Agrium

Agrium Conda Phosphate Operations*
3010 Conda Road
Soda Springs, ID 83276
Tel: 208-547-4381
Fax: 208-547-2550

July 22, 2013
MI-13-020

Mr. Bill Rogers
Stationary Source Permit Program Coordinator
Idaho Department of Environmental Quality
Air Quality Division
1410 North Hilton
Boise, Idaho, 83706

RE: Permit to Construct Application for Agrium's Lanes Creek Mine

Dear Mr. Rogers:

Agrium is pleased to submit this Permit to Construct (PTC) application for the proposed Lanes Creek Mine located approximately 20 miles northeast of Soda Springs, Idaho.

This submittal includes the PTC application air dispersion modeling which demonstrates compliance with all applicable air quality rules and detailed emission calculations. This submittal also contains electronic copies of the modeling files, detailed emission calculations, dispersion modeling protocol and DEQ modeling approval letter that support this application. Additionally, this application contains the $ 1,000.00 PTC application fee.

Pursuant to IDAPA 58.01.01.123, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Please feel free to call me at 208-547-4688 or Dale Kerner with Haley & Aldrich at 208-947-5895 if you have any questions, comments or if you need any additional information.

Sincerely,

Katy McKinley

Katy McKinley
Mine Permit Manager

Cc: Erika Stoner, Agrium
Dale Kerner, Haley & Aldrich
Greg Hildebrand, Hildebrand and Associates, LLC.

* A Registered Name of Nu-West Industries, Inc.

Lanes Creek Mine

Permit to Construct Application

Prepared for:

Agrium

3010 Conda Road
Soda Springs, ID 83276

Prepared by:

Hildebrand & Associates, LLC

Hildebrand & Associates, LLC
4623 E. Pegasus Ct
Boise, Idaho 83716
(208) 761.5121

July15th, 2013

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1.0 INTRODUCTION

Nu-West Industries, Inc. doing business as Agrium Conda Phosphate Operations (Agrium) is requesting an air quality Permit-to-Construct Application (PTC) for an open-pit phosphate mine on the eastern slope of Rasmussen Ridge in Caribou County, Idaho. The proposed mine is called the Lanes Creek Mine (LCM) and is located approximately 20 miles (25 road miles) northeast of Soda Springs, Idaho. The LCM is an inactive phosphate mine proposed for re-development. The mining operation would develop phosphate ore reserves contained within a privately owned lease currently held by J.R. Simplot Company (permit number RP509 [S00509]) and located on private land owned by Bear Lake Grazing Company (BLGC). A lease extension is proposed adjacent to and south of the private lease to accommodate the ore stockpile area.

Details of proposed mining and reclamation activities are included in the Lanes Creek Mine Operations and Reclamation Plan (Agrium, 2013). The LCM would operate for a period of approximately 4 years (Fall 2013 through Spring 2017), followed by an estimated 2 years of reclamation activities (2017-2019). The proposed LCM is generally located at Universal Transverse Mercator (UTM) coordinates 473,934 meters (m) east and 4,743,672 (m) north [North American Datum (NAD) 83)], Zone 12 and encompasses the following sections:
Township 7 South, Range 44 East: SE ¼, NE¼ of the SW ¼, SW ¼ of the NE ¼, SE ¼ of the NW ¼ of Section 4;
Township 7 South, Range 44 East: W ½ of the NE ¼ of Section 9; and,
Township 6 South, Range 44 East, W ½ of the SE ¼ of Section 32

A pre-permit application meeting was held with IDEQ on January 16, 2013. The project is discussed in further detail in Section 2. This document contains the following sections that will serve to meet the Idaho Department of Environmental Quality (IDEQ) PTC Application requirements provided in Idaho Administrative Procedures Act (IDAPA) 58.01.01.200-228 for Agrium's LCM located in Soda Springs, Caribou County, Idaho. Section 2.0 provides facility information, presents a process description, identifies emissions units, and provides a summary of potential to emit (PTE) emissions from the facility. Section 3.0 discusses the air quality impact analysis. Modeling was conducted using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee Dispersion Model version 12345 (release date December 2012). DEQ PTC forms, emissions calculations, modeling files, and other supporting documentation are provided in Appendices A through J.

2.0 PROJECT DESCRIPTION

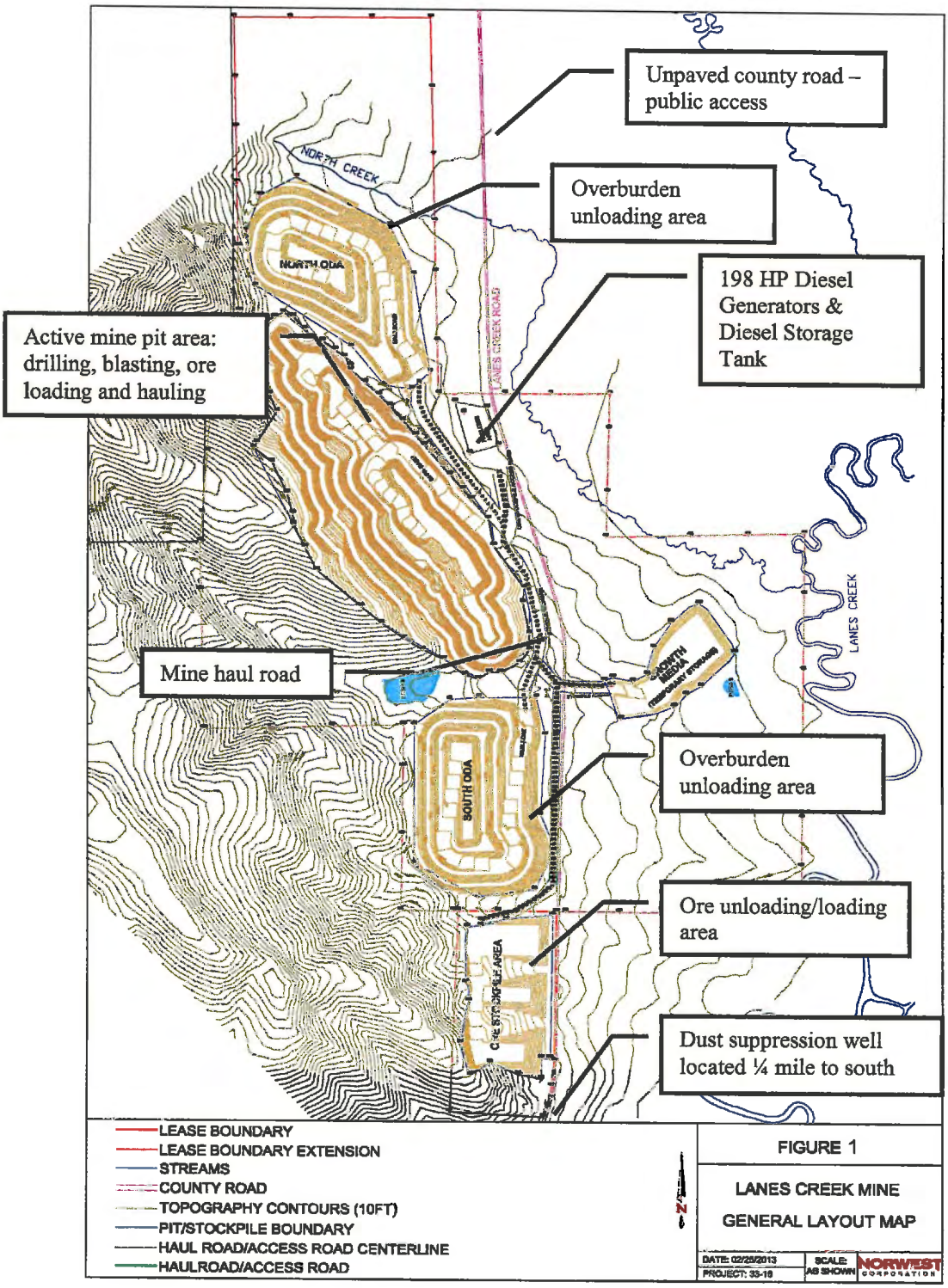
Agrium is proposing to construct and operate an open-pit phosphate mine on east slope of Rasmussen Ridge in Caribou County, Idaho. The proposed LCM is anticipated to be mined at a rate of approximately 0.75 million tons of phosphate ore per year (3 million total tons of recoverable ore). The estimated mine life is approximately four years at this proposed mining rate. Mining operations will commence in the southern portion of the proposed mine pit, expanding the footprint of the existing pit and progress north. An anticipated construction schedule for the LCM is provided in Appendix B. No phosphate ore crushing or smelting is included in the project, nor is any connection to crushing or smelting under consideration. Mining of ore will be consistent with methods currently utilized at Agrium's other open-pit phosphate mining operations in the region.

Prior to mining, growth media will be removed from proposed areas of disturbance and temporarily placed in an existing growth media storage area. During mine development, the existing south overburden stockpile (south overburden disposal area, or south ODA) will be expanded. A separate overburden stockpile to the north (north overburden disposal area, or north ODA) will be established. Mining activities may occur at any time during the year. Ore removed during mining will be temporarily stored south of the pit in the ore stockpile area. Overburden material removed during mining will be temporary stored north and south of the pit in the overburden stockpile areas. As soon as is practicable, overburden material will be selectively backfilled into previous mining excavations. Ore will be loaded into tractor-trailer highway trucks which will transport the ore approximately 30 miles round-trip via existing county (Lanes Creek Road) and private roads to Agrium's existing Wooley Valley Tipple site for transportation to Agrium's Conda Phosphate Operations processing plant.

Seasonal ore haulage to the Wooley Valley Tipple will occur during the winter months (December through March) when the county road is closed to the public and/or as agreed to with Caribou County. Additional mine infrastructure will be constructed to support mining operations and will include a facilities area and on-lease mine haul roads and access roads. The facilities area and on-lease haul roads are discussed below. Proposed mine features are illustrated below in Figure 1-1.

Figure 1-1

Lanes Creek Mine Layout & Plot Plan



2.1 FACILITIES AREA

A facilities area will be constructed east of the mine pit (west of Lanes Creek Road) as a place for employees to meet, receive operational instruction, and discuss safety issues. The facilities area will contain an equipment "ready-line" for parking equipment while not in operation, a diesel generator pad, one 20,000-gallon above-ground storage tank (AST) containing diesel fuel, office/ crew trailers or other infrastructure necessary for operations. The facilities area will house two identical GENARAC, Tier III, 198 horsepower (hp) diesel-burning generators to provide power to the project facilities and the equipment ready-line.

2.2 ON-LEASE ACCESS AND ORE HAUL ROADS

A network of access roads and haul roads will be developed on the lease to provide access to the mine pit and to haul ore to the ore stockpile area. It is anticipated that there will be six haul roads inside the lease boundary and each haul road will be approximately 80 feet wide. Mine personnel will access the west portion of the LCM using the existing county road (Lanes Creek Road) which bisects the lease boundary from north to south. The county road (Lanes Creek Road) is a public road. Modeling receptors (Figure 4-2) were located inside the boundary to represent the section of the road that passes through the facility boundary. Public access to mine haul roads inside the lease boundary will be restricted by access gates and signage.

2.3 PROCESS DESCRIPTION

Major operations at the LCM include: (a) open-pit mining including drilling, blasting, loading and hauling ore and overburden material; and (b) stock piling of ore, growth media and overburden material. As previously mentioned, no phosphate ore crushing or smelting is included in the project, nor is any connection to crushing or smelting under consideration. An illustration of where these processes will occur is presented in Figure 1-1. Descriptions of the major processes, related potential air pollutant emissions from these processes, and the methods used to control emissions are discussed below.

Secondary processes that have the potential to emit regulated air pollutants include: (a) diesel-burning generators and (b) diesel fuel storage in one 20,000 gallon AST. The diesel-burning generators are integral parts of the major operations at the LCM and are therefore included in the description of the major processes below.

The processes at the LCM have the potential to emit (PTE) air pollutant emissions including: particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), carbon monoxide (CO), nitrous oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC), hazardous air pollutants (HAPs), and toxic air pollutants (TAPs).

2.3.1 OPEN-PIT MINING

Mining of ore will be consistent with methods currently utilized at Agrium's other open-pit phosphate mining operations in the region and will include large-scale equipment including rotary blasthole drills, highway haul trucks, off-highway water trucks, dozers and graders, fueling trucks and support vehicles. Depending on weather conditions, peak mining rates are expected to reach between 0.75 million tons per year to 1 million tons per year (3 million total tons of mined ore).

2.3.2 DRILLING AND BLASTING

Drilling and blasting are performed within the open-pit mine. The bulk of production blast-hole drilling will be performed by a rotary blast-hole drill. Ammonium nitrate and fuel oil (ANFO) blasting agents will be used for all rock breakage. Based on a maximum of 100 blasts per year, blasting agent use will average about 1,800 tons per year (tpy), or 18 tons of ANFO per hole drilled.

Both drilling and blasting have the potential to emit regulated air pollutants. Drilling has the potential to emit particulate matter (PM), PM_{10}, and $PM_{2.5}$ emissions, while blasting has the additional potential to emit CO, NOx, and SO_2 emissions. Potential fugitive particulate emissions from drilling may be controlled by the addition of water and/or the use of dust shrouds on an as needed basis in order to inhibit the escape of particulate emissions from the top of the hole during the drilling process. Potential emissions are calculated assuming the fugitive particulate emissions from drilling are controlled 70 percent by water application. However, when calculating worst case potential emissions from blasting, no emission controls are applied.

2.3.3 LOADING AND UNLOADING

Ore, overburden material and growth media are loaded into haul trucks and hauled to their respective staging locations. Ore will be transported from the open-pit to the ore stockpile storage area pending transport to Agrium's Wooley Valley Tipple site. Overburden material from the open pit will be transported directly to the overburden storage areas located to the north and south of the proposed open-pit (north ODA and south ODA). Growth media will be stripped and hauled to the growth media

stockpile. Loading ore and overburden material into haul trucks from the open pit mine and the unloading of ore and overburden material in to the ore and overburden stockpile storage areas has the potential to emit PM, PM_{10}, and $PM_{2.5}$ emissions. When calculating worst case fugitive particulate emissions from loading and unloading, the natural moisture content of the ore is considered. No secondary emission controls are applied.

2.3.4 ON-LEASE HAULING

An on-site road network will be developed to provide access to the mine pit and facilitate material transport on the LCM. The LCM will have six haul roads inside the lease boundary to transport materials and equipment. These will include an ore stockpile road, growth media road, ready-line road, north haul road, south haul road and pit haul road. Stockpiled ore will be loaded onto highway-rated haul trucks and transported approximately 30 miles round-trip via existing county (Lanes Creek Road) and private haul roads to Agrium's existing Wooley Valley Tipple. The Wooley Valley Tipple is an existing facility and is not considered an adjacent or contiguous property. Therefore the emissions from the Wooley Valley Tipple are not included with this project.

2.3.5 STOCK PILES

Prior to mining, available growth media will be stripped and temporarily stockpiled in the growth media storage area. The growth media storage area has an approximate capacity of 461,000 cubic yards. To control fugitive emissions, the growth media stockpile will be seeded with an interim seed mix. Growth media will be used during reclamation activities. Ore removed during mining will be temporarily stored south of the pit in the ore stockpile, pending loading and transport to the Wooley Valley Tipple site during the seasonal haul period. The ore stockpile area will have a capacity of approximately 300,000 cubic yards. Overburden material removed during mining will be directly transported to the temporary overburden storage areas located to the north and south of the proposed open-pit. The north and south overburden storage areas will hold a combined 7,500,000 cubic yards of material. As soon as is practicable, overburden material will be selectively backfilled into previous mining excavations. When calculating worst case potential emissions from ore, overburden and growth media stockpiles, no emission controls are applied.

2.3.6 DISTURBED ACREAGE

During mine development, the LCM will expand the existing open pit, the existing south overburden stockpile storage area will be expanded, and an area for a separate overburden storage area to the north will be established. Additionally, stormwater and sediment control structures, a facilities area, an ore stockpile area, a growth media storage area, and access and haul roads within the lease will be constructed to support mining operations. Areas of surface disturbance associated with these activities are summarized in Table 2-1. During operation, storm water will be managed, controlled and monitored as required under the Environmental Protection Agency's (EPA's) Multi-Sector General Perm it (MSGP) per the National Pollutant Discharge Elimination System (NPDES) program.

Table 2-1

Surface Disturbances

Activity / Area	Existing Surface Disturbances (Acres)	New Surface Disturbances (Acres)	Total Surface Disturbances (Acres)
Mine Pit	11.0	44.9	55.9
ODAs	7.0	43.7	50.7
Sediment Control Structures	2.0	8.0	10.0
Facilities Area	0	1.5	1.5
Ore Stockpile	0	13.7	13.7
Access and Haul Roads	12.0	12.6	24.6
Growth Media Storage Area	4.0	5.3	9.3
Total	36.0	129.7	165.7

2.4 SECONDARY PROCESSESS

The following secondary processes are necessary to support the major operations at the LCM and are capable of producing emissions: (a) diesel-burning generators, and (b) storage tanks. There are two GENERAC, Tier III, stationary diesel-burning generators that will be used at the LCM. The diesel-burning generators are used to provide electrical power to the facilities area and to the equipment ready-line. Each GENERAC diesel-burning generator is nominal rated at 198 hp. In addition, the LCM will use nine portable Wanco light towers. The light towers are powered by Tier IV diesel-burning generators and have a maximum power output of 13.6 hp. When calculating worst case potential emissions from light plants, each

diesel generator was assumed to have a maximum output power of 14 hp. The LCM will include one 20,000 gallon diesel fuel AST, to provide fuel for the generators.

2.5 POLLUTION CONTROL

All reasonable precautions shall be taken to prevent fugitive particulate matter from becoming airborne as required in IDAPA 58.01.01.651. Water trucks will be used to water the unpaved roads at the LCM. Based on the Utah Department of Environmental Quality document, "Emission Factors for Paved and Unpaved Haul Roads" from March 2008, sufficient watering of unpaved roads can result in control efficiency up to 70 percent. To establish reasonable precautions, Agrium shall develop, maintain and implement a fugitive dust control plan which identifies potential sources of fugitive dust and which establishes good operating practices for limiting the formation and dispersion of dust from those sources. A fugitive dust control plan for the LCM is provided in Appendix C.

2.6 EMISSION RELATED INFORMATION

A list of the emission units associated with the LCM is presented in T able 3-1. The emission units are classified by a general process description and include the emission species, type of control device, if any, and a non-fugitive or fugitive emission designation.

2.7 INSIGNIFICANT ACTIVITIES

Certain operations and activities produce air emissions that are considered insignificant with respect to Idaho Tier I air quality permit regulations, according to the Idaho Administrative Procedures Act (IDAPA) 58.01.01.317. However, the LCM is requesting a PTC, and therefore none of the activities at the LCM can be considered insignificant. Therefore all quantified emission units at the LCM will be included in the facility wide emission inventory.

2.8 FACILITY CLASSIFICATION

The LCM is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source. Therefore in accordance with 40 CFR 52.21(a)(2), Prevention of Significant Deterioration (PSD) requirements are not applicable to LCM. The LCM is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 tons per year (tpy).

Non-fugitive facility wide emissions from LCM do not have the potential to emit (PTE) greater than 100 tpy for PM_{10}, $PM_{2.5}$, SO_2, CO, NO_2, or VOC, therefore LCM will be categorized as a synthetic minor stationary source. Emissions of Hazardous Air Pollutants (HAPs) will not exceed the major source thresholds of 10 tpy for a single HAP or 25 tpy for all HAPs combined, therefore the LCM will also be a minor source of HAP emissions.

2.9 CALCULATION OF EMISSIONS

The LCM has the potential to emit the following regulated air pollutants: PM_{10}, $PM_{2.5}$, SO_2, CO, NO_x, VOCs, HAPs and TAPs. In order to ensure that this application is based upon the maximum potential emissions, the inventory is based upon worst case process rates that result in maximum emissions. Emission factors are primarily from the Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition (AP-42), manufacturer-generator exhaust emissions, and Environmental Protection Agency (EPA) Tier IV Non-Road Emission Factors, and EPA Tanks Program 4.0.

The methodology used to estimate emissions from the emission units described in this application is presented in Sections 2.6.1 through 2.6.10. Each section contains the emission units pertaining to a general operation. The calculation of process rates, determination of emission factors, and application of control efficiencies are discussed for each emission unit to fully explain how uncontrolled and controlled potential emissions are calculated. A detailed emission inventory as well as emission calculations are provided on compact disk in Appendix D.

2.10 FUEL BURNING EQUIPMENT

The daily and annual process rates for the diesel-burning generators are based on the nominal power ratings of the generators and the hours of operation. The GENERAC Tier III diesel generators have a nominal power rating of 198 hp. The Tier IV Wanco diesel light plants have a maximum power output of 13.6 hp. However, when calculating worst case emissions for the light plants, each diesel generator was assumed to have a maximum output power of 14 hp. All generator emissions were calculated for continuous operation at 8,760 hours/year. Manufacturer's data sheets for the Wanco light plants and GENERAC generators is provided in Appendix E. EPA Tier IV emission factors for non-road engines is provided in Appendix F.

Uncontrolled PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, VOCs, HAP and TAP emissions resulting from the burning of diesel fuel are calculated using emission factors from AP-42, Tables 3.3-1, 3.3-2 (10/96) for uncontrolled diesel engines less than or equal to 600 hp, generator-manufacturer exhaust emissions, and EPA Tier IV Emission Standards for Non-Road Diesel Engines for engines rated between 11 and 25 hp. The

combustion of diesel burn also contributes to Greenhouse Gas emissions. Greenhouse Gas emissions were calculated using emission factors from AP-42, Table 3.3-1 for uncontrolled diesel engines less than or equal to 600 hp.

Table 2.2

Identification and Description of Emission Units

Description of Emission Unit	Emission Species	Control Device	Non-Fugitive or Fugitive [a]
Fuel Burning Equipment			
Diesel Burning Generators (198 hp)	PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, VOCs, HAPs TAPs	None	Non-Fugitive
Diesel Burning Light Plants (13.6 hp)	PM_{10}, $PM_{2.5}$, CO, NO_x, SO_2, VOCs, HAPs TAPs	None	Non-Fugitive
Tanks			
Diesel Storage Tank (20,000 gallons)	VOCs	None	Non-Fugitive
Mining			
Drilling	PM_{10}, $PM_{2.5}$	Watering [b]	Fugitive
Blasting including AFNO Detonation	PM_{10}, $PM_{2.5}$ CO, NO_x, SO_2	None	Fugitive
Loading Ore and Overburden Material	PM_{10}, $PM_{2.5}$	None	Fugitive
Haul Road Emissions	PM_{10}, $PM_{2.5}$	Watering	Fugitive
Unloading Ore and Overburden Material	PM_{10}, $PM_{2.5}$	None	Fugitive
Ore, Overburden and Growth Media Stockpiles	PM_{10}, $PM_{2.5}$	None	Fugitive

[a] Fugitive emission do not contribute to the facility-wide potential to emit.

[b] Potential emissions are calculated assuming the fugitive particulate emissions from drilling are controlled 70 percent by water application.

2.11 STORAGE TANKS

There will be one AST at the LCM that will have the potential to emit VOC emissions:

- One, 20,000 gallon diesel fuel AST

Uncontrolled VOC emissions from the tanks are calculated using the EPA's TANKS 4.0 program for horizontal fixed roof tanks. The following information was used in the program to calculate the emissions from the tanks.

- The tank is not heated;
- The paint characteristics include white color paint and good paint conditions;
- Tank is positioned horizontally;
- The vacuum and pressure settings are 0 psig

The EPA TANKS output files showing the annual emissions from the diesel fuel AST is presented in Appendix G. Hourly and annual emission rates were estimated from EPA TANKS program by assuming continuous operation (8,760 hours/year).

2.12 DRILLING

Uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions from drilling are calculated using the emission factor of 1.3 lb/hole, from AP-42, Table 11.9-4 (7/98), for total suspended particulates (TSP) from drilling of overburden at western surface coal mines. The TSP emission factor is assumed to be applicable for PM. PM_{10} and $PM_{2.5}$ emissions from drilling are not listed in Table 11.9-4. PM_{10} emissions are assumed equal to 33 percent of PM emissions based on the ratio of PM_{10} to PM emissions for tertiary crushing of high moisture ore in AP-42, Table 11.24-2 (08/82). $PM_{2.5}$ emissions are estimated to be 18.5% of PM_{10} emissions based on the ratio of $PM_{2.5}$ to PM_{10} controlled emissions for tertiary crushing in AP-42, Table 11.24-2 (08/82).

Potential fugitive particulate emissions from drilling may be controlled by the addition of water and/or the use of dust shrouds on an as needed basis in order to inhibit the escape of particulate emissions from the top of the hole during the drilling process. Potential emissions are calculated assuming the fugitive particulate emissions from drilling are controlled 70 percent by water application.

2.13 BLASTING

Uncontrolled emissions of PM_{10} and $PM_{2.5}$ for blasting are calculated by using the predictive emission equation from AP-42, Table 11.9-1 (10/98) for blasting at western surface coal mines for TSP and multiplies the result by the scaling factor for PM_{10} and $PM_{2.5}$ to get emissions in pounds per blast. To generate a daily emission rate, the calculated emission rate in pounds per blast is multiplied by the number of blasts occurring in a day. To generate an annual emission rate, the calculated emission rate is multiplied by the number of blasts per day, and then by the number of days per year in which blasting will be performed. This yields an emission rate in pounds per year, which is subsequently divided by 2000 to get tons per year. The tons per year value is then multiplied by the scaling factor of 0.52 and 0.03 to generate PM_{10} and $PM_{2.5}$ emissions. The scaling factor of 0.52 is provided in AP-42, Table 11.9-1 and is to be multiplied by the TSP emission value. The predictive emission equation for blasting is provided below.

$$EF = (k)(0.000014)(A)^{1.5}$$

Where:

EF = emission factor (lb. /blast)

k = scaling factor (TSP, assumed to be equivalent to PM, 0.52 for PM_{10}, 0.03 for $PM_{2.5}$)

A = horizontal area of the blast (ft^2; 30,000 maximum, calculated by multiplying the average amount of holes drilled per blast (75 holes) by the approximate spacing (20 ft) and burden (20 ft) of the drilling pattern)

Uncontrolled gaseous (CO, NO_x, and SO_2) emissions from blasting are calculated using the emission factors from AP-42, Table 13.3-1 (02/80) for the detonation of ANFO.

