made available for public comment. The public notice of permit actions and public comment period is described in 40 CFR 71.11(d). There is a 30 day public comment period for actions pertaining to a draft permit. For this permit action, the requirements of 40 CFR 71.11(a)(5) and 40 CFR 71.8 have been satisfied as follows:

1. Publishing the public notice for this draft permit in a daily or weekly newspaper of general circulation in the area affected by this source. In this case, publication was provided in the daily Lewiston Tribune on August 21, 2013, and in the weekly Clearwater Progress on August 22, 2013;

2. Providing a copy of the public notice to: the permit applicant, the affected states, the air pollution control agencies of affected states, the Tribal, city and county executives, any comprehensive land use planning agency, any state or federal land manager whose lands may be affected by emissions from the source, the local emergency planning authorities which have jurisdiction over the area where the source is located and all persons who submitted a written request to be included on EPA Region 10's mailing list for Title V permitting actions;

4. Making available from August 21, 2013 through September 20, 2013, on the Region 10 public notice website [Link from http://yosemite.epa.gov/R10/homepage.nsf/Information/R10PN/], a copy of the public notice and the draft permit and statement of basis prepared by EPA;

5. Making available from August 21, 2013 through September 20, 2013, at the Region 10 office and at the locations listed below, a copy of the public notice, draft permit, the statement of basis, the application, and relevant supporting materials:

Lapwai Community Library	Kamiah Community Library
103 N. Main St.	505 S. Main Street
Lapwai, Idaho 83540	Kamiah, Idaho 83536

5.2 Response to Public Comments and Permit Issuance

The public comment period for this permit ran from August 21, 2013 to September 20, 2013. EPA received a letter from the Idaho County Board of Commissioners supporting issuance of the permit without substantive comment on the permit itself. EPA appreciates the Idaho County Board of Commissioners interest in this permitting action. No other comments were received. EPA received no request for public hearing, and therefore none was held. The Idaho County Board of Commissioners requested notice of the final permit decision. As required in 40 CFR 71.11(i), EPA will notify the applicant and the Idaho County Board of Commissioners of the final permit decision.

6. Abbreviations and Acronyms

Btu	British thermal units
CAA	Clean Air Act [42 U.S.C. section 7401 et seq.]
CAM	Compliance assurance monitoring

CFR	Code of Federal Regulations
CO	Carbon monoxide
COMS	Continuous opacity monitoring system
dscf	Dry standard cubic feet
EU	Emission Unit
EPA	United States Environmental Protection Agency (also U.S. EPA)
FARR	Federal Air Rules for Reservations
FR	Federal Register
gr/dscf	Grains per dry standard cubic foot (7,000 grains = 1 pound)
HAP	Hazardous air pollutant
hr	Hour
IEU	Insignificant emission unit
lb	Pound
1bm	Pound-mole
MACT	Maximum Achievable Control Technology
mm	One million
NESHAP	National Emission Standards for Hazardous Air Pollutants (40 CFR Parts 61 and 63)
NOx	Nitrogen oxides
PM	Particulate matter
PM10	Particulate matter less than or equal to 10 microns in aerodynamic diameter
ppmdv	Parts per million on a dry, volume basis
PSD	Prevention of significant deterioration
PTE	Potential to emit
S	Sulfur
SO_2	Sulfur dioxide
tpy	Tons per year
VOC	Volatile organic compound

Appendix A

EPA Estimation of BNFP Potential Air Pollutant Emissions

Statement of Basis

Title V Operating Permit

R10T5100100

Blue North Forest Products
Kamiah, Idaho

Appendix A: Potential Emissions Inventory

Summary of Facility Regulated NSR Air Pollutant Potential Emissions

Potential to Emit, (tons per year)

Non-Fugitive Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Non-Fugitive Subtotal**
Carbon Monoxide (CO)	83.3	83.3	0.4	0.4	0						167
Lead (Pb)	0.01	0.01	0	0	0						0
Nitrogen Oxides (NO_X)	68.0	68.0	2.0	2.0	0						140
Particulates (PM)	57.2	57.2	0.1	0.1	4.4	0.0	0.0	0.0			119
Respirable Particulates (PM_{10})	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0			124
Fine Particulates ($PM_{2.5}$)	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0			124
Sulfur Dioxide (SO_2)	166.3	166.3	0.2	0.2	0						333
Volatile Organic Compounds (VOC)	3.2	3.2	0.2	0.2	331.4		0.0				338
Greenhouse Gas (CO_2e)	29,324	29,324	73	73	0						58,795

Fugitive Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Fugitive Subtotal**
Carbon Monoxide (CO)											0
Lead (Pb)											0
Nitrogen Oxides (NO_X)											0
Particulates (PM)									0.0	0.0	0
Respirable Particulates (PM_{10})									0.0	106.9	107
Fine ($PM_{2.5}$)									0.0	14.0	14
Sulfur Dioxide (SO_2)											0
Volatile Organic Compounds (VOC)											0
Greenhouse Gas (CO_2e)											0

All Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Plantwide PTE**
Carbon Monoxide (CO)	83.3	83.3	0.4	0.4	0	0	0	0	0	0	167
Lead (Pb)	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Oxides (NO_X)	68.0	68.0	2.0	2.0	0	0	0	0	0	0	140
Particulates (PM)	57.2	57.2	0.1	0.1	4.4	0.0	0.0	0.0	0.0	0.0	119
Respirable Particulates (PM_{10})	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0	0.0	106.9	231
Fine Particulates ($PM_{2.5}$)	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0	0.0	14.0	138
Sulfur Dioxide (SO_2)	166.3	166.3	0.2	0.2	0	0	0	0	0	0	333
Volatile Organic Compounds (VOC)	3.2	3.2	0.2	0.2	331.4	0	0.0	0	0	0	338
Greenhouse Gas (CO_2e)	29,324	29,324	73	73	0	0	0	0	0	0	58,795

Notes:

1. For emission unit entitled, "PT - Plant Traffic," EPA is simply transmitting here the result of the calculations performed by BNFP. In the interest of time, EPA did not calculate PT potential emissions.

2. For PSD and Title V applicability considering NSR regulated pollutant emissions, only non-fugitive emissions are counted given the source category in which this facility (sawmill) is listed. For MACT and Title V applicability considering HAP emissions, all emissions are counted.

3. PM is not a pollutant considered in determining whether a source is subject to the requirement to obtain a Title V permit, however, PM emissions are considered in determining whether a facility/project is a major PSD source/modification and whether a source is subject to CAM.

4. The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

5. The "All Emissions" table sums the values in the "Non-Fugitive Emissions" and "Fugitive Emissions" tables.

Summary of Facility Hazardous Air Pollutant (HAP) Potential Emissions

Potential to Emit, (tons per year)

Hazardous Air Pollutants	BLR-1 Hog Fuel Boiler No. 1	BLR-2 Hog Fuel Boiler No. 2	ENG-1 Emergency Diesel Engine No. 1	ENG-2 Emergency Diesel Engine No. 2	KLN Lumber Drying Kilns	Single HAP Plantwide Totals (tons per year)
Trace Metal Compounds						
Antimony Compounds	1.10E-03	1.10E-03				2.2E-03
Arsenic Compounds (including arsine)	3.05E-03	3.05E-03				6.1E-03
Beryllium Compounds	1.53E-04	1.53E-04				3.1E-04
Cadmium Compounds	5.69E-04	5.69E-04				1.1E-03
Chromium Compounds (including hexavalent)	2.92E-03	2.92E-03				5.8E-03
Cobalt Compounds	9.02E-04	9.02E-04				1.8E-03
Lead Compounds (not elemental lead)	6.66E-03	6.66E-03				1.3E-02
Manganese Compounds	2.22E-01	2.22E-01				4.4E-01
Mercury Compounds[2]	4.86E-04	4.86E-04				
Nickel Compounds	4.58E-03	4.58E-03				9.2E-03
Phophorus	3.75E-03	3.75E-03				7.5E-03
Selenium Compounds	3.89E-04	3.89E-04				7.8E-04
Other Inorganic Compounds						
Chlorine	1.10E-01	1.10E-01				2.2E-01
Hydrochloric acid (hydrogen chloride)	2.64E+00	2.64E+00				5.3E+00
Organic Compounds						
Acetaldehyde	1.15E-01	1.15E-01	3.42E-04	3.42E-04	4.79E+00	5.0E+00
Acetophenone	4.44E-07	4.44E-07				8.9E-07
Acrolein	5.55E-01	5.55E-01	4.13E-05	4.13E-05	2.26E-01	1.3E+00
Benzene	5.83E-01	5.83E-01	4.16E-04	4.16E-04		1.2E+00
1,3-Butadiene			1.74E-05	1.74E-05		3.5E-05
Bis(2-ethylhexyl)phthalate (DEHP)	6.53E-06	6.53E-06				1.3E-05
Carbon tetrachloride	6.25E-03	6.25E-03				1.2E-02
Chlorobenzene	4.58E-03	4.58E-03				9.2E-03
Chloroform	3.89E-03	3.89E-03				7.8E-03
Dibenzofurans*	2.59E-07	2.59E-07				5.2E-07
2,4-Dinitrophenol	2.50E-05	2.50E-05				5.0E-05
Ethyl benzene	4.30E-03	4.30E-03				8.6E-03
Ethylene dichloride (1,2-Dichloroethane)	4.03E-03	4.03E-03				8.1E-03
Formaldehyde	6.11E-01	6.11E-01	5.27E-04	5.27E-04	1.42E+00	2.6E+00
Methanol					3.65E+01	3.7E+01
Methyl bromide (Bromomethane)	2.08E-03	2.08E-03				4.2E-03
Methyl chloride (Chloromethane)	3.19E-03	3.19E-03				6.4E-03
Methyl chloroform (1,1,1-trichloroethane)	4.30E-03	4.30E-03				8.6E-03
Methylene chloride (Dichloromethane)	4.03E-02	4.03E-02				8.1E-02
Naphthalene*	1.35E-02	1.35E-02	3.78E-05	3.78E-05		2.7E-02
4-Nitrophenol	1.53E-05	1.53E-05				3.1E-05
Pentachlorophenol	7.08E-06	7.08E-06				1.4E-05
Phenol	7.08E-03	7.08E-03				1.4E-02
Polychlorinated biphenyls (PCB)	1.10E-06	1.10E-06				2.2E-06
Polycyclic Organic Matter (POM)	1.76E-02	1.76E-02	7.29E-05	7.29E-05		3.5E-02
Propionaldehyde	8.47E-03	8.47E-03			1.57E-01	1.7E-01
Propylene dichloride (1,2-Dichloropropane)	4.58E-03	4.58E-03				9.2E-03
Styrene	2.64E-01	2.64E-01				5.3E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	1.19E-09	1.19E-09				2.4E-09
Tetrachloroethylene (tetrachloroethene)	5.28E-03	5.28E-03				1.1E-02
Toluene	1.28E-01	1.28E-01	1.83E-04	1.83E-04		2.6E-01
Trichloroethylene (Trichloroethene)	4.17E-03	4.17E-03				8.3E-03
2,4,6-Trichlorophenol	3.05E-06	3.05E-06				6.1E-06
Vinyl chloride	2.50E-03	2.50E-03				5.0E-03
Xylenes (inlc isomers and mixtures)	3.47E-03	3.47E-03	1.27E-04	1.27E-04		7.2E-03
TOTAL[1]	5.4	5.4	0.002	0.002	43.1	

Predicted Highest Plantwide Single HAP	~~36.5~~	tons per year, methanol
Predicted Plantwide HAP Total	~~53.9~~	tons per year, based on summing estimates
Highest Plantwide Single HAP PTE	9	tons per year, based on emission limit in FARR Non-Title V permit R10NT500901
Plantwide HAP PTE	24	tons per year, based on emission limit in FARR Non-Title V permit R10NT500901

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-1**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace.
Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Monoxide (CO)	0.6	83.3	1
Lead (Pb)	4.80E-05	0.01	1
Nitrogen Oxides (NO_X)	0.49	68.0	1
Particulate Matter (PM)	0.412	57.2	1
Particulate Matter (PM_{10})	0.429	59.6	1,2
Particulate Matter ($PM_{2.5}$)	0.429	59.6	1,2
Sulfur Dioxide (SO_2)	1.198	166.3	1
Volatile Organic Compounds (VOC)	0.023	3.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Dioxide (CO_2)[1]	206.8	28,713	1
Methane (CH_4)	1.5	208	1
Nitrous Oxide (N_2O)	2.9	403	1
TOTAL		29,324	

[1] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

EF Reference	Description
1	EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.
2	Conservatively assume that all "filterable" PM is also PM_{10} and $PM_{2.5}$. The "filterable" fraction equals 0.412 lb/MMBtu as noted in EF Reference No. 1. PM_{10} and $PM_{2.5}$ emissions do include the "condensible" fraction as noted in October 25, 2012 Federal Register notice, pages 65107-65119. The "condensible" fraction equals 0.017 lb/MMBtu as noted in Table 1.6-1 of AP-42 (09/03). The two fractions combined equal 0.117 lb/MMBtu.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-2**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace.
Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Monoxide (CO)	0.6	83.3	1
Lead (Pb)	4.80E-05	0.01	1
Nitrogen Oxides (NO_X)	0.49	68.0	1
Particulate Matter (PM)	0.412	57.2	1
Particulate Matter (PM_{10})	0.429	59.6	1,2
Particulate Matter ($PM_{2.5}$)	0.429	59.6	1,2
Sulfur Dioxide (SO_2)	1.198	166.3	1
Volatile Organic Compounds (VOC)	0.023	3.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Dioxide (CO_2)[1]	206.8	28,713	1
Methane (CH_4)	1.5	208	1
Nitrous Oxide (N_2O)	2.9	403	1
TOTAL		29,324	

[1] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

EF Reference	Description
1	EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.
2	Conservatively assume that all "filterable" PM is also PM_{10} and $PM_{2.5}$. The "filterable" fraction equals 0.412 lb/MMBtu as noted in EF Reference No. 1. PM_{10} and $PM_{2.5}$ emissions do include the "condensible" fraction as noted in October 25, 2012 Federal Register notice, pages 65107-65119. The "condensible" fraction equals 0.017 lb/MMBtu as noted in Table 1.6-1 of AP-42 (09/03). The two fractions combined equal 0.117 lb/MMBtu.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-1**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.
Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

NON-FUGITIVE EMISSIONS
Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0.95	0.4	1
Lead (Pb)	-	0.0	1
Nitrogen Oxides (NO_x)	4.41	2.0	1
Particulate Matter (PM)	0.1974	0.1	2
Particulate Matter (PM_{10})	0.1974	0.1	2
Particulate Matter ($PM_{2.5}$)	0.1974	0.1	2
Sulfur Dioxide (SO_2)	0.50357	0.2	3
Volatile Organic Compounds (VOC)	0.36	0.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	163.054	72.8	4
Methane (CH_4)	0.139	0.1	4
Nitrous Oxide (N_2O)	0.410	0.2	4
TOTAL		73	

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996.
8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)
[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

EF Reference	Description
1	Table 3.3-1 of AP-42, October 1996.
2	Basis: FARR combustion source stack PM emission limit of 0.1 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(1) EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$ (gr/lb) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR PM Calculated EF (lb/MMBtu) | FARR PM Emission Limit (gr/dscf @7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | F_d (dscf/MMBtu) | $CF_{gr\rightarrow lb}$ (gr/lb) 0.1974 | 0.1 | 1.504 | 9,190 | 7,000
	• Assume $PM_{2.5}$ = PM_{10} = PM
3	Option 1: 0.50357 lb/MMBtu. This emission factor is employed to determine PTE as it limits emissions to less than Option 2 below. Basis: FARR distillate fuel oil No. 2 sulfur limit of 0.5% by weight at 40 CFR 49.130(d)(2) EF (lb/MMBtu) = [FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ X $CF_{lb\rightarrow gal}$ (lb/gal) X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) / $CF_{gal\rightarrow Btu}$ (Btu/gal) • $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + O_2 → SO_2. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2. • $CF_{lb\rightarrow gal}$ = 7.05 lb/gal fuel. See weight of distillate oil on page A-6 of Appendix A to AP-42, September 1985. • $CF_{gal\rightarrow Btu}$ = 140,000 Btu/gal fuel. See heating value of distillate oil on page A-5 of Appendix A to AP-42, September 1985.
	FARR Fuel S Calculate SO_2 EF (lb/MMBtu) | FARR Fuel Sulfur Limit (% by weight) | $CF_{S\rightarrow SO2}$ (lb SO_2/lb S) | $CF_{lb\rightarrow gal}$ (lb/gal fuel) | $CF_{gal\rightarrow Btu}$ (Btu/gal fuel) | $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) 0.50357 | 0.5 | 2 | 7.05 | 140,000 | 1.E+06
	Option 2: 1.147 lb/MMBtu. Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu) | FARR SO_2 Emission (ppmvd@7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | $CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm) | F_d (dscf/MMBtu) 1.147 | 500 | 1.504 | 1.66E-07 | 9190
4	EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications." Therefore, GHG Reporting Rule emission factors will be employed to determine GHG PTE. Carbon Dioxide (CO_2) EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)
	Calculated CO_2e EF for CO_2 (lb CO_2e/MMBtu) | 40 CFR 98 Table C-2 EF (kg CO_2/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CO_2) 163.054 | 73.96 | 2.20462262 | 1
	Methane (CH_4) EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)
	Calculated CO_2e EF for CH_4 (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg CH_4/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CH_4) 0.139 | 0.003 | 2.20462262 | 21
	Nitrous Oxide (N_2O) EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)
	Calculated CO_2e EF for N_2O (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg N_2O/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb N_2O) 0.410 | 0.0006 | 2.20462262 | 310

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-2**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011. Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

NON-FUGITIVE EMISSIONS
Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0.95	0.4	1
Lead (Pb)	-	0.0	1
Nitrogen Oxides (NO_x)	4.41	2.0	1
Particulate Matter (PM)	0.1974	0.1	2
Particulate Matter (PM_{10})	0.1974	0.1	2
Particulate Matter ($PM_{2.5}$)	0.1974	0.1	2
Sulfur Dioxide (SO_2)	0.50357	0.2	3
Volatile Organic Compounds (VOC)	0.36	0.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	163.054	72.8	4
Methane (CH_4)	0.139	0.1	4
Nitrous Oxide (N_2O)	0.410	0.2	4
TOTAL		73	

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996.
8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)
[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

EF Reference	Description
1	Table 3.3-1 of AP-42, October 1996.
2	Basis: FARR combustion source stack PM emission limit of 0.1 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(1) EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$ (gr/lb) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR PM Calculated EF (lb/MMBtu) | FARR PM Emission Limit (gr/dscf @7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | F_d (dscf/MMBtu) | $CF_{gr\rightarrow lb}$ (gr/lb) 0.1974 | 0.1 | 1.504 | 9,190 | 7,000
	• Assume $PM_{2.5}$ = PM_{10} = PM
3	Option 1: 0.50357 lb/MMBtu. This emission factor is employed to determine PTE as it limits emissions to less than Option 2 below. Basis: FARR distillate fuel oil No. 2 sulfur limit of 0.5% by weight at 40 CFR 49.130(d)(2) EF (lb/MMBtu) = [FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ X $CF_{lb\rightarrow gal}$ (lb/gal) X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) / $CF_{gal\rightarrow Btu}$ (Btu/gal) • $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + O_2 → SO_2. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2. • $CF_{lb\rightarrow gal}$ = 7.05 lb/gal fuel. See weight of distillate oil on page A-6 of Appendix A to AP-42, September 1985. • $CF_{gal\rightarrow Btu}$ = 140,000 Btu/gal fuel. See heating value of distillate oil on page A-5 of Appendix A to AP-42, September 1985.
	FARR Fuel S Calculate SO_2 EF (lb/MMBtu) | FARR Fuel Sulfur Limit (% by weight) | $CF_{S\rightarrow SO2}$ (lb SO_2/lb S) | $CF_{lb\rightarrow gal}$ (lb/gal fuel) | $CF_{gal\rightarrow Btu}$ (Btu/gal fuel) | $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) 0.50357 | 0.5 | 2 | 7.05 | 140,000 | 1.E+06
	Option 2: 1.147 lb/MMBtu. Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu) | FARR SO_2 Emission (ppmvd@7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | $CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm) | F_d (dscf/MMBtu) 1.147 | 500 | 1.504 | 1.66E-07 | 9190
4	EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications." Therefore, GHG Reporting Rule emission factors will be employed to determine GHG PTE. Carbon Dioxide (CO_2) EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)
	Calculated CO_2e EF for CO_2 (lb CO_2e/MMBtu) | 40 CFR 98 Table C-2 EF (kg CO_2/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CO_2) 163.054 | 73.96 | 2.20462262 | 1
	Methane (CH_4) EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)
	Calculated CO_2e EF for CH_4 (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg CH_4/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CH_4) 0.139 | 0.003 | 2.20462262 | 21
	Nitrous Oxide (N_2O) EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)
	Calculated CO_2e EF for N_2O (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg N_2O/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb N_2O) 0.410 | 0.0006 | 2.20462262 | 310

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **KLN**
Description: Lumber drying
Control Device: None
Work Practice: None
Fuel: None - indirect steam provided by BLR-1 and BLR-2
Predominant Species Dried: Douglas Fir , Ponderosa Pine, White Fir, Western White Pine and Cedar
Installed: 7 double-track kilns (No.'s 1 - 7) installed ?
Annual Capacity: 174,000 mbf/yr

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/mbf)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0	0	
Lead (Pb)	0	0	
Nitrogen Oxides (NO_X)	0	0	
Particulate Matter (PM)	0.05	4.4	1
Particulate Matter (PM_{10})	0.05	4.4	1,2
Particulate Matter ($PM_{2.5}$)	0.05	4.4	1,2
Sulfur Dioxide (SO_2)	0	0	
Volatile Organic Compounds (VOC)	3.8087	331.4	3

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/mbf)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	0	0	
Methane (CH_4)	0	0	
Nitrous Oxide (N_2O)	0	0	
TOTAL	0	0	

EF Reference	Description
1	ODEQ ACDP Application Guidance AQ-EF02 (4/25/00), lumber drying Hemlock (highest EF).
2	Conservative engineering assumption that all PM is also PM_{10} and $PM_{2.5}$.
3	EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012. See WPP1 VOC EF for drying western white pine at temperatures exceeding 200°F.

Abbreviations
ACDP: air construction discharge permit
mbf: 1,000 board feet lumber
ODEQ: Oregon Department of Environmental Conservation
WPP1: Wood Products Protocol 1

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **CYC**

Description: Pneumatic Conveyance of Wood Residual Materials

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity (bdt/yr)	EF			PTE		
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(lb/bdt)			(tpy)		
W4 - Planer shavings cyclone		0.5	0.425	0.25	0.0	0.0	0.0
H1 - Planer mill chipped trim end hog cyclone		0.5	0.425	0.25	0.0	0.0	0.0
W3 - Atlas fuel bin cyclone		0.5	0.425	0.25	0.0	0.0	0.0
W5 - Shavings cyclone on top of shavings/sawdust bin		0.5	0.425	0.25	0.0	0.0	0.0
T1 - Sawmill trimmer sawdust cyclone on top of shavings/sawdust bin		0.5	0.425	0.25	0.0	0.0	0.0
					0.0	0.0	0.0

PM, PM_{10} and $PM_{2.5}$ EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations

bdt: bone dry ton

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BIN**
Description: Mechanical Conveyance and Storage of Residual Materials

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity	EF				PTE			
		PM	PM_{10}	$PM_{2.5}$	VOC	PM	PM_{10}	$PM_{2.5}$	VOC
	(bdt/yr)	(lb/bdt)				(tpy)			
GS - Green sawdust bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GS - Green sawdust bin offgas					9.3741				0.00
GS - Green sawdust bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GC - Green chip bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GC - Green chip bin offgas					4.9196				0.00
GC - Green chip bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
AF - Atlas fuel bin offgas					5.4704				0.00
AF- Atlas fuel bin unloading		0.0015	0.0007	0.0001		0.00	0.00	0.00	
SS - Shavings and green trimmer sawdust bin offgas					5.4704				0.00
SS - Shavings and green trimmer sawdust bin unloading		0.0015	0.0007	0.0001		0.00	0.00	0.00	
HF - Hog fuel bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
HF - Hog fuel bin offgas (including storage pile)					2.9738				0.00
HF - Hog fuel bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
					TOTAL	0.0	0.0	0.00	0.00

PM, PM_{10} and $PM_{2.5}$ EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013.

VOC EF Basis: NCASI Technical Bulletin No. 723 entitled, "Laboratory and Limited Field Measurements of VOC Emissions from Wood Residuals," September 1996. Assume processing of ponderosa pine logs harvested during season resulting in highest emissions. To convert NCASI emission factor from units of carbon to units of propane (estimate of VOC emitted), multiply by propane mass conversation factor of 1.2238. For further explanation for expressing emissions as propane, see Interim VOC Measurement Protocol for the Wood Products Industry - July 2007. See also Appendix C of NCASI's Technical Bulletin No. 991 entitled, "Characterization, Measurement, and Reporting of Volaitle Organic Compounds Emitted from Southern Pine Wood Products Sources," September 2011. For ponderosa pine sawdust, (7.66 lb C/bdt) X 1.2238 = 9.3741 lb VOC/bdt. For shavings, (4.47 lb C/bdt) X 1.2238 = 5.4704. For chips, (4.02 lb C/bdt) X 1.2238 = 4.9196. For ponderosa pine bark, (2.43 lb C/bdt) X 1.2238 = 2.9738.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
NCASI: National Council for Air and Stream Improvement

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **SMI**
Description: Sawmill operations inside a building

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity		EF			PTE		
			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
			(lb/ton log, lb/bdt or lb/mbf; as applicable)			(tpy)		
"Wet" Material Sawing		tons log/yr	0.07	0.035	0.0175	0.0	0.0	0.0
"Wet" Material Chipping		bdt/yr	0.01	0.005	0.0025	0.0	0.0	0.0
Planing Activities		mbf/yr	0.0812	0.0406	0.0203	0.0	0.0	0.0
					TOTAL	0.0	0.0	0.0

EF Basis: Particulate Matter Emission Factors for Sawmills, February 2013. For sawing and chipping, emissions are discounted 80% from uncontrolled emissions because activity occurs within a building. The planing emission factor from the reference document is assumed to already reflect activity occuring within a building.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
mbf: 1,000 board feet lumber

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **SMO**
Description: Sawmill operations outside a building

FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity		EF			PTE		
			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
			(lb/ton log or lb/bdt; as applicable)			(tpy)		
Log Bucking (Cut off saw)		tons log/yr	0.035	0.0175	0.00875	0.0	0.0	0.0
Log Debarking		tons log/yr	0.024	0.012	0.006	0.0	0.0	0.0
Bark Hogging		bdt/yr	0.05	0.025	0.0125	0.0	0.0	0.0
Bark Mechanical Conveyance		bdt/yr	0.0045	0.0021	0.0003	0.0	0.0	0.0
					TOTAL	0.0	0.0	0.0

EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013. For bark mechanical conveyance, EPA assumed six "wet" material drops between debarker and hog fuel bin.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
mbf: 1,000 board feet lumber

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-1**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Trace Metal Compounds		
Antimony Compounds	7.90E-06	1.10E-03
Arsenic Compounds (including arsine)	2.20E-05	3.05E-03
Beryllium Compounds	1.10E-06	1.53E-04
Cadmium Compounds	4.10E-06	5.69E-04
Chromium Compounds (including hexavalent)	2.10E-05	2.92E-03
Cobalt Compounds	6.50E-06	9.02E-04
Lead Compounds (not elemental lead)	4.80E-05	6.66E-03
Manganese Compounds	1.60E-03	2.22E-01
Mercury Compounds	3.50E-06	4.86E-04
Nickel Compounds	3.30E-05	4.58E-03
Phophorus	2.70E-05	3.75E-03
Selenium Compounds	2.80E-06	3.89E-04
Other Inorganic Compounds		
Chlorine	7.90E-04	1.10E-01
Hydrochloric acid (hydrogen chloride)	1.90E-02	2.64E+00
Organic Compounds		
Acetaldehyde	8.30E-04	1.15E-01
Acetophenone	3.20E-09	4.44E-07
Acrolein	4.00E-03	5.55E-01
Benzene	4.20E-03	5.83E-01
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	6.53E-06
Carbon tetrachloride	4.50E-05	6.25E-03
Chlorobenzene	3.30E-05	4.58E-03
Chloroform	2.80E-05	3.89E-03
Dibenzofurans*	1.87E-09	2.59E-07
2,4-Dinitrophenol	1.80E-07	2.50E-05
Ethyl benzene	3.10E-05	4.30E-03
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05	4.03E-03
Formaldehyde	4.40E-03	6.11E-01
Methyl bromide (Bromomethane)	1.50E-05	2.08E-03
Methyl chloride (Chloromethane)	2.30E-05	3.19E-03
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05	4.30E-03
Methylene chloride (Dichloromethane)	2.90E-04	4.03E-02
Naphthalene*	9.70E-05	1.35E-02
4-Nitrophenol	1.10E-07	1.53E-05
Pentachlorophenol	5.10E-08	7.08E-06
Phenol	5.10E-05	7.08E-03
Polychlorinated biphenyls (PCB)	7.93E-09	1.10E-06
Polycyclic Organic Matter (POM)	1.27E-04	1.76E-02
Propionaldehyde	6.10E-05	8.47E-03
Propylene dichloride (1,2-Dichloropropane)	3.30E-05	4.58E-03
Styrene	1.90E-03	2.64E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12	1.19E-09
Tetrachloroethylene (tetrachloroethene)	3.80E-05	5.28E-03
Toluene	9.20E-04	1.28E-01
Trichloroethylene (Trichloroethene)	3.00E-05	4.17E-03
2,4,6-Trichlorophenol	2.20E-08	3.05E-06
Vinyl chloride	1.80E-05	2.50E-03
Xylenes (inlc isomers and mixtures)	2.50E-05	3.47E-03
TOTAL[1]	3.87E-02	5.4

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

EF Reference: Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-2**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Trace Metal Compounds		
Antimony Compounds	7.90E-06	1.10E-03
Arsenic Compounds (including arsine)	2.20E-05	3.05E-03
Beryllium Compounds	1.10E-06	1.53E-04
Cadmium Compounds	4.10E-06	5.69E-04
Chromium Compounds (including hexavalent)	2.10E-05	2.92E-03
Cobalt Compounds	6.50E-06	9.02E-04
Lead Compounds (not elemental lead)	4.80E-05	6.66E-03
Manganese Compounds	1.60E-03	2.22E-01
Mercury Compounds	3.50E-06	4.86E-04
Nickel Compounds	3.30E-05	4.58E-03
Phophorus	2.70E-05	3.75E-03
Selenium Compounds	2.80E-06	3.89E-04
Other Inorganic Compounds		
Chlorine	7.90E-04	1.10E-01
Hydrochloric acid (hydrogen chloride)	1.90E-02	2.64E+00
Organic Compounds		
Acetaldehyde	8.30E-04	1.15E-01
Acetophenone	3.20E-09	4.44E-07
Acrolein	4.00E-03	5.55E-01
Benzene	4.20E-03	5.83E-01
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	6.53E-06
Carbon tetrachloride	4.50E-05	6.25E-03
Chlorobenzene	3.30E-05	4.58E-03
Chloroform	2.80E-05	3.89E-03
Dibenzofurans*	1.87E-09	2.59E-07
2,4-Dinitrophenol	1.80E-07	2.50E-05
Ethyl benzene	3.10E-05	4.30E-03
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05	4.03E-03
Formaldehyde	4.40E-03	6.11E-01
Methyl bromide (Bromomethane)	1.50E-05	2.08E-03
Methyl chloride (Chloromethane)	2.30E-05	3.19E-03
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05	4.30E-03
Methylene chloride (Dichloromethane)	2.90E-04	4.03E-02
Naphthalene*	9.70E-05	1.35E-02
4-Nitrophenol	1.10E-07	1.53E-05
Pentachlorophenol	5.10E-08	7.08E-06
Phenol	5.10E-05	7.08E-03
Polychlorinated biphenyls (PCB)	7.93E-09	1.10E-06
Polycyclic Organic Matter (POM)	1.27E-04	1.76E-02
Propionaldehyde	6.10E-05	8.47E-03
Propylene dichloride (1,2-Dichloropropane)	3.30E-05	4.58E-03
Styrene	1.90E-03	2.64E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12	1.19E-09
Tetrachloroethylene (tetrachloroethene)	3.80E-05	5.28E-03
Toluene	9.20E-04	1.28E-01
Trichloroethylene (Trichloroethene)	3.00E-05	4.17E-03
2,4,6-Trichlorophenol	2.20E-08	3.05E-06
Vinyl chloride	1.80E-05	2.50E-03
Xylenes (inlc isomers and mixtures)	2.50E-05	3.47E-03
TOTAL[1]	3.87E-02	5.4

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

EF Reference: Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-1**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011. Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Acealdehyde	7.67E-04	3.42E-04
Acrolein	9.25E-05	4.13E-05
Benzene	9.33E-04	4.16E-04
1,3-Butadiene	3.91E-05	1.74E-05
Formaldehyde	1.18E-03	5.27E-04
Naphthalene[3]	8.48E-05	3.78E-05
Polycyclic Organic Matter (POM)[4]	1.63E-04	7.29E-05
Toluene	4.09E-04	1.83E-04
Xylenes	2.85E-04	1.27E-04
TOTAL[5]	0.004	0.002

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996. 8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)

[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

[3] Naphthalene is a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[4] See table below for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[5] Because naphthalene are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	1.42E-06
Acenaphthylene*	5.06E-06
Anthracene*	1.87E-06
Benzo(a)anthracene*	1.68E-06
Benzo(b)fluoranthene*	9.91E-08
Benzo(k)fluoranthene*	1.55E-07
Benzo(g,h,l)perylene*	4.89E-07
Benzo(a)pyrene*	1.88E-07
Benzo(e)pyrene*	2.60E-09
Chrysene*	3.53E-07
Dibenzo(a,h)anthracene*	5.83E-07
Fluoranthene*	7.61E-06
Fluorene*	2.92E-05
Indeno(1,2,3-cd)pyrene*	3.75E-07
Naphthalene***	8.48E-05
Phenanthrene*	2.94E-05
SUBTOTAL	1.63E-04

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-2**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995.
Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2

Design Maximum Power Output:	255.00	horsepower
Design Maximum Heat Input Capcity:	1.785	MMBtu/hr[1]
Operation:	500	hours per year[2]

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Acealdehyde	7.67E-04	3.42E-04
Acrolein	9.25E-05	4.13E-05
Benzene	9.33E-04	4.16E-04
1,3-Butadiene	3.91E-05	1.74E-05
Formaldehyde	1.18E-03	5.27E-04
Naphthalene[3]	8.48E-05	3.78E-05
Polycyclic Organic Matter (POM)[4]	1.63E-04	7.29E-05
Toluene	4.09E-04	1.83E-04
Xylenes	2.85E-04	1.27E-04
TOTAL[5]	0.004	0.002

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996. 8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)

[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

[3] Naphthalene is a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[4] See table below for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[5] Because naphthalene are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	1.42E-06
Acenaphthylene*	5.06E-06
Anthracene*	1.87E-06
Benzo(a)anthracene*	1.68E-06
Benzo(b)fluoranthene*	9.91E-08
Benzo(k)fluoranthene*	1.55E-07
Benzo(g,h,l)perylene*	4.89E-07
Benzo(a)pyrene*	1.88E-07
Benzo(e)pyrene*	2.60E-09
Chrysene*	3.53E-07
Dibenzo(a,h)anthracene*	5.83E-07
Fluoranthene*	7.61E-06
Fluorene*	2.92E-05
Indeno(1,2,3-cd)pyrene*	3.75E-07
Naphthalene***	8.48E-05
Phenanthrene*	2.94E-05
SUBTOTAL	1.63E-04

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **KLN**
Description: Lumber drying
Control Device: None
Work Practice: None
Fuel: None - indirect steam provided by BLR-1 and BLR-2
Predominant Species Dried: Douglas Fir , Ponderosa Pine, White Fir, Western White Pine and Cedar
Installed: 7 double-track kilns (No.'s 1 - 7) installed ?
Annual Capacity: 174,000 mbf/yr

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/mbf)	PTE (tpy)
Methanol	0.4200	36.5
Formaldehyde	0.0163	1.4
Acetaldehyde	0.0550	4.8
Propionaldehyde	0.0018	0.2
Acrolein	0.0026	0.2
TOTAL		43.1

EF Reference: EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012. See HAP EF for drying white fir at temperatures exceeding 200°F.

Abbreviations
mbf: 1,000 board foot lumber

EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013.

No.	Criteria Pollutant	EF (lb/MMBtu)
1	Carbon Monoxide (CO)[1]	0.6
2	Lead (Pb)	4.8E-05
3	Nitrogen Oxides (NO_X)	0.49
4	Particulate Matter (PM)[2]	0.412
5	Respirable Particulate (PM_{10})[2]	0.429
6	Fine Particulate ($PM_{2.5}$)[2]	0.429
7	Sulfur Dioxide (SO_2)	1.198
8	Volatile Organic Compounds (VOC)	0.023

No.	Greenhouse Gas Pollutant	EF (lb CO_2e/MMBtu)
9	Carbon Dioxide (CO_2)[3]	~~206.8~~
10	Methane (CH_4)	1.5
11	Nitrous Oxide (N_2O)	2.9
	TOTAL	4.4

[1] If boiler is subject to Major Source Boiler MACT ("NESHAP Subpart DDDDD" or "NESHAP 5D"), do not use CO EF listed in table. Instead, calculate EF based upon applicable NESHAP 5D emission limit as illustrated below. Existing sources must comply with NESHAP 5D emission limits beginning January 31, 2016. The Potlatch facility in St. Maries, Idaho on the Coeur d'Alene Reservation is the only major HAP source operating a biomass boiler in Pacific Northwest Indian Country

[2] If boiler is subject to NSPS Db or Dc or NESHAP 5D or Minor Source Boiler MACT ("NESHAP Subpart JJJJJJ" or "NESHAP 6J"), do not use PM, PM_{10} and $PM_{2.5}$ EF listed in table. Instead, calculate EF based upon most stringent applicable emission limit as illustrated below. Existing sources must comply with NESHAP 5D emission limits beginning January 31, 2016.

[3] Prior to July 21, 2014, CO_2 emissions resulting from biomass combustion are not considered in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." For further details, see explanation for exemption provided by EPA at 76 FR 43490.

No. | **Reference**

Option 1: 0.6 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2.

Option 2: 0.243 - 2.281 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 5D

In order to create an EF in units of "lb/MMBtu heat input" based upon NESHAP 5D CO emission limits expressed in units of "ppm @3%O_2," the following equation must be employed:

EF (lb/MMBtu) = NESHAP 5D CO Limit (ppmvd@3%O_2) X $CF_{3\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfCO}$ X F_d (dscf/MMBtu)

• NESHAP 5D specifies a range of different CO emission limits based upon (a) the date the boiler commenced construction or reconstruction, (b) the design of the boiler and (c) type of fuel combusted. For the purpose of this PTE EF exercise, only the emission limits in units of "ppm" will be employed here. The alternative "lb/MMBtu steam output" or "lb/MWh electric generation output" emission limits could be employed if the efficiency of the boiler is known.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	Boiler Design	NESHAP 5D CO Emission Limit (ppmvd@3%O_2)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	Stokers/sloped grate/others designed to burn wet biomass fuel	1,500 (3-run avg) 720 (30-day rolling avg)	Table 2, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	460 (3-run avg)	Table 2, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	470 (3-run avg) 310 (30-day rolling avg)	Table 2, Row 9
		Suspension burners designed to burn biomass/bio-based solid	2,400 (3-run avg) 2,000 (10-day rolling avg)	Table 2, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	770 (3-run avg) 520 (10-day rolling avg)	Table 2, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	1,100 (3-run avg)	Table 2, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	2,800 (3-run avg) 900 (30-day rolling avg)	Table 2, Row 13
	06/04/10 < Y	Stokers/sloped grate/others designed to burn wet biomass fuel	620 (3-run avg) 390 (30-day rolling avg)	Table 1, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	460 (3-run avg)	Table 1, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	230 (3-run avg) 310 (30-day rolling avg)	Table 1, Row 9
		Suspension burners designed to burn biomass/bio-based solid	2,400 (3-run avg) 2,000 (10-day rolling avg)	Table 1, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	330 (3-run avg) 520 (10-day rolling avg)	Table 1, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	910 (3-run avg)	Table 1, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	1,100 (3-run avg) 900 (30-day rolling avg)	Table 1, Row 13

• $CF_{3\rightarrow 0\%O2}$ (unitless) = (20.9 - X_{O2Fd}) / (20.9 - $X_{O2NESHAP5D}$). To create a conversion factor that adjusts the basis of the NESHAP 5D CO emission limit from 3% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and $X_{O2NESHAP5D}$ = 3. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the NESHAP 5D CO baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

1

• $CF_{ppm \rightarrow lb/dscfCO}$ (lb CO/dscf / ppm CO) = [CO Concentration (ppm)] X [$CF_{ppm \rightarrow unitless}$ (1/ppm)] X [MW CO (g/mol)] X [Ideal Gas Constant @ EPA Standard Conditions (L/mol)]$^{-1}$ X [$CF_{L \rightarrow ft3}$ (L/ft^3)] X [$CF_{g \rightarrow lb}$ (g/lb)]$^{-1}$. This factor converts CO concentration from units "ppm" to "lb/dscf." To create the conversion factor, start by assuming CO concentration of 1 ppm and dividing by 1,000,000 to create a volumetric ratio of CO to exhaust gas. The molecular weight of CO is 28.010 g/mol. EPA standard conditions for reference method testing are a temperature of 20°C and a pressure of 1 atm. See Footnote 1 of Table 19-2 of EPA Method 19. The ideal gas constant is 0.08205746 L-atm/°K-mol. At EPA standard conditions, the value for ideal gas constant becomes 24.05514 L/mol through the following calculation: (0.08205746 L-atm/°K-mol) X (1 atm)$^{-1}$ X (293.15°K). Note that °K = [°C] + 273.15. There are around 28.32 liters (L) in a cubic foot (ft^3) and around 453.6 grams (g) in a pound (lb).

The calculation to determine $CF_{COvolume}$ is presented in the following table:

$CF_{ppm \rightarrow lb/dscfCO}$	CO Concentration (ppm)	$CF_{ppm \rightarrow unitless}$ (1/ppm)	CO Molecular Weight (g/mol)	Ideal Gas Constant (L/mol)	$CF_{L \rightarrow ft3}$ (L/ft^3)	$CF_{g \rightarrow lb}$ (g/lb)
7.27E-08	1	1.E-06	28.010	24.05514	28.3168466	453.59237

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Returning to the equation, EF (lb/MMBtu) = NESHAP 5D CO Limit (ppmvd@3%O_2) X $CF_{3 \rightarrow 0\%O2}$ X $CF_{ppm \rightarrow lb/dscfCO}$ X F_d (dscf/MMBtu), the wood residue-fired boiler NESHAP 5D EF can now be calculated assuming combustion of two different types of solid biomass as illustrated in the following two tables:

For "Existing" Units (Commencing Construction or Reconstruction on or before June 4, 2010)

Boiler Design	Fuel	NESHAP 5D CO Calculated EF (lb/MMBtu)	NESHAP 5D CO Limit Emission Limit[1] (ppmvd@3%O_2)	$CF_{3 \rightarrow 0\%O2}$ (unitless)	$CF_{ppm \rightarrow lb/dscfCO}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Stokers/sloped grate/others designed to burn wet biomass fuel	Wood	1.176	1500	1.168	7.27E-08	9240
	Bark	1.222	1500			9600
Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	Wood	0.361	460			9240
	Bark	0.375	460			9600
Fluidized bed units designed to burn biomass/bio-based solids	Wood	0.369	470			9240
	Bark	0.383	470			9600
Suspension burners designed to burn biomass/bio-based solids	Wood	1.882	2400			9240
	Bark	1.956	2400			9600
Dutch ovens/pile burners designed to burn biomass/bio-based solids	Wood	0.604	770			9240
	Bark	0.627	770			9600
Fuel cell units designed to burn biomass/bio-based solids	Wood	0.863	1100			9240
	Bark	0.896	1100			9600
Hybrid suspension grate boiler designed to burn biomass/bio-based solids	Wood	2.196	2800			9240
	Bark	2.281	2800			9600

[1] Least stringent emission limit selected to calculate EF when NESHAP 5D allows source to choose from among more than one.

For "New" Units (Commencing Construction or Reconstruction after June 4, 2010)

Boiler Design	Fuel	NESHAP 5D CO Calculated EF (lb/MMBtu)	NESHAP 5D CO Limit Emission Limit[1] (ppmvd@3%O_2)	$CF_{3 \rightarrow 0\%O2}$ (no units)	$CF_{ppm \rightarrow lb/dscfCO}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Stokers/sloped grate/others designed to burn wet biomass fuel	Wood	0.486	620	1.168	7.27E-08	9240
	Bark	0.505	620			9600
Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	Wood	0.361	460			9240
	Bark	0.375	460			9600
Fluidized bed units designed to burn biomass/bio-based solids	Wood	0.243	310			9240
	Bark	0.253	310			9600
Suspension burners designed to burn biomass/bio-based solids	Wood	1.882	2400			9240
	Bark	1.956	2400			9600
Dutch ovens/pile burners designed to burn biomass/bio-based solids	Wood	0.408	520			9240
	Bark	0.424	520			9600
Fuel cell units designed to burn biomass/bio-based solids	Wood	0.714	910			9240
	Bark	0.741	910			9600
Hybrid suspension grate boiler designed to burn biomass/bio-based solids	Wood	0.863	1100			9240
	Bark	0.896	1100			9600

[1] Least stringent emission limit selected to calculate EF when NESHAP 5D allows source to choose from among more than one.

Selection: Option 1. No FARR, NSPS or NESHAP 6J CO limits apply to wood residue-fired boilers. If the wood residue-fired boiler is subject to NESHAP 5D, employ NESHAP 5D CO emission limits as PTE EF as illustrated in Option 2.

2

Option 1: 4.8×10^{-5} lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-4.

Selection: Option 1. Note that no FARR, NESHAP or NSPS lead limits apply to wood residue-fired boilers.

3

Option 1: 0.22 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2 for wet wood-fired boiler

Option 2: 0.49 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2 for dry wood-fired boiler

Selection: Option 2. The NO_X emission factors for combusting wet and dry wood are 0.22 and 0.49 lb/MMBtu, respectively. Because each source in Pacific Northwest Indian Country is allowed to combust dry wood in its biomass boiler, it is appropriate to assume combustion of that higher-emitting dry wood in determining NO_X PTE. Note that no FARR, NESHAP or NSPS NO_X limits apply to wood residue-fired boilers.

Option 1: 0.030 - 0.20 lb/MMBtu (EPA Reference Method 5)

Basis: NSPS Subpart Db as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Action*	Date Action Commenced	ACF	NSPS Db PM Emission Limit (lb/MMBtu)	NSPS Db PM Emission Limit (% removal)	Regulatory Citation
100 < X	C, R, M	06/19/84 < Y ≤ 02/28/05	30% < Z	0.10	N/A	60.43b(c)(1)
100 < X ≤ 250	C, R, M	06/19/84 < Y ≤ 02/28/05	30% ≥ Z	0.20	N/A	60.43b(c)(2)
100 < X	C, R, M	02/28/05 < Y	N/A	0.030	N/A	60.43b(h)(1)
100 < X	M	02/28/05 < Y	N/A	0.051	99.8	60.43b(h)(2)
100 < X ≤ 250	M	02/28/05 < Y	30% < Z	0.10	N/A	60.43b(h)(3)
250 < X	M	02/28/05 < Y	30% < Z	0.085	N/A	60.43b(h)(4)

* C - construction, R - reconstruction and M - modification

Option 2: 0.030 - 0.30 lb/MMBtu (EPA Reference Method 5)

Basis: NSPS Subpart Dc as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Action*	Date Action Commenced	ACF	NSPS Dc PM Emission Limit (lb/MMBtu)	NSPS Dc PM Emission Limit (% removal)	Regulatory Citation
30 ≤ X ≤ 100	C, R, M	06/09/89 < Y ≤ 02/28/05	30% < Z	0.10	N/A	60.43c(b)(1)
	C, R, M	06/09/89 < Y ≤ 02/28/05	30% ≥ Z	0.30	N/A	60.43c(b)(2)
	C, R, M	02/28/05 < Y	N/A	0.030	N/A	60.43c(e)(1)
	M	02/28/05 < Y	N/A	0.051	99.8	60.43c(e)(2)
	M	02/28/05 < Y	30% < Z	0.10	N/A	60.43c(e)(3)

* C - construction, R - reconstruction and M - modification

Option 3: 0.03 - 0.07 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 6J as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 6J PM Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.11201(a) and NESHAP 5D…
30 ≤ X	06/04/10 < Y	0.03	Table 1, Row 3
10 ≤ X < 30	06/04/10 < Y	0.07	Table 1, Row 4

Option 4: 0.0032 - 0.44 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 5D as follows:

• NESHAP 5D specifies a range of different PM emission limits based upon (a) the date the boiler commenced construction or reconstruction, (b) the design of the boiler and (c) type of fuel combusted. For the purpose of this PTE EF exercise, only the emission limits in units of "lb/MMBtu heat input" will be employed here. The source may choose to comply with an alternative "lb/MMBtu heat input" emission limit for total selected metals (TSM). Because TSM constitutes only a fraction of total PM, TSM emission limits will not be considered in determining PM PTE EF. TSM is limited to arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	Boiler Design	NESHAP 5D PM Emission Limit (lb/MMBtu; 3-run avg)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	Stokers/sloped grate/others designed to burn wet biomass fuel	0.037	Table 2, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	0.32	Table 2, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	0.11	Table 2, Row 9
		Suspension burners designed to burn biomass/bio-based solid	0.051	Table 2, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	0.28	Table 2, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	0.02	Table 2, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	0.44	Table 2, Row 13
	06/04/10 < Y	Stokers/sloped grate/others designed to burn wet biomass fuel	0.03	Table 1, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	0.03	Table 1, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	0.0098	Table 1, Row 9
		Suspension burners designed to burn biomass/bio-based solid	0.03	Table 1, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	0.0032	Table 1, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	0.02	Table 1, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	0.026	Table 1, Row 13

4

Option 5: 0.397 lb/MMBtu for wood and 0.412 lb/MMBtu for bark (EPA Reference Method 5)

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2)

EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$

• $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Fuel	FARR PM Calculated EF (lb/MMBtu)	FARR PM Emission Limit (gr/dscf @7%O_2)	$CF_{7\rightarrow 0\%O2}$ (unitless)	F_d (dscf/MMBtu)	$CF_{gr\rightarrow lb}$ (gr/lb)
Wood	0.397	0.2	1.504	9240	7000
Bark	0.412	0.2	1.504	9600	7000

Option 6: 0.35 lb/MMBtu (EPA Reference Method 5)

Basis: (a) AP-42, September 2003. Table 1.6-1. (b) Fuel blending and installation of mechanical collectors to comply with FARR PM limit.

According to AP-42 Table 1.6-1, combustion of dry and wet wood in the absence of control equipment results in PM emissions of 0.40 and 0.33 lb/MMBtu, respectively. Combustion of bark and wet wood together without controls results in PM emissions of 0.56 lb/MMBtu. While combustion of wood alone may result in exceedances of the FARR PM emission limit (40 CFR 49.152(d)(2)) if controls are not installed (0.40 and 0.33 ~ 0.397), combustion of bark and wet wood together will likely result in exceedances (0.56 > 0.412). Installing mechanical collectors and blending bark with wood results in PM emissions less than or equal to 0.35 lb/MMBtu.

Selection: Option 5. Because each source in Pacific Northwest Indian Country is subject to the FARR and allowed to combust bark in its biomass boiler, it is appropriate to assume compliance with the FARR and combustion of that slightly higher-emitting bark in determining PM PTE. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

5

Option 1: 0.047 - 0.217 lb/MMBtu

Basis: NSPS Subpart Db (0.03 - 0.20 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 2: 0.047 - 0.317 lb/MMBtu

Basis: NSPS Subpart Dc (0.03 - 0.30 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 3: 0.047 - 0.087 lb/MMBtu

Basis: NESHAP 6J (0.03 - 0.07 lb/MMbtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 4: 0.0202 - 0.457 lb/MMBtu

Basis: NESHAP 5D (0.0032 - 0.44 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 5: 0.429 lb/MMBtu

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2) for filterable portion and AP-42 for condensible portion.

As stated previously in analysis of PM EF, an EF of 0.412 is calculated assuming compliance with FARR PM limit and combustion of bark. EPA Reference Method 5 is the test method employed to determine compliance with the limit. EPA Reference Method 5 measures only filterable PM, but PM_{10} consists of both a filterable and condensible portion. AP-42 estimates the condensible contribution to be 0.017 lb/MMBtu. Adding the two together, 0.412 + 0.017 = 0.429 lb/MMBtu.

Selection: Option 5. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

6

Option 1: 0.047 - 0.217 lb/MMBtu

Basis: NSPS Subpart Db (0.03 - 0.20 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 2: 0.047 - 0.317 lb/MMBtu

Basis: NSPS Subpart Dc (0.03 - 0.30 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 3: 0.047 - 0.087 lb/MMBtu

Basis: NESHAP 6J (0.03 - 0.07 lb/MMbtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 4: 0.0202 - 0.457 lb/MMBtu

Basis: NESHAP 5D (0.0032 - 0.44 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 5: 0.429 lb/MMBtu

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2) for filterable portion and AP-42 for condensible portion.

As stated previously in analysis of PM EF, an EF of 0.412 is calculated assuming compliance with FARR PM limit and combustion of bark. EPA Reference Method 5 is the test method employed to determine compliance with the limit. EPA Reference Method 5 measures only filterable PM, but $PM_{2.5}$ consists of both a filterable and condensible portion. AP-42 estimates the condensible contribution to be 0.017 lb/MMBtu. Adding the two together, 0.412 + 0.017 = 0.429 lb/MMBtu.

Selection: Option 5. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

7

Option 1: 1.153 lb/MMBtu for wood and 1.198 lb/MMBtu for bark

Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 CFR 49.129(d)(1)

EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu)

• $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Fuel	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu)	FARR SO_2 Emission Limit (ppmvd@7%O_2)	$CF_{7\rightarrow 0\%O2}$ (unitless)	$CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Wood	1.153	500	1.504	1.66E-07	9240
Bark	1.198	500	1.504	1.66E-07	9600

Option 2: 4.615 lb/MMBtu for wood and 4.444 lb/MMBtu for bark

Basis: FARR solid fuel sulfur limit of 2% by weight (dry) at 40 CFR 49.130(d)(7)

EF (lb/MMBtu) = {[FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ / HV_{fuel} (Btu/lb)} X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu)

• $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + $O_2 \rightarrow SO_2$. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2.

• HV (heating value) wood (dry) = 8,667 Btu/lb. (5200/(1-0.4)). HV bark (dry) = 9,000 Btu/lb. (4500/(1-0.5)). See page A-5 of Appendix A to AP-42, September 1985.

Fuel	FARR Fuel S Calculate SO_2 EF (lb/MMBtu)	FARR Fuel Sulfur Limit (% by weight)	$CF_{S\rightarrow SO2}$ (lb SO_2/lb S)	HV_{fuel} (Btu/lb)	$CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu)
Wood	4.615	2	2	8667	1.0E+06
Bark	4.444	2	2	9000	1.0E+06

Option 3: 0.025 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2.

Selection: Option 1. Most stringent limit selected to calculate EF.

Option 1: 0.023 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-3 and calculating VOC as compound emitted.

Calculating VOC (as weighted-average VOC)

VOC (as weighted-average VOC) = (VOC_C) X [($MW_{wt\text{-}avg\ VOC}$) / (MW_C)] X [(#C_C) / (#$C_{wt\text{-}avg\ VOC}$)]

where:

VOC_C equals "0.017 lb/MMBtu" from AP-42, September 2003. Table 1.6-3.

$MW_{wt\text{-}avg\ VOC}$ equals "64.689 lb/lb-mol" and is the weighted-average molecular weight for VOC assuming speciated organic compound ratios supported by AP-42 Table 1.6-3

MW_C equals "12.0110 lb/lb-mol" and represents the molecular weight for carbon

#C_C equals "1" as the single carbon atom was the "basis" for which Method 25 VOC test results were determined

#$C_{wt\text{-}avg\ VOC}$ equals "3.975" and is the weighted-average number of carbon atoms present in VOC assuming speciated organic compound ratios supported by AP-42 Table 1.6-3

Calculating value for VOC (as weighted-average VOC):

VOC (as carbon):	0.017	lb/MMBtu
$MW_{wt\text{-}avg\ VOC}$:	64.689	lb/lb-mol
MW_C:	12.011	lb/lb-mol
#C_C:	1	
#$C_{wt\text{-}avg\ VOC}$:	3.975	
VOC (as weighted average VOC)	0.023	lb/MMBtu

The first two columns of the following table are extracted from AP-42, September 2003. Table 1.6-3. The third and fourth columns were created based upon information widely available over the internet. The fifth and sixth columns illustrate calculations necessary to determine weighted-average molecular weight and weighted-average number of carbon atoms comprising VOC emissions resulting from wood residue combustion.

Wood Residue Combustion Organic Compounds	EF (lb/MMBtu)	MW lb/lb-mol	Number of Carbon Atoms	EF x MW	EF X #C atoms
Acenaphthene	9.10E-07	154.21	12	1.40E-04	1.09E-05
Acenaphthylene	5.00E-06	152.19	12	7.61E-04	6.00E-05
Acetaldehyde	8.30E-04	44.05	2	3.66E-02	1.66E-03
Acetone	1.90E-04	58.08	3	1.10E-02	5.70E-04
Acetophenone	3.20E-09	120.15	8	3.84E-07	2.56E-08
Acrolein	4.00E-03	56.06	3	2.24E-01	1.20E-02
Anthracene	3.00E-06	178.23	14	5.35E-04	4.20E-05
Benzaldehyde	8.50E-07	106.12	7	9.02E-05	5.95E-06
Benzene	4.20E-03	78.11	6	3.28E-01	2.52E-02
Benzo(a)anthracene	6.50E-08	228.29	18	1.48E-05	1.17E-06
Benzo(a)pyrene	2.60E-06	252.31	20	6.56E-04	5.20E-05
Benzo(b)fluoranthene	1.00E-07	252.31	20	2.52E-05	2.00E-06
Benzo(e)pyrene	2.60E-09	252.31	20	6.56E-07	5.20E-08
Benzo(g,h,i)perylene	9.30E-08	276.33	22	2.57E-05	2.05E-06
Benzo(j,k)fluoranthene	1.60E-07	202.26	16	3.24E-05	2.56E-06
Benzo(k)fluoranthene	3.60E-08	252.31	20	9.08E-06	7.20E-07
Benzoic acid	4.70E-08	122.12	7	5.74E-06	3.29E-07
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	390.56	24	1.84E-05	1.13E-06
Bromomethane (Methyle bromide)	1.50E-05	94.94	1	1.42E-03	1.50E-05
2-Butanone (MEK)	5.40E-06	72.11	4	3.89E-04	2.16E-05
Carbazole	1.80E-06	167.21	12	3.01E-04	2.16E-05
Carbon tetrachloride	4.50E-05	153.82	1	6.92E-03	4.50E-05
Chlorobenzene	3.30E-05	112.56	6	3.71E-03	1.98E-04
Chloroform	2.80E-05	119.38	1	3.34E-03	2.80E-05
Chloromethane (Methyl chloride)	2.30E-05	50.49	1	1.16E-03	2.30E-05
2-Chloronaphthalene	2.40E-09	162.62	10	3.90E-07	2.40E-08
2-Chlorophenol	2.40E-08	128.56	6	3.09E-06	1.44E-07
Chrysene	3.80E-08	228.28	18	8.67E-06	6.84E-07
Crotonaldehyde	9.90E-06	70.09	4	6.94E-04	3.96E-05
Decachlorobiphenyl	2.70E-10	498.6584	12	1.35E-07	3.24E-09
Dibenzo(a,h)anthracene	9.10E-09	278.35	22	2.53E-06	2.00E-07
1,2-Dibromoethene	5.50E-05	185.85	2	1.02E-02	1.10E-04
Dichlorobiphenyl	7.40E-10	223.09792	12	1.65E-07	8.88E-09
1,2-Dichloroethane (Ethylene dichloride)	2.90E-05	98.96	2	2.87E-03	5.80E-05
Dichloromethane (Methylene chloride)	2.90E-04	84.93	2	2.46E-02	5.80E-04
1,2-Dichloropropane (Propylene dichloride)	3.30E-05	122.99	3	4.06E-03	9.90E-05
2,4-Dinitrophenol	1.80E-07	184.11	6	3.31E-05	1.08E-06
Ethyl benzene	3.10E-05	106.17	8	3.29E-03	2.48E-04
Fluoranthene	1.60E-06	202.26	16	3.24E-04	2.56E-05
Fluorene	3.40E-06	166.22	13	5.65E-04	4.42E-05
Formaldehyde	4.40E-03	30.03	1	1.32E-01	4.40E-03
Heptachlorobiphenyl	6.60E-11	395.32322	12	2.61E-08	7.92E-10
Hexachlorobiphenyl	5.50E-10	360.87816	12	1.98E-07	6.60E-09
Hexanal	7.00E-06	100.15888	6	7.01E-04	4.20E-05
Heptachlorodibenzo-p-dioxins	2.00E-09	425.30614	12	8.51E-07	2.40E-08
Heptachlorodibenzo-p-furans	2.40E-10	409.30674	12	9.82E-08	2.88E-09
Hexachlorodibenzo-p-dioxins	1.60E-06	390.82	12	6.25E-04	1.92E-05
Hexachlorodibenzo-p-furans	2.80E-10	374.86168	12	1.05E-07	3.36E-09
Indeno(1,2,3-cd)pyrene	8.70E-08	326.34	22	2.84E-05	1.91E-06
Isobutyraldehyde	1.20E-05	72.10572	4	8.65E-04	4.80E-05
2-Methylnaphthalene	1.60E-07	142.20	11	2.28E-05	1.76E-06
Monochlorobiphenyl	2.20E-10	187.64492	12	4.13E-08	2.64E-09
Naphthalene	9.70E-05	128.17	10	1.24E-02	9.70E-04
2-Nitrophenol	2.40E-07	139.11	6	3.34E-05	1.44E-06
4-Nitrophenol	1.10E-07	139.11	6	1.53E-05	6.60E-07
Octachlorodibenzo-p-dioxins	6.60E-08	459.7512	12	3.03E-05	7.92E-07
Octachlorodibenzo-p-furans	8.80E-11	443.7518	12	3.91E-08	1.06E-09
Pentachlorodibenzo-p-dioxins	1.50E-09	356.41602	12	5.35E-07	1.80E-08
Pentachlorodibenzo-p-furans	4.20E-10	340.41662	12	1.43E-07	5.04E-09
Pentachlorobiphenyl	1.20E-09	326.4331	12	3.92E-07	1.44E-08
Pentachlorophenol	5.10E-08	266.34	6	1.36E-05	3.06E-07
Perylene	5.20E-10	252.31	20	1.31E-07	1.04E-08
Phenanthrene	7.00E-06	178.23	14	1.25E-03	9.80E-05
Phenol	5.10E-05	94.11	6	4.80E-03	3.06E-04
Propanal	3.20E-06	58.08	3	1.86E-04	9.60E-06
Propionaldehyde	6.10E-05	58.08	3	3.54E-03	1.83E-04
Pyrene	3.70E-06	202.25	16	7.48E-04	5.92E-05
Styrene	1.90E-03	104.15	8	1.98E-01	1.52E-02
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.60E-12	321.97096	12	2.77E-09	1.03E-10
Tetrachlorodibenzo-p-dioxins	4.70E-10	321.97096	12	1.51E-07	5.64E-09
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11	305.97156	12	2.75E-08	1.08E-09

	Tetrachlorodibenzo-p-furans	7.50E-10	305.97156	12	2.29E-07	9.00E-09
	Tetrachlorobiphenyl	2.50E-09	291.98804	12	7.30E-07	3.00E-08
	Tetrachloroethene (Tetrachloroethylene)	3.80E-05	165.83	2	6.30E-03	7.60E-05
	o-Tolualdehyde	7.20E-06	120.15	8	8.65E-04	5.76E-05
	p-Tolualdehyde	1.10E-05	120.15	8	1.32E-03	8.80E-05
	Toluene	9.20E-04	92.14	7	8.48E-02	6.44E-03
	Trichlorobiphenyl	2.60E-09	257.54298	12	6.70E-07	3.12E-08
	1,1,1-trichloroethane (Methyl chloroform)	3.10E-05	133.40	2	4.14E-03	6.20E-05
	Trichloroethene (Trichloroethylene)	3.00E-05	131.39	2	3.94E-03	6.00E-05
	Trichlorofluoromethane	4.10E-05	137.37	1	5.63E-03	4.10E-05
	2,4,6-Trichlorophenol	2.20E-08	197.45	6	4.34E-06	1.32E-07
	Vinyl chloride	1.80E-05	62.50	2	1.13E-03	3.60E-05
	o-Xylene	2.50E-05	106.16	8	2.65E-03	2.00E-04
	TOTAL	1.75E-02			1.13E+00	6.96E-02
				weighted-average molecular weight of VOC →	64.689	3.975 ← weighted-average number of carbon atoms comprising VOC

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Option 1: 195 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb CO_2/MMBtu) X GWP_{CO2} (lb CO_2e/lb CO_2)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb CO_2/MMBtu)	40 CFR 98 GWP_{CO2} (lb CO_2e/lb CO_2)
195.0	195	1

Option 2: 206.8 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-1. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg CO_2/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{CO2} (lb CO_2e/lb CO_2)
206.8	93.8	2.20462262	1

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

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Option 1: 0.4 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb CH_4/MMBtu) X GWP_{CH4} (lb CO_2e/lb CH_4)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb CH_4/MMBtu)	40 CFR 98 GWP_{CH4} (lb CO_2e/lb CH_4)
0.4	0.021	21

Option 2: 1.5 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-2. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg CH_4/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{CH4} GWP_{CH4} (lb CO_2e/lb CH_4)
1.5	0.032	2.20462262	21

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

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Option 1: 4.0 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb N_2O/MMBtu) X GWP_{N2O} (lb CO_2e/lb N_2O)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb N_2O/MMBtu)	40 CFR 98 GWP_{N2O} (lb CO_2e/lb N_2O)
4.0	0.013	310

Option 2: 2.9 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-2. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg N_2O/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{N2O} (lb CO_2e/lb N_2O)
2.9	0.0042	2.20462262	310

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

ACF: Annual Capacity Factor for Wood
C: Construction
CF: Conversion Factor
EF: Emission Factor
FARR: Federal Air Rules for Reservations
GWP: Global Warming Potential
HV: Heating Value
M: Modification
MW: Molecular Weight
PTE: Potential to Emit
R: Reconstruction

EPA Region 10 Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013.

HAP Categories	EF (lb/MMBtu)
Trace Metal Compounds[1]	1.78E-03
Other Inorganic Compounds[2]	1.98E-02
Organic Compounds[3]	1.72E-02
TOTAL	3.87E-02

[1] See Table 1.

[2] See Table 2.

[3] See Table 3.

Table 1 - Trace Metal HAP EF[1]

Trace Metal Compounds	EF (lb/MMBtu)
Antimony Compounds	7.90E-06
Arsenic Compounds (including arsine)	2.20E-05
Beryllium Compounds	1.10E-06
Cadmium Compounds	4.10E-06
Chromium Compounds (including hexavalent)	2.10E-05
Cobalt Compounds	6.50E-06
Lead Compounds (not elemental lead)	4.80E-05
Manganese Compounds	1.60E-03
Mercury Compounds[2]	3.50E-06
Nickel Compounds	3.30E-05
Phophorus	2.70E-05
Selenium Compounds	2.80E-06
SUBTOTAL	1.78E-03

EF Basis: AP-42, September 2003. Table 1.6-4.

[1] Major Source Boiler MACT ("NESHAP Subpart DDDDD" or "NESHAP 5D") provides a source the option of complying with an emission limit for either PM or total selected metals (TSM). TSM includes only arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium. Because NESHAP 5D does not limit TSM compounds individually, it is not possible to create compound-specific EF. AP-42 will remain the basis for the PTE EF even if a boiler is subject to NESHAP 5D.

[2] If boiler is subject to NESHAP 5D, do not use mercury EF listed in table. Instead, employ emission limits specified in table immediately below beginning on source's compliance date. Existing sources must comply with NESHAP 5D emission limits beginning circa January 1, 2016.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 5D Mercury Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	5.7E-06	Table 2, Row 1
	06/04/10 < Y	8.0E-07	Table 1, Row 1

Table 2 - Other Inorganic HAP EF

Other Inorganic Compounds	EF (lb/MMBtu)
Chlorine	7.90E-04
Hydrochloric acid (hydrogen chloride)[1]	1.90E-02
SUBTOTAL	1.98E-02

EF Basis: AP-42, September 2003. Table 1.6-3.

[1] If boiler is subject to NESHAP 5D, do not use hydrogen chloride EF listed in table. Instead, employ emission limits specified in table immediately below beginning on source's compliance date. Existing sources must comply with NESHAP 5D emission limits beginning circa January 1, 2016.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 5D Hydrogen Chloride Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	2.2E-02	Table 2, Row 1
10 ≤ X	06/04/10 < Y	2.2E-02	Table 1, Row 1

Table 3 - Organic HAP EF

Organic Compounds	EF (lb/MMBtu)
Acetaldehyde	8.30E-04
Acetophenone	3.20E-09
Acrolein	4.00E-03
Benzene	4.20E-03
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08
Carbon tetrachloride	4.50E-05
Chlorobenzene	3.30E-05
Chloroform	2.80E-05
Dibenzofurans*[1]	1.87E-09
2,4-Dinitrophenol	1.80E-07
Ethyl benzene	3.10E-05
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05
Formaldehyde	4.40E-03
Methyl bromide (Bromomethane)	1.50E-05
Methyl chloride (Chloromethane)	2.30E-05
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05
Methylene chloride (Dichloromethane)	2.90E-04
Naphthalene*	9.70E-05
4-Nitrophenol	1.10E-07
Pentachlorophenol	5.10E-08
Phenol	5.10E-05
Polychlorinated biphenyls (PCB)[2]	8.15E-09
Polycyclic Organic Matter (POM)[3]	1.27E-04
Propionaldehyde	6.10E-05
Propylene dichloride (1,2-Dichloropropane)	3.30E-05
Styrene	1.90E-03
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12
Tetrachloroethylene (tetrachloroethene)	3.80E-05
Toluene	9.20E-04
Trichloroethylene (Trichloroethene)	3.00E-05
2,4,6-Trichlorophenol	2.20E-08
Vinyl chloride	1.80E-05
Xylenes (inlc isomers and mixtures)	2.50E-05
SUBTOTAL[4]	1.72E-02

EF Basis: AP-42, September 2003. Table 1.6-3.

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] See Table 4 for list of individual dibenzofurans.

[2] See Table 5 for list of individual polychlorinated biphenyls (PCBs).

[3] See Table 6 for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[4] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

Table 4 - Dibenzofurans EF

Dibenzofurans	EF (lb/MMBtu)
Heptachlorodibenzo-p-furans	2.40E-10
Hexachlorodibenzo-p-furans	2.80E-10
Octachlorodibenzo-p-furans	8.80E-11
Pentachlorodibenzo-p-furans	4.20E-10
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11
Tetrachlorodibenzo-p-furans	7.50E-10
SUBTOTAL	1.87E-09

EF Basis: AP-42, September 2003. Table 1.6-3.

Table 5 - PCB EF

PCB Compounds	EF (lb/MMBtu)
Decachlorobiphenyl	2.70E-10
Dichlorobiphenyl	7.40E-10
Heptachlorobiphenyl	6.60E-11
Hexachlorobiphenyl	5.50E-10
Monochlorobiphenyl	2.20E-10
Pentachlorobiphenyl	1.20E-09
Tetrachlorobiphenyl	2.50E-09
Trichlorobiphenyl	2.60E-09
SUBTOTAL	8.15E-09

EF Basis: AP-42, September 2003. Table 1.6-3.

Table 6 - POM EF

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	9.10E-07
Acenaphthylene*	5.00E-06
Anthracene*	3.00E-06
Benzo(a)anthracene*	6.50E-08
Benzo(b)fluoranthene*	1.00E-07
Benzo(j,k)fluoranthene*	1.60E-07
Benzo(k)fluoranthene*	3.60E-08
Benzo(g,h,i)perylene*	9.30E-08
Benzo(a)pyrene*	2.60E-06
Benzo(e)pyrene*	2.60E-09
2-Chloronaphthalene	2.40E-09
Chrysene*	3.80E-08
Dibenzo(a,h)anthracene*	9.10E-09
Dibenzodioxins**,[1]	1.67E-06
Dibenzofurans**,[2]	1.87E-09
Fluoranthene*	1.60E-06
Fluorene*	3.40E-06
Indeno(1,2,3-cd)pyrene*	8.70E-08
2-Methylnaphthalene	1.60E-07
Naphthalene***	9.70E-05
Perylene	5.20E-10
Phenanthrene*	7.00E-06
Pyrene*	3.70E-06
SUBTOTAL	1.27E-04

EF Basis: AP-42, September 2003. Table 1.6-3.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP. For Dibenzodioxins, only 2,3,7,8-Tetrachlorodibenzo-p-dioxins is also an individual HAP.

[1] See Table 7.

[2] See Table 4.

Table 7 - Dibenzodioxins EF

Dibenzodioxins	EF (lb/MMBtu)
Heptachlorodibenzo-p-dioxins	2.00E-09
Hexachlorodibenzo-p-dioxins	1.60E-06
Octachlorodibenzo-p-dioxins	6.60E-08
Pentachlorodibenzo-p-dioxins	1.50E-09
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.60E-12
Tetrachlorodibenzo-p-dioxins	4.70E-10
SUBTOTAL	1.67E-06

EF Basis: AP-42, September 2003. Table 1.6-3.

Appendix A: Potential Emissions Inventory

EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013

No.	Emissions Generating Activity	PM EF	PM_{10} % of PM	PM_{10} EF	$PM_{2.5}$ % of PM	$PM_{2.5}$ EF	Units[1]
Sawmill Activities (upstream of lumber drying)							
IMPORTANT: If sawmill activities (categories No. 1 - 5 listed below) occur within a building, reduce the PM, PM_{10} and $PM_{2.5}$ EF listed below by 80 percent (engineering judgement) as emissions struggle to escape through doorways and other openings. If an activity occurs within an interior enclosure of the building and the activity's by-products are evacuated pneumatically from the building to a target box, cyclone or bag filter system, then only the associated downstream "material handling" emissions are counted.							
1	Log Bucking	0.035	50	0.0175	25	0.00875	lb/ton log
2	Log Debarking	0.024	50	0.012	25	0.006	lb/ton log
3	Hogging	0.050	50	0.025	25	0.0125	lb/bdt material
4	Sawing	0.350	50	0.175	25	0.0875	lb/ton log
5	Chipping	0.050	50	0.025	25	0.0125	lb/bdt material
Planing Activities (downstream of lumber drying)							
6	Accumulation of activities that generate planed dry lumber, chips, sawdust and shavings from rough dried lumber	0.0812	50	0.0406	25	0.0203	lb/mbf
By-Product Conveying or "Material Handling" Activities							
IMPORTANT: The "material" in the "material handling" entries listed below refers to bark, hogged fuel, green chips, dry chips, green sawdust, dry sawdust, shavings and any other woody by-product of lumber production. In the case of material "drops," EF are to be applied to each "drop" separately. Similarly, EF are to be applied to each "material handling" device separately.							
7	"Drop" of "wet" material from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and target box, (b) loadout from target box into a truck bed or railcar and (c) drop onto a pile.	0.00075	N/A	0.00035	N/A	0.00005	lb/bdt material
8	"Drop" of "dry" material from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and target box, (b) loadout from target box into a truck bed or railcar and (c) drop onto a pile.	0.0015	N/A	0.0007	N/A	0.0001	lb/bdt material
9	Pneumatically convey material through medium efficiency cyclone to bin	0.5	85	0.425	50	0.25	lb/bdt material
10	Pneumatically convey material through high efficiency cyclone to bin	0.2	95	0.19	80	0.16	lb/bdt material
11	Pneumatically convey material through cyclone to bin. Exhaust routed through baghouse.	0.001	99.5	0.000995	99	0.00099	lb/bdt material
12	Pneumatically convey material into target box	0.1	85	0.085		0	lb/bdt material
Yard Activities							
13	Wind Erosion of Pile	0.38	50	0.19	25	0.095	ton/acre-yr
14	Paved Roads	Emission factors based upon site-specific parameters.					lb/VMT
15	Unpaved Roads	Emission factors based upon site-specific parameters.					lb/VMT

Acronyms

bdt: bone dry ton
mbf: 1000 board foot lumber
VMT: vehicle mile traveled

[1] EF for log bucking, debarking and sawing are expressed in units of "lb/ton log" in the table above. The EF can be expressed in units of "lb/mbf" lumber as follows:

$$lb/mbf = (lb\ PM/ton\ log) \times (ton/2000\ lb) \times (LD\ lb/ft^3) \times (LRF\ bf\ lumber/ft^3\ log) \times (1000\ bf/mbf)$$

where "LD" stands for log density and "LRF" stands for log recovery factor

• LD values are species-specific and are provided by The Engineering ToolBox and are listed at http://www.engineeringtoolbox.com/weigt-wood-d_821.html

• LRF value of 6.33 bf/ft^3 log is specific to softwood species of the Pacific Coast East. See Section 2 of Appendix D to Forest Products Measurements and Conversion Factors with Special Emphasis on the U.S. Pacific Northwest. College of Forest Resources, University of Washington. 1994. See http://www.ruraltech.org/projects/conversions/briggs_conversions/briggs_append2/appendix02_combined.pdf

No.	Reference

1

For PM, PM_{10}, and $PM_{2.5}$ EF, apply engineering judgement to estimate that log bucking emissions are one-tenth sawing emissions. EPA has stated that log bucking is normally a negligible source of fugitive PM emissions. See page 2-125 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. The document can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. For sawing emissions details, see Reference No. 4 below.

2

• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

3

Apply engineering judgement to estimate that (a) hogging PM emissions are one-half pneumatic target box emissions, (b) hogging PM_{10} emisions are one-half hogging PM emissions and (c) hogging $PM_{2.5}$ emissions are one-half hogging PM_{10} emissions.

4

• Sawing consists of the following cummulative activities: breaking the log into cants and flitches with a smooth edge, breaking cant further down into multiple flitches and/or boards, taking the flitch and trim off all irregular edges to leave four-sided lumber and trimming to square the ends.

• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

5

Apply engineering judgement to estimate that (a) chipping PM emissions are one-half pneumatic target box emissions, (b) chipping PM_{10} emisions are one-half chipping PM emissions and (c) chipping $PM_{2.5}$ emissions are one-half chipping PM_{10} emissions.

6

• For PM, see Table 1.4 on page 8 of CORRIM: Phase I Final Report, Module B, Softwood Lumber - Pacific Northwest Region. June 1, 2004 Review Draft prepared by Michael Milota, Oregon State University.

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

7
8

• See Section 13.2.4 of EPA's AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf. Apply Equation 1 on page 13.2.4-4 to estimate emissions resulting from material loadout from target box as follows: E [lb PM/ton] = (k) X (0.0032) X $(U/5)^{1.3}$ / $(M/2)^{1.4}$

Wet Material Loadout

Particulate	k	0.0032	$(U/5)^{1.3}$	$(M/2)^{1.4}$	lb PM / ton
PM	0.74	0.0032	6.6693	21.0552	0.00075
PM_{10}	0.35				0.00035
$PM_{2.5}$	0.053				0.00005

The following conservative assumptions were

Mean wind speed (U) = 15 miles per hour

$(U/5)^{1.3}$ = 6.66930

Material moisture content (M) = 34 percent. Value based upon observations

$(M/2)^{1.4}$ = 21.05520

Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate.

• Moisture content of 34 percent for "wet" material is based upon observation that average moisture content (dry basis) of green douglas fir lumber (common to the Pacific Northwest) is 51 percent as recorded prior to lab scale kiln VOC emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 51 percent moisture content (dry basis) is equivalent to 34 percent moisture content (wet basis) as illustrated below:

MCD = MCW / (1-MCW); where

MCD: moisture content dry basis

MCW: moisture content wet basis

0.51 = MCW / (1 - MCW)

0.51 - (0.51)(MCW) = MCW

(1.51)(MCW) = 0.51

MCW = 0.34, or 34 percent

Dry Material Loadout

Particulate	k	0.0032	$(U/5)^{1.3}$	$(M/2)^{1.4}$	lb PM / ton
PM	0.74	0.0032	6.6693	10.5552	0.0015
PM_{10}	0.35				0.0007
$PM_{2.5}$	0.053				0.0001

The following conservative assumptions were

	Mean wind speed (U) = 15 miles per hour $(U/5)^{1.3}$ = 6.6693 Material moisture content (M) = 13 percent $(M/2)^{1.4}$ = 10.5552 Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate. • Moisture content of 13 percent for "dry" material is based upon observation that typical moisture content (dry basis) of kiln-dried lumber is 15 percent as recorded during lab scale kiln emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 15 percent moisture content (dry basis) is equivalent to 13 percent moisture content (wet basis) as illustrated below: MCD = MCW / (1-MCW); where MCD: moisture content dry basis MCW: moisture content wet basis 0.15 = MCW / (1 - MCW) 0.15 - (0.15)(MCW) = MCW (1.15)(MCW) = 0.15 MCW = 0.13, or 13 percent
9 10 11 12	• For PM EF, see Oregon Department of Environmental Quality (ODEQ) Wood Products Emission Factors, AQ-EF02 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF02.pdf • For PM_{10} and $PM_{2.5}$ EF, see ODEQ Wood Products Emission Factors - $PM_{10}/PM_{2.5}$ Fractions, AQ-EF03 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF03.pdf
13	• For PM EF, see last row of Table 11.9-4 on page 11.9-11 of Section 11.9 of EPA's AP-42, July 1998 at http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s09.pdf. • For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.
14	See Equation 1 on page 13.2.1-4 of Chapter 13.2.1 of AP-42, January 2011 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf
15	See Equation 1a on page 13.2.2-4 of Chapter 13.2.2 of AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf

EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012

This spreadsheet calculates and compiles volatile organic compound (VOC) and hazardous air pollutant (HAP) emission factors (EF) in units of pounds of pollutant per thousand board feet of lumber dried (lb/mbf) that are preferred by EPA Region 10 for estimating emissions from lumber drying kilns. The EFs are based on actual lab-scale emission test data when available; when not available, EFs for similar species are substituted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

A summary of the EFs for each species of wood is included on this sheet. The sheets that follow present the original test data as well as the calculations for creating each EF. There are two sheets per lumber species: one for HAPs and one for VOCs. To assure adequate conservatism for use in applicability determinations and compliance assurance applications, the EFs represent the 90th percentile of the data when three or more test values are available and the maximum test value of the data when less than three test values are available.

Species	Maximum Kiln Temperature (°F)	WPP1 VOC[1] (lb/mbf)	Total HAP (lb/mbf)	Methanol[2] (lb/mbf)	Formaldehyde[2] (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
Non-Resinous Softwood Species								
White Fir[3]	≤200	0.8388	0.2107	0.1480	0.0034	0.0550	0.0018	0.0026
	>200	1.0902	0.4956	0.4200	0.0163			
Western Hemlock	≤200	0.5253	0.2921	0.1484	0.0016	0.1378	0.0018	0.0026
	>200	0.6615	0.3661	0.2196	0.0044			
Western Red Cedar	≤200	0.3631	0.2939	0.1484	0.0034	0.1378	0.0018	0.0026
	>200	1.1453	0.5784	0.4200	0.0163			
Resinous Softwood Species (Non-Pine Family)								
Douglas Fir	≤200	1.1576	0.1409	0.0690	0.0019	0.0682	0.0007	0.0011
	>200	1.6969	0.1913	0.1170	0.0043			
Engelmann Spruce	≤200	0.1775	0.0640	0.0250	0.0013	0.0360	0.0007	0.0010
	>200	0.2161	0.1201	0.0780	0.0044			
Larch	≤200	1.1576	0.1409	0.0690	0.0019	0.0682	0.0007	0.0011
	>200	1.6969	0.1914	0.1170	0.0044			
Resinous Softwood Species (Pine Family)								
Lodgepole Pine	≤200	1.5293	0.1125	0.0628		0.0420	0.0032	0.0045
	>200	1.5293	0.1166	0.0628	0.0041			
Ponderosa Pine	≤200	2.3450	0.1271	0.0740	0.0034	0.0420	0.0032	0.0045
	>200	3.8087	0.2029	0.1440	0.0092			
Western White Pine	≤200	2.8505	0.1271	0.0740	0.0034	0.0420	0.0032	0.0045
	>200	3.8087	0.2029	0.1440	0.0092			

[1] VOC emissions have been approximated consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC). Employing WPP1 VOC underestimates emissions when the mass-to-carbon ratio of unidentified VOC exceeds that of propane. Ethanol and acetic acid are examples of compounds that contribute to lumber drying VOC emissions (for some species more than others), and both have mass-to-carbon ratios exceeding that of propane.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

[3] White fir in this context refers to any one of several species of true fir grown in the West. The collection of timber commonly referred to as "white fir" includes the following species: white fir, grand fir, noble fir and subalpine fir.

Hazardous Air Pollutant Emission Factors for Drying White Fir Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying any one of several species of true fir grown in the West commonly referred to as "white fir." True fir includes the following species: white fir, grand fir, noble fir and subalpine fir; all classified in the same Abies genus. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile White Fir HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.096	0.0022	no data	no data	no data	2x6	122.0 / 15	42.6	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 5, 12, 14
180	0.148	0.0034	no data	no data	no data	2x6	133.2 / 15	46.9		
225	no data	no data	0.0550	no data	no data	2x4	170 / 13	54	Dinitrophenylhydrazine coated cartridges.	7
240	0.42	0.0156	no data	no data	no data	2x6	126.3 / 15	24	NCASI chilled impinger method.	5
240	0.419	0.0163	no data	no data	no data	2x6	119.0 / 15	24		

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate White Fir HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde[2] (lb/mbf)	Acrolein[2] (lb/mbf)
≤ 200°F	0.1480	0.0034	0.0550	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

[2] In the absence of white fir test data for propionaldehyde and acrolein, western hemlock test data has been substituted. The two wood species are similar in that both are non-resinous softwood species in the scientific classification family Pinaceae. See western hemlock HAP sheet for lab-scale test data and calculations.

Volatile Organic Compound Emission Factors for Drying White Fir Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying any one of several species of true fir grown in the West commonly referred to as "white fir." True fir includes the following species: white fir, grand fir, noble fir and subalpine fir; all classified in the same Abies genus. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile White Fir VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
180	0.26	2x6	106.3 / 15	36.6	JUM 3-200	3, 4
180	0.27	2x6	113.6 / 15	43.2		
180	0.22	2x6	122.0 / 15	42.6	JUM 3-200	3, 4, 5, 12
180	0.25	2x6	133.2 / 15	46.9		
190	0.63	2x4	138.1 / 15	70	JUM VE-7	2
190	0.50	2x4	138.1 / 15	75		
200	0.53	2x4	96.1 / 15	47		
225	0.39	2x4	170 / 13	54	JUM VE-7	7
240	0.62	2x6	126.3 / 15	25	JUM 3-200	5
240	0.6	2x6	119.0 / 15	25		

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate White Fir VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.5700
> 200°F	0.6160

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile White Fir Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1480	0.0034	0.0550	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] See white fir HAP sheet for lab-scale test data and calculations.

Step Four: Convert White Fir Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0399	0	0.0150	0.0007	0.0011	SUM ⇨	0.0567
> 200°F	0.1134	0					0.1302

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from White Fir VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	0.5700		0.0567		0.5133	X 1.2238 =	0.6281
> 200°F	0.6160		0.1302		0.4858		0.5946

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to White Fir VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	0.6281	⇨	0.1480	0.0034	0.0550	0.0018	0.0026	⇨	0.8388
> 200°F	0.5946		0.4200	0.0163					1.0902

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Emission Factors for Western Hemlock Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying western hemlock lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Western Hemlock HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.083	0.0013	no data	no data	no data	2x4	102.3 / 14.7	49.5	NCASI Method 98.01	14, 15
180	0.075	0.0014	0.078	0.002	0.0012	2x4	102.3 / 14.7	49.5	NCASI Method 105	14, 15, 18
180	0.094	0.0015	0.141	0.0008	0.0012	2x4 or 2x6	93.5 / 17.5	no data	NCASI Method 105	18
180	0.052	0.0007	no data	no data	no data	2x4	88.8 / 15	46.2	NCASI Method CI//WP-98.01	13
180	0.0312	0.00082	no data	no data	no data	2x4	56.8 / 15	38.35	NCASI Method CI//WP-98.01	8, 11, 14
180	0.0304	0.00082	no data	no data	no data	2x4	51.1 / 15	35.75		
200	0.098	0.0015	no data	no data	no data	2x6	81.0 / 15	45.2	NCASI Method CI//WP-98.01	11, 14
200	0.175	0.0016	no data	no data	no data	2x6	73.7 / 15	36.5		
200	0.154	0.0018	no data	no data	no data	2x6	100.1 / 15	47.4		
200	0.044	0.0008	0.133	0.0008	0.0024	2x4 or 2x6	83.9 / 15.0	no data	NCASI Method 105	14, 18
200	0.077	0.0014	0.128	0.001	0.0011	2x4 or 2x6	98.6 / 15.0	no data		
200	0.057	0.0014	no data	no data	no data	2x4	76.0 / 15	30.25	NCASI Method CI//WP-98.01	9, 11, 14
215	0.138	0.0043	no data	no data	0.0027	2x4	119.7 / 15	38	no data	6, 11, 14
225	0.189	0.0035	no data	no data		2x6	82 / 15	31.3	NCASI Method CI//WP-98.01	11, 14
225	0.167	0.0034	no data	no data	no data	2x6	77.4 / 15	28.6		
225	0.24	0.004	no data	no data	no data	2x6	101.7 / 15	33.5		
235	0.187	0.0045	0.084	0.0014	0.0019	2x4 or 2x6	76.2 / 15.0	no data	NCASI Method 105	18

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Hemlock HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0016	0.1378	0.0018	0.0026
> 200°F	0.2196	0.0044			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Western Hemlock Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western hemlock lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western Hemlock VOC Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
180	~~0.73~~	2x6	126.6 / 15	66.5	no data	11
180	~~0.66~~	2x6	139.3 / 15	67.9		
180	~~0.6~~	2x6	127.8 / 15	65.7		
180	~~0.67~~	2x6	132.7 / 15	67		
180	0.17	2x4	114.8 / 15	45	no data	11
180	0.07	2x4	103.1 / 15	40.7		
180	0.12	2x4	98.0 / 15	37.5		
180	0.4	2x4	115.7 / 15	52.9		
180	0.236	2x4 or 2x6	93.5 / 17.5	no data	JUM VE-7	18
180	0.142	2x4	102.3 / 14.7	49.5	JUM VE-7	15, 18
180	0.18	2x4	88.8 / 15	46.2	JUM VE-7	13
180	0.198	2x4	56.8 / 15	38.35		8, 11
180	0.122	2x4	51.1 / 15	35.75		
200	0.24	2x4	112.8 / 15	40	JUM VE-7	2
200	0.2	2x6	81.0 / 15	45.2	no data	11
200	0.15	2x6	73.7 / 15	36.5		
200	0.3	2x6	100.1 / 15	47.4		
200	0.204	2x4	76.0 / 15	30.25	JUM 3-200	9, 11
200	0.214	2x4 or 2x6	83.9 / 15.0	no data	JUM VE-7	18
200	0.239	2x4 or 2x6	98.6 / 15.0	no data		
215	0.34	2x4	112.9 / 15	32.7	no data	11
215	0.34	2x4	119.7 / 15	38	JUM 3-200	6, 11
225	0.28	2x6	82 / 15	31.3	no data	11
225	0.27	2x6	77.4 / 15	28.6		
225	0.31	2x6	101.7 / 15	33.5		
235	0.247	2x4 or 2x6	81.6 / 15.0	no data	JUM VE-7	18
235	0.226	2x4 or 2x6	76.2 / 15.0	no data		

[1] Blue highlight denotes data not considered by EPA Region 10 in 2012. The four test runs not considered here were obtained from a single "sample" and appeared to use a much longer drying cycle than would be in common use in the Pacific Northwest. Therefore, these highlighted values were not used in the EF derivation.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Hemlock VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.2700
> 200°F	0.3400

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Western Hemlock Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0016	0.1378	0.0018	0.0026
> 200°F	0.2196	0.0044			

[1] See western hemlock HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western Hemlock Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0401	0	0.0376	0.0007	0.0011	SUM ⇨	0.0794
> 200°F	0.0593	0					0.0986

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western Hemlock VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR			Propane Mass Conversion Factor	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS	Speciated Compounds as Carbon (lb/mbf)	EQUALS	Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	X 1.2238 =	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.2700	⇨	0.0794	⇨	0.1906		0.2332
> 200°F	0.3400		0.0986		0.2414		0.2954

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western Hemlock VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	0.2332	⇨	0.1484	0.0016	0.1378	0.0018	0.0026	⇨	0.5253
> 200°F	0.2954		0.2196	0.0044					0.6615

Hazardous Air Pollutant Emission Factors for Drying Western Red Cedar Lumber

This sheet presents the HAP EF for drying western red cedar lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of western red cedar. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Western Red Cedar HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0034	0.1378	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] In the absence of western red cedar test data, white fir test data has been substituted for methanol and high-temperature formaldehyde and western hemlock test data has been substituted for acetaldehyde, propionaldehyde, acrolein and low-temperature formaldehyde. Western red cedar is similar to white fir and western hemlock in that all three species are non-resinous softwood species in the scientific classification order Pinales. See the white fir and western hemlock HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for western red cedar), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Western Red Cedar Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western red cedar. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western Red Cedar VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
160	0.096	1x4	33.3 / 15	21	JUM VE-7	2
160	0.136	1x4	44.9 / 15	18		
> 200°F	no data					

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Red Cedar VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.1360
> 200°F	0.6160

[1] In the absence of western red cedar test data for high-temperature drying, white fir test data has been substituted. Western red cedar, white fir and western hemlock are similar in that all three are non-resinous softwood species in the scientific classification order Pinales. See the white fir and western hemlock VOC sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed high-temperature observations for western red cedar), separate values are calculated for low and high-temperature drying.

Step Three: Compile Western Red Cedar Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0034	0.1378	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] See western red cedar HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western Red Cedar Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0401	0	0.0376	0.0007	0.0011	SUM ⇨	0.0794
> 200°F	0.1134	0					0.1527

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western Red Cedar VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	0.1360		0.0794		0.0566	X 1.2238 =	0.0692
> 200°F	0.6160		0.1527		0.4633		0.5669

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western Red Cedar VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.0692
> 200°F	0.5669

PLUS

FROM STEP THREE				
Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
0.1484	0.0034	0.1378	0.0018	0.0026
0.4200	0.0163			

EQUALS

WPP1 VOC (lb/mbf)
0.3631
1.1453

Hazardous Air Pollutant Emission Factors for Drying Douglas Fir Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying douglas fir lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Douglas Fir HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
160	0.025	0.0008	no data	no data	no data	2x6	37.3 / 15	23.5	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 12, 14
160	0.023	0.0008	no data	no data	no data	2x6	44.9 / 15	28.5		
160	0.026	0.0017	no data	no data	no data	2x6	40.3 / 15	27.1		
160	0.018	0.0011	no data	no data	no data	2x6	31.9 / 15	25.2		
170	0.015	0.0005	no data	no data	no data	2x4	79.9 / 15	40.5	NCASI Method CI//WP-	13
170	0.026	0.0008	no data	no data	no data	2x4	56.9 / 15	27.5	NCASI Method 98.01	15
170	0.024	0.0008	0.03	0.0004	0.0005	2x4	56.9 / 15	27.5	NCASI Method 105	15, 18
180	0.050	0.0023	0.050	0.0005	0.0009	2x4	43.7 / 15	48	NCASI Method 105	18, 22
180	0.084	0.0019	0.061	0.0003	0.0007	4x4	44.7 / 15	111	NCASI Method 105	19
200	0.068	0.0018	0.043	0.0005	0.0009	2x4	64.3 / 15	60	NCASI Method 105	14, 18, 22
200	0.069	0.0019	0.071	0.0006	0.0004	2x4	59.5 / 15	56		
220	no data	no data	0.030	no data	no data	2x4	73 / 12	46	Dinitrophenylhydrazine coated cartridges.	7
220	no data	no data	0.022	no data	no data	2x4	73 / 15	46		
235	0.117	0.0043	0.067	0.0008		2x4 or 2x6	47.7 / 15	19	NCASI Method 105	18, 21

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Douglas Fir HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0009
> 200°F	0.1170	0.0043			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Douglas Fir Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying douglas fir lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Douglas Fir VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
160	0.51	2x6	37.3 / 15	23.5	JUM 3-200	3, 4, 12
160	0.55	2x6	44.9 / 15	28.5		
160	0.45	2x6	40.3 / 15	27.1		
160	0.46	2x6	31.9 / 15	25.2		
170	0.65	2x4	79.9 / 15	40.5	JUM VE-7	13
170	0.24	2x4	56.9 / 15	27.5	JUM VE-7	15, 18
180	0.942	2x4	38.9 / 15	63	JUM VE-7	2
180	0.669	2x4	44.9 / 15	42		
180	0.21	2x4	56.3 / 15	27		
180	0.575	2x4 or 2x6	43.7 / 15	no data	JUM VE-7	18
180	0.39	4x4	29.8 / 19	67.5	JUM 3-200	10
180	0.845	4x4	44.7 / 15	111		19
200	0.707	2x4 or 2x6	64.3 / 15	no data	JUM VE-7	18
200	0.879	2x4 or 2x6	59.5 / 15	no data		
220	1.2	2x4	73 / 12	46	JUM VE-7	7
220	1.3	2x4	73 / 15	46		
235	1.206	2x4 or 2x6	47.7 / 15	19	JUM VE-7	18, 21

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100.

Step Two: Calculate Douglas Fir VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.8688
> 200°F	1.2812

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Douglas Fir Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0009
> 200°F	0.1170	0.0043			

[1] See douglas fir HAP sheet for lab-scale test data and calculations.

Step Four: Convert Douglas Fir Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0186	0	0.0186	0.0003	0.0004	SUM ⇨	0.0379
> 200°F	0.0316	0					0.0508

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Douglas Fir VOC Emission Factors and Convert Result to "as Propane"

Maximum Dry Bulb Temperature (°F)	FROM STEP TWO: Method 25A VOC as Carbon (lb/mbf)		FROM STEP FOUR: Speciated Compounds as Carbon (lb/mbf)		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.8688	MINUS ⇨	0.0379	EQUALS ⇨	0.8309	X 1.2238 =	1.0169
> 200°F	1.2812		0.0508		1.2304		1.5057

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Douglas Fir VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

Maximum Dry Bulb Temperature (°F)	FROM STEP FIVE: Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		FROM STEP THREE: Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	1.0169	PLUS ⇨	0.0690	0.0019	0.0682	0.0007	0.0009	EQUALS ⇨	1.1576
> 200°F	1.5057		0.1170	0.0043					1.6968

Hazardous Air Pollutant Emission Factors for Engelmann Spruce Lumber

This sheet presents the HAP EF for drying engelmann spruce lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA is not aware of any HAP emission testing of englemann spruce. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile HAP Emission Test Data for Similar Species (White Spruce) by Drying Temperature[1,2]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[3] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.025	0.0013	0.036	0.0003	0.0005	2x4 or 2x6	33.5 / 15	no data	NCASI Method 105	18
235	0.078	0.0044	0.031	0.0007	0.001	2x4 or 2x6	32.7 / 15	no data		

[1] In the absence of engelmann spruce test data, white spruce test data has been substituted. The two wood species are similar in that both are resinous softwood species in the scientific classification genus Picea.

[2] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[3] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Engelmann Spruce HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0250	0.0013	0.0360	0.0007	0.0010
> 200°F	0.0780	0.0044			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Engelmann Spruce Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for engelmann spruce lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile VOC Emission Test Data for Similar Species (White Spruce) by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
≤ 200°F	no data					
235	0.11	2x4 or 2x6	32.7 / 15	no data	JUM VE-7	18

[1] In the absence of engelmann spruce test data, white spruce test data has been substituted. The two wood species are similar in that both are resinous softwood species in the scientific classification genus Picea.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Engelmann Spruce VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.1100
> 200°F	0.1100

[1] In the absence of white spruce test data for low-temperature drying, high-temperature test data has been substituted.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed low-temperature observations for white spruce), separate values are calculated for low and high-temperature drying.

Step Three: Compile Engelmann Spruce Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0250	0.0013	0.0360	0.0007	0.0010
> 200°F	0.0780	0.0044			

[1] See engelmann spruce HAP sheet for lab-scale test data and calculations.

Step Four: Convert Engelmann Spruce Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0067	0	0.0098	0.0003	0.0004	SUM ⇨	0.0173
> 200°F	0.0211	0					0.0316

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Engelmann Spruce VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)				
≤ 200°F	0.1100	MINUS ⇨	0.0173	EQUALS ⇨	0.0927	X 1.2238 =	0.1135
> 200°F	0.1100		0.0316		0.0784		0.0960

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Engelmann Spruce VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.1135
> 200°F	0.0960

PLUS

FROM STEP THREE				
Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
0.0250	0.0013	0.0360	0.0007	0.0010
0.0780	0.0044			

EQUALS

WPP1 VOC (lb/mbf)
0.1775
0.2161

Hazardous Air Pollutant Emission Factors for Drying Larch Lumber

This sheet presents the HAP EF for drying larch lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of larch. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Larch HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0010
> 200°F	0.1170	0.0044			

[1] In the absence of larch test data, douglas fir test data has been substituted for methanol, acetaldehyde, propionaldehyde, acrolein and low-temperature formaldehyde while white spruce test data has been substituted for high-temperature formaldehyde. Larch is similar to douglas fir, engelmann spruce, white spruce, lodgepole pine, ponderosa pine and western white pine in that all seven species are resinous softwood species in the scientific classification order Pinaceae, but larch does not share a common genus with any of these species. It appears to be most similar to douglas fir, engelmann spruce and white spruce in that the four species have small, sparse resin canals as opposed to the large numerous resin canals of the pines. See hhtp://www.faculty.sfasu.edu/mcbroommatth/lectures/wood_science/lab_2_resin_canal_species.pdf. See the douglas fir and englemann spruce HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for larch), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Larch Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying larch lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Larch WPP1 VOC Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	WPP1 VOC (lb/mbf)
≤200	1.1576
>200	1.6968

[1] In the absence of larch test data, douglas fir test data has been substituted. Larch is similar to douglas fir, engelmann spruce, white spruce, lodgepole pine, ponderosa pine and western white pine in that all seven species are resinous softwood species in the scientific classification order Pinaceae, but larch does not share a common genus with any of these species. It appears to be most similar to douglas fir, engelmann spruce and white spruce in that the four species have small, sparse resin canals as opposed to the large numerous resin canals of the pines. See hhtp://www.faculty.sfasu.edu/mcbroommatth/lectures/wood_science/lab_2_resin_canal_species.pdf. See the douglas fir and englemann spruce VOC sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observations for larch), separate values are calculated for low and high-temperature drying.

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Emission Factors for Drying Lodgepole Pine Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying lodgepole pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Lodgepole Pine HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
195	~~0.073~~	~~no data~~	~~0.012~~	~~no data~~	~~no data~~	no data	no data	no data	no data	14
195	~~0.092~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.064~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.028~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.02~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
≤ 200°F	no data									
236	0.063	0.0041	no data	no data	no data	2x4	59.1 / 15	16	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 12, 14
237	0.062	0.0041	no data	no data	no data	2x4	59.7 / 15	16.6		
238	0.056	0.0039	no data	no data	no data	2x4	56.9 / 15	16		

[1] Blue highlight denotes data not considered by EPA Region 10 in 2012. Five test runs considered by EPA Region 10 in 2007 are not considered here due to lack of documentation. The omitted test values are presented in Oregon Department of Environmental Quality memorandum May 8, 2007 entitled, "Title III Implications of Drying Kiln Source Test Results." The memorandum lists "Forintec #1, #2 and #5" along with "OSU QA # 1 and #2 " as the test data sources.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Lodgepole Pine HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol[2] (lb/mbf)	Formaldehyde[2] (lb/mbf)	Acetaldehyde[3] (lb/mbf)	Propionaldehyde[3] (lb/mbf)	(lb/mbf)
≤ 200°F	0.0628	0.0041	0.0420	0.0032	0.0045
> 200°F	0.0628	0.0041			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no confirmed low-temperature observations for lodgepole pine), separate values are calculated for low and high-temperature drying.

[2] In the absence of lodgepole pine test data for low-temperature drying, high-temperature test data has been substituted.

[3] In the absence of lodgepole pine test data for acetaldeyde, propionaldehyde and acrolein, ponderosa pine test data has been substituted. Lodgepole pine, ponderosa pine and western white pine are similar in that all three are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and western white pine HAP sheets for lab-scale test data and calculations.

Volatile Organic Compound Emission Factors for Drying Lodgepole Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying lodgepole pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Lodgepole Pine VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
≤ 200°F	no data					
236	1.17	2x4	59.1 / 15	16.01	JUM 3-200	3, 4, 12
238	0.87	2x4	56.9 / 15	16.01		
240	1.19	2x4	64.9 / 15	16.81		

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Lodgepole Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	1.1860
> 200°F	1.1860

[1] In the absence of lodgepole pine test data for low-temperature drying, high-temperature test data has been substituted.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed low-temperature observations for lodgepole pine), separate values are calculated for low and high-temperature drying.

Step Three: Compile Lodgepole Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0628	0.0041	0.0420	0.0032	0.0045
> 200°F	0.0628	0.0041			

[1] See lodgepole pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Lodgepole Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0169	0	0.0115	0.0013	0.0019	SUM ⇨	0.0316
> 200°F	0.0169	0					0.0316

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Lodgepole Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	1.1860		0.0316		1.1544	X 1.2238 =	1.4127
> 200°F	1.1860		0.0316		1.1544		1.4127

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Lodgepole Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE	PLUS	FROM STEP THREE					EQUALS	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	1.4127		0.0628	0.0041	0.0420	0.0032	0.0045		1.5293
> 200°F	1.4127		0.0628	0.0041					1.5293

Hazardous Air Pollutant Emission Factors for Drying Ponderosa Pine Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying ponderosa pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Ponderosa Pine HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
170	0.035	0.0027	0.042	0.0019	0.0017	2x4	82.6 / 15	42	NCASI Method 105	17, 18
176	0.05	0.0022	no data	no data	no data	2x10 & 2x12	107.1 / 12	55	NCASI Method IM/CAN/WP-99.01 without cannisters	3, 4, 12, 14
176	0.08	0.0036	no data	no data	no data	2x10 & 2x12	124.1 / 12	57		
235	0.144	0.0092	0.028	0.0032	0.0045	2x4 or 2x6	89.1 / 15	19	NCASI Method 105	18, 21

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Ponderosa Pine HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Ponderosa Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying ponderosa pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Ponderosa Pine VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
170	1.59	2x4	82.6 / 15	42	JUM VE-7	17, 18
170	1.795	1x4	112.8 / 15	29	JUM VE-7	2
170	1.925	1x4	88.7 / 15	28		
176	1.29	2x10 & 2x12	107.1 / 12	55	JUM 3-200	3, 4, 12
176	1.54	2x10 & 2x12	124.1 / 12	57		
176	1.40	2x10 & 2x12	114.8 / 12	58.5	JUM 3-200	3, 4
176	1.30	2x10 & 2x12	93.0 / 12	57.1		
235	3.00	2x4 or 2x6	89.1 / 15	19	JUM VE-7	18, 21

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Ponderosa Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	1.8470
> 200°F	3.0000

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Ponderosa Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] See ponderosa pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Ponderosa Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0200	0	0.0115	0.0013	0.0019	SUM ⇨	0.0346
> 200°F	0.0389	0					0.0535

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Ponderosa Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	1.8470		0.0346		1.8124	X 1.2238 =	2.2179
> 200°F	3.0000		0.0535		2.9465		3.6058

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Ponderosa Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE	PLUS	FROM STEP THREE					EQUALS	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	2.2179	⇨	0.0740	0.0034	0.0420	0.0032	0.0045	⇨	2.3450
> 200°F	3.6058		0.1440	0.0092					3.8087

Hazardous Air Pollutant Emission Factors for Drying Western White Pine Lumber

This sheet presents the HAP EF for drying western white pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of western white pine. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Western White Pine HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] In the absence of western white pine test data, ponderosa pine test data has been substituted for all HAP. Western white pine is similar to ponderosa pine and lodgepole pine in that all three species are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and lodgepole pine HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for western white pine), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Western White Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western white pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western White Pine VOC Emission Test Data by Drying Temperature

Max Dry Bulb Temperature,°F	Method 25A VOC as Carbon, lb/mbf	Lumber Dimension	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
170	2.26	1x4	117.4 / 15	44	JUM VE-7	2
> 200°F	no data					

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western White Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	2.2600
> 200°F	3.0000

[1] In the absence of western white pine test data for high-temperature drying, ponderosa pine test data has been substituted. Western white pine, ponderosa pine and lodgepole pine are similar in that all three are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and lodgepole pine sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no high-temperature observations for western white pine), separate values are calculated for low and high-temperature drying.

Step Three: Compile Western White Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] See western white pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western White Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0200	0	0.0115	0.0013	0.0019	SUM ⇨	0.0346
> 200°F	0.0389	0					0.0535

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western White Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	2.2600		0.0346		2.2254	X 1.2238 =	2.7233
> 200°F	3.0000		0.0535		2.9465		3.6058

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western White Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	2.7233		0.0740	0.0034	0.0420	0.0032	0.0045		2.8505
> 200°F	3.6058		0.1440	0.0092					3.8087

Index to References Appearing in
EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012

Reference No. 1
(Undated) J.U.M. Flame Ionization Detector Response Factor Technical Information presented at http://www.jum-aerosol.com/images/E-Fakt-02.pdf

Notes
Methanol response factor (RF) of 0.72 equals average of three response factors 0.69, 0.68 and 0.79 for J.U.M. models 3-200 and VE-7. These two models were exclusively employed to determine Method 25A VOC in the testing EPA Region 10 is relying upon to support VOC emission factor derivation.

An alternative RF of 0.65 from Appendix 3 to EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 at http://www.epa.gov/ttn/emc/prelim/otm26.pdf could have been employed instead.

Employing RF of 0.72 (as opposed to 0.65) generates lower VOC emission factors (EF). A higher RF means that the EPA Method 25A flame ionization detector (FID) measures more of the compound. With the methanol EF having already been determined through speciated sampling and analysis, assuming the FID measures a greater portion of the methanol leaves less of the Method 25A measurement to be accounted for as unspeciated VOC.

Reference No. 2
National Council of the Paper Industry for Air and Stream Improvement, Inc. Technical Bulletin No. 718. July 1, 1996. A Small-Scale Kiln Study on Method 25A Measurements of Volatile Organic Compound Emissions from Lumber Drying.

Notes
To convert Method 25A VOC from "lb C/ODT" to "lb C/mbf," the following calculations were performed:

White Fir – Runs 15 and 16.
(0.85 lb/ODT) X (0.57 lb/mbf) / (0.77 lb/ODT) = 0.63 lb/mbf
(0.68 lb/ODT) X (0.57 lb/mbf) / (0.77 lb/ODT) = 0.50 lb/mbf
See pages 14 and 15 of the reference document.

Western Red Cedar – Runs 10 and 11.
(0.12 lb/ODT) X (0.12 lb/mbf) / (0.15 lb/ODT) = 0.096 lb/mbf
(0.17 lb/ODT) X (0.12 lb/mbf) / (0.15 lb/ODT) = 0.136 lb/mbf
See pages 14 and 15 of the reference document.

Douglas fir – Runs 1 and 3.
(1.00 lb/ODT) X (0.81 lb/mbf) / (0.86 lb/ODT) = 0.942
(0.71 lb/ODT) X (0.81 lb/mbf) / (0.86 lb/ODT) = 0.669
See pages 12 and 15 of the reference document.

Ponderosa Pine – Runs 5 and 6.
(1.92 lb/ODT) X (1.86 lb/mbf) / (1.99 lb/ODT) = 1.795 lb/mbf
(2.06 lb/ODT) X (1.86 lb/mbf) / (1.99 lb/ODT) = 1.925 lb/mbf
See pages 14 and 15 of the reference document.

The moisture content of wood was originally reported on a wet basis. It has been corrected to be on a dry basis using the following equation:
(moisture content on dry basis) = (moisture content on wet basis) / [1 – (moisture content on wet basis)]

Reference No. 3
Small-scale Kiln Study Utilizing Ponderosa Pine, Lodgepole Pine, White Fir, and Douglas-fir. Report by Michael R. Milota to Intermountain Forest Association. September 29, 2000.

Reference No. 4
Milota, Michael. VOC and HAP Emissions from Western Species. Western Dry Kiln Association: May 2001, p. 62-68.

Reference No. 5
Milota, M.R. 2003. HAP and VOC Emissions from White Fir Lumber Dried at High and Conventional Temperatures. Forest Prod. J. 53(3):60-64.

Reference No. 6
VOC and HAP Emissions from the High Temperature Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. June 21, 2004.

Reference No. 7
Fritz, Brad. 2004. Pilot- and Full-Scale Measurements of VOC Emissions from Lumber Drying of Inland Northwest Species. Forest Prod. J. 54(7/8):50-56.

Notes
To convert acetaldehyde from "µg/min-bf" to "lb/mbf," the following calculations were performed:

White fir.
0.0550 lb/mbf = (7.7 µg/min-bf) X (60 min/hr) X (54 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
See page 54 of the reference document.

Douglas fir.
0.030 lb/mbf = (4.9 µg/min-bf) X (60 min/hr) X (46 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
0.022 lb/mbf = (3.6 µg/min-bf) X (60 min/hr) X (46 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
See page 53 of the reference document.

Reference No. 8
VOC and Methanol Emissions from the Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. August 24, 2004.

Reference No. 9
VOC, Methanol, and Formaldehyde Emissions from the Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. October 15, 2004.

Reference No. 10
VOC Emissions from the Drying of Douglas-fir Lumber. Report by Michael R. Milota to Columbia Vista Corporation. June 14, 2005.

Reference No. 11
Milota, M.R. and P. Mosher. 2006. Emissions from Western Hemlock Lumber During Drying. Forest Prod. J. 56(5):66-70.

Reference No. 12
Milota, M.R. 2006. Hazardous Air Pollutant Emissions from Lumber Drying. Forest Prod. J. 56(7/8):79-84.

Reference No. 13
VOC, Methanol, and Formaldehyde Emissions from the Drying of Hemlock, ESLP, and Douglas Fir Lumber. Report by Michael R. Milota to Hampton Affiliates. March 23, 2007.

Reference No. 14
Oregon Department of Environmental Quality memorandum May 8, 2007 entitled, "Title III Implications of Drying Kiln Source Test Results."

Notes
The reference document presents a compilation of EF.

Reference No. 15
HAP Emissions from the Drying of Hemlock and Douglas-fir Lumber by NCASI 98.01 and 105. Report by Michael R. Milota to Hampton Affiliates. May 22, 2007 report.

Reference No. 16
EPA Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 presented at http://www.epa.gov/ttn/emc/prelim/otm26.pdf

Notes
VOC determined through use of this document is referred to as WPP1 VOC. The document is alternatively known as EPA Other Test Method 26 or "OTM26."

Default formaldehyde RF of 0 and propane (an alkane) RF of 1 appear in Appendix 3 – Procedure for Response Factor Determination for the Interim VOC Measurement Protocol for the Wood Products Industry.

Reference No. 17
HAP Emissions by NCASI 98.01 and 105 from Drying of Ponderosa Pine and White Wood Lumber. Report by Michael R. Milota to Hampton Affiliates. July 25, 2007.

Reference No. 18
Milota, M.R. and P. Mosher. 2008. Emission of Hazardous Air Pollutants from Lumber Drying. Forest Prod. J. 58(7/8):50-55.

Reference No. 19
VOC Emissions From the Drying of Douglas-fir Lumber. Report by Michael R. Milota to Columbia Vista Corp. November 12, 2010.

Reference No. 20
NCASI Technical Bulletin No. 991. September 2011. Characterization, Measurement, and Reporting of Volatile Organic Compounds Emitted from Southern Pine Wood Products Sources.

Notes
Acetaldehyde and propionaldehyde RF appear in Table C-1 of Appendix C. The values are estimates based upon dividing the compound's effective carbon numbers (ECN) by the number of carbon atoms in the compound. See Attachment 2 to Appendix C.

Acrolein RF is also an estimate based upon dividing the compound's ECN by the number of carbon atoms in the compound. In this case, the RF estimate does not appear in Table C-1 of Appendix C. The value is calculated as described above pursuant to Attachment 2 to Appendix C.
RF = (ECN) / (number of carbon atoms in compound)
where ECN = 2 given the aliphatic carbon contribution of CH_2CHCHO (see Table 2.1 to Appendix C) and the number of carbon atoms in acrolein = 3.
RF = 2/3 or 0.66

Reference No. 21
Email of 03/26/12 email from Oregon State University's Michael Milota to EPA Region 10's Dan Meyer.

Reference No. 22
Email of 03/27/12 from Oregon State University's Michael Milota to EPA Region 10's Dan Meyer.

2015 NPDES Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) Forms

United States Environmental Protection Agency
1200 Pennsylvania Ave, NW Washington, DC 20460

Note: This is a "smart form"; as you fill out the form, additional questions willl appear that you will need to answer.

Permit Information

1. What action would you like to take? *

Change an Existing Notice of Intent Form (e.g. Make changes to Facility information, Discharge information, Monitoring requirements, etc.)

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in the Facility Operator Information section of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in the Permit Information section of this form. Submission of this NOI also constitutes notice that the operator identified in the Facility Operator Information section of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in the Facility Information section of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

Operator Name (Organization Name)

Idaho Forest Group

Operator Name as Noted by the NOI Preparer

Idaho Forest Group

Provide the existing NPDES ID for the Notice of Intent that you would like to update and click the Submit button.

2. NPDES ID *

IDR05I312: Idaho Forest Group

☒ Confirm NPDES ID: IDR05I312: Idaho Forest Group *

3. Which type of change are you making? Options 2 and 3 cannot be selected together on the same form. If you need to make both Facility Monitoring Changes (option 2) and changes to Discharge Information, SIC Code/ Activity Code, Sectors/Subsectors, or Outfall information (option 3), please submit two separate forms. Submit any changes under option 3 before submitting Facility Monitoring Changes (option 2). If you have previously submitted Facility Monitoring Changes (option 2) for this NPDES ID, please contact your EPA Regional permitting authority before submitting changes under option 3.

☐ 1. Facility Operator Info (only for typographical errors or re-naming without change of ownership), Facility Name/Address, Other Permit Number, SWPPP Information, Estimated Area of Industrial Activity, MS4 Discharge, or Historic Preservation Criterion

☐ 2. Please indicate if any of the below monitoring changes applies to your facility. Reporting any of the below changes to your monitoring requirements will trigger changes to your monitoring requirements in EPA's NetDMR system (e.g., if you report below that you are no longer subject to benchmark monitoring for all parameters, your NetDMR form will no longer be prepopulated with your benchmark monitoring requirements).

* Note that if you have changes to your monitoring requirements that are not described below, you must contact your Regional permitting authority who will be able to change your monitoring requirements in NetDMR.

Options C and D are mutually exclusive and cannot be selected together or with any other option. Additionally, options A and E cannot be selected together. If you need to submit Facility Monitoring Changes that

☒ 3. Discharge Information, SIC Code/Activity Code, Sectors/Subsectors, Outfall information

☐ 4. Endangered Species Criterion

2. Select the state/territory where your facility is located *

ID

3. Is your facility located on Indian Country lands? *

(•) Yes ( ) No

3a. Select the Indian Country lands *

Other

3aa. Other *

Nez Perce

4. Are you requesting coverage as a "federal operator" as defined in Appendix A? *

( ) Yes (•) No

5. Are you a new discharger or a new source as defined in Appendix A? *

( ) Yes (•) No

5a. Have stormwater discharges from your facility been covered previously under an NPDES permit? *

(•) Yes ( ) No

5aa. Provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP 2008 or the NPDES permit number if you had coverage under an EPA individual permit *

IDR05I302

6. Do you directly discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding National Resource Water) (See Appendix L)? Your project will be considered to discharge to a Tier 3 water if the first water of the US to which you discharge is identified by a state, tribe, or EPA as a Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first water of the US to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. *

( ) Yes (•) No

7. Does your facility directly discharge to a Federal CERCLA site listed in Appendix P? For the purposes of this permit, a permittee discharges to a Federal CERCLA site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system. *

( ) Yes (•) No

8. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required? *

(•) Yes ( ) No

9. By indicating "Yes", I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.1.3. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. *

(•) Yes ( ) No

10. Master Permit Number

IDR05I000

B: Facility Information

Identify the applicable sector and subsector of your primary industrial activity (See Appendix D) that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code:

15. Sector *

SECTOR A: TIMBER PRODUCTS

16. Primary SIC Code *

2411: Logging

17. Subsector

A3: Log Storage and Handling

[ ] Check to add an additional Sector and Subsector.

22. Is your facility presently inactive and unstaffed? *

(•) Yes ( ) No

23. Is your facility expected to be inactive and unstaffed for the entire permit term? *

(•) Yes ( ) No

In the event your Facility becomes active during this permit cycle, you must submit a Change NOI to indicate that your Facility has become active.

C: Discharge Information

3. Identify if the following Effluent Limitation Guideline(s) apply to any of your discharges

40 CFR Part/Subpart: Part 429, Subpart I	Eligible Discharges: Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Affected MSGP Sector: A	New Source Date: 1/26/1981	Does your facility have any discharges subject to this effluent limitation guideline? * ◯ Yes ◉ No

Outfalls

4. **List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.**

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
001	+	46.249019	-	116.039816

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

5. Multiple Receiving Waters were returned for your outfall. Please select the receiving water that is associated with your outfall from this list: *

Clearwater River

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

Clearwater River

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◯ Yes ◉ No

3. Has a TMDL been completed for this receiving waterbody? *

◯ Yes ◉ No

Provide the following information about your outfall latitude longitude.

5. Latitude/Longitude Data Source *	6. Horizontal Reference Datum
Map	

7. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? *

◯ Yes ◉ No

8. Do you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) (See Appendix L)? *

◯ Yes ◉ No

Certification Information

Certifier E-Mail *

jshort@idfg.com

☒ Confirm Certifier: jshort@idfg.com *

2015 NPDES Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) Forms

United States Environmental Protection Agency
1200 Pennsylvania Ave, NW Washington, DC 20460

Note: This is a "smart form"; as you fill out the form, additional questions willl appear that you will need to answer.

Permit Information

1. What action would you like to take? *

File a New Notice of Intent Form

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in the Facility Operator Information section of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in the Permit Information section of this form. Submission of this NOI also constitutes notice that the operator identified in the Facility Operator Information section of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in the Facility Information section of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

Operator Name (Organization Name) *

Idaho Forest Group

Operator Name as Noted by the NOI Preparer

Idaho Forest Group

2. Select the state/territory where your facility is located *

ID

3. Is your facility located on Indian Country lands? *

(●) Yes ( ) No

3a. Select the Indian Country lands *

Other

3aa. Other *

Nez Perce

4. Are you requesting coverage as a "federal operator" as defined in Appendix A? *

( ) Yes (●) No

5. Are you a new discharger or a new source as defined in Appendix A? *

○ Yes ◉ No

5a. Have stormwater discharges from your facility been covered previously under an NPDES permit? *

◉ Yes ○ No

5aa. Provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP 2008 or the NPDES permit number if you had coverage under an EPA individual permit *

IDR05I302

6. Do you directly discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding National Resource Water) (See Appendix L)? Your project will be considered to discharge to a Tier 3 water if the first water of the US to which you discharge is identified by a state, tribe, or EPA as a Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first water of the US to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. *

○ Yes ◉ No

7. Does your facility directly discharge to a Federal CERCLA site listed in Appendix P? For the purposes of this permit, a permittee discharges to a Federal CERCLA site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system. *

○ Yes ◉ No

8. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required? *

◉ Yes ○ No

9. By indicating "Yes", I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.1.3. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. *

◉ Yes ○ No

10. Master Permit Number

IDR05I000

A: Facility Operator Information

1. Operator Name (Organization Name) *

Idaho Forest Group

2. Street *

280 Sycamore Drive

3. Supplemental Address

4. City *

Lewiston

5. State/Providence *

ID

6. ZIP Code *

83501

7. Facility County or Similar Govt. Subdivision *

Idaho

8. Phone (10-digits, No dashes) *

2088482322

9. Extension

10. E-Mail *

jdmiller@idfg.com

Operator point of contact information

11. First Name *

James

12. Middle Initial

D

13. Last Name *

Miller

14. Professional Title *

Technical Manager

B: Facility Information

1. Facility Name *

Idaho Forest Group

2. Street/Location *

283 Woodland Rd

3. Supplemental Address

4. City *

Kamiah

5. State *

ID

6. ZIP Code *

83536

7. Facility County or Similar Govt. Subdivision *

Lewis

Latitude/Longitude for the facility:

	8. Latitude (Decimal Degrees) *		9. Longitude (Decimal Degrees) *	10. Latitude/Longitude Data Source *	11. Horizontal Reference Datum
+	46.249019	-	116.039816	Other	

12. What is the ownership type of the facility? *

Corporation

13. Estimated area of industrial activity at your facility exposed to stormwater (to the nearest quarter acre) *

104.1

Identify the applicable sector and subsector of your primary industrial activity (See Appendix D) that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code:

15. Sector *

SECTOR A: TIMBER PRODUCTS

16. Primary SIC Code *

2421: Sawmills And Planing Mills, General

17. Subsector

A1: General Sawmills and Planing Mills

☐ Check to add an additional Sector and Subsector.

22. Is your facility presently inactive and unstaffed? *

◉ Yes ○ No

23. Is your facility expected to be inactive and unstaffed for the entire permit term? *

◉ Yes ○ No

In the event your Facility becomes active during this permit cycle, you must submit a Change NOI to indicate that your Facility has become active.

C: Discharge Information

3. Identify if the following Effluent Limitation Guideline(s) apply to any of your discharges

40 CFR Part/Subpart: Part 429, Subpart I	Eligible Discharges: Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Affected MSGP Sector: A	New Source Date: 1/26/1981	Does your facility have any discharges subject to this effluent limitation guideline? * ○ Yes ◉ No

Outfalls

4. **List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.**

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
001	+	46.249019	-	116.039816

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

5. Multiple Receiving Waters were returned for your outfall. Please select the receiving water that is associated with your outfall from this list: *

Clearwater River

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

Clearwater River

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

○ Yes ◉ No

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Provide the following information about your outfall latitude longitude.

5. Latitude/Longitude Data Source *	6. Horizontal Reference Datum
Map	

7. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? *

○ Yes ◉ No

8. Do you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) (See Appendix L)? *

○ Yes ◉ No

D: Stormwater Pollution Prevention Plan (SWPPP) Information

SWPPP Contact Information

1. First Name *	2. Middle Initial	3. Last Name *	4. Professional Title *
Chris		Johnson	Env Consultant

5. Phone (10-digits, No dashes) *	6. Extension	7. E-Mail *
2086284036		cjenv@hotmail.com

8. Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information. *

Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

☐ Option 1: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

☒ Option 2: Provide the following information from your SWPPP.

A. Describe your onsite industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning, cutting steel beams), and potential spill and leak areas. *

All industrial activity except access road travel for security and very limited maintenance ceased by May 17, 2016. The few remaining logs will be removed by October 2016, probably by chipping and trucking chips off-site.

Historic activities included:

Industrial Activity Associated Pollutants
Material Storage Motor oil, lubricants, hydraulic fluid
Equipment / vehicle fueling and maintenance Motor Oils, lubricants, hydraulic fluids, gasoline, diesel
Access road travel Sediment
Log Storage yards Vehicle motor oil, petroleum products, hydraulic fluid, sediment from soils and wood by-products
Bone-yard, scaling areas, log storage areas, loading areas Woody debris, vehicle motor oil, petroleum products, hydraulic fluids, metal
Chipping the few remaining non-lumber quality logs Vehicle motor oil, petroleum products, hydraulic fluid, sediment from soils and wood by-products

Industrial activity ceased on May 17, 2016. Current owners completed purchase of the property in June 2016. The facility is generally inactive and un-staffed. Leak potential is limited to storage tanks (which are generally being drained or removed), and areas where equipment is being removed or moth balled.

B. List the pollutants(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or in any authorized non-stormwater discharges listed in Part 1.1.3. *

No current activity; except for maintenance, security, and equipment removal. Historical activity includes: Log Storage yards Vehicle motor oil, petroleum products, hydraulic fluid, sediment from soils and wood by-products
Boneyard, scaling areas, log storage areas, loading areas Woody debris, vehicle motor oil, petroleum products, hydraulic fluids, metal
Chipping the few remaining non-lumber quality logs Vehicle motor oil, petroleum products, hydraulic fluid, sediment from soils and wood by-products

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 5.2.4). *

N/A, inactive and un-staffed facility, non-numeric technology based effluents not applicable. No log watering.

D. Provide a schedule for good housekeeping and maintenance (see Part 5.2.5.1) and a schedule for all inspections required in Part 4 (see Part 5.2.5.2). *

• Sweep in and around sawmill, storage bins, and conveyor systems
• Inspect storm drains, grates, and inlets at regular intervals
• Inspect drainage ditches at regular intervals
• Do not discharge liquid wastes or process wastewater to the ground, outflow, or receiving water
• Solid waste containers are covered, erosion resistant, and non absorbent
• Routine inspection of drums, tanks, containers, and fueling areas
• Properly dispose of old materials and waste
• Liquid storage containers are properly labeled, water tight, non absorbent, rodent proof, and equipped with tight fitting lids
• Storage containers are covered and impervious
.
Removal of operational equipment, potential hazardous materials and logs initialed in June 2016 and should be mostly completed by late 2016.

• All power equipment is maintained according to manufacturer's specs to ensure efficient operation and minimize spills of fluids
• The two ditches bounding and draining the facility are checked regularly, maintained with low impact to ensure effective operation
• Mill operators inspect equipment for fluid leaks before and after starting equipment engines
• Batteries are stored indoors in weather proof structures
• Dispose of oil filters, greasy rags, spent coolant, and degreasers
With production having ceased May 17, 2016 and new IFG ownership, maintenance as documented but requires less effort because of the lack of activity

E: Endangered Species Protection

1. Using the instructions in Appendix E of the MSGP, under which endangered species criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit? *

Criterion C – Discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat

2. Provide a brief summary of the basis for the criterion selected in Appendix E (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service to determine no species in action area; implementation of controls approved by EPA and the Services). *

Criterion C, with ESA consultation filed with EPA Region X July 26, 2015. Previous MSGP coverage with all MSGP 2008 and 2015 sample lab analyses showing compliance with benchmarks by a wide margin when this now inactive and unstaffed facility was operating and producing,

a. What federally-listed species or federally-designated critical habitat are located in your “action area." *

Chinook Salmon, Steelhead

b. Using the Criterion C Eligibility Form, check which of the following is applicable to your facility and answer any corresponding questions. *

☐ I submitted my completed Criterion C Eligibility Form to EPA at least 30 days prior to submitting this NOI and agree to implement any controls that were determined by EPA to be necessary to ensure that my discharges and/or discharge-related activities will have no likely adverse affects on listed species and critical habitat.

☒ I submitted my completed Criterion C Eligibility Form to EPA at least 30 days prior to submitting this NOI and have not been notified of any additional controls necessary to ensure no likely adverse affects on listed species and critical habitat.

Date your Criterion C Eligibility Form was sent to EPA (in DD/MM/YYYY format) *

26 Jul 2015

* Note: After you submit your NOI and before your NOI is authorized, EPA may notify you if any additional controls are necessary to ensure your discharges have no likely adverse affects on listed species and critical habitat.

F: Historic Preservation

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.7 are you eligible for coverage under this permit? *

Criterion A - No subsurface stormwater controls

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. 40 CFR 122.22 (d)

Certifier E-Mail *

jshort@idfg.com

Form Action *

Approve

Appendix D:

Site Survey Information

USER QUESTIONNAIRE

For Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user must provide the following information (if available) to the environmental professional. As per the Brownfields Amendments, failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

Respondant Name:	Kevin Brackney
Response Date:	12/14/2017
Address:	Nez Perce Tribe, PO Box 365, Lapwai, ID 83540

1. Environmental Cleanup Liens
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

☐ Yes ☒ No

2. Activity and Land Use Limitations
Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☐ Yes ☒ No

3. Specialized Knowledge or Experience
Do you have any specialized knowledge or experiences related to the property, nearby properties, or are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

☐ Yes ☒ No

4. Purchase Price vs. Fair Market Value
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

☒ Yes ☐ No

5. Commonly Known or Reasonably Ascertainable Information
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?

☒ Yes ☐ No

5a. Do you know the past uses of the property?

☒ Yes ☐ No

5b. Do you know of specific chemicals that are present or were once were present at the property?

☒ Yes ☐ No

5c. Do you know of spills or other chemical releases that have taken place at the property?

☒ Yes ☐ No

5d. Do you know of any environmental cleanups that have taken place at the property?

☒ Yes ☐ No

6. Obviousness of the Presence or Likely Presence of Contamination
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

☒ Yes ☐ No

Appendix E:

Site Photographs

Building 1 (office); looking at front (southern) entrance of office.

Piping in front of Building 1 (southern entrance).

East side of Building 1.

North side of Building 1, space between office and Building 2.

Inside Building 1, from front door looking inside building (looking north).

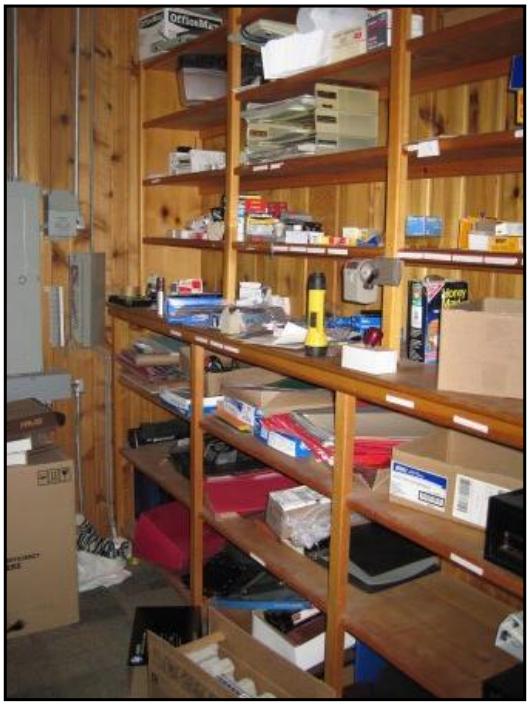
Ceiling tiles inside Building 1 (found throughout building).

Black and white aerial photo of lumber yard found on desk in Building 1.

Furnace room at southwest corner of Building 1.

Furnace room at southwest corner of Building 1.

Storage room at southeast corner of Building 1.



Storage room at southeast corner of Building 1.

Women's bathroom in Building 1, including 2 biohazard containers.

Women's bathroom in Building 1, including 2 biohazard containers.

Women's bathroom in Building 1, including 2 biohazard containers.

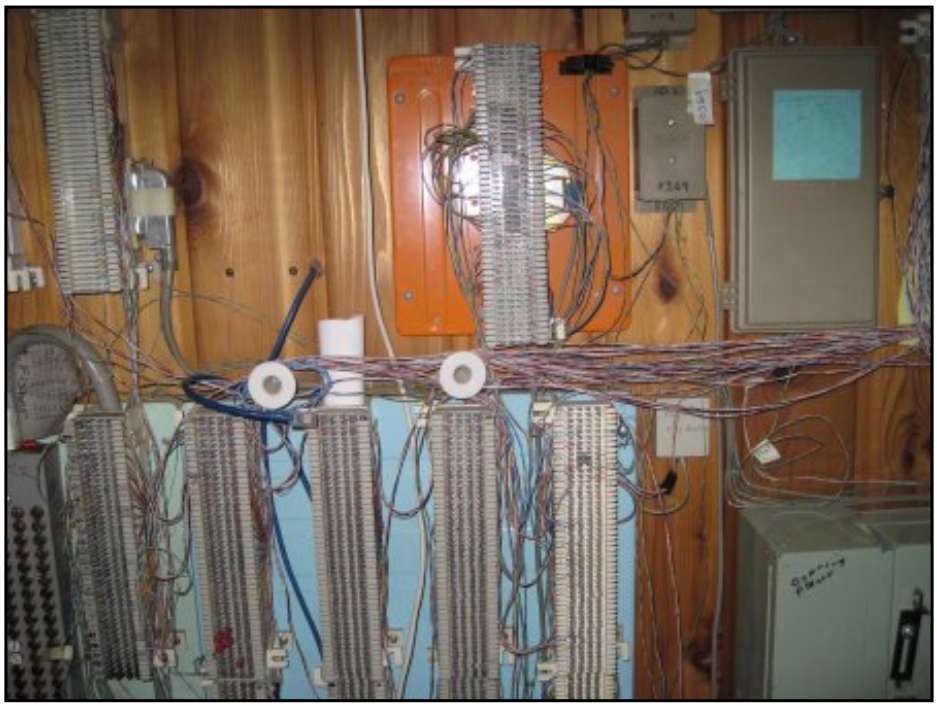
Men's bathroom in Building 1, including 2 biohazard containers.

Men's bathroom in Building 1, including 2 biohazard containers.

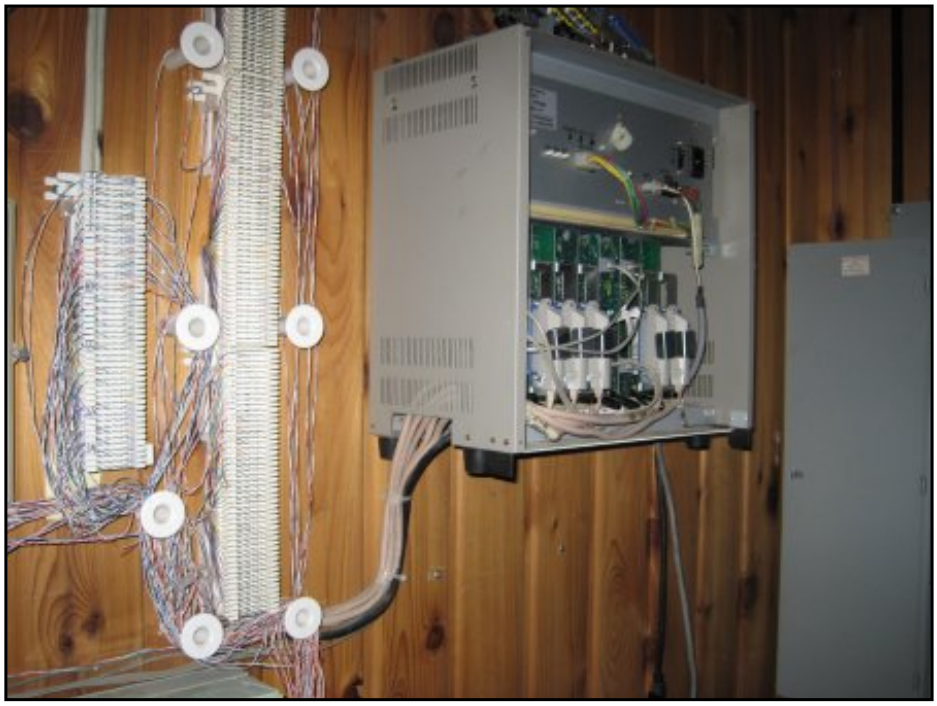
Kitchen in Building 1.

Main office room of Building 1 from back of room, facing south.

Circuitry and ceiling access in SE storage room of Building 1.



Circuitry and ceiling access in SE storage room of Building 1.



Circuitry and ceiling access in SE storage room of Building 1.

Standing at south entrance to Building 1 facing southeast Fire Suppression Lagoon and utility lines.

Utility box at bottom of pole near Fire Suppression Lagoon.

Overhead utility at NW corner of Fire Suppression Lagoon.

Overhead utility at NW corner of Fire Suppression Lagoon.

Fire Suppression Lagoon facing SE (from the NW corner).

Fire Suppression Lagoon facing SE (from the NW corner).

Plastic lining on Fire Suppression Lagoon burm near NW corner.

Looking northwest from NW corner of Fire Suppression Lagoon (towards Building 1).

Roof of Building 2 from east, looking west.

Roof of Building 2 from east, looking west.

Northwest side of Building 2.

Northwest side of Building 2.

Northwest side of Building 2.

Storm drainage at northwest side of Building 2.

Storm drainage at northwest side of Building 2.

Northwest corner and southwest side of Building 2, poor condition of exterior.

Northwest corner and southwest side of Building 2, poor condition of exterior.

Northwest corner and southwest side of Building 2, poor condition of exterior.

Paint on roofing material from northwest corner of Building 2.

Paint on roofing material from northwest corner of Building 2.

Paint on roofing material from northwest corner of Building 2.

Well-like structure at southwest side of Building 2.

Well-like structure at southwest side of Building 2.

Southwest side of Building 2, entrance.

Building 2 ramp entrance.

Building 2 interior, facing north.

Ceiling of Building 2 interior.

1 of 3 small rooms in Building 2, facing east.

North room of Building 2, facing north.

Aerial photo on wall of Building 2, of mill site.

Aerial photo on wall of Building 2, of mill site.

Front of Building 3A (scale house) facing northwest.

Paint on front of Building 3A.

Utility pole near Building 3A.

Building 3A, north side, facing southeast.

Inside Building 3A facing north.

Building 3B, facing northwest.

Inside Building 3B from door (facing northwest).

Inside Building 3B from door (facing northwest).

Northwest side of Building 3B, facing southeast.

Northwest side of Building 3B, facing northwest.

Northwest of Building 3B , facing east.

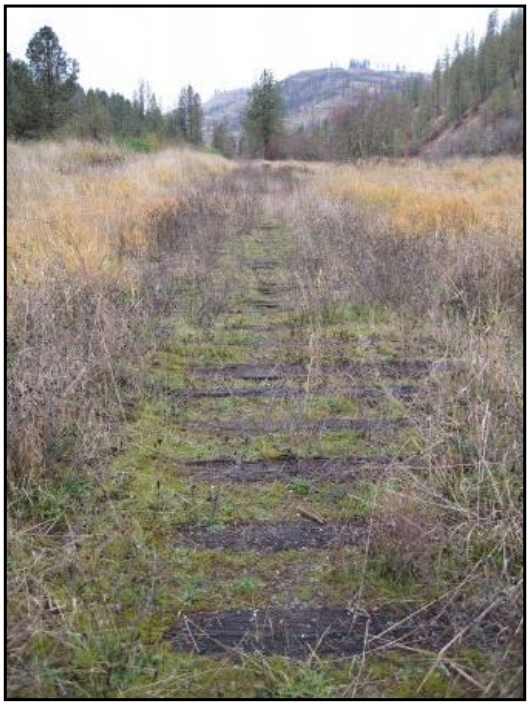
Northwest of Building 3B, facing north (towards fence).

Northwest of 3B, facing west (towards river).

Northwest of 3B, facing south.

Concrete debris in small depression to east of Buildings 1, 2, 3.

Concrete debris in small depression to east of Buildings 1, 2, 3.



Old rail line to east of Buildings 1, 2, 3, facing northwest.

Old rail line to east of Buildings 1, 2, 3, facing southeast.

Large ditch to east of Buildings 1, 2, 3, facing northwest.

Large ditch to east of Buildings 1, 2, 3, facing southeast.

Fenced off area (no water) north of Buildings 1, 2, 3 (sewage lagoon).

Fenced off area (no water) north of Buildings 1, 2, 3 (sewage lagoon).

Fenced off area (no water) north of Buildings 1, 2, 3 (sewage lagoon).

Fenced off area (no water) north of Buildings 1, 2, 3 (sewage lagoon).

Storm water pipe with flowing water coming into large drainage ditch (east of fenced off Sewage Lagoon).

Storm water pipe with flowing water coming into large drainage ditch (east of fenced off Sewage Lagoon).

Large drainage ditch at storm water pipe, facing north.

Large drainage ditch at storm water pipe, facing south.

Old rail line merging with rail spur that enters Building 4 (facing north).

Small white utility building northwest of site, near weir.

Small white utility building northwest of site, near weir.

Rail spur line facing northwest.

Utility building adjacent to weir, from the east side.

Water drainage through grate (weir) into culvert near the utility building.

Outflow water of weir (facing northwest).

Burn pile to west of the utility building/weir (all logs, small area).

Burn pile to west of the utility building/weir (all logs, small area).

Burn pile to west of the utility building/weir (all logs, small area).

Looking southeast of burn pile.

Dump site (metal scrap piles) west of rail lines (taken from rail line looking west towards river).

Rail lines looking south, towards main buildings on site.

Rail line going into Building 4, facing south/southeast.

Closer picture of metal scrap pile west of rail lines near river.

Closer picture of metal scrap pile west of rail lines near river.

Scattered metal scrap near scrap pile.

Scattered metal scrap near scrap pile.

Large metal sheet south of fenced lagoon area.

Building 4 (Packing and Loading Building), north side.

Building 4, north side.

Building 4 looking south (from north side).

Building 4 interior.

Building 4 interior.

Building 4 interior.

Staining on cement of Building 4.

De minimus staining on cement floor of Building 4.