2.14 HAULING ORE AND OVERBURDEN MATERIAL

The hourly and annual process rates for the amount of vehicle miles traveled (VMT) by the haul trucks in order to haul ore, overburden material and growth media to their respective storage areas are calculated by multiplying the distance traveled by the amount of truckloads needed to haul the material, which are anticipated to be consistent throughout the life of the mine. The annual VMT process rates, the support vehicle fleet size, and the support vehicle weights are presented in Table 2-3.

Uncontrolled PM_{10} and $PM_{2.5}$ emissions resulting from the use of haul trucks on unpaved haul roads at the LCM are calculated from the emission factor in AP-42, Section 13.2.2 (11/06).

$$EF = [k\ (s/12)^{**}a\ (W/3)^{**}b][(365-P)/365][\text{surface improvement factors}]$$

Where:

EF = size-specific emission factor (lb/VMT)

k = empirical constant (0.15 for $PM_{2.5}$ and 1.5 for PM_{10})

a = empirical constant (0.9 for PM_{10} and $PM_{2.5}$)

b = empirical constant (0.45 for PM_{10} and $PM_{2.5}$)

s =surface material silt content of 8.4 % from AP-42, Table 13.2.2-1

w = mean weight of vehicles in tons

p = number of days in a year with at least 0.254 mm (0.01 in) of precipitation = 90 from Figure 13.2.2-1

Surface improvement factors = 70% dust control for applying water

Emissions of particulate matter resulting from haul truck traffic on haul roads at the LCM will be controlled by the application of water to the road surface. Based on the Utah Department of Environmental Quality document, "Emission Factors for Paved and Unpaved Haul Roads" from March 2008, sufficient watering of unpaved roads can result in control efficiency up to 70 percent.

At the LCM, the roads will be watered sufficiently to achieve a70 percent control efficiency. Chemical dust suppressants can provide a greater control of fugitive particulate emissions from unpaved roads and may be used where conditions warrant. Potential emissions are calculated assuming the fugitive particulate emissions from hauling are controlled by water application.

Table 2-3

Total VMT and Weighted Average

Support Vehicle	Fleet Size	Vehicle Weight (Tons)	Vehicle Length (Feet)	Vehicle Height (Feet)	VMT Traveled (Total) [a b]
Water Truck	1	37	35	17	6,054
Graders	2	30	38.29	12.15	12,109
Bull Dozer	2	73.25	31	15	12,110
Haul Truck	6	100	35	17	36,324
Drill Truck	1	47.5	44	18	6,054
Excavator	2	127	35	17	12,774
Fuel Truck	1	23	50	14	6,054
Service Truck	1	23	50	14	6,054
¾ Ton Van	3	0.75	14	6	18,161
¾ Ton Truck	6	0.75	14	6	36,324
Average Values [c]		**46.225**	**34.629**	**13.615**	**152,018 (Total VMT)**

a Total VMT traveled accounts for all six haul roads

b Total VMT conservatively estimates four round-trips per day, per vehicle, per haul road, 365 days/year

c Average vehicle values (weight, length & height) were used for modeling

2.15 WIND EROSION OF STOCKPILES

Uncontrolled PM_{10} and $PM_{2.5}$ emissions generated from the storage of ore, overburden material and growth media are calculated from the emission factor provided in AP-42 Section 13.2.4. The PM_{10} and $PM_{2.5}$ emission factor (lb/ton) is generated from using the particle size multiplier (dimensionless), mean wind speed and the material moisture content. The emission factor is then multiplied by the material throughput to yield the PM_{10} and $PM_{2.5}$ emissions. This equation is:

$$EF = k(0.0032) \times \frac{(U/5)^{1.3}}{(M/2)^{1.4}}$$

Where:

EF = emission factor (lb/ton)

k = aerodynamic particle size multiplier (dimensionless), (0.35 for PM_{10}, 0.053 for $PM_{2.5}$)

U = mean wind speed. (The mean wind speed at the LCM site is 7.9 mph, the average value calculated from hourly data collected at the Soda Springs airport meteorological station from 1/2011 through 12/2011

M = material moisture content (phosphate ore in the region has a high moisture content averaging 12 percent)

Potential fugitive particulate emissions from the storage of ore, overburden material and growth media may be controlled by the addition of water on an as needed basis in order to inhibit the escape of particulate emissions. Potential emissions are calculated assuming no controls.

2.16 LOADING, UNLOADING ORE AND OVERBURDEN

Uncontrolled PM_{10} and $PM_{2.5}$ emissions generated from the loading and unloading of ore, overburden material and growth media into haul trucks and stockpiles are calculated from the emission factor provided in AP-42 Section 13.2.4. The PM_{10} and $PM_{2.5}$ emission factor (lb/ton) is generated from using the particle size multiplier (dimensionless), mean wind speed and the material moisture content. The emission factor is then multiplied by the material throughput to yield the PM_{10} and $PM_{2.5}$ emissions. This equation is:

$$EF = k(0.0032) \times \frac{(U/5)^{1.3}}{(M/2)^{1.4}}$$

Where:

EF = emission factor (lb/ton)

k = aerodynamic particle size multiplier (dimensionless), (0.35 for PM_{10}, 0.053 for $PM_{2.5}$)

U = mean wind speed. (The mean wind speed at the LCM site is 7.9 mph, the average value calculated from hourly data collected at the Soda Springs airport meteorological station from 1/2011 through 12/2011

M = material moisture content (phosphate ore in the region has a high moisture content averaging 12 percent)

Besides good operating practices, other pollution control methods are not implemented during ore and overburden loading.

2.17 WIND EROSION OF DISTURBED ACREAGE

Uncontrolled PM_{10} and $PM_{2.5}$ emissions generated from wind erosion of disturbance acreage are calculated from the TSP emission factor provided in AP-42 Section 11.9-4 (7/98). The TSP emission factor is then multiplied by the disturbed acreage and the PM_{10} and $PM_{2.5}$ aerodynamic particle size multiplier from AP-42 Table 13.2.4. Emissions were calculated with no water control. This equation is:

$$EF = 0.38*A*k \text{ tons/acre-year*acre}$$

Where:
EF = is the emissions

A = is the acreage of the source

k = is the Aerodynamic Particle Size Multiplier (dimensionless), (0.35 for PM_{10}, 0.053 for $PM_{2.5}$)

3.0 AIR QUALITY IMPACT ANALYSIS

This section describes the technical approach used for an air quality impact analysis for the LCM. The air dispersion modeling will follow the guidance and protocols outlined in the *State of Idaho Guidelines for Performing Air Quality Impact Analyses* (IDEQ, 2011) and the U.S. Environmental Protection Agency (EPA) *Guideline on Air Quality Models (Revised)* (EPA 2005).

A modeling protocol describing the proposed modeling approach was submitted to DEQ on behalf of Agrium on March 13th, 2013. This protocol was approved with resolution of comments on May 31st, 2013. A copy of the DEQ modeling approval letter along with the air dispersion modeling protocol is provided on compact disk in Appendix H.

The DEQ Modeling Guideline indicates that a modeling analysis is generally required with each permit application for new construction, or a modification that results in an increase in emissions of pollutants for sources permitted by DEQ. The types of permits that require a facility to demonstrate compliance with the NAAQS are permits to construct and Tier II operating permits. A modeling analysis may also be required to demonstrate compliance with the TAP standards. The LCM is located in Caribou County, which is designated as attainment/unclassifiable for NAAQS pollutants.

For new permit application, DEQ developed two levels (Level I and Level II) of modeling thresholds for criteria pollutants. If the facility-wide emissions for a given pollutant are less than Level I modeling thresholds, dispersion modeling for that pollutant is not required. If the facility-wide emissions for a given pollutant are greater than Level I thresholds but less than Level II modeling thresholds, dispersion modeling for that pollutant may not be required and are assessed on a case-by-case basis. Criteria pollutants that were assessed for LCM include PM_{10}, $PM_{2.5}$, and NOx as NO_2, CO, SO_2, and Pb. As stated in the DEQ modeling approval letter facility-wide emissions were compared against DEQs Level II modeling thresholds. Modeling thresholds for criteria pollutants and VOCs are shown in Table 3-1, along with a summary of projected LCM emissions.

Table 3-1

Total Projected Criteria Pollutant Emissions and Modeling Thresholds

Criteria Air Pollutants	Combustion Emissions		Level I Modeling Threshold		Modeling Required	Level II Modeling Threshold		Modeling Required
	lb/hr	T/yr	2011 Guidance			Case-by-Case		
PM10 24-hour	4.76		0.22	lb/hr	YES	2.6	lb/hr	YES
PM2.5 24-hour	0.73		0.054	lb/hr	YES	0.63	lb/hr	YES
PM2.5 annual		7.71	0.35	T/yr	YES	4.1	T/yr	YES
CO 1-hr, 8-hr	15.74		15	lb/hr	YES	175	lb/hr	NO
NOx 1-hr x 80%	5.97		0.20	lb/hr	YES	2.4	lb/hr	YES
NOx annual x 75%		24.63	1.2	T/Yr	YES	14	T/yr	YES
SO2 1hr, 3-hr, 24-hr	1.50		0.21	lb/hr	YES	2.5	lb/hr	NO
SO2 annual		6.53	1.2	T/yr	YES	14	T/yr	NO
VOC	3.97	17.54	40	T/yr	No	N/A	N/A	N/A
Lead rolling 3-month	0.00	0.00 (lb/mo)	14	lb/mo	No	N/A	N/A	N/A

Additionally, for TAPs, emissions are compared against screening emission levels (ELs). Modeling may be required for those TAPs with emissions that are equal to or greater than the ELs. ELs for TAPs emitted at the LCM are shown in Table 3-2, along with a summary of projected LCM hourly TAP emissions. Emissions of benzene, formaldehyde, naphthalene, and 1.3-butadiene, fluorene, phenanthrene, and POM exceed their respective ELs. However, in accordance with IDAPA 58.01.01.210 no further procedures for demonstrating compliance will be required for TAPs because the LCM is subject to 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Table 3-2
Screening Emission Levels and Total Projected TAP Emissions (lb/hr)

Hazardous Air Pollutants (HAPs) Toxic Air Pollutants (TAPs)			**Exceeds EL / Modeling Required**
TAPs / HAPs	**lb/hr**	**EL (lb/hr)**	
Benzene	3.41E-03	8.00E-04	YES
Toluene	1.49E-03	2.50E+01	No
Xylenes	1.04E-03	2.90E+01	No
Formaldehyde	4.31E-03	5.10E-04	YES
Acetaldehyde	2.80E-03	3.00E-03	No
Acrolein	3.38E-04	1.70E-02	No
Non-Carcinogenic Naphthalene	3.10E-04	3.33E+00	No
Carcinogenic Naphthalene	3.10E-04	9.10E-05	YES
Propylene	9.43E-03	N/A	
1.3-Butadiene	1.43E-04	2.40E-05	YES
Acenaphthylene	1.85E-05	9.10E-05	No
Acenaphthene	5.19E-06	9.10E-05	No
Fluorene	1.07E-04	9.10E-05	YES
Phenanthrene	1.07E-04	9.10E-05	YES
Anthracene	6.83E-06	9.10E-05	No
Fluoranthene	2.78E-05	9.10E-05	No
Benzo(g,h,I)perylene	1.79E-06	9.10E-05	No
Pyrene	1.75E-05	9.10E-05	No
PAHs			
Polycyclic Organic Matter (POM) 7-PAH Group	1.25E-05	2.00E-06	YES
Benzo(a)anthracene	6.14E-06		See POM
Chrysene	1.29E-06		See POM
Benzo(b)fluoranthene	3.62E-07		See POM
Benzo(k)fluoranthene	5.66E-07		See POM
Benzo(a)pyrene	6.87E-07		See POM
Indeno(1,2,3-cd)pyrene	1.37E-06		See POM
Dibenzo(a,h)anthracene	2.13E-06		See POM

Note: **Bold TAPs are considered Carcinogenic TAPs in accordance with IDAPA 58.01.586**

DEQ recommends that a preliminary analysis (PA) first be conducted when dispersion modeling is warranted. Facility-wide emissions are modeled for the PA to evaluate whether a significant impact exists. Model results are compared to the Class II Significant Contribution Levels (SCLs). Table 3-3 shows the SCLs which were used to assess whether or not LCM has a significant impact at downwind receptors. When modeling results do not exceed the SCLs for a pollutant, no further analysis for that pollutant is required. Table 3-4 shows the SCLs which were exceeded. A full impact analysis (FIA) was performed for PM_{10}, $PM_{2.5}$, NO_x, and SO_2. The FIA requires adding facility-wide emissions to a background concentration to estimate a total concentration. Background concentrations were provided by DEQ for the cumulative impact analysis. The total concentration for a pollutant must demonstrate compliance with the NAAQS. Table 3-3 shows the NAAQS increments with which the LCM must comply.

Table 3-3

Applicable Regulatory Limits for Criteria Pollutant Dispersion Modeling

Pollutant	Averaging Period	Significant Contribution Levels [c] ($\mu g/m^3$)[b]	NAAQS [d] ($\mu g/m^3$)	Modeled Value [g] for Full/Cumulative NAAQS Analyses
PM_{10}[a]	24-hour	5.0	150	Maximum 6th highest [h]
$PM_{2.5}$[a]	Annual	0.3	15 (12) [i]	$PM_{2.5}$ –Maximum 1st high [i]
	24-hour	1.2	35	$PM_{2.5}$ –Maximum 1st high [i]
Carbon monoxide (CO)	8-hour	500	10,000	Maximum 2nd highest [f]
	1-hour	2,000	40,000	Maximum 2nd highest [f]
Nitrogen Dioxide (NO_2) *NO_2 is the indicator species for NOx*	Annual	1.0	100	Maximum 1st highest [e]
	1-hour [m]	EPA Interim: 4 ppb [k] (7.5 $\mu g/m^3$)	100 ppb (188 $\mu g/m^3$)	Maximum 8th highest[k]
Sulfur Dioxide (SO_2) *SO_2 is the indicator species for SOx*	Annual	1.0	80	Maximum 1st highest [e]
	24-hour	5	365	Maximum 2nd highest [f]
	3-hour	25	1,300	Maximum 2nd highest [f]
	1-hour	EPA Interim: 3 ppb [b, l] (7.9 $\mu g/m^3$)	75 ppb [b, l] (196 $\mu g/m^3$)	Maximum 4th highest[l]
Lead (Pb)	Rolling 3-month average	---	0.15	Maximum 1st highest [e, j]

[a] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) or 2.5 micrometers.
[b] $\mu g/m^3$ = micrograms per cubic meter, ppb = parts per billion
[c] SCLs are defined in Idaho Air Rules Section 006. $PM_{2.5}$ SCLs (75 FR 64864, October 20, 2010) became effective on March 29, 2012. **The maximum 1st highest modeled value is always used for significant impact analyses.**
[d] Federal National Ambient Air Quality Standards (NAAQS, see 40 CFR 50) in effect as of July 1 of each year are incorporated by reference during the legislative session the following spring. See Idaho Air Rules Section 107.
[e] Never expected to be exceeded in any calendar year.
[f] Never expected to be exceeded more than once in any calendar year. The 3-hr and 24-hr SO_2 standards were revoked (see 75 FR 35520, June 22, 2010) but will remain in effect until one year after the effective date of initial area designations for the new 1-hour SO_2 NAAQS. Modeling need not be conducted for 3-hr and 24-hr SO_2 if compliance has been shown for the 1-hr SO_2 NAAQS.
[g] Concentration at any modeled receptor.
[h] PM_{10} concentration at any modeled receptor when using five years of meteorological data. Use the maximum 2nd highest value for analyses with less than five years of meteorological data or one year of site-specific met data.
[i] $PM_{2.5}$ concentration at any modeled receptor when using a single year of site-specific meteorological data or a concatenated file with five years of meteorological data. EPA recommends using the high 8th high 3-year average monitored value for background, and using the highest 24-hr average and highest annual averages across five years of met data for the modeled result (Steven Page memo, Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS, March 23, 2010). Annual $PM_{2.5}$ NAAQS of 12 $\mu g/m^3$ (78 FR 3086, January 15, 2013) will become effective in Idaho when the legislature adjourns *sine die* in spring of 2014.
[j] Pb: The EPA's October 15, 2008 standard became effective in Idaho's NSR program on March 29, 2010.
[k] NO_2 concentration at any modeled receptor when using complete year(s) of site-specific met data or five consecutive years of meteorological data. Compliance is based on the 3-year average of the 98th percentile of the annual distribution of 1-hour average daily maximum concentrations. February 10, 2010 1-hr NO_2 NAAQS (75 FR 6474) became effective in Idaho on April 7, 2011. EPA Interim significant impact level (SIL), Steven Page memo dated June 29, 2010.
[l] SO_2 concentration at any modeled receptor when using five consecutive years of meteorological data. Compliance is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The EPA's 1-hour SO_2 standard (75 FR 35520, June 22, 2010) became effective on April 7, 2011. EPA Interim SIL, Steven Page memo dated August 23, 2010.

Table 3-4

Significant Contribution Level Results

Pollutant	Averaging Period	Significant Contribution Level ($\mu g/m^3$)	SIL Results[1] ($\mu g/m^3$)	East (m)	North (m)
NO_2	Annual	1	6.49	474019.95	4743714.86
	1-hour	7.5	147.54	474042.90	4743633.52
SO_2	Annual	1	1.53	474019.95	4743714.66
	24-hour	5	12.19	474061.67	4743591.81
	3-hour	25	28.26	474061.67	4743591.81
SO_2	1-hour	7.9	39.81	474074.18	4743552.18
CO	8-hour	500	273.27	473728.01	4743036.85
	1-hour	2,000	818.70	474042.90	4743633.52
PM_{10}	24-hour	5	54.55	473795.95	4743094.08
$PM_{2.5}$	24-hour	1.2	11.97	473819.78	4743094.76
	Annual	0.3	1.56	474086.69	4743512.55

1 Five year mean of highest concentration for each averaging period (2004-2008)

4.0 DISPERSION MODELING

The following sections discuss the technical approach for the air dispersion modeling analysis that was performed to estimate ambient air impacts for $PM_{2.5}$, PM_{10}, NO_x, and SO_2. Air dispersion modeling analysis addressed the impacts from combustion and volume sources. Air dispersion modeling analysis followed the guidance and protocols outlined in the Revised State of Idaho Air Quality Modeling Guideline (IDEQ 2011) and the U.S. Environmental Protection Agency (EPA) Guideline on Air Quality Models (Revised) (EPA 2005).

4.1 DISPERSION MODEL SELECTION

The dispersion modeling was conducted using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) modeling system, the AERMOD dispersion model, version 12345 (release date December 2012) was used to predict maximum criteria pollutant concentrations in ambient air from the LCM. Analysis assumed 8,760 hours of all processes to calculate the worst case impacts. AERMOD was run using all the regulatory default options including use of stack-tip downwash, buoyancy-induced dispersion, calms processing routines, upper-bound downwash concentrations for super-squat buildings, default wind speed profile exponents, vertical potential temperature gradients, and no use of gradual plume rise. Only pollutant dispersion was modeled for this analysis; particle deposition was not considered.

4.2 BUILDING WAKE EFFECTS

There are no buildings or structures scheduled to be constructed at the LCM, therefore building downwash effects were not included in this modeling analysis.

4.3 TERRAIN DESCRIPTION

For modeling purposes, the rural/urban classification of an area is determined by either the dominance of a specific land use or by population data in the study area. Generally, if cumulative heavy industrial, light-moderate industrial, commercial, and compact residential (single and multiple family) land uses within a three kilometer radius from the facility is greater than 50%, the area is classified as urban. Conversely, if common residential, estate residential, metropolitan natural, agricultural rural, undeveloped (grasses), undeveloped (heavily wooded) and water surfaces land uses within a three kilometer radius from the facility are greater than 50%, the area is classified as rural.

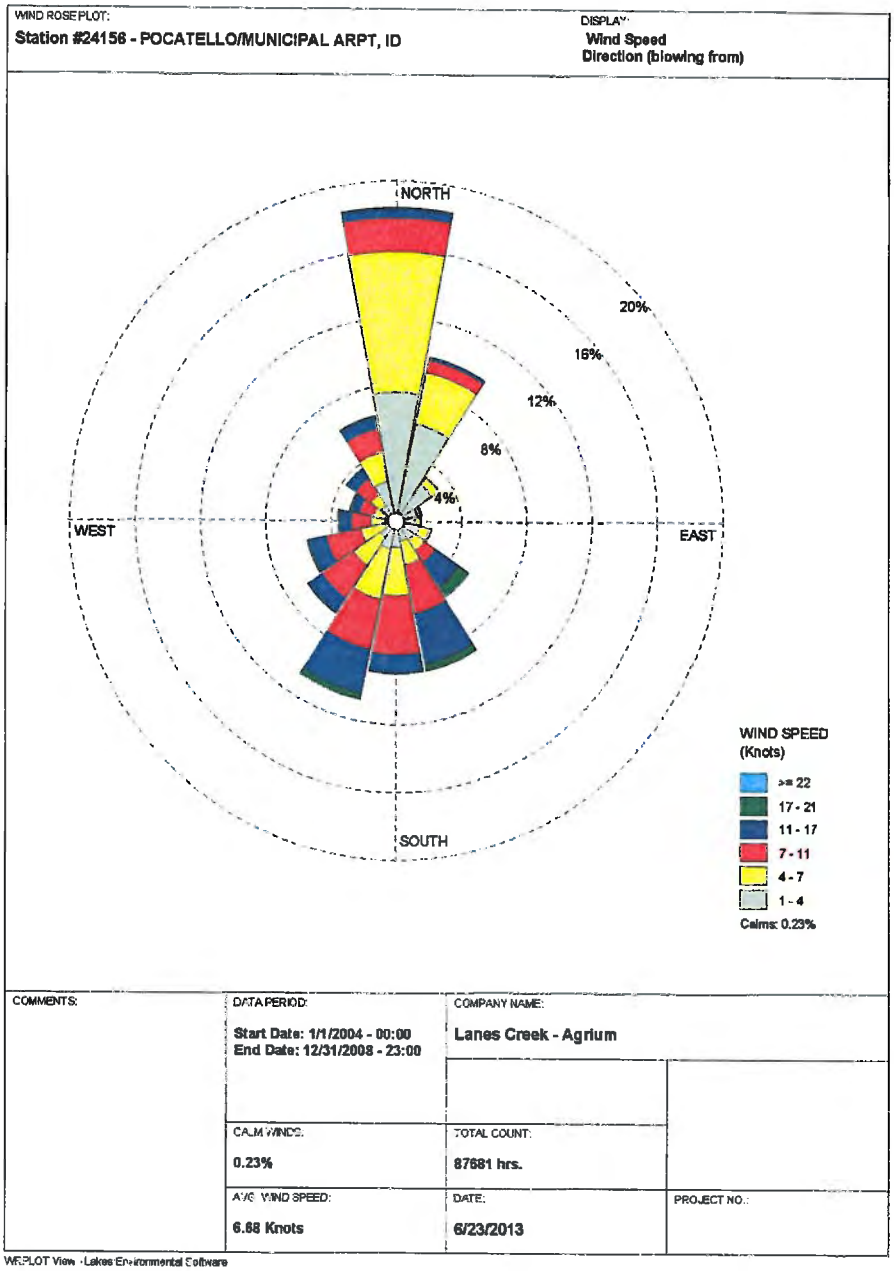
The LCM is remotely located in Soda Springs, Caribou County, Idaho, at an elevation of approximately 6,511 feet (1,984 meters) above mean sea level. The facility is situated within the Caribou-Targhee National Forest. For modeling purposes the rural classification was used in the modeling analysis.

4.4 METEOROLOGICAL DATA

Dispersion modeling was conducted using the best readily-available AERMOD-ready meteorological data set for projects located in the southeastern Idaho phosphate mine district is the P4-Soda Springs 2004-2008 data set. These data were based on surface data collected at P4 in Soda Springs supplemented with surface data collected at the Pocatello airport, with upper air data collected at the Boise airport for the same period. Figure 4-1 presents a windrose for this data.

Figure 4-1

Wind Rose Plot



4.5 COORDINATE SYSTEM

The location of emission sources, structures, and receptors were represented in the UTM coordinate system using North American Datum 1983 (NAD83). UTM coordinates for this analysis were based on UTM Zone 12.