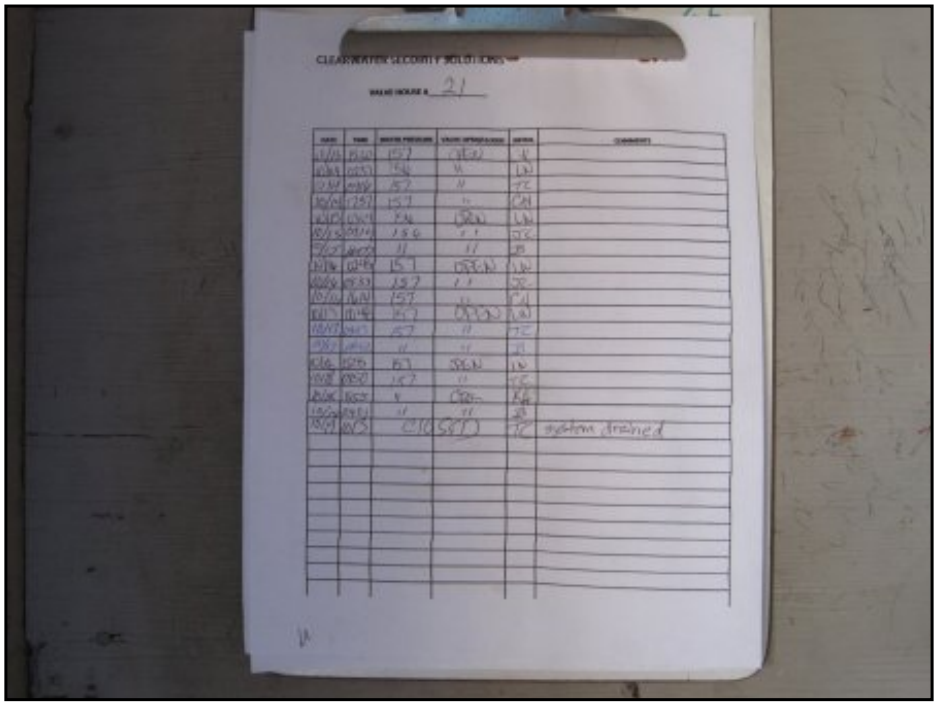
Metal piping on ceiling of Building 4 (fire supression system).

Metal piping on ceiling of Building 4 (fire supression system).

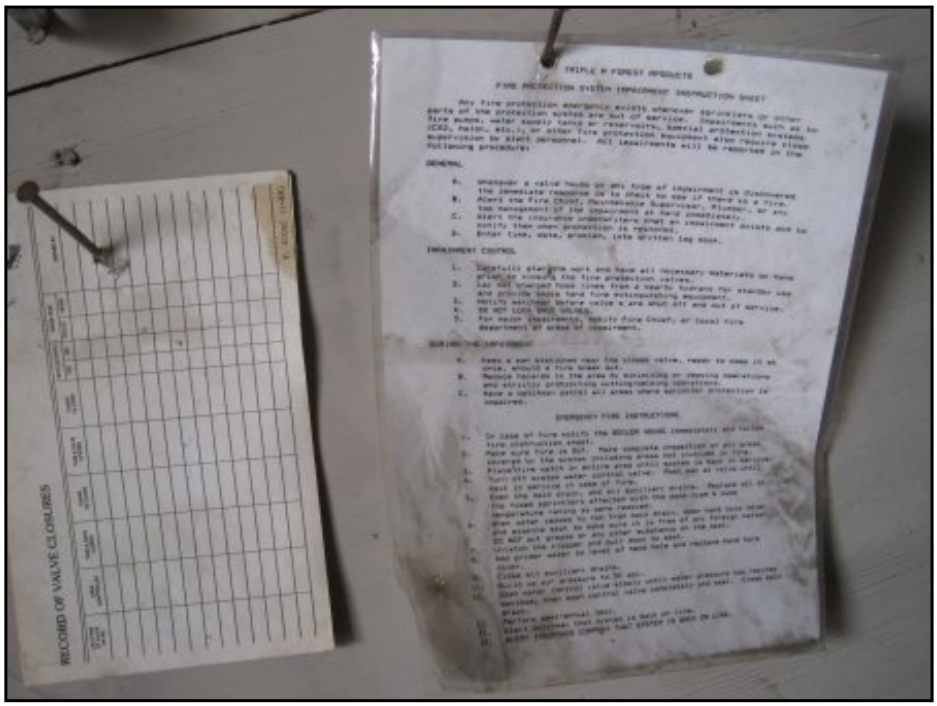
Shed in Building 4 (fire suppression).

Shed in Building 4 (fire suppression).

Shed in Building 4 (fire suppression).

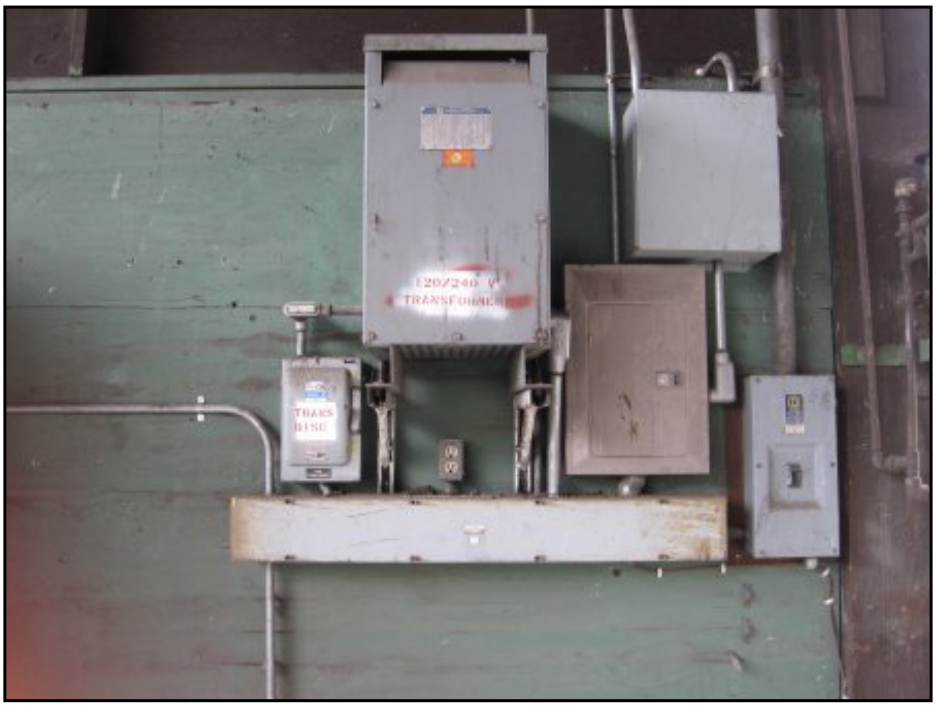


Shed in Building 4 (fire suppression).



Shed in Building 4 (fire suppression).

Shed in Building 4 (fire suppression).



Transformer on south wall of Building 4.

Transformer on south wall of Building 4.

Drain along south entrance of Building 4
(and scrap pile to the west).

Utility access south of Building 4.

Utility access south of Building 4.

Utility access south of Building 4.

Utility access south of Building 4, facing north.

Scrap pile at southwest corner of Building 4, facing west.

Scrap pile at southwest corner of Building 4, facing east.

Fire suppression shack on northwest corner of Building 5.

Fire suppression shack on northwest corner of Building 5.

Fire suppression shack on northwest corner of Building 5.

Northwest side of Building 5 (Lumber Stacker), facing south.

Northwest side of Building 5, facing east.

Inside Building 5, facing south.

Inside Building 5, facing southeast.

Inside Building 5, facing east.

Concrete pit in Building 5.

Northeast corner of Building 5 (interior).

Concrete pit on south side near interior of Building 5 (for equipment since removed).

Concrete pit on south side near interior of Building 5 (for equipment since removed).

Roof material on ground outside of Building 5, east side of building.

Roof material on ground outside of Building 5, east side of building.

Roof material on ground outside of Building 5, east side of building.

Roof material on ground outside of Building 5, east side of building.

Looking into Building 5 from the east, looking west.

From south end of Building 5, facing north to look at building.

From south of of Building 5, facing south.

From south of of Building 5, facing west.

South end of Building 5.

Scrap pile at south end of Building 5 (scrap is from burn in Jan 2017).

Scrap pile at south end of Building 5 (scrap is from burn in Jan 2017).

Scrap pile at south end of Building 5 (scrap is from burn in Jan 2017).

Fire suppression shack on southwest corner of Building 5.

Fire suppression shack on southwest corner of Building 5.

Fire suppression shack on southwest corner of Building 5, looking north.

Burned or demolished building south of Building 5, facing east.

Burned or demolished building south of Building 5, facing south.

Burned or demolished building south of Building 5, facing northeast.

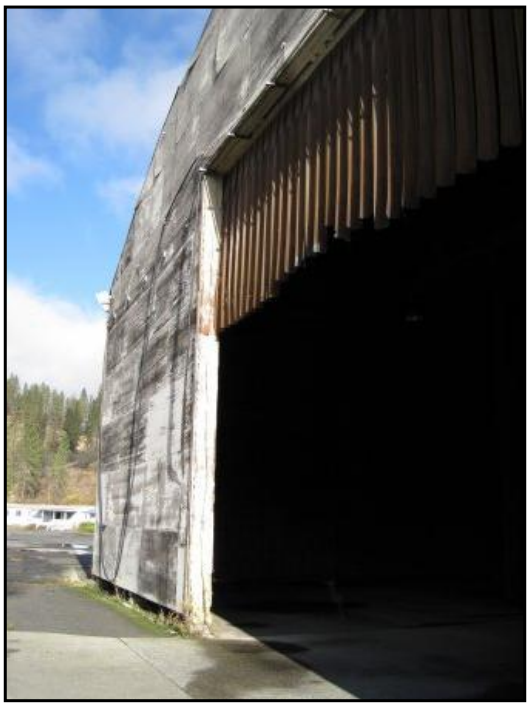
Burned or demolished building south of Building 5, facing north.

Scrap from burned or demolished building south of Building 5.

Scrap from burned or demolished buildings south of Building 5, facing east.

Scrap from burned or demolished buildings south of Building 5, facing west.

Scrap from burned or demolished buildings south of Building 5, facing east.



West side of Building 6A (Dry Shed).

West side of Building 6A, looking east into building.

Roof of Building 6A.

West side of Building 6A, looking southeast into Building 6A, 6B (Dry Shed).

West side of Building 6A, looking west into Building 5.

Utility boxes on west wall of Building 6B (Dry Shed).

Staining or moisture on floor of Building 6A.

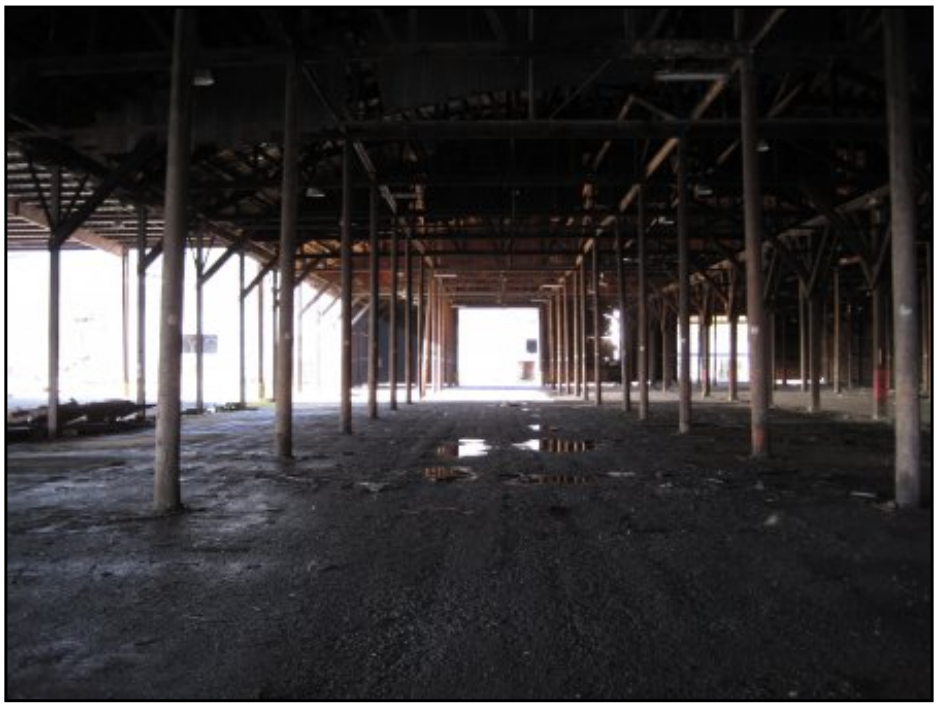
Staining or moisture on floor of Building 6A.

Antifreeze bottle on floor of Building 6A.

Staining on floor of Building 6A.

Staining or moisture on floor of Building 6A.

Interior of Building 6A, looking west from the east side.



Interior of Building 6B, looking west from the east side.

Roofing material/scrap on floor on south side of Building 6B.

Roofing material/scrap on floor on south side of Building 6B.

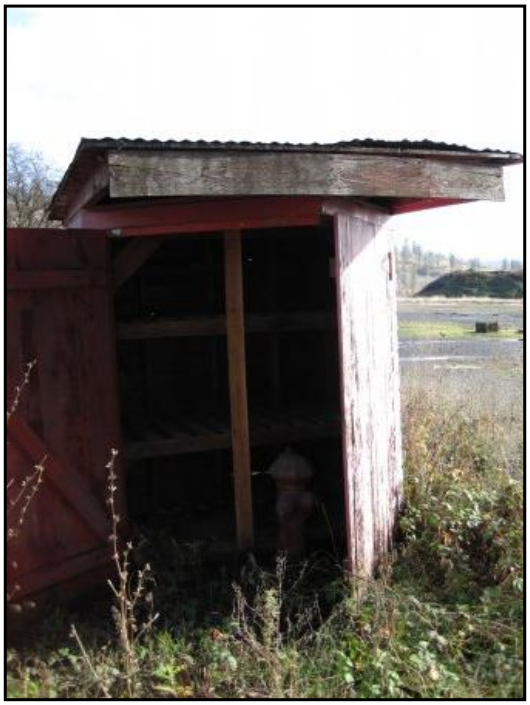
Roofing material/scrap on floor on south side of Building 6B.

Building 7 (Cooling Shed) from northeast corner, looking at southwest corner.

Looking east from Building 6B where dry shed used to be.

Looking east from Building 6B where dry shed used to be, cement pilings.

Building 6A and Building 6B from east, looking west.



Shed east of Building 6B, fire suppression.

Shed east of Building 6B, fire suppression.

AST containment area, looking southeast.

AST containment area, looking east.

AST containment area, looking northwest (from southeast side).

From AST area, looking south towards Building 6B and cooling shed.

North side of Building 6A, looking west.

North side of Building 6A, looking west, roofing material.

North side of Building 6A, looking northwest towards lagoon.

Fire suppression shack on north side of Building 6A.

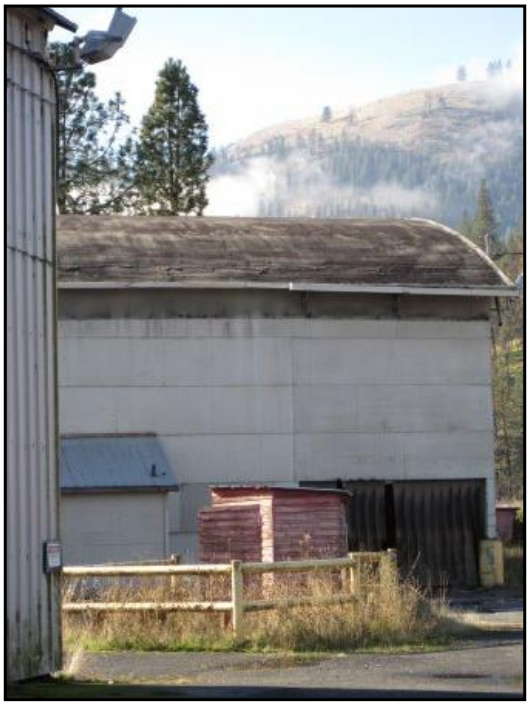
Fire suppression shack on north side of Building 6A.

Fire suppression shack on north side of Building 6A.

Fire suppression shack north of Building 6A, west of lagoon.

Fire suppression shack north of Building 6A, west of lagoon.

Building 4 from southeast, facing northwest.



Building 5 from east, looking west.

Building 6B from west side, looking west into building.

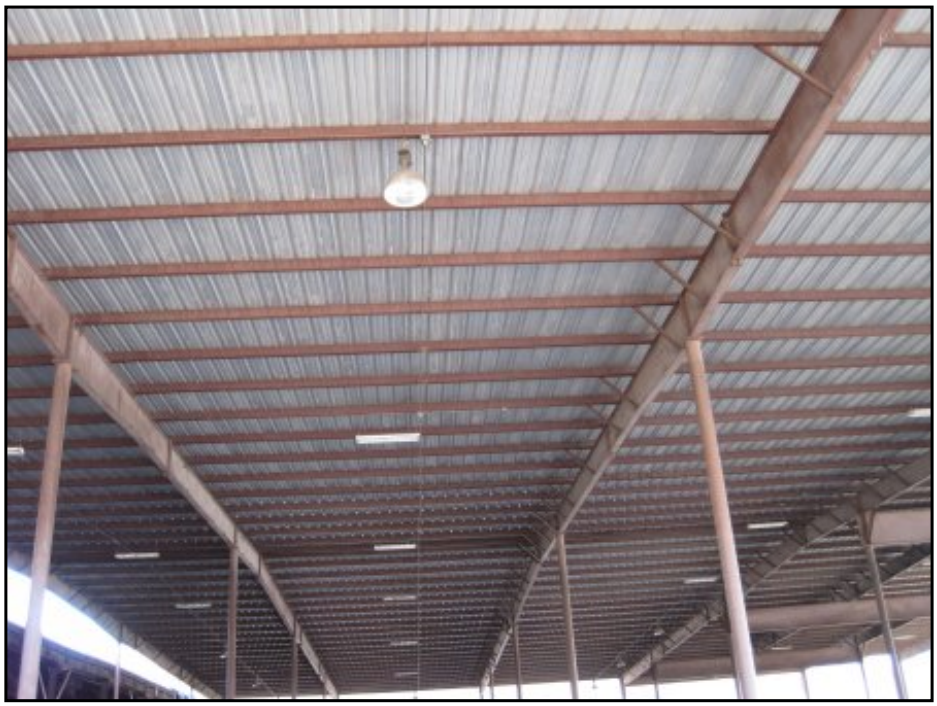
Building 6A from Building 5, note sign about power lines.

Building 6A from Building 5, note sign about power lines.

Southwest exterior corner of Building 6B, drainage for roof runoff.

Looking east from west side of Building 7.

Outside of Building 6B on concrete.



Roof of Building 7 from inside.

From west side of Building 7 looking southeast.

Site entrance (front entrance facing west/northwest).

Building 8 from southeast looking nw.

Fire Suppression Lagoon with water looking west.

Fire Suppression Lagoon with water looking west.

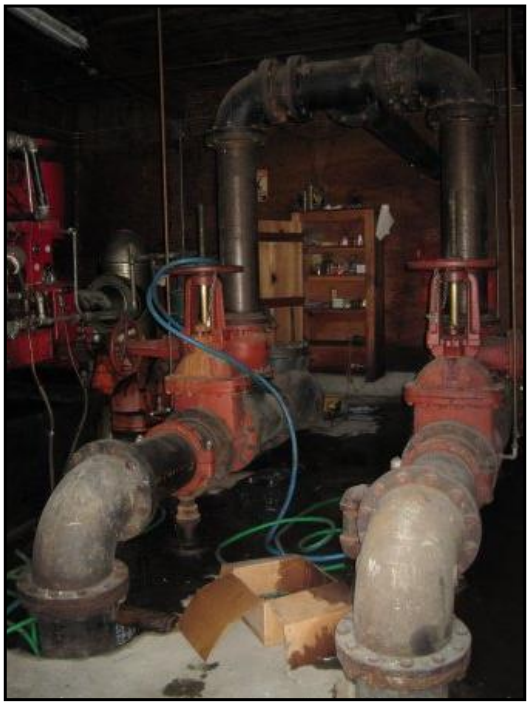
Building 8 from north (inside the fence around the Fire Suppression Lagoon), looking southwest.

Fire Suppression Lagoon from northeast, looking southwest.

Building 8 (Fire Suppression Building) entrance.

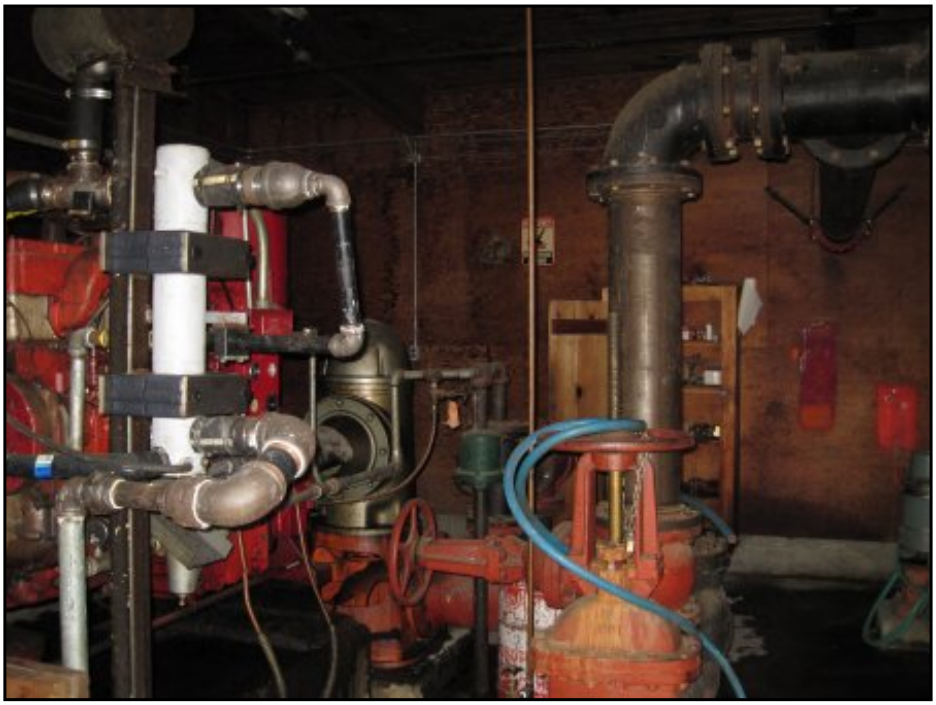
Building 8 inside, from entrance looking northwest.

Building 8 inside, from entrance looking southwest.



Building 8 inside, from entrance looking west.

Building 8 equipment on south wall.



Equipment in Building 8.

Equipment in Building 8.

Ceiling of Building 8.

Building 8 - oil from equipment on concrete.

Discarded lead acid battery in Building 8.

Oil on concrete from equipment in Building 8.

Electrical panels on south wall of Building 8.

Building 8 - corrosive sign on bench.

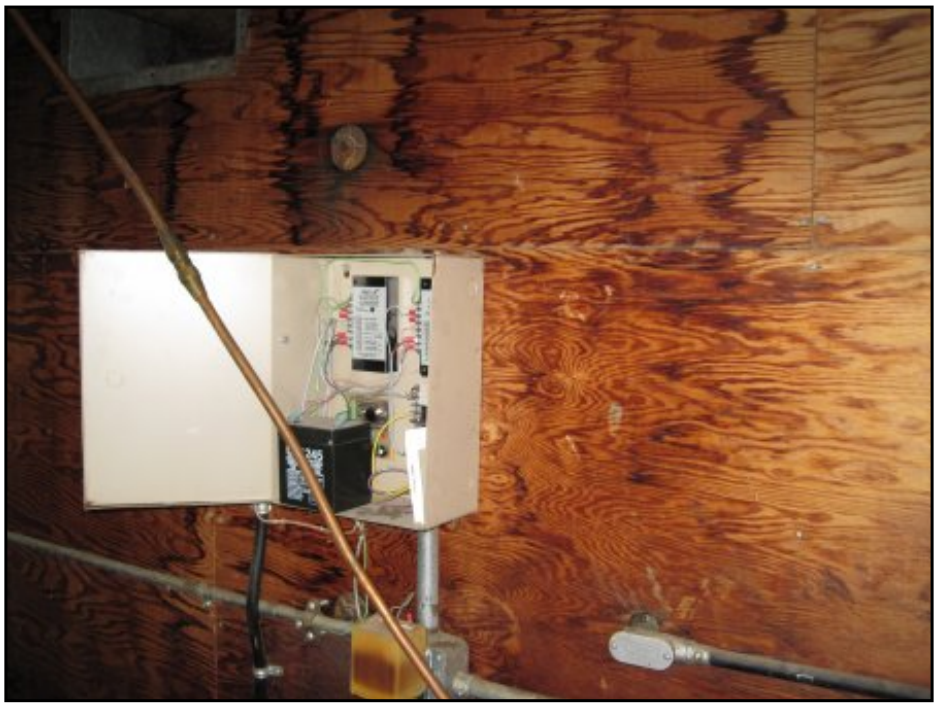
Absorbent on floor under corrosive sign (Building 8).

Northeast corner inside Building 8.

Building 8 equipment.

Building 8 - electrical panels on south wall, water on floor.

Building 8 - oil sheen and water on floor.



Building 8 - electrical panels on north wall.

Building 8 - discarded lead acid batteries.

Building 8 - electrical panels on north wall.

Oil and/or chemical spill and water line on floor of Building 8.

Looking west at Building 8 entrance.

Looking northeast from dry shed location.

Looking northeast from dry shed location.

Pile to southeast of dry shed, on north side of Area A (looking South).

North side of Area A, crossroads near large rubble pile.

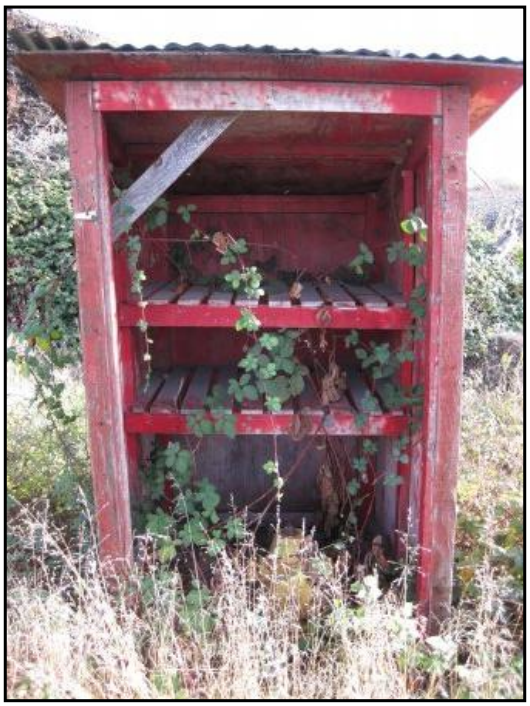
Looking southeast from large pile on north side of Area A.

Looking west from west side of large pile (Area A).

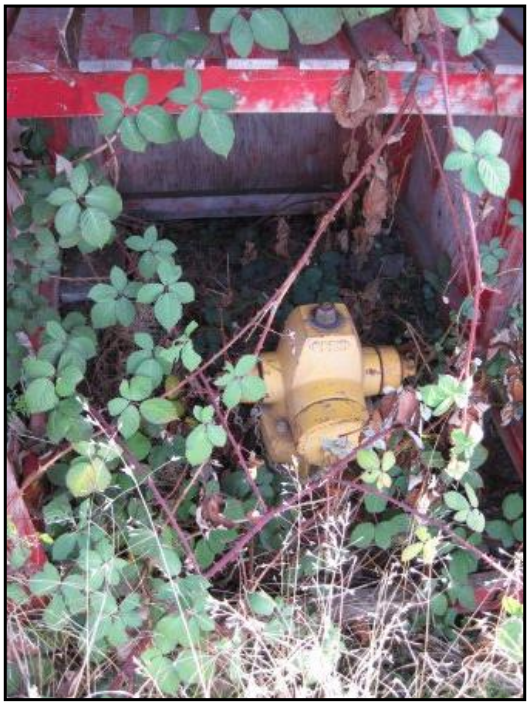
Looking southeast from west side of large pile (Area A).

Looking west from west side of large pile.

Looking north from west side of large pile (towards Buildings 6A, 6B, 7).



Fire suppression shed on west side of large pile (north part of Area A).



Fire suppression shed on west side of large pile (north part of Area A).

South side of Area C looking north.

South side of Area C looking northwest.

South side of debris piles at south end of Area C.

South side of debris piles at south end of Area C.

South side of debris piles at south end of Area C.

Between piles at south side of Area C, looking west.

Between piles at south side of Area C, looking north (concrete debris).

Between piles, looking south toward Building 4 and RR tracks (Area C).

From concrete pile looking north (Area C).

From concrete pile looking northwest (Area C).

From concrete pile looking west (Area C).

From concrete pile looking south (Area C).

Survey marker along river, west side of Area C (46.231736, -116.037522).

Survey marker along river, west side of Area C, looking east to debris piles.

Area C survey marker along river, from the east, looking west to river and marker.

Building 11 (Northern Maintenance Building) from south side, looking northeast.

South side of Building 11.

West side of Building 11, looking inside to the east.

Fiberglass insulation in Building 11.

CO2 container in Building 11.

CO2 container in Building 11.

Roof (interior) of Building 11.

Electrical panels on south wall of Building 11.

Electrical panels on south wall of Building 11.

Electrical panels on south wall of Building 11.

East side of Building 11, from southeast corner.

Activated alumina bags/spillage on north side of Building 11.

Activated alumina bags/spillage on north side of Building 11.

Activated alumina bags/spillage on north side of Building 11.

Activated alumina bags/spillage on north side of Building 11, from northwest, looking southeast.

Broken glass at west side (inside) of Building 11.

Floor drain in Building 11.

North side of Building 12A (Steam Cleaning and Wash Rack Building), looking south towards building.

Building 12A from west side.

Water in concrete pits on north side of Building 12A.

Water in concrete pits on north side of Building 12A.

Water in concrete pits on north side of Building 12A.

Drain on north side of Building 12A.

5 gallon containers on west side of Building 12B (Maintenance Building).

5 gallon containers on west side of Building 12B.

5 gallon containers on west side of Building 12B.

5 gallon containers on west side of Building 12B.

5 gallon containers on west side of Building 12B.

5 gallon containers on west side of Building 12B.

Concrete containment area on west side of Building 12B.

Concrete containment area on west side of Building 12B.

Concrete pits on west side of Building 12B.

Building 12B pits from south, looking north.

Building 12B pits from south, sign on wall.

Sign on west wall over concrete pits next to Building 12B.

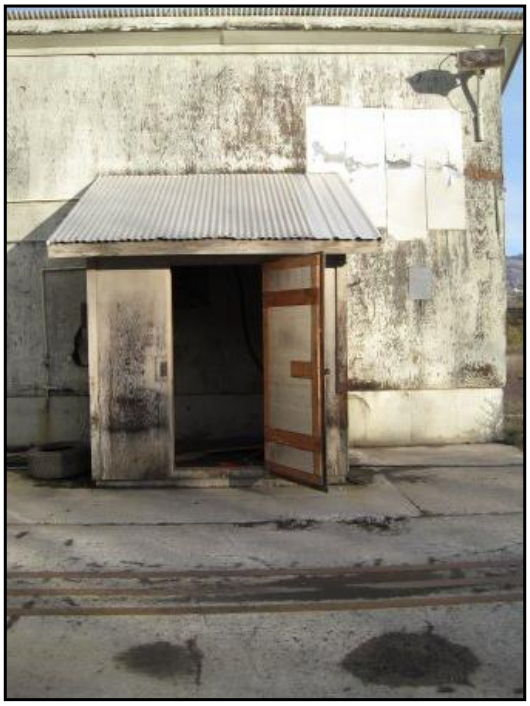
Ancillary room of 12B (Maintenance Building) on south side building.

Ancillary room on south side of Building 12B (maintenance room).

Ancillary room on south side of Building 12B (maintenance room).

Ancillary room on south side of Building 12B (maintenance room).

Exterior shack on southwest side of Building 12B (attached to maintenance building).



Exterior shack on southwest side of Building 12B (attached to maintenance building).

Old petroleum containment area on east side of Building 12B, near northeast corner.

Low storage areas under Building 12B, access on east side of building near fueling station.

Low storage areas under Building 12B, access on east side of building near fueling station.

Low storage areas under Building 12B, access on east side of building near fueling station.

Low storage areas under Building 12B, access on east side of building near fueling station.

Cement containment area on east side of Building 12B, near northeast corner.

Shack on east side of Building 12B, near northeast corner.

Inside Building 12A - floor drain.

Inside Building 12A - equipment.

Inside Building 12A - equipment.

Inside Building 12A - equipment.

Inside Building 12A - equipment.

Inside Building 12A - vent or drain pipe in floor.

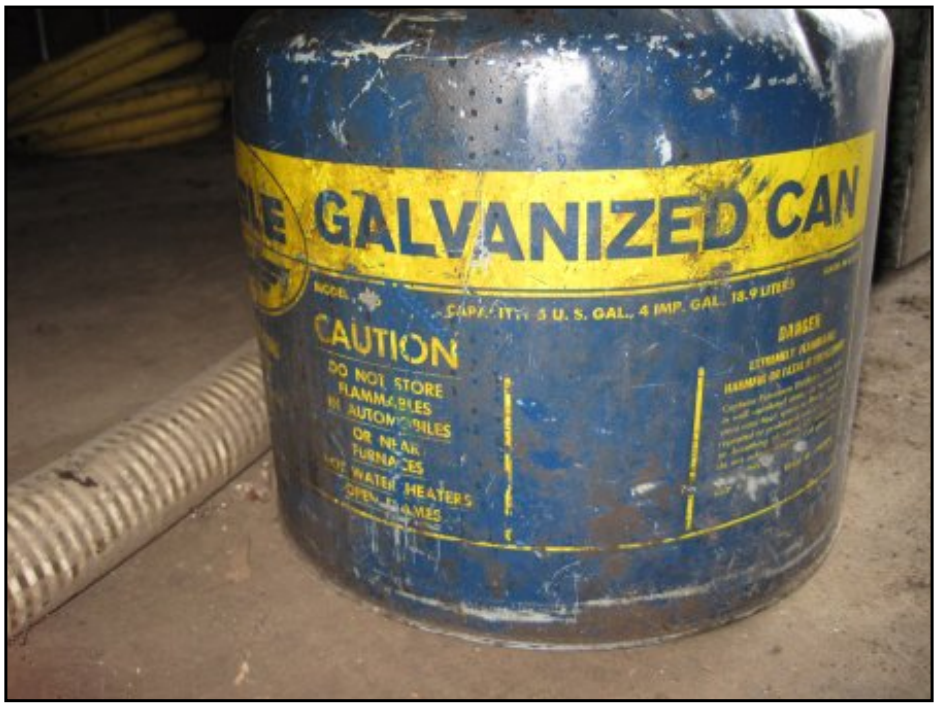
Inside Building 12A - hose running outside building.

Inside Building 12A - equipment.

Inside Building 12A - electrical panels.

Entrance to Building 12A (west side of building).

Graffiti in Building 12A.



Storage canister inside Building 12A.

Storage canister inside Building 12A.

Storage canister inside Building 12A.

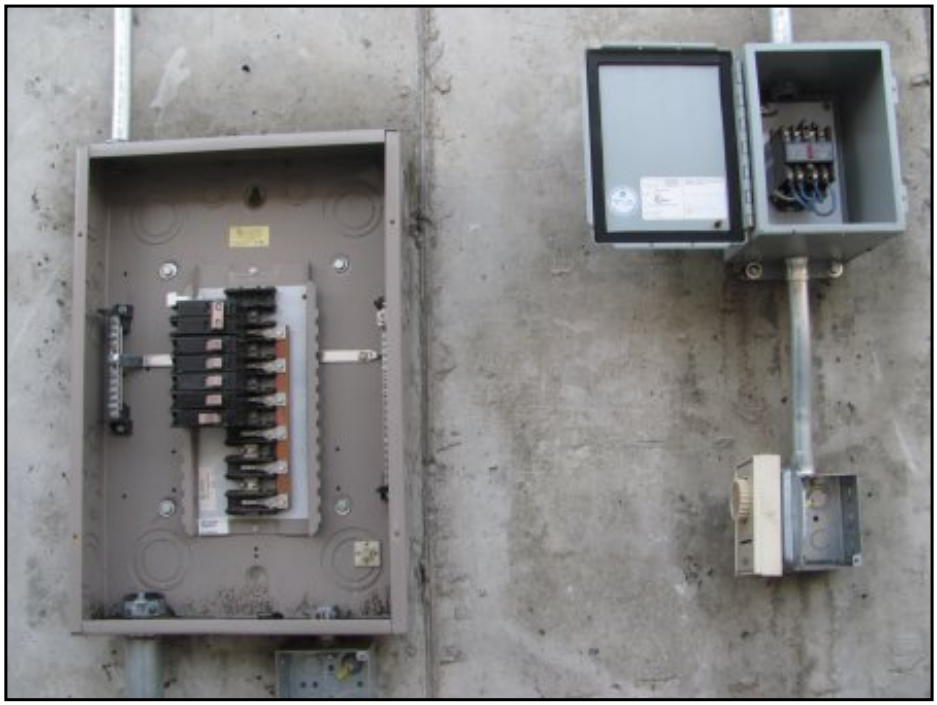
Drum inside Building 12A.

Building 14 interior (no roof).

Pits in Building 14.

Pits in Building 14.

Pits in Building 14 (water with sheen).

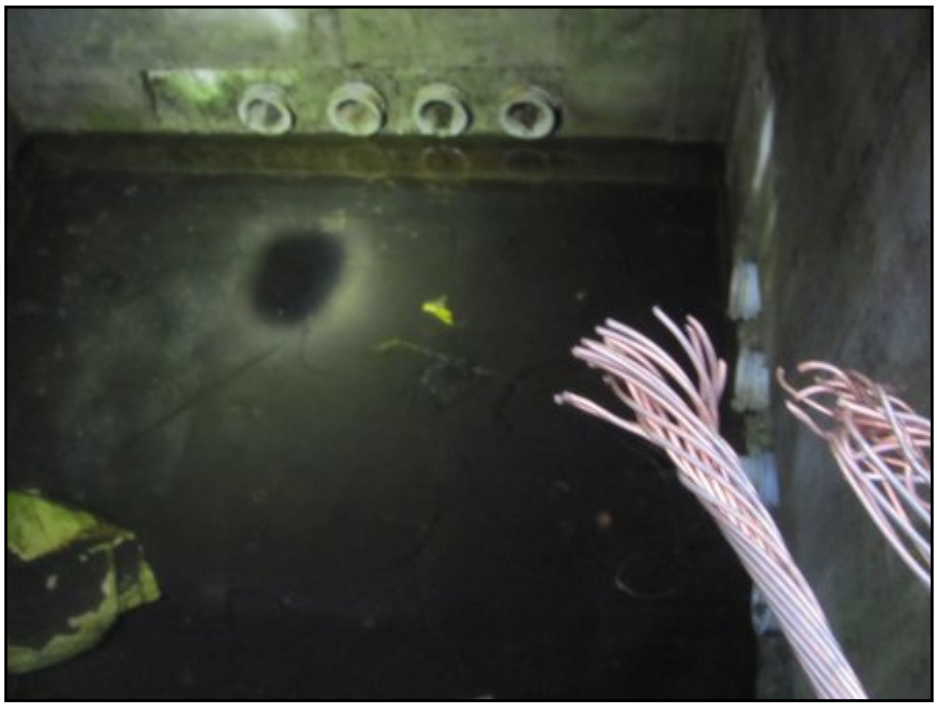


Electrical panels in Building 14.

Pits in Building 14 (water with sheen).

Interior of Building 14.

Pits in Building 14 (water with sheen and pipes near bottom).



Pits in Building 14 (water with sheen and pipes near bottom).

Electrical panels in Building 14.

West side of Building 14 looking at fire suppression shack.

Concrete pad with 5 gal buckets and staining (north of Building 13).

Concrete pad with 5 gal buckets and staining (north of Building 13).

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Concrete pad with 5 gal buckets and staining (north of Building 13).

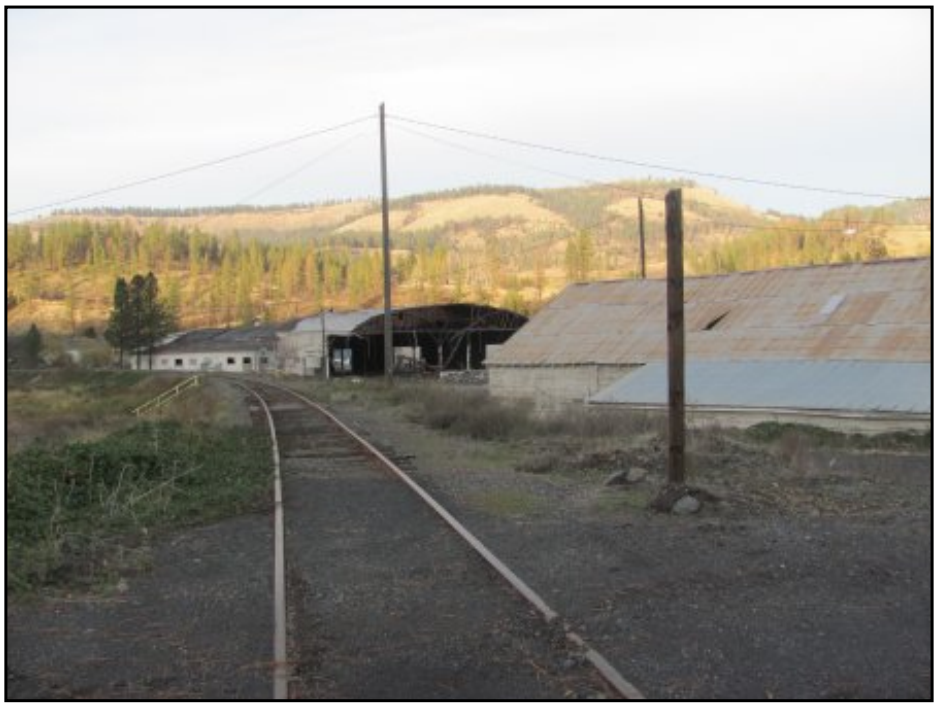
Building 5 roof from the west side.

Building 5 roof from the west side.

South side of Building 12B, facing north.

South side of Building 12B, facing north.

North end of RR bridge facing north.



North end of RR bridge facing northeast.

North end of RR bridge facing east.

North end of RR bridge facing southeast.

North end of RR bridge facing south.

North end of RR bridge facing southwest.

North end of RR bridge facing west.

From southwest corner of Building 13, facing Building 15A/B (kiln) to southeast.

South side of Building 13 (Maintenance Building).

South side of Building 13.

South side of Building 13.

Trash on floor of Building 13, including MSDS station.

Southwest corner of Building 13.

Southeast corner of Building 13.

Eyewash station inside Building 13.

Building 13.

Building 13 interior, stains on floor.

Building 13 interior.

Inside Building 13, looking south from northeast corner.

Building 13 kitchen with remaining appliances.

Building 13 - equipment manuals on shelf.

Inside Building 13 - storage room.

Inside Building 13 - facing west from northeast corner.

Inside Building 13 - water and trash on floor.

Inside Building 13 - water and trash on floor.

Inside Building 13 - stairs to upper level in northwestern part of building.

Building 13 interior - upstairs area in NW corner of building.

Office room inside Building 13.

Inside Building 13 - trash pile on floor.

Inside Building 13 - lubricant bottle in trash on floor.

Inside Building 13 - lubricant bottle in trash on floor.

Inside Building 13 - ammonia container in trash on floor.

Inside Building 13 - west side of building facing south.

Inside Building 13 - sign on wall at north end of building.

Inside Building 13 - trash on floor, including bottles of cleaner.

Inside Building 13 - acetone cleaner bottle.

Inside Building 13, 5- gallon bucket with corroded lid, contains clear liquid with corrosive label.

Inside Building 13, 5- gallon bucket with corroded lid, contains clear liquid with corrosive label.

Inside Building 13 - MSDS in trash on floor.

Fire suppression on east side of Building 13.

Fire suppression on east side of Building 13.

Standing at northeast corner of Building 13, looking southeast.

Standing at northeast corner of Building 13, looking south.

Standing at northeast corner of Building 13, looking east.

Standing at northeast corner of Building 13, looking southeast.

Standing at northeast corner of Building 13, looking southeast.

Northwest of Building 15, looking south, panorama around (south).

Northwest of Building 15, looking south, panorama around (southeast).

Northwest of Building 15, looking south, panorama around (east).

Northwest of Building 15, looking south, panorama around (northeast).

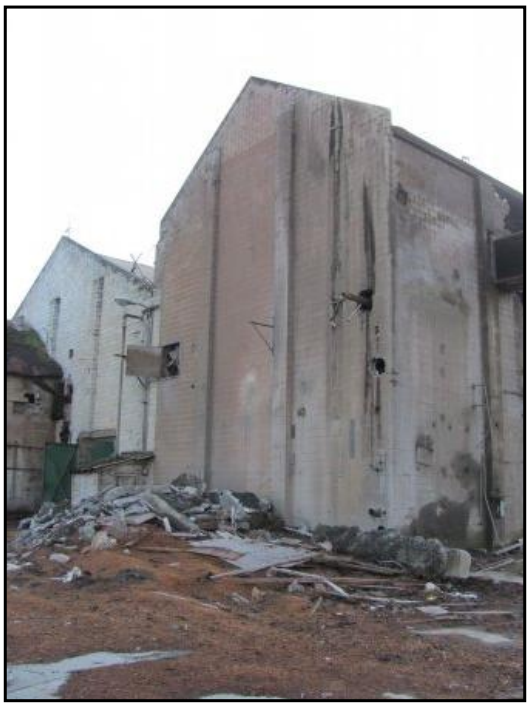
Northwest of Building 15, looking south, panorama around (north).

Northwest of Building 15, looking south, panorama around (northwest).

Northwest of Building 15, looking south, panorama around (west).

North side of Building 15A (Boiler House).

North side of Building 15, looking west towards Building 14 and 13.



Northeast corner of Building 15, looking southwest.

Northeast corner of Building 15, looking southwest.

Southwest corner of sawdust pile near Building 15A/B.

Inside Building 15B (Boiler House) could not enter north half of building).

Inside Building 15B (could not enter north half of building).

Inside Building 15B (could not enter north half of building).

Inside Building 15B (could not enter north half of building).

Inside Building 15B (could not enter north half of building).

Inside Building 15B (could not enter north half of building).

Looking at the southeast corner of Building 15.

Looking at the southeast side of Building 15.

Looking at the southeast corner of Building 15, sawdust pile to the right.

Looking at the southeast side of Building 15.

Standing southwest of Building 15 looking east at Building 15A, 15B.

Wood waste landfill (Area E), north face of fill

Wood waste landfill (Area E), pit area looking north

Log yard west end (Area A), truck loading area

Log yard west end (Area A), trash pile example

Scale house (Building 18)

Pit next to scale house (Area A), light oil sheen on water

Scale house interior

Pump house (Building 17)

Pump house interior

Inside pump house looking down to second level

Widespread demolition debris after fire and salvage operations, facing north towards old sawmill (Building 15, on right) and old maintenance shop (Building 13, on left).

Oil stains on concrete closer to the old sawmill area.

Appendix F:

Miscellaneous Information

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/23/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Laura Webber
Troy Insurance Agency Inc 1822 18th Ave P.O. Box 796 Lewiston ID 83501	PHONE (A/C, No, Ext): (208) 743-3541 FAX (A/C, No): (208) 743-3542 E-MAIL ADDRESS: lwebber@troyins.com

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Alta Science & Engineering, Inc 220 E 5th St Moscow ID 83843	INSURER A: One Beacon Environmental	
	INSURER B: Acuity A Mutual Insurance Co	14184
	INSURER C: State Insurance Fund	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 17-18 NEW LIA POLICY **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:	X	Y	793-00-66-25-0000	7/16/2017	7/16/2018	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ $ $ $ $ $	3,000,000 500,000 10,000 3,000,000 3,000,000 3,000,000
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [X] HIRED AUTOS [X] NON-OWNED AUTOS	X	Y	Z78325	7/24/2017	7/24/2018	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Underinsured motorist	$ $ $ $ $	1,000,000 1,000,000
A	[X] UMBRELLA LIAB [X] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE DED [X] RETENTION $ 10,000		Y	793-00-66-26-0000	7/16/2017	7/16/2018	EACH OCCURRENCE AGGREGATE	$ $	2,000,000 2,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		659171	07/26/2017	07/26/2018	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $	 1,000,000 1,000,000 1,000,000
A	Pollution Liability Professional Liability	X	Y	793-00-66-25-0000 793-00-66-25 Retro 7/16/17	7/16/2017 7/16/2017	7/16/2018 7/16/2018	Per Wtongul Act/Condition Aggregate		$3,000,000 $3,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

THIS CERTIFICATE ISSUED TO ALTA SCIENCE & ENGINEERING, INC, NAMED INSUREDS, INTENDED FOR INSURANCE VERIFICATION PURPOSES ONLY. THIS CERTIFICATE DOES NOT GUARANTEE COVERAGE NOR PROVIDE ANY ADDITIONAL INSURED COVERAGE FOR ANY PERSONS, ORGANIZATIONS, OR ANY CONTRACT HOLDER DOING BUSINESS WITH OR FOR ALTA, AS NAMED ABOVE.

CERTIFICATE HOLDER

ALTA SCIENCE & ENGINEERING, INC
VERIFICATION OF INSURANCE
220 E 5TH ST
MOSCOW, ID 83843

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

SUSAN SPALINGER, M.S.

Environmental Scientist / Human Health Risk Assessor

Alta Science & Engineering, Inc.

Alta-se.com

Experience Summary

Susan Spalinger specializes in human health risk and exposure assessment; metals contaminated sites; site characterization and sampling; statistical data analysis; data management; data verification and validation; and remedy effectiveness monitoring and evaluation. Her 20+ years of experience spans from small environmental site assessments to some of the nation's largest CERCLA sites.

Ms. Spalinger managed a multi-million dollar, multi-year sampling and cleanup program at the Bunker Hill Mining and Metallurgical Complex Superfund Site; and has managed or contributed to numerous environmental site investigations, environmental data management and analysis projects, risk assessments, and exposure research.

Education

M.S., Environmental Science
University of Idaho, 2000

B.S., Environmental Science
Washington State University, 1996

Areas of Expertise

- Human Health Risk and Exposure Assessment
- Data Analysis/Management
- Program and Project Management
- Sampling and Monitoring
- Data Quality Objectives (DQOs)
- Sampling and Analysis Plans (SAPs)
- Quality Assurance Project Plans (QAPPs)
- Quality Assurance/Quality Control (QA/QC)
- IEUBK Model for Lead in Children
- Adult Lead Methodology (ALM) for Adult Exposures to Lead in Soil
- Institutional Controls
- CERCLA

Project Experience

Bunker Hill Mining and Metallurgical Complex Superfund Site, Idaho, 1997–present

Much of Ms. Spalinger's career has focused on the human health remedy at the Bunker Hill Mining and Metallurgical Complex Superfund Site (BHSS). She is currently the Principal-in-Charge of the Technical, Scientific and Engineering Services Contract with the Idaho Department of Environmental Quality (IDEQ) and oversees the remedial effectiveness monitoring, risk assessment/management, and data management and GIS activities at the BHSS. She has managed and overseen critical aspects of the Basin Property Remediation Program (BPRP) since the OU3 Record of Decision (ROD) was issued in 2002, including contract, administrative, personnel, and program/project management, as well as sampling methodology development, data analysis, data management, and annual planning and budgeting. Under Ms. Spalinger's guidance and oversight, more than 150,000 soil, dust, and water samples required to determine remedial actions, evaluate remedy effectiveness, and used by the Institutional Controls Program (ICP), have successfully been collected for IDEQ. Susan has statistically analyzed the environmental and health data to support four USEPA Five-Year Reviews; managed pilot projects to evaluate interior cleaning effectiveness options; and authored or contributed to numerous sampling and analysis/ quality assurance project plans (SAP/QAPPs); data summary reports; field activity reports; data gap summaries and recommendations; risk assessment/risk management evaluation reports; and various technical memoranda for the USEPA and IDEQ to make guidance and policy decisions. Ms. Spalinger has successfully managed, coordinated and collaborated with dozens of staff in multiple offices, as well as with our clients at IDEQ and the USEPA and various stakeholders and residents throughout her many years of work at the BHSS.

Risk Assessment, Review and Support for Inactive Phosphate Mine Sites in Southeast Idaho, 2016-present

Ms. Spalinger is the Principal-in-Charge of risk assessment support to IDEQ for inactive phosphate mine sites in Southeast Idaho. Ms. Spalinger is overseeing scientists with expertise in human health and ecological risk assessment, as well as toxicology, ecology, data analysis and data validation, and hydrogeology. Our team supports IDEQ by conducting technical reviews of the data summary reports, data validation reports, and human

health and ecological risk assessment documents. Ms. Spalinger oversees this work and provides technical document review. At IDEQ's request Susan's reviewed the exposure factors proposed for use in risk assessment by the local Native American Tribe.

Idaho Abandoned Mine Lands, Site Evaluation for the Former Nicholia Smelter Site, Lemhi County, 2014–present

Ms. Spalinger is overseeing the site characterization and human health risk assessment at an abandoned smelting and mine site in southeast Idaho. Although slag was removed from the site, a legacy of heavy metal contamination remains from smelter operations in the late 1880s. A ranch house is located about a quarter mile down-gradient from the smelter site. Susan provided guidance on and development of soil and water sampling activities and completed data analysis and the human health risk assessment being used to form the basis of remediation actions. She is currently collaborating with the team to develop the cleanup action work plan.

Idaho Abandoned Mine Lands, Human Health Risk Assessment for the Silver King Mine Site, Blaine County, 2015–2017

Ms. Spalinger completed the human health risk assessment at an abandoned mine site, as a subject matter expert subcontractor for the Idaho Department of Lands. Underground mining and ore processing using a concentrator and floatation mill operated in the mid-1880s and again in the early 1940s that left tailing and waste rock piles on-site and soils and surface water contaminated with arsenic and other metals. She is currently collaborating with the team to develop the cleanup action work plan.

Pilot Project for the 100F-Area of the Hanford Dept. of Energy Site, Washington, 2014–2017

Ms. Spalinger was the Principal-in-Charge of a pilot project undertaken by the Confederated Tribes of the Umatilla Indian Reservation to create an online mapping resource of injury assessment information. She oversaw our scientists and GIS analysts that researched and gathered existing data and information related to an area of the Site considered complete for remedial actions. The online mapping application includes numerous map layers containing air, soil, groundwater, biological, and vegetation data that link to a tribal risk assessment model, as well as a database of accumulated documents. The information will support natural resource damage assessment activities.

Aquatic Data Compilation for the Hanford Natural Resource Trustee Council, Washington, 2017–present

Ms. Spalinger is the Principal-in-Charge and one of the scientist conducting research and review of studies conducted at the Hanford Site for the Natural Resource Trustee Council through a contract with the Confederated Tribes of the Umatilla Indian Reservation. The overall project objective is to compile, review, organize, and submit relevant site data and associated source reports/papers needed to support assessment of aquatic injury in the Columbia River.

Development of a Tribal Risk Calculator, Oregon, 2017–present

Ms. Spalinger is the project manager of a team of scientists, GIS analysts, and developers tasked to create a risk calculator application for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The purpose of the project is to support the Tribe's First Foods mission develop a tribally-relevant human health risk assessment tool that will facilitate communication of environmental data to the people of the CTUIR. The GIS-based tool will store and display geo-referenced chemical and radionuclide media concentration data collected from the Hanford Site in combination with a novel Unit Risk Factor model to produce heat maps of lifetime cancer and non-cancer risk.

Risk Evaluation Assistance under the Technical Assistance to the Idaho DEQ Waste Management and Remediation Program for Remediation of Petroleum, Hazardous Waste, and Mine Sites Contract, Idaho, 2015-present

Ms. Spalinger provides assistance and technical reviews of SAPs, QAPPs, and risk evaluations at various sites located within Idaho containing petroleum or other hazardous materials.

Van Stone Mine and Mill Site Risk Assessment, Washington, 2012-2013

Washington State Department of Ecology is overseeing cleanup of the Van Stone Mine and Mill Site, the largest open pit metal mine in north-central Washington State. Ms. Spalinger lead the human health risk assessment and coordinated HHRA and ERA tasks with the team. The risk assessment incorporated an uncertainty section that

discussed how the sampling approach impacted the risk assessment results, and at the same time, assisted with identifying the priority cleanup areas. Susan completed the Baseline Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) in accordance with the Model Toxics Control Act (MTCA).

Mass Fraction of Soil in Indoor Dust Analysis for the Integrated Exposure Uptake Biokinetic (IEUBK) Model, 2013, 2015

As a subcontractor to SRC, Inc., Ms. Spalinger is supporting USEPA with an analysis of the mass fraction of soil in indoor dust (M_{sd}) parameter in the IEUBK Model for Lead in Children. The USEPA's Technical Review Workgroup for Lead and Asbestos continues to research and refine the IEUBK Model and the large, unique BHSS database of paired property soil and indoor house dust is a critical component to the research. Susan is responsible for maintaining data integrity and confidentiality, data analysis, programming in SAS, and coordinating statistical analysis results with USEPA's contractor. This research is supporting USEPA's evaluation of the IEUBK Model for Lead in Children and national lead policies.

Estimating Soil and Dust Ingestion through the Blood/Soil/Dust Lead Relationship at the Bunker Hill Superfund Site, 2011-2015

Ms. Spalinger was the project manager, project scientist, and quality systems officer for this research project under contract with the USEPA Office of Research and Development. Soil and dust ingestion rates are an important parameter in the USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model, as well as national and state risk assessment methods and risk-based cleanups. However, current estimates of soil ingestion rates are based on limited data. To address the need for better soil/dust ingestion rates, USEPA initiated this project to measure the lead bioavailability of soil and dust samples from the BHSS archives, because of its unique environmental health database. Susan assisted with the development of the work plan, directed the selection of archived samples to be used for the project, analyzed data, oversaw data validation and quality control, and assisted with drafting a report and publishing a paper in Environmental Health Perspectives. These results were considered by USEPA policy makers and used to update exposure assessment parameters employed is risk assessments nationally.

East Helena Superfund Site, Montana: Institutional Controls Program (ICP) for Operable Unit 2, 2011–2013

Ms. Spalinger was the project manager and Principal-in-Charge assisting Lewis and Clark County in developing an ICP for the East Helena Superfund Site. The sampling and remediation of properties was near completion and the USEPA, State, County, and cities needed an ICP in compliance with the ROD, and certain components were to be regulated through an ordinance adopted by the City-County Board of Health. The County was charged with adopting and administering the ICP, in coordination with two cities and the neighboring county. Ms. Spalinger led the project team to develop i) the components of the ICP for Board of Health adoption, and ii) the Implementation Plan to guide the administration and implementation of ICP activities. Additional tasks included overseeing the incorporation of the project database with the County's GIS, development of property statuses for GIS display, cost estimates for long-term ICP functions.

Milltown Reservoir/Clark Fork River Superfund Site, near Deer Lodge, Montana, 2007-2013

Ms. Spalinger managed and worked on the investigations for human health remedial actions at three sites within the Clark Fork River OU for the Montana Department of Environmental Quality (MDEQ). She reviewed background documents and directed the data gap investigation, co-authored the SAPs, coordinated the sampling and database/GIS efforts, and oversaw the data validation and summary reporting. Susan currently assists MDEQ by providing CERCLA expertise in characterization for remedial action purposes, quality assurance/ quality control, and human health risk characterization/ management issues.

Hanford Dept. of Energy Site, Washington State: 200-CS-1 Operable Unit Feasibility Study, 2005–2008

Ms. Spalinger was a co-project manager and senior scientist for a risk assessment and feasibility study at one of the OUs at the Hanford Site. This work was based on site-specific data generated in an earlier remedial investigation. Ms. Spalinger and a team of scientists and engineers successfully completed an expedited baseline risk assessment following both USEPA and WA MTCA guidance, feasibility study, and proposed plan to achieve a Tri-Party Agreement milestone.

Problem Investigation in Environmental Health, Risk Assessment for Environmental Health Professionals. American University of Armenia, Yerevan, Armenia, May 2012 and 2016

Ms. Spalinger co-taught the environmental health short course focusing on environmental and occupational health, including chemical toxicity, exposure assessment, and risk characterization. While at the AUA in 2012, Ms. Spalinger presented on the role of communities in environmental cleanups and importance of proper risk communication for a panel discussion on The Role of Safety, Health, and Communities in Mining and Metals.

Peer Reviews

Ms. Spalinger provided technical review and comments on Idaho State's risk based decision-making guidance document and software (the 2004 Risk Evaluation Manual, REM) in December 2002.

Ms. Spalinger was a peer reviewer for USEPA's Technical Review Workgroup Recommendations for the Sampling and Analysis of Indoor Residential Dust for the IEUBK Model in 2005.

Ms. Spalinger provides technical peer reviews for papers submitted to journals such as, Environmental Science and Pollution Research (2016), and Environmental Research (2017).

Regulatory Knowledge

Ms. Spalinger has extensive knowledge of CERCLA as amended by SARA; is familiar with IDAPA, and Idaho and Washington States' risk-based cleanup regulations, and institutional controls regulations by health districts or counties in Idaho and Montana.

Scientific/Technical Knowledge

Physical/chemical/biological sciences: Chemistry; biology; biochemistry; air quality; ecology.

Math and Statistics: ANOVA, Regression Analysis, Multivariate Analysis, Trend Analysis.

Risk Analysis: Human health risk assessment; screening level ecological risk assessment; toxicology; USEPA risk assessment guidance; IEUBK Model for Lead in Children; EPA Adult Lead Methodology; Idaho State REM and Petro REM, Washington State MTCA, and cleanup criteria development.

Environmental Oversight: Design of sampling and monitoring programs; sampling and analytical procedures for soil/sediment/house dust and hazardous substances; EPA's DQOs, SAPs, QAPPs, FSPs; personnel and equipment decontamination procedures; use of EPA's Contract Laboratory Program; data validation and verification.

Certifications/Training

- First Aid/CPR Certification, current
- HAZWOPER, 40 hour +refreshers, current
- AMA Assertiveness Training for Managers, 2013
- NWETC Applied Contaminant Chemistry and Transport in Soil and Groundwater, 2009
- PSMJ Principals Boot Camp, 2009
- AMA Developing Executive Leadership, 2008
- PSMJ Project Management Boot Camp, 2007
- American Society of Civil Engineers Project Management, 2001
- USEPA ABIH Certification Risk Assessment Guidance for Superfund, 2000

Special Appointments, Memberships, or Affiliations

- Board Member – Society of Inland Northwest Environmental Scientists (SINES), 2014-Present
- Member – Association for Environmental Health and Sciences Foundation, 2011-2016
- Member – National Association of Environmental Professionals, 2012-2013
- Chair – CDC's Citizen's Advisory Committee on Public Health Service Activities and Research at Department of Energy Sites: Idaho National Engineering and Environmental Laboratory (INEEL) Health Effects Subcommittee, 2004-2005

Peer Reviewed Publications

von Lindern, I.H., S. Spalinger, M. Stifelman, L. Wichers Stanek, C. Bartrem. "Estimating Children's Soil/Dust Ingestion Rates Through Retrospective Analyses of Blood Lead Biomonitoring from the Bunker Hill Superfund Site in Idaho," Environmental Health Perspectives, Vol. 124 (9), pp. 1462-1470, Sept. 2016.

Spalinger, S., M. von Braun, V. Petroysan, I. von Lindern. "Northern Idaho House Dust and Soil Lead Levels Compared to the Bunker Hill Superfund Site," Environ Monit & Assess, Vol. 130/1-3, pp.57-72, July 2007.

Petroysan, V., M. von Braun, S. Spalinger, I. von Lindern. "Seasonal Variations of Lead Concentration and Loading Rates in Residential House Dust in Northern Idaho," J Hazard Mater, 2006 Jan 18.

von Lindern, I.H., S.M. Spalinger, V. Petroysan, M.C. von Braun. "Assessing remedial effectiveness through the blood lead: soil/dust lead relationship at the Bunker Hill Superfund Site in the Silver Valley of Idaho," Science of the Total Environment, Vol.303/1-2, pp. 139-170, 2003.

von Lindern, I.H., S.M. Spalinger, B.N. Bero, V. Petrosyan, M.C. von Braun, "The influence of soil remediation on lead in house dust," Science of the Total Environment, Vol. 303/1-2, pp. 59-78, 2003.

von Braun, M.C., I. von Lindern, N.K. Khristoforova, A.H. Kachur, P.V. Yelpatyevsky, P.V. Elpatyevskaya, S.M. Spalinger, "Environmental lead contamination in the Rudnaya-Pristan Dalnegorsk Mining and Smelter District, Russian Far East," Environmental Research, 88, 164-173, 2002.

Presentations

- Platform Presenter at the Association for Environmental Health and Sciences Foundation's Annual West Coast Conference, San Diego, CA, March 2014 – "Estimating Soil/Dust Ingestion through the Blood to Soil/Dust Lead Relationship".
- Guest Speaker at the Emerging Issues in Environmental and Occupational Health: Mining and Construction in Transition Economies, Yerevan, Armenia, April 2013 – "Exposure assessment and risk management in mining communities" and "Integrated public health, community advocacy and remediation of legacy contamination from mining and smelting".
- Platform Presenter at the Association for Environmental Health and Sciences Foundation's Annual West Coast Conference, San Diego, CA, March 2001 – "House Dust and Soil Lead Levels: Northern Idaho vs. Bunker Hill Superfund Site".
- Platform Presenter at the Society of Risk Analysis Annual Meeting, Phoenix, AZ, December 1998 – "Preliminary Site Characterization of the Rudnaya Pristan-Dalnegorsk Mining District, Russian Far East".

CASEY BARTREM, Ph.D.

Environmental Scientist

Alta-se.com

Experience Summary

Dr. Casey Bartrem is an Environmental Scientist at Alta. Her primary focus is in international environmental health and coordinating field activities, training, and sampling and data management. She occupied a key role for the Zamfara Emergency Environmental Response Project, which was recognized by the United Nations, and given their prestigious Green Star Award. Dr. Bartrem also assists with quality assurance/quality control (QA/QC) for the Bunker Hill Mining and Metallurgical Complex Superfund Site and has worked as a field technician on a variety of projects in Idaho and Washington. Dr. Bartrem combines experience working in rural communities with strong technical skills in field sampling, QA/QC, and data management.

Dr. Bartrem has instructed courses in Environmental Health and Risk Assessment for the American University of Armenia School of Public Health. She has worked on risk assessments in mining communities of Kyrgyzstan and Nigeria and in tannery communities of Bangladesh.

Education

Ph.D., Environmental Science
University of Idaho

B.S., Environmental Biology/Zoology
Michigan State University

Areas of Expertise

- Risk Assessment
- Field Sampling and Characterization
- Sampling and Analysis Plans
- Quality Assurance/Quality Control
- Data Management and Analysis
- Field Operations Management
- Project Training and Coordination

Project Experience

Lead Poisoning Emergency Response, Zamfara State, Nigeria, 2010-2017

Dr. Bartrem worked as Field Coordinator and Lead Trainer for more than three years at the site of the world's worst lead poisoning epidemic in northern Nigeria. She worked closely with international humanitarian organizations (including Doctors Without Borders); with local, state, and federal Nigerian officials; and US organizations (including Centers for Disease Control and Prevention). Dr. Bartrem was responsible for coordinating field activities, collecting and managing data sets on contamination characterization, training local staff in remedial techniques and quality control procedures, and managing international staff and volunteers.

Bunker Hill Mining and Metallurgical Complex Superfund Site, Idaho

Alta has been involved with developing and protecting the human health remedy at the Bunker Hill Superfund Site (BHSS), one of the largest Superfund sites in the nation. Dr. Bartrem assists with QA/QC, sampling, and data analysis. She ensures the work is completed in strict adherence to the current SAP/QAPP. She has also assisted with analyzing the BHSS lead exposure data for two projects that are providing information to the USEPA and their national lead policy decisions.

Assessment of Mine Sites in Northeast Washington

Dr. Bartrem served as the field crew member for an assessment of mining-related metal contamination associated with 20 Washington Department of Natural Resources properties. She assisted with site XRF screening and sampling and data analysis.

PhD Dissertation: Environmental Exposures Resulting from Severe Soil Contamination, 2012 – Present

Dr. Bartrem is currently analyzing data from the Zamfara Emergency Environmental Response to develop an understanding of exposure routes for young children in lead contaminated villages in Northern Nigeria. The lead poisoning outbreak has been described as the worst in modern history. Dr. Bartrem published one piece of her dissertation in 2013.

United States Peace Corps Volunteer

Prior to starting with Alta, Casey served as a US Peace Corps Volunteer in the Kingdom of Lesotho from 2007-2009 as a community heath and economic development volunteer. She was responsible for forming and implementing her own projects during this time, which ranged from teaching sustainable agriculture and nutrition, working with HIV/AIDS

groups, starting a community library, and forming a women's small business cooperative.

Field and Research Technician

Dr. Bartrem has a wide variety of technical experience in field data collection. She worked as a laboratory technician in a behavioral neuroscience lab and as a forest inventory technician for the Montana Department of Natural Resources, where she was responsible for stand surveys and forest health inventories. She also was also part of a large team of researchers studying the effects of dioxin on the Tittabawassee River Floodplain in Michigan, where the 5-year ecological risk analysis included a full ecosystem assessment.

Certifications/Training

- Extensive water, soil, and dust sampling experience
- Portable hand-held X-Ray Fluorescence Spectrometer (PXRF) operator
- Mammalian, invertebrate, fish, and avian trapping/sampling experience
- ORV certification in ID, MT, MI
- Radio telemetry, GIS/GPS, navigation
- OSHA 29 CFR 1910.120 HAZWOPER 24 Hour, current
- Wilderness First Responder, 80 hour: Desert Mountain Medicine, current
- National Registry of Emergency Medical Technicians, current
- NIH Human Subjects Certification, Current

Publications/Presentations

Tirima S, Bartrem C, von Lindern I, von Braun M, Lind D, Anka SM, Abdullahi A. 2017. Food contamination as a pathway for lead exposure in children during the 2010-2013 lead poisoning epidemic in Zamfara, Nigeria. Forthcoming in Journal of Environmental Science.

Durkee J, Bartrem C, Moler G. 2017. Legacy lead arsenate soil contamination at childcare centers in the Yakima Valley, Central Washington, USA. Chemosphere 168: 1126–1135.

von Lindern I, Spalinger S, Stifelman ML, Stanek LW, Bartrem C. 2016. Estimating children's soil/dust ingestion rates through retrospective analyses of blood lead biomonitoring from the Bunker Hill Superfund Site in Idaho. Environ Health Perspect 124:1462–1470.

Tirima S, Bartrem C, von Lindern I, von Braun M, Lind D, Anka SM, Abdullahi A. 2016. Environmental remediation to address childhood lead poisoning epidemic due to artisanal gold mining in Zamfara, Nigeria. Environ Health Perspect 124:1471–1478.

Bartrem C, Tirima S, von Lindern I, von Braun M, Worrell MC, Moller G. Unknown Risk: Co-exposure to lead and other heavy metals among children living in small-scale mining communities in Zamfara State, Nigeria. International Journal of Environmental Health Research. February 2014.

Plumlee GS, Durant JT, Morman SA, Neri A, Wolf RE, Dooyema C, Hageman PL, Lowers HA, Fernette GL, Meeker GP, Benzel WM, Driscoll RL, Berry CJ, Crock JG, Harland G, Adams M, Bartrem C, Tirima S, Behrooz B, von Lindern I, Brown MJ. Linking Geological Health Sciences to Help Understand an Outbreak of Childhood Lead Poisoning from Artisanal Gold Mining, Northwest Nigeria. Environmental Health Perspectives. 2013.

Holmes, M., Bartrem, C., Wade, J. Androgen dependent seasonal changes in muscle fiber type in the dewlap neuromuscular system of green anoles. Physiol. Behav. 2007 Mar 31. 17:9 (560-560).

"Artisanal mining lead poisoning epidemic Zamfara State, Nigeria, 2010-11; Phase I and II Emergency Response Cleanup – Assessment of remedial effectiveness." (prepared by I. von Lindern, S. Tirima, and C. Bartrem) TerraGraphics Environmental Engineering. August 2011.

"Zamfara, Nigeria lead poisoning epidemic emergency environmental response: UNICEF final report." (prepared by I. von Lindern, M. von Braun, S. Tirima, and C. Bartrem) TerraGraphics Environmental Engineering. March 2011.

"Bagega Cleanup Recommendations, Zamfara State, Nigeria, 2010-2011." (prepared by I. von Lindern, S. Tirima, and C. Bartrem) TerraGraphics Environmental Engineering. September 2011.

"Zamfara, Nigeria lead poisoning emergency environmental response: comprehensive project report." (prepared by I. von Lindern, M. von Braun, S. Tirima, and C. Bartrem) TerraGraphics Environmental Engineering. Publication pending.

JOHN MEANS, MES

Brownfields Program Director

Alta-se.com

Experience Summary

John Means leads the Environmental Science and Development Services Division at Alta where he guides clients though the planning, assessment, clean up, and redevelopment process. He has 19 years of project management experience in the environmental and heavy industrial sectors. In these sectors, he has been responsible for project financial pro forma development and budget oversight, work plans, scheduling, construction bid specifications, cost estimates and managing professional and contractor services. He was a Senior Program Manager directing the Washington State Department of Ecology Brownfields Program. Mr. Means acted as the project manager and conceptual architect of a multi-year Strategic Brownfield Policy Initiative that resulted in omnibus legislation to amend the State of Washington Model Toxics Control Act. To implement the legislation, Mr. Means was lead policy advisor for administrative code rulemaking and guidance. He has managed and overseen large-scale projects with annual operation budgets exceeding $1 million. He has effectively built close-knit client/regulator teams to guide projects through complex regulatory and economic conditions.

Education

M.E.S, Master of Environmental Studies, Environmental Science and Policy
The Evergreen State College, 2008

B.A., Ecological Planning and Design
The Evergreen State College, 2004

Areas of Expertise

- Brownfields Cleanup and Redevelopment
- Project/Program Management
- Environmental Policy and Planning
- Freshwater Habitat Restoration
- Heavy Industrial Equipment Construction

Project Experience

Mr. Means brings a strong interdisciplinary perspective to his work that emphasizes integrating remediation and reuse planning that provides efficient and cost-effective project delivery strategies for clients in Idaho and Washington State. He is especially known for his ability to effectively work between project proponents and regulatory sectors to craft equitable and scientifically sound solutions to remediate complex sites.

Washington State Department of Ecology – Toxics Cleanup Program, Olympia, Washington, July 2006-Sepember 2014

As the former Brownfields Program manager, Mr. Means brought together leading thinkers to establish a nationally recognized state Brownfields program that is known for innovative thinking and close working relationships with key partners in the governmental, private, academic, and community sectors. As the state of Washington Brownfields expert and senior level Brownfields Program Manager for Washington State Department of Ecology (Ecology), Mr. Means was responsible for Brownfields program initiatives and policy development resulting in innovative strategies and business practices that enhance Ecology's ability to be an effective partner for expediting the cleanup and redevelopment of distressed Brownfields properties and urban renewal projects. Mr. Means was the architect and co-author of a series of publications, which resulted in a final report and recommendation that culminated in landmark legislation. Mr. Means was the senior advisor to a team that that developed policy and guidance to implement the legislation. Concurrently, he developed and managed the highly successful Brownfield Integrated Planning Program with 23 projects statewide and $6 million in funding. This program employed a project delivery method that integrated environmental investigation site planning, finance, and land use planning into a cohesive development strategy. This strategy significantly reduced cleanup cycle time and cost.

Mr. Means provided operational leadership, developed annual work plans and resource allocation scheduling, oversaw and managed programmatic income grants from the US EPA Section 128(a) State and Tribal Response Program, and capital project funding budgets. In this capacity, he was responsible for annual work plans, task and budget development, review of invoices, charges and deliverables for work completion and contract compliance, and technical assistance for clients who were developing or have executed grant agreements with the EPA Brownfields Program and the Department of Ecology's Integrated Planning Grant Program.

Mr. Means is a frequent speaker at state and national conferences and known for communicating the importance of prioritizing community outreach, economic development forecasting, and environmental justice goals as integral

effective cleanup projects. Mr. Means also serves in a senior advisory role providing mentoring, input, and review for younger Brownfields practitioners.

Relocating and Restoring Historic Train Depot, Brownfields Redevelopment Project, Morton, Washington, July 2004-July 2006

From July 2004 through July 2006, Mr. Means was the project manager for an award winning Brownfields redevelopment project that entailed the relocation and restoration of a historic train depot in Morton, Washington. The central project elements included cleanup of petroleum-contaminated soils, economic opportunity development within a timber-affected community, preservation of a historically significant structure, and transportation enhancement planning. Specific duties included financial pro forma development and budget oversight, preparation and management of project development scope, implementation of schedule and construction bid specifications, construction cost estimates, management of $1.2 million in federal and state grants, management of professional and contractor services and preparation of NEPA/SEPA and cultural review documentation.

Building Construction and Heavy Industry

Mr. Means has 18 years' experience in commercial building and heavy industrial equipment construction. Projects included large-scale commercial building construction, large steam turbine retrofits in nuclear plants, and petroleum pipeline weld annealing. Duties included construction crew supervision, field installation of heavy machinery, client-training, blueprint take off, materials estimating and layout, job site management, oversight of heavy equipment excavating and grading operations, concrete form construction, and structural steel erection.

Freshwater Fish Habitat Study and Restoration

Mr. Means was the owner of a small private consulting firm specializing in fisheries habitat study and remediation design/construction. The firm provided non-profit and municipality clientele by investigating and analyzing existing conditions, limiting factors to fish production, and making recommendations for habitat remediation and enhancement. This included data collection and analytical methods and reporting of biological and physical conditions for project design, with a special emphasis in the investigation, design and remediation of fish passage structures. Working with the timber industry and tribes, he had a leading role in developing a methodology to conduct watershed scale fish passage evaluations for road crossing structures.

Publications/Presentations

- Model Toxics Control Act Remedial Action Grants
- Alternative Financing Evaluation
- University of Washington Brownfield Report: Linking Toxics
- Redevelopment across the States: Lessons Learned for Washington State
- Ecology's Guide to Leveraging Brownfield Redevelopment for Community Revitalization

BENJAMIN BAILEY, GISP

Geographic Information Systems Data Analyst

Alta Science & Engineering, Inc.

Alta-se.com

Experience Summary

Benjamin Bailey has nearly 20 years as a Geographic Information System (GIS) Analyst and Cartographer. He has developed the firm's GIS capabilities since 1997 and provides quick turnaround of client requests. His expertise is in the analysis of raster and vector GIS data, the evaluation, development, and maintenance of cadastral data, and cartographic production.

Mr. Bailey's primary responsibilities include production of materials for environmental science and civil engineering support, maintenance of map data library and data archives, production of graphical materials for presentations, and ensuring the overall quality and efficiency of GIS materials and peripheral equipment. He is skilled in the use of various mapping software including ArcGIS, MapInfo Professional, and AutoCAD, as well as the use of Global Positioning System (GPS) receivers and software.

Mr. Bailey provides support for projects in Idaho, Washington, Oregon, and Montana, as well as international projects in Central America and Africa.

Education

B.S., Cartography
University of Idaho, 1997

Areas of Expertise

- GIS Analysis
- Cartographic Techniques
- Cadastral Data Management
- Geodatabase Management
- Raster Data Modeling
- GIS/CAD Integration
- Database Support
- High-Quality Map Production
- Other Graphics and Peripheral Support

Project Experience

Confederated Tribes of the Umatilla Indian Reservation, Mission, Oregon

In collaboration with our client, a web-based mapping application was developed for the 100-F study zone of the Hanford Site to serve the needs of researchers and Tribal policy makers. Mr. Bailey's role was to gather and produce GIS data pertaining to the monitoring of water, soil, air, and biota, and design and test web mapping applications in ArcGIS Online before delivering the final data and design recommendations to the client.

Mr. Bailey was also tasked with the gathering and cataloguing of documentation relevant to the environmental monitoring of the site. These documents include closeout reports, DOE Environmental Monitoring reports, sampling data, maps, and waste site closure packages.

Hanford 200-SW-2 Operable Unit, Hanford, Washington

Mr. Bailey produced figures for the Field Summary Report for the 2015 aerial survey of the 200-SW-2 Operable Unit and Central Plateau of the Hanford site. The project involved collaboration with the U.S. Department of Energy to gather and format radiological survey data for use in report figures and tables, develop site subregions for data organization, and display complex data in a simple and easy to read layout. Over 110 figures were generated in ArcGIS for this report, showing the radiological data, study areas, wastes sites, and other relevant features.

Bunker Hill Mining and Metallurgical Complex / Coeur d'Alene River Basin Superfund Site, Idaho

Mr. Bailey has worked extensively on several aspects of the Bunker Hill Superfund Site Project. His work began with the development of the geodatabase for the OU1 and OU2 portions of the Site. With the addition of OU3, Ben expanded the geodatabase for over 2,000 square miles of the Coeur d'Alene River Basin. This process required the acquisition and detailed digitization of available base maps for areas surrounding the Coeur d'Alene River, expanding from the Montana border to northeastern Washington. This data set includes over 13,000 parcels, over 18,000 sampling units, infrastructure such as roads and utility lines, hydrographic features, and governmental boundaries.

Tasks within this project included calculating contaminated land areas, terrain, and floodplains; a vicinity analysis for

blood lead survey participants; mapping various land uses as part of a comprehensive risk assessment; and plotting sampling and remediation data for remedy planning. The GIS team maintains nearly 24,000 attributed records and metadata, and generated numerous maps used for planning, sampling, remediation, and risk management evaluations.

Mr. Bailey produced an Operations and Maintenance (O&M) atlas for the Bunker Hill site, containing map layers illustrating the site's infrastructure, county and city zoning areas, land ownership, and remedial action descriptions and locations; this has been a key resource for local and state government personnel. Mr. Bailey has been involved with Bunker Hill related projects such as the State of Idaho land transfers, O&M management, Human Health Risk Assessments, sampling and cleanup tracking and modeling, unpaved roads remediation, water quality monitoring, and barrier analysis, among others.

Mr. Bailey was involved in developing a system of identifying and tracking unsampled lands within the Bunker Hill site that are not listed as personal properties. This system was necessary to ensure that all areas were visited, as remedial efforts in some parts of the site are coming to a close.

Area-Wide Assessment Repository (AWARe) Database, Idaho

A database for cataloguing and tracking potential Brownfields sites within the state of Idaho was developed for the Idaho Department of Environmental Quality. Mr. Bailey was involved with several aspects of this program, including field data collection, georeferencing site addresses, and producing an online map application in ArcGIS Online.

Milltown Reservoir/Clark Fork River Superfund Site, Deer Lodge, Montana

Mr. Bailey made updates and improvements to the State of Montana's cadastral data for the Deer Lodge area in preparation for sampling and remediation activities. GPS surveys and aerial imagery were used to rectify and correct parcel placement. This preparation included development of the property database structure, protocols for the editing of this layer, and the land use and sample type category designations to be stored in the layer's attributes.

Palouse Basin Aquifer Commission, Whitman County, Washington

A study was commissioned by the Palouse Basin Aquifer Commission, a board made up of participants from Whitman County, Latah County, Washington State University, and the University of Idaho, among other entities to determine the overall groundwater level and the boundaries of the Grand Ronde and Wanapum Aquifers. Mr. Bailey acted as a field representative for this project; his responsibilities included determination of well locations, contacting the owners of land where wells were located to schedule measurements, measuring well depths, logging site visits, and follow-up with property owners regarding supplementary information.

Certifications/Training

- GIS Professional Certification, #91217
- HAZWOPER, 40 hour +refreshers, current
- MapInfo Professional Intermediate and Advanced Courses, 1999
- Introduction to ESRI ArcGIS I and II, 2003
- ArcGIS 3D and Spatial Analyst
- Microsoft Excel and Access, 2002, 2005
- GeoDatabase and ModelBuilder For Management/Analysis, October 2009
- Geodatabases and Linear Referencing, September 2010
- ESRI Users' Conference, 2006 & 2007
- First Aid/CPR Certification, 2006, 2011-current
- Advanced Raster Analysis Techniques
- Northwest GIS Users Conference, 2008, 2009, 2016
- University of Idaho GIS Day 2014-2016

KATE EIRIKSSON, M.S.

Environmental Scientist

Alta-se.com

Experience Summary

Kate Eiriksson assists with several projects covering a variety of disciplines within TerraGraphics including: developing sustainability efforts, Phase I environmental site assessments, technical editing and editorial review, Brownfields assessments support, and leaking underground storage tank/underground storage tank (LUST/UST) investigations support. Ms. Eiriksson also has broad experience working in natural resources management with federal, state, local, tribal, and non-profit partners.

Education

M.S., Environmental Science & Policy
Johns Hopkins University, 2009

B.A., History
University of Puget Sound, 2002

Areas of Expertise

- Sustainability Efforts
- Phase I ESAs
- QA/QC
- Brownfields Assessment & Data Collection/Analysis
- Technical Editing, Editorial Review, & Document Control & Production

Project Experience

Sustainability Efforts

While still establishing a background in business sustainability, Ms. Eiriksson has completed internal white papers on the economics of sustainable practices in the Silver Valley, met with outside consultants to discuss both local government and private enterprise sustainability programs, and done policy research. She has advised on and attended multiple sustainability seminars. And she intends to apply her policy background towards TerraGraphics' promising sustainability program and is currently collecting baseline metrics for further analysis.

Phase I Environmental Site Assessments

Ms. Eiriksson has been involved in all stages of Phase I Environmental Site Assessments (ESAs). She has performed all appropriate inquiry-related tasks, database mining, site reconnaissance, data analysis, and project management support. She is familiar with the ASTM standards and has a working knowledge of a variety of federal, state, county, and tribal environmental rules and regulations, including in Idaho, Washington, and California.

Quality Assurance/Quality Control

Ms. Eiriksson assists in ensuring that rigorous quality control procedures are followed for TerraGraphics projects. Kate has also assisted in technical and editorial reviews for many projects including the Bayhorse State Park Brownfield Project, the Bunker Hill Superfund Site, various LUST/UST site investigations, and many brownfields cleanup projects. She has also assisted with the preparation of various documents including: project proposals, Sampling and Analysis Plan/Quality Assurance Project Plans, Phase II ESAs, Analysis of Brownfields Cleanup Alternatives, and a mitigation plan for archeological impacts during a mine site remediation project. Many of these projects demanded strict adherence to the appropriate U.S. Environmental Protection Agency's (USEPA) analytical methods, procedures, and quality control requirements.

Environmental Sampling/Data Collection & Analysis

Ms. Eiriksson's field experience includes data collection and analysis, as well as experience working with a direct push drill rig and sampling soil for PCBs, chlorinated solvents, and other hazardous chemicals, including

petroleum. She is familiar with the USEPA's laboratory methods and chain-of-custody procedures.

Additionally, Ms. Eiriksson took a leading role in the collection, organization, and analysis of data for an area-wide assessment database for southern Idaho's most populous counties. This database contains historic business and site information (including brownfields assessment information, GPS points, and photos) to be used by Idaho Department of Environmental Quality's Brownfields Program. She has continued to assist with this project by conducting additional research at the Idaho State Historical Society archives and in local university historical collections.

National Test Site, Readiness in Technical Base and Facilities' Integrated Plan

Ms. Eiriksson has spent extensive time at the National Test Site (NTS) offices in Las Vegas, Nevada assisting with document control and technical editing for the Readiness in Technical Base and Facilities' Integrated Plan. This process included preparing an award-winning document which combined the NTS's planning efforts and components of the Annual Maintenance Plan, Ten Year Investment Plan and Annual Task Planning.

Regulatory Knowledge

Ms. Eiriksson is becoming familiar with policy drivers for sustainability programs, is acquainted with RCRA regulations, and has a solid working knowledge of applicable USEPA methods, ASTM standards, and state and federal regulations particularly including stormwater. She is also familiar with NEPA processes, the FEMA floodplain program, and the USEPA ACRES database. Kate's scientific background and training help to give her an insight into the technical nature of the wide variety of projects that TerraGraphics personnel work on; this is of great value when reviewing the associated technical documents. Through her editorial reviews of many technical documents, she also has a general understanding of regulations that apply specifically to TerraGraphics' work at the Bunker Hill site.

Certifications/Training

- HAZWOPER, 40 hour +refreshers, current
- First Aid/CPR Certification, current

RACHEL GIBEAULT, B.A.

Environmental Scientis

Alta Science & Engineering, Inc.

Alta-se.com

Experience Summary

Rachel Gibeault is the TerraGraphics project manager for Phase I Environmental Site Assessments (ESAs) throughout Idaho and the Pacific Northwest. She also assists in several projects covering a variety of disciplines within TerraGraphics including Phase II ESAs, Brownfields Assessments, LUST/UST Investigations, and Risk Assessments.

Ms. Gibeault is familiar with a variety of field test equipment; analytical protocols; quality assurance/quality control (QA/QC) development, implementation, and data validation; and reporting methods. She also conducts technical and editorial reviews on deliverables for numerous projects.

Education

B.A., Biology
Goshen College, Indiana, 2005

A.A., General Studies
Hesston College, Kansas, 2001

Areas of Expertise

- Phase I and II ESAs
- Project Management
- LUST/UST Investigations
- Brownfields Assessment / ABCAs
- QAPPs and H&SPs
- QA/QC Memoranda and Data Validation
- Risk Assessments (MTCA, REM, PetroREM)
- Data Management
- Microsoft® Office

Project Experience

Quality Assurance / Quality Control: 2008–Present

Ms. Gibeault assists in ensuring that rigorous quality control procedures are followed for TerraGraphics projects. She has supported human health risk assessment reports and performed risk calculations. She has completed QA/QC plans and Quality Assurance Project Plans (QAPPs) and/or Sampling Analysis Plans (SAPs) that utilize the USEPA Data Quality Objective (DQO) process prior to Phase II field work. She has also performed data validation according to USEPA National Functional Guidelines for organic and inorganic compounds on field and laboratory QA/QC processes for soil and groundwater petroleum assessment projects such as Columbus Square, located in Goldendale, Washington, the Bonjorni Site and the Wirts Service Station in Ellensburg, Washington, or the CMG Properties, the Pet Health Clinic, and Bob's Auto Clinic in Sunnyside, Washington, and the soil sampling for the Bayhorse Kilns mine site project, located in Challis, Idaho. Ms. Gibeault has also conducted technical and editorial reviews of major deliverables for many projects including the Hanford nuclear facility in Richland, Washington; the Bayhorse State Park near Challis, Idaho; the Palouse Basin Aquifer Committee report for the Palouse valley; and the five-year reviews for the BHSS.

Risk Evaluations: 2007–Present

Ms. Gibeault has run risk assessments with the Idaho DEQ's Risk Evaluation Manual (REM), the Idaho Risk Evaluation Manual for Petroleum Releases (PetroREM), Oregon DEQ's Guidance for Risk Based Decision Making for the Remediation of Contaminated Sites, and Washington's Model Toxics Control Act (MTCA). Her risk assessment project experience for petroleum sites in Idaho using the PetroREM include the Former Mahaffey Oil Site in Parma, Idaho (2013) and the West Fairview Avenue Site in Boise, Idaho (2016–2017). Her experience with MTCA includes the Bonjorni Site and the Wirts Service Station Site in Ellensburg, Washington, the Tiger Oil Site in Yakima, Washington, and the CMG Properties, the Pet Health Clinic, Bob's Auto Clinic, and Pik a Pop sites in Sunnyside, Washington.

Brownfields Assessment Projects / ABCAs: 2007–Present

Ms. Gibeault has worked on several Brownfields projects including the Mahaffey Oil remediation project in Parma, Idaho; the Pend Oreille Bay Trail, in Ponderay, Idaho; the former Twin City Foods site in Lewiston, Idaho; remediation monitoring and project close-out at Birch Plaza in Rexburg, Idaho; the Bayhorse State Park Kilns site in Challis, Idaho; the West Fairview Avenue Site (former Gillingham Construction site) in Boise, Idaho; and several sites for the Greater Moscow Area Coalition USEPA Brownfield Assessment Grant. She has continued to develop the Area-Wide Assessment Repository (AWARe) Database that stores information on potential Brownfields sites found in Idaho's counties and has started the AWARe ArcGIS Online Web Map tool that allows the stored addresses to be shown on interactive maps and developed remediation plans using the Assessment of Brownfields Cleanup Alternatives (ABCA) process for these types of projects.

Phase I and II Environmental Site Assessments: 2007–Present

Ms. Gibeault is project manager of TerraGraphics' Phase I ESAs. She leads site reconnaissance, conducts interviews, gathers historical use data, reviews historical regulatory files, and writes/reviews the final reports. She has completed Phase I ESAs for a variety of private and public clients throughout the Western United States. Ms. Gibeault is familiar with the ASTM standards, USEPA standards, ISM soil sampling techniques, and a variety of environmental rules and regulations to conduct Phase I and II ESAs that produce accurate and defensible data.

LUST/UST Projects: 2007–Present

Ms. Gibeault has assisted in the completion of several projects where underground storage tanks have been the predominant focus of the investigation. She is familiar with a wide range of assessment tools, sampling techniques, and cleanup alternatives. She has completed a number of risk-based evaluations (MTCA, REM, and the PetroREM) and has worked on risk-based cleanups for projects including Mahaffey Oil in Parma, Idaho; the former Marsh Valley Hospital in Downey, Idaho; and the West Fairview Avenue site in Boise, Idaho.

Environmental Sampling: 2007–Present

Ms. Gibeault has assisted in the installation of sub-slab vapor wells, soil vapor wells, shallow groundwater wells, and deep groundwater monitoring wells. She has experience working with a direct push drill rig and sampling soil, soil vapor, and groundwater for PCBs, chlorinated solvents, and other hazardous chemicals including petroleum and methamphetamine. Ms. Gibeault is familiar with USEPA's laboratory methods and chain-of-custody procedures.

Regulatory Knowledge

Ms. Gibeault is familiar with RCRA regulations and has a solid working knowledge of applicable USEPA methods and National Functional Guidelines, ASTM standards, and state and federal regulations. She has worked extensively with Washington State Department of Ecology's MTCA cleanup regulations, with Idaho DEQ's REM and PetroREM, and with Oregon DEQ's Guidance for Risk Based Decision Making for the Remediation of Contaminated Sites.

Certifications/Training

- HAZWOPER, 40 hour +refreshers, current
- First Aid/CPR/AED Certification, current
- USEPA Construction General Permit process
- City of Boise Responsible Person License, 2013 2015
- Project Management Bootcamp. PSMJ Resources, Inc. Seattle, WA, 2010
- Principles of Quality Assurance & Quality Control in Environmental Field Programs. NWETC, Warren, NJ, 2016
- Microsoft® Excel™ Up to Speed: Shortcuts, Functions, Charts & Analysis & Visual Basic Programming. NWETC, Portland, OR, 2014
- Contaminant Chemistry and Transport Workshop. NWETC, Portland, OR, 2008
- Teaching Certificate in Secondary Education Biology and General Science, 2005
- Student Teaching Internship. Concord High School. Elkhart, IN, 2004

EPA United States Environmental Protection Agency

Envirofacts

Search Results

ICIS-Air

BLUE NORTH FOREST PRODUCTS
(FMLY 3RIVERS
P O BOX 757, WOODLAND RD
KAMIAH, ID 83536

Plant Information

Operating Status Code	OPR	Operating Status Desc.	Operating
Facility ID	100000001606100001	State Registration Number	EPA
Facility Type Code	TRB	Facility Type Desc.	Tribal Government
Government Facility Code		Government Facility Description	

ICIS-Air Links

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- Law
- ICIS-Air Search User Guide
- Contact Us

Report an Error

NAICS Information

NAICS Code	NAICS Description
999999	AFS Migration

SIC Information

SIC Code	SIC Description
2421	Sawmills And Planing Mills, General

Air Program Information

Program Code	Program Description	Operating Status	Subpart Code	Subpart Description
CAACFC	Stratospheric Ozone Protection	Operating		
CAANAM	Tribal Rule Not Otherwise Covered	Operating		
CAANESH	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)	Operating	CAANESHM	NESHAP Part 61 - Subpart M - ASBESTOS
CAATVP	Title V Permits	Operating		
CAASIP	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards	Permanently Closed		

Air Pollutant Information

Pollutant Code	Pollutant Description	Chemical Abstract Service (CAS) Number	SRS ID	AIR Pollutant Class Code	AIR Pollutant Class Description
10193	Carbon monoxide	630080	65052	UNK	Emissions classification unknown
300000005	NITROGEN OXIDES NO2	10102440	167924	UNK	Emissions classification unknown

Pollutant Code	Pollutant Description	Chemical Abstract Service (CAS) Number	SRS ID	AIR Pollutant Class Code	AIR Pollutant Class Description
300000240	CFC (CHLOROFLUOROCARBONS)	75718	761411	MIN	Minor Emissions
300000305	TOTAL HYDROCARBONS	308067530	966481	UNK	Emissions classification unknown
300000322	TOTAL PARTICULATE MATTER		1647643	MAJ	Major Emissions
300000329	FACIL			MAJ	Major Emissions
300000329	FACIL			MAJ	Major Emissions
300000330	OTHER			MIN	Minor Emissions

Air Compliance Monitoring Information

State/EPA Flag	Activity Type	Activity Type Description	Compliance Monitor Type	Compliance Monitor Type Description	End Date	Program Code
E	INS	Inspection/Evaluation	FOO	FCE On-Site	09-JUN-15	CAAFIP,CAAGACTM,CAAGHG,CAAMACT,CAANESH,CAANSPS,CAAOP,CAASO,CAATVP
E	INS	Inspection/Evaluation	PCE	PCE On-Site	29-SEP-14	CAACFC
E	INS	Inspection/Evaluation	FOO	FCE On-Site	29-SEP-14	CAATVP
E	INS	Inspection/Evaluation	PCE	PCE On-Site	17-SEP-13	CAACFC
E	INS	Inspection/Evaluation	FOO	FCE On-Site	17-SEP-13	CAATVP
E	INS	Inspection/Evaluation	FOO	FCE On-Site	19-SEP-12	CAATVP
E	INS	Inspection/Evaluation	PCE	PCE On-Site	27-SEP-11	CAACFC
E	INS	Inspection/Evaluation	FOO	FCE On-Site	27-SEP-11	CAATVP
E	INS	Inspection/Evaluation	FOO	FCE On-Site	16-SEP-10	CAATVP
E	INS	Inspection/Evaluation	PCE	PCE On-Site	14-MAY-08	CAACFC
E	INS	Inspection/Evaluation	FOO	FCE On-Site	14-MAY-08	CAATVP
E	INS	Inspection/Evaluation	PCE	PCE On-Site	21-MAR-06	CAACFC
E	INS	Inspection/Evaluation	FOO	FCE On-Site	21-MAR-06	CAANAM,CAATVP

State/EPA Flag	Activity Type	Activity Type Description	Compliance Monitor Type	Compliance Monitor Type Description	End Date	Program Code
E	INS	Inspection/Evaluation	FOO	FCE On-Site	12-MAY-04	CAANAM,CAATVP
E	INS	Inspection/Evaluation	FOO	FCE On-Site	23-MAY-02	CAANAM,CAATVP

Formal Enforcement Information

State/EPA Flag	Activity Type	Activity Type Description	Enforcement Identifier	Enforcment Type Code	Total Penalty Assessed	Settlement Entered Date
E	AFR	Administrative - Formal	10-2007-A003	113D1	6500	25-SEP-07
E	AFR	Administrative - Formal	10-2007-0203	113D1		25-SEP-07
E	AFR	Administrative - Formal	10-2004-A001	113D1	500	08-SEP-04
E	JDC	Judicial	10-2004-A002	CIV		08-SEP-04
S	AFR	Administrative - Formal	ID000A00001606100001	SCAAAO	2500	28-JUL-92

Informal Enforcement Information

State/EPA Flag	Activity Type	Activity Type Description	Enforcement Identifier	Enforcement Type Code	Total Penalty Assessed	End Date
E	AIF	Administrative - Informal	10-000F0001606100001	NOV		01-AUG-07
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		26-JAN-94
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		23-NOV-93
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		11-DEC-91
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		16-AUG-91
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		20-AUG-90
S	AIF	Administrative - Informal	ID000A00001606100001	NOV		10-MAR-89

Title V Annual Compliance Certificate (TVACC) Information

State/EPA Flag	Receipt Date	Reviewed Date	Deviation Flag
E	16-MAR-15	16-MAR-15	Y
E	29-FEB-16	29-FEB-16	N

Air Stack Test Information

State/EPA Flag	Actual Date	Reviewed Date	Test Status Code	Test Status Desc
S	09-SEP-93		NA	N/A
S	28-JUL-94		NA	N/A
S	15-MAR-95		NA	N/A

TRI Pollution Prevention Report for BLUE NORTH FOREST PRODUCTS and LEAD

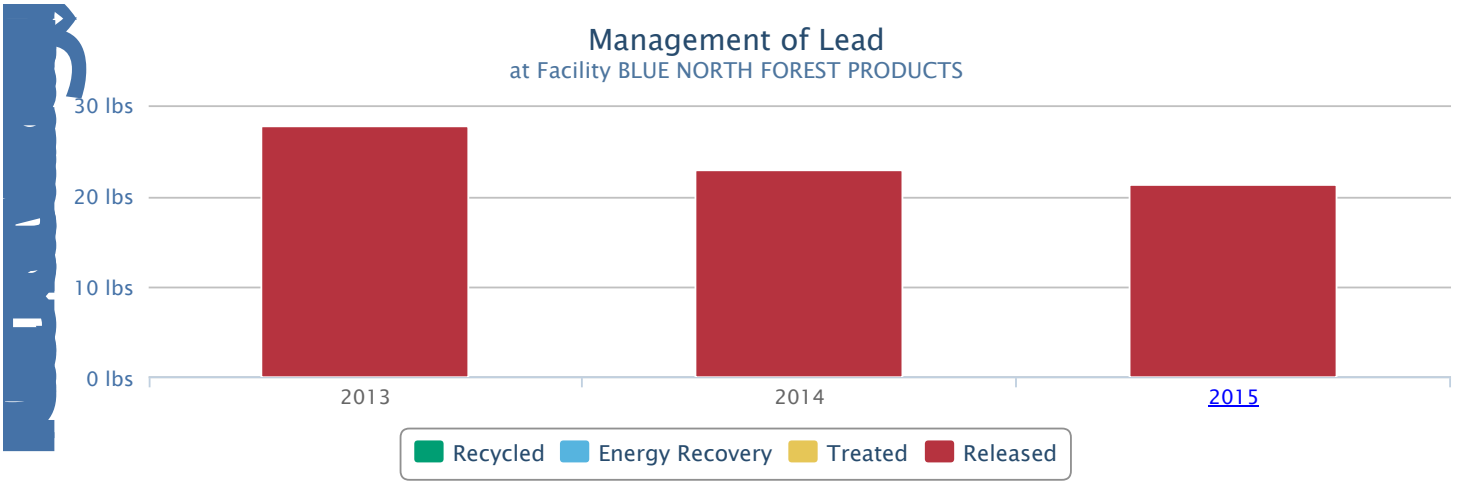
Facility ID: 8353WBLNRT283WD

Facility Name and Address:
BLUE NORTH FOREST PRODUCTS
283 WOODLAND RD
KAMIAH, ID 83536

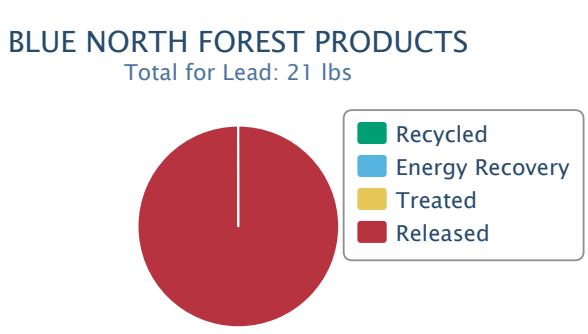
Parent Company: NA

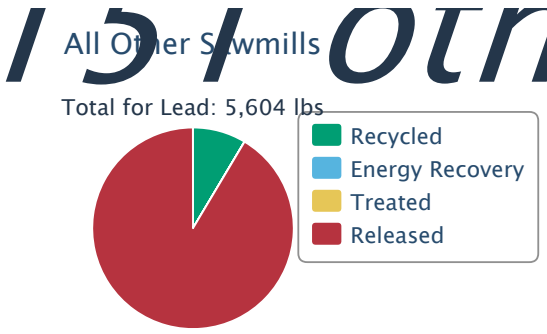
Industry: Sawmills (321113)
Chemical: Lead

Production Related Waste Management for Selected Chemical



Waste Management Comparison - 2015





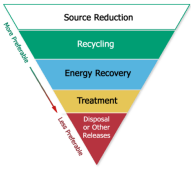
Pollution Prevention Activities for Selected Chemical

Reporting Year	Section 8.10: Newly Implemented Source Reduction Activity	Section 8.10: Methods to Identify Activity	Section 8.11: Optional Pollution Prevention Information*
2015	*Barriers:* B7 - No known substitutes or alternative technologies.		*Barriers to P2*: No known substitutes or alternative technologies. - No Comment Provided

**Classifications of Optional Pollution Prevention Information shown in brackets are provided by EPA.*

TRI Pollution Prevention Glossary

The Waste Management Hierarchy



The **waste management hierarchy** established by the Pollution Prevention Act (PPA) guides waste generators toward the best options for managing wastes. The preferred option is to prevent pollution at its source, but for waste that is generated, the preferred management methods are recycling, followed by burning for energy recovery, treatment and, as a last resort, disposing of the waste.

- **Source Reduction** includes activities that eliminate or reduce the generation of chemical waste.
- **Recycling** includes the recovery of a toxic chemical in waste for reuse.
- **Energy Recovery** includes the combustion of toxic chemicals in waste to generate heat or electricity.
- **Treatment** includes the destruction of a toxic chemical in waste.
- **Disposal or Other Releases** includes toxic chemical quantities entering the environment.

The PPA requires facilities to provide the following details about each chemical they report to TRI:

- A breakdown of **production-related waste managed**. This includes all amounts of the chemical released directly to the environment or otherwise managed as waste, other than waste generated by one-time events not associated with normal production processes (e.g., fires or remedial actions).
- A **production ratio or activity index** to provide context for reported toxic chemical quantities. For example, if a chemical is used in the manufacture of refrigerators, the **production index** would track the number of refrigerators produced and could be used to help gauge how much of the chemical is being released per unit of production.
- Any newly implemented **source reduction activities**, reported using "W-codes" (e.g., "W41: Increased purity of raw materials")

Facilities may also provide **optional Pollution Prevention Information** describing their source reduction, recycling, or pollution control activities.

Alta Science & Engineering, Inc.

www.alta-se.com

220 East 5th Street, Suite 325
Moscow, Idaho 83843
Ph: (208) 882-7858; Fax: (208) 883-3785

M E M O R A N D U M

To: Kevin Brackney, Nez Perce Tribe

From: Susan Spalinger
John Means

Date: November 16, 2017

Job Code: 17831

Subject: Site Reconnaissance Summary of the Idaho Forest Group Mill Site in Kamiah, Idaho

The purpose of this memorandum is to summarize observations made during the site visit of the Idaho Forest Group (IFG) Mill Site in Kamiah, Idaho, completed by Alta Science and Engineering, Inc. (Alta) personnel on November 14, 2017. We completed the site reconnaissance as part of a Phase I Environmental Site Assessment (ESA); and will complete the Report by December 15, 2017 (per Contract No. A17-016). This memorandum is limited to a summary of the visual observations made during the site visit. It does not include information based on other Phase I ESA components as described in the American Society for Testing and Materials (ASTM) E1527-13: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

Susan Spalinger, Casey Bartrem, and John Means of Alta met Kim Cannon from the Nez Perce Tribe at the IFG Mill Site on November 14, 2017. Mr. Cannon explained what he knows about the Site, and showed Alta personnel around most of the Site.

It was not possible to traverse the entire 114-acre Site on foot in one day; however, Alta personnel made all efforts to visually observe the entire site from various waypoints if they were unable to walk it. IFG does not currently conduct any operations on Site. All offices were vacant. Alta personnel did not observe any other persons on Site with the exception of one ATV user driving past the main office building towards the Clearwater River. Mr. Cannon stated that there was a fire on Site earlier in 2017.

In summary, based on the site visit, the Site may have environmental impacts from past operations, demolition/salvage activities, and the 2017 fire.

Pertinent Site observations are summarized below. Areas referenced below are shown in Figure 2 of a previous Phase I report (Farallon Consulting 2016).

Wood Waste Landfill Area on the east portion of the Site:

- The fill appears to be chipped wood waste from the log yard mixed with pit run rock. Periodic burning has taken place. Remains from transient campfires and personal items were strewn about in the area. No other hazardous waste was observed.

Old Log Yard Storage Area on southeast portion of the Site:

- The ground is disturbed from past operations and demolition/salvage activities. The area contains widespread debris from demolition/salvage operations, as well as piles of demolition debris from after salvage operations and/or the fire. Alta personnel observed oil stains on the concrete pads. Alta personnel did not observe above ground storage tanks or 55-gallon drums.
- The Truck Unloading Area contains the old scale house and weighing area and a gravel road. Refuse, such as aerosol paint cans, pesticide cans, oil bottles, and plastic bottles, was strewn about. The scale equipment had been removed, and a light oil sheen was observed on the standing water in the remaining pit. Overhead transformers had blue non-PCB stickers. The exterior of the scale house structure had corrugated metal roofing and the paint was in decent condition. The interior of the scale house was in disrepair, contained a circuit board on the wall, and the tiled floor was in poor condition with some staining.

Pump House on south end of the Site, adjacent to the Clearwater River:

- Alta personnel observed a two-level concrete-brick structure, descending to river level. There was an oil sheen observed on the standing water in the bottom level. Two 5-gallon cans of lubricant and a 1-gallon can of gasoline with no secondary containment were also observed.

Boiler House:

- This structure was partially burned with open walls and was unsafe to enter (no interior observations). The exterior walls were concrete-brick with corrugated metal roofing. Alta personnel could see the upper portion of the boiler from the hole in the north exterior wall. A large sawdust pile still exists on the northeast corner of this structure.

Area to the west, north, and east of the Boiler House (Former Green Sorter, Sawmill, and structure to east of the Boiler House):

- The surrounding area is heavily disturbed with debris and garbage strewn about from fire remains and demolition operations. Alta personnel observed demolished and/or burned buildings. Old cement foundations and cement pilings were still in the ground. In general, debris and garbage appeared to consist of concrete chunks, fire department clothing, building pieces, partially burned wood and bark chips, old wiring and circuitry pieces, insulation, and roofing materials. Alta personnel observed oils stains on a remaining concrete pad. The condition of the soil is heavily disturbed (e.g., littered with debris, marked with vehicle tracks) and difficult to observe staining. Alta personnel did observe one concrete drain area located at ground surface in the area; however, they did not see any large drums or storage tanks.

Concrete Structure and Fire Shed #16 (west of the Boiler House):

- The Fire Shed still contains piping. This concrete-brick structure appeared to be newer but did not have a roof. It appeared to be some kind of electrical area and contained three large, square cement pits in the ground covered by metal doors labeled as ‘high voltage’. Alta personnel observed circuitry on the walls, as well as a Washington Water Power meter. Alta personnel could observe the interiors of two of the square cement pits. Each pit contained some standing water and garbage; however, the walls of the pits contained multiple pipe openings (the openings for the pipes appeared to be approximately 4 or 6 inches wide), and some copper wiring. Broken fluorescent lighting, yellow plastic and garbage were strewn across the floor.

Two Maintenance Buildings in western portion of the Site nearest the bend in the river:

- The exterior of both buildings contained peeling paint in poor condition.
- Westernmost Maintenance Building: The interior of only the attached ancillary room of the Westernmost Maintenance Building could be accessed. This room contained more than 25 empty antifreeze jugs (1-gallon jugs of 'Zecol Maximum' and 'Polyfreeze gold'). Alta personnel observed staining on the workbench under tubing still attached to 'Fleetguard' oil cans. The exterior of this building had a 'Hazardous waste material storage area' sign and had a fenced, cement containment structure. Multiple 5-gallon buckets, some empty, were strewn throughout this area and labeled as hydraulic oil, diesel, and tractor fluid. Alta personnel observed a shallow layer of dark sludge at the bottom of the cement containment area. The southeast corner of this building had another cement containment area with gasoline and fueling station signs. Personnel also observed some staining on the southeast corner of this containment area.
- Easternmost Maintenance Building: The interior of the Easternmost Maintenance Building contained considerable garbage, such as broken fluorescent lighting, ammonia jugs, acetone cans, one 5-gallon paint bucket, one 5-gallon bucket filled with an unknown liquid and a label indicating "corrosive", plastic, wood, binders, papers, etc. One refrigerator and microwave (likely from the 1970s era) remained in the building. The stairs and floor to the loft appeared to sag and was unsafe to ascend; therefore, we did not make observations of the loft in the northern portion of this building. Alta personnel observed minimal staining of the cement floor.

Area north of the Easternmost Maintenance Building and west of the former Green Sorter:

- Alta personnel observed a low-lying, cement containment area with about 14 5-gallon buckets of various fluids (transmission fluid, flushing fluid, heavy duty degreaser, etc.) and two sacks of sakrete. The bottom of this containment area appeared stained and contained absorbent material.

Steam Cleaning and Pressure Wash Building/Area:

- The Pressure Wash Area was of cement construction and contained a drain marked "outfall to stream" and "dump no pollutants". North of the pressure wash shed was a divided, cement ditch area with piping and standing water. Alta personnel did not observe any sheen on the standing water. The inside of the Pressure Wash Shed smelled of petroleum and contained a few grease and oil cans/drums. There was a drain in the cement floor, with a pipe on the drain coming from the large piping/water treatment and Pressure Wash equipment.

Maintenance Building north of the Cleaning and Pressure Wash Building:

- Paint was in poor condition. A pile of Activated Alumina bags were on two pallets on the southeast corner of this building and were open and had spilled. The inside of this building had a drain in the cement floor and contained a transformer with circuitry on the south wall; however, Alta personnel did not observe any staining on the floor below the transformer box.

Lumber Stacker, Trimmer, and Planing Buildings/Area:

- The south end of the Lumber Stacker Shed and the Trimmer and Planing Buildings is where the fire occurred in 2017. The interior of the north portion of the Lumber Stacker Shed contained a large cement ditch in the ground and a small rectangular ditch filled with garbage and debris. The burn piles that remain from the 2017 fire contain wood,

metal, cement, painted panels, roofing materials (it is unknown if roofing material contains asbestos), plastics such as "polyglass", electrical, insulation, etc. Cement foundations remain in this area. A well-like cement, circular structure (approximately three feet tall) exists in the ground outside the north wall of the Lumber Stacker Shed.

Dry Sheds, Cooling Shed, and Former Kilns Area:

- The kilns no longer exist; only piles of debris remain in this area. The large Dry Shed (adjacent to the fire suppression lagoon) has paint that is peeling and in poor condition. The Dry Shed roofing material is scattered throughout the exterior grounds and whether it is asbestos containing material is unknown. Fluorescent tube lighting exists in the ceiling of this building. The smaller Dry Shed to the east of these buildings no longer exists. Only the cement pilings and debris (such as the roofing materials) remain strewn throughout the ground.

Former 12,000-Gallon Diesel AST Area:

- A cement containment area remains on the ground. This area is open-air and smelled of petroleum fuel. Vegetation (such as berry vines and grasses) is growing around this cement structure and prevented Alta personnel from observing the surrounding soils. Remnants of the former railroad tracks exist between the cement containment area and the ditch (to the northeast).

Fire Suppression Shed and Fire Suppression Lagoon:

- The Fire Suppression Lagoon contains standing water and appears to remain lined. Two power poles, each with two transformers, are located on the northwest and southeast corners of the lagoon. The transformers appear to be in good condition and state "customer owned." Alta personnel did not observe any blue "Non-PCB" stickers on these transformers. The exterior of the Fire Suppression Shed has peeling paint in poor condition. The interior of the shed has a strong petroleum/chemical odor. The large pump/piping equipment remains inside the shed. The floor of the shed is wet with sheens. It was difficult to navigate around the equipment to observe the back portion of this shed. Numerous large lead-acid batteries remain in the shed, labeled as 'heavy duty interstate batteries'. The word 'corrosive' was pained on two of the tables. Alta personnel observed miscellaneous antifreeze and paint cans in the back portion of the shed.

Main offices and Scale House Area:

- Two office buildings exist and have exterior peeling/chipping paint. One of the office buildings is a mobile home-type structure with unknown roofing materials (the roofing materials may contain asbestos). The interiors are in general disrepair and contain old office furniture and supplies. A large well-like structure exists in the ground near the mobile office building. An old photocopy machine sits outside the north side of the Scale House.

Packing/Loading Building with Rail Spur:

- The rail line ends inside this Packing/Loading Building. The floor is cement with staining that Alta considers de minimis. Fluorescent light tubes are present along the ceiling. A transformer box with circuitry is located on the south wall of the building with no staining on the wood pallet-like material below. The roofing material is unknown (and may contain asbestos).

Additional Areas of the Site:

- Alta personnel observed an old remnant railroad line to the northeast of the Main offices in the vegetated area. A fenced-in area contained a dry lagoon; however, Alta personnel did not observe any water in the lagoon. Mr. Cannon thought this was the old sewage lagoon. Brambles, grasses, and vegetation are heavy throughout this area. Alta personnel observed one rail tie pile and metal scrap pile in the forested, vegetated area on the northern most portion of the Site nearest to the river. Alta personnel also observed a small shed and weir on the northern end, with an adjacent wetland-type area full of water.

Do not make entries in shaded areas

OMB #: 2050-0024 Expires: 5-31-88

ENVIRONMENTAL PROTECTION AGENCY

GENERATOR BIENNIAL HAZARDOUS WASTE REPORT FOR 1985

This report is for the calendar year ending December 31, 1985
Read All Instructions Carefully Before Making Any Entries on Form

I. NON-REGULATED STATUS

Complete this section only if you did not generate regulated quantities of hazardous waste at any time during the 1985 calendar year. Circle the one code at right that best describes your status during the entire year (see instructions for explanation of codes).

1 Non-handler
2 Small Quantity Generator
4 Exempt
5 Beneficial Use
(9) Out of Business

Please print/type with elite type (12 characters per inch)

II. GENERATOR'S EPA I.D. NUMBER

T/A C
I D 0 0 9 0 6 3 1 8 1
F 1
1 2 13 14 15

This Installation's Non-Regulated Status is Expected to Apply:

☐ For 1985 Only ☐ Permanently

☐ Other not in operation At Present
No operation Since March - 1987

C303 ENTRY (OFFICIAL USE ONLY): ☐

III. NAME OF ESTABLISHMENT

P O T I A T C H C O R P Kamilah Unit
30 69

IV. ESTABLISHMENT MAILING ADDRESS

3
15 16 45
Street or P.O. Box

4
15 16 41 42 47 51
City or Town State Zip Code

Tear out here

V. LOCATION OF ESTABLISHMENT (if different than section IV above)

5
15 16 45
Street or Route number

6
15 16 41 42 47
City or Town State Zip Code

RECEIVED
FEB 03 1986
WASTE MANAGEMENT BRANCH

VI. ESTABLISHMENT CONTACT

2
15 16 45
Name (last and first)

46 55
Phone No. (area code & no.)

VII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print/Type Name	Title	Signature	Date Signed
Nevvis Frazier	Acting Mgr.	Nevvis Frazier	1-30-86

Potlatch

Potlatch Corporation
Wood Products, Western Division

P.O. Box 1016
Lewiston, Idaho 83501-1016
Telephone (208) 799-0123

July 3, 1996

Ms. Paula Jo Miller
Idaho Department of Health and Welfare
Division of Environmental Quality
1410 N. Hilton
Boise, ID 83706-1290

Dear Ms. Miller:

During our telephone conversation on June 28, you indicated that your records list our Jaype Plywood and Post Falls Particleboard facilities as "inactive," relative to generator status. As I mentioned, these facilities, as well as the St. Maries Complex, should be listed as conditionally exempt small quantity generators. Our records indicate that the EPA Identification Numbers for these facilities are as follows:

Jaype Plywood: IDD009668237
Post Falls Particleboard: IDD990783250
St. Maries Complex: IDD054656293
Lewiston Complex: IDD009061375

The following plants are no longer in existence:

Potlatch Lumber: IDD009069121
Rutledge Lumber: IDD009069022

We no longer own or operate the following plant:

Kamiah Plant: IDD009063181

Please make the necessary revisions to your records, and let us know if any of the EPA ID numbers listed above differ from those in your records.

Thanks for letting us know about the status of our facilities and for your help in keeping the records straight.

Sincerely,

John A. Emery

John A. Emery, PhD
Senior Environmental Engineer

cc: Wayne Burton
Greg Cooperrider
Dave Howard
Mike Weger
Rick Kelly

SMHAZ02.WPD

For the best experience, open this PDF portfolio in Acrobat 9 or Adobe Reader 9, or later.

Get Adobe Reader Now!

IDD 1813
11/20/97
SF

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
IDAHO OPERATIONS OFFICE
1435 N. Orchard St.
Boise, Idaho 83706

November 20, 1997

Bill Mulligan, President
Three Rivers Lumber, Inc.
P.O. Box 757
Woodland Rd
Kamiah, Idaho 83536

Re: RCRA Compliance Evaluation Inspection

Dear Mr. Mulligan,

On October 8, 1997, we conducted a Compliance Evaluation Inspection (CEI) at your facility on behalf of the United States Environmental Protection Agency (EPA). The purpose of the inspection was to determine the facility's compliance with the Resource Conservation and Recovery Act (RCRA)-- EPA's hazardous waste program. Based on the portions of the facility inspected and the information obtained at the time of the inspection, no RCRA violations were found.

You do not appear to generate any hazardous waste and have a well operated and maintained facility. Thank you for the courtesy and cooperation extended to us during the inspection.

If you have any questions, please give me a call at (208) 378-5754

Sincerely,

Mike Silverman

Michael Silverman
Environmental Engineer

10/08/97

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
IDAHO OPERATIONS OFFICE
1435 N. Orchard St.
Boise, Idaho 83706

November 20, 1997

MEMORANDUM

SUBJECT: RCRA Compliance Evaluation Inspection (CEI)
Three Rivers lumber, Inc., Kamiah, Idaho

FROM: Michael Silverman
Environmental Engineer
EPA-IOO

TO: Mark Masarik, IOO
Kevin Schanilec, RCRA Compliance Unit

Attached is a copy the CEI report I have prepared for above referenced facility.

If you have any questions, please contact me at (208) 378-5754.

cc: Lynda Williams, Nez Perce Tribe of Idaho

EPA RCRA COMPLIANCE INSPECTION REPORT

FACILITY NAME: Three Rivers Timber, Inc.

EPA IDENTIFICATION NUMBER:

None

ADDRESS:

P.O. Box 757
Kamiah, Idaho 83536

Contact: Bill Mulligan, President
(208) 935-2547

TYPE OF INSPECTION:

Compliance Evaluation Inspection (CEI)

DATE OF INSPECTION:

October 8, 1997

REPORT PREPARED BY:

Michael Silverman
Environmental Engineer
EPA-IOO

INSPECTION PARTICIPANTS:

Michael Silverman, EPA-IOO
Bill Mulligan, Three Rivers Lumber
Herb Hazen, Three Rivers Lumber
Jenifer Williams, Nez Perce Tribe,
Intern representative

PURPOSE:

The purpose of the inspection was to determine compliance with the Resource Conservation and Recovery Act (RCRA).

BACKGROUND:

Three Rivers Lumber, Inc is a log mill which began its operations in 1996. It is located in Kamiah, Idaho on a site formerly operated by Potlatch Company (EPA ID # ~~IDD056057151~~ IDD009063187) until the old mill was closed down in 1984. In 1986 Weyerhaeuser Company purchased the site and ran it until 1995.

Three Rivers has not notified as a handler of hazardous waste (although Potlatch Company did notify when it operated the mill until 1984).

INSPECTION:

We arrived at 2:00 PM and presented our credentials to Bill Mulligan. I explained the purpose of the inspection. We then toured the facility.

We looked at the entire facility, including the maintenance shop, truck wash facility, bone yard and all product storage areas. Used oil is collected and the tank appropriately labeled and burned in the facility's space heater. Batteries are recycled.

A 5 gallon parts washer was observed in the maintenance area. MSDS information (attached) indicated that it used a non-hazardous citrus based solvent.

The facility had no painting operation and did not appear to generate any other hazardous waste.

Exit Interview

I reported to Mr. Mulligan that I did not believe there were any violation of RCRA at his facility and that the facility did not appear to manage any hazardous waste. I said that I would go back to my office and prepare a final report and notify him accordingly.

SUMMARY:

Three Rivers Lumber did not appear to be a generator of hazardous waste.

RECOMMENDATION:

I recommend that no further action be taken at this time.

I also recommend that the old Potlatch ID number, for the mill that ceased operations in 1984, be ~~removed from the RCRA notification list~~ inactivated. (Site shows as inactive).

M. Silverman

Michael Silverman
Environmental Engineer
EPA/IOO

11/20/97
DATE

2074

(SI

MATER

Ozzy Juice

ChemFree® Corporation
Eight Meca Way
Norcross, GA 30093
Tel : (770) 564-5580
FAX : (770) 564-5533

IDENTITY : Industrial-strength degreasl

MANUFACTURER'S NAME : ADDRESS :	ChemFree® Corporation Eight Meca Way Norcross, Georgia 30093 (770) 564-5580
EMERGENCY PHONE # :	January 5, 1995
DATE PREPARED :	M. Mancinelli
PREPARED BY :	

SECTION II
HAZARDOUS INGREDIENTS / INFORMATION

HAZARDOUS COMPONENTS	OSHA	ACGIH	Other
	PEL	TLV	

None as defined by 29 CFR , 40 CFR or SARA TITLE III; this product is not a carcinogen or a potential carcinogen as defined by OSHA, the NTP or the IARC Monographs.

SECTION III
PHYSICAL / CHEMICAL CHARACTERISTICS

APPEARANCE AND ODOR :	Free-flowing honey-colored liquid with a slight, pleasant aroma
BOILING POINT : 210° F	SPECIFIC GRAVITY : 1.083
SOLUBILITY IN WATER : Infinite	pH : 7.0

SECTION IV
FIRE & EXPLOSION HAZARD DATA

FLASH POINT :	None
METHOD USED :	Open cup
FLAMMABLE LIMITS :	
LEL :	N/A
UEL :	N/A
SPECIAL FIRE FIGHTING PROCEDURES :	none
USUAL FIRE & EXPLOSION HAZARDS :	none

SECTION V
REACTIVITY DATA

STABILITY :	Stable
HAZARDOUS POLYMERIZATION :	Will not occur

SECTION VI
HEALTH HAZARD DATA

HEALTH HAZARDS (Acute & Chronic) :	None
CARCINOGENICITY :	
NTP :	Ingredients not listed
IARC MONOGRAPHS:	Ingredients not listed
OSHA REGULATED :	Ingredients not listed

SECTION VII
PRECAUTIONS FOR SAFE HANDLING

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED :	
SPILLS :	Dilute with water and flush into sanitary sewer.
WASTE DISPOSAL METHOD :	Dilute with water and flush into sanitary sewer.
PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:	Do not freeze. Keep container closed when not in use. Follow label instructions.
OTHER PRECAUTIONS :	Keep this and all chemicals out of the reach of small children.

SECTION VIII
CONTROL MEASURES

RESPIRATORY PROTECTION (Specify Type) :	Not required.
VENTILATION (Local exhaust) :	Not required.
PROTECTIVE GLOVES :	It is recommended that rubber gloves be worn when handling industrial-use products.
EYE PROTECTION :	It is recommended that safety glasses be worn when handling industrial-use products.
OTHER / HYGIENIC PRACTICES :	Always use good housekeeping procedures when using any chemical product.

SECTION IX
ADDITIONAL INFORMATION

BIODEGRADABILITY :	Biodegradable
WASTE DISPOSAL METHODS :	Not required
DOT Class :	Not required
DOT Identification Number :	Not required

SARA TITLE III REPORTING REQUIREMENTS

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES	Reporting not required.
SECTION 304 - HAZARDOUS RELEASES	Reporting not required.
SECTION 311 - COMMUNITY RIGHT-TO-KNOW (RKK)	Reporting not required.
SECTION 312 - R-T-K INVENTORY DATA	Reporting not required.
SECTION 313 - EMISSIONS AND RELEASE	Reporting not required.

REFERENCES

PERMISSIBLE EXPOSURE REFERENCES :

- Registry of Toxic Effects of Chemical Substances
- Title 29 Code of Federal Regulations
- National Toxicology Program (NTP) Report on Carcinogens
- International Agency for Research on Cancer (IARC) Monographs

REGULATORY STANDARDS :

- DOT Title 49 Code of Federal Regulations 172.101
- SARA Title III

Please print or type with ELITE type *(12 characters/inch)* in the unshaded areas only.

Form Approved OMB No. 158-S79016
GSA No. 0246-EPA-OT

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

DETACH A

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER: S F ID D009063181 T/A 3 C 1

APPROVED:

DATE RECEIVED (yr., mo., & day): 880818

AUG 18 80 00564

I. NAME OF INSTALLATION

Potlatch Corporation Kamiah Unit

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 3 PO Box 757

CITY OR TOWN: 4 Kamiah

ST.: ID

ZIP CODE: 83536

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 5 Same

CITY OR TOWN: 6

ST.:

ZIP CODE:

IV. INSTALLATION CONTACT

NAME AND TITLE *(last, first, & job title)*: 2 Anderson Jack Environ Engr

PHONE NO. *(area code & no.)*: 208 - 799 - 1779

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: 8 Potlatch Corporation

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*

F = FEDERAL
M = NON-FEDERAL

M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete item VII)*
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only – enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify):*

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form 8700-12 (6-80)

CONTINUE ON REVERSE

I.D. – FOR OFFICIAL USE ONLY

S W | 1 | 2 | - | 13 | 14 | 15 T/A C

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F001	F003	F005			
7	**8**	**9**	**10**	**11**	**12**

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	**38**	**39**	**40**	**41**	**42**
43	**44**	**45**	**46**	**47**	**48**

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☒ 2. CORROSIVE (D002) ☒ 3. REACTIVE (D003) ☒ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
	CLEARWATER UNITS MANUFACTURING MANAGER	8/15/80

EPA Form 8700-12 (6-80) REVERSE

DETACH

DETACH

EPA

ACKNOWLEDGEMENT OF NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

(VERIFICATION)

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act *(RCRA)*. Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER ➤ •IDD009063181

POTLATCH CORPORATION KAMIAH UNIT
BOX 757
KAMIAH ID 83536

INSTALLATION ADDRESS ➤ BOX 757
KAMIAH ID 83536

EPA Form 8700-12B (4-80) 11/04/80

Potlatch

Potlatch Corporation
Idaho Pulp & Paperboard Division

P.O. Box 1016
Lewiston, Idaho 83501
Telephone (208) 799-0123

December 16, 1980

ID D009063181

U.S. Environmental Protection Agency
1200 - 6th Avenue
Seattle, Washington 98101

Attention: Linda Dawson M/S 530

Potlatch Corporation requests that the following facilities in Idaho be removed from the list of "generators" of hazardous wastes and reclassified as "small quantity generators". Each facility would like to retain an identification number for possible future use.

This request for reclassification is being made after a thorough analysis of wastes at each facility and the determination that very little, if any, hazardous wastes have been and will be generated at the facilities. Identification numbers were applied for in August, 1980 because of the confusion within the regulations that existed at that time and the penalties that would entail should hazardous wastes be present.

	Facility	I.D. Number	Signature
1.	St. Maries Plywood Box 366 St. Maries, Idaho 83861	IDD054656293	R. E. Stevenson Plant Manager
2.	Potlatch Lumber Box 397 Potlatch, Idaho 83855	IDD009069121	R. E. Vassar Plant Manager
3.	Post Falls Particleboard Box 786 Post Falls, Idaho 83854	IDD990783250	T. M. Barnes Plant Manager
4.	Rutledge Lumber Box 370 Coeur d'Alene, Idaho 83814	IDD009069022	J. D. Wentworth Plant Manager
5.	Lewiston Complex Box 1016 Lewiston, Idaho 83501	IDD009061375	P. D. Harris Plant Manager Consumer Products Div.

M. D. Clausner, Jr.
Clearwater Units, Mfg. Mgr

	Facility	I.D. Number	Signature
5.	continued		L. E. Rolig Division Manager Pulp & Paperboard Div.
6.	Jaype Plywood/Cedar Star Route Pierce, Idaho 83546	IDD009668237	B. R. Wallace Plant Manager
7.	Kamiah Plant Box 757 Kamiah Idaho 83536	IDD009063181	J. L. Winegar Plant Manager

Thank you for your attention to this matter and to the great amount of help extended during the past several months.

Very truly yours,

Jack A. Anderson
Environmental Engineer
North Idaho Units

JAA:lla

INTERVIEW DOCUMENTATION

Date: December 6, 2017

Interviewer: Kate Eiriksson

Interviewee: Joyce at Kamiah City Hall
208.935.2672

Subject: 283 Woodland Road
Kamiah, ID 83536

Kate Eiriksson, an Alta employee, contacted the City of Kamiah to confirm that the subject property was not within city limits and thus not subject to any city planning and zoning requirements. The site is located in Idaho County, which does not have any Planning and Zoning regulations.

INTERVIEW DOCUMENTATION

Date: December 6, 2017

Interviewer: Kate Eiriksson

Interviewee: Jake Davis
Public Health Department
District 2
208.476.7850

Subject: 283 Woodland Road
Kamiah, ID 83536

Kate Eiriksson, an Alta employee, contacted the Idaho Public Health Department, District 2, to find out if they had any records related to accidents or incidents, hazard reports, etc. Mr. Davis thought the only records they may have would be related to septic systems and was going to respond via email. His response on Monday, December 11, 2017 is located below:

"Ms. Eiriksson,

I am unable to locate any records regarding these properties. Please let me know if you have any questions.

Respectfully,
Jacob Davis
Environmental Health Specialist
Public Health – Idaho North Central District

(208) 476-7850

105 115th Street
Orofino, ID 83544

From: Kate Eiriksson [mailto:kate.eiriksson@alta-se.com]
Sent: Wednesday, December 6, 2017 11:41 AM
To: Jacob Davis <jdavis@phd2.idaho.gov>
Cc: Rachel Gibeault <Rachel.Gibeault@alta-se.com>
Subject: Kamiah Property

Hi Jake,

Thanks again for taking a look at your records for this now vacant mill site in Kamiah. The address is 283 Woodland Road, Kamiah, ID 83536. The property is in Idaho County and encompasses about 114 acres and used to have more than 20 structures. There was a fire there in January which destroyed the sawmill building, but most of the structures seem to remain. As far as I can tell, the site seems to be on these parcels:

- RP 34NO3E351950 A;
- RP 34NO3E352110 A;
- RP 34NO3E364511 A;

- RP 34NO3E365600 A;
- PP/PP 000009701 A;
- PP/PP 000009702 A;
- RP 34NO3E350300 A; and
- PP/PP 000009700 A

Any information you have on the site would be appreciated. Thanks in advance!

Regards,
Kate Eiriksson, MS
Environmental Scientist

988 South Longmont Avenue, Suite 200
Boise, ID 83706
Phone: 208.336.7080 | Fax: 208.908.4980
www.alta-se.com"

INTERVIEW DOCUMENTATION

Date: December 6, 2017

Interviewer: Kate Eiriksson

Interviewee: Dan Musgrave,
Kamiah Volunteer Fire
Department Chief
208.935.5231 (cell)

Subject: 283 Woodland Road
Kamiah, ID 83536

Kate Eiriksson, an Alta employee, contacted the Chief for the Kamiah Volunteer Fire Department via telephone. Mr. Dan Musgrave confirmed, aside from the January 2017 fire, a lack of environmental issues, spills, incident responses, or general calls at the site in his 38 years in the area. The January 2017 fire destroyed a single, large sawmill building and was determined to have been caused by "hot work." He also pointed Kate to Jason Blubaum, the regional Fire Investigator for the State Fire Marshal's Office, who completed a final report on the fire.

Kate made multiple attempts to contact Mr. Blubaum via email and phone, but did not get a response within the timeframe of this report.

United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Permit Number: R10T5100100
Issued: September 30, 2013
Effective: September 30, 2013
Expiration: September 30, 2018
Replaces: R10T5ID0003
AFS Plant I.D. Number: 16-061-00001

Title V Air Quality Operating Permit

Permit Renewal No. 1

In accordance with the provisions of Title V of the Clean Air Act (42 U.S.C. 7401 *et seq.*), 40 CFR Part 71 and other applicable rules and regulations,

Blue North Forest Products, LLC

is authorized to operate air emission units and to conduct other air pollutant emitting activities in accordance with the conditions listed in this permit. This source is authorized to operate in the following location:

Location: Nez Perce Reservation
Woodland Road
Kamiah, Idaho
Latitude: 46.246 N, Longitude: 116.035 W

Responsible Official: Herb Hazen
Vice President, Manufacturing and Sales
Blue North Forest Products, LLC
P.O. Box 757
Kamiah, Idaho 83536-0757
Phone: 208.935.2547, Fax: 208.935.2540
Email: hjhazen22@hotmail.com

Owner: Michael F. Burns
2930 Westlake Avenue North, Suite 300
Seattle, Washington 98109-1968
Phone: 206.352.9324

The United States Environmental Protection Agency (EPA) has also developed a statement of basis that describes the bases for conditions contained in this permit.

Donald A. Dossett

Donald A. Dossett, P.E., Manager
Air Permits and Diesel Unit
Office of Air, Waste and Toxics
U.S. EPA, Region 10

9/30/13

Date

Table of Contents

Table of Contents

1. Source Information and Emission Units

The Blue North Forest Products, LLC (BNFP or permittee) facility is a sawmill that produces dry dimensional lumber from logs. The emission units are listed in Table 1.

Table 1: Emission Units (EU) & Control Devices

EU ID	Emission Unit Description	Control Device[1]
BLR-1	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
BLR-2	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
ENG-1	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.	None
ENG-2	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995.	None
KLN	Seven 64-foot double-track lumber drying kilns. Indirectly heated. Kilns No. 2 through 6 automated. Kilns No. 1 and 7 not automated. 16 dry bulbs and 2 wet bulbs per kiln.	None
CYC	Five wood residual cyclones. W4 – planer mill shavings cyclone. H1 – planer mill chipped trim ends hog cyclone. W3 – Atlas fuel bin cyclone. W5 – shavings cyclone on top of shavings/sawdust bin. T1 – saw mill trimmer sawdust cyclone on top of shavings/sawdust bin.	None.
BIN	Five wood residual bins. GS – green sawdust bin. GC – green chip bin. AF – Atlas fuel bin. SS – shavings and green trimmer sawdust bin. HF – hog fuel bin.	None.
SMI	Sawmill operations inside a building. This activity includes, but is not limited to, hogging, sawing, chipping, shaving and mechanical transfer of wood residuals.	Inside building
SMO	Sawmill operations outside a building. This activity includes, but is not limited to, debarking, hogging, sawing, chipping, mechanical transfer of wood residuals and hog fuel storage pile.	None.
PT	Plant traffic generating fugitive emissions along paved and unpaved roads.	Watering

[1] The multiclone is required to be used by this permit.

2. Standard Terms and Conditions

2.1. Terms not otherwise defined in this permit have the meaning assigned to them in the referenced regulations. The language of the cited regulation takes precedence over paraphrasing except the text of terms specified pursuant to any of the following sections is directly enforceable: section 304(f)(4) of the Federal Clean Air Act (CAA), 40 CFR §§ 71.6(a)(3)(i)(B and C), 71.6(a)(3)(ii), and 71.6(b), or any other term specifically identified as directly enforceable.

Compliance with the Permit

2.2. The permittee must comply with all conditions of this Part 71 permit. All terms and conditions of this permit are enforceable by EPA and citizens under the Clean Air Act. Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [40 CFR § 71.6(a)(6)(i)]

2.3. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR § 71.6(a)(6)(ii)]

Permit Shield

2.4. Compliance with the terms and conditions of this permit shall be deemed compliance with the applicable requirements specifically listed in this permit as of the date of permit issuance. [40 CFR § 71.6(f)(1)]

2.5. Nothing in this permit shall alter or affect the following:

2.5.1. The provisions of section 303 of the Clean Air Act (emergency orders), including the authority of EPA under that section;

2.5.2. The liability of a permittee for any violation of applicable requirements prior to or at the time of permit issuance;

2.5.3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Clean Air Act; or

2.5.4. The ability of EPA to obtain information under section 114 of the Clean Air Act. [40 CFR § 71.6(f)(3)]

Other Credible Evidence

2.6. For the purpose of submitting compliance certifications in accordance with Condition 3.49 of this permit, or establishing whether or not a person has violated or is in violation of any requirement of this permit, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.
[Section 113(a) and 113(e)(1) of the CAA, 40 CFR §§ 51.212, 52.12, 52.33, 60.11(g) and 61.12]

Emergency Provisions

2.7. In addition to any emergency or upset provision contained in any applicable requirement, the permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency. To do so, the permittee shall demonstrate the

affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

2.7.1. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

2.7.2. The permitted facility was at the time being properly operated;

2.7.3. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and

2.7.4. The permittee submitted notice of the emergency to EPA within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of Condition 3.48 of this permit, concerning prompt notification of deviations.

[40 CFR §§ 71.6(g)(2), (3) and (5)]

2.8. In any enforcement proceeding, the permittee attempting to establish the occurrence of an emergency has the burden of proof. [40 CFR § 71.6(g)(4)]

2.9. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [40 CFR § 71.6(g)(1)]

Permit Actions

2.10. This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR § 71.6(a)(6)(iii)]

2.11. The permit may be reopened by EPA and the permit revised prior to expiration under any of the circumstances described in 40 CFR § 71.7(f). [40 CFR § 71.7(f)]

Permit Expiration and Renewal

2.12. Nothing in this permit shall alter or affect the following: This permit shall expire on the expiration date on page one of this permit or on an earlier date if the source is issued a Part 70 or Part 71 permit by a permitting authority under an EPA approved or delegated permit program. [40 CFR § 71.6(a)(11)]

2.13. Expiration of this permit terminates the permittee's right to operate unless a timely and complete permit renewal application has been submitted at least six months, but not more than 18 months, prior to the date of expiration of this permit. [40 CFR §§ 71.5(a)(1)(iii), 71.7(b) and 71.7(c)(1)(ii)]

2.14. If the permittee submits a timely and complete permit application for renewal, consistent with 40 CFR § 71.5(a)(2), but EPA has failed to issue or deny the renewal permit, then all the terms and conditions of the permit, including any permit shield granted pursuant to 40 CFR § 71.6(f) shall remain in effect until the renewal permit has been issued or denied. This permit shield shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by EPA any additional information identified as being needed to process the application. [40 CFR §§ 71.7(c)(3) and 71.7(b)]

Off-Permit Changes

2.15. The permittee is allowed to make certain changes without a permit revision, provided that the following requirements are met:

2.15.1. Each change is not addressed or prohibited by this permit;

2.15.2. Each change meets all applicable requirements and does not violate any existing permit term or condition;

2.15.3. The changes are not changes subject to any requirement of 40 CFR Parts 72 through 78 or modifications under any provision of Title I of the Clean Air Act;

2.15.4. The permittee provides contemporaneous written notice to EPA of each change, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11), that describes each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change;

2.15.5. The changes are not covered by a permit shield provided under 40 CFR § 71.6(f) and Conditions 2.4 and 2.5 of this permit; and

2.15.6. The permittee keeps a record describing all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes.

[40 CFR §71.6(a)(12)]

Emissions Trading and Operational Flexibility

2.16. The permittee is allowed to make a limited class of changes under section 502(b)(10) of the Clean Air Act within this permitted facility that contravene the specific terms of this permit without applying for a permit revision, provided:

2.16.1. The changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions);

2.16.2. The changes are not modifications under any provision of Title I of the Clean Air Act;

2.16.3. The changes do not violate applicable requirements;

2.16.4. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

2.16.5. The permittee sends a notice to EPA, at least 7 days in advance of any change made under this provision, that describes the change, when it will occur and any change in emissions and identifies any permit terms or conditions made inapplicable as a result of the change and the permittee attaches each notice to its copy this permit; and

2.16.6. The changes are not covered by a permit shield provided under 40 CFR § 71.6(f) and Conditions 2.4 and 2.5 of this permit. [40 CFR § 71.6(a)(13)(i)]

2.17. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. [40 CFR § 71.6(a)(8)]

Severability

2.18. The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force. [40 CFR §71.6(a)(5)]

Property Rights

2.19. This permit does not convey any property rights of any sort, or any exclusive privilege. [40 CFR §71.6(a)(6)(iv)]

3. General Requirements

General Compliance Schedule

3.1. For applicable requirements with which the source is in compliance, the permittee will continue to comply with such requirements. [40 CFR §§ 71.6(c)(3) and 71.5(c)(8)(iii)(A)]

3.2. For applicable requirements that will become effective during the permit term, the permittee shall meet such requirements on a timely basis. [40 CFR §§ 71.6(c)(3) and 71.5(c)(8)(iii)(B)]

Inspection and Entry

3.3. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow EPA or an authorized representative to perform the following:

3.3.1. Enter upon the permittee's premises where a Part 71 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

3.3.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

3.3.3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

3.3.4. As authorized by the Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [40 CFR § 71.6(c)(2)]

Open Burning Restrictions

3.4. Except as exempted in 40 CFR § 49.131(c), the permittee shall not openly burn, or allow the open burning of, the following materials:

3.4.1. Garbage;

3.4.2. Dead animals or parts of dead animals;

3.4.3. Junked motor vehicles or any materials resulting from a salvage operation;

3.4.4. Tires or rubber materials or products;

3.4.5. Plastics, plastic products, or styrofoam;

3.4.6. Asphalt or composition roofing, or any other asphaltic material or product;

3.4.7. Tar, tarpaper, petroleum products, or paints;

3.4.8. Paper, paper products, or cardboard other than what is necessary to start a fire or that is generated at single-family residences or residential buildings with four or fewer dwelling units and is burned at the residential site;

3.4.9. Lumber or timbers treated with preservatives;

3.4.10. Construction debris or demolition waste;

3.4.11. Pesticides, herbicides, fertilizers, or other chemicals;

3.4.12. Insulated wire;

3.4.13. Batteries;

3.4.14. Light bulbs;

3.4.15. Materials containing mercury (e.g., thermometers);

3.4.16. Asbestos or asbestos-containing materials;

3.4.17. Pathogenic wastes;

3.4.18. Hazardous wastes; or

3.4.19. Any material other than natural vegetation that normally emits dense smoke or noxious fumes when burned. [40 CFR §§ 49.131(c) and (d)(1)]

3.5. Open burning shall be conducted as follows:

3.5.1. All materials to be openly burned shall be kept as dry as possible through the use of a cover or dry storage;

3.5.2. Before igniting a burn, noncombustibles shall be separated from the materials to be openly burned to the greatest extent practicable;

3.5.3. Natural or artificially induced draft shall be present, including the use of blowers or air curtain incinerators where practicable;

3.5.4. To the greatest extent practicable, materials to be openly burned shall be separated from the grass or peat layer; and

3.5.5. A fire shall not be allowed to smolder. [40 CFR § 49.131(e)(1)]

3.6. Except for exempted fires set for cultural or traditional purposes, a person shall not initiate any open burning when:

3.6.1. The Regional Administrator has declared a burn ban; or

3.6.2. An air stagnation advisory has been issued or an air pollution alert, warning or emergency has been declared by the Regional Administrator.
[40 CFR §§ 49.131(d)(2), (d)(3) and (e)(2), and 49.137(c)(4)(i)]

3.7. Except for exempted fires set for cultural or traditional purposes, any person conducting open burning when such an advisory is issued or declaration is made shall either immediately extinguish the fire, or immediately withhold additional material such that the fire burns down.
[40 CFR §§ 49.131(e)(3) and 49.137(c)(4)(ii)]

3.8. Nothing in this section exempts or excuses any person from complying with applicable laws and ordinances of local fire departments and other governmental jurisdictions.
[40 CFR § 49.131(d)(4)]

Visible Emissions Limits

3.9. Except as provided for in Conditions 3.10 and 3.11, the visible emissions from any air pollution source that emits, or could emit, particulate matter or other visible air pollutants shall not exceed 20% opacity, averaged over any consecutive six-minute period. Compliance with this emission limit is determined as follows:

3.9.1. Using EPA Reference Method 9 found in Appendix A of 40 CFR part 60; or

3.9.2. Alternatively, using a continuous opacity monitoring system that complies with Performance Specification 1 found in Appendix B of 40 CFR part 60. [40 CFR §§ 49.124(d)(1) and (e)]

3.10. The requirements of Condition 3.9 do not apply to open burning, agricultural activities, forestry and silvicultural activities, non-commercial smoke houses, sweat houses or lodges, smudge pots, furnaces and boilers used exclusively to heat residential buildings with four or fewer dwelling units, or emissions from fuel combustion in mobile sources. [40 CFR § 49.124(c)]

3.11. Exceptions to the visible emission limit in Condition 3.9 include:

3.11.1. The visible emissions from an air pollution source may exceed the 20% opacity limit if the owner or operator of the air pollution source demonstrates to the Regional Administrator's satisfaction that the presence of uncombined water, such as steam, is the only reason for the failure of an air pollution source to meet the 20% opacity limit.