4.6 RECEPTORS

Receptors were placed in all areas directly surrounding the facility considered to be ambient air. Air dispersion modeling analysis was performed using a model receptor grid that ensures that maximum estimated impacts from the facility are identified. Following DEQ and EPA guidelines, receptor locations were identified with sufficient density and spatial coverage to isolate the area with the highest impacts. The following receptor grid locations were used for the analysis to accomplish this coverage:

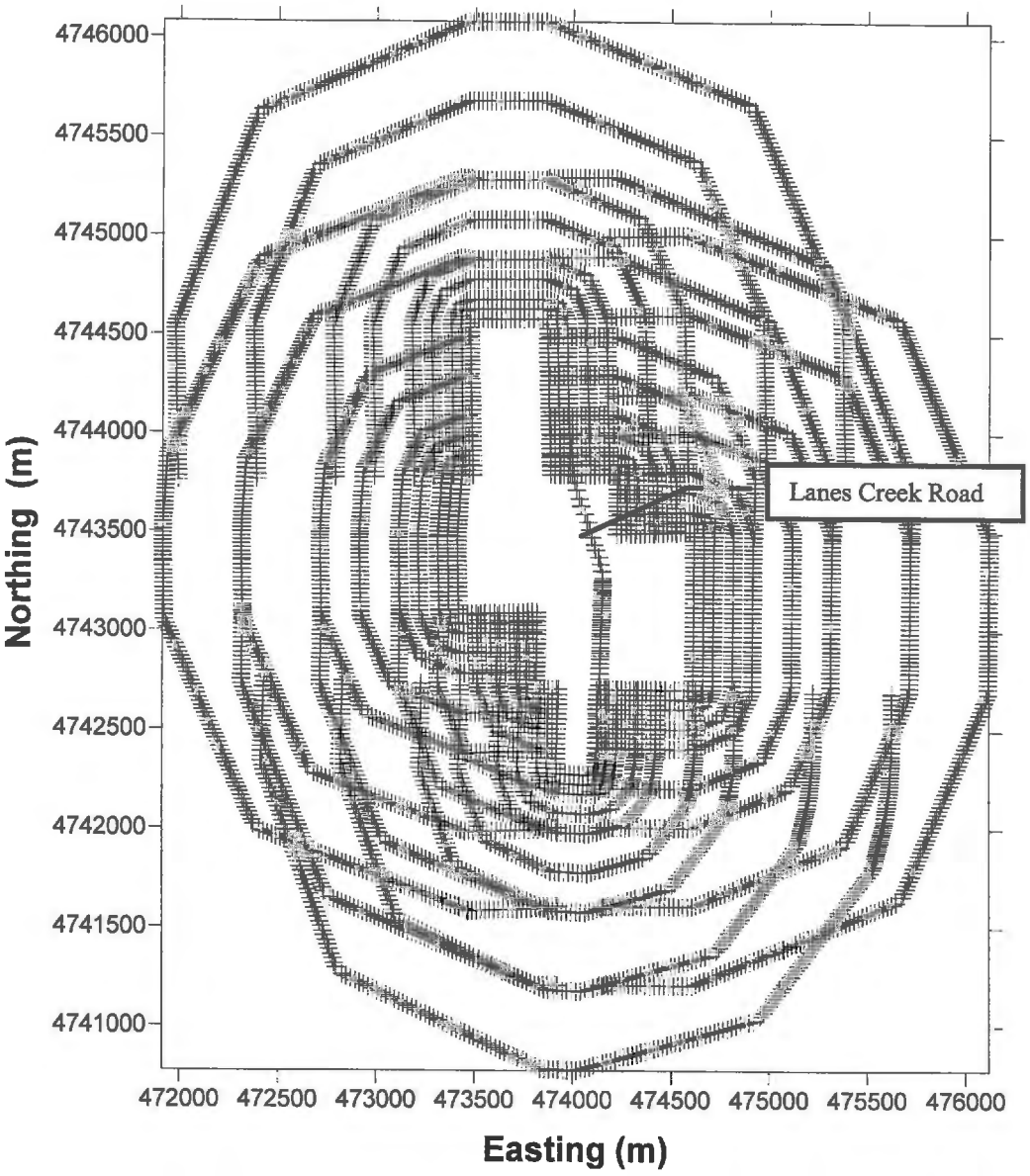
- 25-m receptor spacing on the property boundary;
- 50-m receptor spacing out to 100 m in all directions from the center of the facility;
- 100-m receptor spacing out to 200 m in all directions from the center of the facility;
- 200-m receptor spacing out to 400 m in all directions from the center of the facility;
- 400-m receptor spacing out to 800 m in all directions from the center of the facility;

The ambient air boundary at the LCM was determined pursuant to the requirements of Section 6.5 of the "State of Idaho Guideline for Performing Air Quality Impact Analyses". The ambient air boundary is the lease boundary of the property. The LCM area may be accessed by Lanes Creek Road from the east and by Blackfoot River Road from the south. The general public is not invited to the LCM as part of normal business conducted at the facility. Access to the LCM area will be restricted and gates installed where necessary and agreed to with Bear Lake Grazing Company. During winter months when recreation may bring persons into proximity with the mine, means of delineating and keeping the public away from mining activities will be used. These may include temporary orange barrier mesh fencing, orange cones, or signage. Monitoring by Agrium personnel will be completed to assure that these measures are properly placed and maintained.

Receptor locations are presented in UTM coordinates (NAD 83). Terrain elevations were assigned to all receptors using U.S. Geological Survey National Emission Data Set (NED – 30 m) in the AERMAP program. Figure 4-2 presents the receptor grid and boundary of the LCM.

Figure 4-2

Facility Receptors and Boundary



4.7 BACKGROUND CONCENTRATIONS

To evaluate the potential impacts of emissions from the LCM on the public, the dispersion modeling evaluation considered the existing background concentrations of pollutants in the Soda Springs, Idaho area. The background concentration of a given pollutant is added to the modeled impact from the LCM, and the result is compared to the NAAQS for that pollutant. The following background concentrations were provided by DEQ:

Table 4-1

DEQ Recommended Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)	Reference
PM10	24-hr	43	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
PM2.5	24-hr	16	Average of 98th percentile values, 2010-2012, 24-hr block avgs, Campbell County, Wyoming, open pit mining area: WY DEQ monitors near Belle Ayr Ba-4,5n,5s; Btm-36-2 (Black Thunder Mine), and Buckskin Mine North Site.
	Annual	5.2	Average of 98th percentile values, 2010-2012, 24-hr block avgs, Campbell County, Wyoming, open pit mining area: WY DEQ monitors near Belle Ayr Ba-4,5n,5s; Btm-36-2 (Black Thunder Mine), and Buckskin Mine North Site.
CO	1-hr	3 ppm (3,600 $\mu g/m^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
	8-hr	2.0 ppm (2,300 $\mu g/m^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
NO2	1-hr	9.8 ppb (18 $\mu g/m^3$)	Average of 98th percentile 1-hour values, 2010-2012, WY DEQ, Uinta County, UT, Murphy Ridge (UT/WY border), and Sublette County, WY, Wyoming Range/West
	Annual	2.3 ppb (4.3 $\mu g/m^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural
O3	Single Value for Level 3 NOx Analysis	0.079 ppm	Average of the 98th percentile 1-hour values, 2010-2012, WY DEQ, Uinta County, UT, Murphy Ridge (UT/WY border), and Sublette County, WY, Wyoming Range/West
SO2	1-hr	18 ppb (47 $\mu g/m^3$)	Average of 99th percentile values, 2010-2012, WY DEQ, Sweetwater County, WY, CBSA Rock Springs, Moxa
	Annual	0.003 ppm (8 $\mu g/m^3$)	Idaho DEQ, 2003, Default, Rural remote, non-agricultural

4.8 MODEL PARAMETERS

Modeled emissions sources at LCM are classified as point and volume sources. Point source parameters and coordinates are shown in Table 4-2. Open pit parameters and coordinates are shown in Table 4-3. Volume source parameters and coordinates are shown in Table 4-4. Source locations are presented in UTM coordinates (NAD 83). Point and volume source descriptions are referenced in the air dispersion modeling protocol.

Table 4-2

Point Source Parameters & Coordinates

ource ID	Source Description	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exist Velocity (m/s)	Exit Temperature (°K)	Easting (m)	Northing (n
TCK1	Diesel Generator (198 hp)	1946.5	1.829	0.1036	46.55	698.15	473951.84	4743667.8
TCK2	Diesel Generator (198 hp)	1946.5	1.829	0.1036	46.55	698.15	473950.00	4743667.8
TCK3	Diesel Light Plant (at Ore stockpile) -1	1946.5	1.219	0.0256	34.83	699.82	473999.00	4742427.(
TCK4	Diesel Light Plant (at Facilities Area) -2	1946.5	1.219	0.0256	34.83	699.82	473974.00	4743752.(
TCK5	Diesel Light Plant (North ODA Area) -3	1946.5	1.219	0.0256	34.83	699.82	473677.00	4744105.(
TCK6	Diesel Light Plant (South ODA Area) -4	1946.5	1.219	0.0256	34.83	699.82	473967.28	4743004.7
TC	Diesel Light Plant (Pit Area) -5	1946.5	1.219	0.0256	34.83	699.82	473549.00	4743567.(
TCK8	Diesel Light Plant (Pit Area) -6	1946.5	1.219	0.0256	34.83	699.82	473710.00	4743238.(
TCK9	Diesel Light Plant (Pit Area) -7	1946.5	1.219	0.0256	34.83	699.82	474175.00	4743282.(
TCK10	Diesel Light Plant (Pit Area) -8	1946.5	1.219	0.0256	34.83	699.82	474089.00	4743501.(
TCK11	Diesel Light Plant (Pit Area) -9	1946.5	1.219	0.0256	34.83	699.82	473695.00	4743960.(

Table 4-3

Open Pit Parameters & Coordinates

Source ID	Source Description	Base Elevation (m)	Release Height (m)	Length X (m)	Length Y (m)	Orientation Angle (Degrees)	Pit Volume (m^3)	Easting (m)	Northing (m)
OPIT	Open Pit	2019	55	325	885	-25	31638750	473809.65	4743095.3
AREA1	Drilling	2039.78	10	52.79	52.79	-25		473829.9885	4743348.9
AREA2	Blasting	2044.6	20	52.79	52.79	-25		473744.18	4743543.9

Table 4-4

Volume Source Parameters & Coordinates

Source ID	Description	Base Elevation [m]	Height [m]	Sigma Y [m]	Sigma Z [m]	Length X [m]	Easting [m]	Northing [m]
VOL1	South Haul Road Segment	1993.13	4	16.74	3.72	71.982	474063.6	4743124.6
VOL2	South Haul Road Segment	1992.93	4	16.74	3.72	71.982	474062.3	4743134.6
VOL3	South Haul Road Segment	1992.73	4	16.74	3.72	71.982	474061	4743144.5
VOL4	South Haul Road Segment	1993.09	4	16.74	3.72	71.982	474059.7	4743154.4
VOL5	South Haul Road Segment	1994.18	4	16.74	3.72	71.982	474065.4	4743184.1
VOL6	South Haul Road Segment	1994.82	4	16.74	3.72	71.982	474072.5	4743202.8
VOL7	South Haul Road Segment	1994.06	4	16.74	3.72	71.982	474083.1	4743230.9
VOL8	South Haul Road Segment	1990.15	4	16.74	3.72	71.982	474087.9	4743255.5
VOL9	South Haul Road Segment	1987.52	4	16.74	3.72	71.982	474090.8	4743275.3
VOL10	South Haul Road Segment	1987.65	4	16.74	3.72	71.982	474089.5	4743291.1
VOL11	South Haul Road Segment	1983.75	4	16.74	3.72	71.982	474030.2	4743456.4
VOL12	South Haul Road Segment	1982.88	4	16.74	3.72	71.982	474017.6	4743486.7
VOL13	Pit Road	1999	4	16.74	3.72	71.982	473577.73	4743957.1
VOL14	Pit Road	2006.4	4	16.74	3.72	71.982	473637.7736	4743904.2
VOL15	Pit Road	1993.78	4	16.74	3.72	71.982	473700.2051	4743865.4
VOL16	Pit Road	2000.47	4	16.74	3.72	71.982	473741.3792	4743811.8
VO[illegible]	Pit Road	1999.99	4	16.74	3.72	71.982	473816.8104	4743733.4
VO[illegible]	Pit Road	1985.78	4	16.74	3.72	71.982	473911.2618	4743621.2
VOL19	Pit Road	1983.3	4	16.74	3.72	71.982	473954.1942	4743570.2
VOL20	Pit Road	1987.18	4	16.74	3.72	71.982	473999.1203	4743472.2
VOL21	Pit Road	1987.43	4	16.74	3.72	71.982	474057.4875	4743354.1
VOL22	Pit Road	1995.32	4	16.74	3.72	71.982	474051.6818	4743226.7
VOL23	Pit Road	2001.17	4	16.74	3.72	71.982	473968.6696	4743192.5
VOL24	Pit Road	2025.72	4	16.74	3.72	71.982	473857.7141	4743252.5
VOL25	Pit Road	2046.07	4	16.74	3.72	71.982	473775.7975	4743307.9
VOL26	Pit Road	2068.65	4	16.74	3.72	71.982	473645.9074	4743418.6
VOL27	Pit Road	2085.28	4	16.74	3.72	71.982	473598.4892	4743514.2
VOL28	Pit Road	2074.02	4	16.74	3.72	71.982	473555.9106	4743644.8
VOL29	Pit Road	2049.94	4	16.74	3.72	71.982	473565.5178	4743750.4
VOL30	Pit Road	2025.17	4	16.74	3.72	71.982	473528.0135	4743835.9
VOL31	Pit Road	2012.93	4	16.74	3.72	71.982	473518.0487	4743897.2
VOL32	Pit Road	2003.93	4	16.74	3.72	71.982	473559.6808	4743947.3
VOL39	North Haul Road	1980.85	4	16.74	3.72	71.982	474014.5067	4743517.6
VOL40	North Haul Road	1980.68	4	16.74	3.72	71.982	474009.6379	4743526.3
VOL41	North Haul Road	1980.42	4	16.74	3.72	71.982	474004.7691	4743535
VOL42	North Haul Road	1980.32	4	16.74	3.72	71.982	474001.7265	4743540.5
VOL43	North Haul Road	1980.45	4	16.74	3.72	71.982	473995.5719	4743548.4
VOL44	North Haul Road	1980.6	4	16.74	3.72	71.982	473989.4173	4743556.3
VOL45	North Haul Road	1980.63	4	16.74	3.72	71.982	473983.2626	4743564.1
VO[illegible]	North Haul Road	1980.37	4	16.74	3.72	71.982	473977.108	4743572

VOL47	North Haul Road	1979.93	4	16.74	3.72	71.982	473970.9534	4743579.9
VOL48	North Haul Road	1979.54	4	16.74	3.72	71.982	473964.7988	4743587.8
VOL49	North Haul Road	1979.31	4	16.74	3.72	71.982	473958.6442	4743595.7
VOL50	North Haul Road	1979.43	4	16.74	3.72	71.982	473952.4896	4743603.5
VOL51	North Haul Road	1979.7	4	16.74	3.72	71.982	473946.335	4743611.4
VOL52	North Haul Road	1980.07	4	16.74	3.72	71.982	473940.1804	4743619.3
VOL53	North Haul Road	1980.67	4	16.74	3.72	71.982	473934.0258	4743627.2
VOL54	North Haul Road	1981.37	4	16.74	3.72	71.982	473921.3275	4743644.8
VOL55	North Haul Road	1981.28	4	16.74	3.72	71.982	473915.8624	4743653.2
VOL56	North Haul Road	1981.31	4	16.74	3.72	71.982	473910.3972	4743661.6
VOL57	North Haul Road	1981.65	4	16.74	3.72	71.982	473904.9321	4743670
VOL58	North Haul Road	1982.05	4	16.74	3.72	71.982	473899.4669	4743678.3
VOL59	North Haul Road	1982.26	4	16.74	3.72	71.982	473894.0018	4743686.7
VOL60	North Haul Road	1982.71	4	16.74	3.72	71.982	473888.5367	4743695.1
VOL61	North Haul Road	1983.06	4	16.74	3.72	71.982	473883.0715	4743703.4
VOL62	North Haul Road	1983.32	4	16.74	3.72	71.982	473877.6064	4743711.8
VOL63	North Haul Road	1984.17	4	16.74	3.72	71.982	473872.1412	4743720.2
VOL64	North Haul Road	1984.82	4	16.74	3.72	71.982	473866.6761	4743728.6
VOL65	North Haul Road	1985.03	4	16.74	3.72	71.982	473857.2617	4743747
VOL66	North Haul Road	1984.86	4	16.74	3.72	71.982	473853.7498	4743756.3
VOL67	North Haul Road	1983.61	4	16.74	3.72	71.982	473849.1786	4743778.4
VOL[illegible]	North Haul Road	1982.93	4	16.74	3.72	71.982	473849.1477	4743788.4
VOL[illegible]	Ready Line Road	1969.61	4	16.74	3.72	71.982	473895.4309	4743091.2
VOL78	Ready Line Road	1969.92	4	16.74	3.72	71.982	473893.7855	4743051.3
VOL79	Ready Line Road	1969.98	4	16.74	3.72	71.982	473892.9628	4743031.3
VOL80	Ready Line Road	1969.86	4	16.74	3.72	71.982	473892.14	4743011.3
VOL81	Ready Line Road	1969.38	4	16.74	3.72	71.982	473890.906	4743981.3
VOL82	Ready Line Road	1970.33	4	16.74	3.72	71.982	473889.2606	4743941.4
VOL83	Ready Line Road	1974.08	4	16.74	3.72	71.982	473885.147	4743841.4
VOL84	Ready Line Road	1974.94	4	16.74	3.72	71.982	473884.3243	4743821.5
VOL85	Ready Line Road	1979.3	4	16.74	3.72	71.982	473872.042	4743783.2
VOL86	Ready Line Road	1982.2	4	16.74	3.72	71.982	473864.1474	4743764.8
VOL87	Ready Line Road	1985.02	4	16.74	3.72	71.982	473856.8788	4743747.9
VOL89	Ore Stockpile Road	1986.29	4	16.74	3.72	71.982	474125.3335	4743169.5
VOL90	Ore Stockpile Road	1986.48	4	16.74	3.72	71.982	474125.0092	4743149.5
VOL91	Ore Stockpile Road	1987	4	16.74	3.72	71.982	474124.6635	4743128.2
VOL92	Ore Stockpile Road	1987.15	4	16.74	3.72	71.982	474124.3608	4743109.5
VOL93	Ore Stockpile Road	1986.65	4	16.74	3.72	71.982	474124.0366	4743089.5
VOL94	Ore Stockpile Road	1986.59	4	16.74	3.72	71.982	474123.7664	4743072.9
VOL95	Ore Stockpile Road	1986.62	4	16.74	3.72	71.982	474123.3856	4743052.9
VOL96	Ore Stockpile Road	1986.64	4	16.74	3.72	71.982	474123.0049	4743032.9
VOL97	Ore Stockpile Road	1986.67	4	16.74	3.72	71.982	474122.6242	4743012.9
VOL98	Ore Stockpile Road	1986.69	4	16.74	3.72	71.982	474122.2434	4742992.9
VOL99	Ore Stockpile Road	1986.72	4	16.74	3.72	71.982	474121.8627	4742972.9
VOL[illegible]	Ore Stockpile Road	1986.07	4	16.74	3.72	71.982	474121.2916	4742942.9
VOL[illegible]	Ore Stockpile Road	1986.68	4	16.74	3.72	71.982	474120.7205	4742912.9

VOL102	Ore Stockpile Road	1986.9	4	16.74	3.72	71.982	474120.5302	4742902.9
VOL103	Ore Stockpile Road	1987.03	4	16.74	3.72	71.982	474119.9591	4742872.9
VOL104	Ore Stockpile Road	1987.77	4	16.74	3.72	71.982	474119.388	4742842.9
VOL105	Ore Stockpile Road	1986.96	4	16.74	3.72	71.982	474118.8169	4742812.9
VOL106	Ore Stockpile Road	1986.95	4	16.74	3.72	71.982	474118.6265	4742802.9
VOL107	Ore Stockpile Road	1986.96	4	16.74	3.72	71.982	474118.2458	4742782.9
VOL108	Ore Stockpile Road	1986.99	4	16.74	3.72	71.982	474117.8651	4742762.9
VOL109	Ore Stockpile Road	1987.74	4	16.74	3.72	71.982	474110.2521	4742750.8
VOL110	Ore Stockpile Road	1989.24	4	16.74	3.72	71.982	474095.2367	4742737.6
VOL111	Ore Stockpile Road	1990.76	4	16.74	3.72	71.982	474080.0957	4742726.5
VOL112	Ore Stockpile Road	1991.61	4	16.74	3.72	71.982	474071.5874	4742721.2
VOL113	Ore Stockpile Road	1992.46	4	16.74	3.72	71.982	474063.0791	4742716
VOL114	Ore Stockpile Road	1994.04	4	16.74	3.72	71.982	474046.0625	4742705.5
VOL115	Ore Stockpile Road	1995.28	4	16.74	3.72	71.982	474033.5343	4742701.2
VOL116	Ore Stockpile Road	1996.91	4	16.74	3.72	71.982	474014.15	4742696.3
VOL117	Ore Stockpile Road	1997.63	4	16.74	3.72	71.982	474004.4579	4742693.9
VOL118	Ore Stockpile Road	1998.46	4	16.74	3.72	71.982	473994.7658	4742691.4
VOL119	Ore Stockpile Road	1999.51	4	16.74	3.72	71.982	473985.0737	4742688.9
VOL120	Ore Stockpile Road	2000.65	4	16.74	3.72	71.982	473974.5278	4742686.3
VOL125	Growth Media Road	1994.06	4	16.74	3.72	71.982	474082.7259	4743230.9
VOL126	Growth Media Road	1988.13	4	16.74	3.72	71.982	474114.6669	4743192.4
VOL127	Growth Media Road	1984.1	4	16.74	3.72	71.982	474145.3794	4743178.6
VOL128	Growth Media Road	1980.84	4	16.74	3.72	71.982	474195.3222	4743176.2
VOL129	Growth Media Road	1978.62	4	16.74	3.72	71.982	474307.5572	4743169.2
VOL130	Growth Media Road	1978.62	4	16.74	3.72	71.982	474248.19	4743180.9
VOL131	Growth Media Stockpile	1975.49	4.572	16.6577	1.06326	71.628	474354.4648	4743182.3
VOL132	Ore Stockpile	2002.43	3.962	25.6599	0.92149	110.3376	474009.3927	4742555.1
VOL133	Waste Pile - North ODA	1974.73	19.2	35.7963	4.46567	153.924	473675.8345	4744239.1
VOL134	Waste Rock Loading (pit and stockpiles)	1946	5	2.48093	1.20465	10.668	473854.00	4743493.00
VOL135	Ore Loading at the pit	1946	5	2.48093	1.20465	10.668	473837.90	4743539.83
VOL136	Ore Loading to Tipple	1946	5	2.48093	1.20465	10.668	473813.83	4743895.03
VOL137	Ore unloading to ore stockpile	1946	5	2.48093	1.20465	10.668	473981.89	4742491.06
VOL138	Ore unloading to ore stockpile	1946	5	2.48093	1.20465	10.668	474027.00	4742492.00
VOL139	Waste rock unloading into the pit	1946	5	2.48093	1.20465	10.668	473946.00	4743295.00
VOL140	Waste rock unloading at North ODA	1946	5	2.48093	1.20465	10.668	473675.00	4744344.00
VOL141	Waste rock unloading at South ODA	1946	5	2.48093	1.20465	10.668	473955.00	4742947.00
VOL142	Waste Pile - South ODA	1974.73	19.2	35.7963	4.46567	153.924	473972.03	4742859.84

5.0 MODELING RESULTS

PM_{10}, $PM_{2.5}$, SO_2, and NO_x emissions were modeled using AERMOD. As shown in Table 3-4, modeled concentrations of PM_{10}, $PM_{2.5}$, SO_2, and NO_x emissions exceeded the SCL. Therefore a cumulative impact analysis was conducted for these pollutants. Modeling results for each required averaging time is presented in Tables 5-1 through Table 5-7. Table 5-8 presents modeling results plus corresponding background concentrations. Figures 5-1 through 5-8 present modeled concentration isopleths for each pollutant. The total impact concentrations were then compared with the NAAQS. Cumulative modeling demonstrates that the LCM will comply with the NAAQS. Electronic modeling files used in this analysis are included on compact disk in Appendix I.

Table 5-1
Maximum Impacts for Cumulative NAAQS Analysis
(NO2 impacts, 1-hour averaging period)

Years Modeled	Three Year Mean of 8th Highest Daily Maximum 1-Hour Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2006	93.43	474008.39	4742271.79	2012.44
2007	89.56	473930.88	4742701.39	2006.92
2008	90.40	474008.39	4742271.79	2012.44
Mean	91.13			

Table 5-2
Maximum Impacts for Cumulative NAAQS Analysis
(NO2 impacts, Annual averaging period)

Years Modeled	Highest Maximum Annual Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2005	6.84	473889.60	4743785.18	1978.49

Table 5-3
Maximum Impacts for Cumulative NAAQS Analysis
PM_{10} impacts, Maximum 6th Highest 24-hr average concentration.

Years Modeled	6 st Highest 24-hour Average Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2005	32.13	473772.12	4743093.41	2022.75

Table 5-4
Maximum Impacts for Cumulative NAAQS Analysis SO_2 impacts, 3-year average of the 99th percentile of the annual distribution of 1-hour average daily maximum concentrations not to exceed standard.

Years Modeled	Three Year Average of the 99 Percentile of the Annual Distribution of 1-hour Average Daily Maximum concentration - 4th Highest Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2006	27.73	474061.67	4743591.81	1970.49
2007	28.8	474042.90	4743633.52	1970.04
2008	27.07	474061.67	4743591.81	1970.49
Mean	27.87			

Table 5-5
Maximum Impacts for Cumulative NAAQS Analysis SO_2 impacts, Maximum 1 highest - Never expected to be exceeded in any calendar year.

Years Modeled	Annual concentrations – 1st Highest Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2004-2008	1.53	474019.95	4743714.86	1969.12

Table 5-6
Maximum Impacts for Cumulative NAAQS Analysis
PM2.5 impacts, Three-year average of the 98th percentile of 24-hour average concentrations not to exceed standard.