3.11.2. The visible emissions from an oil-fired boiler or solid fuel-fired boiler that continuously measures opacity with a continuous opacity monitoring system (COMS) may exceed the 20% opacity limit during start-up, soot blowing, and grate cleaning for a single period of up to 15 consecutive minutes in any eight consecutive hours, but must not exceed 60% opacity at any time. [40 CFR §§ 49.124(d)(2) and (3)]

Fugitive Particulate Matter Requirements and Recordkeeping

3.12. Except as provided for in Condition 3.17, the permittee shall take all reasonable precautions to prevent fugitive particulate matter emissions and shall maintain and operate all pollutant-emitting activities to minimize fugitive particulate matter emissions. Reasonable precautions include, but are not limited to the following:

3.12.1. Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, grading of roads, or clearing of land;

3.12.2. Application of asphalt, oil (but not used oil), water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces that can create airborne dust;

3.12.3. Full or partial enclosure of materials stockpiles in cases where application of oil, water, or chemicals is not sufficient or appropriate to prevent particulate matter from becoming airborne;

3.12.4. Implementation of good housekeeping practices to avoid or minimize the accumulation of dusty materials that have the potential to become airborne, and the prompt cleanup of spilled or accumulated materials;

3.12.5. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;

3.12.6. Adequate containment during sandblasting or other similar operations;

3.12.7. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and

3.12.8. The prompt removal from paved streets of earth or other material that does or may become airborne. [40 CFR §§ 49.126(d)(1) and (2)]

3.13. Once each calendar year, during typical operating conditions and meteorological conditions conducive to producing fugitive dust, the permittee shall survey the facility to determine the sources of fugitive particulate matter emissions. For new sources or new operations, a survey shall be conducted within 30 days after commencing operation.

3.13.1. The permittee shall record the results of the survey, including the date and time of the survey and identification of any sources of fugitive particulate matter emissions found; and

3.13.2. If sources of fugitive particulate matter emissions are present, the permittee shall determine the reasonable precautions that will be taken to prevent fugitive particulate matter emissions. [40 CFR §§ 49.126(e)(1)(i) and (ii)]

3.14. The permittee shall prepare, and update as necessary following each survey, a written plan that specifies the reasonable precautions that will be taken and the procedures to be followed to prevent fugitive particulate matter emissions, including appropriate monitoring and recordkeeping.

3.14.1. For construction or demolition activities, a written plan shall be prepared prior to commencing construction or demolition. [40 CFR §§ 49.126(e)(1)(iii) and (iv)]

3.15. The permittee shall implement the written plan, and maintain and operate all sources to minimize fugitive particulate matter emissions. [40 CFR §§ 49.126(e)(1)(iii) and (iv)]

3.16. Efforts to comply with this section cannot be used as a reason for not complying with other applicable laws and ordinances. [40 CFR § 49.126(e)(3)]

3.17. The requirements of Conditions 3.12 through 3.16 do not apply to open burning, agricultural activities, forestry and silvicultural activities, sweat houses or lodges, non-commercial smoke houses, or activities associated with single-family residences or residential buildings with four or fewer dwelling units. [40 CFR § 49.126(c)]

Other Work Practice Requirements and Recordkeeping

3.18. The permittee shall comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR Part 68 no later than the latest of the following dates:

3.18.1. Three years after the date on which a regulated substance, present above the threshold quantity in a process, is first listed under 40 CFR § 68.130; or

3.18.2. The date on which a regulated substance is first present above a threshold quantity in a process. [40 CFR § 68.10]

3.19. Except as provided for motor vehicle air conditioners (MVACs) in 40 CFR Part 82, Subpart B, the permittee shall comply with the stratospheric ozone and climate protection standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

3.19.1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR § 82.156.

3.19.2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR § 82.158.

3.19.3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR § 82.161.

3.19.4. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to 40 CFR § 82.166. ("MVAC-like appliance" is defined at 40 CFR § 82.152.)

3.19.5. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR § 82.156.

3.19.6. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR § 82.166. [40 CFR Part 82, Subpart F]

3.20. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the MVAC, the permittee must comply with all the applicable requirements for stratospheric ozone and climate protection as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. [40 CFR Part 82, Subpart B]

3.21. The permittee shall comply with 40 CFR Part 61, Subpart M for asbestos removal and disposal when conducting any renovation or demolition at the facility. [40 CFR Part 61, Subpart M]

General Testing and Associated Recordkeeping and Reporting

3.22. In addition to the specific testing requirements contained in the emission unit sections of this permit, the permittee shall comply with the generally applicable testing requirements in Conditions 3.23 through 3.30 whenever conducting a performance test or emission factor derivation test required by this permit unless specifically stated otherwise in this permit. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.23. Test Notification. The permittee shall provide EPA at least 30 days prior notice of any performance test, except as otherwise specified in this permit, to afford EPA the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay in conducting the scheduled performance test, the permittee shall notify EPA as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with EPA by mutual agreement. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.24. Test Plan. The permittee shall submit to EPA a source test plan 30 days prior to any required testing. The source test plan shall include and address the following elements:

3.24.1. Purpose and scope of testing;

3.24.2. Source description, including a description of the operating scenarios and mode of operation during testing and including fuel sampling and analysis procedures;

3.24.3. Schedule/dates of testing;

3.24.4. Process data to be collected during the test and reported with the results, including source-specific data identified in the emission unit sections of this permit;

3.24.5. Sampling and analysis procedures, specifically requesting approval for any proposed alternatives to the reference test methods, and addressing minimum test length (e.g., one hour, 8 hours, 24 hours, etc.) and minimum sample volume;

3.24.6. Sampling location description and compliance with the reference test methods;

3.24.7. Analysis procedures and laboratory identification;

3.24.8. Quality assurance plan;

3.24.9. Calibration procedures and frequency;

3.24.10. Sample recovery and field documentation;

3.24.11. Chain of custody procedures;

3.24.12. Quality assurance/quality control project flow chart;

3.24.13. Data processing and reporting;

3.24.14. Description of data handling and quality control procedures; and

3.24.15. Report content and timing. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.25. Facilities for performing and observing the emission testing shall be provided that meet the requirements of 40 CFR 60.8(e) and Reference Method 1 (40 CFR Part 60, Appendix A). [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.26. Unless EPA determines in writing that other operating conditions are representative of normal operations or unless specified in the emission unit sections of this permit, the source shall be operated at a capacity of at least 90% but no more than 100% of maximum during all tests. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.27. Only regular operating staff may adjust the processes or emission control devices during or within 2 hours prior to the start of a source test. Any operating adjustments made during a source test, that are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.28. Each source test shall follow the reference test methods specified by this permit and consist of at least three (3) valid test runs.

3.28.1. If the reference test method yields measured pollutant concentration values at an oxygen concentration other than specified in the emission standard, the permittee shall correct the measured pollutant concentration to the oxygen concentration specified in the emission standard by using the following equation:

$$PC_X = PC_M \times \frac{(20.9 - X)}{(20.9 - Y)}$$

Where: PC_X = Pollutant concentration at X percent;
PC_M = Pollutant concentration as measured;
X = The oxygen concentration specified in the standard; and
Y = The measured average volumetric oxygen concentration.
[40 CFR § 71.6(a)(3)(i)(B)]

3.28.2. Source test emission data shall be reported as the arithmetic average of all valid test runs and in the terms of any applicable emission limit, unless otherwise specified in the emission unit sections of this permit. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.29. Test Records. For the duration of each test run (unless otherwise specified), the permittee shall record the following information:

3.29.1. All data which is required to be monitored during the test in the emission unit sections of this permit; and

3.29.2. All continuous monitoring system data which is required to be routinely monitored in the emission unit sections of this permit for the emission unit being tested. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

3.30. Test Reports. Emission test reports shall be submitted to EPA within 45 days of completing any emission test required by this permit along with items required to be recorded in Condition 3.29 above. [40 CFR §§ 71.6(a)(3) and 71.6(c)(1)]

General Recordkeeping

3.31. Monitoring Records. The permittee shall keep records of required monitoring information that include the following:

3.31.1. The date, place, and time of sampling or measurements;

3.31.2. The date(s) analyses were performed;

3.31.3. The company or entity that performed the analyses;

3.31.4. The analytical techniques or methods used;

3.31.5. The results of such analyses; and,

3.31.6. The operating conditions as existing at the time of sampling or measurement.

[40 CFR § 71.6(a)(3)(ii)(A)]

3.32. Off-Permit Change Records. The permittee shall keep a record describing all off-permit changes allowed to be made under Condition 2.15 that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes. [40 CFR §71.6(a)(12)]

3.33. Open Burning Records. For any open burning allowed under Conditions 3.4 through 3.8, the permittee shall document the following:

3.33.1. The date that burning was initiated;

3.33.2. The duration of the burn;

3.33.3. The measures taken to comply with each provision of Condition 3.5; and

3.33.4. The measures taken to ensure that materials prohibited in Condition 3.4 were not burned. [40 CFR § 71.6(a)(3)(i)(B)]

3.34. Fee Records. The permittee shall retain in accordance with the provisions of Condition 3.35 of this permit, all work sheets and other materials used to determine fee payments. Records shall be retained for five years following the year in which the emissions data is submitted.

[40 CFR § 71.9(i)]

3.35. Records Retention. The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [40 CFR §§ 71.6(a)(3)(ii)(B), 49.126(e)(1)(v) and 49.130(f)(2)]

General Reporting

3.36. Additional Information. The permittee shall furnish to EPA, within a reasonable time, any information that EPA may request in writing to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee shall also furnish to EPA copies of records that are required to be kept pursuant to the terms of the permit, including information claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR Part 2, Subpart B.

[40 CFR §§ 71.6(a)(6)(v) and 71.5(a)(3)]

3.37. Corrections. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. [40 CFR § 71.5(b)]

3.38. Off-Permit Change Report. The permittee shall provide contemporaneous written notice to EPA of each off-permit change allowed to be made under Condition 2.15, except for changes that qualify as insignificant activities under 40 CFR § 71.5(c)(11). The written notice shall describe

each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change; [40 CFR §71.6(a)(12)]

3.39. Section 502(b)(10) Change Report. The permittee is required to send a notice to EPA at least 7 days in advance of any section 502(b)(10) change allowed to be made under Condition 2.16. The notice must describe the change, when it will occur and any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy of this permit. [40 CFR § 71.6(a)(13)(i)(A)]

3.40. Address. Unless otherwise specified in this permit, any documents required to be submitted under this permit, including reports, test data, monitoring data, notifications, compliance certifications, fee calculation worksheets, and applications for renewals and permit modifications shall be submitted to the EPA address below. A copy of each document submitted to EPA that does not contain confidential business information shall be sent to the Tribal address below:

Original documents go to EPA at:	Copies go to Tribe at:
Part 71 Air Quality Permits U.S. EPA - Region 10, AWT-107 1200 Sixth Avenue, Suite 900 Seattle, WA 98101-3140	Air Quality Coordinator Nez Perce Tribe P.O. Box 365 Lapwai, ID 83540-0365

[40 CFR §§ 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

Part 71 Emission and Fee Reporting

3.41. Part 71 Annual Emission Report. No later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA an annual report of actual emissions for the preceding calendar year. [40 CFR § 71.9(h)(1)]

3.41.1. "Actual emissions" means the actual rate of emissions in tons per year of any "regulated pollutant (for fee calculation)," as defined in 40 CFR § 71.2, emitted from a Part 71 source over the preceding calendar year. Actual emissions shall be calculated using each emissions unit's actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. [40 CFR § 71.9(c)(6)]

3.41.2. Actual emissions shall be computed using methods required by the permit for determining compliance, such as monitoring or source testing data. [40 CFR § 71.9(h)(3)]

3.41.3. Actual emissions shall include fugitive emissions. [40 CFR § 71.9(c)(1)]

3.42. Part 71 Fee Calculation Worksheet. Based on the annual emission report required in Condition 3.41 and no later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA a fee calculation worksheet (blank forms provided by EPA) and a photocopy of each fee payment check (or other confirmation of actual fee paid). [40 CFR §§ 71.9(c)(1), 71.9(e)(1) and 71.9(h)(1)]

3.42.1. The annual emissions fee shall be calculated by multiplying the total tons of actual emissions of each "regulated pollutant (for fee calculation)," emitted from the source by the presumptive emission fee (in dollars/ton) in effect at the time of calculation. The presumptive emission fee is revised each calendar year and is available from EPA prior to the start of each calendar year. [40 CFR § 71.9(c)(1)]

3.42.2. The permittee shall exclude the following emissions from the calculation of fees:

3.42.2.1 The amount of actual emissions of each regulated pollutant (for fee calculation) that the source emits in excess of 4,000 tons per year;

3.42.2.2 Actual emissions of any regulated pollutant (for fee calculation) already included in the fee calculation; and

3.42.2.3 The insignificant quantities of actual emissions not required to be listed or calculated in a permit application pursuant to 40 CFR § 71.5(c)(11). [40 CFR § 71.9(c)(5)]

3.43. Part 71 Annual Fee Payment. No later than the date specified in Condition 4.1 of each year, the permittee shall submit to EPA full payment of the annual permit fee based on the fee calculation worksheet required in Condition 3.42. [40 CFR §§ 71.9(a), 71.9(c)(1) and 71.9(h)(1)]

3.43.1. The fee payment and a completed fee filing form shall be sent to:

U.S.EPA
FOIA and Miscellaneous Payments
Cincinnati Finance Center
P. O. Box 979078
St Louis, MO 63197-9000

[40 CFR § 71.9(k)(2)]

3.43.2. The fee payment shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of the U.S. Environmental Protection Agency. [40 CFR § 71.9(k)(1)]

3.43.3. The permittee, when notified by EPA of additional amounts due, shall remit full payment within 30 days of receipt of an invoice from EPA. [40 CFR § 71.9(j)(2)]

3.43.4. If the permittee thinks an EPA assessed fee is in error and wishes to challenge such fee, the permittee shall provide a written explanation of the alleged error to EPA along with full payment of the EPA assessed fee. [40 CFR § 71.9(j)(3)]

3.43.5. Failure of the permittee to pay fees in a timely manner shall subject the permittee to assessment of penalties and interest in accordance with 40 CFR § 71.9(l). [40 CFR § 71.9(l)]

3.44. The annual emission report and fee calculation worksheet (and photocopy of each fee payment check), required in Conditions 3.41 and 3.42, shall be submitted to EPA at the address listed in Condition 3.40 of this permit.[1] [40 CFR § 71.9(k)(1)]

3.45. The annual emission report and fee calculation worksheet (and photocopy of each fee payment check), required in Conditions 3.41 and 3.42, shall be certified by a responsible official in accordance with Condition 3.50 of this permit. [40 CFR § 71.9(h)(2)]

Annual Registration

3.46. The permittee shall submit an annual registration report that consists of estimates of the total actual emissions from the air pollution source for the following air pollutants: PM, PM_{10}, $PM_{2.5}$, SO_X, NO_X, CO, VOC, lead and lead compounds, ammonia, fluorides (gaseous and particulate), sulfuric acid mist, hydrogen sulfide, total reduced sulfur (TRS), and reduced sulfur compounds, including all calculations for the estimates. Emissions shall be calculated using the actual

[1] The permittee should note that an annual emissions report, required at the same time as the fee calculation worksheet by 40 CFR § 71.9(h), has been incorporated into the fee calculation worksheet.

operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.

[40 CFR §§ 49.138(e)(3)(xii), (e)(4) and (f)]

3.46.1. The emission estimates required by Condition 3.46 shall be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Regional Administrator. Any emission estimates submitted to the Regional Administrator shall be verifiable using currently accepted engineering criteria. The following procedures are generally acceptable for estimating emissions from air pollution sources:

3.46.1.1 Source-specific emission tests;

3.46.1.2 Mass balance calculations;

3.46.1.3 Published, verifiable emission factors that are applicable to the source;

3.46.1.4 Other engineering calculations; or

3.46.1.5 Other procedures to estimate emissions specifically approved by the Regional Administrator. [40 CFR §§ 49.138(e)(4) and (f)]

3.46.2. The annual registration report shall be submitted with the annual emission report and fee calculation worksheet required by Conditions 3.41 and 3.42 of this permit. The permittee may submit a single combined report provided that the combined report clearly identifies which emissions are the basis for the annual registration report, the part 71 annual emission report, and the part 71 fee calculation worksheet. All registration information and reports shall be submitted on forms provided by the Regional Administrator. [40 CFR §§ 49.138(d) and (f)]

Periodic and Deviation Reporting

3.47. Semi-Annual Monitoring Report. The permittee shall submit to EPA reports of any required monitoring for each six month reporting period from July 1 to December 31 and from January 1 to June 30. All reports shall be submitted to EPA and shall be postmarked by the 45th day following the end of the reporting period. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with Condition 3.50. [40 CFR § 71.6(a)(3)(iii)(A)]

3.48. Deviation Report. The permittee shall promptly report to EPA, by telephone or facsimile, deviations from permit conditions, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be made using the following numbers:

Telephone: (206) 553-1331
Facsimile: (206) 553-0110
Attn: Part 71 Deviation Report

[40 CFR § 71.6(a)(3)(iii)(B)]

3.48.1. For the purposes of Conditions 3.47 and 3.48, deviation means any situation in which an emissions unit fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or record keeping required by this permit. For a situation lasting more than 24 hours, each 24-hour period is considered a separate deviation. Included in the meaning of deviation are any of the following:

3.48.1.1 A situation where emissions exceed an emission limitation or standard;

3.48.1.2 A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;

3.48.1.3 A situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit (including indicators of compliance revealed through parameter monitoring);

3.48.1.4 A situation in which any testing, monitoring, recordkeeping or reporting required by this permit is not performed or not performed as required;

3.48.1.5 A situation in which an exceedance or an excursion, as defined in 40 CFR Part 64, occurs; and

3.48.1.6 Failure to comply with a permit term that requires submittal of a report. [40 CFR § 71.6(a)(3)(iii)(C)]

3.48.2. For the purpose of Condition 3.48 of the permit, prompt is defined as any definition of prompt or a specific time frame for reporting deviations provided in an underlying applicable requirement as identified in this permit. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:

3.48.2.1 For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence;

3.48.2.2 For emissions of any regulated pollutant excluding those listed in Condition 3.48.2.1 above, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours of the occurrence; or

3.48.2.3 For all other deviations from permit requirements, the report shall be submitted with the semi-annual monitoring report required in Condition 3.47. [40 CFR § 71.6(a)(3)(iii)(B)]

3.48.3. Within 10 working days of the occurrence of a deviation as provided in Condition 3.48.2.1 or 3.48.2.2 above, the permittee shall also submit a written notice, which shall include a narrative description of the deviation and updated information as listed in Condition 3.48, to EPA, certified consistent with Condition 3.50 of this permit. [40 CFR §§ 71.6(a)(3)(i)(B) and (iii)(B)]

Annual Compliance Certification

3.49. The permittee shall submit to EPA a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, postmarked by February 28 of each year and covering the permit or permits in effect during the previous calendar year. The compliance certification shall be certified as to truth, accuracy, and completeness by a responsible official consistent with Condition 3.50 of this permit. [40 CFR § 71.6(c)(5)]

3.49.1. The annual compliance certification shall include the following:

3.49.1.1 The identification of each permit term or condition that is the basis of the certification;

3.49.1.2 The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during

the certification period. Such methods and other means shall include, at a minimum, the methods and means required in this permit. If necessary, the permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Clean Air Act, which prohibits knowingly making a false certification or omitting material information; and

3.49.1.3 The status of compliance with each term and condition of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 occurred.

[40 CFR § 71.6(c)(5)(iii)]

Document Certification

3.50. Any document required to be submitted under this permit shall be certified by a responsible official as to truth, accuracy, and completeness. Such certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. [40 CFR §§ 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

Permit Renewal

3.51. The permittee shall submit a timely and complete application for permit renewal at least six months, but not more than 18 months, prior to the date of expiration of this permit.

[40 CFR §§ 71.5(a)(1)(iii), 71.7(b) and 71.7(c)(1)(ii)]

3.52. The application for renewal shall include the current permit number, a description of permit revisions and off-permit changes that occurred during the permit term and were not incorporated into the permit during the permit term, any applicable requirements that were promulgated and not incorporated into the permit during the permit term, and other information required by the application form. [40 CFR §§ 71.5(a)(2) and 71.5(c)(5)]

4. Facility-Specific Requirements

Fees and Emission Reports Due Date

4.1. Unless otherwise specified, fees and emission reports required by this permit are due annually on November 15. [40 CFR §§ 71.9(a) and 71.9(h)]

Fuel Sulfur Limits

4.2. The permittee shall not sell, distribute, use, or make available for use any solid fuel that contains more than 2.0 percent sulfur by weight. [40 CFR § 49.130(d)(7)]

4.2.1. Compliance with the sulfur limit is determined using ASTM method E775-87(2004). [40 CFR § 49.130(e)(3)]

4.3. The permittee shall not sell, distribute, use, or make available for use any ASTM Grade 2 distillate fuel oil that contains more than 0.5 percent sulfur by weight. [40 CFR § 49.130(d)(4)]

4.3.1. Compliance with the sulfur limit is determined using ASTM methods D2880-03, D4294-03, D6021-96(2001). [40 CFR § 49.130(e)(1)]

Fuel Sulfur Monitoring and Recordkeeping

4.4. The permittee shall keep records showing that only wood is combusted in the boilers. [40 CFR § 49.130(f)(1)(iii)]

4.5. The permittee shall obtain, record, and keep records of the percent sulfur by weight from the vendor for each purchase of fuel oil. If the vendor is unable to provide this information, then obtain a representative grab sample for each purchase and test the sample using the reference method. [40 CFR § 49.130(f)(1)(i)]

Visible and Fugitive Emission Monitoring and Recordkeeping

4.6. Except as provided for in Condition 4.13, once each calendar quarter, the permittee shall visually survey each emission unit and any other pollutant emitting activity for the presence of visible emissions or fugitive emissions of particulate matter.

4.6.1. The observer conducting the visual survey must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting and wind, and the presence of uncombined water on the visibility of emissions (see 40 CFR part 60, Appendix A, Method 22).

4.6.2. For the surveys, the observer shall select a position that enables a clear view of the emission point to be surveyed, that is at least 15 feet, but not more than 0.25 miles, from the emission point, and where the sunlight is not shining directly in the observer's eyes.

4.6.3. The observer shall observe emissions from each potential emission point for at least 15 seconds.

4.6.4. Any visible emissions or fugitive emissions of particulate matter other than uncombined water shall be recorded as a positive reading associated with the emission unit or pollutant emitting activity.

4.6.5. Surveys shall be conducted while the facility is operating, and during daylight hours. [40 CFR § 71.6(a)(3)(i)(B)]

4.7. If the observation conducted under Condition 4.6 identifies any visible emissions or fugitive emissions of particulate matter, the permittee shall:

4.7.1. Immediately upon conclusion of the visual observation in Condition 4.6, investigate the source and reason for the presence of visible emissions or fugitive emissions; and

4.7.2. As soon as practicable, take appropriate corrective action. [40 CFR § 71.6(a)(3)(i)(B)]

4.8. If the corrective actions undertaken pursuant to Condition 4.7.2 do not eliminate the visible or fugitive emissions, the permittee shall within 24 hours of the initial survey conduct a visible emissions observation of the emission point in question, for thirty minutes, using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

4.9. If any of the visible emissions observations required in Condition 4.8 or 4.10 indicate visible emissions greater than 20% opacity, the permittee shall conduct daily visible emissions observations, for thirty minutes, of the emission point in question until two consecutive daily observations indicate visible emissions of 20% opacity or less. [40 CFR § 71.6(a)(3)(i)(B)]

4.10. If the Method 9 visible emissions observation required in Condition 4.8, or if two consecutive daily observations required by Condition 4.9 indicate visible emissions of 20% opacity or less, the permittee shall conduct weekly visible emissions observations of the emission point for three additional weeks. [40 CFR § 71.6(a)(3)(i)(B)]

4.11. The permittee shall maintain records of the following:

4.11.1. Details of each visual survey or visible emissions observation, including date, time, observer and results for each emission unit and any other pollutant emitting activity;

4.11.2. Date, time and type of any investigation conducted pursuant to Condition 4.7.1;

4.11.3. Findings of the investigation, including the reasons for the presence of visible emissions or fugitive emissions of particulate matter;

4.11.4. Date, time and type of corrective actions taken pursuant to Condition 4.7.2;

4.11.5. Results of any Method 9 visible emissions observations conducted on the source of visible or fugitive emissions, and pursuant to Conditions 4.8 through 4.10.

[40 CFR § 71.6(a)(3)(i)(B)]

4.12. Any observation of visible emissions in excess of 20% opacity is a deviation and subject to the provisions of Conditions 3.47 and 3.48. [40 CFR § 71.6(a)(3)(i)(B)]

4.13. The requirements of Conditions 4.6 through 4.12 shall not apply to emissions from boilers BLR-1 and BLR-2. [40 CFR § 71.6(a)(3)(i)(B)]

Open Burning, Agricultural Burning, Forestry and Silvicultural Burning Permits

4.14. The permittee shall apply for and obtain a permit for any open burning, agricultural burning, or forestry and silvicultural burning. The permittee shall submit an application to the Nez Perce Tribe for each proposed burn, and shall comply with the provisions of 40 CFR 49.132, 40 CFR 49.133 and/or 40 CFR 49.134, as applicable. [40 CFR 49.132, 40 CFR 49.133, 40 CFR 49.134]

Facility-Wide HAP Emission Limits and Work Practice Requirements

4.15. HAP emissions from this facility shall not exceed 24 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) for the previous eleven months. Monthly HAP emissions (tons) shall be determined by multiplying appropriate emission factors (lb/unit) by the recorded monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

4.15.1. Hydrogen chloride emission factors shall be based on the most recent fuel sampling results. [Permit No. R10NT500901]

4.16. Emissions of any single HAP from this facility shall not exceed 9 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) for the previous eleven months. Monthly emissions of any single HAP (tons) shall be determined by multiplying appropriate emission factors (lb/unit) by the recorded monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

4.16.1. Hydrogen chloride emission factors shall be based on the most recent fuel sampling results. [Permit No. R10NT500901]

Facility-Wide HAP Monitoring and Recordkeeping Requirements

4.17. Each month, the permittee shall calculate and record facility-wide monthly and rolling 12-month total emissions (tons) for all HAP-emitting activities at the facility. [Permit No. R10NT500901]

4.18. Prior to the first fuel analysis being conducted as required in Condition 5.5.4 and 6.5.4, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to boilers BLR-1 and BLR-2 for use in emission calculations. [40 CFR § 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

4.19. The permittee shall track and record the operations and production for each HAP-emitting activity at the facility, such that facility-wide HAP emissions can be calculated on a monthly and 12-month basis. [Permit No. R10NT500901]

4.20. The permittee shall maintain records of emission calculations and parameters used to calculate emissions for at least five years. [Permit No. R10NT500901]

Facility-Wide HAP Reporting Requirements

4.21. Once each year, on or before November 15, the permittee shall, along with the annual registration required in Condition 3.46, submit to EPA a report containing the twelve monthly rolling 12-month emissions calculations for the previous calendar year. [R10NT500901]

4.21.1. The report shall contain a description of all emissions estimating methods used, including emission factors and their sources, assumptions made and production data. [R10NT500901]

NESHAP Subpart JJJJJJ Work Practice and Emission Reduction Measures

4.22. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up. The permittee shall conduct a performance tune-up of boilers BLR-1 and BLR-2 no later than March 21, 2014, and biennially or every 5 years thereafter depending upon whether the boiler has an oxygen trim system that maintains an optimum air-to-fuel ratio subject to the following:
[40 CFR §§ 63.11196(a)(1), 63.11201(b), 63.11210(c), 63.11223(a) through (c) and Table 2 to Subpart JJJJJJ of Part 63]

4.22.1. If the boiler does not have an oxygen trim system that maintains an optimum air-to-fuel ratio, each performance tune-up shall be conducted no more than 25 months after the previous tune-up. [40 CFR § 63.11223(b)]

4.22.2. If the boiler has an oxygen trim system that maintains an optimum air-to-fuel ratio, each performance tune-up shall be conducted no more than 61 months after the previous tune-up. [40 CFR § 63.11223(c)]

4.22.3. If the boiler is not operating on the required date for a tune-up, the tune-up shall be conducted within 30 days of startup. [40 CFR § 63.11223(b)(7)]

4.22.4. Conduct the tune-up while combusting biomass. [40 CFR § 63.11223(a)]

4.22.5. Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly. The inspection may be delayed until the next scheduled boiler shutdown, not to exceed 36 months from the previous inspection. [40 CFR § 63.11223(b)(3)]

4.22.6. Optimize total emissions of CO. This optimization shall be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the boiler is subject. [40 CFR §§ 63.11223(b)(4)]

4.23. NESHAP Subpart JJJJJJ Energy Assessment for Boilers BLR-1 and BLR-2 and Their Energy Use Systems. The permittee shall satisfy Condition 4.23.1 or 4.23.2 no later than March 21, 2014:
[40 CFR § 63.11196(a)(3), 63.11201(b), 63.11210(c) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1. Have a one-time energy assessment performed or amended in accordance with Condition 4.24 and as follows:
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1.1 The energy assessment (and in the case of an amendment; the underlying assessment) shall be completed on or after January 1, 2008.
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.23.1.2 An energy assessment performed after February 1, 2013 shall be conducted by a qualified energy assessor. [Table 2 to Subpart JJJJJJ of Part 63]

4.23.2. Operate under an energy management program compatible with ISO 50001 that includes boilers BLR-1 and BLR-2.
[40 CFR § 63.11201(b) and Table 2 to Subpart JJJJJJ of Part 63]

4.24. NESHAP Subpart JJJJJJ One-Time Energy Assessment Requirements for Boilers BLR-1 and BLR-2 and Their Energy Use Systems. If the permittee elects to have a one-time energy assessment performed or amended to comply with Condition 4.23, the assessment (or amended assessment) shall include the following:
[40 CFR § 63.11201(b), 40 CFR § 63.11237 and Table 2 to Subpart JJJJJJ of Part 63]

4.24.1. An on-site evaluation up to 8 technical labor hours in duration (but may be longer at the discretion of the permittee) that includes the following: [40 CFR § 63.11237]

4.24.1.1 A visual inspection of the boiler system;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.2 An evaluation of operating characteristics of the boiler system, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.3 An inventory of major energy use systems consuming energy from the boiler and which are under control of the permittee;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.1.4 A review of available architectural and engineering plans, facility operating and maintenance procedures and logs, and fuel usage;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.2. A list of major energy conservation measures that are within the permittee's control;
[Table 2 to Subpart JJJJJJ of Part 63]

4.24.3. A list of the energy savings potential of the energy conservation measures identified, and [Table 2 to Subpart JJJJJJ of Part 63]

4.24.4. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.
[Table 2 to Subpart JJJJJJ of Part 63]

4.25. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 General Duty Requirement. At all times, the permittee must operate and maintain the boiler , including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to EPA that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR § 63.11205(a)]

NESHAP Subpart JJJJJJ Monitoring and Recordkeeping Requirements

4.26. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up Monitoring. The permittee shall measure and record the concentration of CO in parts per million, by volume, and O_2 in volume percent, in the boiler's effluent stream before and after the performance tune-up conducted to satisfy Condition 4.22. Measurements may be either on a dry or wet basis, as long as

it is the same basis before and after the performance tune-up is performed. Measurements may be taken using a portable CO analyzer. [40 CFR § 63.11223(b)(5)]

4.27. NESHAP Subpart JJJJJJ Recordkeeping for Compliance – Boilers BLR-1 and BLR-2 and Their Energy Use Systems. The permittee shall maintain the following records: [40 CFR § 63.11225(c)]

4.27.1. A copy of each notification and report submitted to comply with NESHAP Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status submitted to EPA. [40 CFR §§ 63.10(b)(2)(xiv) and 63.11225(c)(1)]

4.27.2. Records identifying the boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. [40 CFR § 63.11225(c)(2)(i)]

4.27.3. A copy of the energy assessment report for the boiler and its energy use systems. [40 CFR § 63.11225(c)(2)(iii)]

4.28. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Recordkeeping for General Duty Requirement. The permittee shall maintain the following records: [40 CFR § 63.11225(c)]

4.28.1. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment. [40 CFR § 63.11225(c)(4)]

4.28.2. Records of actions taken during periods of malfunction to minimize emissions in accordance with Condition 4.25, including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. [40 CFR § 63.11225(c)(5)]

4.29. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Recordkeeping for Use of Non-Hazardous Secondary Materials as Fuels. The permittee shall maintain the following records:

4.29.1. If the boiler combusts non-hazardous secondary materials that have been determined not to be a solid waste pursuant to 40 CFR § 241.3(b)(1), the permittee shall keep a record which documents how the secondary material meets each of the legitimacy criteria under 40 CFR § 241.3(d)(1).

4.29.2. If the boiler combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR § 241.3(b)(4), the permittee shall keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR § 241.2 and each of the legitimacy criteria in 40 CFR § 241.3(d)(1).

4.29.3. If the boiler combusts a fuel that received a non-waste determination pursuant to the petition process submitted under 40 CFR § 241.3(c), the permittee shall keep a record that documents how the fuel satisfies the requirements of the petition process.

4.29.4. If the boiler combusts non-hazardous secondary materials as fuel per 40 CFR §241.4, the permittee shall keep records documenting that the material is a listed non-waste under 40 CFR § 241.4(a). [40 CFR § 63.11225(c)(2)(ii)]

NESHAP Subpart JJJJJJ Reporting Requirements

4.30. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Performance Tune-up Reporting. Maintain on-site and submit to EPA as part of the reporting satisfying Conditions 4.32 and 4.33, as applicable, the following information for each performance tune-up conducted to satisfy Condition 4.22: [40 CFR § 63.11223(b)(6)]

4.30.1. The concentration of CO in the boiler's effluent stream in parts per million, by volume, and O_2 in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. [40 CFR § 63.11223(b)(6)(i)]

4.30.2. A description of any corrective action taken as a part of the tune-up of the boiler. [40 CFR § 63.11223(b)(6)(ii)]

4.31. NESHAP Subpart JJJJJJ Initial Notification Requirement. The permittee shall submit an Initial Notification to EPA no later than January 20, 2014, and the notification shall provide the following information:
[40 CFR §§ 63.9(b), 63.11225(a)(2), 63.11235 and Table 8 to NESHAP JJJJJJ of Part 63]

4.31.1. The name and address of the owner or operator; [40 CFR § 63.9(b)(2)(i)]

4.31.2. The address (i.e., physical location) of the affected source; [40 CFR § 63.9(b)(2)(ii)]

4.31.3. An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date; [40 CFR § 63.9(b)(2)(iii)]

4.31.4. A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and [40 CFR § 63.9(b)(2)(iv)]

4.31.5. A statement of whether the affected source is a major source or an area source. [40 CFR § 63.9(b)(2)(v)]

4.32. NESHAP Subpart JJJJJJ Notification of Compliance Status. The permittee shall submit a Notification of Compliance Status to EPA no later than July 19, 2014, and the notification shall be signed by the permittee's responsible official certifying its accuracy and attesting to whether the source has complied with NESHAP JJJJJJ. The notification shall provide the following information: [40 CFR §§ 63.9(h)(1), 63.11214(b) and (c), and 63.11225(a)(4)]

4.32.1. The methods that were used to determine compliance; [40 CFR § 63.9(h)(2)(i)(A)]

4.32.2. The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods; [40 CFR § 63.9(h)(2)(i)(C)]

4.32.3. A statement by the permittee as to whether the boiler has complied with NESHAP Subpart JJJJJJ or other requirements. [40 CFR § 63.9(h)(2)(i)(G)]

4.32.4. The statement, "This facility complies with the requirements in 40 CFR § 63.11214 to conduct an initial tune-up of the boiler." [40 CFR § 63.11225(a)(4)(ii)]

4.32.5. The statement, "This facility has had an energy assessment performed according to § 63.11214(c)." [40 CFR § 63.11225(a)(4)(iii)]

4.32.6. The statement, "No secondary materials that are solid waste were combusted in any affected unit." [40 CFR § 63.11225(a)(4)(v)]

4.33. NESHAP Subpart JJJJJJ Annual Compliance Certification Report. Each year, the permittee shall prepare by March 1 and submit to EPA by March 15 an Annual Compliance Certification Report for the previous calendar year. The report shall be signed by the permittee's responsible official and provide the following information: [40 CFR § 63.11225(b)]

4.33.1. Company name and address. [40 CFR §63.11225(b)(1)]

4.33.2. Statement by a responsible official, with the official's name, title, phone number, email address and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of NESHAP Subpart JJJJJJ. [40 CFR §63.11225(b)(2)]

4.33.3. The statement, "This facility complies with the requirements in 40 CFR § 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler." [40 CFR §63.11225(b)(2)(i)]

4.33.4. The statement, "No secondary materials that are solid waste were combusted in any affected unit." [40 CFR §63.11225(b)(2)(i)(ii)]

4.33.5. A description of any deviations from the applicable requirements during the previous calendar year, the time periods during which the deviations occurred, and the corrective actions taken. [40 CFR § 63.11225(b)(3)]

4.34. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Notification of Combustion of Solid Waste. The permittee shall provide 30 days prior notice to EPA of the date upon which combusting of solid waste will commence or recommence in the boiler. The notification shall identify the following: [40 CFR § 63.11225(f)]

4.34.1. The name of the owner or operator of the boiler, the location of the boiler, identification of the boiler as a boiler that will commence combusting solid waste, and the date of the notice. [40 CFR § 63.11225(f)(1)]

4.34.2. The currently applicable subcategory listed at 40 CFR § 63.11200. [40 CFR § 63.11225(f)(2)]

4.34.3. The date on which the permittee became subject to the currently applicable emission limits. [40 CFR § 63.11225(f)(3)]

4.34.4. The date upon which the permittee will commence combusting solid waste**.** [40 CFR § 63.11225(f)(4)]

4.35. NESHAP Subpart JJJJJJ Boilers BLR-1 and BLR-2 Notification of Fuel Switch, Physical Change or Permit Limit. The permittee shall provide notice to EPA if the permittee switched fuels or made a physical change to the boiler and the fuel switch or change resulted in (a) the applicability of a different subcategory of NESHAP JJJJJJ listed at 40 CFR § 63.11200, (b) the boiler becoming subject to NESHAP Subpart JJJJJJ, or (c) the boiler switching out of NESHAP Subpart JJJJJJ due to a change to 100 percent natural gas. Notice shall also be provided if EPA issues a permit limit to the permittee that results in the permittee being subject to NESHAP Subpart JJJJJJ. Notice shall be provided within 30 days of the change, and the notification shall identify the following: [40 CFR § 63.11225(g)]

4.35.1. The name of the owner or operator of the boiler, the location of the boiler, identification of the boiler as a boiler that has switched fuels, was physically changed, or took a permit limit, and the date of the notice. [40 CFR § 63.11225(g)(1)]

4.35.2. The date upon which the fuel switch, physical change, or permit limit occurred. [40 CFR § 63.11225(g)(2)]

Monitoring for Modifications to the Facility – Employing PSD's Actual to Projected Actual Test

4.36. Where there is a reasonable possibility (as defined in 40 CFR § 52.21(r)(6)(vi)) that a project (other than projects at a source with a PAL) that is not a part of a major modification may result in a significant emissions increase of any regulated NSR pollutant and the permittee elects to use the method specified in 40 CFR § 52.21(b)(41)(ii)(a) through (c) for calculating projected actual emissions, the permittee shall perform the following:

4.36.1. Before beginning actual construction of the project, document and maintain a record of the following information.

4.36.1.1 A description of the project.

4.36.1.2 Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project.

4.36.1.3 A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under 40 CFR § 52.21(b)(41)(ii)(c) and an explanation for why such amount was excluded, and any netting calculations, if applicable.

4.36.2. Monitor the emission of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions unit identified in Condition 4.36.1.2; and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity or potential to emit of that regulated NSR pollutant at such emissions unit. [40 CFR § 52.21(r)(6)]

Reporting for Modifications to the Facility – Employing PSD's Actual to Projected Actual Test

4.37. If monitoring and recordkeeping is required in Condition 4.36, the permittee shall report to EPA when the annual emissions, in tons per year, from the project identified in Condition 4.36.1.1 exceed the baseline actual emissions as documented and maintained pursuant to Condition 4.36.1.3 by a significant amount (as defined in 40 CFR § 52.21(b)(23)) for that regulated NSR pollutant , and when such emissions differ from the preconstruction projection as documented and maintained pursuant to Condition 4.36.1.3. Such report shall be submitted to EPA within 60 days after the end of such year. The report shall contain the following.

4.37.1. The name, address and telephone number of the major stationary source.

4.37.2. The annual emissions as calculated pursuant to Condition 4.36.2.

4.37.3. Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection). [40 CFR § 52.21(r)(6)]

5. Unit-Specific Requirements – BLR–1 (Hog Fuel-Fired Boiler No. 1)

BLR-1 Emission Limits and Work Practice Requirements

5.1. FARR Particulate Matter Limit. Particulate matter emissions from the boiler stack shall not exceed an average of 0.46 grams per dry standard cubic meter (0.2 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

5.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(2) and (e)]

5.2. FARR Sulfur Dioxide Emission Limit. Sulfur dioxide emissions from the boiler stack shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

5.2.1. Compliance with the SO_2 limit is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60,

appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60.
[40 CFR §§ 49.129(d)(1) and (e)]

5.3. At all times that the boiler operates, the boiler exhaust shall be directed to the multiclone.
[40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

5.4. The multiclone shall be maintained in good operating condition and shall be operated at all times that the boiler is operational. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

BLR-1 Testing Requirements

5.5. Initial Particulate Matter Test. No later than 120 days after issuance of this permit, the permittee shall measure particulate matter emissions from the boiler stack using the test method specified in Condition 5.1.1.

5.5.1. Testing shall be conducted at a minimum of one load condition; that load condition being one in which the boiler is generating steam at a load reflecting the highest sustained load (M lb steam/hr) generally observed since the facility was re-started in August 2010.

5.5.2. During each source test run, the permittee shall measure the visible emissions from the boiler stack for the duration of each particulate matter test run using the procedures specified in Condition 3.9.1.

5.5.3. During each source test run, the permittee shall record the values (and time recorded) of the parameters specified in Condition 5.8. For monitoring devices that do not have continuous recording devices, the recorded values must consist of no fewer than 3 values recorded per test run.

5.5.4. During each source test run, the permittee shall collect composite fuel samples. The permittee shall estimate and record the percentages of bark, species of wood and material less than 1/8 inch in each composite fuel sample. The permittee shall determine and record the boiler fuel-heat-input-to-steam-output ratio (MMBtu/M lb steam) using the procedures specified in Appendix A to this permit (below). Prior to the first fuel analysis being conducted, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to the boiler for emission calculations.
[40 CFR § 71.6(a)(3)(i)(B)]

5.6. Periodic Particulate Matter Test. The permittee shall measure particulate matter emissions from the boiler stack using the procedures specified in Condition 5.5 as follows:

If testing required in Condition 5.5 results in measured particulate matter emissions …	**Additional particulate matter testing shall be conducted …**
≥ 90% of the emission limit in Condition 5.1 for any load condition	Once per calendar year, between December 1 and March 31
≥ 75% but < 90% of the emission limit in Condition 5.1 for any load condition	Once per two calendar years, between December 1 and March 31
< 75% of the emission limit in Condition 5.1 for any load condition	Once per four calendar years, between December 1 and March 31

[40 CFR § 71.6(a)(3)(i)(B)]

BLR-1 Monitoring and Recordkeeping Requirements

5.7. Periodic Visible Emission Monitoring. The permittee shall measure visible emissions from the boiler stack within one month after this permit is issued for one hour using the procedures specified in Condition 3.9.1 and subsequently as specified in the following table.

If the most recent visible emission measurement results in measured opacity of …	**Additional visible emissions measurements shall be conducted …**
One or more 6-minute average > 20% opacity	Once per day, until two consecutive daily measurements are ≤ 20%
One or more 6-minute average ≥ 10% opacity	Once per month, with consecutive tests at least 10 days apart, until three consecutive monthly measurements are < 10%
All 6-minute averages < 10% opacity	Once per calendar quarter, with consecutive tests at least 30 days apart

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

5.8. Within 60 days of issuance of this permit, the permittee shall install, calibrate, operate and maintain equipment necessary to measure and record:

5.8.1. Steam production (lb/hr) - continuous measurement/display, recorded at least once per hour with at least 90% monthly data capture;

5.8.2. Steam pressure (psig) - continuous measurement/display, recorded at least once per month;

5.8.3. Boiler excess oxygen downstream of the combustion chamber (%) - continuous measurement/display, recorded at least once per day with at least 90% monthly data capture;

5.8.4. Pressure drop across the multiclone (inches of water) - continuous measurement/display, recorded at least once per day with at least 90% data capture.

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

5.9. Procedure to Define Multiclone Pressure Drop and Visible Emissions Excursions. No later than 45 days after conducting testing pursuant to Condition 5.5, the permittee shall define excursions for multiclone pressure drop and visible emissions. The level at which an excursion will be deemed to occur shall be based upon testing conducted pursuant to Condition 5.5 and the following criteria:

5.9.1. If the permittee conducts testing at one load condition (M lb steam/hr), the excursion levels for all operating loads shall be determined as follows:

If particulate matter testing required in Condition 5.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
≥ 90% of the emission limit in Condition 5.1	Average pressure drop observed over three test runs	Average opacity observed over 3 test runs
≥ 75% but < 90% of the emission limit in Condition 5.1	95 percent of the average pressure drop observed over	110 percent of the average opacity observed

If particulate matter testing required in Condition 5.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
	three test runs	over 3 test runs
≥ 50% < 75% of the emission limit in Condition 5.1	90 percent of the average pressure drop observed over three test runs	125 percent of the average opacity observed over 3 test runs
< 50% of the emission limit in Condition 5.1	80 percent of the average pressure drop observed over three test runs	150 percent of the average opacity observed over 3 test runs

5.9.2. If the permittee conducts testing at more than one load condition (M lb steam/hr), excursion levels shall be determined as follows:

5.9.2.1 Apply the criteria in Condition 5.9.1 separately to test results for each load condition;

5.9.2.2 Excursion levels for a particular load condition shall apply to operating loads that are equal to or less than the particular one tested, but only to the extent that the operating load is greater than all other load conditions undergoing testing (if any) between 0 lb steam/hr and the particular load condition. [40 CFR § 64.6(c)]

5.10. The permittee shall ensure that the monitoring equipment required by Condition 5.8 meets the following performance, operational and maintenance criteria:

5.10.1. Measurement locations that provide for obtaining data that are representative of the emissions or parameters being monitored. [40 CFR § 64.3(b)(1)]

5.10.2. Quality assurance and control practices, considering manufacturer recommendations, that are adequate to ensure the continuing validity of the data. [40 CFR § 64.3(b)(3)]

5.10.3. Maintaining necessary parts for routine repairs of the monitoring equipment. [40 CFR § 64.7(b)]

5.10.4. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), continuous operation of the monitoring equipment (or collecting data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [40 CFR § 64.7(c)]

5.10.5. Until the permittee provides notice of the establishment of excursion levels pursuant to Condition 5.18, an excursion is defined as a one-hour average exhaust stack opacity

greater than 5%. Thereafter, an excursion is any multiclone pressure drop or exhaust stack opacity value beyond the levels established pursuant to Condition 5.9.
[40 CFR §§ 64.1 and 64.6(c)(2)]

5.10.6. An exceedance is defined as any measured emission of PM which exceeds an emission limit specified in Condition 3.9 or 5.1. [40 CFR §§ 64.1 and 64.6(c)(2)]

5.11. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [40 CFR § 64.7(d)(1)]

5.12. The permittee shall develop and implement a quality improvement plan (QIP) in accordance with 40 CFR § 64.8 if EPA Region 10 determines, pursuant to 40 CFR § 64.7(d)(2), that the permittee has not used acceptable procedures in response to an excursion or exceedance.
[40 CFR §§ 64.7(d)(2) and 64.8(a)]

5.13. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [40 CFR § 64.7(e)]

5.14. The recordkeeping requirements of Condition 3.35 shall apply to monitoring conducted to satisfy Conditions 5.8 through 5.13. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR § 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Instead of paper records, the permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR § 64.9(b)]

5.15. The permittee shall sample and analyze the wood fuel for chloride content no less frequently than quarterly to determine a hydrogen chloride emission factor (lb/MMBtu).

5.15.1. Sampling and analysis procedures to determine chloride content in the wood fuel shall follow the procedures specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below). The results of the analyses shall be used to determine a hydrogen chloride emission factor (lb/MMBtu) for the boiler as specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below).
[Permit No. R10NT500901 and 40 CFR § 71.6(c)(1)]

BLR-1 Reporting Requirements

5.16. The reports required by Condition 3.47 and 3.48 shall include the following:

5.16.1. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions and exceedances, as applicable, and the corrective actions taken;

5.16.2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

5.16.3. A description of the actions taken to implement a QIP during the reporting period as specified in § 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.[40 CFR § 64.9(a)(2)]

5.17. The report required by Condition 3.46 shall include copies of all laboratory results relied upon to calculate HCl emission factors and shall list the sampling and analytical methods employed. [40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

5.18. At the time the permittee submits a report for the testing conducted pursuant to Condition 5.5 but no later than 45 days after having completed the testing, the permittee shall notify EPA of the establishment of excursion levels for multiclone pressure drop and visible emissions. The notice shall present the excursion levels and an explanation of how the values were derived. [40 CFR § 64.6(c)(2)]

6. Unit-Specific Requirements – BLR–2 (Hog Fuel-Fired Boiler No. 2)

BLR-2 Emission Limits and Work Practice Requirements

6.1. FARR Particulate Matter Limit. Particulate matter emissions from the boiler stack shall not exceed an average of 0.46 grams per dry standard cubic meter (0.2 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

6.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(2) and (e)]

6.2. FARR Sulfur Dioxide Emission Limit. Sulfur dioxide emissions from the boiler stack shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

6.2.1. Compliance with the SO_2 limit is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

6.3. At all times that the boiler operates, the boiler exhaust shall be directed to the multiclone. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

6.4. The multiclone shall be maintained in good operating condition and shall be operated at all times that the boiler is operational. [40 CFR §§ 49.124(d)(1), 49.125(d)(2) and 71.6(a)(1)]

BLR-2 Testing Requirements

6.5. Initial Particulate Matter Test. No later than 120 days after issuance of this permit, the permittee shall measure particulate matter emissions from the boiler stack using the test method specified in Condition 6.1.1.

6.5.1. Testing shall be conducted at a minimum of one load condition; that load condition being one in which the boiler is generating steam at a load reflecting the highest sustained load (M lb steam/hr) generally observed since the facility was re-started in August 2010.

6.5.2. During each source test run, the permittee shall measure the visible emissions from the boiler stack for the duration of each particulate matter test run using the procedures specified in Condition 3.9.1.

6.5.3. During each source test run, the permittee shall record the values (and time recorded) of the parameters specified in Condition 6.8. For monitoring devices that do not have continuous recording devices, the recorded values must consist of no fewer than 3 values recorded per test run.

6.5.4. During each source test run, the permittee shall collect composite fuel samples. The permittee shall estimate and record the percentages of bark, species of wood and material less than 1/8 inch in each composite fuel sample. The permittee shall determine and record the boiler fuel-heat-input-to-steam-output ratio (MMBtu/M lb steam) using the procedures specified in Appendix A to this permit (below). Prior to the first fuel analysis being conducted, the permittee shall use 1.7 MMBtu/M lb steam to calculate the monthly heat input to the boiler for emission calculations.

[40 CFR § 71.6(a)(3)(i)(B)]

6.6. Periodic Particulate Matter Test. The permittee shall measure particulate matter emissions from the boiler stack using the procedures specified in Condition 6.5 as follows:

If testing required in Condition 6.5 results in measured particulate matter emissions …	**Additional particulate matter testing shall be conducted …**
≥ 90% of the emission limit in Condition 6.1 for any load condition	Once per calendar year, between December 1 and March 31
≥ 75% but < 90% of the emission limit in Condition 6.1 for any load condition	Once per two calendar years, between December 1 and March 31
< 75% of the emission limit in Condition 6.1 for any load condition	Once per four calendar years, between December 1 and March 31

[40 CFR § 71.6(a)(3)(i)(B)]

BLR-2 Monitoring and Recordkeeping Requirements

6.7. Periodic Visible Emission Monitoring. The permittee shall measure visible emissions from the boiler stack within one month after this permit is issued for one hour using the procedures specified in Condition 3.9.1 and subsequently as specified in the following table.

If the most recent visible emission measurement results in measured opacity of …	**Additional visible emissions measurements shall be conducted …**
One or more 6-minute average > 20% opacity	Once per day
One or more 6-minute average ≥ 10% opacity	Once per month, with consecutive tests at

	least 10 days apart
All 6-minute averages < 10% opacity	Once per calendar quarter, with consecutive tests at least 30 days apart

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

6.8. Within 60 days of issuance of this permit, the permittee shall install, calibrate, operate and maintain equipment necessary to measure and record:

6.8.1. Steam production (lb/hr) - continuous measurement/display, recorded at least once per hour with at least 90% monthly data capture;

6.8.2. Steam pressure (psig) - continuous measurement/display, recorded at least once per month;

6.8.3. Boiler excess oxygen downstream of the combustion chamber (%) - continuous measurement/display, recorded at least once per day with at least 90% monthly data capture;

6.8.4. Pressure drop across the multiclone (inches of water) - continuous measurement/display, recorded at least once per day with at least 90% data capture.

[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii), 71.6(c)(1), 64.6(c), 64.3(b)(4)]

6.9. Procedure to Define Multiclone Pressure Drop and Visible Emissions Excursions. No later than 45 days after conducting testing pursuant to Condition 6.5, the permittee shall define excursions for multiclone pressure drop and visible emissions. The level at which an excursion will be deemed to occur shall be based upon testing conducted pursuant to Condition 6.5 and the following criteria:

6.9.1. If the permittee conducts testing at one load condition (M lb steam/hr), the excursion levels for all operating loads shall be determined as follows:

If particulate matter testing required in Condition 6.5 results in measured emissions (gr/dscf @ 7% O_2)…	**A multiclone pressure drop excursion shall be defined as an instantaneous measurement (inches of water) less than…**	**A visible emissions excursion is defined as a one-hour average greater than…**
≥ 90% of the emission limit in Condition 6.1	Average pressure drop observed over three test runs	Average opacity observed over 3 test runs
≥ 75% but < 90% of the emission limit in Condition 6.1	95 percent of the average pressure drop observed over three test runs	110 percent of the average opacity observed over 3 test runs
≥ 50% < 75% of the emission limit in Condition 6.1	90 percent of the average pressure drop observed over three test runs	125 percent of the average opacity observed over 3 test runs
< 50% of the emission limit in Condition 6.1	80 percent of the average pressure drop observed over three test runs	150 percent of the average opacity observed over 3 test runs

6.9.2. If the permittee conducts testing at more than one load condition (M lb steam/hr), excursion levels shall be determined as follows:

6.9.2.1 Apply the criteria in Condition 6.9.1 separately to test results for each load condition;

6.9.2.2 Excursion levels for a particular load condition shall apply to operating loads that are equal to or less than the particular one tested, but only to the extent that the operating load is greater than all other load conditions undergoing testing (if any) between 0 lb steam/hr and the particular load condition. [40 CFR § 64.6(c)]

6.10. The permittee shall ensure that the monitoring equipment required by Condition 6.8 meets the following performance, operational and maintenance criteria:

6.10.1. Measurement locations that provide for obtaining data that are representative of the emissions or parameters being monitored. [40 CFR 64.3(b)(1)]

6.10.2. Quality assurance and control practices, considering manufacturer recommendations, that are adequate to ensure the continuing validity of the data. [40 CFR 64.3(b)(3)]

6.10.3. Maintaining necessary parts for routine repairs of the monitoring equipment. [40 CFR § 64.7(b)]

6.10.4. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), continuous operation of the monitoring equipment (or collecting data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [40 CFR § 64.7(c)]

6.10.5. Until the permittee provides notice of the establishment of excursion levels pursuant to Condition 6.18, an excursion is defined as a one-hour average exhaust stack opacity greater than 5%. Thereafter, an excursion is any multiclone pressure drop or exhaust stack opacity value beyond the levels established pursuant to Condition 6.9. [40 CFR § 64.1 and 64.6(c)(2)]

6.10.6. An exceedance is defined as any measured emission of PM which exceeds an emission limit specified in Condition 3.9 or 6.1. [40 CFR § 64.1 and 64.6(c)(2)]

6.11. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [40 CFR § 64.7(d)(1)]

6.12. The permittee shall develop and implement a quality improvement plan (QIP) in accordance with 40 CFR § 64.8 if EPA Region 10 determines, pursuant to 40 CFR § 64.7(d)(2), that the permittee has not used acceptable procedures in response to an excursion or exceedance.
[40 CFR §§ 64.7(d)(2) and 64.8(a)]

6.13. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [40 CFR § 64.7(e)]

6.14. The recordkeeping requirements of Condition 3.35 shall apply to monitoring conducted to satisfy Conditions 6.8 through 6.13. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR § 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Instead of paper records, the permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR § 64.9(b)]

6.15. The permittee shall sample and analyze the wood fuel for chloride content no less frequently than quarterly to determine a hydrogen chloride emission factor (lb/MMBtu).

6.15.1. Sampling and analysis procedures to determine chloride content in the wood fuel shall follow the procedures specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below). The results of the analyses shall be used to determine a hydrogen chloride emission factor (lb/MMBtu) for the boiler as specified in 40 CFR § 63.7521 as described in Appendix B to this permit (below).
[Permit No. R10NT500901 and 40 CFR § 71.6(c)(1)]

BLR-2 Reporting Requirements

6.16. The reports required by Condition 3.47 and 3.48 shall include the following:

6.16.1. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions and exceedances, as applicable, and the corrective actions taken;

6.16.2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

6.16.3. A description of the actions taken to implement a QIP during the reporting period as specified in § 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.[40 CFR § 64.9(a)(2)]

6.17. The report required by Condition 3.46 shall include copies of all laboratory results relied upon to calculate HCl emission factors and shall list the sampling and analytical methods employed.
[40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

6.18. At the time the permittee submits a report for the testing conducted pursuant to Condition 6.5 but no later than 45 days after having completed the testing, the permittee shall notify EPA of the establishment of excursion levels for multiclone pressure drop and visible emissions. The notice shall present the excursion levels and an explanation of how the values were derived.
[40 CFR § 64.6(c)(2)]

7. Unit Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)

ENG-1 Emission Limits and Work Practice Requirements

7.1. Particulate matter emissions from the stack of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

7.1.1. Compliance with the particulate matter limit in Condition 7.1 is determined using EPA Reference Method 5 (see 40 CFR part 60, appendix A).
[40 CFR §§ 49.125(d)(1) and (e)]

7.2. Sulfur dioxide emissions from the stack of this emission unit shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

7.2.1. Compliance with the SO_2 limit in Condition 7.2 is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

7.3. At all times the permittee shall be in compliance with NESHAP Subpart ZZZZ requirements that apply to the permittee. [40 CFR § 63.6605(a)]

7.4. The permittee shall change the oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR § 63.6603(a) and Row 4.a. of Table 2d to Subpart ZZZZ of Part 63]

7.4.1. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 7.4 as follows:

7.4.1.1 The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content.

7.4.1.2 The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.

7.4.1.3 If all these condemning limits are not exceeded, the engine owner or operator is not required to change the oil.

7.4.1.4 If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the

engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

7.5. The permittee shall inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.b. of Table 2d to Subpart ZZZZ of Part 63]

7.6. The permitee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.c. of Table 2d to Subpart ZZZZ of Part 63]

7.7. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements pursuant to Conditions 7.4, 7.5 and 7.6, or if performing the management practice would otherwise pose an unacceptable risk under federal, state, or local law, the management practice shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. [Footnote 2 of Table 2d to Subpart ZZZZ of Part 63]

7.8. Except as provided for in Condition 7.10, the permittee shall not operate the engine for more than 100 hours per calendar year for the following purposes: [40 CFR § 63.6640(f)(2)]

7.8.1. Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine; and [40 CFR § 63.6640(f)(2)(i)]

7.8.2. Other non-emergency situations. [40 CFR § 63.6640(f)(4)]

7.9. The permittee may operate the engine for up to 50 hours per calendar year in non-emergency situations other than the activities listed in Condition 7.8.1, but only to the extent allowed by Condition 7.8. [40 CFR §§ 63.6640(f)(2) and (4)]

7.10. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency engines beyond 100 hours per calendar year. [40 CFR § 63.6640(f)(2)(i)]

7.11. During periods of startup, the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
[40 CFR § 63.6625(h) and Table 2d to Subpart ZZZZ of Part 63]

7.12. At all times the permittee shall operate and maintain the engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emission does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR § 63.6605(b)]

7.13. The permittee shall operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's emission-related written operation and maintenance instruction, or alternatively, the permittee shall develop and follow its own maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions

[40 CFR §§ 63.6625(e), 40 CFR § 63.6640(a) and Row 9 of Table 6 to Subpart ZZZZ of Part 63]

ENG-1 Monitoring and Recordkeeping Requirements

7.14. The first time each calendar year that the engine is operated during daylight hours in a non-emergency situation, the permittee shall conduct at least one 6-minute visible emissions observation of the engine stack using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

7.15. If the permittee utilizes an oil analysis program pursuant to Condition 7.4.1, the owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

7.16. The permittee shall install a non-resettable hour meter if one is not already installed.
[40 CFR § 63.6625(f)]

7.16.1. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter.

7.16.2. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR § 63.6655(f)]

7.17. The permittee shall keep records to show continuous compliance with Condition 7.13.
[40 CFR § 63.6655(d)]

7.18. The permittee shall keep records of the maintenance conducted on the engine in order to demonstrate that the permittee operated and maintained the engine and after-treatment control device (if any) according to the permittee's own maintenance plan. [40 CFR § 63.6655(e)]

ENG-1 Reporting Requirements

7.19. The permittee shall comply with the applicable NESHAP Subpart A general provisions listed in Table 8 to Subpart ZZZZ of Part 63.
[40 CFR §§ 63.6665 and Table 8 to Subpart ZZZZ of Part 63]

7.19.1. The requirement to submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) does not apply.
[40 CFR § 63.6645(a)(5)]

7.20. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 any failure to perform timely management practices as required by Conditions 7.4, 7.5 and 7.6 for reasons afforded by Condition 7.7. Report also the federal, state or local law under which the risk was deemed unacceptable.
[40 CFR §§ 71.6(a)(3)(iii)(A) and footnote 2 of Table 2d to Subpart ZZZZ of Part 63)]

7.21. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 each instance in which the permittee did not meet the requirements in Table 8 to 40 CFR 63, Subpart ZZZZ. [40 CFR §§ 63.6640(e) and 71.6(a)(3)(iii)(A)]

7.22. The permittee shall report all deviations as defined in 40 CFR Part 63, Subpart ZZZZ in the semi-annual monitoring report required by Condition 3.47. [40 CFR § 63.6650(f)]

8. Unit Specific Requirements – ENG-2 (Emergency Backup Engine No. 2)

ENG-2 Emission Limits and Work Practice Requirements

8.1. Particulate matter emissions from the stack of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period.

8.1.1. Compliance with the particulate matter limit in Condition 8.1 is determined using EPA Reference Method 5 (see 40 CFR part 60, appendix A).
[40 CFR §§ 49.125(d)(1) and (e)]

8.2. Sulfur dioxide emissions from the stack of this emission unit shall not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period.

8.2.1. Compliance with the SO_2 limit in Condition 8.2 is determined using EPA Reference Methods 6, 6A, 6B, and 6C as specified in the applicability section of each method (see 40 CFR part 60, appendix A) or, alternatively, a continuous emission monitoring system that complies with Performance Specification 2 found in Appendix B of 40 CFR Part 60. [40 CFR §§ 49.129(d)(1) and (e)]

8.3. At all times the permittee shall be in compliance with NESHAP Subpart ZZZZ requirements that apply to the permittee. [40 CFR § 63.6605(a)]

8.4. The permittee shall change the oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR § 63.6603(a) and Row 4.a. of Table 2d to Subpart ZZZZ of Part 63]

8.4.1. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 8.4 as follows:

8.4.1.1 The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content.

8.4.1.2 The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.

8.4.1.3 If all these condemning limits are not exceeded, the engine owner or operator is not required to change the oil.

8.4.1.4 If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

8.5. The permittee shall inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR § 63.6603(a) and Row 4.b. of Table 2d to Subpart ZZZZ of Part 63]

8.6. The permitee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 CFR § 63.6603(a) and Row 4.c. of Table 2d to Subpart ZZZZ of Part 63]

8.7. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements pursuant to Conditions 8.4, 8.5 and 8.6, or if performing the management practice would otherwise pose an unacceptable risk under federal, state, or local law, the management practice shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. [Footnote 2 of Table 2d to Subpart ZZZZ of Part 63]

8.8. Except as provided for in Condition 8.10, the permittee shall not operate the engine for more than 100 hours per calendar year for the following purposes: [40 CFR § 63.6640(f)(2)]

8.8.1. Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine; and [40 CFR § 63.6640(f)(2)(i)]

8.8.2. Other non-emergency situations. [40 CFR § 63.6640(f)(4)]

8.9. The permittee may operate the engine for up to 50 hours per calendar year in non-emergency situations other than the activities listed in Condition 8.8.1 but only to the extent allowed by Condition 8.8. [40 CFR §§ 63.6640(f)(2) and (4)]

8.10. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency engines beyond 100 hours per calendar year. [40 CFR § 63.6640(f)(2)(i)]

8.11. During periods of startup, the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
[40 CFR § 63.6625(h) and Table 2d to Subpart ZZZZ of Part 63]

8.12. At all times the permittee shall operate and maintain the engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emission does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR § 63.6605(b)]

8.13. The permittee shall operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's emission-related written operation and maintenance instruction, or alternatively, the permittee shall develop and follow its own maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions
[40 CFR §§ 63.6625(e), 40 CFR § 63.6640(a) and Row 9 of Table 6 to Subpart ZZZZ of Part 63]

ENG-2 Monitoring and Recordkeeping Requirements

8.14. The first time each calendar year that the engine is operated during daylight hours, the permittee shall conduct at least one 6-minute visible emissions observation of the engine stack using the procedures specified in Condition 3.9.1. [40 CFR § 71.6(a)(3)(i)(B)]

8.15. If the permittee utilizes an oil analysis program pursuant to Condition 8.4.1, the owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the

analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[40 CFR § 63.6625(i) and footnote 1 of Table 2d to Subpart ZZZZ of Part 63]

8.16. The permittee shall install a non-resettable hour meter if one is not already installed.
[40 CFR § 63.6625(f)]

8.16.1. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter.

8.16.2. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR § 63.6655(f)]

8.17. The permittee shall keep records to show continuous compliance with Condition 8.13.
[40 CFR § 63.6655(d)]

8.18. The permittee shall keep records of the maintenance conducted on the engine in order to demonstrate that the permittee operated and maintained the engine and after-treatment control device (if any) according to the permittee's own maintenance plan. [40 CFR § 63.6655(e)]

ENG-2 Reporting Requirements

8.19. The permittee shall comply with the applicable NESHAP Subpart A general provisions listed in Table 8 to Subpart ZZZZ of Part 63.
[40 CFR §§ 63.6665 and Table 8 to Subpart ZZZZ of Part 63]

8.19.1. The requirement to submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) does not apply.
[40 CFR § 63.6645(a)(5)]

8.20. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 any failure to perform timely management practices as required by Conditions 8.4, 8.5 and 8.6 for reasons afforded by Condition 8.7. Report also the federal, state or local law under which the risk was deemed unacceptable.
[40 CFR §§ 71.6(a)(3)(iii)(A) and footnote 2 of Table 2d to Subpart ZZZZ of Part 63)]

8.21. The permittee shall report in the semi-annual monitoring report required by Condition 3.47 each instance in which the permittee did not meet the requirements in Table 8 to 40 CFR 63, Subpart ZZZZ. [40 CFR §§ 63.6640(e) and 71.6(a)(3)(iii)(A)]

8.22. The permittee shall report all deviations as defined in 40 CFR Part 63, Subpart ZZZZ in the semi-annual monitoring report required by Condition 3.47. [40 CFR § 63.6650(f)]

9. Unit-Specific Requirements – KLN (Lumber Drying Kilns)

KLN Emission Limits and Work Practice Requirements

9.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

9.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

KLN Monitoring and Recordkeeping Requirements

9.2. The permittee shall determine the monthly volume of lumber dried (bf/month) in the lumber kilns according to species of lumber and maximum drying temperature of each batch.

9.2.1. For each kiln charge, track the species and volume of lumber dried (bf) and the maximum dry bulb temperature (ºF) of heated air entering the lumber stack. [40 CFR §§ 71.6(a)(3)(i)(B) and (C), 71.6(a)(3)(ii) and 71.6(c)(1)]

10. Unit-Specific Requirements – CYC (Wood Residual Cyclones)

CYC Emission Limits and Work Practice Requirements

10.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

10.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

11. Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

SMI Emission Limits and Work Practice Requirements

11.1. Particulate matter emissions from the stack(s) of this emission unit shall not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot) during any three-hour period.