Years Modeled	1st Highest 24-hour Average Concentration ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2004-2008	11.97	473819.78	4743094.76	2018.49

Table 5-7
Maximum Impacts for Cumulative NAAQS Analysis
PM2.5 impacts, Annual concentrations not to exceed standard.

Years Modeled	1st Highest Annual Concentrations ($\mu g/m^3$)	Receptor Location		
		East (m)	North (m)	Elevation (m)
2004-2008	1.61	474086.69	4743512.55	1974.44

Table 5-8
Modeling Results

Pollutant	Averaging Time	Modeled Results ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percentage of Standards (%)
NO_2	1-hour	91.13	18	109.13	188	58.05
	Annual	6.84	4.3	11.14	100	11.14
SO_2	1-hour	27.87	47	74.87	196	38.20
	Annual	1.53	8.0	9.53	80	11.91
PM_{10}	24-hour	32.13	43	75.13	150	50.09
$PM_{2.5}$	24-hour	11.97	16	27.97	35	79.91
	Annual	1.61	5.2	6.81	15	45.4

Figure 5- 1

8th Highest Daily Maximum 1-Hour NO_2 Concentration ($\mu g/m^3$)

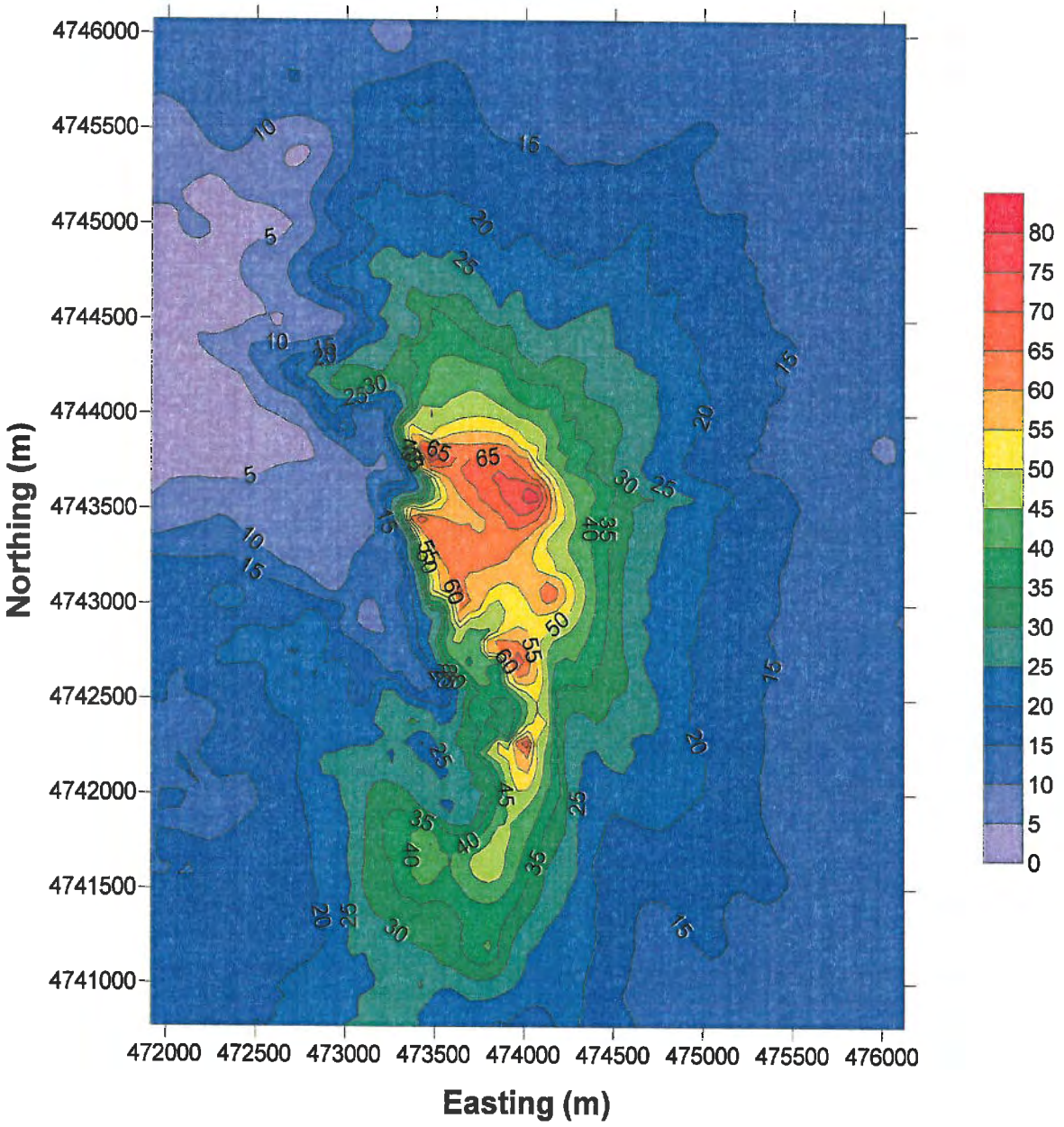


Figure 5- 2

Highest Maximum Annual NO_2 Concentration ($\mu g/m^3$)

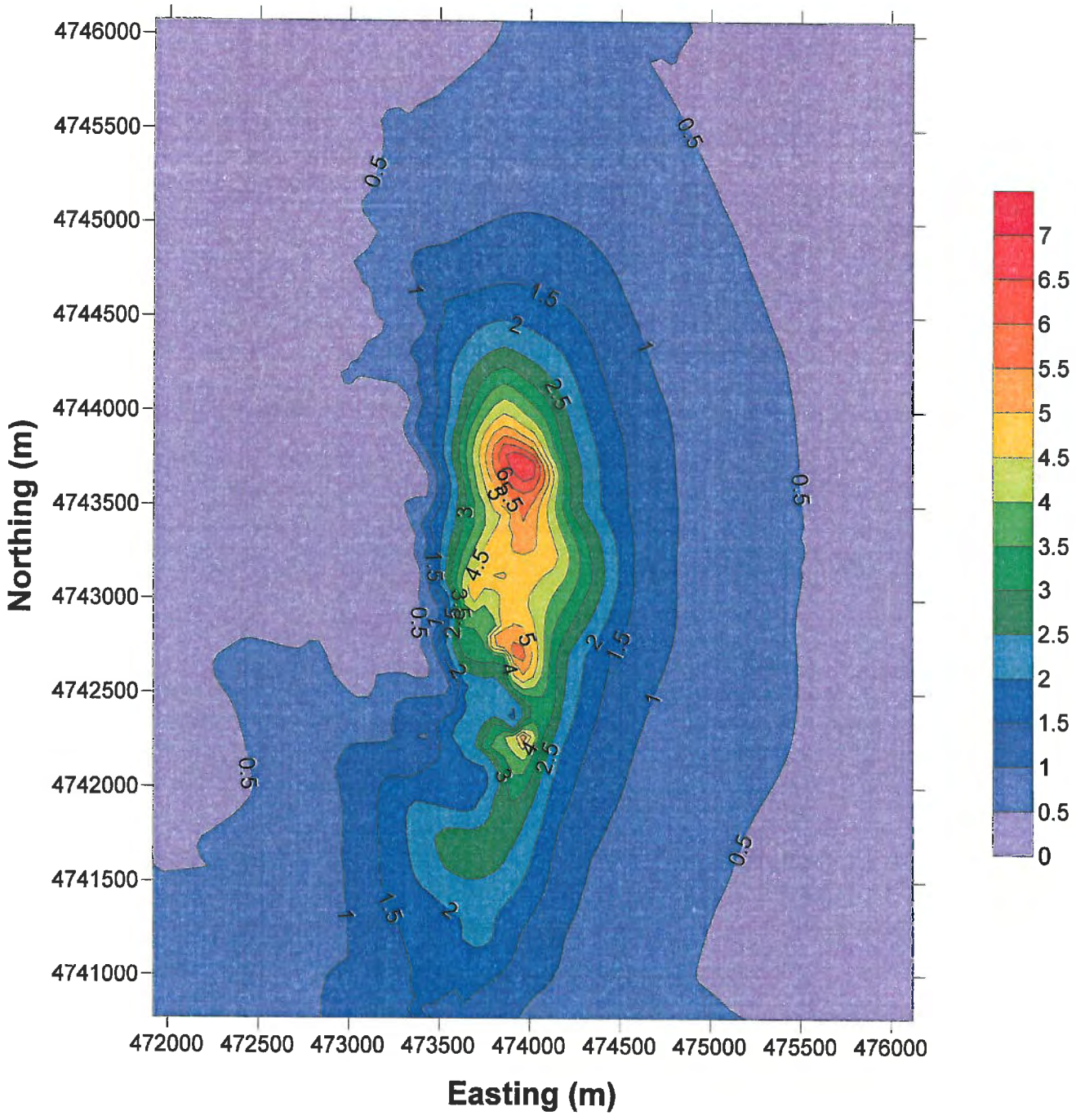


Figure 5- 3

6 st Highest 24-hour Average PM_{10} Concentration ($\mu g/m^3$)

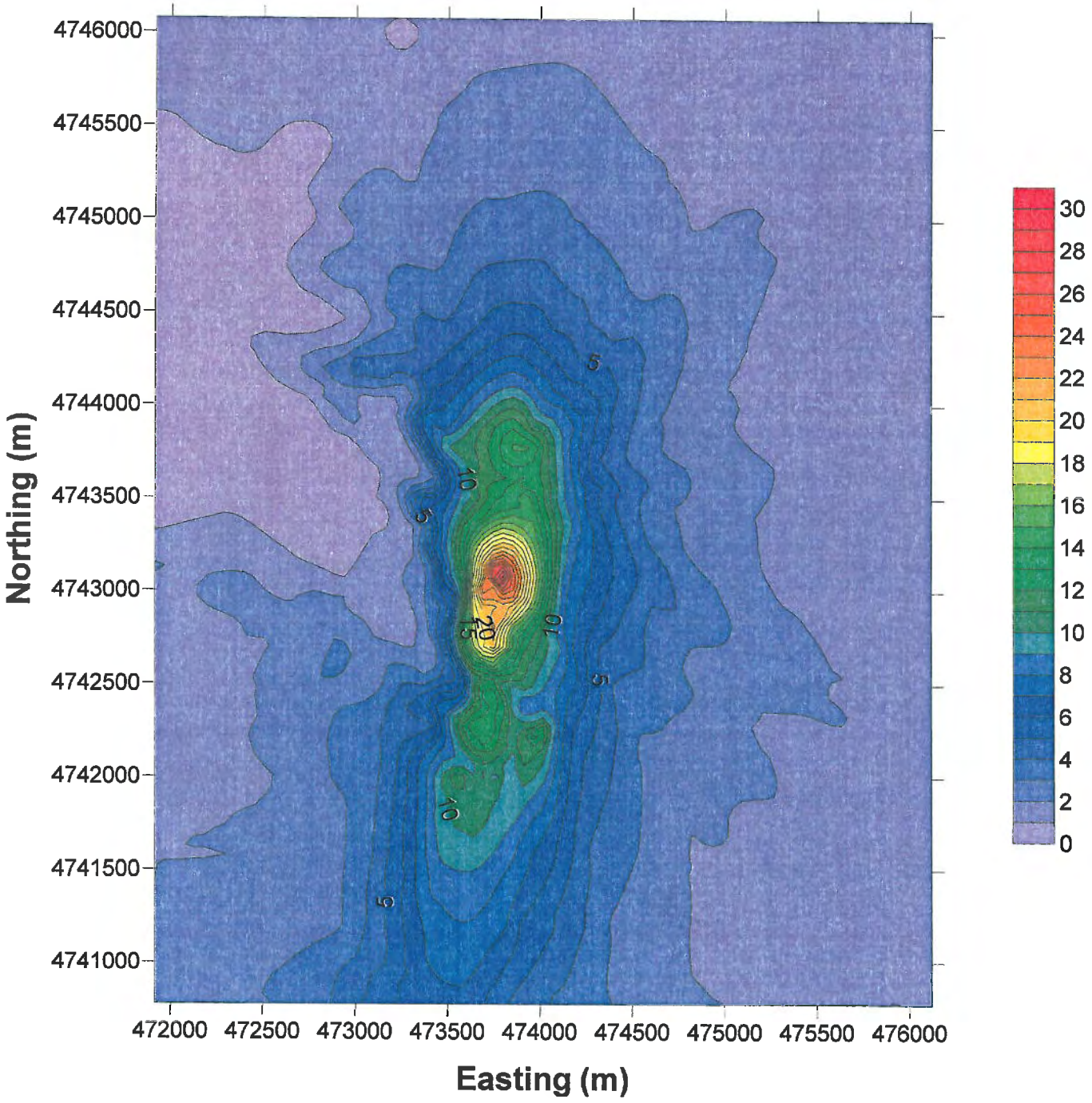


Figure 5- 4

99 Percentile Annual Distribution of 1-hour Average Daily Maximum SO_2 Concentration - 4th Highest Concentration ($\mu g/m^3$)

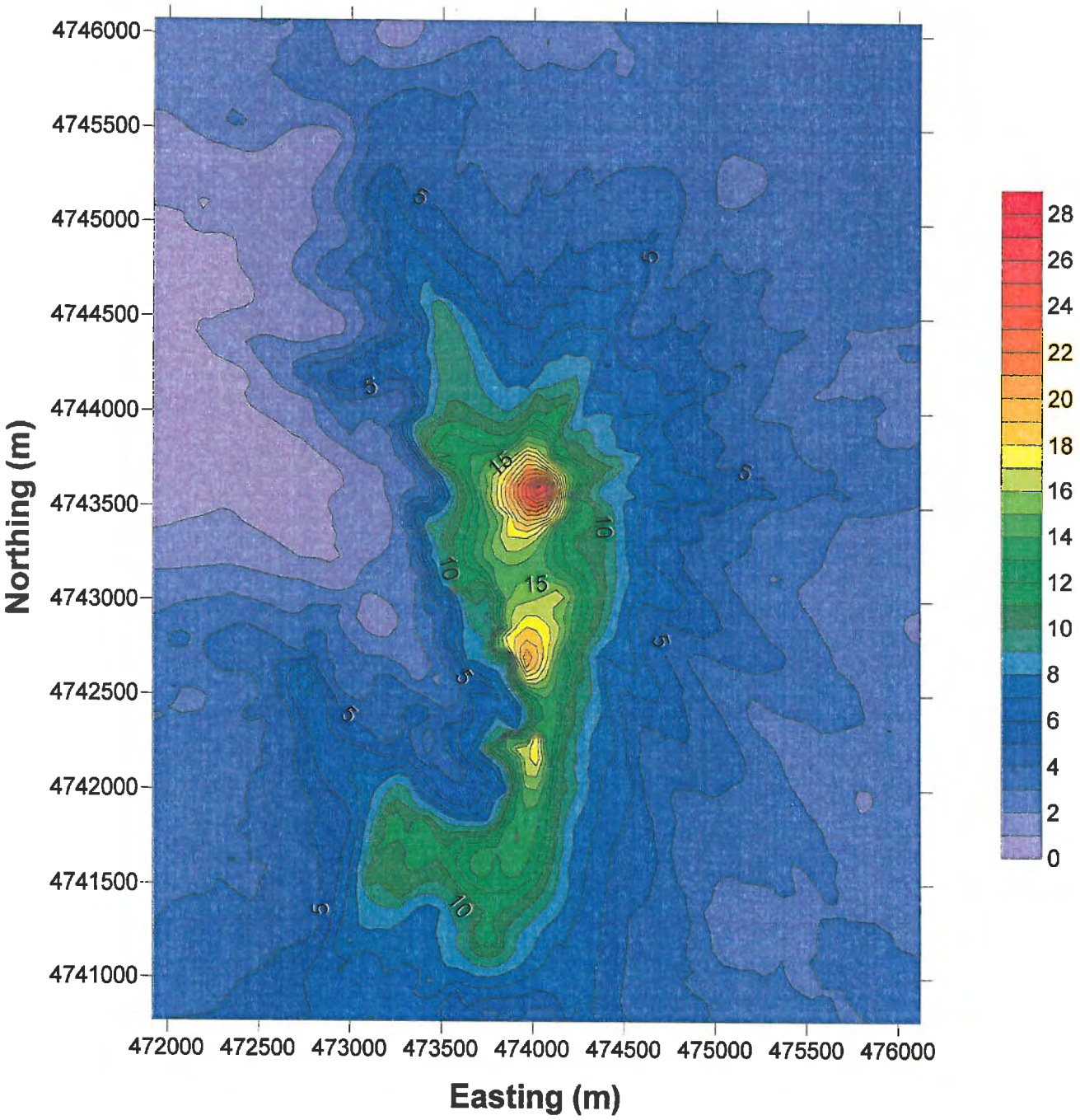


Figure 5- 5

Maximum Highest Annual SO2 Concentration – 1st Highest Concentration (µg/m3)

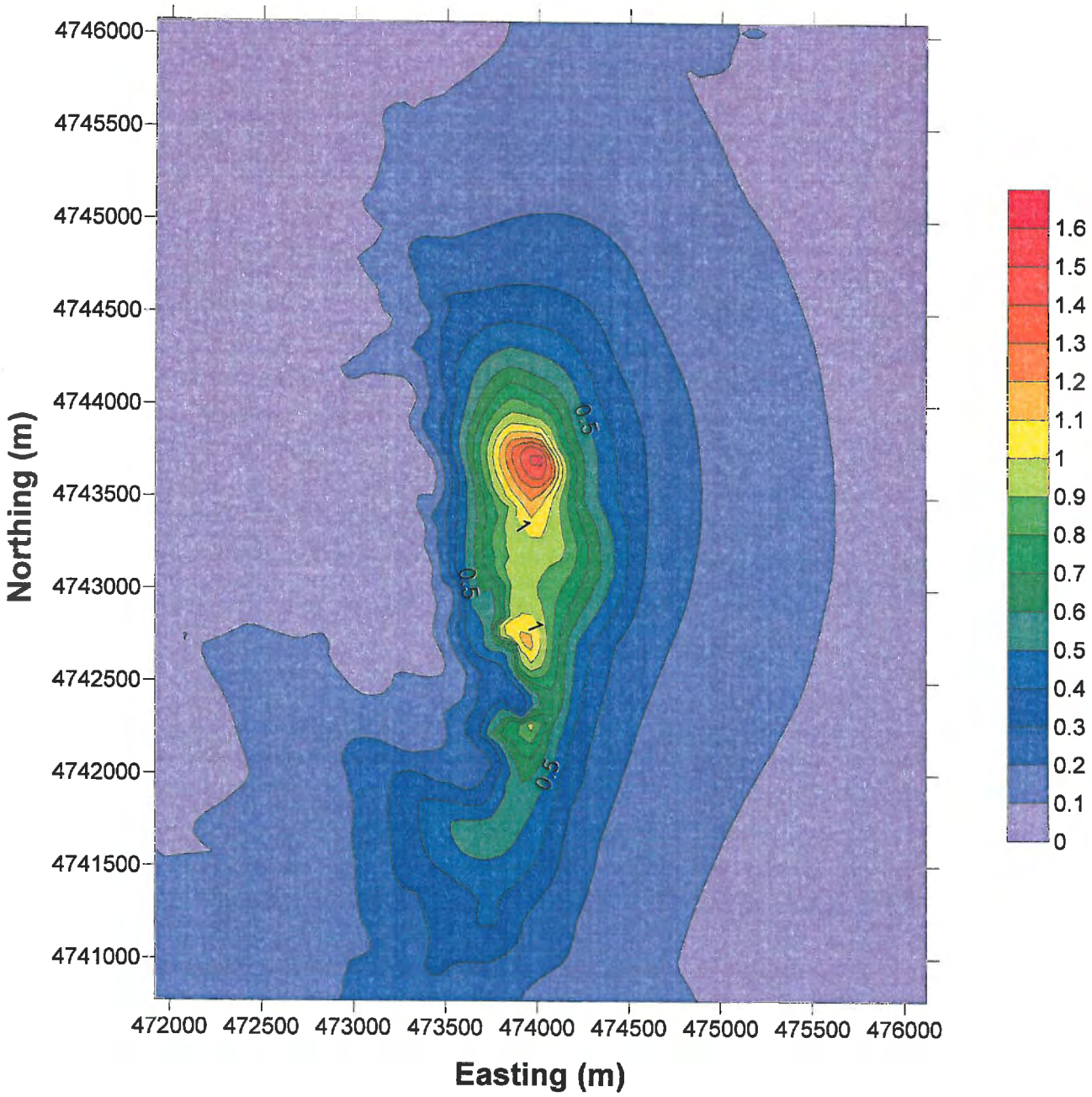


Figure 5- 6
Highest 24-hour $PM_{2.5}$ Concentration - 1st Highest Concentration ($\mu g/m^3$)

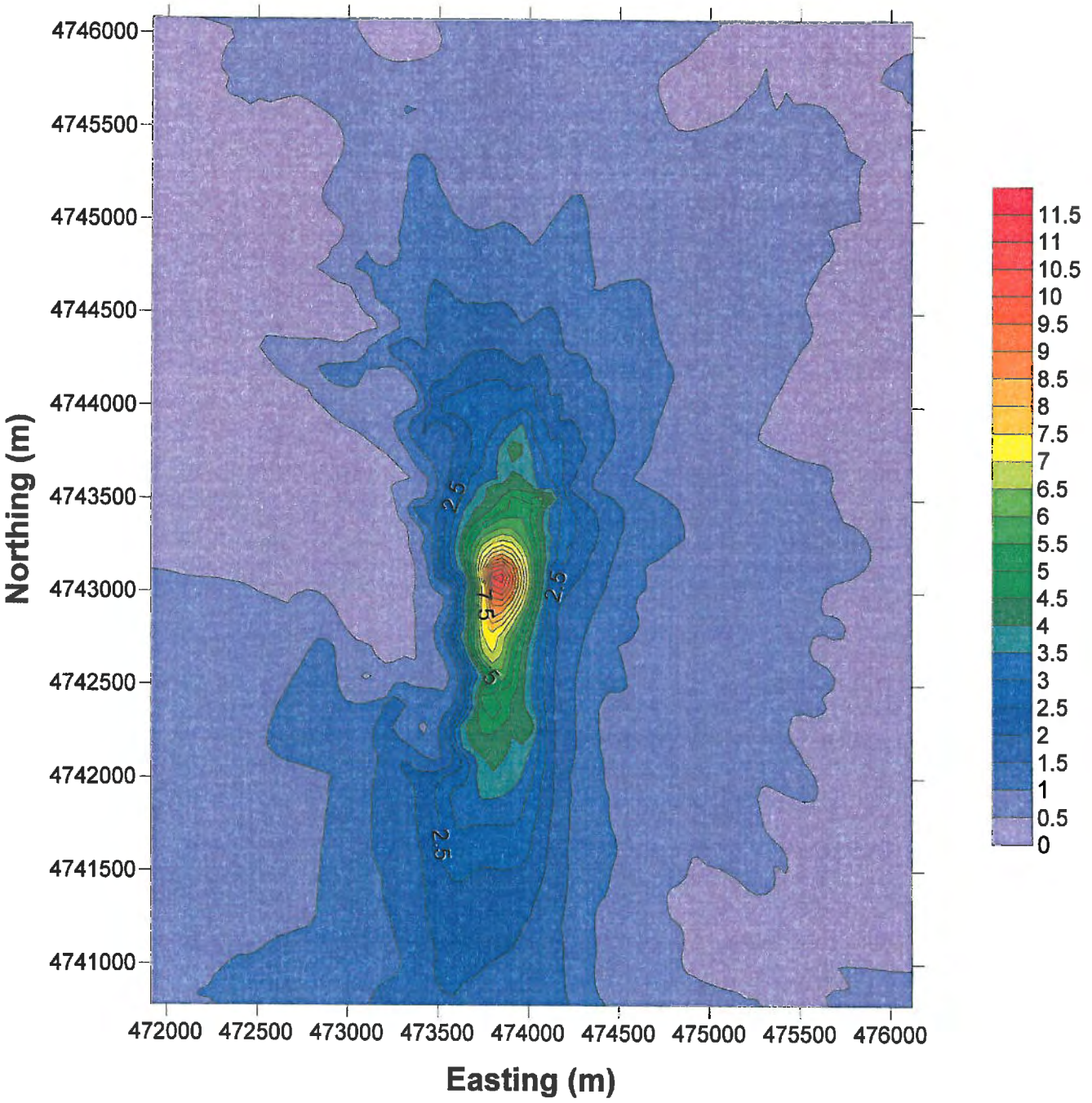
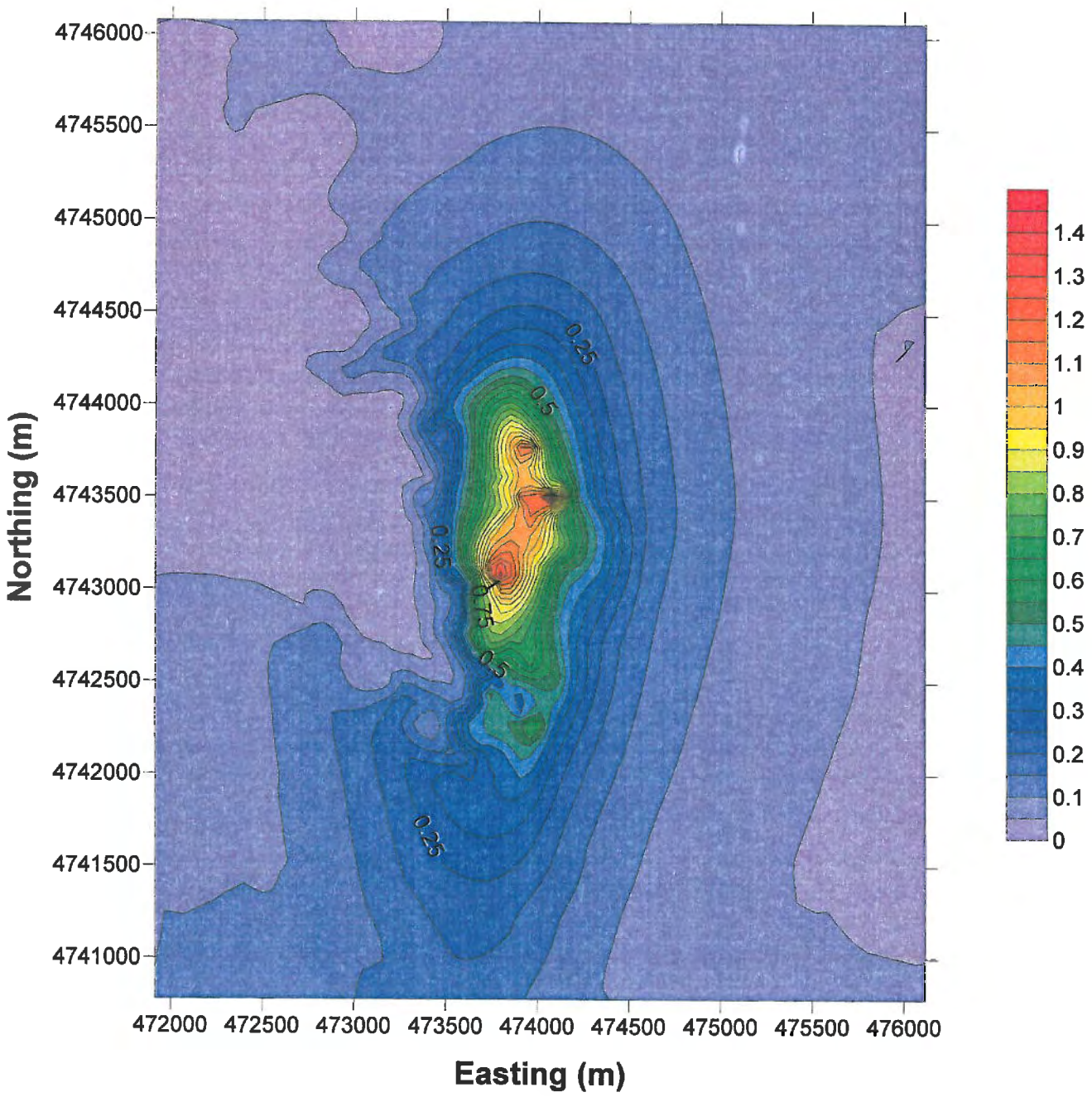


Figure 5- 7
Highest Annual $PM_{2.5}$ Concentration 1st Highest Concentration ($\mu g/m^3$)



6.0 REGULATORY ANALYSIS

A regulatory analysis was performed for the LCM to determine the applicability of the state and federal air quality regulations. The regulatory applicability determinations are included in this section. As described below, the sources comply with applicable Idaho air quality regulations in Idaho Administrative Procedure Act (IDAPA) 58.01.01, as well as EPA Code of Federal Regulations (CFR).