11.1.1. Compliance with the particulate matter limit is determined using EPA Reference Method 5 (see 40 CFR part 60, Appendix A). [40 CFR §§ 49.125(d)(3) and (e)]

Appendix A: Boiler Fuel-Heat-Input-To-Steam-Output Ratio

Last Revised September 2013

1. During each emission test run:
   - Measure average stack gas flow (dscfm) using Reference Method 2
   - Measure average steam flow rate (mlbsteam/hr) using boiler monitoring equipment

2. Sample Fuel
   - Take 3 composite samples (composed of three approximately 2-pound individual samples) using 63.7521(c); all samples shall be collected at a location that most accurately represents the fuel being burned; if not sampling during a stack test, individual belt or screw feeder samples, described in 63.7521(c)(1)(ii), shall be separated by a 30 minute period

3. Homogenize Fuel Sample
   - Subdivide and homogenize each composite sample using 63.7521(d) until sample passes 0.5 mm screen

4. Determine Fuel Moisture
   - Determine moisture content (%, wet basis) of three composite samples using ASTM E871-82R06; time analysis such that samples used for moisture analysis represents moisture content of samples introduced to oxygen bomb; do not average the three sample results
   - For converting heat content or ultimate analysis % to dry basis, use the following:
     - (value, wet basis) / (1 - %moisture) = (value, dry basis)

5. Determine Fuel Heat Content (aka Gross Calorific Value or High Heat Value)
   - Determine gross calorific value (Btu/lb, wet basis) for each composite sample using ASTM E711-87R04; do not average the three sample results; convert GCV results to be on dry basis

6. Perform Ultimate Analysis (for each composite sample)
   - Determine ash content (%, dry basis) using ASTM D1102-84R07
   - Determine C (%, wet basis) using ASTM E777-87R04; convert to dry basis
   - Determine H (%, wet basis) using ASTME777-87R04; convert to dry basis
   - Determine N (%, wet basis) using ASTM E778-87R04; convert to dry basis
   - Determine S (%, wet basis) using ASTM E775-87R04; convert to dry basis
   - Calculate O (%, dry basis) using ash, C, H, N and S results (%, dry basis) and ASTM E870-82R06

7. Calculate Hogged Fuel F-Factor (for each composite sample)
   - Calculate F-factor (dscf/mmBtu) using results from ultimate analysis (dry basis) and GCV (dry basis) using equation 19-13 in 40 CFR 60 App A, RM19

8. Calculate Conversion Factor
   - Determine fuel heat input rate (mmBtu/hr) using average stack flow rate and percent oxygen (dry) for each run and F-factor for each composite sample:
     (dscf/min) ((20.9 - $\%O_2$)/20.9) x (60 min/hr) / (dscf/mmBtu) = (mmBtu/hr)
   - Determine input/output ratios (mmBtu/mlbsteam) by dividing the fuel heat input rate (mmBtu/hr) for each composite by the steam flow rate (mlbsteam/hr) for each run
   - Average the input/output ratio (mmBtu/mlbsteam) for the three samples/runs

Appendix B: HCl Emission Factor Procedure for Hogged Fuel

Last Revised December 2008

1. Sample Fuel
   - Take 3 composite samples (composed of three approximately 2-pound individual samples) using 40 CFR 63.7521(c); all samples shall be collected at a location that most accurately represents the fuel being burned; if not sampling during a stack test, individual belt or screw feeder samples, described in 40 CFR 63.7521(c)(1)(ii), shall be separated by a 30 minute period

2. Homogenize Sample
   - Subdivide and homogenize each composite sample using 40 CFR 63.7521(d) until sample passes 0.5 mm screen; approximately 50 grams of sample are needed for each moisture analysis, 1 gram of sample is needed for each oxygen bomb, and 2 grams of sample are needed for ash analysis

3. Determine Moisture Content
   - Determine moisture content (%, wet basis) of three composite samples using ASTM E871-82R06; time analysis such that samples used for moisture analysis represents moisture content of samples introduced to oxygen bomb; do not average the three sample results

4. Prepare Sample for Heat Content and Chlorine Content Analysis
   - Prepare three composite samples using SW-846-5050; this sample preparation can be performed simultaneously with heat content analysis (ASTM E711); alternatively, ASTM E776-87R04 can be used in place of both SW-846-5050 and SW-846-9056/9056A; do not combine composite samples before or after sample preparation

5. Determine Heat Content (aka Gross Calorific Value or High Heat Value)
   - Determine gross calorific value (Btu/lb, wet basis) of three composite samples using ASTM E711-87R04; do not average the three sample results
   - Convert GCV results to be on a dry basis:
     (GCV, wet basis) / (1 - %moisture) = (GCV, dry basis)

6. Determine Chlorine Content
   - Analyze bomb combustate for each composite sample for Cl (mg/L, wet basis) using SW-846-9056 or SW-846-9056A (alternatively, use ASTM E776-87R04 in place of SW-846-5050 and SW-846-9056/9056A)
   - Convert Cl mg/L (wet basis) to Cl ug/g (wet basis) using SW-846-5050 (eq. 1)

7. Determine Average HCl Emission Factor
   - Convert Cl (ug/g, wet basis) to HCl (lb/mmBtu, dry basis) for each composite sample:
     (Cl ug/g, wet basis) / (1 -%moisture) x (36.5 g HCl / 35.5 g Cl) / ($1x10^6$ ug/g) / (GCV Btu/lb, dry basis) x ($1x10^6$ Btu/mmBtu) = (HCl lb/mmBtu)
   - Determine HCl emission factor (HCl lb/mmBtu) by averaging the HCl results from the three composite samples.

United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Permit Number: R10T5100100
Issued: September 30, 2013
Effective: September 30, 2013
Expiration: September 30, 2018
Replaces: R10T5-ID-00-03
AFS Plant I.D. Number: 16-061-00001

Statement of Basis

Title V Air Quality Operating Permit
Permit Renewal No. 1

Permit Writer: Dan Meyer

Blue North Forest Products, LLC

Nez Perce Reservation
Kamiah, Idaho

Purpose of Permit and Statement of Basis

Title 40 Code of Federal Regulations Part 71 establishes a comprehensive air quality operating permit program under the authority of Title V of the 1990 amendments to the federal Clean Air Act. The air quality operating permit is an enforceable compilation of all of the applicable air pollution requirements that apply to an existing affected air emissions source. The permit is developed via a public process, may contain additional new requirements to improve monitoring of existing requirements, and contains procedural and prohibitory requirements related to the permit program itself. The permit is valid for 5 years and may be renewed.

This document, the statement of basis, summarizes the legal and factual basis for the permit conditions in the air quality operating permit to be issued to Blue North Forest Products, LLC (referred to herein as BNFP, facility, source, or permittee). Unlike the air quality operating permit, this document is not legally enforceable. This statement of basis summarizes the emitting processes at the facility, air emissions, permitting and compliance history, the statutory or regulatory provisions that relate to the subject facility, and the steps taken to provide opportunities for public review of the permit. The permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the permittee from the requirements of the permit.

Table of Contents

1. EPA Authority to Issue Title V Permits

On July 1, 1996, EPA adopted regulations (see 61 Federal Register (FR) 34202) codified at 40 Code of Federal Regulations (CFR) Part 71 setting forth the procedures and terms under which the Agency would administer a federal operating permit program. These regulations were updated on February 19, 1999 (64 FR 8247) to incorporate EPA's approach for issuing federal operating permits to affected stationary sources in Indian Country.

As described in 40 CFR 71.4(a), EPA will implement a Part 71 program in areas where a state, local, or Tribal agency has not developed an approved Part 70 program. Unlike states, Indian Tribes are not required to develop operating permit programs, though EPA encourages Tribes to do so. See, for example, Indian Tribes: Air Quality Planning and Management (63 FR 7253, February 12, 1998) (also known as the "Tribal Authority Rule"). Therefore, within Indian Country, EPA will administer and enforce a Part 71 federal operating permit program for stationary sources until the governing Indian Tribe receives EPA's approval to administer its own operating permit program.

2. Facility Information

2.1 Location

The BNFP facility is located along the east side of the Clearwater River directly north of Kamiah , Idaho in the southeast quadrant of the Nez Perce Reservation. The facility is located within the exterior boundaries of the 1863 Nez Perce Reservation and is in Indian Country as defined in 40 CFR Part 71.

2.2 Nez Perce Reservation

The Nez Perce Reservation is in northern Idaho. In 1855, Governor Stevens concluded a treaty with the Nez Perce Tribe recognizing tribal rights to an immense tract of country consisting of some 7.5 million acres. A new treaty in 1863 reduced the reservation to its current size of approximately 760,000 acres located in northern Idaho. Today there are 15 communities located within the boundaries of the reservation. Based on 1986 data, the population is estimated at about 11,400 within the incorporated communities. Another 5,000 to 6,000 people live in the rural areas. Tribal enrollment is approximately 3,300 members with 1,000 members living off the reservation.

The Nez Perce Tribe operates under a constitution that was approved in 1958. The Tribe's constitution provides that a nine member Nez Perce Tribal Executive Committee is the governing body.

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2.3 Facility Description

The primary operation at the privately-owned 34-acre facility is the production of dimensional lumber from raw logs. The BNFP facility has debarkers and saws, kilns for drying lumber, a planer, wood chippers, a bark hog, various storage bins and two hog fuel-fired boilers (to supply steam to the kilns). The site includes a log yard, shops, offices, and open and covered storage areas. There are no chemical

wood preservative or gluing operations. Logs are received and stored in the log yard. The process of cutting the logs into lumber includes debarking, sawing, chipping, kiln drying, planing, and packaging for shipping.

The manufacturing process is comprised of the following steps. The raw logs are delivered to the site, stockpiled, debarked, cut to length, and then rough sawn into lumber. The lumber is stickered, kiln dried, planed, graded, bundled, sold and shipped out. There are two debarking lines based on the diameter of the logs. Currently only the small log line is operational. The bark or hog is ground into a manageable size, approximately 1.5 inches, and conveyed to the boiler house. Extra hog fuel is sold to Clearwater Paper in Lewiston (formerly Potlatch Corporation). Some bark is sold for 'beauty bark'. Douglas fir and white fir are the primary species processed at the mill. They usually run less than 10% ponderosa pine and they do not process cedar. The Douglas fir has higher BTU than the white fir; therefore, they prefer to sell the white fir fuel and utilize the Douglas fir bark and shavings on-site. The bark is stored under a roof for approximately two weeks before being mixed with dry shavings and fed into the boiler. When stockpiled, the bark starts to heat, drying the fuel out, resulting in a more consistent fuel. Planner shavings and chips are also used as fuel for the boiler or sold to Clearwater Paper or to a pellet plant for horse bedding. The shavings are stored in a bin. Rough lumber is sorted by moisture (weight) to load the kilns efficiently for energy conservation. One species of lumber is loaded in the kiln at a time. The drying time is 24-120 hours depending on the species and time of year.

The facility runs a shift per day with 58 total employees, 40 working in the yard. Everyone works a 40 hour week. Logs are supplied from US Forest Service sales, State of Idaho lands, industrial landowners like Potlatch, and private foresters. About 90% of their product is 2 by stock lumber and of that 60% is white fir and 40% is Douglas fir. The other 10% of their product is ponderosa pine, 1 by stock. They do not process cedar. Annually they process approximately 60 million board feet. All the green chips and sawdust generated are sold. They use bark and shavings as fuel for their boiler. The mill has two debarking and planer lines, one for large diameter logs and the other for small diameter logs. They are only using the small diameter side and that the average log diameter being processed is 7.5 inches in diameter. They take logs down to 4.5 inches in diameter.

The air pollution emission units and control devices that exist at the facility are listed in Table 2-1 below by emission unit identification (EU ID). None of the emission units vent through a stack shared with another emission unit. Installation dates for each emission unit, to the extent known, are listed because they are important in determining applicability of federal PSD, NSPS and MACT standards (see further discussion in Section 4). Capacities are listed for several emission units based on the best information available from the applicant. Those control devices that are required by rule or this permit are so noted.

Table 2-1 – Emission Units (EU) & Control Devices

EU ID	Emission Unit Description	Control Device[1]
BLR-1	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone
BLR-2	31.7 MMBtu/hr capacity hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate. Actual steam production around 10,000 lb/hr of 110 psi steam in June 2013. Installed circa 1948.	Multiclone

EU ID	Emission Unit Description	Control Device[1]
ENG-1	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.	None
ENG-2	Cummins NT-280-IF 255 horsepower compression-ignition diesel-fired engine to supply mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency. Manufactured 1971. Installed circa 1995.	None
KLN	Seven 64-foot double-track lumber drying kilns. Indirectly heated. Kilns No. 2 through 6 automated. Kilns No. 1 and 7 not automated. 16 dry bulbs and 2 wet bulbs per kiln. Annual capacity equals 174,000 mbf lumber. Installed?	None
CYC	Five wood residual cyclones. W4 – planer mill shavings cyclone. H1 – planer mill chipped trim ends hog cyclone. W3 – Atlas fuel bin cyclone. W5 – shavings cyclone on top of shavings/sawdust bin. T1 – saw mill trimmer sawdust cyclone on top of shavings/sawdust bin.	None.
BIN	Five wood residual bins. GS – green sawdust bin. GC – green wood chip bin. AF – Atlas fuel bin. SS – shavings and green trimmer sawdust bin. HF – hog fuel bin.	None.
SMI	Sawmill operations inside a building. This activity includes, but is not limited to, hogging, sawing, chipping, shaving and mechanical transfer of wood residuals.	Inside building
SMO	Sawmill operations outside a building. This activity includes, but is not limited to, debarking, hogging, sawing, chipping, mechanical transfer of wood residuals and hog fuel storage pile.	None.
PT	Plant traffic generating fugitive emissions along paved and unpaved roads.	Watering

[1] The multiclone is required to be used by this permit.

An emission unit or activity qualifies as an insignificant emission unit (IEU) if it is an activity type listed in 40 CFR 71.5(c)(11)(i) or emits less than 2 tons per year of any regulated air pollutant excluding HAPs [40 CFR 71.5(c)(11)(ii)(A)] and less than 1000 pounds per year of any HAP or the de minimis HAP level established under Section 112(g), whichever is lower [40 CFR 71.5(c)(11)(ii)(B)]. BNFP has noted in its renewal application a list of IEUs similar to the one from its previous Title V permit. The updated list of IEUs are shown in Table 2-2 below.

Table 2-2 – Insignificant Emission Units (IEU)

EU ID	Emission Unit Description
IEU-1	500 gallon gasoline tank and fueling
IEU-2	12,000 gallon diesel tank and fueling
IEU-3	Wood residue pile
IEU-4	Log feed decks
IEU-5	Sawmill building vents
IEU-6	Sorter building vents
IEU-7	Powerhouse vents

EU ID	Emission Unit Description
IEU-8	Planner building vents
IEU-9	Lumber storage shed vents
IEU-10	Fire station roof vents
IEU-11	Lumber shipping
IEU-12	Log storage

2.4 Local Air Quality and Attainment Status

Local Air Quality and Attainment Status: Northern Idaho, including the Nez Perce Reservation, attains the national ambient air quality standard (NAAQS) for $PM_{2.5}$, and is "unclassified" for all other criteria pollutants. An area is unclassifiable when there is insufficient monitoring data to determine compliance with the NAAQS. The State of Idaho operates continuous $PM_{2.5}$ monitors at three locations near the Nez Perce Reservation, in the towns of Lewiston, Moscow, and Grangeville. The 2010-2012 24-hour $PM_{2.5}$ design values for these monitors are, respectively, 18 micrograms per cubic meter ($\mu g/m^3$), 16 $\mu g/m^3$, and 14 $\mu g/m^3$. These values are substantially below the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$, and demonstrate that the surrounding area is in compliance with the $PM_{2.5}$ NAAQS. Monitoring for $PM_{2.5}$ is also being conducted by the Nez Perce Tribe at three locations on the Nez Perce Reservation in Kamiah, Lapwai and Reubens. Data from these monitors indicate that both the 24-hour and annual $PM_{2.5}$ design values on the reservation are well below the $PM_{2.5}$ NAAQS.

2.5 Permitting, Construction and Compliance History

The facility currently owned by Blue North Forest Products, LLC was previously owned by Three Rivers Timber (TRT). Previous to that, the mill was owned by Weyerhaeuser, by Rawlins Construction/Triple R Forest Products Limited Partnership, and by Potlatch Corporation. The mill was reportedly built in the late 1950s and owned by the Potlatch Corporation until it was shut down in March 1984. Potlatch subsequently sold the mill to Rawlins Construction Company in January 1986. Rawlins transferred the mill to Triple R Forest Products, a Montana limited partnership, with Rawlins as general partner, and Weyerhaeuser Company as the limited partner. Operation of the mill resumed in November/December 1986 with normal production beginning in January 1987. In March 1988, Weyerhaeuser Company purchased Rawlins' general partnership. The limited partnership structure was formally dissolved in February 1993 leaving Weyerhaeuser in full ownership. Three Rivers Timber purchased the mill from Weyerhaeuser in 1994. TRT operated the facility until it closed in November 2008. In April 2010 the mill was auctioned but did not sell. Mill equipment and other assets were to be sold piecemeal, prior to Michael Burns purchasing the mill on June 21, 2010. The BFNP mill started operations on August 30, 2010. Restart of the mill did not trigger PSD review based upon EPA review conducted May 2011.

A chronological summary of permit activities for BNFP is presented in Table 2-3 below.

Table 2-3 – Clean Air Act Permitting History

Date	Permit No.	Action
08/23/02	R10T5-ID-00-03	EPA issues initial Title V permit.
09/27/07	R10NT500900	EPA issues non-Title V permit to limit HAP emissions to less than major source threshold levels to avoid Plywood and Composite Wood Products MACT and any other major source MACT to come.
04/07/06 – 04/07/07	R10T5-ID-00-03	Title V permit renewal application due to EPA.
04/07/07	R10T5-ID-00-03	EPA receives TRT Title V permit renewal application.
010/07/07	R10T5-ID-00-03	Title V permit expires but is administratively extended because TRT submitted a timely permit renewal application.

Date	Permit No.	Action
12/08/10	R10T5-ID-00-03	BNFP submits Title V permit renewal application.
09/30/11	R10T5-ID-00-03	BNFP submits amendment to Title V permit renewal application.
07/26/13	R10T5010100	Pre-draft Title V permit renewal is sent to BNFP and Nez Perce Tribe for initial review.
08/21/13 – 09/20/13	R10T5100100	Public comment period for draft Title V permit renewal.

The Nez Perce Tribe Air Quality Program has inspected the facility each year for the past three years. There is no record of any notice of violation having been issued to BNFP for Clean Air Act violations stemming from those inspections. However, the inspection reports suggest that the facility is not complying with Condition 3.3 of its non-Title V permit, R10NT500900, as only two composite samples are being collected and analyzed quarterly. The permittee is required to sample and analyze three composite samples quarterly. Also, the inspection reports suggest that the facility is not complying with (a) 40 CFR § 49.126(e)(1)(i) requirement to, "Document the results of the (annual fugitive dust) survey, including the date and time of the survey and identification of any sources of fugitive particulate matter emissions found" and (b) 40 CFR § 49.126(e)(1)(iii) requirement to "prepare, and update as necessary following each (annual fugitive dust) survey, a written plan that specifies the reasonable precautions that will be taken and the procedures to be followed to prevent fugitive particulate matter emissions, including appropriate monitoring and recordkeeping."

3. Emission Inventory

3.1 Emission Inventory Basics

An emission inventory generally reflects either the "actual" or "potential" emissions from a source. Actual emissions generally represent a specific period of time and are based on actual operation and controls. Potential emissions, referred to as potential to emit (PTE), generally represent the maximum capacity of a source to emit a pollutant under its physical and operational design, taking into consideration regulatory restrictions, but only required control devices. PTE is often used to determine applicability to several EPA programs, including Title V, PSD and Section 112 (MACT).

Emissions can be broken into two categories: point and fugitive. Fugitive emissions are those which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Examples of fugitive emissions are roads, piles that are not normally enclosed, wind blown dust from open areas, and those activities that are normally performed outside buildings. Point sources of emissions include any emissions that are not fugitive.

The equation below represents the general technique for estimating emissions (in tons per year) from each emission unit at the facility. Emissions are calculated by multiplying an emission factor by an operational parameter. To estimate actual emission, BNFP will need to track the actual operational rates. Note that emission factors may be improved over time. For those estimation techniques that require substantial site-specific parameter tracking, such as piles and roads, emissions associated with a defined operational rate can be estimated to establish a set ratio that can be used to multiply by the actual operational rate in future years, significantly simplifying the annual inventory effort. All of the techniques and site-specific parameters and assumptions should be reviewed each year before estimating emissions to be sure they remain appropriate.

$$E = EF \times OP \times K$$

Where:

E = pollutant emissions in tons/year

EF = emission factor (see Appendix A to this Statement of Basis)
OP = operational rate (or capacity for PTE)
K = 1 ton/2000 lbs for conversion from pounds per year to tons per year

3.2 Potential to Emit (PTE)

BNFP completed and submitted EPA Part 71 Operating Permit Form EMISS for all emission units as part of its Title V permit renewal application. Form EMISS lists actual and potential emissions. BNFP submitted calculations supporting Form EMISS. EPA has documented the facility PTE in Appendix A. In some instances, EPA revised the emission estimates provided by BNFP to more accurately reflect potential emissions from the facility. A summary of BNFP's PTE is presented in Table 3-1 below. Note that while fugitive emissions are included in Table 3-1, fugitive emissions are not always used to determine program applicability as explained in more detail in Section 4.1 of this Statement of Basis.

Table 3-1 – BNFP Potential to Emit[1]

	PTE in tons per year										
Pollutant[2]	**BLR-1**	**BLR-2**	**ENG-1**	**ENG-2**	**KLN**	**CYC**	**BIN**	**IMA**	**OMA**	**PT**	**Total**
CO	83.3	83.3	0.4	0.4	0						167.4
Pb	0	0	0	0	0						0
NO_X	68.0	68.0	2.0	2.0	0						140
PM	57.2	57.2	0.1	0.1	4.4	0	0	0	0	0	119
PM_{10}	59.6	59.6	0.1	0.1	4.4	0	0	0	0	106.9	230.7
$PM_{2.5}$	59.6	59.6	0.1	0.1	4.4	0	0	0	0	14.0	137.8
SO_2	166.3	166.3	0.2	0.2	0						333
VOC	3.2	3.2	0.2	0.2	331.4		0				338.2
GHG (CO_2e)[3]	29,324	29,324	73	73	0						58,794
Plant-wide Total HAP[4]											24
Plant-wide Single HAP[4]											9

[1] Fugitive emissions are included in this table but may not always be used in applicability determinations (see Section 4.1)

[2] CO = carbon monoxide; Pb = lead; NO_X = oxides of nitrogen; PM = particulate matter; PM_{10} = particulate matter with diameter 10 microns or less; $PM_{2.5}$ = particulate matter with diameter 2.5 microns or less; SO_2 = sulfur dioxide; VOC = volatile organic compounds; GHG = greenhouse gases; HAP = hazardous air pollutants [see Clean Air Act, Section 112(b)]; plant-wide total HAP = all HAPs totaled; plant-wide single HAP = highest individual HAP

[3] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

[4] HAP PTE is capped by plant-wide emission limits created in a FARR Non-Title V permit

The PTE estimates for the facility generally assume all units operate 8760 hours per year, with the exception being the engines ENG-1 and ENG-2. Because these engines are intended only to operate in the event of an emergency to suppress a fire should electricity not be available, their potential emissions are calculated assuming 500 hours of annual operation. The boilers' (BLR-1 and BLR-2) potential PM emissions were calculated assuming emission rates equal to the applicable FARR PM emission limit for wood-fired boiler stacks of 0.2 gr/dscf at 7% O_2. This is equivalent to about 0.4 lb/MMBtu. The permit requires the facility to vent boilers' exhausts to their respective multiclones at all times to achieve compliance with the PM limit. The boilers' potential sulfur dioxide emissions are based on the applicable FARR combustion source stack SO_2 emission limit of 500 ppm. Although boilers' HAP PTE was estimated by employing AP-42 emission factors, individual and total HAP emissions have been limited facility-wide to less than major source threshold levels at the request of BNFP so as to avoid MACT standards that apply to major sources. The boilers' potential greenhouse gas emissions were estimated

employing emission factors appearing in the Mandatory Greenhouse Gas Reporting Rule (40 CFR 98) pursuant to March 2011 EPA guidance document entitled, "PSD and Title V Permitting Guidance for Greenhouse Gases." For a derivation of nearly all the emission factors employed to construct the boilers' PTE inventory, see sections of Appendix A entitled, "EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013" and "EPA Region 10 Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013."

Emission factors for the boilers are based on heat input (fuel) to the boilers. The permit requires BNFP to track steam production so as to calculate boiler heat input (firing rate) for the purpose of the emission inventory. The conversion factor applied to convert steam production to heat input must be based on the latest site specific boiler testing/sampling data. Appendix A to the permit explains the procedures for developing a boiler input-to-output ratio.

The kilns' VOC PTE was estimated by employing worst-case emission factors derived from lab-scale testing conducted largely by Professor Mike Milota at Oregon State University. Although the kilns are each subject to the applicable FARR process source stack PM emission limit of 0.1 gr/dscf, EPA did not consider the limit in determined the kilns' PM PTE because BNFP did not provide each kiln's physical capacity to vent to the atmosphere. Neither did EPA consider the applicable FARR visible emissions limit of 20% opacity because EPA could not quantify a correlation between opacity and PM emissions for the kiln exhaust vents. To estimate PM PTE, EPA employed an uncontrolled emission factor published by the Oregon Department of Environmental Quality. Although the kilns' HAP PTE was estimated by employing worst-case emission factors derived from lab-scale testing conducted largely by Professor Mike Milota at Oregon State University, individual and total HAP emissions have been limited facility-wide to less than major source threshold levels at the request of BNFP.

EPA relied largely upon AP-42, ODEQ guidance, an Oregon State University draft technical report, 1977 and 1978 EPA technical documents along with engineering judgment to estimate PM, PM_{10} and $PM_{2.5}$ potential emissions resulting from traditional sawmill activities like log debarking, sawing, chipping, hogging, mechanical and pneumatic conveyance of wood residuals and loading and unloading wood residuals. EPA did not consider the FARR visible emissions limit of 20% opacity that applies to all these activities because EPA could not quantify a correlation between opacity and PM emissions. Neither did EPA consider the FARR rule for limiting fugitive PM emissions largely because the permit we are issuing does not contain sufficient testing, monitoring, recordkeeping and reporting to support the use of controlled emission factors.

BNFP is expected to use the emission factors and calculation methods presented in Appendix A unless BNFP demonstrates that a more appropriate emission factor or calculation method should be used (e.g., results of more recent source testing or sampling, revised emission factors published in AP-42, etc.). It is important to emphasize that to the extent BNFP relies on any type of emission control technique to estimate emissions used to determine annual fees, or the applicability of a regulatory program, use of the technique must be fully documented and verifiable.

4. Regulatory Analysis and Permit Content

EPA is required by 40 CFR Part 71 to include in this Title V permit all emission limitations and standards that apply to the facility, including operational, monitoring, testing, recordkeeping and reporting requirements necessary to assure compliance. This section explains which air quality regulations apply to this facility and how those requirements are addressed in the permit.

Located within Indian Country, the BNFP sawmill is subject to federal air quality regulations, but is not subject to state air quality regulations. EPA does not consider any permits issued by Idaho to the BNFP facility to be applicable requirements. The facility could be subject to tribal air quality regulations;

however, the Tribe has not gone through the process of obtaining authorization to be treated in the same manner as states under 40 CFR §§ 49.6 and 49.7 (Tribal Authority Rule) and obtaining approval of air quality regulations as a "Tribal Implementation Plan." Therefore, Tribal air quality regulations, if any, are not federally enforceable and do not meet the definition of "applicable requirement" under 40 CFR Part 71. As such, there are no Tribal air quality regulations in the BNFP Title V permit.

EPA relied on information provided in BNFP's Title V permit application and on supplementary information provided by BNFP to determine the requirements that are applicable to the sawmill. Future modifications to the mill could result in additional requirements.

4.1 Federal Air Quality Requirements

Title V Operating Permit Program. Title V of the Clean Air Act and the implementing regulation found in 40 CFR part 71 require major sources (as well as a selection of non-major sources) of air pollution to obtain operating permits and form the legal bases for this permit. A source is major if it has the potential to emit 100 tons per year or more of any air pollutant subject to regulation, 25 tons per year or more of hazardous air pollutants (totaled) or 10 tons per year or more of any single hazardous air pollutant (see 40 CFR 71.2). BNFP's sawmill is a major source subject to Title V because it has the potential to emit more than 100 tons per year of CO, NO_X, PM_{10}, $PM_{2.5}$, SO_2 and VOC not counting fugitive emissions (see Table 1 and Appendix A). While PM emissions also exceed 100 tons per year, EPA does not consider PM a regulated pollutant for Title V applicability purposes. Greenhouse gas potential emissions do not exceed the 100,000 ton-per-year CO_2 equivalent threshold to qualify as a pollutant subject to regulation.

The Title V operating permit serves as a comprehensive compilation of the air quality requirements that are applicable to a source. The permit also must assure compliance, so source-specific testing, monitoring, recordkeeping and reporting have been added where EPA believes it is necessary, as explained in Section 4.3 (Permit Conditions) of this Statement of Basis below.

Compliance Assurance Monitoring (CAM). CAM applies at time of initial Title V permit issuance for emission units that (a) are subject to an emission limit, (b) employ a control device to comply with the limit, and (c) have post-control PTE equal to or greater than the major source threshold defined in Title V (generally, 100 tons per year). See 40 CFR Part 64. Each of the boilers at BNFP (a) is subject to a PM emission limit, (b) employs a multiclone to comply with the limit, but (c) does not have post-control PTE equal to or greater than 100 tpy.[1] Each boiler, however, does have pre-control PTE equal to or greater than 100 tpy.[2] CAM applies at the time of Title V permit renewal for emission units like the BNFP boilers that satisfy criteria (a) and (b) above and that have pre-control PTE equal to or greater than the major source threshold defined in Title V. The boilers must be in compliance with CAM at permit renewal and may also be required to submit a CAM plan if a significant change is made to the unit prior to renewal. The multiclones that control particulate matter emissions from the boilers are the only control devices at the sawmill.

Prevention of Significant Deterioration (PSD). Under the PSD pre-construction permitting program found in Part C of the Clean Air Act and 40 CFR 52.21, no "major stationary source" or "major modification" to a major stationary source can begin actual construction without first obtaining a PSD permit. The PSD

[1] Each Boiler's Post-Control PTE Calculations. 57.2 tpy PM = (31.7 MMBtu/hr) X (0.412 lb PM/MMBtu) X (8760 hr/yr) X (ton/2000 lb), where 31.7 MMBtu/hr equals heat input capacity of each boiler and 0.412 lb PM/MMBtu is approximately equal to applicable FARR PM emission limit.

[2] Each Boiler's Pre-Control PTE Calculations. The calculation to estimate each boiler's PM potential emission not considering multiclone is as follows: (56 tons per year) X [1 / (1 - 0.6)] = 140 tons. The value "56 tons per year" is extracted from BNFP Part 71 permit renewal application and is based upon stack test results reflecting post-control emissions. The value "0.6" reflects an estimated 60 percent PM control efficiency for a multiclone. EPA carried out this calculation back in 2002 to determine each boiler's potential to emit in the absence of the FARR PM limit in support of issuance of initial Part 71 permit to TRT.

program has been changed over the years, but in general, a major stationary source for purposes of the PSD program is a source with a PTE of more than 250 tons per year of any PSD pollutant. A modification is major if it results in emission increases greater than defined significance levels. Historical reviews of potential PSD projects are difficult due to the lack of specific details about the sources, their emissions and the various applicability requirements in previous PSD programs.

Based on the information available today, EPA is not aware of any modifications that would have been subject to PSD. EPA is not aware of any other modifications to the facility and does not draw any conclusions regarding compliance with past permitting requirements for this facility. Therefore, no permit shield is implied or explicit for past new source review or PSD requirements.

New Source Performance Standards (NSPS). Four NSPS subparts may apply to each boiler (a steam generating unit): 40 CFR 60, Subparts D (Fossil-Fuel-Fired Steam Generators), Da (Electric Utility Steam Generating Units), Db (Industrial-Commercial-Institutional Steam Generating Units) and Dc (Small Industrial-Commercial-Institutional Steam Generating Units). Subparts D, Da and Db do not apply because the heat capacity of each boiler is 31.7 MMBtu/hr, comfortably below the applicability thresholds of 100 (NSPS Db) and 250 MMBtu/hr (NSPS D and Da). Subpart Dc does not apply because each boiler was constructed well before the June 9, 1989 cutoff. EPA has no record of either boiler being reconstructed or undergoing a modification such that Subpart Dc is now applicable.

National Emission Standards for Hazardous Air Pollutants (NESHAP). With a few exceptions, MACT standards promulgated under 40 CFR Part 63 apply to "major sources" of HAP. Section 112(a)(1) and 40 CFR 63.2 define a "major source" as a stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls in the aggregate, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP. There are at least two MACT standards that might be applicable to BNFP operations if major for HAP: Subparts DDDDD (Industrial, Commercial and Institutional Boilers and Process Heaters at Major Sources) and DDDD (Plywood and Composite Wood Products Manufacture – includes lumber kilns). The compliance dates for the two MACT standards are January 31, 2016 and October 1, 2007, respectively.

Potential HAP emissions (in the absence of enforceable PTE limits) from BNFP operations are approximately 54 tons per year. See emissions inventory in Appendix A. On September 27, 2007, EPA issued a non-Title V permit limiting HAP emissions to less than major source thresholds to the former owner of the facility TRT. That permit has recently been administratively amended to reflect new ownership of the mill. Requirements from that non-Title V permit have been incorporated into this Title V permit renewal, and EPA is creating additional testing, monitoring, recordkeeping and reporting requirements at this time to assure compliance. With enforceable limits on HAP emissions from BNFP in place, the facility is considered a minor (aka area) HAP source, thereby avoiding major source MACT standards that might otherwise apply.

EPA has recently finalized a MACT standard that applies to boilers at area HAP sources. The regulation is codified at 40 CFR 63, Subpart JJJJJJ - Industrial, Commercial, and Institutional Boilers for Area Sources, and each boiler at BNFP is an affected source (biomass boiler). BNFP is required to conduct an energy assessment and tune the boiler before March 21, 2014. Thereafter, BNFP is required to tune the boiler either every two or five years depending upon whether an oxygen trim system is being employed to control combustion in the boiler. BNFP intends to install and begin employing an oxygen trim system in each boiler beginning around October 1, 2013. If BNFP's plans are successful, the next boiler tune-up beyond the first will not be required until five years later.

Another MACT standard that applies to area HAP sources (as well as major HAP sources) is MACT Subpart ZZZZ - National Emission Standards for Reciprocating Internal Combustion Engines. Each of

BNFP's emergency engines is an affected source. Among other requirements, BNFP is required to either (a) operate and maintain each engine according to the manufacturer's emission-related operation and maintenance instructions or (b) develop and follow its own maintenance plan. MACT Subpart ZZZZ also specifies a schedule for changing the engine oil and conducting inspections of certain engine components, and replacing as necessary. BNFP must limit the number of hours it operates the engines in order for certain other requirements to not apply. Compliance is required no later than May 3, 2013.

Section 111(d) and Section 129 Regulations. There are no CAA, Section 111(d) or 129 regulations that apply to the type of emission units at BNFP. Biomass combustion in the boilers is not considered solid waste or municipal waste combustion or incineration.

Federal Air Rules for Reservations (FARR). On April 8, 2005, EPA promulgated a Federal Implementation Plan (FIP) for Reservations in Idaho, Oregon and Washington. This FIP is commonly referred to as the Federal Air Rules for Reservations (FARR). EPA published the FARR rules that generally apply to Indian Reservations in EPA Region 10 in 40 CFR 49.121 to 49.139. The FARR rules that specifically apply on the 1863 Nez Perce Reservation are codified at 40 CFR 49.10401 to 49.10411. Those FARR requirements that apply to the permittee and have been included in the permit are discussed in Section 4.3 of this document. Several requirements of the FARR that are in effect on the Nez Perce Reservation do not apply to BNFP's mill. Table 4-2 below lists the FARR requirements that do not apply to the permittee and explains why.

Table 4-2 – Inapplicable FARR Requirements

Citation	Description	Reason Inapplicable
49.127	Rules that apply to wood waste burners (wigwam burners)	No wigwam burners exist at BNFP
49.128	Rules that apply to wood veneer, plywood, particleboard and hardboard manufacturing	BNFP does not produce any of the products listed
49.129(d)(2)	Limits SO_2 from process source stacks	None of BNFP's processes emit SO_2
49.130(d)(1), (3-6) and (8)	Limits amount of sulfur in coal and gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.130(e)(2) and (4)	Specifies reference methods for determining sulfur content of coal and gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.130(f)(1)(ii)	Additional requirements that apply to gaseous fuels	BNFP only combusts wood waste in its boilers and No. 2 distillate in its engines.
49.135	Restricts emissions determined to be detrimental to human health or welfare	Actual requirements will result from EPA's determination and subsequent permits or orders that address an issue

Acid Rain Program. Title IV of the CAA created a SO_2 and NO_X reduction program found in 40 CFR Part 72. The program applies to any facility that includes one or more "affected units" that produce power. Neither of BNFP's boilers are a "unit" as defined in 40 CFR 72.2 because neither combust fossil fuels.

Mandatory Greenhouse Gas Reporting Rule. This rule requires sources above certain emission thresholds to calculate, monitor, and report greenhouse gas emissions. According to the definition of "applicable requirement" in 40 CFR 71.2, neither 40 CFR part 98, nor CAA §307(d)(1)(V), the CAA authority under which 40 CFR part 98 was promulgated, are listed as applicable requirements for the purpose of Title V permitting. Although the rule is not an applicable requirement under 40 CFR part 71, the source is not relieved from the requirement to comply with the rule separately from compliance with their part 71

operating permit. It is the responsibility of each source to determine applicability to part 98 and to comply, if necessary.

4.2 Other Federal Requirements

EPA Trust Responsibility. As part of the EPA Region 10's direct federal implementation and oversight responsibilities, EPA Region 10 has a trust responsibility to each of the 271 federally recognized Indian tribes within the Pacific Northwest and Alaska. The trust responsibility stems from various legal authorities including the U.S. Constitution, Treaties, statutes, executive orders, historical relations with Indian tribes, and in this case the Nez Perce Treaty of 1863. In general terms, EPA is charged with considering the interest of tribes in planning and decision making processes. Each office within EPA is mandated to establish procedures for regular and meaningful consultation and collaboration with Indian tribal governments in the development of EPA decisions that have tribal implications. EPA Region 10's Office of Air, Waste and Toxics has contacted the Nez Perce Tribe to invite consultation on the BNFP Title V operating permit renewal application.

Endangered Species Act (ESA). Under this act, EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. It is EPA's conclusion that the issuance of this Title V permit will not affect a listed species or critical habitat because it does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. Therefore, no additional analysis and no additional requirements will be added to this permit for ESA reasons. EPA's no-effect determination concludes EPA's obligations under Section 7 of the ESA. For more information about EPA's obligations, see the Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act, published by the FWS and NMFS (March 1998, Figure 1).

National Environmental Policy Act (NEPA). Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the Clean Air Act shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. This permit is an action taken under regulations implementing the Clean Air Act and is therefore exempt from NEPA.

National Historic Preservation Act (NHPA). As noted earlier, the issuance of this Title V permit does not authorize new emissions units, increase existing emission limits or impose any new work practice requirements. No changes to the facility are expected as a result of this permit action. Consequently, no adverse effects are expected, and further review under NHPA is not indicated.

Environmental Justice (EJ) Policy - Under Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed on February 11, 1994, EPA is directed, to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. This permit action does not allow new or additional emissions and therefore impacts. As a result, there is no information available that indicates that there are disproportionately high and adverse impacts to a minority or low-income population.

4.3 Permit Conditions

This Title V operating permit compiles all of the applicable requirements that apply to the permittee. Additional monitoring, recordkeeping and reporting requirements have been created where needed so the permit assures compliance with all of the applicable requirements. Each permit condition in the permit is explained below. The permit is organized into the following eleven sections:

Permit Section 1: Source Information and Emission Units
Permit Section 2: Standard Terms and Conditions
Permit Section 3: General Requirements
Permit Section 4: Facility-Specific Requirements
Permit Section 5: Unit-Specific Requirements – BLR-1 (Hog Fuel-Fired Boiler No. 1)
Permit Section 6: Unit-Specific Requirements – BLR-2 (Hog Fuel-Fired Boiler No. 2)
Permit Section 7: Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)
Permit Section 8: Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 2)
Permit Section 9: Unit-Specific Requirements – KLN (Lumber Drying Kilns)
Permit Section 10: Unit-Specific Requirements – CYC (Wood Residual Cyclones)
Permit Section 11: Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

Permit Section 1 – Source Information and Emission Units

This permit section contains a brief description of the facility and a list of emission units. A more detailed description of the facility can be found in Section 2 of this Statement of Basis.

Permit Section 2 – Standard Terms and Conditions

This permit section includes generic compliance terms that are required in all Title V permits, but are not subject to the annual compliance certification requirements found in Permit Condition 3.49.

Permit Condition 2.1 explains that the language in the underlying regulations takes precedence over paraphrased language in the permit. Some applicable requirements are paraphrased in the permit with the intention of clarifying the requirement, but with no intention of changing the underlying meaning of the requirement. Where there is a difference between the language in a permit and an underlying regulation, the wording in the underlying regulation should be used to interpret and implement the requirement. This permit condition also notes some underlying authorities that may have been used to create additional requirements in this permit.

Permit Conditions 2.4 and 2.5 address a general permit shield which states that compliance with the permit is deemed compliance with the applicable requirements listed in the permit. The permittee is responsible for complying with any applicable requirements that exist but have not been included in the permit. The permittee did not request a specific permit shield for any specific requirement excluded from this permit and none is being granted.

Permit Conditions 2.12 through 2.14 address the expiration of the permit and the ramifications if the permittee does or does not renew their permit. It is important to note that, if the permittee does not submit a complete and timely renewal application, the permittee's right to operate is terminated. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit. Specific requirements regarding permit renewal are in Permit Conditions 3.51 and 3.52.

Permit Conditions 2.15 through 2.17 address options for making certain physical and operational changes in the facility that do not require a permit modification. If the permittee uses any of these options, they must comply with the applicable recordkeeping requirement found in Permit Condition 3.32 and reporting requirements found in Permit Conditions 3.38 and 3.39.

Permit Section 3 – General Requirements

This permit section includes conditions that are required in all Title V permits. In some cases, facility-specific testing, monitoring, recordkeeping and reporting requirements for these permit conditions might be found in Section 4 of the permit because those requirements can vary from permit to permit. Unless otherwise specified, emission units are subject to the general requirements in Section 3 of the permit as

well as the facility-specific and unit-specific requirements in Sections 4 and 5.

Permit Conditions 3.1 and 3.2 are general compliance schedule requirements. Because EPA is not aware of any non-compliance at the time of permit issuance, there is no issue-specific compliance schedule in Section 4 of the permit. The area source boiler MACT (NESHAP Subpart JJJJJJ) is the only applicable regulation for which the initial compliance date has not yet passed. The initial notification must be submitted no later than January 20, 2014, and BNFP must comply with the applicable work practice and emission reduction measures no later than March 21, 2014. Section 4 of the permit contains all applicable NESHAP Subpart JJJJJJ requirements.

Permit Condition 3.3 requires the permittee to allow EPA-authorized representatives access to the facility and required records.

Permit Conditions 3.4 through 3.8 restrict open burning wherever the FARR applies including at industrial facilities. If the permittee performs any open burning, recordkeeping requirements specific to open burning found in Permit Condition 3.33 will apply.

Permit Condition 3.9 through 3.11 limit visible emissions, require the use of either Reference Method 9 or a continuous opacity monitoring system (COMS) for determining compliance with the limit, and provide exception to the rule. Reference Method 9 includes specific guidance for reading opacity when there is a wet plume (both attached and detached and directs the observer to take readings excluding the portion of the plume that includes uncombined water (droplets). In the vast majority of cases, the likelihood of exceeding the 20% opacity limit due to the presence of uncombined water is very low because an experienced observer would know that he/she should not read that portion of the plume. However, there are meteorological conditions that can prevent uncombined water (droplets) from completely evaporating in a plume (e.g., 100% relative humidity and a saturated plume). The provision in Permit Condition 3.11 addresses that situation. Currently, this facility does not use (and is not required to use) a COMS to monitor visible emissions.

Because testing, monitoring, recordkeeping and reporting for assuring compliance with the visible emission limit can change based on the emission unit in question, the testing, monitoring, recordkeeping and reporting requirements are contained in the facility-specific requirements in Section 4 of the permit, or in each emission unit-specific section, as appropriate. The general monitoring, recordkeeping and reporting for this requirement is the periodic visible emissions survey (plant walkthrough) specified in Permit Conditions 4.6 through 4.13.

Permit Conditions 3.12 through 3.17 restrict fugitive particulate matter emissions and require a plan be created to assure the use of reasonable precautions to prevent fugitive emissions. The plan is based on a survey of the facility and is updated annually. This annual survey can be accomplished simultaneously with the periodic visible emission survey requirement in Permit Conditions 4.6 through 4.13, as long as both requirements are fully complied with.

Permit Condition 3.18 addresses requirements in the Chemical Accident Prevention Program found in 40 CFR Part 68. This program requires sources that use or store regulated substances above a certain threshold to develop plans to prevent accidental releases. Based on information in their application, there are no regulated substances above the threshold quantities in this rule at BNFP; therefore, the facility is not currently subject to the requirement to develop and submit a risk management plan. However, this requirement is included in the permit as an applicable requirement because BNFP has an ongoing responsibility to submit a risk management plan if a substance is listed that BNFP has in quantities over the threshold amount, or if BNFP ever increases the amount of any regulated substance above the threshold quantity. Including this term in the permit minimizes the need to reopen the permit if BNFP becomes subject to the requirement to submit a risk management plan.

Permit Conditions 3.19 and 3.20 address the Stratospheric Ozone and Climate Protection Program found in 40 CFR Part 82. This program requires sources that handle regulated materials to meet certain procedural and certification requirements. There may be equipment at the facility that uses or contains chlorofluorocarbons (CFCs) or other materials regulated under this program. All air conditioning and refrigeration units must be maintained by certified individuals if they contain regulated materials.

Permit Condition 3.21 addresses asbestos demolition or renovation activity found in 40 CFR Part 61, Subpart M (NESHAP). This program requires sources that handle asbestos-containing materials to follow specific procedures. If BNFP conducts any demolition or renovation activity at their facility, they must assure that the project is in compliance with the federal rules governing asbestos, including the requirement to conduct an inspection for the presence of asbestos. This requirement is in the permit to address any demolition or renovation activity that may occur at the facility.

Permit Conditions 3.22 through 3.30 specify the procedures that must be followed whenever the permit requires emissions testing or sampling in an emission unit-specific section of the permit. If there is a conflict between these permit conditions and an emission unit-specific permit condition, the specific permit condition should be followed. Concentration-based emission limits required to be corrected to a specific oxygen concentration in the flue gas often do not contain a protocol to convert measured concentrations to specified oxygen levels. Permit Condition 3.28 provides a protocol for such a conversion.

Permit Condition 3.31 describes general recordkeeping that has been added to the permit using Part 71 authority to assure that there is good documentation for any monitoring that the permittee performs.

Permit Condition 3.32 describes recordkeeping requirements that apply only if the permittee makes off-permit changes. Certain off-permit changes are allowed in Permit Condition 2.15.

Permit Condition 3.33 describe recordkeeping requirements that apply if the permittee performs open burning. The open burning recordkeeping was added using Part 71 authority. Open burning is restricted in Permit Conditions 3.4 through 3.8.

Permit Condition 3.34 includes recordkeeping that applies to fee records including the duration that the records must be maintained. The duration is consistent with that required by Title V (see Permit Condition 3.35).

Permit Condition 3.35 sets the duration that records must be maintained. Both Title V and FARR records must be maintained for 5 years. These two requirements have been combined (streamlined) into one permit condition. If there is ever a conflict between these requirements and a more restrictive emission unit-specific permit condition, the specific permit condition should be followed.

Permit Conditions 3.36 and 3.37 require the permittee to submit or correct submitted information when requested by EPA and as needed. The permittee has an ongoing obligation to assure that all data in its Title V application is correct and to notify EPA of any errors or omissions.

Permit Condition 3.38 and 3.39 describe reporting requirements that apply only if the permittee makes off-permit changes (Permit Condition 3.38) or section 502(b)(10) changes (Permit Condition 3.39). Certain off-permit changes are allowed in Permit Condition 2.15. Section 502(b)(10) changes are allowed in Permit Conditions 2.16.

Permit Condition 3.40 includes the address for submittals to EPA Region 10. All reports and notices, except for fee payments (see Permit Condition 3.43), should be sent to this address. Copies of each document sent to EPA should be sent to the Tribal Air Quality Coordinator.

Permit Conditions 3.41 through 3.45 require submittal of an annual emission inventory (of actual emissions) and payment of fees for Part 71 purposes. These requirements refer to Permit Condition 4.1 for the actual due date by which fees and emissions must be submitted each year. The per-ton fee rate varies

each year; the permittee should contact EPA to obtain the current rate. The submittal of the emission inventory is timed to coincide with the payment of fees because annual Title V fees are based on actual emissions generated during the previous calendar year. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, the emission estimation techniques listed in this statement of basis should be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory required in Permit Condition 3.46 to be reported at the same time can be combined with the Part 71 emission inventory as long as it is clear which emissions inventory is for which purpose, because the pollutant lists for each emission inventory are slightly different.

At this time, greenhouse gases (GHG) are neither regulated air pollutants nor regulated air pollutant (for fee calculation) as those terms are defined at 40 CFR § 71.2. BNFP is not required to pay Title V fees on its GHG emissions. EPA, however, has formally proposed to regulate GHG emitted from electric utility generating units through an NSPS. In the event EPA promulgates an NSPS regulating GHG, GHG may become a regulated pollutant and regulated pollutant (for fee calculation). Right now, it is not.

Permit Condition 3.46 requires submittal of an annual emission inventory (of actual emissions) for FARR registration purposes. Appendix A to this statement of basis documents the methods, techniques, and assumptions that EPA believes provide the most accurate basis for estimating actual emissions for this facility. As explained in Section 3.2 of this statement of basis, the emission estimation techniques listed in this statement of basis should be used to calculate the annual emissions inventory, unless the permittee has other information showing why another technique more accurately represents emissions. Also note that the actual emission estimates differ from the facility's PTE because actual emission are calculated based on actual operations, not maximum operational capacity.

Note that the FARR emission inventory is required to be submitted at the same time as the Part 71 fees and emission inventory required in Permit Conditions 3.41 through 3.45. The Part 71 and FARR emission inventories can be combined as long as it is clear which emissions inventory is for which purpose, because the pollutant lists for each emission inventory are slightly different.

Permit Conditions 3.47 and 3.48 require semi-annual monitoring reports and prompt deviation reports. Determinations of deviations, continuous or intermittent compliance status, or violations of the permit are not limited to the testing or monitoring methods required by the underlying regulations or this permit. Failure to meet any permit term or permit condition, including emission standards, is considered a deviation. Other credible evidence (including any evidence admissible under the federal rules of evidence) must be considered by the source and EPA in such determinations. The timing for reporting deviations, as well as other data collected, depends on the circumstances, as explained in these permit conditions. The deadline for the semiannual monitoring report was changed from the 30th day to the 45th day following the end of the reporting period in the permit renewal in an effort by EPA to make all of the Title V permits consistent.

Permit Condition 3.49 requires an annual compliance certification. The permittee must certify compliance with the permit conditions in sections 3 through 9. The permittee does not need to annually certify compliance with the provisions in permit sections 1 or 2. Consistent with Permit Condition 2.6, however, if a permittee is aware of any information that indicates noncompliance, that information must be included in the annual compliance certification. In a year when the permit is renewed or revised, the permittee must address each permit for the time that permit was in effect. The deadline for the annual compliance certification has changed from January 30 to February 28 in the permit renewal in an effort by

EPA to make all of the Title V permits consistent. Forms for the annual compliance certifications may be obtained on the internet at:

http://www.epa.gov/air/oaqps/permits/p71forms.html.

Permit Condition 3.50 requires the permittee to certify the truth, accuracy and completeness of all documents (notices, reports, data, and etc) submitted to EPA. The certification must be signed by a responsible official as defined in 40 CFR 71.2. BNFP's responsible officials are listed on the first page of the permit. BNFP should request an administrative amendment of the permit if the responsible official for the facility changes.

Permit Conditions 3.51 through 3.52 require the permittee to submit an application for renewal and describe some of the information that must be included in the application. As explained in Permit Conditions 2.12 through 2.14, failure to submit a complete application on time terminates the permittee's right to operate. The expiration date of the permit is listed on the top right-hand corner of the front page of the permit.

Permit Section 4 – Facility-Specific Requirements

This permit section includes applicable requirements and related testing, monitoring, recordkeeping and reporting that apply either to multiple emission units or on a facility-specific basis. Unless otherwise specified, emission units are subject to the facility-specific requirements in Section 4 of the permit as well as the general and unit-specific requirements in Sections 3 and 5 of the permit.

Permit Conditions 4.1 lists the due date for the annual fees and emission reports required in Permit Conditions 3.41 through 3.46. Note that the due date continues to be November 15.

Permit Conditions 4.2 and 4.4 limit the sulfur content of the solid fuel burned in any combustion device and specifies the method for determining compliance. The facility burns only wood waste in the boilers. The underlying rule allows the permittee to simply keep records showing that only wood waste is burned because the naturally occurring sulfur content of wood waste is normally much less than the limit of 2% by weight.

Permit Conditions 4.3 and 4.5 limit the sulfur content of the No. 2 distillate fuel oil burned in any combustion device and require recordkeeping or sampling to document compliance.

Permit Conditions 4.6 through 4.13 require a quarterly survey (also called a plant walkthrough) for visible and fugitive emissions as well as specific follow-up steps (investigation, corrective action, RM9 observation and additional recordkeeping and reporting) if visible or fugitive emissions are observed. If observed visible or fugitive emissions can not be eliminated within 24 hours, a tiered sequence of RM9 opacity observations must be performed. Observations of visible or fugitive emissions during a survey are not considered deviations; however, any resulting RM9 readings above 20% opacity are considered permit deviations pursuant to Permit Conditions 3.47 and 3.48. The annual fugitive particulate matter survey required in Permit Condition 3.13 can be accomplished simultaneously with a quarterly survey required in this permit condition as long as both requirements are fully complied with. This permit condition serves as the periodic monitoring for several fugitive and particulate matter limits found in the permit.

Permit Condition 4.14 requires permits for open burning, agricultural burning and forestry/silvicultural burning. These requirements are in effect on the Nez Perce Reservation only.

Permit Conditions 4.15 and 4.16 limit HAP emissions to below the major source thresholds of 10 tpy for any individual HAP and 25 tpy for all HAP combined. These permit conditions originated in 2007 non-Title V permit No. R10NT500900 to TRT. The facility will be treated as a minor source for NESHAP/MACT reasons as long as it complies with the limits. Because the limits are facility-wide,

compliance with the limits will be determined based on actual emission estimates using actual production data and current emission factors. The lumber kiln emission factors currently recommended were developed primarily through testing performed in a laboratory because lumber kilns are very difficult and expensive to test in the field. If there ever is a question regarding the representativeness of the kiln emission factors, it may be possible to test lumber from this specific mill in a "lab scale" kiln. In Permit Conditions 4.15.1 and 4.16.1, the second sentence of the underlying non-Title V requirement was removed because chloride sampling now exists.

Permit Conditions 4.17 through 4.19 describe the recordkeeping and calculations required to confirm compliance with the HAP limits. Recommended emission factors for the boilers are presented in Appendix A as lb/MMBtu. BNFP plans to track steam production. BNFP will need to convert the steam output (lb/hr) to heat input (mmBtu/hr) using a factor of 1.7 MMBtu/M lb steam until actual values are measured (see the required sampling and analysis in Permit Condition 5.5.3) – Permit Condition 4.18 was added for that reason.

Permit Condition 4.20 requires chloride data to be kept for 5 years, consistent with the Non-Title V permit and the Part 71 data maintenance requirements.

Permit Condition 4.21 requires the permittee to report actual HAP emissions with their annual FARR emission report. This allows all of the emission reporting to be done simultaneously for the facility.

Permit Conditions 4.22 – 4.25. EPA has placed area source boiler MACT (NESHAP Subpart JJJJJJ) requirements in the section of the permit reserved for facility-specific requirements, and not emission unit-specific requirements. This is because the area source boiler MACT requirements extend beyond just the boilers. They extend, for instance, to energy use systems like the lumber drying kilns.

BNFP combusts in boilers only material satisfying the definition of biomass as that term is defined at 40 CFR § 63.11237. Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (*e.g.,* almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste as that term is defined at 40 CFR § 241.2. Because the boilers combust only biomass, it is in the NESHAP Subpart JJJJJJ biomass subcategory of boilers pursuant to 40 CFR § 63.11200(b). It is with this in mind that EPA Region 10 created permit terms reflecting NESHAP Subpart JJJJJJ requirements.

Permit Condition 4.22. Existing biomass boilers are subject to periodic tune-up management practices for PM (surrogate for urban metal HAP) and CO (surrogate for urban organic HAP) based upon finding that periodic tune-ups represent generally available control technology (GACT), (78 FR 7489, February 1, 2013). BNFP plans to install and employ on each of its boilers an oxygen trim system that consists of a flue gas oxygen monitor that automatically provides a feedback signal to the combustion air controller. An oxygen trim system, according to 40 CFR §63.11237, means a system of monitors that is used to maintain excess air at the desired level in a combustion device. Whereas boilers not employing an oxygen trim system are required to undergo a tune-up once every 2 years, the tune-up frequency is relaxed to once every 5 years for boilers employing said system. The NESHAP Subpart JJJJJJ tune-up requirements at 40 CFR § 63.11223(b)(1) and (2) related to inspection of burner and flame pattern do not apply to the BNFP boilers because the boilers do not employ any burners. Burners are typically employed to combust gas and liquid fuels along with pulverized coal. In contrast, BNFP employs a fuel chute to introduce biomass into the boilers.

Permit Conditions 4.23 and 4.24. Existing biomass boilers are subject to a beyond-the-floor control technology or GACT requirement to conduct an energy assessment, (76 FR 15573, March 21, 2011). For boilers like the BNFP boilers with an annual heat input capacity less than 0.3 trillion Btu, the duration of the energy assessment will be up to 8 on-site technical labor hours pursuant to the definition of energy assessment at 40 CFR § 63.11237.[3] This length of time may be extended at the discretion of the source. EPA has not established a minimum value for the amount of time necessary to conduct on-site technical labor.

The requirement to evaluate systems to identify energy savings opportunities extends to the boiler system and any energy use system (under the control of the source) that accounts for at least 50 percent of the boiler's energy (e.g., steam, hot water, or electricity). See definition of energy assessment at 40 CFR § 63.11237. The energy use systems serving as the basis for the percent of affected boiler energy production may be segmented by production area or energy use area as most logical and applicable to the source. The term boiler system, as defined in 40 CFR § 63.11237 means the boiler and associated components, such as feedwater systems, combustion air systems, fuel systems, blowdown systems, combustion control systems, steam systems, and condensate return systems, directly connected to and serving the energy use systems. Similarly, the term energy use system includes any of the following systems located at the Clean Air Action (CAA) Section 112 stationary source that use energy provided by the boiler: (a) process heating; compressed air systems; machine drive (motor, pumps, fans); process cooling; facility heating, ventilation, and air conditioning systems; hot water systems; building envelop; and lighting; or (b) other systems that use steam, hot water, process heat, or electricity, provided by the boiler. Energy use systems are only those systems using energy clearly produced by the boiler either (a) directly as steam or process heat, or (b) through an associated steam turbine generator in the form of electricity. The steam produced by the BNFP boilers is delivered to its lumber drying kilns.

A source operating under an energy management program compatible with ISO 50001 is not required to conduct an energy assessment. An energy management program, as defined at 40 CFR § 63.11237, means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, and energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Permit Condition 4.25. The following sentence appears in Condition 4.25, "The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved." Because the BNFP boilers are not subject to an emission limitation, there is no "level" for emissions to be reduced by. Achieving compliance with general duty to minimize emissions goes beyond complying with tune-up and energy assessment requirements of Conditions 4.22 through 4.24. Compliance with this requirement will be determined, in part, based upon inspection of records created and maintained by the permittee to comply with 40 CFR §§ 63.10(b)(2)(iii), 63.11223(b)(6) and 63.11225(c)(4) and (5).

Permit Conditions 4.26 – 4.29. BNFP is required to conduct monitoring and maintain records to document compliance with GACT work practice standards and emission reduction measures. BNFP is also required to document that when it combusts biomass that is considered a non-hazardous secondary material as that term is defined at 40 CFR § 241.2, that it is combusting a fuel and not a solid waste.[4]

[3] Each boiler's annual heat input capacity of 0.28 TBtu = (31.7 MMBtu/hr) X (8,760 hr/yr) X (1 TBtu/1x10^6 MMBtu)

[4] When EPA refers to secondary materials in this context, EPA means any material that is not the primary product of a manufacturing or commercial process, and can include post-consumer material, off-specification commercial

Permit Condition 4.26. The requirement to measure and record boiler exhaust stack CO concentration is satisfied if measurements are taken before and after the performance tune-up. It is not necessary to take measurements between interim tasks in the tune-up process.

Permit Condition 4.27. Should BNFP choose to operate in accordance with an energy management program so as to comply with Condition 4.23.2, Condition 4.27 requires BNFP to, among other things; maintain records that document BNFP's energy management program and how it is compatible with ISO 50001.

Permit Condition 4.29. The following background about the different biomass streams that could potentially be combusted in the boilers provides some context for Condition 4.29. EPA understands that BNFP only combusts in its boilers biomass generated on-site. This clean cellulosic biomass is considered a traditional fuel as those terms are defined at 40 CFR § 241.2. EPA does not know to what extent, if at all, BNFP occasionally combusts in the boilers bark that has been recovered from any unpaved log yard floor and processed back into a fuel. This material is considered a non-hazardous secondary material. It is possible that BNFP may combust biomass that is generated off-site and received at the facility via truck delivery. Whether this off-site material is considered clean cellulosic material or non-hazardous secondary material would need to be determined on a load-by-load basis.

Permit Conditions 4.29.1 and 4.29.2. These permit conditions refer to legitimacy criteria that must be satisfied in order to consider non-hazardous secondary material to be a fuel. The criteria presented at 40 CFR § 241.3(d)(1) are as follows:

> (d) Legitimacy criteria for non-hazardous secondary materials.
>
> (1) Legitimacy criteria for non-hazardous secondary materials used as a fuel in combustion units include the following:
>
> (i) The non-hazardous secondary material must be managed as a valuable commodity based on the following factors:
>
> (A) The storage of the non-hazardous secondary material prior to use must not exceed reasonable time frames;
>
> (B) Where there is an analogous fuel, the non-hazardous secondary material must be managed in a manner consistent with the analogous fuel or otherwise be adequately contained to prevent releases to the environment;
>
> (C) If there is no analogous fuel, the non-hazardous secondary material must be adequately contained so as to prevent releases to the environment;
>
> (ii) The non-hazardous secondary material must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy.
>
> (iii) The non-hazardous secondary material must contain contaminants at levels comparable in concentration to or lower than those in traditional fuels which the combustion unit is designed to burn. Such comparison is to be based on a direct comparison of the contaminant levels in the non-hazardous secondary material to the traditional fuel itself.

Permit Condition 4.29.2. This permit condition refers to the term processing, and that term has the meaning given to it by EPA at 40 CFR § 241.2. Processing means any operations that transform discarded non-hazardous secondary material into a non-waste fuel or non-waste ingredient product. Processing

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chemical products or manufacturing chemical intermediates, post-industrial material, and scrap. A non-hazardous secondary material is a secondary material that, when discarded, would not be identified as a hazardous waste under 40 CFR § 261.

includes, but is not limited to, operations necessary to: Remove or destroy contaminants; significantly improve the fuel characteristics of the material, *e.g.,* sizing or drying the material in combination with other operations; chemically improve the as-fired energy content; or improve the ingredient characteristics. Minimal operations that result only in modifying the size of the material by shredding do not constitute processing for purposes of this definition.

Permit Condition 4.29.3. This permit condition refers to a petition process whereby the Regional Administrator may grant a non-waste determination that a non-hazardous secondary material that is used as a fuel, which is not managed within the control of the generator, is not discarded and is not a solid waste when combusted pursuant to 40 CFR § 241.3(c). The criteria and process for making such non-waste determinations includes the following:

(1) Submittal of an application to the Regional Administrator for the EPA Region where the facility combusting the non-hazardous secondary material is located for a determination that the non-hazardous secondary material, even though it has been transferred to a third party, has not been discarded and is indistinguishable in all relevant aspects from a product fuel. The determination will be based on whether the non-hazardous secondary material that has been discarded, is a legitimate fuel as specified in 40 CFR § 241.3(d)(1) and on the following criteria:

   (i) Whether market participants treat the non-hazardous secondary material as a product rather than as a solid waste;

   (ii) Whether the chemical and physical identity of the non-hazardous secondary material is comparable to commercial fuels;

   (iii) Whether the non-hazardous secondary material will be used in a reasonable time frame given the state of the market;

   (iv) Whether the constituents in the non-hazardous secondary material are released to the air, water or land from the point of generation to the point just prior to combustion of the secondary material at levels comparable to what would otherwise be released from traditional fuels; and

   (v) Other relevant factors.

(2) The Regional Administrator will evaluate the application pursuant to the following procedures:

   (i) The applicant must submit an application for the non-waste determination addressing the legitimacy criteria in 40 CFR § 241.3(d)(1) and the relevant criteria in 40 CFR § 241.3(c)(1)(i) through (v). In addition, the applicant must also show that the non-hazardous secondary material has not been discarded in the first instance.

   (ii) The Regional Administrator will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be published in a newspaper advertisement or radio broadcast in the locality where the facility combusting the non-hazardous secondary material is located, and be made available on EPA's Web site.

   (iii) The Regional Administrator will accept public comments on the tentative decision for at least 30 days, and may also hold a public hearing upon request or at his discretion. The Regional Administrator will issue a final decision after receipt of comments and after the hearing (if any).

   (iv) If a change occurs that affects how a non-hazardous secondary material meets the relevant criteria contained in this paragraph after a formal non-waste determination has been granted, the applicant must re-apply to the Regional Administrator for a formal determination that the

non-hazardous secondary material continues to meet the relevant criteria and, thus is not a solid waste.

Permit Condition 4.29.4. BNFP does not combust any of the materials that EPA has listed as non-waste under 40 CFR § 241.4(a). The current list of EPA-designated non-waste materials are as follows:

(1) Scrap tires that are not discarded and are managed under the oversight of established tire collection programs, including tires removed from vehicles and off-specification tires.

(2) Resinated wood.

(3) Coal refuse that has been recovered from legacy piles and processed in the same manner as currently-generated coal refuse.

(4) Dewatered pulp and paper sludges that are not discarded and are generated and burned on-site by pulp and paper mills that burn a significant portion of such materials where such dewatered residuals are managed in a manner that preserves the meaningful heating value of the materials.

Permit Condition 4.30. The underlying NESHAP Subpart JJJJJJ requirement at 40 CFR §63.11223(b)(6) quires the permittee to track certain tune-up related information and to submit it to the EPA if requested by the Administrator. EPA is taking this opportunity to require the permittee to submit certain tune-up related information as part of notification of compliance status and annual compliance certification.

The requirement in 40 CFR § 63.11223(b)(6)(iii) to track the type and amount of fuel used over the 12 months prior to the tune-up would have appeared as an element of Permit Condition 4.30, but the requirement does not apply to the boilers because they combust only biomass. It is not physically capable of using any other type of fuel listed at 40 CFR § 63.11200.

Permit Condition 4.33. EPA is utilizing its discretion, as granted through 40 CFR § 63.11225(b), to require BNFP to submit a NESHAP Subpart JJJJJJ compliance certification report to EPA each year by March 15 for the previous year's operations. EPA is unable to require this report be submitted by February 28 as part of the annual compliance certification report required by Condition 3.49 because the underlying NESHAP Subpart JJJJJJ reporting provision specifies a submittal date no sooner than March 15.

Permit Conditions 4.36 and 4.37. The PSD regulation applicability test for modifications was changed in December 2002. The rule change resulted in a new applicable requirement for PSD major sources. Since BNFP is a PSD major source, this term is included in the operating permit. In summary, when the permittee considers a plant modification project to be exempt from PSD via the method specified in 40 CFR § 52.21(b)(41)(ii)(a-c) and there is a reasonable possibility that there will be a significant emissions increase resulting from the project, then the permittee must fulfill specified requirements related to documentation, monitoring, and notification. This term will be relevant to BNFP only when the permittee is contemplating making physical or operational changes to the facility. In those instances it is strongly recommended that the permittee contact EPA to discuss their plans and verify their assumptions.

Permit Section 5 – Unit-Specific Requirements – BLR-1 (Hog Fuel-Fired Boiler No. 1)

Permit Condition 5.1 limits the particulate matter (PM) emissions from the boiler to 0.2 gr/dscf at 7% O_2 and describes the emission testing method for determining compliance.

Permit Condition 5.2 limits the sulfur dioxide (SO_2) emissions from the boiler and describes the emission testing methods for determining compliance. As the boiler only uses wood waste as fuel, SO_2 emissions are expected to be well below the emission limit.

Permit Condition 5.3 requires the boiler exhaust to be vented to the multiclone at all times. While there is no testing to confirm it, it can be assumed that the multiclone is needed for the boiler to comply with the

particulate matter and visible emission limits. This requirement ensures the emission control device is used and will be considered when estimating PTE for the boiler.

Permit Condition 5.4 requires the boiler control device to be maintained. Consistent with the requirement to ensure boiler emissions are controlled at all times, this requires ensures the control device is operating correctly and hopefully that the boiler stays in compliance with the particulate matter and visible emission limits.

Permit Conditions 5.5 and 5.6 require measurement of particulate matter emissions. The boiler was last tested to determine PM emissions in 1993 while Weyerhaeuser was running the mill. Emissions rates approaching or exceeding the FARR PM limit were measured. BNFP indicates that it believes its emissions are much less now given the improved quality of hog fuel being combusted. The permit requires the permittee to test the boiler to determine PM emissions within 120 days of permit issuance. The schedule for additional testing after that depends on the results of that next test. During each test, visible emissions must be measured and all required periodic and compliance assurance monitoring required by the permit must be recorded. A new heat-input-to-steam-output ratio must be developed during each particulate matter test. The ratio is used to convert tracked steam production into heat input for calculating boiler emissions. Testing is required to be performed during winter months to hopefully capture worst-case emissions due to wetter fuel and higher steam demand. Because the permittee prefers to measure and track steam output rather than fuel input, during each emission test a ratio of heat input to steam output must be determined using procedures found in Appendix A to the permit. The ratio is then used to convert measured steam flows (mlb/hr) to heat input (mmBtu/hr) which can be applied to emission factors that are normally in terms of heat input (lb/mmBtu). The general emission testing requirements in Permit Conditions 3.22 through 3.30 apply to all emissions testing; except, periodic visible emission testing is only required to meet 3.27 (emission unit operation), 3.29 (records during tests) and 3.30 (test reports) of the general requirements as well as the recordkeeping required in Condition 5.5.3 (note that all particulate matter testing must follow all of Condition 5.5).

Permit condition 5.7 requires routine visible emission monitoring to satisfy compliance assurance monitoring for the visible emission limit and provides additional indication of compliance with the particulate matter limit. The frequency for each observation depends on the results of the previous observation.

Permit Condition 5.8 requires ongoing monitoring of boiler operations and multiclone pressure drop. Each of the parameters are required to be monitored (measured with a gauge indicator) continuously; however, the frequency of data recording varies. Because the permittee will base actual emissions on steam production, the permit requires continuous recording of the pounds of steam produced. Steam pressure, required to be recorded once per month, provides an indication of potential changes in boiler duty and allows an estimation of steam heat content. Boiler excess oxygen, required to be recorded once per hour, provides an indication of boiler performance with the concern that much lower oxygen levels may lead to incomplete combustion and much higher oxygen levels could cause the combustion chamber to be too cool. Pressure drop across the multiclone is generally related to control device performance (plugging or corrosion); but, is often only adequate for indicating significant changes in performance. The boiler oxygen and multiclone pressure drop readings can be useful for trouble-shooting performance problems and for tracking equipment condition trends. The permit includes a 90% data capture requirement for recordkeeping on a hourly or daily schedule – that is at least 90% percent of the data required to be measured and recorded each hour or day must be measured and recorded to comply with the permit. Data capture of less than 90% for steam production, boiler excess oxygen and multiclone pressure drop is a permit deviation. This provides relief for the more stringent monitoring/recording schedules during a given month; whereas, steam pressure must be recorded at least once each month to comply with the data capture requirement.

While BNFP is already measuring steam production and pressure, it does not currently have equipment in place to continuously measure boiler excess oxygen and the pressure drop across the multiclone. BNFP has up to 60 days after permit issuance to begin measuring these additional parameters.

Permit Condition 5.9 provides the procedure the permittee is required to follow in order to define multiclone pressure drop and opacity excursions. Levels will be based upon values observed during PM emissions testing. The closer PM emissions are to the FARR limit, the less observed values will be adjusted to account for compliant operational variability. The permittee is being given the opportunity to test at more than one load condition so as derive load-specific threshold values.

Permit Condition 5.10 requires the performance, operational and maintenance criteria from Part 64 that applies to the monitoring equipment required in Permit Condition 5.8. Excursions thresholds for multiclone pressure drop and visible emissions, specifically defined for BNFP's boiler and control equipment, will be based upon testing required by this permit. If testing shows a good margin of compliance with the particulate matter limits, excursion thresholds will be relaxed from test observations. Excursion thresholds may not be established for up to six months after permit issuance. Until the excursion thresholds have been established, an interim CAM threshold of 5% opacity will apply. While visiting the facility in June 2013, EPA permit writer observed negligible opacity in boiler stack exhaust.

Permit Condition 5.11 specifies what Part 64 requires the permittee to do when an excursion occurs.

Permit Condition 5.12 simply states EPA's option to require a quality improvement plan (QIP); this condition becomes a requirement only in the event EPA informs the permittee that a QIP is required.

Permit Condition 5.13 serves as a safeguard against incorrectly set excursion/exceedance thresholds by requiring the redefinition of the thresholds as needed.

Permit Condition 5.14 requires, consistent with Permit Condition 3.35, the maintenance of all records and supporting information.

Permit Condition 5.15 requires quarterly wood waste fuel sampling to determine the chloride content of the wood so a hydrogen chloride emission factor can be developed and used for reporting emissions. The hogged fuel sampling and chloride analytical procedures are specified in Appendix B to the permit. While the Non-Title V permit in which the sampling/analytical procedure was first required allows the permittee to request an alternative, that option has not been transferred to the Title V permit because it is EPA's policy that the methods required be specified in the permit. The permit must be revised to incorporate any alternative that is approved.

Permit Condition 5.16 requires reporting from Part 64 to be combined with the Part 71 semi-annual deviation reports required in Permit Conditions 3.47 and 3.38.

Permit Condition 5.17 requires fuel chloride analytical data to be included in the Part 71 annual compliance report required in 3.46.

Permit Condition 5.18 requires notification be given for establishment of CAM indicator levels at the same time PM testing is submitted.

Permit Section 6 – Unit-Specific Requirements – BLR-2 (Hog Fuel-Fired Boiler No. 2)

The requirements for boiler BLR-2 exactly mimic the requirements for BLR-1 exactly. See explanation of BLR-1 requirements immediately above.

Permit Section 7 – Unit-Specific Requirements – ENG-1 (Emergency Backup Engine No. 1)

Permit Condition 7.1 limits the particulate matter (PM) emissions from the engine to 0.1 gr/dscf at 7% O_2 and describes the emission testing method for determining compliance. This is equivalent to

approximately 0.1974 lb/MMBtu. EPA's October 1996 AP-42 at Table 3.3-1 estimates an actual PM_{10} emission rate of 0.31 lb/MMBtu for diesel-fired industrial engines up to 600 hp. No unit-specific testing or monitoring is required given that BNFP only intends to operate the engine in an emergency and as needed to maintain readiness. If BNFP operates the engine for more than 100 hours per year in non-emergency situations, additional MACT ZZZZ requirements will apply. BNFP is required to track the engine's hours of operation.

Permit Condition 7.2 limits sulfur dioxide emissions and specifies the test method for determining compliance. The monitoring required in Permit Condition 4.5 to demonstrate compliance with the fuel sulfur content limit can also be used to indicate compliance with this stack concentration limit through calculations if needed, because the fuel sulfur content limit is more stringent than this limit as illustrated in SO_2 PTE calculation in Appendix A to this Statement of Basis.

Permit Conditions 7.3 through 7.13 are MACT ZZZZ requirements to properly operate and maintain an emergency engine. No fuel requirements apply. If BNFP operates the engine in non-emergency situations for more than 100 hours per year, additional requirements will apply. There is no time limit on the use of the engine in emergency situations. Compliance with MACT ZZZZ requirements must be achieved no later than May 3, 2013 pursuant to 40 CFR § 63.6595(a)(1).

Permit Condition 7.14 requires periodic visible emission monitoring to assure compliance with the facility-wide visible emission limit.

Permit Conditions 7.15 through 7.18 are MACT ZZZZ monitoring and recordkeeping requirements. BNFP is required to track hours of operation, and this provides BNFP with information useful to calculate its actual emissions.

Permit Conditions 7.19 through 7.22 are MACT ZZZZ reporting requirements. With issuance of this Title V permit, EPA is specifying when certain MACT ZZZZ reports must be submitted.

Permit Section 8 – Unit-Specific Requirements – ENG-2 (Emergency Backup Engine No. 2)

The requirements for engine ENG-2 mimic the requirements for ENG-1 exactly. See explanation of ENG-1 requirements immediately above.

Permit Section 9 – Unit-Specific Requirements – KLN (Lumber Drying Kilns)

Permit Conditions 9.1 limits particulate matter emissions and describes the test method for determining compliance. The visible and fugitive emission monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

Permit Condition 9.2 requires periodic monitoring and recordkeeping that will assure compliance with the hazardous air pollutant emission limits.

Permit Section 10 – Unit-Specific Requirements – CYC (Wood Residual Cyclones)

Permit Condition 10.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

Permit Section 11 – Unit-Specific Requirements – SMI (Sawmill Activities Inside a Building)

Permit Condition 11.1 limits particulate matter emissions and describes the test method for determining compliance. No unit-specific testing or monitoring is required. The visible and fugitive emission

monitoring required in Permit Conditions 4.6 through 4.12 will serve as the periodic monitoring to assure compliance for this unit.

5. Public Participation

5.1 Public Notice and Comment

As required in 40 CFR 71.11(a)(5) and 40 CFR 71.8, all draft operating permits must be publicly noticed and made available for public comment. The public notice of permit actions and public comment period is described in 40 CFR 71.11(d). There is a 30 day public comment period for actions pertaining to a draft permit. For this permit action, the requirements of 40 CFR 71.11(a)(5) and 40 CFR 71.8 have been satisfied as follows:

1. Publishing the public notice for this draft permit in a daily or weekly newspaper of general circulation in the area affected by this source. In this case, publication was provided in the daily Lewiston Tribune on August 21, 2013, and in the weekly Clearwater Progress on August 22, 2013;

2. Providing a copy of the public notice to: the permit applicant, the affected states, the air pollution control agencies of affected states, the Tribal, city and county executives, any comprehensive land use planning agency, any state or federal land manager whose lands may be affected by emissions from the source, the local emergency planning authorities which have jurisdiction over the area where the source is located and all persons who submitted a written request to be included on EPA Region 10's mailing list for Title V permitting actions;

4. Making available from August 21, 2013 through September 20, 2013, on the Region 10 public notice website [Link from http://yosemite.epa.gov/R10/homepage.nsf/Information/R10PN/], a copy of the public notice and the draft permit and statement of basis prepared by EPA;

5. Making available from August 21, 2013 through September 20, 2013, at the Region 10 office and at the locations listed below, a copy of the public notice, draft permit, the statement of basis, the application, and relevant supporting materials:

Lapwai Community Library	Kamiah Community Library
103 N. Main St.	505 S. Main Street
Lapwai, Idaho 83540	Kamiah, Idaho 83536

5.2 Response to Public Comments and Permit Issuance

The public comment period for this permit ran from August 21, 2013 to September 20, 2013. EPA received a letter from the Idaho County Board of Commissioners supporting issuance of the permit without substantive comment on the permit itself. EPA appreciates the Idaho County Board of Commissioners interest in this permitting action. No other comments were received. EPA received no request for public hearing, and therefore none was held. The Idaho County Board of Commissioners requested notice of the final permit decision. As required in 40 CFR 71.11(i), EPA will notify the applicant and the Idaho County Board of Commissioners of the final permit decision.

6. Abbreviations and Acronyms

Btu	British thermal units
CAA	Clean Air Act [42 U.S.C. section 7401 et seq.]
CAM	Compliance assurance monitoring

CFR	Code of Federal Regulations
CO	Carbon monoxide
COMS	Continuous opacity monitoring system
dscf	Dry standard cubic feet
EU	Emission Unit
EPA	United States Environmental Protection Agency (also U.S. EPA)
FARR	Federal Air Rules for Reservations
FR	Federal Register
gr/dscf	Grains per dry standard cubic foot (7,000 grains = 1 pound)
HAP	Hazardous air pollutant
hr	Hour
IEU	Insignificant emission unit
lb	Pound
1bm	Pound-mole
MACT	Maximum Achievable Control Technology
mm	One million
NESHAP	National Emission Standards for Hazardous Air Pollutants (40 CFR Parts 61 and 63)
NOx	Nitrogen oxides
PM	Particulate matter
PM10	Particulate matter less than or equal to 10 microns in aerodynamic diameter
ppmdv	Parts per million on a dry, volume basis
PSD	Prevention of significant deterioration
PTE	Potential to emit
S	Sulfur
SO_2	Sulfur dioxide
tpy	Tons per year
VOC	Volatile organic compound

Appendix A

EPA Estimation of BNFP Potential Air Pollutant Emissions

Statement of Basis

Title V Operating Permit

R10T5100100

Blue North Forest Products
Kamiah, Idaho

Appendix A: Potential Emissions Inventory

Summary of Facility Regulated NSR Air Pollutant Potential Emissions

Potential to Emit, (tons per year)

Non-Fugitive Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Non-Fugitive Subtotal**
Carbon Monoxide (CO)	83.3	83.3	0.4	0.4	0						167
Lead (Pb)	0.01	0.01	0	0	0						0
Nitrogen Oxides (NO_X)	68.0	68.0	2.0	2.0	0						140
Particulates (PM)	57.2	57.2	0.1	0.1	4.4	0.0	0.0	0.0			119
Respirable Particulates (PM_{10})	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0			124
Fine Particulates ($PM_{2.5}$)	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0			124
Sulfur Dioxide (SO_2)	166.3	166.3	0.2	0.2	0						333
Volatile Organic Compounds (VOC)	3.2	3.2	0.2	0.2	331.4		0.0				338
Greenhouse Gas (CO_2e)	29,324	29,324	73	73	0						58,795

Fugitive Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Fugitive Subtotal**
Carbon Monoxide (CO)											0
Lead (Pb)											0
Nitrogen Oxides (NO_X)											0
Particulates (PM)									0.0	0.0	0
Respirable Particulates (PM_{10})									0.0	106.9	107
Fine ($PM_{2.5}$)									0.0	14.0	14
Sulfur Dioxide (SO_2)											0
Volatile Organic Compounds (VOC)											0
Greenhouse Gas (CO_2e)											0

All Emissions

	BLR-1	BLR-2	ENG-1	ENG-2	KLN	CYC	BIN	SMI	SMO	PT	
	Hog Fuel Boiler No. 1	Hog Fuel Boiler No. 2	Emergency Diesel Engine No. 1	Emergency Diesel Engine No. 2	Lumber Drying Kilns	Wood Residual Cyclones	Wood Residual Bins	Indoor Milling Activities	Outdoor Milling Activities	Plant Traffic	**Plantwide PTE**
Carbon Monoxide (CO)	83.3	83.3	0.4	0.4	0	0	0	0	0	0	167
Lead (Pb)	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Oxides (NO_X)	68.0	68.0	2.0	2.0	0	0	0	0	0	0	140
Particulates (PM)	57.2	57.2	0.1	0.1	4.4	0.0	0.0	0.0	0.0	0.0	119
Respirable Particulates (PM_{10})	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0	0.0	106.9	231
Fine Particulates ($PM_{2.5}$)	59.6	59.6	0.1	0.1	4.4	0.0	0.0	0.0	0.0	14.0	138
Sulfur Dioxide (SO_2)	166.3	166.3	0.2	0.2	0	0	0	0	0	0	333
Volatile Organic Compounds (VOC)	3.2	3.2	0.2	0.2	331.4	0	0.0	0	0	0	338
Greenhouse Gas (CO_2e)	29,324	29,324	73	73	0	0	0	0	0	0	58,795

Notes:

1. For emission unit entitled, "PT - Plant Traffic," EPA is simply transmitting here the result of the calculations performed by BNFP. In the interest of time, EPA did not calculate PT potential emissions.

2. For PSD and Title V applicability considering NSR regulated pollutant emissions, only non-fugitive emissions are counted given the source category in which this facility (sawmill) is listed. For MACT and Title V applicability considering HAP emissions, all emissions are counted.

3. PM is not a pollutant considered in determining whether a source is subject to the requirement to obtain a Title V permit, however, PM emissions are considered in determining whether a facility/project is a major PSD source/modification and whether a source is subject to CAM.

4. The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

5. The "All Emissions" table sums the values in the "Non-Fugitive Emissions" and "Fugitive Emissions" tables.

Summary of Facility Hazardous Air Pollutant (HAP) Potential Emissions

Potential to Emit, (tons per year)

Hazardous Air Pollutants	BLR-1 Hog Fuel Boiler No. 1	BLR-2 Hog Fuel Boiler No. 2	ENG-1 Emergency Diesel Engine No. 1	ENG-2 Emergency Diesel Engine No. 2	KLN Lumber Drying Kilns	Single HAP Plantwide Totals (tons per year)
Trace Metal Compounds						
Antimony Compounds	1.10E-03	1.10E-03				2.2E-03
Arsenic Compounds (including arsine)	3.05E-03	3.05E-03				6.1E-03
Beryllium Compounds	1.53E-04	1.53E-04				3.1E-04
Cadmium Compounds	5.69E-04	5.69E-04				1.1E-03
Chromium Compounds (including hexavalent)	2.92E-03	2.92E-03				5.8E-03
Cobalt Compounds	9.02E-04	9.02E-04				1.8E-03
Lead Compounds (not elemental lead)	6.66E-03	6.66E-03				1.3E-02
Manganese Compounds	2.22E-01	2.22E-01				4.4E-01
Mercury Compounds[2]	4.86E-04	4.86E-04				
Nickel Compounds	4.58E-03	4.58E-03				9.2E-03
Phophorus	3.75E-03	3.75E-03				7.5E-03
Selenium Compounds	3.89E-04	3.89E-04				7.8E-04
Other Inorganic Compounds						
Chlorine	1.10E-01	1.10E-01				2.2E-01
Hydrochloric acid (hydrogen chloride)	2.64E+00	2.64E+00				5.3E+00
Organic Compounds						
Acetaldehyde	1.15E-01	1.15E-01	3.42E-04	3.42E-04	4.79E+00	5.0E+00
Acetophenone	4.44E-07	4.44E-07				8.9E-07
Acrolein	5.55E-01	5.55E-01	4.13E-05	4.13E-05	2.26E-01	1.3E+00
Benzene	5.83E-01	5.83E-01	4.16E-04	4.16E-04		1.2E+00
1,3-Butadiene			1.74E-05	1.74E-05		3.5E-05
Bis(2-ethylhexyl)phthalate (DEHP)	6.53E-06	6.53E-06				1.3E-05
Carbon tetrachloride	6.25E-03	6.25E-03				1.2E-02
Chlorobenzene	4.58E-03	4.58E-03				9.2E-03
Chloroform	3.89E-03	3.89E-03				7.8E-03
Dibenzofurans*	2.59E-07	2.59E-07				5.2E-07
2,4-Dinitrophenol	2.50E-05	2.50E-05				5.0E-05
Ethyl benzene	4.30E-03	4.30E-03				8.6E-03
Ethylene dichloride (1,2-Dichloroethane)	4.03E-03	4.03E-03				8.1E-03
Formaldehyde	6.11E-01	6.11E-01	5.27E-04	5.27E-04	1.42E+00	2.6E+00
Methanol					3.65E+01	3.7E+01
Methyl bromide (Bromomethane)	2.08E-03	2.08E-03				4.2E-03
Methyl chloride (Chloromethane)	3.19E-03	3.19E-03				6.4E-03
Methyl chloroform (1,1,1-trichloroethane)	4.30E-03	4.30E-03				8.6E-03
Methylene chloride (Dichloromethane)	4.03E-02	4.03E-02				8.1E-02
Naphthalene*	1.35E-02	1.35E-02	3.78E-05	3.78E-05		2.7E-02
4-Nitrophenol	1.53E-05	1.53E-05				3.1E-05
Pentachlorophenol	7.08E-06	7.08E-06				1.4E-05
Phenol	7.08E-03	7.08E-03				1.4E-02
Polychlorinated biphenyls (PCB)	1.10E-06	1.10E-06				2.2E-06
Polycyclic Organic Matter (POM)	1.76E-02	1.76E-02	7.29E-05	7.29E-05		3.5E-02
Propionaldehyde	8.47E-03	8.47E-03			1.57E-01	1.7E-01
Propylene dichloride (1,2-Dichloropropane)	4.58E-03	4.58E-03				9.2E-03
Styrene	2.64E-01	2.64E-01				5.3E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	1.19E-09	1.19E-09				2.4E-09
Tetrachloroethylene (tetrachloroethene)	5.28E-03	5.28E-03				1.1E-02
Toluene	1.28E-01	1.28E-01	1.83E-04	1.83E-04		2.6E-01
Trichloroethylene (Trichloroethene)	4.17E-03	4.17E-03				8.3E-03
2,4,6-Trichlorophenol	3.05E-06	3.05E-06				6.1E-06
Vinyl chloride	2.50E-03	2.50E-03				5.0E-03
Xylenes (inlc isomers and mixtures)	3.47E-03	3.47E-03	1.27E-04	1.27E-04		7.2E-03
TOTAL[1]	5.4	5.4	0.002	0.002	43.1	

Predicted Highest Plantwide Single HAP	~~36.5~~	tons per year, methanol
Predicted Plantwide HAP Total	~~53.9~~	tons per year, based on summing estimates
Highest Plantwide Single HAP PTE	9	tons per year, based on emission limit in FARR Non-Title V permit R10NT500901
Plantwide HAP PTE	24	tons per year, based on emission limit in FARR Non-Title V permit R10NT500901

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-1**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace.
Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Monoxide (CO)	0.6	83.3	1
Lead (Pb)	4.80E-05	0.01	1
Nitrogen Oxides (NO_X)	0.49	68.0	1
Particulate Matter (PM)	0.412	57.2	1
Particulate Matter (PM_{10})	0.429	59.6	1,2
Particulate Matter ($PM_{2.5}$)	0.429	59.6	1,2
Sulfur Dioxide (SO_2)	1.198	166.3	1
Volatile Organic Compounds (VOC)	0.023	3.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Dioxide (CO_2)[1]	206.8	28,713	1
Methane (CH_4)	1.5	208	1
Nitrous Oxide (N_2O)	2.9	403	1
TOTAL		29,324	

[1] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

EF Reference	Description
1	EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.
2	Conservatively assume that all "filterable" PM is also PM_{10} and $PM_{2.5}$. The "filterable" fraction equals 0.412 lb/MMBtu as noted in EF Reference No. 1. PM_{10} and $PM_{2.5}$ emissions do include the "condensible" fraction as noted in October 25, 2012 Federal Register notice, pages 65107-65119. The "condensible" fraction equals 0.017 lb/MMBtu as noted in Table 1.6-1 of AP-42 (09/03). The two fractions combined equal 0.117 lb/MMBtu.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-2**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace.
Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Monoxide (CO)	0.6	83.3	1
Lead (Pb)	4.80E-05	0.01	1
Nitrogen Oxides (NO_X)	0.49	68.0	1
Particulate Matter (PM)	0.412	57.2	1
Particulate Matter (PM_{10})	0.429	59.6	1,2
Particulate Matter ($PM_{2.5}$)	0.429	59.6	1,2
Sulfur Dioxide (SO_2)	1.198	166.3	1
Volatile Organic Compounds (VOC)	0.023	3.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tons per year)	EF Reference
Carbon Dioxide (CO_2)[1]	206.8	28,713	1
Methane (CH_4)	1.5	208	1
Nitrous Oxide (N_2O)	2.9	403	1
TOTAL		29,324	

[1] The DC Circuit Court of Appeals on July 12, 2013 vacated EPA regulations that delayed until July 21, 2014 consideration of CO_2 emissions resulting from biomass combustion in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." See explanation for exemption provided by EPA at 76 FR 43490. See DC Circuit Court of Appeals July 12, 2013 ruling vacating the exemption at http://www.cadc.uscourts.gov/internet/opinions.nsf/F523FF1F29C06ECA85257BA6005397B5/$file/11-1101-1446222.pdf

EF Reference	Description
1	EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.
2	Conservatively assume that all "filterable" PM is also PM_{10} and $PM_{2.5}$. The "filterable" fraction equals 0.412 lb/MMBtu as noted in EF Reference No. 1. PM_{10} and $PM_{2.5}$ emissions do include the "condensible" fraction as noted in October 25, 2012 Federal Register notice, pages 65107-65119. The "condensible" fraction equals 0.017 lb/MMBtu as noted in Table 1.6-1 of AP-42 (09/03). The two fractions combined equal 0.117 lb/MMBtu.

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-1**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011.
Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

NON-FUGITIVE EMISSIONS
Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0.95	0.4	1
Lead (Pb)	-	0.0	1
Nitrogen Oxides (NO_x)	4.41	2.0	1
Particulate Matter (PM)	0.1974	0.1	2
Particulate Matter (PM_{10})	0.1974	0.1	2
Particulate Matter ($PM_{2.5}$)	0.1974	0.1	2
Sulfur Dioxide (SO_2)	0.50357	0.2	3
Volatile Organic Compounds (VOC)	0.36	0.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	163.054	72.8	4
Methane (CH_4)	0.139	0.1	4
Nitrous Oxide (N_2O)	0.410	0.2	4
TOTAL		73	

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996.
8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)
[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

EF Reference	Description
1	Table 3.3-1 of AP-42, October 1996.
2	Basis: FARR combustion source stack PM emission limit of 0.1 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(1) EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$ (gr/lb) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR PM Calculated EF (lb/MMBtu) | FARR PM Emission Limit (gr/dscf @7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | F_d (dscf/MMBtu) | $CF_{gr\rightarrow lb}$ (gr/lb) 0.1974 | 0.1 | 1.504 | 9,190 | 7,000
	• Assume $PM_{2.5}$ = PM_{10} = PM
3	Option 1: 0.50357 lb/MMBtu. This emission factor is employed to determine PTE as it limits emissions to less than Option 2 below. Basis: FARR distillate fuel oil No. 2 sulfur limit of 0.5% by weight at 40 CFR 49.130(d)(2) EF (lb/MMBtu) = [FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ X $CF_{lb\rightarrow gal}$ (lb/gal) X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) / $CF_{gal\rightarrow Btu}$ (Btu/gal) • $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + O_2 → SO_2. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2. • $CF_{lb\rightarrow gal}$ = 7.05 lb/gal fuel. See weight of distillate oil on page A-6 of Appendix A to AP-42, September 1985. • $CF_{gal\rightarrow Btu}$ = 140,000 Btu/gal fuel. See heating value of distillate oil on page A-5 of Appendix A to AP-42, September 1985.
	FARR Fuel S Calculate SO_2 EF (lb/MMBtu) | FARR Fuel Sulfur Limit (% by weight) | $CF_{S\rightarrow SO2}$ (lb SO_2/lb S) | $CF_{lb\rightarrow gal}$ (lb/gal fuel) | $CF_{gal\rightarrow Btu}$ (Btu/gal fuel) | $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) 0.50357 | 0.5 | 2 | 7.05 | 140,000 | 1.E+06
	Option 2: 1.147 lb/MMBtu. Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu) | FARR SO_2 Emission (ppmvd@7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | $CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm) | F_d (dscf/MMBtu) 1.147 | 500 | 1.504 | 1.66E-07 | 9190
4	EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications." Therefore, GHG Reporting Rule emission factors will be employed to determine GHG PTE. Carbon Dioxide (CO_2) EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)
	Calculated CO_2e EF for CO_2 (lb CO_2e/MMBtu) | 40 CFR 98 Table C-2 EF (kg CO_2/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CO_2) 163.054 | 73.96 | 2.20462262 | 1
	Methane (CH_4) EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)
	Calculated CO_2e EF for CH_4 (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg CH_4/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CH_4) 0.139 | 0.003 | 2.20462262 | 21
	Nitrous Oxide (N_2O) EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)
	Calculated CO_2e EF for N_2O (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg N_2O/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb N_2O) 0.410 | 0.0006 | 2.20462262 | 310

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-2**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011. Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

NON-FUGITIVE EMISSIONS
Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0.95	0.4	1
Lead (Pb)	-	0.0	1
Nitrogen Oxides (NO_x)	4.41	2.0	1
Particulate Matter (PM)	0.1974	0.1	2
Particulate Matter (PM_{10})	0.1974	0.1	2
Particulate Matter ($PM_{2.5}$)	0.1974	0.1	2
Sulfur Dioxide (SO_2)	0.50357	0.2	3
Volatile Organic Compounds (VOC)	0.36	0.2	1

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/MMBtu)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	163.054	72.8	4
Methane (CH_4)	0.139	0.1	4
Nitrous Oxide (N_2O)	0.410	0.2	4
TOTAL		73	

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996.
8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)
[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

EF Reference	Description
1	Table 3.3-1 of AP-42, October 1996.
2	Basis: FARR combustion source stack PM emission limit of 0.1 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(1) EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$ (gr/lb) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR PM Calculated EF (lb/MMBtu) | FARR PM Emission Limit (gr/dscf @7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | F_d (dscf/MMBtu) | $CF_{gr\rightarrow lb}$ (gr/lb) 0.1974 | 0.1 | 1.504 | 9,190 | 7,000
	• Assume $PM_{2.5}$ = PM_{10} = PM
3	Option 1: 0.50357 lb/MMBtu. This emission factor is employed to determine PTE as it limits emissions to less than Option 2 below. Basis: FARR distillate fuel oil No. 2 sulfur limit of 0.5% by weight at 40 CFR 49.130(d)(2) EF (lb/MMBtu) = [FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ X $CF_{lb\rightarrow gal}$ (lb/gal) X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) / $CF_{gal\rightarrow Btu}$ (Btu/gal) • $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + O_2 → SO_2. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2. • $CF_{lb\rightarrow gal}$ = 7.05 lb/gal fuel. See weight of distillate oil on page A-6 of Appendix A to AP-42, September 1985. • $CF_{gal\rightarrow Btu}$ = 140,000 Btu/gal fuel. See heating value of distillate oil on page A-5 of Appendix A to AP-42, September 1985.
	FARR Fuel S Calculate SO_2 EF (lb/MMBtu) | FARR Fuel Sulfur Limit (% by weight) | $CF_{S\rightarrow SO2}$ (lb SO_2/lb S) | $CF_{lb\rightarrow gal}$ (lb/gal fuel) | $CF_{gal\rightarrow Btu}$ (Btu/gal fuel) | $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu) 0.50357 | 0.5 | 2 | 7.05 | 140,000 | 1.E+06
	Option 2: 1.147 lb/MMBtu. Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu) • $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60. • F_d = 9,190 dscf/MMBtu for combustion of oil. See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.
	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu) | FARR SO_2 Emission (ppmvd@7%O_2) | $CF_{7\rightarrow 0\%O2}$ (unitless) | $CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm) | F_d (dscf/MMBtu) 1.147 | 500 | 1.504 | 1.66E-07 | 9190
4	EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications." Therefore, GHG Reporting Rule emission factors will be employed to determine GHG PTE. Carbon Dioxide (CO_2) EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)
	Calculated CO_2e EF for CO_2 (lb CO_2e/MMBtu) | 40 CFR 98 Table C-2 EF (kg CO_2/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CO_2) 163.054 | 73.96 | 2.20462262 | 1
	Methane (CH_4) EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)
	Calculated CO_2e EF for CH_4 (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg CH_4/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb CH_4) 0.139 | 0.003 | 2.20462262 | 21
	Nitrous Oxide (N_2O) EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg\rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)
	Calculated CO_2e EF for N_2O (lb CO_2e/hp-hr) | 40 CFR 98 Table C-2 EF (kg N_2O/MMBtu) | $CF_{kg\rightarrow lb}$ (lb/kg) | 40 CFR 98 Table A-1 GWP_{CO2} (lb CO_2e/lb N_2O) 0.410 | 0.0006 | 2.20462262 | 310

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **KLN**
Description: Lumber drying
Control Device: None
Work Practice: None
Fuel: None - indirect steam provided by BLR-1 and BLR-2
Predominant Species Dried: Douglas Fir , Ponderosa Pine, White Fir, Western White Pine and Cedar
Installed: 7 double-track kilns (No.'s 1 - 7) installed ?
Annual Capacity: 174,000 mbf/yr

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Criteria Pollutant Emissions	EF (lb/mbf)	PTE (tpy)	EF Reference
Carbon Monoxide (CO)	0	0	
Lead (Pb)	0	0	
Nitrogen Oxides (NO_X)	0	0	
Particulate Matter (PM)	0.05	4.4	1
Particulate Matter (PM_{10})	0.05	4.4	1,2
Particulate Matter ($PM_{2.5}$)	0.05	4.4	1,2
Sulfur Dioxide (SO_2)	0	0	
Volatile Organic Compounds (VOC)	3.8087	331.4	3

Greenhouse Gas Emissions (CO_2 Equivalent)	EF (lb/mbf)	PTE (tpy)	EF Reference
Carbon Dioxide (CO_2)	0	0	
Methane (CH_4)	0	0	
Nitrous Oxide (N_2O)	0	0	
TOTAL	0	0	

EF Reference	Description
1	ODEQ ACDP Application Guidance AQ-EF02 (4/25/00), lumber drying Hemlock (highest EF).
2	Conservative engineering assumption that all PM is also PM_{10} and $PM_{2.5}$.
3	EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012. See WPP1 VOC EF for drying western white pine at temperatures exceeding 200°F.

Abbreviations
ACDP: air construction discharge permit
mbf: 1,000 board feet lumber
ODEQ: Oregon Department of Environmental Conservation
WPP1: Wood Products Protocol 1

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **CYC**

Description: Pneumatic Conveyance of Wood Residual Materials

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity (bdt/yr)	EF			PTE		
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(lb/bdt)			(tpy)		
W4 - Planer shavings cyclone		0.5	0.425	0.25	0.0	0.0	0.0
H1 - Planer mill chipped trim end hog cyclone		0.5	0.425	0.25	0.0	0.0	0.0
W3 - Atlas fuel bin cyclone		0.5	0.425	0.25	0.0	0.0	0.0
W5 - Shavings cyclone on top of shavings/sawdust bin		0.5	0.425	0.25	0.0	0.0	0.0
T1 - Sawmill trimmer sawdust cyclone on top of shavings/sawdust bin		0.5	0.425	0.25	0.0	0.0	0.0
					0.0	0.0	0.0

PM, PM_{10} and $PM_{2.5}$ EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations

bdt: bone dry ton

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **BIN**
Description: Mechanical Conveyance and Storage of Residual Materials

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity	EF				PTE			
		PM	PM_{10}	$PM_{2.5}$	VOC	PM	PM_{10}	$PM_{2.5}$	VOC
	(bdt/yr)	(lb/bdt)				(tpy)			
GS - Green sawdust bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GS - Green sawdust bin offgas					9.3741				0.00
GS - Green sawdust bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GC - Green chip bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
GC - Green chip bin offgas					4.9196				0.00
GC - Green chip bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
AF - Atlas fuel bin offgas					5.4704				0.00
AF- Atlas fuel bin unloading		0.0015	0.0007	0.0001		0.00	0.00	0.00	
SS - Shavings and green trimmer sawdust bin offgas					5.4704				0.00
SS - Shavings and green trimmer sawdust bin unloading		0.0015	0.0007	0.0001		0.00	0.00	0.00	
HF - Hog fuel bin loading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
HF - Hog fuel bin offgas (including storage pile)					2.9738				0.00
HF - Hog fuel bin unloading		0.00075	0.00035	0.00005		0.00	0.00	0.00	
					TOTAL	0.0	0.0	0.00	0.00

PM, PM_{10} and $PM_{2.5}$ EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013.

VOC EF Basis: NCASI Technical Bulletin No. 723 entitled, "Laboratory and Limited Field Measurements of VOC Emissions from Wood Residuals," September 1996. Assume processing of ponderosa pine logs harvested during season resulting in highest emissions. To convert NCASI emission factor from units of carbon to units of propane (estimate of VOC emitted), multiply by propane mass conversation factor of 1.2238. For further explanation for expressing emissions as propane, see Interim VOC Measurement Protocol for the Wood Products Industry - July 2007. See also Appendix C of NCASI's Technical Bulletin No. 991 entitled, "Characterization, Measurement, and Reporting of Volaitle Organic Compounds Emitted from Southern Pine Wood Products Sources," September 2011. For ponderosa pine sawdust, (7.66 lb C/bdt) X 1.2238 = 9.3741 lb VOC/bdt. For shavings, (4.47 lb C/bdt) X 1.2238 = 5.4704. For chips, (4.02 lb C/bdt) X 1.2238 = 4.9196. For ponderosa pine bark, (2.43 lb C/bdt) X 1.2238 = 2.9738.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
NCASI: National Council for Air and Stream Improvement

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **SMI**
Description: Sawmill operations inside a building

NON-FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity		EF			PTE		
			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
			(lb/ton log, lb/bdt or lb/mbf; as applicable)			(tpy)		
"Wet" Material Sawing		tons log/yr	0.07	0.035	0.0175	0.0	0.0	0.0
"Wet" Material Chipping		bdt/yr	0.01	0.005	0.0025	0.0	0.0	0.0
Planing Activities		mbf/yr	0.0812	0.0406	0.0203	0.0	0.0	0.0
					TOTAL	0.0	0.0	0.0

EF Basis: Particulate Matter Emission Factors for Sawmills, February 2013. For sawing and chipping, emissions are discounted 80% from uncontrolled emissions because activity occurs within a building. The planing emission factor from the reference document is assumed to already reflect activity occuring within a building.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
mbf: 1,000 board feet lumber

Regulated NSR Air Pollutant Potential Emissions Inventory

Emission Unit: **SMO**
Description: Sawmill operations outside a building

FUGITIVE EMISSIONS

Potential to Emit, (tons per year)

Emissions Generating Activity	Annual Capacity		EF			PTE		
			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
			(lb/ton log or lb/bdt; as applicable)			(tpy)		
Log Bucking (Cut off saw)		tons log/yr	0.035	0.0175	0.00875	0.0	0.0	0.0
Log Debarking		tons log/yr	0.024	0.012	0.006	0.0	0.0	0.0
Bark Hogging		bdt/yr	0.05	0.025	0.0125	0.0	0.0	0.0
Bark Mechanical Conveyance		bdt/yr	0.0045	0.0021	0.0003	0.0	0.0	0.0
					TOTAL	0.0	0.0	0.0

EF Basis: EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013. For bark mechanical conveyance, EPA assumed six "wet" material drops between debarker and hog fuel bin.

Annual Capacity Basis: BNFP Title V renewal application supplemental information

Abbreviations
bdt: bone dry ton
mbf: 1,000 board feet lumber

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-1**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Trace Metal Compounds		
Antimony Compounds	7.90E-06	1.10E-03
Arsenic Compounds (including arsine)	2.20E-05	3.05E-03
Beryllium Compounds	1.10E-06	1.53E-04
Cadmium Compounds	4.10E-06	5.69E-04
Chromium Compounds (including hexavalent)	2.10E-05	2.92E-03
Cobalt Compounds	6.50E-06	9.02E-04
Lead Compounds (not elemental lead)	4.80E-05	6.66E-03
Manganese Compounds	1.60E-03	2.22E-01
Mercury Compounds	3.50E-06	4.86E-04
Nickel Compounds	3.30E-05	4.58E-03
Phophorus	2.70E-05	3.75E-03
Selenium Compounds	2.80E-06	3.89E-04
Other Inorganic Compounds		
Chlorine	7.90E-04	1.10E-01
Hydrochloric acid (hydrogen chloride)	1.90E-02	2.64E+00
Organic Compounds		
Acetaldehyde	8.30E-04	1.15E-01
Acetophenone	3.20E-09	4.44E-07
Acrolein	4.00E-03	5.55E-01
Benzene	4.20E-03	5.83E-01
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	6.53E-06
Carbon tetrachloride	4.50E-05	6.25E-03
Chlorobenzene	3.30E-05	4.58E-03
Chloroform	2.80E-05	3.89E-03
Dibenzofurans*	1.87E-09	2.59E-07
2,4-Dinitrophenol	1.80E-07	2.50E-05
Ethyl benzene	3.10E-05	4.30E-03
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05	4.03E-03
Formaldehyde	4.40E-03	6.11E-01
Methyl bromide (Bromomethane)	1.50E-05	2.08E-03
Methyl chloride (Chloromethane)	2.30E-05	3.19E-03
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05	4.30E-03
Methylene chloride (Dichloromethane)	2.90E-04	4.03E-02
Naphthalene*	9.70E-05	1.35E-02
4-Nitrophenol	1.10E-07	1.53E-05
Pentachlorophenol	5.10E-08	7.08E-06
Phenol	5.10E-05	7.08E-03
Polychlorinated biphenyls (PCB)	7.93E-09	1.10E-06
Polycyclic Organic Matter (POM)	1.27E-04	1.76E-02
Propionaldehyde	6.10E-05	8.47E-03
Propylene dichloride (1,2-Dichloropropane)	3.30E-05	4.58E-03
Styrene	1.90E-03	2.64E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12	1.19E-09
Tetrachloroethylene (tetrachloroethene)	3.80E-05	5.28E-03
Toluene	9.20E-04	1.28E-01
Trichloroethylene (Trichloroethene)	3.00E-05	4.17E-03
2,4,6-Trichlorophenol	2.20E-08	3.05E-06
Vinyl chloride	1.80E-05	2.50E-03
Xylenes (inlc isomers and mixtures)	2.50E-05	3.47E-03
TOTAL[1]	3.87E-02	5.4

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

EF Reference: Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **BLR-2**
Description: Hog fuel-fired Sterling-design water-tube boiler with dutch oven furnace. Induced draft. Water-cooled fixed grate.
Maximum Steam Production: 14,000 lb/hr at 110 psig
Particulate Matter Control Device: Multiclone (required by permit)
Fuel: Biomass (hog fuel, wood residue)
Commence Construction: Prior to NSPS Dc applicabity with no known NSPS reconstruction or modification.
Startup: 1948
Design Maximum Heat Input Capcity: 31.7 MMBtu/hr
Operation: 8760 hours per year

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Trace Metal Compounds		
Antimony Compounds	7.90E-06	1.10E-03
Arsenic Compounds (including arsine)	2.20E-05	3.05E-03
Beryllium Compounds	1.10E-06	1.53E-04
Cadmium Compounds	4.10E-06	5.69E-04
Chromium Compounds (including hexavalent)	2.10E-05	2.92E-03
Cobalt Compounds	6.50E-06	9.02E-04
Lead Compounds (not elemental lead)	4.80E-05	6.66E-03
Manganese Compounds	1.60E-03	2.22E-01
Mercury Compounds	3.50E-06	4.86E-04
Nickel Compounds	3.30E-05	4.58E-03
Phophorus	2.70E-05	3.75E-03
Selenium Compounds	2.80E-06	3.89E-04
Other Inorganic Compounds		
Chlorine	7.90E-04	1.10E-01
Hydrochloric acid (hydrogen chloride)	1.90E-02	2.64E+00
Organic Compounds		
Acetaldehyde	8.30E-04	1.15E-01
Acetophenone	3.20E-09	4.44E-07
Acrolein	4.00E-03	5.55E-01
Benzene	4.20E-03	5.83E-01
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	6.53E-06
Carbon tetrachloride	4.50E-05	6.25E-03
Chlorobenzene	3.30E-05	4.58E-03
Chloroform	2.80E-05	3.89E-03
Dibenzofurans*	1.87E-09	2.59E-07
2,4-Dinitrophenol	1.80E-07	2.50E-05
Ethyl benzene	3.10E-05	4.30E-03
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05	4.03E-03
Formaldehyde	4.40E-03	6.11E-01
Methyl bromide (Bromomethane)	1.50E-05	2.08E-03
Methyl chloride (Chloromethane)	2.30E-05	3.19E-03
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05	4.30E-03
Methylene chloride (Dichloromethane)	2.90E-04	4.03E-02
Naphthalene*	9.70E-05	1.35E-02
4-Nitrophenol	1.10E-07	1.53E-05
Pentachlorophenol	5.10E-08	7.08E-06
Phenol	5.10E-05	7.08E-03
Polychlorinated biphenyls (PCB)	7.93E-09	1.10E-06
Polycyclic Organic Matter (POM)	1.27E-04	1.76E-02
Propionaldehyde	6.10E-05	8.47E-03
Propylene dichloride (1,2-Dichloropropane)	3.30E-05	4.58E-03
Styrene	1.90E-03	2.64E-01
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12	1.19E-09
Tetrachloroethylene (tetrachloroethene)	3.80E-05	5.28E-03
Toluene	9.20E-04	1.28E-01
Trichloroethylene (Trichloroethene)	3.00E-05	4.17E-03
2,4,6-Trichlorophenol	2.20E-08	3.05E-06
Vinyl chloride	1.80E-05	2.50E-03
Xylenes (inlc isomers and mixtures)	2.50E-05	3.47E-03
TOTAL[1]	3.87E-02	5.4

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

EF Reference: Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-fired Boilers, July 2013.

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-1**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995. Rebuilt circa 2011. Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2
Design Maximum Power Output: 255.00 horsepower
Design Maximum Heat Input Capcity: 1.785 MMBtu/hr[1]
Operation: 500 hours per year[2]

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Acealdehyde	7.67E-04	3.42E-04
Acrolein	9.25E-05	4.13E-05
Benzene	9.33E-04	4.16E-04
1,3-Butadiene	3.91E-05	1.74E-05
Formaldehyde	1.18E-03	5.27E-04
Naphthalene[3]	8.48E-05	3.78E-05
Polycyclic Organic Matter (POM)[4]	1.63E-04	7.29E-05
Toluene	4.09E-04	1.83E-04
Xylenes	2.85E-04	1.27E-04
TOTAL[5]	0.004	0.002

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996. 8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)

[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

[3] Naphthalene is a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[4] See table below for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[5] Because naphthalene are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	1.42E-06
Acenaphthylene*	5.06E-06
Anthracene*	1.87E-06
Benzo(a)anthracene*	1.68E-06
Benzo(b)fluoranthene*	9.91E-08
Benzo(k)fluoranthene*	1.55E-07
Benzo(g,h,l)perylene*	4.89E-07
Benzo(a)pyrene*	1.88E-07
Benzo(e)pyrene*	2.60E-09
Chrysene*	3.53E-07
Dibenzo(a,h)anthracene*	5.83E-07
Fluoranthene*	7.61E-06
Fluorene*	2.92E-05
Indeno(1,2,3-cd)pyrene*	3.75E-07
Naphthalene***	8.48E-05
Phenanthrene*	2.94E-05
SUBTOTAL	1.63E-04

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **ENG-2**
Description: Cummins NT-280-IF compression-ignition diesel-fired engine. Manufactured 1971. Installed circa 1995.
Engine supplies mechanical work to water pump for fire suppression in the event facility loses electricity in an emergency.
Control Device: none
Fuel: Distillate Fuel Oil No. 2

Design Maximum Power Output:	255.00	horsepower
Design Maximum Heat Input Capcity:	1.785	MMBtu/hr[1]
Operation:	500	hours per year[2]

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/MMBtu)	PTE (tpy)
Acealdehyde	7.67E-04	3.42E-04
Acrolein	9.25E-05	4.13E-05
Benzene	9.33E-04	4.16E-04
1,3-Butadiene	3.91E-05	1.74E-05
Formaldehyde	1.18E-03	5.27E-04
Naphthalene[3]	8.48E-05	3.78E-05
Polycyclic Organic Matter (POM)[4]	1.63E-04	7.29E-05
Toluene	4.09E-04	1.83E-04
Xylenes	2.85E-04	1.27E-04
TOTAL[5]	0.004	0.002

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

[1] Heat Input = Power Output (MMBtu/hr) X Average BSFC (Btu/hp-hr) X (MMBtu/1x10^6 Btu), where BSFC stands for brake-specific fuel consumption. See footnote A of Table 3.3-1 of AP-42, October 1996. 8.4483 MMBtu/hr = (1,206.9 hp-hr) X (7,000 Btu/hp-hr) X (MMBtu/1x10^6 Btu)

[2] September 6, 1995 EPA memorandum entitled, "Calculating Potential to Emit (PTE) for Emergency Generators"

[3] Naphthalene is a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[4] See table below for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[5] Because naphthalene are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	1.42E-06
Acenaphthylene*	5.06E-06
Anthracene*	1.87E-06
Benzo(a)anthracene*	1.68E-06
Benzo(b)fluoranthene*	9.91E-08
Benzo(k)fluoranthene*	1.55E-07
Benzo(g,h,l)perylene*	4.89E-07
Benzo(a)pyrene*	1.88E-07
Benzo(e)pyrene*	2.60E-09
Chrysene*	3.53E-07
Dibenzo(a,h)anthracene*	5.83E-07
Fluoranthene*	7.61E-06
Fluorene*	2.92E-05
Indeno(1,2,3-cd)pyrene*	3.75E-07
Naphthalene***	8.48E-05
Phenanthrene*	2.94E-05
SUBTOTAL	1.63E-04

EF Basis: AP-42, October 1996. Table 3.3-2. Although the engine is subject to RICE MACT (NESHAP ZZZZ), no emission limits apply.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP.

Hazardous Air Pollutant Potential Emissions Inventory

Emission Unit: **KLN**
Description: Lumber drying
Control Device: None
Work Practice: None
Fuel: None - indirect steam provided by BLR-1 and BLR-2
Predominant Species Dried: Douglas Fir , Ponderosa Pine, White Fir, Western White Pine and Cedar
Installed: 7 double-track kilns (No.'s 1 - 7) installed ?
Annual Capacity: 174,000 mbf/yr

Potential to Emit, (tons per year)

Hazardous Air Pollutants	EF (lb/mbf)	PTE (tpy)
Methanol	0.4200	36.5
Formaldehyde	0.0163	1.4
Acetaldehyde	0.0550	4.8
Propionaldehyde	0.0018	0.2
Acrolein	0.0026	0.2
TOTAL		43.1

EF Reference: EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012. See HAP EF for drying white fir at temperatures exceeding 200°F.

Abbreviations
mbf: 1,000 board foot lumber

EPA Region 10 Regulated NSR Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013.

No.	Criteria Pollutant	EF (lb/MMBtu)
1	Carbon Monoxide (CO)[1]	0.6
2	Lead (Pb)	4.8E-05
3	Nitrogen Oxides (NO_X)	0.49
4	Particulate Matter (PM)[2]	0.412
5	Respirable Particulate (PM_{10})[2]	0.429
6	Fine Particulate ($PM_{2.5}$)[2]	0.429
7	Sulfur Dioxide (SO_2)	1.198
8	Volatile Organic Compounds (VOC)	0.023

No.	Greenhouse Gas Pollutant	EF (lb CO_2e/MMBtu)
9	Carbon Dioxide (CO_2)[3]	~~206.8~~
10	Methane (CH_4)	1.5
11	Nitrous Oxide (N_2O)	2.9
	TOTAL	4.4

[1] If boiler is subject to Major Source Boiler MACT ("NESHAP Subpart DDDDD" or "NESHAP 5D"), do not use CO EF listed in table. Instead, calculate EF based upon applicable NESHAP 5D emission limit as illustrated below. Existing sources must comply with NESHAP 5D emission limits beginning January 31, 2016. The Potlatch facility in St. Maries, Idaho on the Coeur d'Alene Reservation is the only major HAP source operating a biomass boiler in Pacific Northwest Indian Country

[2] If boiler is subject to NSPS Db or Dc or NESHAP 5D or Minor Source Boiler MACT ("NESHAP Subpart JJJJJJ" or "NESHAP 6J"), do not use PM, PM_{10} and $PM_{2.5}$ EF listed in table. Instead, calculate EF based upon most stringent applicable emission limit as illustrated below. Existing sources must comply with NESHAP 5D emission limits beginning January 31, 2016.

[3] Prior to July 21, 2014, CO_2 emissions resulting from biomass combustion are not considered in determining PSD and Title V applicability pursuant to 40 CFR 52.21(b)(49)(ii)(a) and 40 CFR 71.2 definition of "subject to regulation." For further details, see explanation for exemption provided by EPA at 76 FR 43490.

No. | **Reference**

Option 1: 0.6 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2.

Option 2: 0.243 - 2.281 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 5D

In order to create an EF in units of "lb/MMBtu heat input" based upon NESHAP 5D CO emission limits expressed in units of "ppm @3%O_2," the following equation must be employed:

EF (lb/MMBtu) = NESHAP 5D CO Limit (ppmvd@3%O_2) X $CF_{3\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfCO}$ X F_d (dscf/MMBtu)

• NESHAP 5D specifies a range of different CO emission limits based upon (a) the date the boiler commenced construction or reconstruction, (b) the design of the boiler and (c) type of fuel combusted. For the purpose of this PTE EF exercise, only the emission limits in units of "ppm" will be employed here. The alternative "lb/MMBtu steam output" or "lb/MWh electric generation output" emission limits could be employed if the efficiency of the boiler is known.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	Boiler Design	NESHAP 5D CO Emission Limit (ppmvd@3%O_2)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	Stokers/sloped grate/others designed to burn wet biomass fuel	1,500 (3-run avg) 720 (30-day rolling avg)	Table 2, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	460 (3-run avg)	Table 2, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	470 (3-run avg) 310 (30-day rolling avg)	Table 2, Row 9
		Suspension burners designed to burn biomass/bio-based solid	2,400 (3-run avg) 2,000 (10-day rolling avg)	Table 2, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	770 (3-run avg) 520 (10-day rolling avg)	Table 2, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	1,100 (3-run avg)	Table 2, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	2,800 (3-run avg) 900 (30-day rolling avg)	Table 2, Row 13
	06/04/10 < Y	Stokers/sloped grate/others designed to burn wet biomass fuel	620 (3-run avg) 390 (30-day rolling avg)	Table 1, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	460 (3-run avg)	Table 1, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	230 (3-run avg) 310 (30-day rolling avg)	Table 1, Row 9
		Suspension burners designed to burn biomass/bio-based solid	2,400 (3-run avg) 2,000 (10-day rolling avg)	Table 1, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	330 (3-run avg) 520 (10-day rolling avg)	Table 1, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	910 (3-run avg)	Table 1, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	1,100 (3-run avg) 900 (30-day rolling avg)	Table 1, Row 13

• $CF_{3\rightarrow 0\%O2}$ (unitless) = (20.9 - X_{O2Fd}) / (20.9 - $X_{O2NESHAP5D}$). To create a conversion factor that adjusts the basis of the NESHAP 5D CO emission limit from 3% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and $X_{O2NESHAP5D}$ = 3. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the NESHAP 5D CO baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

1

• $CF_{ppm \rightarrow lb/dscfCO}$ (lb CO/dscf / ppm CO) = [CO Concentration (ppm)] X [$CF_{ppm \rightarrow unitless}$ (1/ppm)] X [MW CO (g/mol)] X [Ideal Gas Constant @ EPA Standard Conditions (L/mol)]$^{-1}$ X [$CF_{L \rightarrow ft3}$ (L/ft^3)] X [$CF_{g \rightarrow lb}$ (g/lb)]$^{-1}$. This factor converts CO concentration from units "ppm" to "lb/dscf." To create the conversion factor, start by assuming CO concentration of 1 ppm and dividing by 1,000,000 to create a volumetric ratio of CO to exhaust gas. The molecular weight of CO is 28.010 g/mol. EPA standard conditions for reference method testing are a temperature of 20°C and a pressure of 1 atm. See Footnote 1 of Table 19-2 of EPA Method 19. The ideal gas constant is 0.08205746 L-atm/°K-mol. At EPA standard conditions, the value for ideal gas constant becomes 24.05514 L/mol through the following calculation: (0.08205746 L-atm/°K-mol) X (1 atm)$^{-1}$ X (293.15°K). Note that °K = [°C] + 273.15. There are around 28.32 liters (L) in a cubic foot (ft^3) and around 453.6 grams (g) in a pound (lb).

The calculation to determine $CF_{COvolume}$ is presented in the following table:

$CF_{ppm \rightarrow lb/dscfCO}$	CO Concentration (ppm)	$CF_{ppm \rightarrow unitless}$ (1/ppm)	CO Molecular Weight (g/mol)	Ideal Gas Constant (L/mol)	$CF_{L \rightarrow ft3}$ (L/ft^3)	$CF_{g \rightarrow lb}$ (g/lb)
7.27E-08	1	1.E-06	28.010	24.05514	28.3168466	453.59237

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Returning to the equation, EF (lb/MMBtu) = NESHAP 5D CO Limit (ppmvd@3%O_2) X $CF_{3 \rightarrow 0\%O2}$ X $CF_{ppm \rightarrow lb/dscfCO}$ X F_d (dscf/MMBtu), the wood residue-fired boiler NESHAP 5D EF can now be calculated assuming combustion of two different types of solid biomass as illustrated in the following two tables:

For "Existing" Units (Commencing Construction or Reconstruction on or before June 4, 2010)

Boiler Design	Fuel	NESHAP 5D CO Calculated EF (lb/MMBtu)	NESHAP 5D CO Limit Emission Limit[1] (ppmvd@3%O_2)	$CF_{3 \rightarrow 0\%O2}$ (unitless)	$CF_{ppm \rightarrow lb/dscfCO}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Stokers/sloped grate/others designed to burn wet biomass fuel	Wood	1.176	1500	1.168	7.27E-08	9240
	Bark	1.222	1500			9600
Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	Wood	0.361	460			9240
	Bark	0.375	460			9600
Fluidized bed units designed to burn biomass/bio-based solids	Wood	0.369	470			9240
	Bark	0.383	470			9600
Suspension burners designed to burn biomass/bio-based solids	Wood	1.882	2400			9240
	Bark	1.956	2400			9600
Dutch ovens/pile burners designed to burn biomass/bio-based solids	Wood	0.604	770			9240
	Bark	0.627	770			9600
Fuel cell units designed to burn biomass/bio-based solids	Wood	0.863	1100			9240
	Bark	0.896	1100			9600
Hybrid suspension grate boiler designed to burn biomass/bio-based solids	Wood	2.196	2800			9240
	Bark	2.281	2800			9600

[1] Least stringent emission limit selected to calculate EF when NESHAP 5D allows source to choose from among more than one.

For "New" Units (Commencing Construction or Reconstruction after June 4, 2010)

Boiler Design	Fuel	NESHAP 5D CO Calculated EF (lb/MMBtu)	NESHAP 5D CO Limit Emission Limit[1] (ppmvd@3%O_2)	$CF_{3 \rightarrow 0\%O2}$ (no units)	$CF_{ppm \rightarrow lb/dscfCO}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Stokers/sloped grate/others designed to burn wet biomass fuel	Wood	0.486	620	1.168	7.27E-08	9240
	Bark	0.505	620			9600
Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	Wood	0.361	460			9240
	Bark	0.375	460			9600
Fluidized bed units designed to burn biomass/bio-based solids	Wood	0.243	310			9240
	Bark	0.253	310			9600
Suspension burners designed to burn biomass/bio-based solids	Wood	1.882	2400			9240
	Bark	1.956	2400			9600
Dutch ovens/pile burners designed to burn biomass/bio-based solids	Wood	0.408	520			9240
	Bark	0.424	520			9600
Fuel cell units designed to burn biomass/bio-based solids	Wood	0.714	910			9240
	Bark	0.741	910			9600
Hybrid suspension grate boiler designed to burn biomass/bio-based solids	Wood	0.863	1100			9240
	Bark	0.896	1100			9600

[1] Least stringent emission limit selected to calculate EF when NESHAP 5D allows source to choose from among more than one.

Selection: Option 1. No FARR, NSPS or NESHAP 6J CO limits apply to wood residue-fired boilers. If the wood residue-fired boiler is subject to NESHAP 5D, employ NESHAP 5D CO emission limits as PTE EF as illustrated in Option 2.

2

Option 1: 4.8×10^{-5} lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-4.

Selection: Option 1. Note that no FARR, NESHAP or NSPS lead limits apply to wood residue-fired boilers.

3

Option 1: 0.22 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2 for wet wood-fired boiler

Option 2: 0.49 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2 for dry wood-fired boiler

Selection: Option 2. The NO_X emission factors for combusting wet and dry wood are 0.22 and 0.49 lb/MMBtu, respectively. Because each source in Pacific Northwest Indian Country is allowed to combust dry wood in its biomass boiler, it is appropriate to assume combustion of that higher-emitting dry wood in determining NO_X PTE. Note that no FARR, NESHAP or NSPS NO_X limits apply to wood residue-fired boilers.

Option 1: 0.030 - 0.20 lb/MMBtu (EPA Reference Method 5)

Basis: NSPS Subpart Db as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Action*	Date Action Commenced	ACF	NSPS Db PM Emission Limit (lb/MMBtu)	NSPS Db PM Emission Limit (% removal)	Regulatory Citation
100 < X	C, R, M	06/19/84 < Y ≤ 02/28/05	30% < Z	0.10	N/A	60.43b(c)(1)
100 < X ≤ 250	C, R, M	06/19/84 < Y ≤ 02/28/05	30% ≥ Z	0.20	N/A	60.43b(c)(2)
100 < X	C, R, M	02/28/05 < Y	N/A	0.030	N/A	60.43b(h)(1)
100 < X	M	02/28/05 < Y	N/A	0.051	99.8	60.43b(h)(2)
100 < X ≤ 250	M	02/28/05 < Y	30% < Z	0.10	N/A	60.43b(h)(3)
250 < X	M	02/28/05 < Y	30% < Z	0.085	N/A	60.43b(h)(4)

* C - construction, R - reconstruction and M - modification

Option 2: 0.030 - 0.30 lb/MMBtu (EPA Reference Method 5)

Basis: NSPS Subpart Dc as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Action*	Date Action Commenced	ACF	NSPS Dc PM Emission Limit (lb/MMBtu)	NSPS Dc PM Emission Limit (% removal)	Regulatory Citation
30 ≤ X ≤ 100	C, R, M	06/09/89 < Y ≤ 02/28/05	30% < Z	0.10	N/A	60.43c(b)(1)
	C, R, M	06/09/89 < Y ≤ 02/28/05	30% ≥ Z	0.30	N/A	60.43c(b)(2)
	C, R, M	02/28/05 < Y	N/A	0.030	N/A	60.43c(e)(1)
	M	02/28/05 < Y	N/A	0.051	99.8	60.43c(e)(2)
	M	02/28/05 < Y	30% < Z	0.10	N/A	60.43c(e)(3)

* C - construction, R - reconstruction and M - modification

Option 3: 0.03 - 0.07 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 6J as follows:

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 6J PM Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.11201(a) and NESHAP 5D…
30 ≤ X	06/04/10 < Y	0.03	Table 1, Row 3
10 ≤ X < 30	06/04/10 < Y	0.07	Table 1, Row 4

Option 4: 0.0032 - 0.44 lb/MMBtu (EPA Reference Method 5)

Basis: NESHAP 5D as follows:

• NESHAP 5D specifies a range of different PM emission limits based upon (a) the date the boiler commenced construction or reconstruction, (b) the design of the boiler and (c) type of fuel combusted. For the purpose of this PTE EF exercise, only the emission limits in units of "lb/MMBtu heat input" will be employed here. The source may choose to comply with an alternative "lb/MMBtu heat input" emission limit for total selected metals (TSM). Because TSM constitutes only a fraction of total PM, TSM emission limits will not be considered in determining PM PTE EF. TSM is limited to arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	Boiler Design	NESHAP 5D PM Emission Limit (lb/MMBtu; 3-run avg)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	Stokers/sloped grate/others designed to burn wet biomass fuel	0.037	Table 2, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	0.32	Table 2, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	0.11	Table 2, Row 9
		Suspension burners designed to burn biomass/bio-based solid	0.051	Table 2, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	0.28	Table 2, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	0.02	Table 2, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	0.44	Table 2, Row 13
	06/04/10 < Y	Stokers/sloped grate/others designed to burn wet biomass fuel	0.03	Table 1, Row 7
		Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	0.03	Table 1, Row 8
		Fluidized bed units designed to burn biomass/bio-based solid	0.0098	Table 1, Row 9
		Suspension burners designed to burn biomass/bio-based solid	0.03	Table 1, Row 10
		Dutch ovens/pile burners designed to burn biomass/bio-based solid	0.0032	Table 1, Row 11
		Fuel cell units designed to burn biomass/bio-based solid	0.02	Table 1, Row 12
		Hybrid suspension grate boiler designed to burn biomass/bio-based solid	0.026	Table 1, Row 13

4

Option 5: 0.397 lb/MMBtu for wood and 0.412 lb/MMBtu for bark (EPA Reference Method 5)

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2)

EF (lb/MMBtu) = FARR PM Limit (gr/dscf@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X F_d (dscf/MMBtu) / $CF_{gr\rightarrow lb}$

• $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Fuel	FARR PM Calculated EF (lb/MMBtu)	FARR PM Emission Limit (gr/dscf @7%O_2)	$CF_{7\rightarrow 0\%O2}$ (unitless)	F_d (dscf/MMBtu)	$CF_{gr\rightarrow lb}$ (gr/lb)
Wood	0.397	0.2	1.504	9240	7000
Bark	0.412	0.2	1.504	9600	7000

Option 6: 0.35 lb/MMBtu (EPA Reference Method 5)

Basis: (a) AP-42, September 2003. Table 1.6-1. (b) Fuel blending and installation of mechanical collectors to comply with FARR PM limit.

According to AP-42 Table 1.6-1, combustion of dry and wet wood in the absence of control equipment results in PM emissions of 0.40 and 0.33 lb/MMBtu, respectively. Combustion of bark and wet wood together without controls results in PM emissions of 0.56 lb/MMBtu. While combustion of wood alone may result in exceedances of the FARR PM emission limit (40 CFR 49.152(d)(2)) if controls are not installed (0.40 and 0.33 ~ 0.397), combustion of bark and wet wood together will likely result in exceedances (0.56 > 0.412). Installing mechanical collectors and blending bark with wood results in PM emissions less than or equal to 0.35 lb/MMBtu.

Selection: Option 5. Because each source in Pacific Northwest Indian Country is subject to the FARR and allowed to combust bark in its biomass boiler, it is appropriate to assume compliance with the FARR and combustion of that slightly higher-emitting bark in determining PM PTE. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

5

Option 1: 0.047 - 0.217 lb/MMBtu

Basis: NSPS Subpart Db (0.03 - 0.20 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 2: 0.047 - 0.317 lb/MMBtu

Basis: NSPS Subpart Dc (0.03 - 0.30 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 3: 0.047 - 0.087 lb/MMBtu

Basis: NESHAP 6J (0.03 - 0.07 lb/MMbtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 4: 0.0202 - 0.457 lb/MMBtu

Basis: NESHAP 5D (0.0032 - 0.44 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 5: 0.429 lb/MMBtu

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2) for filterable portion and AP-42 for condensible portion.

As stated previously in analysis of PM EF, an EF of 0.412 is calculated assuming compliance with FARR PM limit and combustion of bark. EPA Reference Method 5 is the test method employed to determine compliance with the limit. EPA Reference Method 5 measures only filterable PM, but PM_{10} consists of both a filterable and condensible portion. AP-42 estimates the condensible contribution to be 0.017 lb/MMBtu. Adding the two together, 0.412 + 0.017 = 0.429 lb/MMBtu.

Selection: Option 5. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

6

Option 1: 0.047 - 0.217 lb/MMBtu

Basis: NSPS Subpart Db (0.03 - 0.20 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 2: 0.047 - 0.317 lb/MMBtu

Basis: NSPS Subpart Dc (0.03 - 0.30 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 3: 0.047 - 0.087 lb/MMBtu

Basis: NESHAP 6J (0.03 - 0.07 lb/MMbtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 4: 0.0202 - 0.457 lb/MMBtu

Basis: NESHAP 5D (0.0032 - 0.44 lb/MMBtu) as noted above for PM plus 0.017 lb/MMBtu condensible portion as noted in AP-42.

Option 5: 0.429 lb/MMBtu

Basis: FARR wood-fired boiler stack PM emission limit of 0.2 gr/dscf corrected to 7% O_2 at 40 CFR 49.125(d)(2) for filterable portion and AP-42 for condensible portion.

As stated previously in analysis of PM EF, an EF of 0.412 is calculated assuming compliance with FARR PM limit and combustion of bark. EPA Reference Method 5 is the test method employed to determine compliance with the limit. EPA Reference Method 5 measures only filterable PM, but $PM_{2.5}$ consists of both a filterable and condensible portion. AP-42 estimates the condensible contribution to be 0.017 lb/MMBtu. Adding the two together, 0.412 + 0.017 = 0.429 lb/MMBtu.

Selection: Option 5. If the wood residue-fired boiler is subject to NSPS Db or Dc or NESHAP 6J or 5D, employ NSPS and NESHAP PM emission limits as PTE EF.

7

Option 1: 1.153 lb/MMBtu for wood and 1.198 lb/MMBtu for bark

Basis: FARR combustion source stack SO_2 emission limit of 500 parts per million by volume dry basis (ppmvd) corrected to 7% O_2 at 40 CFR 49.129(d)(1)

EF (lb/MMBtu) = FARR SO_2 Limit (ppmvd@7%O_2) X $CF_{7\rightarrow 0\%O2}$ X $CF_{ppm\rightarrow lb/dscfSO2}$ X F_d (dscf/MMBtu)

• $CF_{7\rightarrow 0\%O2}$ = (20.9 - X_{O2Fd}) / (20.9 - X_{O2FARR}). To create a correction factor that adjusts the basis of the FARR emission limit from 7% O_2 to 0% O_2 (the basis for F_d), X_{O2Fd} = 0 and X_{O2FARR} = 7. The value 20.9 is the percent by volume of the ambient air that is O_2. Decreasing the O_2 from the FARR baseline increases the pollutant concentration. See Equation 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• $CF_{ppm\rightarrow lb/dscfSO2}$ = 1.660 X 10^{-7} lb SO_2/dscf / ppm SO_2. See Table 19-1 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

• F_d = 9,240 dscf/MMBtu for combustion of "wood" or 9,600 dscf/MMBtu for combustion of "wood bark." See Table 19-2 of EPA Method 19 at Appendix A-7 to 40 CFR Part 60.

Fuel	FARR 500 ppm Calculate SO_2 EF (lb/MMBtu)	FARR SO_2 Emission Limit (ppmvd@7%O_2)	$CF_{7\rightarrow 0\%O2}$ (unitless)	$CF_{ppm\rightarrow lb/dscfSO2}$ (lb/dscf / ppm)	F_d (dscf/MMBtu)
Wood	1.153	500	1.504	1.66E-07	9240
Bark	1.198	500	1.504	1.66E-07	9600

Option 2: 4.615 lb/MMBtu for wood and 4.444 lb/MMBtu for bark

Basis: FARR solid fuel sulfur limit of 2% by weight (dry) at 40 CFR 49.130(d)(7)

EF (lb/MMBtu) = {[FARR Fuel S Limit (%S) / 100] X $CF_{S\rightarrow SO2}$ / HV_{fuel} (Btu/lb)} X $CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu)

• $CF_{S\rightarrow SO2}$ = 2 lb SO_2/lb S. S + $O_2 \rightarrow SO_2$. For every 1 mol S (16 lb/lb-mol) reactant, there is 1 mol SO_2 (32 lb/lb-mol) product. 32 / 16 = 2.

• HV (heating value) wood (dry) = 8,667 Btu/lb. (5200/(1-0.4)). HV bark (dry) = 9,000 Btu/lb. (4500/(1-0.5)). See page A-5 of Appendix A to AP-42, September 1985.

Fuel	FARR Fuel S Calculate SO_2 EF (lb/MMBtu)	FARR Fuel Sulfur Limit (% by weight)	$CF_{S\rightarrow SO2}$ (lb SO_2/lb S)	HV_{fuel} (Btu/lb)	$CF_{Btu\rightarrow MMBtu}$ (Btu/MMBtu)
Wood	4.615	2	2	8667	1.0E+06
Bark	4.444	2	2	9000	1.0E+06

Option 3: 0.025 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-2.

Selection: Option 1. Most stringent limit selected to calculate EF.

Option 1: 0.023 lb/MMBtu

Basis: AP-42, September 2003. Table 1.6-3 and calculating VOC as compound emitted.

Calculating VOC (as weighted-average VOC)

VOC (as weighted-average VOC) = (VOC_C) X [($MW_{wt\text{-}avg\ VOC}$) / (MW_C)] X [(#C_C) / (#$C_{wt\text{-}avg\ VOC}$)]

where:

VOC_C equals "0.017 lb/MMBtu" from AP-42, September 2003. Table 1.6-3.

$MW_{wt\text{-}avg\ VOC}$ equals "64.689 lb/lb-mol" and is the weighted-average molecular weight for VOC assuming speciated organic compound ratios supported by AP-42 Table 1.6-3

MW_C equals "12.0110 lb/lb-mol" and represents the molecular weight for carbon

#C_C equals "1" as the single carbon atom was the "basis" for which Method 25 VOC test results were determined

#$C_{wt\text{-}avg\ VOC}$ equals "3.975" and is the weighted-average number of carbon atoms present in VOC assuming speciated organic compound ratios supported by AP-42 Table 1.6-3

Calculating value for VOC (as weighted-average VOC):

VOC (as carbon):	0.017	lb/MMBtu
$MW_{wt\text{-}avg\ VOC}$:	64.689	lb/lb-mol
MW_C:	12.011	lb/lb-mol
#C_C:	1	
#$C_{wt\text{-}avg\ VOC}$:	3.975	
VOC (as weighted average VOC)	0.023	lb/MMBtu

The first two columns of the following table are extracted from AP-42, September 2003. Table 1.6-3. The third and fourth columns were created based upon information widely available over the internet. The fifth and sixth columns illustrate calculations necessary to determine weighted-average molecular weight and weighted-average number of carbon atoms comprising VOC emissions resulting from wood residue combustion.