Federal Regulations

New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Applicability, 40 CFR Parts 51 and 51

In accordance with EPA and IDAPA 58.01.01.205 rules, the proposed facility will not be required to submit a construction permit application subject to the requirements of New Source Review (NSR) as the facility is not a major new source.

Greenhouse Gas Reporting Program (GHGRP), 40 CFR Part 98

On November 8, 2010, EPA signed a rule that finalized greenhouse gas (GHG) reporting requirements. Facilities must report GHG emissions if they meet the definition of one of the identified industry segments and emit 25,000 Metric Tons (MT) CO2e (CO2 equivalent) or more per year in combined GHG emissions. An air emission inventory for GHGs was performed for the LCM and was estimated to emit approximately 2,629 metric tons per year of CO2e. This value would be considered the potential to emit assuming the facility operated 8,760 hours per year. The LCM is not subject to the GHG reporting program of 40 CFR Part 98 because facility emissions are less than 25,000 metric tons per year. A copy of the emission estimate is included with this permit application.

Greenhouse Gas Tailoring Rule

On May 13, 2010, EPA issued a final rule that establishes an approach to addressing greenhouse gas emissions from stationary sources under the Clean Air Act (CAA) permitting programs. This final rule sets thresholds for GHG emissions that define when permits under NSR, PSD and Title V Operating Permit programs are required for new and existing facilities. This rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain PSD and Title V permits.

Beginning July 1, 2011, the PSD major source threshold of 1000,000 tons per year CO2e became effective. A new source with potential GHG emissions above 100,000 tons per year CO2e is now subject to PSD permitting requirements for GHGs, regardless of whether PSD is also triggered for non-GHG pollutants. Modifications to existing major sources that result in an increase of GHG emissions by 75,000 tons per year CO2e or more are subject to PSD permitting requirements for GHGs. Therefore, beginning July 1, 2011, PSD for GHG pollutants can be triggered regardless of whether PSD is also triggered for non-GHG pollutants. In addition, beginning July 1, 2011, facilities with potential CO2e emissions of 100,000 tons per year or more are subject to Title V permitting requirements.

For determining PSD or Title V major source or major modification applicability, the quantity of GHGs emitted must not only equal or exceed 100,000 tons per year threshold on a CO2e basis, but the sum of emissions of each GHG pollutant not adjusted for its global warming potential must also exceed the applicable threshold for non-GHG regulated pollutants (i.e., 100 tons per year for Title V or 100 tons per year/250 tons per year for PSD, depending on whether the source is on the list of 28 PSD categories or a designated facility as defined in IDAPA 58.01.01.006.26v). As the total CO2e is 2,629 tons per year, the LCM is not subject to PSD or Title V operating permit programs with respect to the GHG Tailoring Rule at this time.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61

The LCM is not subject to any NESHAP requirements pursuant to 40 CFR Part 61.

New Source Performance Standards - 40 CFR Part 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

e-CFR Data is current as of May 6, 2013

§ 60.110b Applicability and designation of affected facility

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

Agrium is proposing to install one, 20,000 gallon diesel fuel tank at the Lanes Creek Mine. A regulatory analysis of this storage tank indicates that requirements of 40 CFR Part 60, Subpart Kb does not apply to this AST. This AST has a design capacity of 20,000 gallons (greater than 75 m^3 or 19,800 gallons). However, the tank stores diesel fuel (volatile organic liquid) with a maximum true vapor pressure less than 15.0 KPa (2.2 psia). The vapor pressure of diesel fuel is only 0.009 psia @70°F (21 °C). Please refer to the attached MSDS in Appendix J. Therefore, in accordance with §60.110b(b), requirements of Subpart Kb does not apply to this tank.

Compliance Assurance Monitoring, 40 CFR Part 64

The Compliance Assurance Monitoring (CAM) rule, 40 CFR Part 64 applies to each Pollutant Specific Emissions Unit when it is located at a major source that is required to obtain Title V, Part 70 or 71 permit. The LCM is not a major source nor will the facility obtain a Title V, Part 70 or 71 operating permit. Therefore, the CAM rule is not applicable to the LCM.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63

Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) apply both to major sources of HAPs, defined as PTE equal to or greater than 10 tons per year for any single HAP or PTE equal to or greater than 25 tons per year for total HAP, and area sources of HAPs, defined as any stationary source of HAPs that is not a major source. As HAP emissions are below major source thresholds, the LCM is not a major source of HAPs. However, the LCM is an area source of HAPs.

National Emission Standards for Hazardous Air Pollutants for Gasoline-Dispensing Facilities - 40 CFR Part 63 - Subpart CCCCCC

e-CFR Data is current as of June 27, 2013

§ 63.11110 What is the purpose of this subpart

This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). This subpart also establishes requirements to demonstrate compliance with the emission limitations and management practices.

§ 63.11111 Am I subject to the requirements in this subpart?

(a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.

(b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in § 63.11116.

(c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in § 63.11117.

(d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in § 63.11118.

(e) An affected source shall, upon request by the Administrator, demonstrate that their monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable. For new or reconstructed affected sources, as specified in § 63.11112(b) and (c), recordkeeping to document monthly

throughput must begin upon startup of the affected source. For existing sources, as specified in § 63.11112(d), recordkeeping to document monthly throughput must begin on January 10, 2008. For existing sources that are subject to this subpart only because they load gasoline into fuel tanks other than those in motor vehicles, as defined in § 63.11132, recordkeeping to document monthly throughput must begin on January 24, 2011. Records required under this paragraph shall be kept for a period of 5 years.

(f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).

(g) The loading of aviation gasoline into storage tanks at airports, and the subsequent transfer of aviation gasoline within the airport, is not subject to this subpart.

(h) Monthly throughput is the total volume of gasoline loaded into, or dispensed from, all the gasoline storage tanks located at a single affected GDF. If an area source has two or more GDF at separate locations within the area source, each GDF is treated as a separate affected source.

(i) If your affected source's throughput ever exceeds an applicable throughput threshold, the affected source will remain subject to the requirements for sources above the threshold, even if the affected source throughput later falls below the applicable throughput threshold.

(j) The dispensing of gasoline from a fixed gasoline storage tank at a GDF into a portable gasoline tank for the on-site delivery and subsequent dispensing of the gasoline into the fuel tank of a motor vehicle or other gasoline-fueled engine or equipment used within the area source is only subject to § 63.11116 of this subpart.

(k) For any affected source subject to the provisions of this subpart and another Federal rule, you may elect to comply only with the more stringent provisions of the applicable subparts. You must consider all provisions of the rules, including monitoring, recordkeeping, and reporting. You must identify the affected source and provisions with which you will comply in your Notification of Compliance Status required under § 63.11124. You also must demonstrate in your Notification of Compliance Status that each provision with which you will comply is at least as stringent as the otherwise applicable requirements in this subpart. You are responsible for making accurate determinations concerning the more

stringent provisions, and noncompliance with this rule is not excused if it is later determined that your determination was in error, and, as a result, you are violating this subpart. Compliance with this rule is your responsibility and the Notification of Compliance Status does not alter or affect that responsibility.

[73 FR 1945, Jan. 10, 2008, as amended at 76 FR 4181, Jan. 24, 2011]

The diesel fuel from the LCM AST will be dispensed to trucks and vehicles at the site. Diesel fuels are not covered under 40 CFR Part 63, Subpart CCCCCC. Therefore, 40 CFR Part 63, Subpart CCCCCC does not apply to the LCM.

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60 Subpart IIII

e-CFR Data is current as of May 8, 2013

§ 60.4200 Am I subject to this subpart

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

The installation date for two 198 hp engines is 2013. Therefore, according to § 60.4200, engines at Lanes Creek Mine are subject to 40 CFR Part 60, Subpart IIII. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. According to § 60.4200 (a)(4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

§ 60.4204 Emission Standards for Owners and Operators

According to 40 CFR §60.4204(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in § 60.4201which is basically certification by manufacturer of the engines that the engines comply with requirements of this subpart.

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§ 60.4204 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart

In accordance with § 60.4207 (b), beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in § 60.4211.

§ 60.4209(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in § 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine

§ 60.4211(a) – Lane Creek must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

§ 60.4211 (c) – lanes Creek must comply with the emission standards specified in § 60.4204(b) and must comply by purchasing an engine certified to the emission standards in § 60.4204(b), for the same model

year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

§ 60.4211(g) – If LCM does not install, configure, operate, and maintain each engine and control device according to the manufacturer's emission-related written instructions, or change emission-related settings in a way that is not permitted by the manufacturer, it must demonstrate compliance as follows:

(1) for the stationary CI internal combustion engine with maximum engine power less than 100 HP, Lanes Creek must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) For the 189 hp engines, Lanes Creek must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

IDAPA Regulations

IDAPA 58.01.01.123 – Certification Documents

IDAPA 58.01.01.123 requires all documents including application forms for permits to construct, records, and monitoring reports submitted to the Department shall contain a certification by a responsible official. Agrium will comply with this requirement and the appropriate certifications by a responsible official are being submitted with this application.

Visible Emissions

This regulation states that any point of emissions shall not have a discharge of any air pollutant for a period aggregating more than three minutes in any 60-minute period of greater than 20 percent opacity. The emission points at the facility are subject to this regulation. Yanke Machine Shop, Inc. will comply with this by rule by completing all routine onsite equipment maintenance and ensuring that the facility is operated within standards of good operating practices.

IDAPA 58.01.01.650 - Rules for Control of Fugitive Dust

IDAPA 58.01.01.650 requires that all reasonable precautions be taken to prevent the generation of fugitive dust. Agrium will comply with fugitive particulate matter regulations and will submit and maintain a fugitive dust control plan.

7.0 REFERENCES

Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models (Revised)*. 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

Idaho Administrative Code, Department of Environmental Quality (IDEQ), 2012. IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho, http://adminrules.idaho.gov/rules/current/58/index.html.

Idaho Department of Environmental Quality (IDEQ). 2011. *State of Idaho Air Quality Modeling Guideline*. Stationary Source Program, Air Quality Division. July, 2011.

U.S. Environmental Protection Agency (EPA). 2004. *User's Guide for the AMS/EPA Regulatory Model - AERMOD*. EPA-454/B-03-002. Office of Air Quality Planning and Standards, Emissions Monitoring and Analysis Division. Research Triangle Park, North Carolina. September 2004.

Utah Department of Environmental Quality. March 2008. Emission Factors for Paved and Unpaved Haul Roads

APPENDIX A

PERMIT TO CONSTRUCT APPLICATION FORMS

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Cover Sheet for Air Permit Application – Permit to Construct **Form CSPTC**

Please see instructions on page 2 before filling out the form.

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER			
1. Company Name	Nu West Industries, Inc. dba Agrium		
2. Facility Name	Lanes Creek Mine	3. Facility ID No.	TBD
4. Brief Project Description - One sentence or less	Permit to Construct Application		

PERMIT APPLICATION TYPE

5. ☒ New Source ☐ New Source at Existing Facility ☐ PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c
☐ Unpermitted Existing Source ☐ Facility Emissions Cap ☐ Modify Existing Source: Permit No.:____ Date Issued:____
☐ Required by Enforcement Action: Case No.:____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms		DEQ Verify
☒	☐	Form CSPTC – Cover Sheet		☐
☒	☐	Form GI – Facility Information		☐
☐	☐	Form EU0 – Emissions Units General		☐
☒	☐	Form EU1– Industrial Engine Information	Please specify number of EU1s attached: 11	☐
☐	☒	Form EU2– Nonmetallic Mineral Processing Plants	Please specify number of EU2s attached: ____	☐
☐	☒	Form EU3– Spray Paint Booth Information	Please specify number of EU3s attached:	☐
☐	☒	Form EU4– Cooling Tower Information	Please specify number of EU3s attached: ____	☐
☐	☒	Form EU5 – Boiler Information	Please specify number of EU4s attached: ____	☐
☐	☒	Form CBP– Concrete Batch Plant	Please specify number of CBPs attached: ____	☐
☐	☒	Form HMAP – Hot Mix Asphalt Plant	Please specify number of HMAPs attached: ____	☐
☐	☒	PERF – Portable Equipment Relocation Form		☐
☐	☒	Form AO – Afterburner/Oxidizer		☐
☐	☒	Form CA – Carbon Adsorber		☐
☐	☒	Form CYS – Cyclone Separator		☐
☐	☒	Form ESP – Electrostatic Precipitator		☐
☐	☒	Form BCE– Baghouses Control Equipment		☐
☐	☒	Form SCE– Scrubbers Control Equipment		☐
☐	☒	Form VSCE – Venturi Scrubber Control Equipment		☐
☐	☒	Form CAM – Compliance Assurance Monitoring		☐
☒	☐	Forms EI— Emissions Inventory		☐
☒	☐	PP – Plot Plan		☐
☒	☐	Forms MI1 – MI4 – Modeling	(Excel workbook, all 4 worksheets)	☐
☒	☐	Form FRA – Federal Regulation Applicability		☐

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline – 1-877-5PERMIT

General Information **Form GI**
Revision 7
2/18/10

Please see instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION

1. Company Name	2. Facility Name
Nu-West Industries dba Agrium	Lanes Creek Mine

3. Brief Project Description	Permit to Construct Application

FACILITY INFORMATION

4. Primary Facility Permit Contact Person/Title	Erika Stoner		Mine Manager	
5. Telephone Number and Email Address	(208) 574-2080		erika.stoner@agrium.com	
6. Alternate Facility Contact Person/Title	Katy McKinley		Mine Permitting Manager	
7. Telephone Number and Email Address	NA		katy.mckinley@agrium.com	
8. Address to Which the Permit Should be Sent	3010 Conda Road			
9. City/County/State/Zip Code	Soda Springs	Carbiou	Idaho	83276
10. Equipment Location Address (if different than the mailing address above)	NA			
11. City/County/State/Zip Code	NA			
12. Is the Equipment Portable?	☐ Yes ☒ No			
13. SIC Code(s) and NAICS Code	Primary SIC: 1475	Secondary SIC:	NAICS: 212392	
14. Brief Business Description and Principal Product	Phosphate Mine			
15. Indentify any adjacent or contiguous facility that this company owns and/or operates	NA			
16. Specify the reason for the application	☒ Permit to Construct (PTC) For Tier I permitted facilities only: If you are applying for a PTC then you must also specify how the PTC will be incorporated into the Tier I permit. ☐ Incorporate the PTC at the time of the Tier I renewal ☐ Co-process the Tier I modification and PTC ☐ Administratively amend the Tier I permit to incorporate the PTC upon your request (IDAPA 58.01.01.209.05.a, b, or c) ☐ Tier I Permit ☐ Tier Ii Permit ☐ Tier II/Permit to Construct			

CERTIFICATION

In accordance with IDAPA 58.01.01.123 (Rules for the Control of Air Pollution in Idaho), I certify based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

17. Responsible Official's Name/Title	Erika Stoner		Mine Manager
18. Responsible Official Address	3010 Conda Road, Soda Springs, ID 83276		
19. Responsible Official Telephone Number	(208) 574-2080		
20. Responsible Official Email Address	erika.stoner@agrium.com		
21. Responsible Official's Signature	Erika Stoner	Date	July 3/13

22. ☒ Check here to indicate that you would like to review the draft permit prior to final issuance.

DEQ AIR QUALITY PROGRAM
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Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: ☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:

5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type: ☒ Compression ☐ Spark	
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number: Diesel Light Plant 1	9. Maximum Rated Engine Power: 14 Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: Wanco	12. Model: NA	13. Model Year: 2012
14. Date of Modification (if applicable): None	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 2	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2)	☐ Gasoline Fuel	☐ Natural Gas	☐ Other Fuels
	(gal/hr)	(gal/hr)	(cf/hr)	(unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
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Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number: Diesel Light Plant 3	9. Maximum Rated Engine Power: 14 Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: Wanco	12. Model: NA	13. Model Year: 2012
14. Date of Modification (if applicable): None	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 4	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit: ☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:

5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type: ☒ Compression ☐ Spark

7. Use ☐ Emergency ☒ Non-Emergency

8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 5	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
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Emissions Units - Industrial Engine Information **Form EU1**
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IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 6	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2)	☐ Gasoline Fuel	☐ Natural Gas	☐ Other Fuels
	(gal/hr)	(gal/hr)	(cf/hr)	(unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

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Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
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IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 7	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

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Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
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IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Diesel Light Plant 8	14 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Wanco	NA	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	0.44 gal/hr	NA	NA	NA
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
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Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION		
1. Company Name: Nu-West Industries, dba/ Agrium	2. Facility Name: Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS			
4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	56-68 Cubic Inches (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number: Diesel Light Plant 9	9. Maximum Rated Engine Power: 14 Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: Warico	12. Model: NA	13. Model Year: 2012
14. Date of Modification (if applicable): None	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS				
17. Fuel Type	☒ Diesel Fuel (#2)	☐ Gasoline Fuel	☐ Natural Gas	☐ Other Fuels
18. Full Load Consumption Rate	0.44 gal/hr (gal/hr)	NA (gal/hr)	NA (cf/hr)	NA (unit:)
19. Actual Consumption Rate	0.44 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE
21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): 8,760 Hours/Year
22. Operating Schedule (hours/day, months/year, etc.): 8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	6.7 (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number: Gen 1	9. Maximum Rated Engine Power: 198 Brake Horsepower (bhp)		
10. Construction Date: 2013	11. Manufacturer: Iveco/FPT	12. Model: SD 100	13. Model Year: 2012
14. Date of Modification (if applicable): None	15. Serial Number (if available): N/A	16. Control Device (if any): None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	7.3 gal/hr	NA	NA	NA
19. Actual Consumption Rate	7.3 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Industrial Engine Information **Form EU1**
Revision 8
1/15/10

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	
Nu-West Industries, dba/ Agrium	Lanes Creek Mine	
3 Brief Project Description:	Permit to Construct Application	

ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

4. Type of Unit:	☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #: Date Issued:		
5. Engine Displacement:	6.7 (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☐ Emergency ☒ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power:		
Gen 2	198 Brake Horsepower (bhp)		
10. Construction Date:	11. Manufacturer:	12. Model:	13. Model Year:
2013	Iveco/FPT	SD 100	2012
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	
None	N/A	None	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☐ Other Fuels (unit:)
18. Full Load Consumption Rate	7.3 gal/hr	NA	NA	NA
19. Actual Consumption Rate	7.3 gal/hr	NA	NA	NA
20. Sulfur Content wt%	0.5 %	N/A	N/A	NA

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
8,760 Hours/Year

22. Operating Schedule (hours/day, months/year, etc.):
8,760 Hours/Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

AIR PERMIT APPLICATION

Revision 6
10/7/09

For each box in the table below, CTRL+click on the blue underlined text for instructions and information.

IDENTIFICATION	
1. Company Name: Nu-West Industries dba Agrium	2. Facility Name: Lanes Creek Mine.
3. Brief Project Description: Permit to Construct Application	

APPLICABILITY DETERMINATION	
4. List applicable subparts of the New Source Performance Standards (NSPS) (40 CFR part 60). Examples of NSPS affected emissions units include internal combustion engines, boilers, turbines, etc. The applicant must thoroughly review the list of affected emissions units.	List of applicable subpart(s): **40 CFR Part 60 Subpart IIII** ☐ Not Applicable
5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in 40 CFR part 61 and 40 CFR part 63. Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. EPA has a web page dedicated to NESHAP that should be useful to applicants.	List of applicable subpart(s): ☑ Not Applicable
6. For each subpart identified above, conduct a complete a regulatory analysis using the instructions and referencing the example provided on the following pages. **Note** - Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation applies. Regulatory reviews that are submitted with insufficient detail will be determined incomplete.	☑ A detailed regulatory review is provided (Follow instructions and example). ☐ DEQ has already been provided a detailed regulatory review. Give a reference to the document including the date.

IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT

It is emphasized that it is the applicant's responsibility to satisfy all technical and regulatory requirements, and that DEQ will help the applicant understand what those requirements are prior to the application being submitted but that DEQ will not perform the required technical or regulatory analysis on the applicant's behalf.

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline - 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	Nu-West Industries, Inc dba Agrium
Facility Name:	Lanes Creek Mine
Facility ID No.:	TBD
Brief Project Description:	Permit To Construct Phosphate Mine

SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

		1.		2.	3.	4.		5.
Criteria Pollutants	**Averaging Period**	**Significant Impact Analysis Results (µg/m3)**	**Significant Contribution Level (µg/m3)**	**Full Impact Analysis Results (µg/m3)**	**Background Concentration (µg/m3)**	**Total Ambient Impact (µg/m3)**	**NAAQS (µg/m3)**	**Percent of NAAQS**
PM_{10}	24-hour	54.55	5	32.13	43.00	75.13	150	50%
	Annual	5.76	1	Revoked	Revoked	Revoked	Revoked	Revoked
SO_2	3-hr	28.26	25	28.26	----	28.26	1300	2%
	24-hr	12.19	5	12.19	----	12.19	365	3%
	1-hour	39.81	7.9	27.87	47.00	74.87	196	38%
	Annual	1.53	1	1.53	8.00	9.53	80	12%
NO_2	1-hour	147.54	7.5	91.13	18.00	109.13	188	58%
	Annual	6.49	1	6.84	4.30	11.40	100	11%
PM2.5	24-Hour	11.97	1.2	27.97	16.00	27.97	35	80%
	Annual	1.56	0.3	1.61	5.20	6.81	15	45%
CO	1-hr	818.70	2000	Below SIL	Below SIL	Below SIL	10000	---
	8-hr	273.27	500	Below SIL	Below SIL	Below SIL	40000	----

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the **Air Permit Hotline - 1-877-5PERMIT**	**PERMIT TO CONSTRUCT APPLICATION** Revision 3 3/27/2007

Please see instructions on page 2 before filling out the form.

Company Name:	Nu-West Industries, Inc. dba Agrium
Facility Name:	Lanes Creek Mine
Facility ID No.:	TBD
Brief Project Description:	Permit To Construct Phosphate Mine

POINT SOURCE STACK PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	7.	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Stack Height (m)**	**Modeled Diameter (m)**	**Stack Exit Temperature (K)**	**Stack Exit Flowrate (acfm)**	**Stack Exit Velocity (m/s)**	**Stack orientation (e.g., horizontal, rain cap)**
Point Source(s)										
Diesel Generator (198 hp)	STCK1	473,951.84	4,743,667.81	1,946.50	1.83	0.10	698.15	832.00	46.55	Vertical
Diesel Generator (198 hp)	STCK2	473,950.00	4,743,667.81	1,946.50	1.83	0.10	698.15	832.00	46.55	Vertical
Diesel Light Plant (at Ore stockpile) -1	STCK3	473,999.00	4,742,427.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (at Facilities Area) -2	STCK4	473,974.00	4,743,752.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (North ODA Area) -3	STCK5	473,677.00	4,744,105.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (South ODA Area) -4	STCK6	473,967.28	4,743,004.79	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (Pit Area) -5	STCK7	473,549.00	4,743,567.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (Pit Area) -6	STCK8	473,710.00	4,743,238.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (Pit Area) -7	STCK9	474,175.00	4,743,282.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (Pit Area) -8	STCK10	474,089.00	4,743,501.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
Diesel Light Plant (Pit Area) -9	STCK11	473,695.00	4,743,960.00	1,946.50	1.22	0.03	699.82	38.00	34.83	Vertical
(insert more rows as needed)										

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline - 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	Nu-West Industries, Inc. dba Agrium
Facility Name:	Lanes Creek Mine
Facility ID No.:	TBD
Brief Project Description:	Permit o Construct Phosphate Mine

FUGITIVE SOURCE PARAMETERS

1.	2.	3a.	3b.	4.	5.	6.	7.	8.	9.	10.
Emissions units	**Stack ID**	**UTM Easting (m)**	**UTM Northing (m)**	**Base Elevation (m)**	**Release Height (m)**	**Easterly Length (m)**	**Northerly Length (m)**	**Angle from North (°)**	**Initial Vertical Dimension (m)**	**Initial Horizontal Dimension (m)**
Area Source(s)										
Open Pit	OPIT	473,809.65	4,743,095.30	2,019.00	55.00	325.00	885.00	-25.00	885.00	325.00
Drilling	Area1	473,829.99	4,743,348.90	2,039.78	10.00	52.79	52.79	-25.00	52.79	52.79
Blasting	Area2	473,744.18	4,743,543.90	2,044.60	20.00	52.79	52.79	-25.00	52.79	52.79
Volume Source(s)										
South Haul Road Segment	VOL1	474,063.60	4,743,124.60	1,993.13	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL2	474,062.30	4,743,134.60	1,992.93	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL3	474,061.00	4,743,144.50	1,992.73	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL4	474,059.70	4,743,154.40	1,993.09	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL5	474,065.40	4,743,184.10	1,994.18	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL6	474,072.50	4,743,202.80	1,994.82	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL7	474,083.10	4,743,230.90	1,994.06	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL8	474,087.90	4,743,255.50	1,990.15	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL9	474,090.80	4,743,275.30	1,987.52	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL10	474,089.50	4,743,291.10	1,987.65	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL11	474,030.20	4,743,456.40	1,983.75	4.00	71.98	71.98		16.74	3.72
South Haul Road Segment	VOL12	474,017.60	4,743,486.70	1,982.88	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL13	473,577.73	4,743,957.10	1,999.00	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL14	473,637.77	4,743,904.20	2,006.40	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL15	473,700.21	4,743,865.40	1,993.78	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL16	473,741.38	4,743,811.80	2,000.47	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL17	473,816.81	4,743,733.40	1,999.99	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL18	473,911.26	4,743,621.20	1,985.78	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL19	473,954.19	4,743,570.20	1,983.30	4.00	71.98	71.98		16.74	3.72

Pit Road	VOL20	473,999.12	4,743,472.20	1,987.18	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL21	474,057.49	4,743,354.10	1,987.43	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL22	474,051.68	4,743,226.70	1,995.32	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL23	473,968.67	4,743,192.50	2,001.17	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL24	473,857.71	4,743,252.50	2,025.72	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL25	473,775.80	4,743,307.90	2,046.07	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL26	473,645.91	4,743,418.60	2,068.65	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL27	473,598.49	4,743,514.20	2,085.28	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL28	473,555.91	4,743,644.80	2,074.02	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL29	473,565.52	4,743,750.40	2,049.94	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL30	473,528.01	4,743,835.90	2,025.17	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL31	473,518.05	4,743,897.20	2,012.93	4.00	71.98	71.98		16.74	3.72
Pit Road	VOL32	473,559.68	4,743,947.30	2,003.93	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL39	474,014.51	4,743,517.60	1,980.85	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL40	474,009.64	4,743,526.30	1,980.68	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL41	474,004.77	4,743,535.00	1,980.42	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL42	474,001.73	4,743,540.50	1,980.32	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL43	473,995.57	4,743,548.40	1,980.45	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL44	473,989.42	4,743,556.30	1,980.60	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL45	473,983.26	4,743,564.10	1,980.63	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL46	473,977.11	4,743,572.00	1,980.37	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL47	473,970.95	4,743,579.90	1,979.93	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL48	473,964.80	4,743,587.80	1,979.54	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL49	473,958.64	4,743,595.70	1,979.31	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL50	473,952.49	4,743,603.50	1,979.43	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL51	473,946.34	4,743,611.40	1,979.70	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL52	473,940.18	4,743,619.30	1,980.07	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL53	473,934.03	4,743,627.20	1,980.67	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL54	473,921.33	4,743,644.80	1,981.37	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL55	473,915.86	4,743,653.20	1,981.28	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL56	473,910.40	4,743,661.60	1,981.31	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL57	473,904.93	4,743,670.00	1,981.65	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL58	473,899.47	4,743,678.30	1,982.05	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL59	473,894.00	4,743,686.70	1,982.26	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL60	473,888.54	4,743,695.10	1,982.71	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL61	473,883.07	4,743,703.40	1,983.06	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL62	473,877.61	4,743,711.80	1,983.32	4.00	71.98	71.98		16.74	3.72

North Haul Road	VOL63	473,872.14	4,743,720.20	1,984.17	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL64	473,866.68	4,743,728.60	1,984.82	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL65	473,857.26	4,743,747.00	1,985.03	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL66	473,853.75	4,743,756.30	1,984.86	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL67	473,849.18	4,743,778.40	1,983.61	4.00	71.98	71.98		16.74	3.72
North Haul Road	VOL68	473,849.15	4,743,788.40	1,982.93	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL77	473,895.43	4,743,091.20	1,969.61	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL78	473,893.79	4,743,051.30	1,969.92	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL79	473,892.96	4,743,031.30	1,969.98	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL80	473,892.14	4,743,011.30	1,969.86	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL81	473,890.91	4,743,981.30	1,969.38	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL82	473,889.26	4,743,941.40	1,970.33	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL83	473,885.15	4,743,841.40	1,974.08	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL84	473,884.32	4,743,821.50	1,974.94	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL85	473,872.04	4,743,783.20	1,979.30	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL86	473,864.15	4,743,764.80	1,982.20	4.00	71.98	71.98		16.74	3.72
Ready Line Road	VOL87	473,856.88	4,743,747.90	1,985.02	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL89	474,125.33	4,743,169.50	1,986.29	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL90	474,125.01	4,743,149.50	1,986.48	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL91	474,124.66	4,743,128.20	1,987.00	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL92	474,124.36	4,743,109.50	1,987.15	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL93	474,124.04	4,743,089.50	1,986.65	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL94	474,123.77	4,743,072.90	1,986.59	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL95	474,123.39	4,743,052.90	1,986.62	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL96	474,123.00	4,743,032.90	1,986.64	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL97	474,122.62	4,743,012.90	1,986.67	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL98	474,122.24	4,742,992.90	1,986.69	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL99	474,121.86	4,742,972.90	1,986.72	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL100	474,121.29	4,742,942.90	1,986.07	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL101	474,120.72	4,742,912.90	1,986.68	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL102	474,120.53	4,742,902.90	1,986.90	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL103	474,119.96	4,742,872.90	1,987.03	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL104	474,119.39	4,742,842.90	1,987.77	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL105	474,118.82	4,742,812.90	1,986.96	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL106	474,118.63	4,742,802.90	1,986.95	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL107	474,118.25	4,742,782.90	1,986.96	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL108	474,117.87	4,742,762.90	1,986.99	4.00	71.98	71.98		16.74	3.72

Ore Stockpile Road	VOL109	474,110.25	4,742,750.80	1,987.74	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL110	474,095.24	4,742,737.60	1,989.24	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL111	474,080.10	4,742,726.50	1,990.76	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL112	474,071.59	4,742,721.20	1,991.61	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL113	474,063.08	4,742,716.00	1,992.46	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL114	474,046.06	4,742,705.50	1,994.04	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL115	474,033.53	4,742,701.20	1,995.28	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL116	474,014.15	4,742,696.30	1,996.91	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL117	474,004.46	4,742,693.90	1,997.63	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL118	473,994.77	4,742,691.40	1,998.46	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL119	473,985.07	4,742,688.90	1,999.51	4.00	71.98	71.98		16.74	3.72
Ore Stockpile Road	VOL120	473,974.53	4,742,686.30	2,000.65	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL125	474,082.73	4,743,230.90	1,994.06	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL126	474,114.67	4,743,192.40	1,988.13	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL127	474,145.38	4,743,178.60	1,984.10	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL128	474,195.32	4,743,176.20	1,980.84	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL129	474,307.56	4,743,169.20	1,978.62	4.00	71.98	71.98		16.74	3.72
Growth Media Road	VOL130	474,248.19	4,743,180.90	1,978.62	4.00	71.98	71.98		16.74	3.72
Growth Media Stockpile	VOL131	474,354.46	4,743,182.30	1,975.49	4.57	71.63	71.63		16.66	1.06
Ore Stockpile	VOL132	474,009.39	4,742,555.10	2,002.43	3.96	110.34	110.34		25.66	0.92
Waste Pile - North ODA	VOL133	473,675.83	4,744,239.10	1,974.73	19.20	153.92	153.92		35.80	4.47
Waste Rock Loading (pit and stockpiles)	VOL134	473,854.00	4,743,493.00	1,946.00	5.00	10.67	10.67		2.48	1.20
Ore Loading at the pit	VOL135	473,837.90	4,743,539.83	1,946.00	5.00	10.67	10.67		2.48	1.20
Ore Loading to Tipple	VOL136	473,813.83	4,743,895.03	1,946.00	5.00	10.67	10.67		2.48	1.20
Ore unloading to ore stockpile	VOL137	473,981.89	4,742,491.06	1,946.00	5.00	10.67	10.67		2.48	1.20
Ore unloading to ore stockpile	VOL138	474,027.00	4,742,492.00	1,946.00	5.00	10.67	10.67		2.48	1.20
Waste rock unloading into the pit	VOL139	473,946.00	4,743,295.00	1,946.00	5.00	10.67	10.67		2.48	1.20
Waste rock unloading at North ODA	VOL140	473,675.00	4,744,344.00	1,946.00	5.00	10.67	10.67		2.48	1.20
Waste rock unloading at South ODA	VOL141	473,955.00	4,742,947.00	1,946.00	5.00	10.67	10.67		2.48	1.20
Waste Pile - South ODA	VOL142	473,972.03	4,742,859.84	1,974.73	19.20	153.92	153.92		35.80	4.47

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline - 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	Nu-West Industries, Inc. dba Agrium
Facility Name:	Lanes Creek Mine
Facility ID No.:	TDB
Brief Project Description:	Permit To Construct Phosphate Mine

BUILDING AND STRUCTURE INFORMATION

1.	2.	3.	4.	5.	6.	7.
Building ID Number	**Length (ft)**	**Width (ft)**	**Base Elevation (m)**	**Building Height (m)**	**Number of Tiers**	**Description/Comments**
No Structure or Buildings						

APPENDIX B

ANTICIPATED CONSTRUCTION SCHEDULE

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Lanes Creek Mine Anticipated Construction Schedule

- **Fall 2013**
    - Implement preliminary water management plan
    - Topsoil strip, and road construction as needed to access GM stockpile
    - GM strip of "new" pond locations (1A and 1B), GM strip of access roads as needed and (potentially) facilities area
    - Construct 2 ponds to replace existing pond 1: Pond 1A east of Lanes Creek Road, Pond 1B near existing pit
    - Reconfigure/decommission temp channels for stormwater management
    - Stabilize site for Winter 2013/2014

- **Spring 2014 (June/July)**
    - Topsoil strip for Phase 1 mine pit footprint and all stockpile areas (N and S ODA), ore stockpile
    - Strip/construct haul roads and access roads, facilities area if not completed in 2013
    - Establish stockpile footprints and access/haul roads
    - North ODA low-permeability base construction
    - Additional water management feature construction (culverts, ditches, ponds)
    - Build out facilities area (generator, AST, temp structures)

- **Late Summer/Fall (and into winter of) 2014**
    - 1st phase of mining, to continue as needed to meet first year volume requirement
    - 1st ore haul in December 2014 to March 2015.

APPENDIX C

DUST CONTROL PLAN

Agrium

Dust Control Plan

This Dust Control Plan identifies the fugitive dust sources at the Lane Creek site and describes all of the dust control measures to be implemented before, during, and after any dust generating activity for the duration of the project.

Dust Control Plan
Section 1 – General Information – Page 1

1-A Project Name and Location

Project Name: Lanes Creek Mine

Project Address: 20 miles Northeast of Soda Springs

Physical Address: 3010 Conda Road

City/State/Zip: Soda Springs, Idaho 83276 County: Caribou

Section(s): 4 & 9 Township: 7 S Range: 44 E

Section(s): 32 Township 6 S Range: 44 E

Expected Construction Start Date: 2013 End Date: 2019

1-B Contacts

Names, addresses, and phone numbers of persons and operators responsible for the implementation of the Dust Control Plan and responsible for the dust generating operation.

Mine Manager: Erika Stoner, Mine Manager

Address: P.O. Box 758 / 3010 Conda Road

City / State / Zip: Soda Springs, Idaho 83276

Phone: (208) 574-2080 Fax: N/A

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Section 1 – General Information – Page 2

Project Name: Lanes Creek Mine

1-C Contractors

Provide the names, addresses, and phone numbers of the contractors involved in dust generating activities **or** performing dust control as part of this project.

1. Kiewit Mining Group, 3826 Blackfoot River Road, Soda Springs, ID 83276
   (208) 547-1097

1-D The following will have the primary responsibility for implementing this Dust Control Plan?

Primary Project Contact: Erika Stoner
Title: Mine Manager
Company Name: Agrium Conda Phosphate Operations (CPO)
Address: P.O. Box 758 / 3010 Conda Road
City / State / Zip: Soda Springs, Idaho 83276
On-Site Phone: (208) 574-2080 Fax: N/A
Mobile Phone: N/A Pager: N/A

1-E Provide a brief description of the project's operations.

Agrium is proposing to construct and operate an open-pit phosphate mine on the northeastern ridge of Rasmussen Ridge in Caribou County, Idaho. During mine development, the LCM will expand the existing open pit, the existing south overburden stockpile storage area will be expanded and an area for a separate overburden storage area to the north will be established. Additionally, storm water and sediment control structures, a facilities area, an ore stockpile area, a growth media storage area, and access and haul roads within the lease will be constructed to support mining operations. There will be a total of 129.7 acres of new surface disturbance and 36 acres of existing disturbance.

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Dust Control Plan
Section 2 – Plot Plan – Page 1

Project Name: Lanes Creek Mine

2-A Plot Plan

A plot plan or facility layout map identifies the location of the project. Refer to Figure 1-1 for a facility layout map. Attached maps may include tract maps, site maps, and topographic maps. Use the checklist below to make sure all areas have been identified on the facility layout map.

Identify the relative locations of actual and potential sources of fugitive dust emissions.

- ☒ Bulk material handling and storage areas.
- ☒ Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards.
- ☒ Drilling and Blasting operations
- ☐ Exit points where carryout and trackout onto paved public roads may occur.
- ☒ Water supply locations if water application will be used for controlling visible dust emissions.
- ☒ Freeways, roads, or traffic areas that may be affected by the dust generating activities.

Water for dust suppressant will come from a water well located at the Rasmussen Valley Mine

2-B Facility Map

☒ Figure 1 provides a facility layout map.

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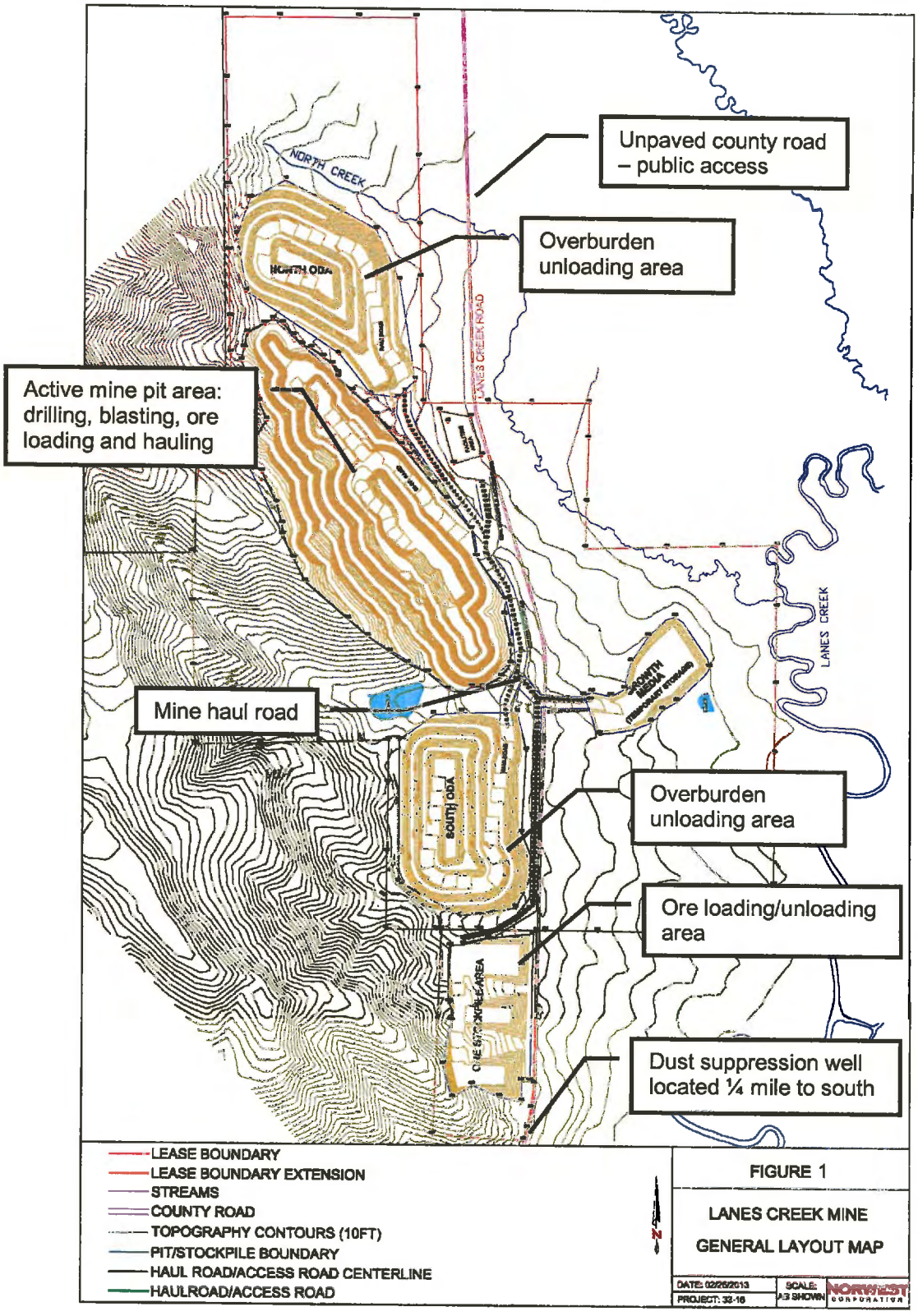
Figure 1-1

Lanes Creek Mine Out



Agrium

Dust Control Plan
Section 3 – Fugitive Dust Sources – Page 1

Project Name: Lanes Creek Mine

3-A Disturbed Surface Area

Report the total area of land surface to be disturbed, the daily throughput volume of earthmoving in cubic yards, and the total area in acres of the entire project site.

Total area of existing surface disturbances:	36	Acres
Total area of new surface to be disturbed:	129.7	Acres
Total throughput volume of earthmoving:	13.1 million	Cubic Yards
Total area of entire project site:	352	Acres

3-B Dust Generating Activity Dates

The expected start and completion dates of dust generating activities and soil disturbance activities to be performed on site.

Expected start date:	2013	**Completion Date:**	2019
Phase Project Start – A:	2013 (Mining)	Completion – A:	2017
Phase Project Start – B:	2017 (Reclamation)	Completion – B:	2019

3-C Other Locations

Other locations included with this plan that are involved with this project. An example may include listing any site where materials will be imported from or exported to.

☐ No other locations are included with this project. (Skip to 3-D)

Location 1: Lanes Creek Haul Road

☐ No Dust Control Plan Required ☒ Included with this plan ☐ Included with another plan

Location 2: Wooley Valley Tipple

☒ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 3: _____

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

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Section 3 – Fugitive Dust Sources – Page 2

Project Name: Lanes Creek Mine

3-D Sources of Fugitive Dust

Procedures to limit visible dust emissions from activities that cause fugitive dust emissions.
Check at least one box under each category.

Pre-Activity.

- ☒ The site will be pre-watered and work will be phased to reduce the amount of disturbed surface area at any one time (Refer to Section 4-A).

Active Operations.

- ☒ Water will be applied to dry areas during leveling, grading, trenching, drilling, and earthmoving activities (Refer to Section 4-A).
- ☒ Dust suppressants may be applied to the disturbed surface areas (Refer to Sections 4-A or 4-B, and 4-C).

Inactive Operations, including after work hours, weekends, and holidays.

- ☒ Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust. (Refer to Section 4-A or 4-B, and 4-C)

Temporary stabilization of areas that remains unused for seven or more days.

- ☒ Vehicular access will be restricted and water or dust suppressants will be applied and maintained at all un-vegetated areas (Refer to Section 4-A or 4-B, and 4-C).
- ☒ Vegetation will be established on all previously disturbed growth media areas (Refer to Section 4-C).
- ☐ Gravel will be applied and maintained at all previously disturbed areas (Refer to Section 4-C).
- ☐ Previously disturbed areas will be stabilized by vegetation, compaction … (Refer to Section 4-C).

Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas.

- ☒ Apply water or dust suppressants to unpaved haul and access roads (Complete Section 4-A or 4-B)
- ☒ Post speed limit signs of not more than 15 miles per hour at each entrance, and again every 1000 feet. (Refer to Section 4-C)
- ☒ Water or dust suppressants will be applied to vehicle traffic and equipment storage areas (Refer to Section 4-A or 4-B).

Wind Events.

- ☒ Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so. Activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.

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Section 3 – Fugitive Dust Sources – Page 3

3-E Bulk Materials

Handling of Bulk Materials.

- ☐ Water or dust suppressants will be applied when handling bulk materials.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.

Storage of Bulk Materials.

- ☒ Water, or dust suppressants, or re-seeding of stockpiles will be applied.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles, and water or dust suppressants will be applied.

On-Site Transporting of Bulk Materials.

- ☒ Vehicle speed will be limited on the work site to 15 mph.
- ☒ All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.

Off-Site Transporting of Bulk Materials.

- ☐ The following practices will be performed: (Refer to Section 5-B)

3-F Comments

Agrium shall conduct monthly facility-wide inspections of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive dust emissions are effective.

Agrium shall maintain records of all fugitive dust complaints received for a minimum period of two years. Agrium shall take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the complaint, Agrium's assessment of the validity of the complaint, any corrective action taken, and the date the corrective was taken. A record of fugitive dust complaints shall be maintained by the mine project manager.

Agrium

Dust Control Plan
Section 4 – Dust Control Methods – Page 1

Project Name: Lanes Creek Mine

4-A Water Application

Water application will be used for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies to this project.

Water Application Equipment:

☐ Sprinklers: Describe the activities that will utilize sprinklers:

Minimum treated area: _____ ☐ Square Feet ☐ Acres

Maximum treated area: _____ ☐ Square Feet ☐ Acres

Minimum water flow rate: _____ Gallons/minute Duration: _____

☒ Water Truck, ☐ Water Trailer, ☐ Water Wagon, ☐ Other: _____

Describe the activities that will utilize this equipment:
Haul roads, ore, overburden, and growth media stockpiles, and facilities area.

Number of application equipment available: 1 Water Truck

Application equipment capacity: 500 gallons

Application frequency: Up to 4 Times Per Day

Hours of operation: 12 to 20 hours/day

Water Supply:

☐ Storage tanks

☒ Wells Agrium South Rasmussen Valley Site – 1 Off-Site Water Well

☐ Canal, River, Pond, Lake, etc. Describe:

Approval granted by the owner or public agency to use their water source for this project.

Owner or Agency: Agrium CPO

Contact: Erika Stoner (Mine Manager) Phone No.: (208) 574-2080

☐ Other:

Agrium

Section 4 – Dust Control Methods – Page 2

Project Name: Lanes Creek Mine

4-B Dust Suppressant Products

Complete this section if a dust suppressant product will be used. These materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous materials (road oils).

☒ **Not Applicable.** At this time only water application will be utilized to control fugitive emissions. If magnesium chloride is utilized, Agrium will provide MSDS, environmental approvals, and manufacturer's usage instructions. Skip to 4-C.

Application Area: _____

Product Name: _____

Contractor's Name: _____ Phone No: _____

Application Rate: _____ Gallons of undiluted material per ☐ mile or ☐ acre treated.

Application Frequency: _____ Applications per ☐ week, ☐ month, ☐ year

Application Equipment: _____

Number of Application Equipment Available: _____

Application Equipment Capacity: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☐ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☐ Manufacturer's Usage Instructions (method, frequency, and intensity of application)
- ☐ Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

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Section 4 – Dust Control Methods – Page 3

Project Name: Lanes Creek Mine

4-C Other Dust Control Methods

Check below the other types of dust control methods that will be employed at the site.