Wood Residue Combustion Organic Compounds	EF (lb/MMBtu)	MW lb/lb-mol	Number of Carbon Atoms	EF x MW	EF X #C atoms
Acenaphthene	9.10E-07	154.21	12	1.40E-04	1.09E-05
Acenaphthylene	5.00E-06	152.19	12	7.61E-04	6.00E-05
Acetaldehyde	8.30E-04	44.05	2	3.66E-02	1.66E-03
Acetone	1.90E-04	58.08	3	1.10E-02	5.70E-04
Acetophenone	3.20E-09	120.15	8	3.84E-07	2.56E-08
Acrolein	4.00E-03	56.06	3	2.24E-01	1.20E-02
Anthracene	3.00E-06	178.23	14	5.35E-04	4.20E-05
Benzaldehyde	8.50E-07	106.12	7	9.02E-05	5.95E-06
Benzene	4.20E-03	78.11	6	3.28E-01	2.52E-02
Benzo(a)anthracene	6.50E-08	228.29	18	1.48E-05	1.17E-06
Benzo(a)pyrene	2.60E-06	252.31	20	6.56E-04	5.20E-05
Benzo(b)fluoranthene	1.00E-07	252.31	20	2.52E-05	2.00E-06
Benzo(e)pyrene	2.60E-09	252.31	20	6.56E-07	5.20E-08
Benzo(g,h,i)perylene	9.30E-08	276.33	22	2.57E-05	2.05E-06
Benzo(j,k)fluoranthene	1.60E-07	202.26	16	3.24E-05	2.56E-06
Benzo(k)fluoranthene	3.60E-08	252.31	20	9.08E-06	7.20E-07
Benzoic acid	4.70E-08	122.12	7	5.74E-06	3.29E-07
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08	390.56	24	1.84E-05	1.13E-06
Bromomethane (Methyle bromide)	1.50E-05	94.94	1	1.42E-03	1.50E-05
2-Butanone (MEK)	5.40E-06	72.11	4	3.89E-04	2.16E-05
Carbazole	1.80E-06	167.21	12	3.01E-04	2.16E-05
Carbon tetrachloride	4.50E-05	153.82	1	6.92E-03	4.50E-05
Chlorobenzene	3.30E-05	112.56	6	3.71E-03	1.98E-04
Chloroform	2.80E-05	119.38	1	3.34E-03	2.80E-05
Chloromethane (Methyl chloride)	2.30E-05	50.49	1	1.16E-03	2.30E-05
2-Chloronaphthalene	2.40E-09	162.62	10	3.90E-07	2.40E-08
2-Chlorophenol	2.40E-08	128.56	6	3.09E-06	1.44E-07
Chrysene	3.80E-08	228.28	18	8.67E-06	6.84E-07
Crotonaldehyde	9.90E-06	70.09	4	6.94E-04	3.96E-05
Decachlorobiphenyl	2.70E-10	498.6584	12	1.35E-07	3.24E-09
Dibenzo(a,h)anthracene	9.10E-09	278.35	22	2.53E-06	2.00E-07
1,2-Dibromoethene	5.50E-05	185.85	2	1.02E-02	1.10E-04
Dichlorobiphenyl	7.40E-10	223.09792	12	1.65E-07	8.88E-09
1,2-Dichloroethane (Ethylene dichloride)	2.90E-05	98.96	2	2.87E-03	5.80E-05
Dichloromethane (Methylene chloride)	2.90E-04	84.93	2	2.46E-02	5.80E-04
1,2-Dichloropropane (Propylene dichloride)	3.30E-05	122.99	3	4.06E-03	9.90E-05
2,4-Dinitrophenol	1.80E-07	184.11	6	3.31E-05	1.08E-06
Ethyl benzene	3.10E-05	106.17	8	3.29E-03	2.48E-04
Fluoranthene	1.60E-06	202.26	16	3.24E-04	2.56E-05
Fluorene	3.40E-06	166.22	13	5.65E-04	4.42E-05
Formaldehyde	4.40E-03	30.03	1	1.32E-01	4.40E-03
Heptachlorobiphenyl	6.60E-11	395.32322	12	2.61E-08	7.92E-10
Hexachlorobiphenyl	5.50E-10	360.87816	12	1.98E-07	6.60E-09
Hexanal	7.00E-06	100.15888	6	7.01E-04	4.20E-05
Heptachlorodibenzo-p-dioxins	2.00E-09	425.30614	12	8.51E-07	2.40E-08
Heptachlorodibenzo-p-furans	2.40E-10	409.30674	12	9.82E-08	2.88E-09
Hexachlorodibenzo-p-dioxins	1.60E-06	390.82	12	6.25E-04	1.92E-05
Hexachlorodibenzo-p-furans	2.80E-10	374.86168	12	1.05E-07	3.36E-09
Indeno(1,2,3-cd)pyrene	8.70E-08	326.34	22	2.84E-05	1.91E-06
Isobutyraldehyde	1.20E-05	72.10572	4	8.65E-04	4.80E-05
2-Methylnaphthalene	1.60E-07	142.20	11	2.28E-05	1.76E-06
Monochlorobiphenyl	2.20E-10	187.64492	12	4.13E-08	2.64E-09
Naphthalene	9.70E-05	128.17	10	1.24E-02	9.70E-04
2-Nitrophenol	2.40E-07	139.11	6	3.34E-05	1.44E-06
4-Nitrophenol	1.10E-07	139.11	6	1.53E-05	6.60E-07
Octachlorodibenzo-p-dioxins	6.60E-08	459.7512	12	3.03E-05	7.92E-07
Octachlorodibenzo-p-furans	8.80E-11	443.7518	12	3.91E-08	1.06E-09
Pentachlorodibenzo-p-dioxins	1.50E-09	356.41602	12	5.35E-07	1.80E-08
Pentachlorodibenzo-p-furans	4.20E-10	340.41662	12	1.43E-07	5.04E-09
Pentachlorobiphenyl	1.20E-09	326.4331	12	3.92E-07	1.44E-08
Pentachlorophenol	5.10E-08	266.34	6	1.36E-05	3.06E-07
Perylene	5.20E-10	252.31	20	1.31E-07	1.04E-08
Phenanthrene	7.00E-06	178.23	14	1.25E-03	9.80E-05
Phenol	5.10E-05	94.11	6	4.80E-03	3.06E-04
Propanal	3.20E-06	58.08	3	1.86E-04	9.60E-06
Propionaldehyde	6.10E-05	58.08	3	3.54E-03	1.83E-04
Pyrene	3.70E-06	202.25	16	7.48E-04	5.92E-05
Styrene	1.90E-03	104.15	8	1.98E-01	1.52E-02
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.60E-12	321.97096	12	2.77E-09	1.03E-10
Tetrachlorodibenzo-p-dioxins	4.70E-10	321.97096	12	1.51E-07	5.64E-09
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11	305.97156	12	2.75E-08	1.08E-09

	Tetrachlorodibenzo-p-furans	7.50E-10	305.97156	12	2.29E-07	9.00E-09
	Tetrachlorobiphenyl	2.50E-09	291.98804	12	7.30E-07	3.00E-08
	Tetrachloroethene (Tetrachloroethylene)	3.80E-05	165.83	2	6.30E-03	7.60E-05
	o-Tolualdehyde	7.20E-06	120.15	8	8.65E-04	5.76E-05
	p-Tolualdehyde	1.10E-05	120.15	8	1.32E-03	8.80E-05
	Toluene	9.20E-04	92.14	7	8.48E-02	6.44E-03
	Trichlorobiphenyl	2.60E-09	257.54298	12	6.70E-07	3.12E-08
	1,1,1-trichloroethane (Methyl chloroform)	3.10E-05	133.40	2	4.14E-03	6.20E-05
	Trichloroethene (Trichloroethylene)	3.00E-05	131.39	2	3.94E-03	6.00E-05
	Trichlorofluoromethane	4.10E-05	137.37	1	5.63E-03	4.10E-05
	2,4,6-Trichlorophenol	2.20E-08	197.45	6	4.34E-06	1.32E-07
	Vinyl chloride	1.80E-05	62.50	2	1.13E-03	3.60E-05
	o-Xylene	2.50E-05	106.16	8	2.65E-03	2.00E-04
	TOTAL	1.75E-02			1.13E+00	6.96E-02
				weighted-average molecular weight of VOC →	64.689	3.975 ← weighted-average number of carbon atoms comprising VOC

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Option 1: 195 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb CO_2/MMBtu) X GWP_{CO2} (lb CO_2e/lb CO_2)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb CO_2/MMBtu)	40 CFR 98 GWP_{CO2} (lb CO_2e/lb CO_2)
195.0	195	1

Option 2: 206.8 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-1. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg CO_2/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{CO2} (lb CO_2e/lb CO_2)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg CO_2/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{CO2} (lb CO_2e/lb CO_2)
206.8	93.8	2.20462262	1

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

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Option 1: 0.4 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb CH_4/MMBtu) X GWP_{CH4} (lb CO_2e/lb CH_4)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb CH_4/MMBtu)	40 CFR 98 GWP_{CH4} (lb CO_2e/lb CH_4)
0.4	0.021	21

Option 2: 1.5 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-2. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg CH_4/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{CH4} (lb CO_2e/lb CH_4)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg CH_4/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{CH4} GWP_{CH4} (lb CO_2e/lb CH_4)
1.5	0.032	2.20462262	21

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

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Option 1: 4.0 lb CO_2e/MMBtu

Basis: (a) AP-42, September 2003. Table 1.6-3. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (lb N_2O/MMBtu) X GWP_{N2O} (lb CO_2e/lb N_2O)

AP-42 Calculated CO_2e EF (lb CO_2e/MMBtu)	AP-42 EF (lb N_2O/MMBtu)	40 CFR 98 GWP_{N2O} (lb CO_2e/lb N_2O)
4.0	0.013	310

Option 2: 2.9 lb CO_2e/MMBtu

Basis: (a) 40 CFR 98, Subpart C. Table C-2. (b) 40 CFR 98, Subpart A. Table A-1.

EF (lb CO_2e/MMBtu) = EF (kg N_2O/MMBtu) X $CF_{kg \rightarrow lb}$ (lb/kg) X GWP_{N2O} (lb CO_2e/lb N_2O)

40 CFR 98 Calculated CO_2e EF (lb CO_2e/MMBtu)	40 CFR 98 EF (kg N_2O/MMBtu)	$CF_{kg \rightarrow lb}$ (lb/kg)	40 CFR 98 GWP_{N2O} (lb CO_2e/lb N_2O)
2.9	0.0042	2.20462262	310

Selection: Option 2. EPA's March 2011 guidance document "PSD and Title V Permitting Guidance for Greenhouse Gases" states that the GHG Report Rule (40 CFR 98), "should be considered a primary reference for sources and permitting authorities in estimating GHG emissions and establishing measurement techniques when preparing or processing permit applications."

ACF: Annual Capacity Factor for Wood
C: Construction
CF: Conversion Factor
EF: Emission Factor
FARR: Federal Air Rules for Reservations
GWP: Global Warming Potential
HV: Heating Value
M: Modification
MW: Molecular Weight
PTE: Potential to Emit
R: Reconstruction

EPA Region 10 Hazardous Air Pollutant Potential to Emit Emission Factors for Wood Residue-Fired Boilers, July 2013.

HAP Categories	EF (lb/MMBtu)
Trace Metal Compounds[1]	1.78E-03
Other Inorganic Compounds[2]	1.98E-02
Organic Compounds[3]	1.72E-02
TOTAL	3.87E-02

[1] See Table 1.

[2] See Table 2.

[3] See Table 3.

Table 1 - Trace Metal HAP EF[1]

Trace Metal Compounds	EF (lb/MMBtu)
Antimony Compounds	7.90E-06
Arsenic Compounds (including arsine)	2.20E-05
Beryllium Compounds	1.10E-06
Cadmium Compounds	4.10E-06
Chromium Compounds (including hexavalent)	2.10E-05
Cobalt Compounds	6.50E-06
Lead Compounds (not elemental lead)	4.80E-05
Manganese Compounds	1.60E-03
Mercury Compounds[2]	3.50E-06
Nickel Compounds	3.30E-05
Phophorus	2.70E-05
Selenium Compounds	2.80E-06
SUBTOTAL	1.78E-03

EF Basis: AP-42, September 2003. Table 1.6-4.

[1] Major Source Boiler MACT ("NESHAP Subpart DDDDD" or "NESHAP 5D") provides a source the option of complying with an emission limit for either PM or total selected metals (TSM). TSM includes only arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium. Because NESHAP 5D does not limit TSM compounds individually, it is not possible to create compound-specific EF. AP-42 will remain the basis for the PTE EF even if a boiler is subject to NESHAP 5D.

[2] If boiler is subject to NESHAP 5D, do not use mercury EF listed in table. Instead, employ emission limits specified in table immediately below beginning on source's compliance date. Existing sources must comply with NESHAP 5D emission limits beginning circa January 1, 2016.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 5D Mercury Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	5.7E-06	Table 2, Row 1
	06/04/10 < Y	8.0E-07	Table 1, Row 1

Table 2 - Other Inorganic HAP EF

Other Inorganic Compounds	EF (lb/MMBtu)
Chlorine	7.90E-04
Hydrochloric acid (hydrogen chloride)[1]	1.90E-02
SUBTOTAL	1.98E-02

EF Basis: AP-42, September 2003. Table 1.6-3.

[1] If boiler is subject to NESHAP 5D, do not use hydrogen chloride EF listed in table. Instead, employ emission limits specified in table immediately below beginning on source's compliance date. Existing sources must comply with NESHAP 5D emission limits beginning circa January 1, 2016.

Maximum Design Heat Input Capacity (MMBtu/hr)	Date Construction or Reconstruction Commenced	NESHAP 5D Hydrogen Chloride Emission Limit (lb/MMBtu)	Regulatory Citation 40 CFR 63.7500(a)(1) and NESHAP 5D…
10 ≤ X	Y ≤ 06/04/10	2.2E-02	Table 2, Row 1
10 ≤ X	06/04/10 < Y	2.2E-02	Table 1, Row 1

Table 3 - Organic HAP EF

Organic Compounds	EF (lb/MMBtu)
Acetaldehyde	8.30E-04
Acetophenone	3.20E-09
Acrolein	4.00E-03
Benzene	4.20E-03
Bis(2-ethylhexyl)phthalate (DEHP)	4.70E-08
Carbon tetrachloride	4.50E-05
Chlorobenzene	3.30E-05
Chloroform	2.80E-05
Dibenzofurans*[1]	1.87E-09
2,4-Dinitrophenol	1.80E-07
Ethyl benzene	3.10E-05
Ethylene dichloride (1,2-Dichloroethane)	2.90E-05
Formaldehyde	4.40E-03
Methyl bromide (Bromomethane)	1.50E-05
Methyl chloride (Chloromethane)	2.30E-05
Methyl chloroform (1,1,1-trichloroethane)	3.10E-05
Methylene chloride (Dichloromethane)	2.90E-04
Naphthalene*	9.70E-05
4-Nitrophenol	1.10E-07
Pentachlorophenol	5.10E-08
Phenol	5.10E-05
Polychlorinated biphenyls (PCB)[2]	8.15E-09
Polycyclic Organic Matter (POM)[3]	1.27E-04
Propionaldehyde	6.10E-05
Propylene dichloride (1,2-Dichloropropane)	3.30E-05
Styrene	1.90E-03
2,3,7,8-Tetrachlorodibenzo-p-dioxin*	8.60E-12
Tetrachloroethylene (tetrachloroethene)	3.80E-05
Toluene	9.20E-04
Trichloroethylene (Trichloroethene)	3.00E-05
2,4,6-Trichlorophenol	2.20E-08
Vinyl chloride	1.80E-05
Xylenes (inlc isomers and mixtures)	2.50E-05
SUBTOTAL[4]	1.72E-02

EF Basis: AP-42, September 2003. Table 1.6-3.

* designates a HAP that is subject individually to the 10 tpy major source threshold, but that is also one of several polycyclic organic matter (POM) compounds that, in aggregate, are subject to the same 10 tpy major source threshold.

[1] See Table 4 for list of individual dibenzofurans.

[2] See Table 5 for list of individual polychlorinated biphenyls (PCBs).

[3] See Table 6 for list of individual polycyclic organic matter (POM) compounds. POM defines a broad class of compounds that generally includes all organic structures having two or more fused aromatic rings (i.e., rings that share a common border), and that have a boiling point greater than or equal to 212°F (100°C). See http://www.epa.gov/ttn/atw/hlthef/polycycl.html#ref11

[4] Because dibenzofurans, naphthalene and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (one of several dibenzodioxins) are accounted for individually and in the calculation of POM EF, their individual contribution here is discounted so as to avoid double-counting.

Table 4 - Dibenzofurans EF

Dibenzofurans	EF (lb/MMBtu)
Heptachlorodibenzo-p-furans	2.40E-10
Hexachlorodibenzo-p-furans	2.80E-10
Octachlorodibenzo-p-furans	8.80E-11
Pentachlorodibenzo-p-furans	4.20E-10
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11
Tetrachlorodibenzo-p-furans	7.50E-10
SUBTOTAL	1.87E-09

EF Basis: AP-42, September 2003. Table 1.6-3.

Table 5 - PCB EF

PCB Compounds	EF (lb/MMBtu)
Decachlorobiphenyl	2.70E-10
Dichlorobiphenyl	7.40E-10
Heptachlorobiphenyl	6.60E-11
Hexachlorobiphenyl	5.50E-10
Monochlorobiphenyl	2.20E-10
Pentachlorobiphenyl	1.20E-09
Tetrachlorobiphenyl	2.50E-09
Trichlorobiphenyl	2.60E-09
SUBTOTAL	8.15E-09

EF Basis: AP-42, September 2003. Table 1.6-3.

Table 6 - POM EF

POM Compounds	EF (lb/MMBtu)
Acenaphthene*	9.10E-07
Acenaphthylene*	5.00E-06
Anthracene*	3.00E-06
Benzo(a)anthracene*	6.50E-08
Benzo(b)fluoranthene*	1.00E-07
Benzo(j,k)fluoranthene*	1.60E-07
Benzo(k)fluoranthene*	3.60E-08
Benzo(g,h,i)perylene*	9.30E-08
Benzo(a)pyrene*	2.60E-06
Benzo(e)pyrene*	2.60E-09
2-Chloronaphthalene	2.40E-09
Chrysene*	3.80E-08
Dibenzo(a,h)anthracene*	9.10E-09
Dibenzodioxins**,[1]	1.67E-06
Dibenzofurans**,[2]	1.87E-09
Fluoranthene*	1.60E-06
Fluorene*	3.40E-06
Indeno(1,2,3-cd)pyrene*	8.70E-08
2-Methylnaphthalene	1.60E-07
Naphthalene***	9.70E-05
Perylene	5.20E-10
Phenanthrene*	7.00E-06
Pyrene*	3.70E-06
SUBTOTAL	1.27E-04

EF Basis: AP-42, September 2003. Table 1.6-3.

* designates a polycyclic aromatic hydrocarbon (PAH). PAHs are potent atmospheric pollutants that consist of fused aromatic rings and do not contain heteroatoms or carry substituents. See http://en.wikipedia.org/wiki/Polycyclic_aromatic_hydrocarbon#PAH_compounds

** designates a POM compound that is also an individual HAP. For Dibenzodioxins, only 2,3,7,8-Tetrachlorodibenzo-p-dioxins is also an individual HAP.

[1] See Table 7.

[2] See Table 4.

Table 7 - Dibenzodioxins EF

Dibenzodioxins	EF (lb/MMBtu)
Heptachlorodibenzo-p-dioxins	2.00E-09
Hexachlorodibenzo-p-dioxins	1.60E-06
Octachlorodibenzo-p-dioxins	6.60E-08
Pentachlorodibenzo-p-dioxins	1.50E-09
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.60E-12
Tetrachlorodibenzo-p-dioxins	4.70E-10
SUBTOTAL	1.67E-06

EF Basis: AP-42, September 2003. Table 1.6-3.

Appendix A: Potential Emissions Inventory

EPA Region 10 Particulate Matter Emission Factors for Sawmills, February 2013

No.	Emissions Generating Activity	PM EF	PM_{10} % of PM	PM_{10} EF	$PM_{2.5}$ % of PM	$PM_{2.5}$ EF	Units[1]
Sawmill Activities (upstream of lumber drying)							
IMPORTANT: If sawmill activities (categories No. 1 - 5 listed below) occur within a building, reduce the PM, PM_{10} and $PM_{2.5}$ EF listed below by 80 percent (engineering judgement) as emissions struggle to escape through doorways and other openings. If an activity occurs within an interior enclosure of the building and the activity's by-products are evacuated pneumatically from the building to a target box, cyclone or bag filter system, then only the associated downstream "material handling" emissions are counted.							
1	Log Bucking	0.035	50	0.0175	25	0.00875	lb/ton log
2	Log Debarking	0.024	50	0.012	25	0.006	lb/ton log
3	Hogging	0.050	50	0.025	25	0.0125	lb/bdt material
4	Sawing	0.350	50	0.175	25	0.0875	lb/ton log
5	Chipping	0.050	50	0.025	25	0.0125	lb/bdt material
Planing Activities (downstream of lumber drying)							
6	Accumulation of activities that generate planed dry lumber, chips, sawdust and shavings from rough dried lumber	0.0812	50	0.0406	25	0.0203	lb/mbf
By-Product Conveying or "Material Handling" Activities							
IMPORTANT: The "material" in the "material handling" entries listed below refers to bark, hogged fuel, green chips, dry chips, green sawdust, dry sawdust, shavings and any other woody by-product of lumber production. In the case of material "drops," EF are to be applied to each "drop" separately. Similarly, EF are to be applied to each "material handling" device separately.							
7	"Drop" of "wet" material from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and target box, (b) loadout from target box into a truck bed or railcar and (c) drop onto a pile.	0.00075	N/A	0.00035	N/A	0.00005	lb/bdt material
8	"Drop" of "dry" material from one surface to another including, but not limited to, (a) each mechanical conveyance drop between point of generation and target box, (b) loadout from target box into a truck bed or railcar and (c) drop onto a pile.	0.0015	N/A	0.0007	N/A	0.0001	lb/bdt material
9	Pneumatically convey material through medium efficiency cyclone to bin	0.5	85	0.425	50	0.25	lb/bdt material
10	Pneumatically convey material through high efficiency cyclone to bin	0.2	95	0.19	80	0.16	lb/bdt material
11	Pneumatically convey material through cyclone to bin. Exhaust routed through baghouse.	0.001	99.5	0.000995	99	0.00099	lb/bdt material
12	Pneumatically convey material into target box	0.1	85	0.085		0	lb/bdt material
Yard Activities							
13	Wind Erosion of Pile	0.38	50	0.19	25	0.095	ton/acre-yr
14	Paved Roads	Emission factors based upon site-specific parameters.					lb/VMT
15	Unpaved Roads	Emission factors based upon site-specific parameters.					lb/VMT

Acronyms

bdt: bone dry ton
mbf: 1000 board foot lumber
VMT: vehicle mile traveled

[1] EF for log bucking, debarking and sawing are expressed in units of "lb/ton log" in the table above. The EF can be expressed in units of "lb/mbf" lumber as follows:

$$lb/mbf = (lb\ PM/ton\ log) \times (ton/2000\ lb) \times (LD\ lb/ft^3) \times (LRF\ bf\ lumber/ft^3\ log) \times (1000\ bf/mbf)$$

where "LD" stands for log density and "LRF" stands for log recovery factor

• LD values are species-specific and are provided by The Engineering ToolBox and are listed at http://www.engineeringtoolbox.com/weigt-wood-d_821.html

• LRF value of 6.33 bf/ft^3 log is specific to softwood species of the Pacific Coast East. See Section 2 of Appendix D to Forest Products Measurements and Conversion Factors with Special Emphasis on the U.S. Pacific Northwest. College of Forest Resources, University of Washington. 1994. See http://www.ruraltech.org/projects/conversions/briggs_conversions/briggs_append2/appendix02_combined.pdf

No.	Reference

1

For PM, PM_{10}, and $PM_{2.5}$ EF, apply engineering judgement to estimate that log bucking emissions are one-tenth sawing emissions. EPA has stated that log bucking is normally a negligible source of fugitive PM emissions. See page 2-125 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. The document can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. For sawing emissions details, see Reference No. 4 below.

2

• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

3

Apply engineering judgement to estimate that (a) hogging PM emissions are one-half pneumatic target box emissions, (b) hogging PM_{10} emisions are one-half hogging PM emissions and (c) hogging $PM_{2.5}$ emissions are one-half hogging PM_{10} emissions.

4

• Sawing consists of the following cummulative activities: breaking the log into cants and flitches with a smooth edge, breaking cant further down into multiple flitches and/or boards, taking the flitch and trim off all irregular edges to leave four-sided lumber and trimming to square the ends.

• For PM EF, see Table 2-47 of Assessment of Fugitive Particulate Emission Factor for Industrial Processes, EPA-450/3-78-107, September 1978. See also Table 2-59 of Technical Guidance for Controls of Industrial Process Fugitive Particulate Emissions, EPA-450/3-77-010, March 1977. Both documents can be downloaded from internet at http://nepis.epa.gov/Simple.html by entering EPA publication number. EPA revoked the PM EF from WebFIRE on January 1, 2002. See detailed search results for SCC 3-07-008-01 (include revoked factors) at http://cfpub.epa.gov/webfire/index.cfm?action=fire.detailedSearch

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

5

Apply engineering judgement to estimate that (a) chipping PM emissions are one-half pneumatic target box emissions, (b) chipping PM_{10} emisions are one-half chipping PM emissions and (c) chipping $PM_{2.5}$ emissions are one-half chipping PM_{10} emissions.

6

• For PM, see Table 1.4 on page 8 of CORRIM: Phase I Final Report, Module B, Softwood Lumber - Pacific Northwest Region. June 1, 2004 Review Draft prepared by Michael Milota, Oregon State University.

• For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.

7
8

• See Section 13.2.4 of EPA's AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf. Apply Equation 1 on page 13.2.4-4 to estimate emissions resulting from material loadout from target box as follows: E [lb PM/ton] = (k) X (0.0032) X $(U/5)^{1.3}$ / $(M/2)^{1.4}$

Wet Material Loadout

Particulate	k	0.0032	$(U/5)^{1.3}$	$(M/2)^{1.4}$	lb PM / ton
PM	0.74	0.0032	6.6693	21.0552	0.00075
PM_{10}	0.35				0.00035
$PM_{2.5}$	0.053				0.00005

The following conservative assumptions were

Mean wind speed (U) = 15 miles per hour

$(U/5)^{1.3}$ = 6.66930

Material moisture content (M) = 34 percent. Value based upon observations

$(M/2)^{1.4}$ = 21.05520

Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate.

• Moisture content of 34 percent for "wet" material is based upon observation that average moisture content (dry basis) of green douglas fir lumber (common to the Pacific Northwest) is 51 percent as recorded prior to lab scale kiln VOC emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 51 percent moisture content (dry basis) is equivalent to 34 percent moisture content (wet basis) as illustrated below:

MCD = MCW / (1-MCW); where

MCD: moisture content dry basis

MCW: moisture content wet basis

0.51 = MCW / (1 - MCW)

0.51 - (0.51)(MCW) = MCW

(1.51)(MCW) = 0.51

MCW = 0.34, or 34 percent

Dry Material Loadout

Particulate	k	0.0032	$(U/5)^{1.3}$	$(M/2)^{1.4}$	lb PM / ton
PM	0.74	0.0032	6.6693	10.5552	0.0015
PM_{10}	0.35				0.0007
$PM_{2.5}$	0.053				0.0001

The following conservative assumptions were

	Mean wind speed (U) = 15 miles per hour $(U/5)^{1.3}$ = 6.6693 Material moisture content (M) = 13 percent $(M/2)^{1.4}$ = 10.5552 Note: • Mean wind speed of 15 mph is a reasonable upper bounder estimate. • Moisture content of 13 percent for "dry" material is based upon observation that typical moisture content (dry basis) of kiln-dried lumber is 15 percent as recorded during lab scale kiln emissions testing conducting by Oregon State University's Mike Milota and organized in Microsoft Excel workbook entitled, "EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012." 15 percent moisture content (dry basis) is equivalent to 13 percent moisture content (wet basis) as illustrated below: MCD = MCW / (1-MCW); where MCD: moisture content dry basis MCW: moisture content wet basis 0.15 = MCW / (1 - MCW) 0.15 - (0.15)(MCW) = MCW (1.15)(MCW) = 0.15 MCW = 0.13, or 13 percent
9 10 11 12	• For PM EF, see Oregon Department of Environmental Quality (ODEQ) Wood Products Emission Factors, AQ-EF02 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF02.pdf • For PM_{10} and $PM_{2.5}$ EF, see ODEQ Wood Products Emission Factors - $PM_{10}/PM_{2.5}$ Fractions, AQ-EF03 Revised 08/01/11. http://www.deq.state.or.us/aq/permit/acdp/docs/AQ-EF03.pdf
13	• For PM EF, see last row of Table 11.9-4 on page 11.9-11 of Section 11.9 of EPA's AP-42, July 1998 at http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s09.pdf. • For PM_{10} and $PM_{2.5}$ EF, apply engineering judgement to estimate that (a) PM_{10} emissions are one-half PM emissions and (b) $PM_{2.5}$ emissions are one-half PM_{10} emissions.
14	See Equation 1 on page 13.2.1-4 of Chapter 13.2.1 of AP-42, January 2011 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf
15	See Equation 1a on page 13.2.2-4 of Chapter 13.2.2 of AP-42, November 2006 at http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf

EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012

This spreadsheet calculates and compiles volatile organic compound (VOC) and hazardous air pollutant (HAP) emission factors (EF) in units of pounds of pollutant per thousand board feet of lumber dried (lb/mbf) that are preferred by EPA Region 10 for estimating emissions from lumber drying kilns. The EFs are based on actual lab-scale emission test data when available; when not available, EFs for similar species are substituted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

A summary of the EFs for each species of wood is included on this sheet. The sheets that follow present the original test data as well as the calculations for creating each EF. There are two sheets per lumber species: one for HAPs and one for VOCs. To assure adequate conservatism for use in applicability determinations and compliance assurance applications, the EFs represent the 90th percentile of the data when three or more test values are available and the maximum test value of the data when less than three test values are available.

Species	Maximum Kiln Temperature (°F)	WPP1 VOC[1] (lb/mbf)	Total HAP (lb/mbf)	Methanol[2] (lb/mbf)	Formaldehyde[2] (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
Non-Resinous Softwood Species								
White Fir[3]	≤200	0.8388	0.2107	0.1480	0.0034	0.0550	0.0018	0.0026
	>200	1.0902	0.4956	0.4200	0.0163			
Western Hemlock	≤200	0.5253	0.2921	0.1484	0.0016	0.1378	0.0018	0.0026
	>200	0.6615	0.3661	0.2196	0.0044			
Western Red Cedar	≤200	0.3631	0.2939	0.1484	0.0034	0.1378	0.0018	0.0026
	>200	1.1453	0.5784	0.4200	0.0163			
Resinous Softwood Species (Non-Pine Family)								
Douglas Fir	≤200	1.1576	0.1409	0.0690	0.0019	0.0682	0.0007	0.0011
	>200	1.6969	0.1913	0.1170	0.0043			
Engelmann Spruce	≤200	0.1775	0.0640	0.0250	0.0013	0.0360	0.0007	0.0010
	>200	0.2161	0.1201	0.0780	0.0044			
Larch	≤200	1.1576	0.1409	0.0690	0.0019	0.0682	0.0007	0.0011
	>200	1.6969	0.1914	0.1170	0.0044			
Resinous Softwood Species (Pine Family)								
Lodgepole Pine	≤200	1.5293	0.1125	0.0628		0.0420	0.0032	0.0045
	>200	1.5293	0.1166	0.0628	0.0041			
Ponderosa Pine	≤200	2.3450	0.1271	0.0740	0.0034	0.0420	0.0032	0.0045
	>200	3.8087	0.2029	0.1440	0.0092			
Western White Pine	≤200	2.8505	0.1271	0.0740	0.0034	0.0420	0.0032	0.0045
	>200	3.8087	0.2029	0.1440	0.0092			

[1] VOC emissions have been approximated consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC). Employing WPP1 VOC underestimates emissions when the mass-to-carbon ratio of unidentified VOC exceeds that of propane. Ethanol and acetic acid are examples of compounds that contribute to lumber drying VOC emissions (for some species more than others), and both have mass-to-carbon ratios exceeding that of propane.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

[3] White fir in this context refers to any one of several species of true fir grown in the West. The collection of timber commonly referred to as "white fir" includes the following species: white fir, grand fir, noble fir and subalpine fir.

Hazardous Air Pollutant Emission Factors for Drying White Fir Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying any one of several species of true fir grown in the West commonly referred to as "white fir." True fir includes the following species: white fir, grand fir, noble fir and subalpine fir; all classified in the same Abies genus. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile White Fir HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.096	0.0022	no data	no data	no data	2x6	122.0 / 15	42.6	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 5, 12, 14
180	0.148	0.0034	no data	no data	no data	2x6	133.2 / 15	46.9		
225	no data	no data	0.0550	no data	no data	2x4	170 / 13	54	Dinitrophenylhydrazine coated cartridges.	7
240	0.42	0.0156	no data	no data	no data	2x6	126.3 / 15	24	NCASI chilled impinger method.	5
240	0.419	0.0163	no data	no data	no data	2x6	119.0 / 15	24		

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate White Fir HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde[2] (lb/mbf)	Acrolein[2] (lb/mbf)
≤ 200°F	0.1480	0.0034	0.0550	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

[2] In the absence of white fir test data for propionaldehyde and acrolein, western hemlock test data has been substituted. The two wood species are similar in that both are non-resinous softwood species in the scientific classification family Pinaceae. See western hemlock HAP sheet for lab-scale test data and calculations.

Volatile Organic Compound Emission Factors for Drying White Fir Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying any one of several species of true fir grown in the West commonly referred to as "white fir." True fir includes the following species: white fir, grand fir, noble fir and subalpine fir; all classified in the same Abies genus. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile White Fir VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
180	0.26	2x6	106.3 / 15	36.6	JUM 3-200	3, 4
180	0.27	2x6	113.6 / 15	43.2		
180	0.22	2x6	122.0 / 15	42.6	JUM 3-200	3, 4, 5, 12
180	0.25	2x6	133.2 / 15	46.9		
190	0.63	2x4	138.1 / 15	70	JUM VE-7	2
190	0.50	2x4	138.1 / 15	75		
200	0.53	2x4	96.1 / 15	47		
225	0.39	2x4	170 / 13	54	JUM VE-7	7
240	0.62	2x6	126.3 / 15	25	JUM 3-200	5
240	0.6	2x6	119.0 / 15	25		

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate White Fir VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.5700
> 200°F	0.6160

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile White Fir Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1480	0.0034	0.0550	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] See white fir HAP sheet for lab-scale test data and calculations.

Step Four: Convert White Fir Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0399	0	0.0150	0.0007	0.0011	SUM ⇨	0.0567
> 200°F	0.1134	0					0.1302

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from White Fir VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	0.5700		0.0567		0.5133	X 1.2238 =	0.6281
> 200°F	0.6160		0.1302		0.4858		0.5946

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to White Fir VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	0.6281	⇨	0.1480	0.0034	0.0550	0.0018	0.0026	⇨	0.8388
> 200°F	0.5946		0.4200	0.0163					1.0902

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Emission Factors for Western Hemlock Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying western hemlock lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Western Hemlock HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.083	0.0013	no data	no data	no data	2x4	102.3 / 14.7	49.5	NCASI Method 98.01	14, 15
180	0.075	0.0014	0.078	0.002	0.0012	2x4	102.3 / 14.7	49.5	NCASI Method 105	14, 15, 18
180	0.094	0.0015	0.141	0.0008	0.0012	2x4 or 2x6	93.5 / 17.5	no data	NCASI Method 105	18
180	0.052	0.0007	no data	no data	no data	2x4	88.8 / 15	46.2	NCASI Method CI//WP-98.01	13
180	0.0312	0.00082	no data	no data	no data	2x4	56.8 / 15	38.35	NCASI Method CI//WP-98.01	8, 11, 14
180	0.0304	0.00082	no data	no data	no data	2x4	51.1 / 15	35.75		
200	0.098	0.0015	no data	no data	no data	2x6	81.0 / 15	45.2	NCASI Method CI//WP-98.01	11, 14
200	0.175	0.0016	no data	no data	no data	2x6	73.7 / 15	36.5		
200	0.154	0.0018	no data	no data	no data	2x6	100.1 / 15	47.4		
200	0.044	0.0008	0.133	0.0008	0.0024	2x4 or 2x6	83.9 / 15.0	no data	NCASI Method 105	14, 18
200	0.077	0.0014	0.128	0.001	0.0011	2x4 or 2x6	98.6 / 15.0	no data		
200	0.057	0.0014	no data	no data	no data	2x4	76.0 / 15	30.25	NCASI Method CI//WP-98.01	9, 11, 14
215	0.138	0.0043	no data	no data	0.0027	2x4	119.7 / 15	38	no data	6, 11, 14
225	0.189	0.0035	no data	no data		2x6	82 / 15	31.3	NCASI Method CI//WP-98.01	11, 14
225	0.167	0.0034	no data	no data	no data	2x6	77.4 / 15	28.6		
225	0.24	0.004	no data	no data	no data	2x6	101.7 / 15	33.5		
235	0.187	0.0045	0.084	0.0014	0.0019	2x4 or 2x6	76.2 / 15.0	no data	NCASI Method 105	18

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Hemlock HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0016	0.1378	0.0018	0.0026
> 200°F	0.2196	0.0044			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Western Hemlock Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western hemlock lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western Hemlock VOC Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
180	~~0.73~~	2x6	126.6 / 15	66.5	no data	11
180	~~0.66~~	2x6	139.3 / 15	67.9		
180	~~0.6~~	2x6	127.8 / 15	65.7		
180	~~0.67~~	2x6	132.7 / 15	67		
180	0.17	2x4	114.8 / 15	45	no data	11
180	0.07	2x4	103.1 / 15	40.7		
180	0.12	2x4	98.0 / 15	37.5		
180	0.4	2x4	115.7 / 15	52.9		
180	0.236	2x4 or 2x6	93.5 / 17.5	no data	JUM VE-7	18
180	0.142	2x4	102.3 / 14.7	49.5	JUM VE-7	15, 18
180	0.18	2x4	88.8 / 15	46.2	JUM VE-7	13
180	0.198	2x4	56.8 / 15	38.35		8, 11
180	0.122	2x4	51.1 / 15	35.75		
200	0.24	2x4	112.8 / 15	40	JUM VE-7	2
200	0.2	2x6	81.0 / 15	45.2	no data	11
200	0.15	2x6	73.7 / 15	36.5		
200	0.3	2x6	100.1 / 15	47.4		
200	0.204	2x4	76.0 / 15	30.25	JUM 3-200	9, 11
200	0.214	2x4 or 2x6	83.9 / 15.0	no data	JUM VE-7	18
200	0.239	2x4 or 2x6	98.6 / 15.0	no data		
215	0.34	2x4	112.9 / 15	32.7	no data	11
215	0.34	2x4	119.7 / 15	38	JUM 3-200	6, 11
225	0.28	2x6	82 / 15	31.3	no data	11
225	0.27	2x6	77.4 / 15	28.6		
225	0.31	2x6	101.7 / 15	33.5		
235	0.247	2x4 or 2x6	81.6 / 15.0	no data	JUM VE-7	18
235	0.226	2x4 or 2x6	76.2 / 15.0	no data		

[1] Blue highlight denotes data not considered by EPA Region 10 in 2012. The four test runs not considered here were obtained from a single "sample" and appeared to use a much longer drying cycle than would be in common use in the Pacific Northwest. Therefore, these highlighted values were not used in the EF derivation.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Hemlock VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.2700
> 200°F	0.3400

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Western Hemlock Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0016	0.1378	0.0018	0.0026
> 200°F	0.2196	0.0044			

[1] See western hemlock HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western Hemlock Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0401	0	0.0376	0.0007	0.0011	SUM ⇨	0.0794
> 200°F	0.0593	0					0.0986

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western Hemlock VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR			Propane Mass Conversion Factor	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS	Speciated Compounds as Carbon (lb/mbf)	EQUALS	Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	X 1.2238 =	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.2700	⇨	0.0794	⇨	0.1906		0.2332
> 200°F	0.3400		0.0986		0.2414		0.2954

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western Hemlock VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	0.2332	⇨	0.1484	0.0016	0.1378	0.0018	0.0026	⇨	0.5253
> 200°F	0.2954		0.2196	0.0044					0.6615

Hazardous Air Pollutant Emission Factors for Drying Western Red Cedar Lumber

This sheet presents the HAP EF for drying western red cedar lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of western red cedar. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Western Red Cedar HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0034	0.1378	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] In the absence of western red cedar test data, white fir test data has been substituted for methanol and high-temperature formaldehyde and western hemlock test data has been substituted for acetaldehyde, propionaldehyde, acrolein and low-temperature formaldehyde. Western red cedar is similar to white fir and western hemlock in that all three species are non-resinous softwood species in the scientific classification order Pinales. See the white fir and western hemlock HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for western red cedar), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Western Red Cedar Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western red cedar. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western Red Cedar VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
160	0.096	1x4	33.3 / 15	21	JUM VE-7	2
160	0.136	1x4	44.9 / 15	18		
> 200°F	no data					

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western Red Cedar VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.1360
> 200°F	0.6160

[1] In the absence of western red cedar test data for high-temperature drying, white fir test data has been substituted. Western red cedar, white fir and western hemlock are similar in that all three are non-resinous softwood species in the scientific classification order Pinales. See the white fir and western hemlock VOC sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed high-temperature observations for western red cedar), separate values are calculated for low and high-temperature drying.

Step Three: Compile Western Red Cedar Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.1484	0.0034	0.1378	0.0018	0.0026
> 200°F	0.4200	0.0163			

[1] See western red cedar HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western Red Cedar Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0401	0	0.0376	0.0007	0.0011	SUM ⇨	0.0794
> 200°F	0.1134	0					0.1527

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western Red Cedar VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	0.1360		0.0794		0.0566	X 1.2238 =	0.0692
> 200°F	0.6160		0.1527		0.4633		0.5669

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western Red Cedar VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.0692
> 200°F	0.5669

PLUS

FROM STEP THREE				
Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
0.1484	0.0034	0.1378	0.0018	0.0026
0.4200	0.0163			

EQUALS

WPP1 VOC (lb/mbf)
0.3631
1.1453

Hazardous Air Pollutant Emission Factors for Drying Douglas Fir Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying douglas fir lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Douglas Fir HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
160	0.025	0.0008	no data	no data	no data	2x6	37.3 / 15	23.5	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 12, 14
160	0.023	0.0008	no data	no data	no data	2x6	44.9 / 15	28.5		
160	0.026	0.0017	no data	no data	no data	2x6	40.3 / 15	27.1		
160	0.018	0.0011	no data	no data	no data	2x6	31.9 / 15	25.2		
170	0.015	0.0005	no data	no data	no data	2x4	79.9 / 15	40.5	NCASI Method CI//WP-	13
170	0.026	0.0008	no data	no data	no data	2x4	56.9 / 15	27.5	NCASI Method 98.01	15
170	0.024	0.0008	0.03	0.0004	0.0005	2x4	56.9 / 15	27.5	NCASI Method 105	15, 18
180	0.050	0.0023	0.050	0.0005	0.0009	2x4	43.7 / 15	48	NCASI Method 105	18, 22
180	0.084	0.0019	0.061	0.0003	0.0007	4x4	44.7 / 15	111	NCASI Method 105	19
200	0.068	0.0018	0.043	0.0005	0.0009	2x4	64.3 / 15	60	NCASI Method 105	14, 18, 22
200	0.069	0.0019	0.071	0.0006	0.0004	2x4	59.5 / 15	56		
220	no data	no data	0.030	no data	no data	2x4	73 / 12	46	Dinitrophenylhydrazine coated cartridges.	7
220	no data	no data	0.022	no data	no data	2x4	73 / 15	46		
235	0.117	0.0043	0.067	0.0008		2x4 or 2x6	47.7 / 15	19	NCASI Method 105	18, 21

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Douglas Fir HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0009
> 200°F	0.1170	0.0043			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Douglas Fir Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying douglas fir lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Douglas Fir VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
160	0.51	2x6	37.3 / 15	23.5	JUM 3-200	3, 4, 12
160	0.55	2x6	44.9 / 15	28.5		
160	0.45	2x6	40.3 / 15	27.1		
160	0.46	2x6	31.9 / 15	25.2		
170	0.65	2x4	79.9 / 15	40.5	JUM VE-7	13
170	0.24	2x4	56.9 / 15	27.5	JUM VE-7	15, 18
180	0.942	2x4	38.9 / 15	63	JUM VE-7	2
180	0.669	2x4	44.9 / 15	42		
180	0.21	2x4	56.3 / 15	27		
180	0.575	2x4 or 2x6	43.7 / 15	no data	JUM VE-7	18
180	0.39	4x4	29.8 / 19	67.5	JUM 3-200	10
180	0.845	4x4	44.7 / 15	111		19
200	0.707	2x4 or 2x6	64.3 / 15	no data	JUM VE-7	18
200	0.879	2x4 or 2x6	59.5 / 15	no data		
220	1.2	2x4	73 / 12	46	JUM VE-7	7
220	1.3	2x4	73 / 15	46		
235	1.206	2x4 or 2x6	47.7 / 15	19	JUM VE-7	18, 21

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100.

Step Two: Calculate Douglas Fir VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.8688
> 200°F	1.2812

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Douglas Fir Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0009
> 200°F	0.1170	0.0043			

[1] See douglas fir HAP sheet for lab-scale test data and calculations.

Step Four: Convert Douglas Fir Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0186	0	0.0186	0.0003	0.0004	SUM ⇨	0.0379
> 200°F	0.0316	0					0.0508

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Douglas Fir VOC Emission Factors and Convert Result to "as Propane"

Maximum Dry Bulb Temperature (°F)	FROM STEP TWO: Method 25A VOC as Carbon (lb/mbf)		FROM STEP FOUR: Speciated Compounds as Carbon (lb/mbf)		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.8688	MINUS ⇨	0.0379	EQUALS ⇨	0.8309	X 1.2238 =	1.0169
> 200°F	1.2812		0.0508		1.2304		1.5057

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Douglas Fir VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

Maximum Dry Bulb Temperature (°F)	FROM STEP FIVE: Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		FROM STEP THREE: Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	1.0169	PLUS ⇨	0.0690	0.0019	0.0682	0.0007	0.0009	EQUALS ⇨	1.1576
> 200°F	1.5057		0.1170	0.0043					1.6968

Hazardous Air Pollutant Emission Factors for Engelmann Spruce Lumber

This sheet presents the HAP EF for drying engelmann spruce lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA is not aware of any HAP emission testing of englemann spruce. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile HAP Emission Test Data for Similar Species (White Spruce) by Drying Temperature[1,2]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[3] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
180	0.025	0.0013	0.036	0.0003	0.0005	2x4 or 2x6	33.5 / 15	no data	NCASI Method 105	18
235	0.078	0.0044	0.031	0.0007	0.001	2x4 or 2x6	32.7 / 15	no data		

[1] In the absence of engelmann spruce test data, white spruce test data has been substituted. The two wood species are similar in that both are resinous softwood species in the scientific classification genus Picea.

[2] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[3] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Engelmann Spruce HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0250	0.0013	0.0360	0.0007	0.0010
> 200°F	0.0780	0.0044			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Engelmann Spruce Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for engelmann spruce lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile VOC Emission Test Data for Similar Species (White Spruce) by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
≤ 200°F	no data					
235	0.11	2x4 or 2x6	32.7 / 15	no data	JUM VE-7	18

[1] In the absence of engelmann spruce test data, white spruce test data has been substituted. The two wood species are similar in that both are resinous softwood species in the scientific classification genus Picea.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Engelmann Spruce VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	0.1100
> 200°F	0.1100

[1] In the absence of white spruce test data for low-temperature drying, high-temperature test data has been substituted.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed low-temperature observations for white spruce), separate values are calculated for low and high-temperature drying.

Step Three: Compile Engelmann Spruce Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0250	0.0013	0.0360	0.0007	0.0010
> 200°F	0.0780	0.0044			

[1] See engelmann spruce HAP sheet for lab-scale test data and calculations.

Step Four: Convert Engelmann Spruce Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0067	0	0.0098	0.0003	0.0004	SUM ⇨	0.0173
> 200°F	0.0211	0					0.0316

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Engelmann Spruce VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)				
≤ 200°F	0.1100	MINUS ⇨	0.0173	EQUALS ⇨	0.0927	X 1.2238 =	0.1135
> 200°F	0.1100		0.0316		0.0784		0.0960

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Engelmann Spruce VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
≤ 200°F	0.1135
> 200°F	0.0960

PLUS

FROM STEP THREE				
Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
0.0250	0.0013	0.0360	0.0007	0.0010
0.0780	0.0044			

EQUALS

WPP1 VOC (lb/mbf)
0.1775
0.2161

Hazardous Air Pollutant Emission Factors for Drying Larch Lumber

This sheet presents the HAP EF for drying larch lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of larch. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Larch HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0690	0.0019	0.0682	0.0007	0.0010
> 200°F	0.1170	0.0044			

[1] In the absence of larch test data, douglas fir test data has been substituted for methanol, acetaldehyde, propionaldehyde, acrolein and low-temperature formaldehyde while white spruce test data has been substituted for high-temperature formaldehyde. Larch is similar to douglas fir, engelmann spruce, white spruce, lodgepole pine, ponderosa pine and western white pine in that all seven species are resinous softwood species in the scientific classification order Pinaceae, but larch does not share a common genus with any of these species. It appears to be most similar to douglas fir, engelmann spruce and white spruce in that the four species have small, sparse resin canals as opposed to the large numerous resin canals of the pines. See hhtp://www.faculty.sfasu.edu/mcbroommatth/lectures/wood_science/lab_2_resin_canal_species.pdf. See the douglas fir and englemann spruce HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for larch), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Larch Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying larch lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Larch WPP1 VOC Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	WPP1 VOC (lb/mbf)
≤200	1.1576
>200	1.6968

[1] In the absence of larch test data, douglas fir test data has been substituted. Larch is similar to douglas fir, engelmann spruce, white spruce, lodgepole pine, ponderosa pine and western white pine in that all seven species are resinous softwood species in the scientific classification order Pinaceae, but larch does not share a common genus with any of these species. It appears to be most similar to douglas fir, engelmann spruce and white spruce in that the four species have small, sparse resin canals as opposed to the large numerous resin canals of the pines. See hhtp://www.faculty.sfasu.edu/mcbroommatth/lectures/wood_science/lab_2_resin_canal_species.pdf. See the douglas fir and englemann spruce VOC sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observations for larch), separate values are calculated for low and high-temperature drying.

Appendix A: Potential Emissions Inventory

Hazardous Air Pollutant Emission Factors for Drying Lodgepole Pine Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying lodgepole pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Lodgepole Pine HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
195	~~0.073~~	~~no data~~	~~0.012~~	~~no data~~	~~no data~~	no data	no data	no data	no data	14
195	~~0.092~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.064~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.028~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
195	~~0.02~~	~~no data~~	~~no data~~	~~no data~~	~~no data~~	no data	no data	no data	no data	
≤ 200°F	no data									
236	0.063	0.0041	no data	no data	no data	2x4	59.1 / 15	16	NCASI Method IM/CAN/WP-99.01 without cannisters.	3, 4, 12, 14
237	0.062	0.0041	no data	no data	no data	2x4	59.7 / 15	16.6		
238	0.056	0.0039	no data	no data	no data	2x4	56.9 / 15	16		

[1] Blue highlight denotes data not considered by EPA Region 10 in 2012. Five test runs considered by EPA Region 10 in 2007 are not considered here due to lack of documentation. The omitted test values are presented in Oregon Department of Environmental Quality memorandum May 8, 2007 entitled, "Title III Implications of Drying Kiln Source Test Results." The memorandum lists "Forintec #1, #2 and #5" along with "OSU QA # 1 and #2 " as the test data sources.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Lodgepole Pine HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol[2] (lb/mbf)	Formaldehyde[2] (lb/mbf)	Acetaldehyde[3] (lb/mbf)	Propionaldehyde[3] (lb/mbf)	(lb/mbf)
≤ 200°F	0.0628	0.0041	0.0420	0.0032	0.0045
> 200°F	0.0628	0.0041			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no confirmed low-temperature observations for lodgepole pine), separate values are calculated for low and high-temperature drying.

[2] In the absence of lodgepole pine test data for low-temperature drying, high-temperature test data has been substituted.

[3] In the absence of lodgepole pine test data for acetaldeyde, propionaldehyde and acrolein, ponderosa pine test data has been substituted. Lodgepole pine, ponderosa pine and western white pine are similar in that all three are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and western white pine HAP sheets for lab-scale test data and calculations.

Volatile Organic Compound Emission Factors for Drying Lodgepole Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying lodgepole pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Lodgepole Pine VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
≤ 200°F	no data					
236	1.17	2x4	59.1 / 15	16.01	JUM 3-200	3, 4, 12
238	0.87	2x4	56.9 / 15	16.01		
240	1.19	2x4	64.9 / 15	16.81		

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Lodgepole Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	1.1860
> 200°F	1.1860

[1] In the absence of lodgepole pine test data for low-temperature drying, high-temperature test data has been substituted.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no observed low-temperature observations for lodgepole pine), separate values are calculated for low and high-temperature drying.

Step Three: Compile Lodgepole Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data [1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0628	0.0041	0.0420	0.0032	0.0045
> 200°F	0.0628	0.0041			

[1] See lodgepole pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Lodgepole Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0169	0	0.0115	0.0013	0.0019	SUM ⇨	0.0316
> 200°F	0.0169	0					0.0316

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Lodgepole Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	1.1860		0.0316		1.1544	X 1.2238 =	1.4127
> 200°F	1.1860		0.0316		1.1544		1.4127

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Lodgepole Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE	PLUS	FROM STEP THREE					EQUALS	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	1.4127		0.0628	0.0041	0.0420	0.0032	0.0045		1.5293
> 200°F	1.4127		0.0628	0.0041					1.5293

Hazardous Air Pollutant Emission Factors for Drying Ponderosa Pine Lumber

This sheet presents lab-scale test data and calculations used to create HAP EF for drying ponderosa pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Step One: Compile Ponderosa Pine HAP Emission Test Data by Drying Temperature[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	Lumber Dimensions	Moisture Content[2] (%) (Initial / Final)	Time to Final Moisture Content (hours)	HAP Sample Collection Technique	Reference
170	0.035	0.0027	0.042	0.0019	0.0017	2x4	82.6 / 15	42	NCASI Method 105	17, 18
176	0.05	0.0022	no data	no data	no data	2x10 & 2x12	107.1 / 12	55	NCASI Method IM/CAN/WP-99.01 without cannisters	3, 4, 12, 14
176	0.08	0.0036	no data	no data	no data	2x10 & 2x12	124.1 / 12	57		
235	0.144	0.0092	0.028	0.0032	0.0045	2x4 or 2x6	89.1 / 15	19	NCASI Method 105	18, 21

[1] Yellow highlight denotes data not considered by EPA Region 10 in 2007 when providing notice of original EFs prior to initial PCWP (Plywood and Composite Wood Products) MACT compliance date.

[2] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Ponderosa Pine HAP Emission Factors Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Ponderosa Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying ponderosa pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Ponderosa Pine VOC Emission Test Data by Drying Temperature

Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	Lumber Dimensions	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
170	1.59	2x4	82.6 / 15	42	JUM VE-7	17, 18
170	1.795	1x4	112.8 / 15	29	JUM VE-7	2
170	1.925	1x4	88.7 / 15	28		
176	1.29	2x10 & 2x12	107.1 / 12	55	JUM 3-200	3, 4, 12
176	1.54	2x10 & 2x12	124.1 / 12	57		
176	1.40	2x10 & 2x12	114.8 / 12	58.5	JUM 3-200	3, 4
176	1.30	2x10 & 2x12	93.0 / 12	57.1		
235	3.00	2x4 or 2x6	89.1 / 15	19	JUM VE-7	18, 21

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Ponderosa Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data

Maximum Dry Bulb Temperature[1] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	1.8470
> 200°F	3.0000

[1] Because VOC emissions appear to be dependent upon drying temperature, separate values are calculated for low and high-temperature drying.

Step Three: Compile Ponderosa Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] See ponderosa pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Ponderosa Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0200	0	0.0115	0.0013	0.0019	SUM ⇨	0.0346
> 200°F	0.0389	0					0.0535

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Ponderosa Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	1.8470		0.0346		1.8124	X 1.2238 =	2.2179
> 200°F	3.0000		0.0535		2.9465		3.6058

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Ponderosa Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE	PLUS	FROM STEP THREE					EQUALS	
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)		Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)		WPP1 VOC (lb/mbf)
≤ 200°F	2.2179	⇨	0.0740	0.0034	0.0420	0.0032	0.0045	⇨	2.3450
> 200°F	3.6058		0.1440	0.0092					3.8087

Hazardous Air Pollutant Emission Factors for Drying Western White Pine Lumber

This sheet presents the HAP EF for drying western white pine lumber. The EFs are based on the 90th percentile value of actual lab-scale HAP test data when three or more data points are available and on the maximum value when less than three data points are available. EPA Region 10 is not aware of any HAP emission testing of western white pine. Consistent with other species, when actual test data is not available, data for a similar species is substituted as noted. When there are more than one similar species, the highest of the EF for the similar species is substituted.

Western White Pine HAP Emission Factors[1]

Maximum Dry Bulb Temperature[2] (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] In the absence of western white pine test data, ponderosa pine test data has been substituted for all HAP. Western white pine is similar to ponderosa pine and lodgepole pine in that all three species are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and lodgepole pine HAP sheets for lab-scale test data and calculations.

[2] Because methanol and formaldehyde emissions appear to be dependent upon drying temperature in other species (no observations for western white pine), separate values are calculated for low and high-temperature drying.

Volatile Organic Compound Emission Factors for Drying Western White Pine Lumber

This sheet presents lab-scale VOC and HAP test data and calculations used to create VOC EF for drying western white pine lumber. The VOC test method used (EPA Reference Method 25A) has some limitations in that it misses some HAP (or portions of HAP) compounds that are VOC and known to exist and reports the results "as carbon" which only accounts for the carbon portion of each compound measured. The missed HAP compounds are accounted for through separate testing. The VOC test data is adjusted to fully account for five known HAPs that are VOC using separate HAP (speciated) test data and is reported "as propane" to better represent all of the unspeciated VOC compounds. This technique is consistent with EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 (WPP1 VOC) except that the VOC results are adjusted to account for not only methanol and formaldehyde but also acetaldehyde, propionaldehyde and acrolein.

Specifically, EFs are calculated from the VOC and HAP test data based on the 90th percentile value of actual lab-scale test data when three or more data points are available and on the maximum value when less than three data points are available. When actual test data is not available for this wood species, data for a similar species is substituted. When there are more than one similar species, the highest of the EF for the similar species is substituted. That portion of the (speciated) HAP compounds that are measured by the VOC test method (based on known flame ionization detector response factors) is subtracted from the VOC EF. The remaining "unspeciated" VOC EF is adjusted to represent propane rather than carbon and then added to the speciated HAP EF to provide the "total" VOC EF.

Note that reporting the unspeciated VOC as propane (mass-to-carbon ratio of 1.22 and a response factor of 1) may underestimate the actual mass of VOC for certain wood species because VOC compounds like ethanol and acetic acid with higher mass-to-carbon ratios (1.92 and 2.5, respectively) and lower response factors (0.66 and 0.575, respectively) can be a significant portion of the total VOC. Without reliable test data for such compounds, EPA assumes propane adequately represents the mix of unspeciated VOC.

Step One: Compile Western White Pine VOC Emission Test Data by Drying Temperature

Max Dry Bulb Temperature,°F	Method 25A VOC as Carbon, lb/mbf	Lumber Dimension	Moisture Content[1] (%) (Initial/Final)	Time to Final Moisture Content (hours)	Method 25A Analyzer	Reference
170	2.26	1x4	117.4 / 15	44	JUM VE-7	2
> 200°F	no data					

[1] Dry basis. Moisture content = (weight of water / weight wood) x 100

Step Two: Calculate Western White Pine VOC Emission Factors "as Carbon" Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature[2] (°F)	Method 25A VOC as Carbon (lb/mbf)
≤ 200°F	2.2600
> 200°F	3.0000

[1] In the absence of western white pine test data for high-temperature drying, ponderosa pine test data has been substituted. Western white pine, ponderosa pine and lodgepole pine are similar in that all three are resinous softwood species in the scientific classification genus Pinus. See the ponderosa pine and lodgepole pine sheets for lab-scale test data and calculations.

[2] Because VOC emissions appear to be dependent upon drying temperature in other species (no high-temperature observations for western white pine), separate values are calculated for low and high-temperature drying.

Step Three: Compile Western White Pine Speciated HAP Emission Factors Based on Maximum/90th Percentile Test Data[1]

Maximum Dry Bulb Temperature (°F)	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)
≤ 200°F	0.0740	0.0034	0.0420	0.0032	0.0045
> 200°F	0.1440	0.0092			

[1] See western white pine HAP sheet for lab-scale test data and calculations.

Step Four: Convert Western White Pine Speciated HAP Emission Factors to "as Carbon" and Total

Speciated Compound "X" expressed as carbon = (RF_X) X (SC_X) X $[(MW_C) / (MW_X)]$ X $[(\#C_X) / (\#C_C)]$

where: RF_X represents the flame ionization detector (FID) response factor (RF) for speciated compound "X"

SC_X represents emissions of speciated compound "X" expressed as the entire mass of compound emitted

MW_C equals "12.0110" representing the molecular weight (MW) for carbon as carbon is becoming the "basis" for expressing mass of speciated compound "X"

MW_X represents the molecular weight for speciated compound "X"

$\#C_X$ represents the number of carbon atoms in speciated compound "X"

$\#C_C$ equals "1" as the single carbon atom is becoming the "basis" for expressing mass of speciated compound "X"

Maximum Dry Bulb Temperature (°F)	Methanol as Carbon (lb/mbf)	Formaldehyde as Carbon (lb/mbf)	Acetaldehyde as Carbon (lb/mbf)	Propionaldehyde as Carbon (lb/mbf)	Acrolein as Carbon (lb/mbf)		Speciated Compounds as Carbon (lb/mbf)
≤ 200°F	0.0200	0	0.0115	0.0013	0.0019	SUM ⇨	0.0346
> 200°F	0.0389	0					0.0535

Element and Compound Information

Element / Compound	FID RF[1]	Molecular Weight (lb/lb-mol)	Formula	Number of Carbon Atoms	Number of Hydrogen Atoms	Number of Oxygen Atoms	Reference
Methanol	0.72	32.042	CH_40	1	4	1	1
Formaldehyde	0	30.0262	CH_2O	1	2	1	16
Acetaldehyde	0.5	44.053	C_2H_4O	2	4	1	20
Propionaldehyde	0.66	58.0798	C_3H_6O	3	6	1	20
Acrolein	0.66	56.064	C_3H_4O	3	4	1	20
Propane	1	44.0962	C_3H_8	3	8	0	16
Carbon	-	12.0110	C	1	-	-	-
Hydrogen	-	1.0079	H	-	1	-	-
Oxygen	-	15.9994	O	-	-	1	-

[1] FID RF = volumetric concentration or "instrument display" / compound's actual known concentration. Numerator and denominator expressed on same basis (ie. carbon, propane, etc) and concentration in units of "ppm."

Step Five: Subtract Speciated HAP Compounds from Western White Pine VOC Emission Factors and Convert Result to "as Propane"

	FROM STEP TWO		FROM STEP FOUR		Method 25A VOC as Carbon without Speciated Compounds (lb/mbf)	Propane Mass Conversion Factor	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Carbon (lb/mbf)	MINUS ⇨	Speciated Compounds as Carbon (lb/mbf)	EQUALS ⇨			
≤ 200°F	2.2600		0.0346		2.2254	X 1.2238 =	2.7233
> 200°F	3.0000		0.0535		2.9465		3.6058

Method 25A VOC as propane without speciated compounds = (VOC_C) X $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$

where: VOC_C represents Method 25A VOC as carbon without speciated compounds

RF_{C3H8} equals "1" and represents the FID RF for propane. All alkanes, including propane, have a RF of 1.

MW_{C3H8} equals "44.0962" and represents the molecular weight for propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

MW_C equals "12.0110" and represents the molecular weight for carbon

$\#C_C$ equals "1" as the single carbon atom was the "basis" for which Method 25A VOC test results were determined as illustrated in Step One of this spreadsheet

$\#C_{C3H8}$ equals "3" as three carbon atoms are present within propane; the compound that is the "basis" for expressing mass of VOC per WPP1 VOC

Note: The following portion from the equation immediately above, $(1/RF_{C3H8})$ X $[(MW_{C3H8}) / (MW_C)]$ X $[(\#C_C) / (\#C_{C3H8})]$, equals 1.2238 and can be referred to as the "propane mass conversion factor."

Step Six: Calculate WPP1 VOC by Adding Speciated HAP Compounds to Western White Pine VOC Emission Factors "as Propane"

WPP1 VOC = Method 25A VOC as propane without speciated compounds + ∑ speciated compounds expressed as the entire mass of compound

	FROM STEP FIVE		FROM STEP THREE						
Maximum Dry Bulb Temperature (°F)	Method 25A VOC as Propane without Speciated Compounds (lb/mbf)	PLUS	Methanol (lb/mbf)	Formaldehyde (lb/mbf)	Acetaldehyde (lb/mbf)	Propionaldehyde (lb/mbf)	Acrolein (lb/mbf)	EQUALS	WPP1 VOC (lb/mbf)
≤ 200°F	2.7233		0.0740	0.0034	0.0420	0.0032	0.0045		2.8505
> 200°F	3.6058		0.1440	0.0092					3.8087

Index to References Appearing in
EPA Region 10 HAP and VOC Emission Factors for Lumber Drying, December 2012

Reference No. 1
(Undated) J.U.M. Flame Ionization Detector Response Factor Technical Information presented at http://www.jum-aerosol.com/images/E-Fakt-02.pdf

Notes
Methanol response factor (RF) of 0.72 equals average of three response factors 0.69, 0.68 and 0.79 for J.U.M. models 3-200 and VE-7. These two models were exclusively employed to determine Method 25A VOC in the testing EPA Region 10 is relying upon to support VOC emission factor derivation.

An alternative RF of 0.65 from Appendix 3 to EPA's Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 at http://www.epa.gov/ttn/emc/prelim/otm26.pdf could have been employed instead.

Employing RF of 0.72 (as opposed to 0.65) generates lower VOC emission factors (EF). A higher RF means that the EPA Method 25A flame ionization detector (FID) measures more of the compound. With the methanol EF having already been determined through speciated sampling and analysis, assuming the FID measures a greater portion of the methanol leaves less of the Method 25A measurement to be accounted for as unspeciated VOC.

Reference No. 2
National Council of the Paper Industry for Air and Stream Improvement, Inc. Technical Bulletin No. 718. July 1, 1996. A Small-Scale Kiln Study on Method 25A Measurements of Volatile Organic Compound Emissions from Lumber Drying.

Notes
To convert Method 25A VOC from "lb C/ODT" to "lb C/mbf," the following calculations were performed:

White Fir – Runs 15 and 16.
(0.85 lb/ODT) X (0.57 lb/mbf) / (0.77 lb/ODT) = 0.63 lb/mbf
(0.68 lb/ODT) X (0.57 lb/mbf) / (0.77 lb/ODT) = 0.50 lb/mbf
See pages 14 and 15 of the reference document.

Western Red Cedar – Runs 10 and 11.
(0.12 lb/ODT) X (0.12 lb/mbf) / (0.15 lb/ODT) = 0.096 lb/mbf
(0.17 lb/ODT) X (0.12 lb/mbf) / (0.15 lb/ODT) = 0.136 lb/mbf
See pages 14 and 15 of the reference document.

Douglas fir – Runs 1 and 3.
(1.00 lb/ODT) X (0.81 lb/mbf) / (0.86 lb/ODT) = 0.942
(0.71 lb/ODT) X (0.81 lb/mbf) / (0.86 lb/ODT) = 0.669
See pages 12 and 15 of the reference document.

Ponderosa Pine – Runs 5 and 6.
(1.92 lb/ODT) X (1.86 lb/mbf) / (1.99 lb/ODT) = 1.795 lb/mbf
(2.06 lb/ODT) X (1.86 lb/mbf) / (1.99 lb/ODT) = 1.925 lb/mbf
See pages 14 and 15 of the reference document.

The moisture content of wood was originally reported on a wet basis. It has been corrected to be on a dry basis using the following equation:
(moisture content on dry basis) = (moisture content on wet basis) / [1 – (moisture content on wet basis)]

Reference No. 3
Small-scale Kiln Study Utilizing Ponderosa Pine, Lodgepole Pine, White Fir, and Douglas-fir. Report by Michael R. Milota to Intermountain Forest Association. September 29, 2000.

Reference No. 4
Milota, Michael. VOC and HAP Emissions from Western Species. Western Dry Kiln Association: May 2001, p. 62-68.

Reference No. 5
Milota, M.R. 2003. HAP and VOC Emissions from White Fir Lumber Dried at High and Conventional Temperatures. Forest Prod. J. 53(3):60-64.

Reference No. 6
VOC and HAP Emissions from the High Temperature Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. June 21, 2004.

Reference No. 7
Fritz, Brad. 2004. Pilot- and Full-Scale Measurements of VOC Emissions from Lumber Drying of Inland Northwest Species. Forest Prod. J. 54(7/8):50-56.

Notes
To convert acetaldehyde from "µg/min-bf" to "lb/mbf," the following calculations were performed:

White fir.
0.0550 lb/mbf = (7.7 µg/min-bf) X (60 min/hr) X (54 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
See page 54 of the reference document.

Douglas fir.
0.030 lb/mbf = (4.9 µg/min-bf) X (60 min/hr) X (46 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
0.022 lb/mbf = (3.6 µg/min-bf) X (60 min/hr) X (46 hr) X (kg/1x10^9g) X (2.205 lb/kg) X (1,000 bf/mbf).
See page 53 of the reference document.

Reference No. 8
VOC and Methanol Emissions from the Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. August 24, 2004.

Reference No. 9
VOC, Methanol, and Formaldehyde Emissions from the Drying of Hemlock Lumber. Report by Michael R. Milota to Hampton Affiliates. October 15, 2004.

Reference No. 10
VOC Emissions from the Drying of Douglas-fir Lumber. Report by Michael R. Milota to Columbia Vista Corporation. June 14, 2005.

Reference No. 11
Milota, M.R. and P. Mosher. 2006. Emissions from Western Hemlock Lumber During Drying. Forest Prod. J. 56(5):66-70.

Reference No. 12
Milota, M.R. 2006. Hazardous Air Pollutant Emissions from Lumber Drying. Forest Prod. J. 56(7/8):79-84.

Reference No. 13
VOC, Methanol, and Formaldehyde Emissions from the Drying of Hemlock, ESLP, and Douglas Fir Lumber. Report by Michael R. Milota to Hampton Affiliates. March 23, 2007.

Reference No. 14
Oregon Department of Environmental Quality memorandum May 8, 2007 entitled, "Title III Implications of Drying Kiln Source Test Results."

Notes
The reference document presents a compilation of EF.

Reference No. 15
HAP Emissions from the Drying of Hemlock and Douglas-fir Lumber by NCASI 98.01 and 105. Report by Michael R. Milota to Hampton Affiliates. May 22, 2007 report.

Reference No. 16
EPA Interim VOC Measurement Protocol for the Wood Products Industry - July 2007 presented at http://www.epa.gov/ttn/emc/prelim/otm26.pdf

Notes
VOC determined through use of this document is referred to as WPP1 VOC. The document is alternatively known as EPA Other Test Method 26 or "OTM26."

Default formaldehyde RF of 0 and propane (an alkane) RF of 1 appear in Appendix 3 – Procedure for Response Factor Determination for the Interim VOC Measurement Protocol for the Wood Products Industry.

Reference No. 17
HAP Emissions by NCASI 98.01 and 105 from Drying of Ponderosa Pine and White Wood Lumber. Report by Michael R. Milota to Hampton Affiliates. July 25, 2007.

Reference No. 18
Milota, M.R. and P. Mosher. 2008. Emission of Hazardous Air Pollutants from Lumber Drying. Forest Prod. J. 58(7/8):50-55.

Reference No. 19
VOC Emissions From the Drying of Douglas-fir Lumber. Report by Michael R. Milota to Columbia Vista Corp. November 12, 2010.

Reference No. 20
NCASI Technical Bulletin No. 991. September 2011. Characterization, Measurement, and Reporting of Volatile Organic Compounds Emitted from Southern Pine Wood Products Sources.

Notes
Acetaldehyde and propionaldehyde RF appear in Table C-1 of Appendix C. The values are estimates based upon dividing the compound's effective carbon numbers (ECN) by the number of carbon atoms in the compound. See Attachment 2 to Appendix C.

Acrolein RF is also an estimate based upon dividing the compound's ECN by the number of carbon atoms in the compound. In this case, the RF estimate does not appear in Table C-1 of Appendix C. The value is calculated as described above pursuant to Attachment 2 to Appendix C.
RF = (ECN) / (number of carbon atoms in compound)
where ECN = 2 given the aliphatic carbon contribution of CH_2CHCHO (see Table 2.1 to Appendix C) and the number of carbon atoms in acrolein = 3.
RF = 2/3 or 0.66

Reference No. 21
Email of 03/26/12 email from Oregon State University's Michael Milota to EPA Region 10's Dan Meyer.

Reference No. 22
Email of 03/27/12 from Oregon State University's Michael Milota to EPA Region 10's Dan Meyer.

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2. OWNER:
Name Three Rivers Timber
Address P.O. Box 757
City Kamiah State ID Zip 83536

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S — X

Twp. 34 North ☒ or South ☐
Rge. 3 East ☒ or West ☐
Sec. 35, ____ 1/4 (10 acres) NE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't Lot ____ County ID, CO.
Lat: : : Long: : :
Address of Well Site 1 Mile NW of Kamiah Woodland Rd. City Kamiah
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK check all that apply (Replacement etc.)
~~☐ New Well~~ ☒ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES Deepening

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y ☐ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
No	Change	on		Steel	☐	☐	☐	☐
4½	0-40	300	160	Plastic	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☒ Perforations Method SAW
☐ Screens Screen Type ____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
260	300	⅛x4	58	4½	Plastic	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
30 ft. below ground Artesian pressure — lb.
Depth flow encountered — ft. Describe access port or control devices: Top of Casing

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

1/4 1/4 1/4
Lat: : : Long: : :

Yield gal./min.	Drawdown	Pumping Level	Time
30			1.75

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered ____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
6	200	240	Gray Shale	12	
6	240	261	Granitic Sandstone		✓
6	261	280	Gray Sof Granite	18	
6	280	300	Green Granite		✓

MICROFILMED 007173

Completed Depth 300 ft (Measurable)
Date: Started 7-31-96 Completed 8-1-96

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Uhlenkott Drilling Firm No. 125
Firm Official Ray Uhlenkott Date 8-31-96
and
Supervisor or Operator Ray Uhlenkott Date 8-31-96
(Sign once if Firm Official & Operator)

NESE 35 34N 3E

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0061711
Drilling Permit No. 283849
Water right or injection well #

2. OWNER: Blue North Forest Products LLC
Name
Address 283 Woodland Rd
City Kamiah State ID Zip 83536

3. WELL LOCATION:
Twp. 34 North ☒ or South ☐ Rge. 3 East ☒ or West ☐
Sec. 36 10 acres 1/4 NW 40 acres 1/4 SW 160 acres 1/4
Gov't Lot County Idaho
Lat. 46 ° 14 586 (Deg. and Decimal minutes)
Long. 116 ° 02 016 (Deg. and Decimal minutes)
Address of Well Site Same No. 84-94-0031-100
(Give at least name of road + Distance to Road or Landmark) City Kamiah
Lot. Blk. Sub. Name

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other

5. TYPE OF WORK:
☐ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☒ Other Deepen

6. DRILL METHOD:
☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
—				

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
4½"	-10	470	Sch	40 PVC	☐	☒	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s)

9. PERFORATIONS/SCREENS:
Perforations ☒ Y ☐ N Method Saw
Manufactured screen ☐ Y ☐ N Type
Method of installation

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
430	470	⅛ x 6	77	4½"	PVC	Sch 40

Length of Headpipe — Length of Tailpipe —
Packer ☐ Y ☐ N Type —

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
		—		

11. FLOWING ARTESIAN:
Flowing Artesian? ☐ Y ☐ N Artesian Pressure (PSIG) —
Describe control device —

12. STATIC WATER LEVEL and WELL TESTS:
Depth first water encountered (ft) 430' Static water level (ft) 30'
Water temp. (°F) 58° Bottom hole temp. (°F)
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
470'	50 est.	1 HR

Test method: Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: Good

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
6	300	470	Salt/Pepper Granite	X	

Completed Depth (Measurable): 470'
Date Started 2/10/14 Date Completed: 2/11/14

14. DRILLER'S CERTIFICATION:
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Neil & Sons Well Drilling LLC Co. No. 616
*Principal Driller [signature] Date 2/12/14
*Driller Date
*Operator II Jason Neil Date 2/12/14
Operator I [signature] Date 2/12/14

* Signature of Principal Driller and rig operator are required.