☒ Physical barriers for restricting unauthorized vehicle access:
- ☒ Fences ☒ Gates ☒ Signs ☐ Berms ☐ Concrete Barriers
- ☐ Other: _____

☐ Wind barriers Describe: _____

☒ Posted speed limit signs
- ☒ Posted at 15 miles per hour, ☐ Posted at _____ miles per hour (less than 15 MPH)

☒ Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.
- Explain: Growth media stockpiles and roadside berms will be vegetated

☒ Apply and maintain gravel:
- ☒ On haul roads ☒ On access roads ☒ At equipment storage yards
- ☒ At vehicle traffic areas ☐ For temporarily stabilizing previously disturbed areas.
- Explain: Facilities area and on-site access and haul roads will be constructed using a gravel base

☐ Apply pavement:
- Explain: _____

☐ Other: _____

4-D Contingencies

Contingencies to be implemented if application equipment becomes inoperable, more equipment is needed to effectively control fugitive dust emissions during active and inactive periods, accessibility limitations occur at the water sources, or staff is not available to operate the application equipment. Describe the contingencies that will be in place and when they will be implemented. Provide any additional information below.

In the event that the water truck becomes inoperable, the water truck will either be repaired or another measure of controlling fugitive dust would be utilized as expeditiously as practicable. Mine personnel will be responsible for assisting the mine manager in controlling fugitive dust emissions. Applicable mine personnel will have access to either an electronic or paper copy of the dust control plan.

4-E Record keeping

Records and any other supporting documents for demonstrating compliance must be maintained, but only for those days when a control measure is implemented. IDEQ has developed record keeping forms that may be used for complying with this requirement. Check below:

☒ Records will be maintained using documents and forms developed by IDEQ.

Fugitive Dust Control Method Log, Weather Log, Self Inspection Checklist

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Example - Self-Inspection Checklist: Fugitive Dust Control Method Log

Date	Time	Control Method	Comments
5-09-14	7 AM	Water Truck	All haul roads on facility grounds
5-09-14	7 AM	Water Truck	Entrance of facility/North stock pile area only
5-09-14	7 AM	Water Truck	All haul roads on facility grounds
5-09-14	7 AM	See weather log	All haul roads on facility grounds
5-09-14	7 AM	See weather log	All haul roads on facility grounds

Example - Self-Inspection Checklist: Weather Log

Date	Temperature	Wind Speed/Direction	Amt. of Rainfall	Comments
10-10-14	55 F (high)	5 mph	0.10 inch	Wet, cloudy, cold
10-11-14	50 F (high)	8 mph	0.0 inch	Wet, cloudy, cold
10-12-14	56 F (high)	8 mph	0.05 inch	Wet, cloudy, cold
10-16-14	52 F (high)	7 mph	0.0 inch	Wet, cloudy, cold

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Dust Control Plan
Section 6 – Certification

Project Name: Lanes Creek Mine

6-A Certification

The responsible official, principle operator, or the individual implementing must certify the plan.

I certify that all information contained herein and information submitted in the attachments to these documents are true and correct to the best of my knowledge.

Erika Stoner Print Name	Mine Manager Title
 Signature	 Date

(208) 574-2080 Phone Number	N/A Fax Number	N/A Cell Number

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Self-Inspection Checklist: Fugitive Dust Control Method Log

Fugitive Dust Source: **Haul Roads**

Date	Time	Control Method	Comments

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Self-Inspection Checklist: Fugitive Dust Control Method Log

Fugitive Dust Source: **Ore Stockpile**

Date	Time	Control Method	Comments

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Self-Inspection Checklist: Fugitive Dust Control Method Log

Fugitive Dust Source: **North & South Overburden Stockpiles**

Date	Time	Control Method	Comments

Self-Inspection Checklist: Fugitive Dust Control Method Log

Fugitive Dust Source: **<u>Drilling</u>**

Date	Time	Control Method	Comments

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Self-Inspection Checklist: Fugitive Dust Control Method Log

Fugitive Dust Source: **Facilities Area**

Date	Time	Control Method	Comments

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Self-Inspection Checklist: Weather Log

Date	Temperature	Wind Speed / Direction	Amt. of Rainfall	Comments

APPENDIX D

EMISSION CALCULATIONS
(PROVIDED ON CD)

Nu-West Industries, Inc. dba Agrium
Lanes Creek Mine Emissions Summary
Facility-Wide Fugitive Emissions
Permit To Construct Application

	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC		CO_2e		Lead	
Source	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**
Blasting	3.2	1.9	0.18	0.11	0.41	1.80	3.49	15.30	13.77	60.30	—	—	—	—	—	—
Drilling	0.4	1.61	0.22	0.90	—	—	—	—	—	—	—	—	—	—	—	—
Media Growth Haul Road	3.28E-04	2.87	3.28E-05	0.29	—	—	—	—	—	—	—	—	—	—	—	—
North Haul Road	1.99E-03	17.44	1.99E-04	1.74	—	—	—	—	—	—	—	—	—	—	—	—
Ready-Line Haul Road	6.27E-04	5.49	6.27E-05	0.55	—	—	—	—	—	—	—	—	—	—	—	—
Ore Stockpile Haul Road	9.67E-04	8.47	9.67E-05	0.85	—	—	—	—	—	—	—	—	—	—	—	—
South & Pit Haul Road	2.06E-03	18.07	2.06E-04	1.81	—	—	—	—	—	—	—	—	—	—	—	—
Total Media Growth [1]	1.60E-02	7.02E-02	2.43E-03	1.06E-02	—	—	—	—	—	—	—	—	—	—	—	—
Ore Stockpile	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Total Wast Rock [2]	0.36	1.57	0.05	0.24	—	—	—	—	—	—	—	—	—	—	—	—
Ore Loading in Pit	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Ore stockpile to Tipple	0.06	0.25	0.009	0.04												
Unload Ore Stockpile	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Total Disturbed Acreage [3]	3.99	17.49	0.600	2.63		—	—	—	—	—	—	—	—	—	—	—
Post Project Totals	**8.14**	**75.97**	**1.09**	**9.27**	**0.41**	**1.80**	**3.49**	**15.30**	**13.77**	**60.30**	—	—	—	—	—	—

(1) Total media growth represents the loading and unloading of media growth from the pit to the stockpile, the stockpile and from stockpile to reclamation.

(2) Total waste rock represents north and south stockpiles, loading/unloading from the pit to the stockpiles and stockpiles back to pit/reclamation

(3) Total disturbed acreage includes mine pit, north and south ODA, sediment control, facilities area, ore stockpile, growth media, and access and haul roads

(3) Total disturbed acreage in considered a short-term, one time event, therefore emssions were not included in modeling

Nu-West Industries, Inc. dba Agrium
Lanes Creek Mine Emissions Summary
Facility-Wide Point Source Emissions
Permit to Construct Application

	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC		CO_2e		Lead	
Source	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**
Diesel Generator (198 hp)	0.05	0.23	0.05	0.23	0.41	1.78	1.22	5.35	0.31	1.34	1.22	5.35	227.70	997.33	—	—
Diesel Generator (198 hp)	0.05	0.23	0.05	0.23	0.41	1.78	1.22	5.35	0.31	1.34	1.22	5.35	227.70	997.33	—	—
Diesel Light Plant 14 hp (Ore Stockpile)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (Facilities Area)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (North ODA)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp(South ODA)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Light Plant 14 hp (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Diesel Tank (20,000 gallon)	—	—	—	—	—	—	—	—	—	—	0.002	0.01	—	—	—	—
Post Project Totals	**0.19**	**0.82**	**0.19**	**0.82**	**1.07**	**4.69**	**4.00**	**17.52**	**1.97**	**8.64**	**4.00**	**17.52**	**600**	**2629**	—	—

Nu-West Industris, Inc. dba Agrium
Lanes Creek Mine Emissions Summary
Permit To Construct

	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC		CO_2e		Lead	
Source	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**	**lb/hr**	**T/Yr**
198 HP Diesel Generator	0.05	0.23	0.05	0.23	0.41	1.78	1.22	5.35	0.31	1.34	1.22	5.35	227.70	997.33	—	—
198 HP Diesel Generator	0.05	0.23	0.05	0.23	0.41	1.78	1.22	5.35	0.31	1.34	1.22	5.35	227.70	997.33	—	—
Blasting	3.2	1.9	0.18	0.11	0.41	1.80	3.49	15.30	13.77	60.30	—	—	—	—	—	—
Drilling	0.4	1.61	0.22	0.90	—	—	—	—	—	—	—	—	—	—	—	—
Media Growth Haul Road	3.28E-04	2.87	3.28E-05	0.29	—	—	—	—	—	—	—	—	—	—	—	—
North Haul Road	1.99E-03	17.44	1.99E-04	1.74	—	—	—	—	—	—	—	—	—	—	—	—
Ready-Line Haul Road	6.27E-04	5.49	6.27E-05	0.55	—	—	—	—	—	—	—	—	—	—	—	—
Ore Stockpile Haul Road	9.67E-04	8.47	9.67E-05	0.85	—	—	—	—	—	—	—	—	—	—	—	—
South & Pit Haul Road	2.06E-03	18.07	2.06E-04	1.81	—	—	—	—	—	—	—	—	—	—	—	—
1 Diesel Light Plant (Ore Stockpile)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (Facilities Area)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (North ODA)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (South ODA)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
1 Diesel Light Plant (Pit)	0.01	0.04	0.01	0.04	0.03	0.13	0.17	0.76	0.15	0.66	0.17	0.76	16.10	70.52	—	—
Total Media Growth [1]	1.60E-02	7.02E-02	2.43E-03	1.06E-02	—	—	—	—	—	—	—	—	—	—	—	—
Ore Stockpile	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Total Wast Rock [2]	0.36	1.57	0.05	0.24	—	—	—	—	—	—	—	—	—	—	—	—
Ore Loading In Pit	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Ore stockpile to Tipple	0.06	0.25	0.009	0.04											—	—
Unload Ore Stockpile	0.06	0.25	0.009	0.04	—	—	—	—	—	—	—	—	—	—	—	—
Total Disturbed Acreage [3]	3.99	17.49	0.600	2.63		—	—	—	—	—	—	—	—	—	—	—
Diesel Tank	—	—	—	—	—	—	—	—	—	—	0.002	0.01			—	—
Post Project Totals	**6.33**	**76.79**	**1.28**	**10.10**	**1.48**	**6.49**	**7.49**	**32.82**	**15.74**	**68.94**	**4.00**	**17.52**	**600**	**2629**	—	—

(1) Total media growth represents the loading and unloading of media growth from the pit to the stockpile, the stockpile and from stockpile to reclamation.

(2) Total waste rock represents north and south stockpiles, loading/unloading from the pit to the stockpiles and stockpiles back to pit/reclamation

(3) Total disturbed acreage includes mine pit, north and south ODA, sediment control, facilities area, ore stockpile, growth media, and access and haul roads

(3) Total disturbed acreage in considered a short-term, one time event, therefore emissions were not included in modeling

BSFC (brake specific fuel consumption) = 7,000 Btu/hp-hr Reference "a" AP-42 Table 3.3-1
MMBtu/hr = 1.39
1 lb = 453.6 Grams

				Unit Size	SD 100		SD 100				
				Operation	198	HP	198	HP	Total	Total	
					8,760	hours/year	8,760	hours/year	Emissions	Emissions	
HAPs [3]	EF / Units				Emissions		Emissions		lb/hr	tons/year	CAS
Benzene	9.33E-04	lb/mmBtu	AP-42 Table 3.3-2		1.29E-03	5.66E-03	1.29E-03	5.66E-03	2.59E-03	1.13E-02	71-43-2
Toluene	4.09E-04	lb/mmBtu	AP-42 Table 3.3-2		5.67E-04	2.48E-03	5.67E-04	2.48E-03	1.13E-03	4.97E-03	108-88-3
Xylenes	2.85E-04	lb/mmBtu	AP-42 Table 3.3-2		3.95E-04	1.73E-03	3.95E-04	1.73E-03	7.90E-04	3.46E-03	1330-20-7
Formaldehyde	1.18E-03	lb/mmBtu	AP-42 Table 3.3-2		1.64E-03	7.16E-03	1.64E-03	7.16E-03	3.27E-03	1.43E-02	50-00-0
Acetaldehyde	7.67E-04	lb/mmBtu	AP-42 Table 3.3-2		1.06E-03	4.66E-03	1.06E-03	4.66E-03	2.13E-03	9.31E-03	75-07-0
Acrolein	9.25E-05	lb/mmBtu	AP-42 Table 3.3-2		1.28E-04	5.62E-04	1.28E-04	5.62E-04	2.56E-04	1.12E-03	107-02-8
Naphthalene	8.48E-05	lb/mmBtu	AP-42 Table 3.3-2		1.18E-04	5.15E-04	1.18E-04	5.15E-04	2.35E-04	1.03E-03	91-20-3
1.3-Butadiene	3.91E-05	lb/mmBtu	AP-42 Table 3.3-2		5.42E-05	2.37E-04	5.42E-05	2.37E-04	1.08E-04	4.75E-04	106-99-0
PAHs	EF / Units										
Acenaphthyiene	5.06E-06	lb/mmBtu	AP-42 Table 3.3-2		7.01E-06	3.07E-05	7.01E-06	3.07E-05	1.40E-05	6.14E-05	203-96-8
Acenaphthene	1.42E-06	lb/mmBtu	AP-42 Table 3.3-2		1.97E-06	8.62E-06	1.97E-06	8.62E-06	3.94E-06	1.72E-05	83-32-9
Fluorene	2.92E-05	lb/mmBtu	AP-42 Table 3.3-2		4.05E-05	1.77E-04	4.05E-05	1.77E-04	8.09E-05	3.55E-04	86-73-7
Phenanthrene	2.94E-05	lb/mmBtu	AP-42 Table 3.3-2		4.07E-05	1.78E-04	4.07E-05	1.78E-04	8.15E-05	3.57E-04	85-01-8
Anthracene	1.87E-06	lb/mmBtu	AP-42 Table 3.3-2		2.59E-06	1.14E-05	2.59E-06	1.14E-05	5.18E-06	2.27E-05	120-12-7
Fluoranthene	7.61E-06	lb/mmBtu	AP-42 Table 3.3-2		1.05E-05	4.62E-05	1.05E-05	4.62E-05	2.11E-05	9.24E-05	206-44-0
Pyrene	4.78E-06	lb/mmBtu	AP-42 Table 3.3-2		6.63E-06	2.90E-05	6.63E-06	2.90E-05	1.33E-05	5.80E-05	129-00-0
Benzo(a)anthracene	1.68E-06	lb/mmBtu	AP-42 Table 3.3-2		2.33E-06	1.02E-05	2.33E-06	1.02E-05	4.66E-06	2.04E-05	56-55-3
Chrysene	3.53E-07	lb/mmBtu	AP-42 Table 3.3-2		4.89E-07	2.14E-06	4.89E-07	2.14E-06	9.79E-07	4.29E-06	218-01-9
Benzo(b)fluoranthene	9.91E-08	lb/mmBtu	AP-42 Table 3.3-2		1.37E-07	6.02E-07	1.37E-07	6.02E-07	2.75E-07	1.20E-06	205-99-2
Benzo(k)fluoranthene	1.55E-07	lb/mmBtu	AP-42 Table 3.3-2		2.15E-07	9.41E-07	2.15E-07	9.41E-07	4.30E-07	1.88E-06	205-82-3
Benzo(a)pyrene	1.88E-07	lb/mmBtu	AP-42 Table 3.3-2		2.61E-07	1.14E-06	2.61E-07	1.14E-06	5.21E-07	2.28E-06	50-32-8
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/mmBtu	AP-42 Table 3.3-2		5.20E-07	2.28E-06	5.20E-07	2.28E-06	1.04E-06	4.55E-06	193-39-5
Dibenzo(a,h)anthracene	5.83E-07	lb/mmBtu	AP-42 Table 3.3-2		8.08E-07	3.54E-06	8.08E-07	3.54E-06	1.62E-06	7.08E-06	53-70-3
Benzo(g,h,I)perylene	4.89E-07	lb/mmBtu	AP-42 Table 3.3-2		6.78E-07	2.97E-06	6.78E-07	2.97E-06	1.36E-06	5.94E-06	191-24-2
											N/A
Organic Speciated Compound	EF / Units										
Propylene	2.58E-03	lb/mmBtu	AP-42 Table 3.3-2		3.58E-03	1.57E-02	3.58E-03	1.57E-02	7.15E-03	3.13E-02	115-07-1

[1] PM_{10} = Particulate matter less than or equal to 10 μm aerodynamic diameter. All particulate is assmed to be less than or equal to 1 μm in size.

[2] It is conservatively assmed that PM = $PM_{2.5}$ / PM_{10}.

[3] Hazardous air pollutant listed in the Clean Air Act.

[4] Emission factors are from manufacturer's statement of exhaust emissions

Combustion Sources - Small Diesel Fuel Stationary Engines (<600hp)

Assumptions:		Units	
BSFC (brake specific fuel consumption) =	7,000	Btu/hp-hr	Reference "a" AP-42 Table 3.3-1
MMBtu/hr =	0.88		
1 lb =	453.6	grams	

					Diesel Light Plants (9)		
				Unit Size	126.0	HP	
				Operation	8,760	hours/year	
HAPs [4]	EF / Units				Emissions		CAS
Benzene	9.33E-04	lb/mmBtu	AP-42 Table 3.3-2		8.23E-04	3.60E-03	71-43-2
Toluene	4.09E-04	lb/mmBtu	AP-42 Table 3.3-2		3.61E-04	1.58E-03	108-88-3
Xylenes	2.85E-04	lb/mmBtu	AP-42 Table 3.3-2		2.51E-04	1.10E-03	1330-20-7
Formaldehyde	1.18E-03	lb/mmBtu	AP-42 Table 3.3-2		1.04E-03	4.56E-03	50-00-0
Acetaldehyde	7.67E-04	lb/mmBtu	AP-42 Table 3.3-2		6.76E-04	2.96E-03	75-07-0
Acrolein	9.25E-05	lb/mmBtu	AP-42 Table 3.3-2		8.16E-05	3.57E-04	107-02-8
Naphthalene	8.48E-05	lb/mmBtu	AP-42 Table 3.3-2		7.48E-05	3.28E-04	91-20-3
1.3-Butadiene	3.91E-05	lb/mmBtu	AP-42 Table 3.3-2		3.45E-05	1.51E-04	106-99-0
							N/A
PAHs	EF / Units						
Acenaphthylene	5.06E-06	lb/mmBtu	AP-42 Table 3.3-2		4.46E-06	1.95E-05	203-96-8
Acenaphthene	1.42E-06	lb/mmBtu	AP-42 Table 3.3-2		1.25E-06	5.49E-06	83-32-9
Fluorene	2.92E-05	lb/mmBtu	AP-42 Table 3.3-2		2.58E-05	1.13E-04	86-73-7
Phenanthrene	2.94E-05	lb/mmBtu	AP-42 Table 3.3-2		2.59E-05	1.14E-04	85-01-8
Anthracene	1.87E-06	lb/mmBtu	AP-42 Table 3.3-2		1.65E-06	7.22E-06	120-12-7
Fluoranthene	7.61E-06	lb/mmBtu	AP-42 Table 3.3-2		6.71E-06	2.94E-05	206-44-0
Pyrene	4.78E-06	lb/mmBtu	AP-42 Table 3.3-2		4.22E-06	1.85E-05	129-00-0
Benzo(a)anthracene	1.68E-06	lb/mmBtu	AP-42 Table 3.3-2		1.48E-06	6.49E-06	56-55-3
Chrysene	3.53E-07	lb/mmBtu	AP-42 Table 3.3-2		3.11E-07	1.36E-06	218-01-9
Benzo(b)fluoranthene	9.91E-08	lb/mmBtu	AP-42 Table 3.3-2		8.74E-08	3.83E-07	205-99-2
Benzo(k)fluoranthene	1.55E-07	lb/mmBtu	AP-42 Table 3.3-2		1.37E-07	5.99E-07	205-82-3
Benzo(a)pyrene	1.88E-07	lb/mmBtu	AP-42 Table 3.3-2		1.66E-07	7.26E-07	50-32-8
Indeno(1,2,3-cd)pyrene	3.75E-07	lb/mmBtu	AP-42 Table 3.3-2		3.31E-07	1.45E-06	193-39-5
Dibenzo(a,h)anthracene	5.83E-07	lb/mmBtu	AP-42 Table 3.3-2		5.14E-07	2.25E-06	53-70-3
Benzo(g,h,i)perylene	4.89E-07	lb/mmBtu	AP-42 Table 3.3-2		4.31E-07	1.89E-06	191-24-2
							N/A
Organic Speciated Compound	EF / Units						
Propylene	2.58E-03	lb/mmBtu	AP-42 Table 3.3-2		2.28E-03	9.97E-03	115-07-1

[1] Tier IV emission standards taken from EPA Tier IV Non-Road Emission Standards, Table 3.

[2] SO_2 Emission Factor taken from AP-42, Table 3.3-1.

[3] It is assumed that PM emissions from EPA Tier IV Table 3 equals PM_{10} & $PM_{2.5}$.

[4] Hazardous air pollutant listed in the Clean Air Act.

Lanes Creek Mine Facility Wide HAPs

HAP	Lb/hr	TPY
Benzene	3.41E-03	1.49E-02
Toluene	1.49E-03	6.55E-03
Xylene	1.04E-03	4.56E-03
1,3 Butadiene	1.43E-04	6.26E-04
Formaldehyde	4.31E-03	1.89E-02
Acrolein	3.38E-04	1.48E-03
Acetaldehyde	2.80E-03	1.23E-02
Naphthalene	3.10E-04	1.36E-03
Total HAP	**1.39E-02**	**6.07E-02**

BSFC (brake specific fuel consumption) = 7,000 Btu/hp-hr Reference "a" AP-42 Table 3.3-1

MMBtu/hr = 1.39

MMBtu/hr = 0.88

				Lanes Creek Prime		Lanes Creek Prime		Lanes Creek Light Plants (9 Total)					
			Unit Size	198	HP	198	HP	126	HP				
			Operation	8,760	hours/year	8,760	hours/year	8,760	hours/year	Total	Total		Exceed	
				Emissions		Emissions		Emissions		Emissions	Emissions	EL	EL	CAS
TAPs				(lb/hr)	(tons/year)	(lb/hr)	(tons/year)	(lb/hr)	(tons/year)	lb/hr	tons/year	(lb/hr)	Y/N	Number
Benzene[2]	9.33E-04	lb/mmBtu	AP-42 Table 3.3-2	1.29E-03		1.29E-03		8.23E-04		3.41E-03		8.00E-04	YES	71-43-2
Toluene[1]	4.09E-04	lb/mmBtu	AP-42 Table 3.3-2	5.67E-04		5.67E-04		3.61E-04		1.49E-03		2.50E+01	No	108-88-3
Xylenes[1]	2.85E-04	lb/mmBtu	AP-42 Table 3.3-2	3.95E-04		3.95E-04		2.51E-04		1.04E-03		2.90E+01	No	1330-20-7
Formaldehyde[2]	1.18E-03	lb/mmBtu	AP-42 Table 3.3-2	1.64E-03		1.64E-03		1.04E-03		4.31E-03		5.10E-04	YES	50-00-0
Acetaldehyde[2]	7.67E-04	lb/mmBtu	AP-42 Table 3.3-2	1.06E-03		1.06E-03		6.76E-04		2.80E-03		3.00E-03	No	75-07-0
Acrolein[1]	9.25E-05	lb/mmBtu	AP-42 Table 3.3-2	1.28E-04		1.28E-04		8.16E-05		3.38E-04		1.70E-02	No	107-02-8
Naphthalene[1]	8.48E-05	lb/mmBtu	AP-42 Table 3.3-2	1.18E-04		1.18E-04		7.48E-05		3.10E-04		3.33E+00	No	91-20-3
Naphthalene[2]	8.48E-05	lb/mmBtu	AP-42 Table 3.3-2	1.18E-04		1.18E-04		7.48E-05		3.10E-04		9.10E-05	YES	91-20-3
Propylene	2.58E-03	lb/mmBtu	AP-42 Table 3.3-2	3.58E-03		3.58E-03		2.28E-03		9.43E-03				115-07-1
1.3-Butadiene[2]	3.91E-05	lb/mmBtu	AP-42 Table 3.3-2	5.42E-05		5.42E-05		3.45E-05		1.43E-04		2.40E-05	YES	106-99-0
Acenaphthylene[2]	5.06E-06	lb/mmBtu	AP-42 Table 3.3-2	7.01E-06		7.01E-06		4.46E-06		1.85E-05		9.10E-05	No	208-96-8
Acenaphthene[2]	1.42E-06	lb/mmBtu	AP-42 Table 3.3-2	1.97E-06		1.97E-06		1.25E-06		5.19E-06		9.10E-05	No	83-32-9
Fluorene[2]	2.92E-05	lb/mmBtu	AP-42 Table 3.3-2	4.05E-05		4.05E-05		2.58E-05		1.07E-04		9.10E-05	YES	86-73-7
Phenanthrene[2]	2.94E-05	lb/mmBtu	AP-42 Table 3.3-2	4.07E-05		4.07E-05		2.59E-05		1.07E-04		9.10E-05	YES	85-01-8
Anthracene[2]	1.87E-06	lb/mmBtu	AP-42 Table 3.3-2	2.59E-06		2.59E-06		1.65E-06		6.83E-06		9.10E-05	No	120-12-7
Fluoranthene[2]	7.61E-06	lb/mmBtu	AP-42 Table 3.3-2	1.05E-05		1.05E-05		6.71E-06		2.78E-05		9.10E-05	No	206-44-0
Benzo(g,h,i)perylene[2]	4.89E-07	lb/mmBtu	AP-42 Table 3.3-2	6.78E-07		6.78E-07		4.31E-07		1.79E-06		9.10E-05	No	191-24-2
Pyrene[2]	4.78E-06	lb/mmBtu	AP-42 Table 3.3-2	6.63E-06		6.63E-06		4.22E-06		1.75E-05		9.10E-05	No	129-00-0
														N/A
	PAHs													N/A
Benzo(a)anthracene[3]	1.68E-06	lb/mmBtu	AP-42 Table 3.3-2	2.33E-06		2.33E-06		1.48E-06		6.14E-06				56-55-3
Chrysene[3]	3.53E-07	lb/mmBtu	AP-42 Table 3.3-2	4.89E-07		4.89E-07		3.11E-07		1.29E-06				218-01-9
Benzo(b)fluoranthene[3]	9.91E-08	lb/mmBtu	AP-42 Table 3.3-2	1.37E-07		1.37E-07		8.74E-08		3.62E-07				205-99-2
Benzo(k)fluoranthene[3]	1.55E-07	lb/mmBtu	AP-42 Table 3.3-2	2.15E-07		2.15E-07		1.37E-07		5.66E-07				207-08-9
Benzo(a)pyrene[3]	1.88E-07	lb/mmBtu	AP-42 Table 3.3-2	2.61E-07		2.61E-07		1.66E-07		6.87E-07				50-32-8
Indeno(1,2,3-cd)pyrene[3]	3.75E-07	lb/mmBtu	AP-42 Table 3.3-2	5.20E-07		5.20E-07		3.31E-07		1.37E-06				193-39-5
Dibenzo(a,h)anthracene[3]	5.83E-07	lb/mmBtu	AP-42 Table 3.3-2	8.08E-07		8.08E-07		5.14E-07		2.13E-06				53-70-3
			Total POM	4.76E-06		4.76E-06		3.03E-06		1.25E-05		2.00E-06	YES	N/A
														N/A

[1] Are considered Non-Carcinogenic TAPs in acordance with IDAPA 58.01.585

[2] Are considered Carcinogenic TAPs in acordance with IDAPA 58.01.586

[3] Are considered Carcinogenic TAPs in acordance with IDAPA 58.01.586

[3] For emisions of PAH mixtures, the following PAHs shall be considered as one TAP, equivalent in potency to benzo(a)pyrene

EL - Screening Emission Level

Total emissions (lb/hr and tons/year) are combined for the two generators

APPENDIX E

WANCO LIGHT PLANT & GENERAC DATA SHEETS

Wanco® Light Towers

WANCO® The industry leader.

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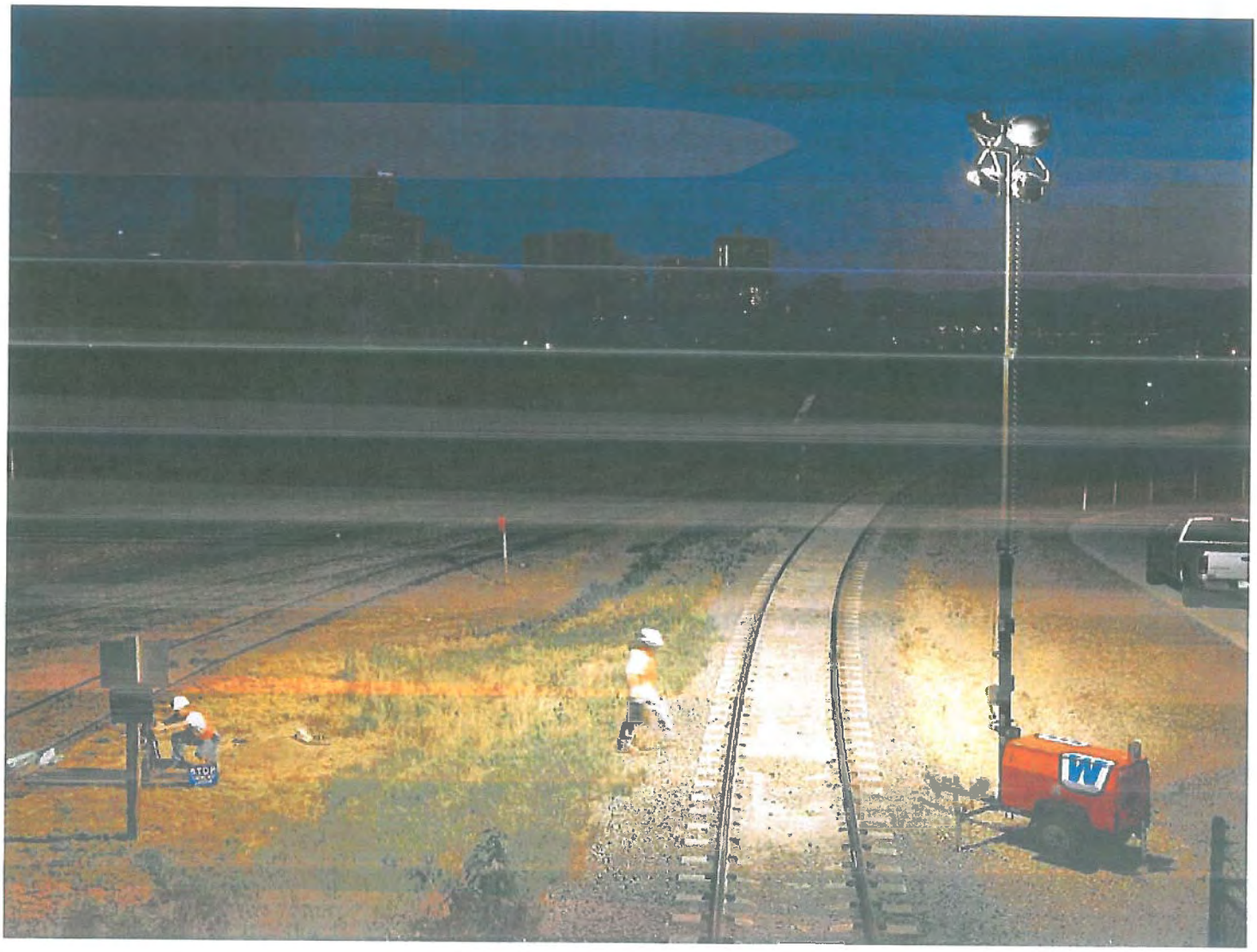
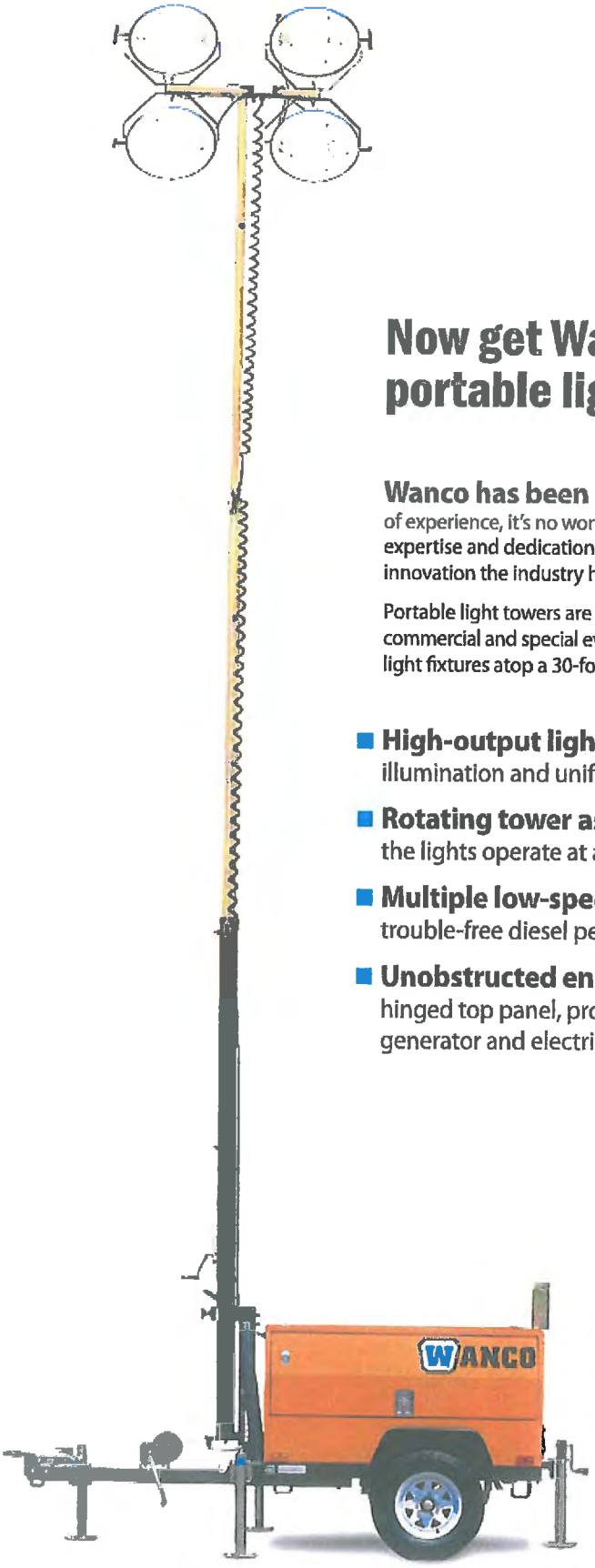
www.wanco.com



Working late?
Light up your job site with Wanco® Light Towers.

Not just another light tower, Wanco Light Towers use state-of-the-art technology to achieve the most efficient illumination, shining a uniform light pattern across the entire job site.

Other advancements include a choice of low-speed engines that provide trouble-free diesel performance and greater longevity, and unsurpassed engine accessibility via a maintenance panel that lifts completely out of the way.



Now get Wanco ingenuity in a portable light tower.

Wanco has been building light towers for 25 years. With this kind of experience, it's no wonder the Wanco Light Tower has turned heads. Our engineering expertise and dedication to quality have made the Wanco Light Tower unique, with innovation the industry has never seen.

Portable light towers are ideal for wide-area outdoor lighting in a variety of construction, commercial and special event applications. Wanco Light Towers feature four 1000-watt light fixtures atop a 30-foot variable-height mast.

- **High-output light fixtures** provide super-bright illumination and uniform light coverage
- **Rotating tower assembly** turns 360 degrees, and the lights operate at any height
- **Multiple low-speed engine options** offer trouble-free diesel performance and greater longevity
- **Unobstructed engine accessibility** with hinged top panel, provides full access to engine, generator and electrical components

With a reputation for service and integrity, Wanco products feature superb functionality, unique features, versatility and dependability.

Light fixtures

The Wanco Light Tower's high-output fixtures feature a high-intensity parabolic reflector that increases illumination and creates a brighter, more uniform light pattern. The result is greater visibility and improved safety for workers. For fast job-site setup and less downtime, each light fixture can be aimed independently without the use of tools—and the fixtures stay in place once positioned.

Tower

The telescoping tower assembly is compact when stored, yet extends to 30 feet when deployed. Two winches raise and extend the mast easily. Power- and hand-operated winches are available. In the upright position, the light tower mast rotates 360 degrees, and the lights can be operated at any height, preventing the trailer from having to be moved frequently.

Power system

The power system includes a choice of rugged, low-RPM, Tier 4i diesel engines and high-quality four-pole generators. A 30-gallon fuel tank provides extended run times of 60 to 70 hours between refueling. The rugged, translucent polyethylene fuel tank is rupture resistant and offers an instant view of fuel level, eliminating the need for a fuel gauge.

Serviceability

Wanco has created a unique innovation that greatly improves serviceability. For complete access to the engine, generator and electrical components, the Wanco Light Tower features a hinged top panel that rises with the mast when maintenance is required. No other light tower makes engine access this easy. The gull-wing side doors may be opened while the maintenance panel is raised, further enhancing access.

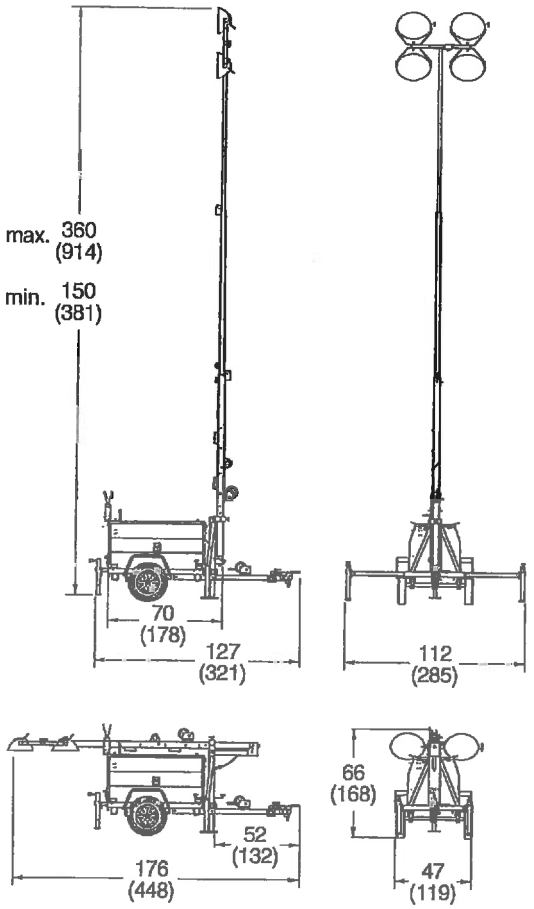
Hinged top panel opens fully. The light tower mast attaches to the panel for maintenance and raises the panel using the drawbar winch.

Engine and components are easily accessible with top panel up. Crossbar can be removed and side doors can be opened with panel raised.

Specifications

Physical

Dimensions in inches (cm)



Operating weight	1800 lbs. (815kg)
Shipping weight	1580 lbs. (717kg)
Tires	ST175/80D13
Tow hitch	Combo-type for 2-inch ball and 3-inch pintle hook

Lights

Lamps	Four metal halide lamps
Wattage	1000 watts per lamp
Luminosity	Up to 0.5 fc at 7.5 acres (5.4 lm/m² at 30,400 m²)

Output power

Output	6 kW
Voltage	120 V or 240 V*
Amperage	50 A @ 120 V 25 A @ 240 V
Frequency	60 Hz or 50 Hz*
Voltage regulation	±5%, no load to full load

Power system

Engine type	Tier 4 diesel, 3-cylinder, 4-cycle
Engine speed	1800 rpm
Generator type	Brushless
Generator insulation	H
Battery	12 V dc, 550 CCA
Maximum power output	12.1 or 13.6 hp (9 or 10 kW)*
Displacement	56 or 68 cu. in. (916 or 1123cm³)*
Sound level at maximum load	71 dB at 23 feet (7m)
Fuel tank capacity	30 gal. (114L)
Fuel consumption	0.44 gal./hr. (1.67L/h)
Runtime before refueling	60 to 70 hrs., approx.

Functional

Steel enclosure protects components from the elements. Enclosure is powder-coated, lockable, and weather-resistant.

Two outriggers and four leveling jacks provide stability.

Control panel features elapsed hour meter, 120-volt GFCI receptacle for powering external equipment, and circuit breakers for on/off functionality and protection.

Diesel engine includes glow-plug preheat system for increased service life and improved cold-weather starting.

Automatic engine shutdown system protects engine from damage due to low oil pressure and high coolant temperature.

For maintenance, hinged top panel provides unimpeded access to engine, generator, and electrical components.

Options include a choice of engines, 7.5 or 8 kW generator, 240V Twist-Lock® receptacle, block heater, fuel/water separator and electric winches.

**Depending on model*

Due to Wanco's commitment to continuous improvement of our products, all information is subject to change without notice.
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303-427-5725 fax
www.wanco.com

GENERAC®

STATEMENT OF EXHAUST EMISSIONS
2012 IVECO DIESEL FUELED GENERATOR

Generator Model:	**SD100**	Aspiration:	**Turbocharged/Aftercooled**
kW_e Rating:	**100**	Rated RPM:	**1800 RPM**
Engine Family:	**CFPXL06.7DGB**	EPA Certificate #:	**CFPXL06.7DGB-015**
Engine Model:	**F4GE9685A*J**	CARB Certificate #:	**Not Applicable**
Rated Engine Power (BHP)*:	**198**	SCAQMD CEP #:	**511715**
Fuel Consumption (gal/hr)*:	**10.04**	Emission Std. Category:	**Tier 3**

*Engine Power and Fuel Consumption are declared by the Engine Manufacturer of Record and the U.S. EPA.

Emissions based on declared Rated BHP of specific Engine Models.
(These values are Actual Exhaust Emissions during a 5-Mode test based on declared Rated BHP.)

CO	NOx + NMHC	PM	
0.9	**3.8**	**0.16**	Grams/kW-hr
0.7	**2.8**	**0.12**	Grams/bhp-hr

- The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.
- Values based on 5-mode testing are official data of record as submitted to regulatory agencies for certification purposes. Testing was conducted in accordance with prevailing EPA & CARB protocols, which are typically accepted by SCAQMD and other regional authorities.
- No emission values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.
- Generac Power Systems reserves the right to revise this information without prior notice.
- Consult state and local regulatory agencies for specific permitting requirements.
- The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generating set.

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SD100

GENERAC® | INDUSTRIAL POWER

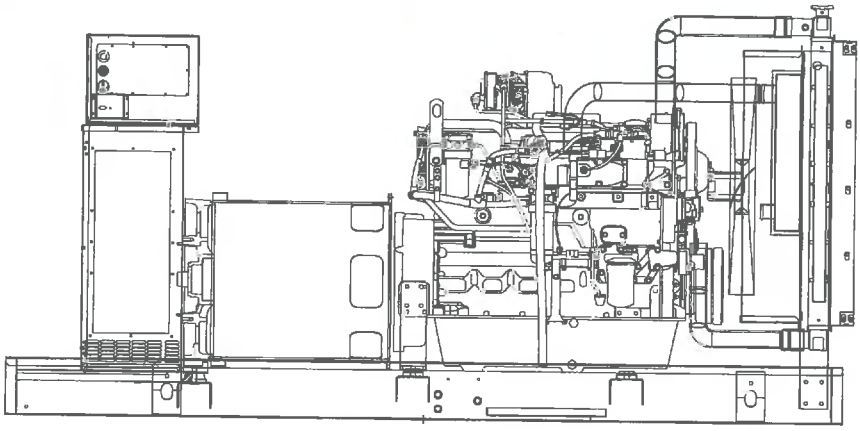
Industrial Diesel Generator Set

EPA Certified Stationary Emergency

100 kW Diesel

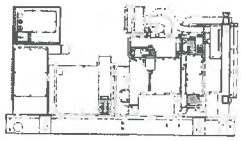
Standby Power Rating
125kVA 100kW 60Hz

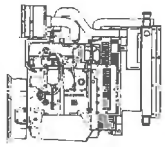
Prime Power Rating
113kVA 90KW 60Hz

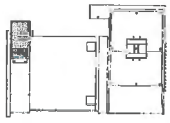


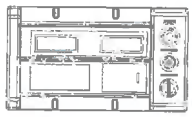
Generator image used for illustration purposes only

*EPA Certified Prime ratings are not available in the U.S. or its Territories for engine model year 2011 and beyond









features benefits

Generator Set	
• PROTOTYPE & TORSIONALLY TESTED	▸ PROVIDES A PROVEN UNIT
• UL2200 TESTED	▸ ENSURES A QUALITY PRODUCT
• RHINOCOAT PAINT SYSTEM	▸ IMPROVES RESISTANCE TO ELEMENTS
• WIDE RANGE OF ENCLOSURES AND TANKS	▸ PROVIDES A SINGLE SOURCE SOLUTION
Engine	
• EPA COMPLIANT	▸ MEETS EPA STANDARDS
• INDUSTRIAL TESTED, GENERAC APPROVED	▸ ENSURES INDUSTRIAL STANDARDS
• POWER-MATCHED OUTPUT	▸ ENGINEERED FOR PERFORMANCE
• INDUSTRIAL GRADE	▸ IMPROVES LONGEVITY AND RELIABILITY
Alternator	
• TWO-THIRDS PITCH	▸ ELIMINATES HARMFUL 3RD HARMONIC
• LAYER WOUND ROTOR & STATOR	▸ IMPROVES COOLING
• CLASS H MATERIALS	▸ HEAT TOLERANT DESIGN
• DIGITAL 3-PHASE VOLTAGE CONTROL	▸ FAST AND ACCURATE RESPONSE
Controls	
• ENCAPSULATED BOARD W/ SEALED HARNESS	▸ EASY, AFFORDABLE REPLACEMENT
• 4-20mA VOLTAGE-TO-CURRENT SENSORS	▸ NOISE RESISTANT 24/7 MONITORING
• SURFACE-MOUNT TECHNOLOGY	▸ PROVIDES VIBRATION RESISTANCE
• ADVANCED DIAGNOSTICS & COMMUNICATIONS	▸ HARDENED RELIABILITY

primary codes and standards

NEMA

GENERAC | INDUSTRIAL POWER

SD100

application and engineering data

ENGINE SPECIFICATIONS

General

Make	Iveco/FPT
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emissions Data Sheet
Cylinder #	6
Type	In-Line
Displacement - L (cu. in.)	6.7
Bore - mm (in.)	104 (4.09)
Stroke - mm (in.)	128 (5.2)
Compression Ratio	16.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	2- Valve
Piston Type	Alloy Aluminum

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity - L (qts)	17 (18)

Cooling System

Cooling System Type	Closed Recovery
Water Pump Flow	Centrifugal
Fan Type	Pusher
Fan Speed (rpm)	2538 rpm
Fan Diameter mm (in.)	599 (23.6)
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120VAC

Fuel System

Fuel Type*	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	5
Fuel Inject Pump Make	Stanadyne
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Engine Type	Direct Injection
Fuel Supply Line - mm (in.)	12.7(½")
Fuel Return Line - mm (in.)	12.7(½")

Engine Electrical System

System Voltage	12VDC
Battery Charging Alternator	Std
Battery Size (at 0°C)	995 CCA
Battery Group	31
Battery Voltage	(1) 12VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390 mm Generac
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	< 3%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	Synchronous Brushless
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes

Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	± 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99	BS5514
NFPA 110	SAE J1349
ISO 8528-5	DIN6271
ISO 1708A.5	IEEE C62.41 TESTING
ISO 3046	NEMA ICS 1

Rating Definitions:
Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)
Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

SD100

operating data (60Hz)

POWER RATINGS (kW)

	STANDBY		PRIME	
Single-Phase 120/240VAC @1.0pf	100 kW	Amps: 417	80 kW	Amps: 333
Three-Phase 120/208VAC @0.8pf	100 kW	Amps: 347	80 kW	Amps: 278
Three-Phase 120/240VAC @0.8pf	100 kW	Amps: 301	80 kW	Amps: 241
Three-Phase 277/480VAC @0.8pf	100 kW	Amps: 150	80 kW	Amps: 120
Three-Phase 346/600VAC @0.8pf	100 kW	Amps: 120	80 kW	Amps: 96

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480VAC						208/240VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	100	79	118	157	197	236	275	59	89	118	148	177	206
Upsize 1	130	116	174	232	290	348	406	87	131	174	218	261	305
Upsize 2	150	133	199	265	332	398	464	100	149	199	249	299	348
Upsize 3	200	187	280	373	467	560	653	140	210	280	350	420	490

FUEL

Fuel Pump Lift - in (mm)
36 (900)

Total Fuel Requirement Capacity - gph
29.1

Fuel Consumption Rates*

	STANDBY			PRIME	
Percent Load	gph	lph	Percent Load	gph	lph
25%	2.2	8.3	25%	2	7.6
50%	4.2	15.9	50%	3.8	14.4
75%	5.9	22.3	75%	5.3	20.1
100%	7.3	27.6	100%	6.6	25.0

* Refer to "Emissions Data Sheet" for maximum fuel flow for EPA and SCAQMD permitting purposes.

COOLING

		STANDBY	PRIME
Coolant Flow per Minute	gpm (lpm)	44.6 (168.8)	44.6 (168.8)
Heat Rejection to Coolant	BTU/hr	269,130	243,330
Inlet Air	cfm (m3/min)	7,900 (223.7)	6,360 (180)
Max. Operating Radiator Air Temp	F° (C°)	122 (50)	122 (50)
Max. Operating Ambient Temperature	F° (C°)	104 (40)	104 (40)
Coolant System Capacity	gal (L)	5.65 (21.4)	5.65 (21.4)
Maximum Radiator Backpressure	in H_2O	0.5	0.5

COMBUSTION AIR REQUIREMENTS

		STANDBY	PRIME
Flow at Rated Power	cfm (m3/min)	325 (9.2)	293 (8.3)

ENGINE

		STANDBY	PRIME
Rated Engine Speed	rpm	1800	1800
Horsepower at Rated kW**	hp	152	113
Piston Speed	ft/min	1559	1559
BMEP	psi	164	148

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		STANDBY	PRIME
Exhaust Flow (Rated Output)	cfm (m³/min)	885 (25)	832 (23.5)
Max. Backpressure (Post Silencer)	inHg (Kpa)	1.5 (5.1)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	885 (474)	797 (425)
Exhaust Outlet Size (Open Set)	NPT (male)	101.6 (4)	101.6 (4)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

GENERAC | INDUSTRIAL POWER

SD100

standard features and options

GENERATOR SET

●	Genset Vibration Isolation	Std
○	IBC Seismic Certified/Seismic Rated Vibration Isolators	Opt
○	Extended warranty	Opt
○	Gen-Link Communications Software	Opt
○	Steel Enclosure	Opt
○	Aluminum Enclosure	Opt

ENGINE SYSTEM

	General	
●	Oil Drain Extension	Std
○	Oil Make-Up System	Opt
○	Oil Heater	Opt
●	Air cleaner	Std
●	Fan guard	Std
●	Radiator duct adapter	Std
●	Stainless steel flexible exhaust connection	Std
●	Industrial Exhaust Silencer	Std
○	Critical Exhaust Silencer	Opt

	Fuel System	
●	Fuel lockoff solenoid	Std
●	Secondary fuel filter	Std
○	Flexible fuel lines	Opt
○	Primary fuel filter	Opt
○	Single Wall Tank (Export Only)	-
○	UL 142 Fuel Tank	Opt

	Cooling System	
○	120VAC Coolant Heater	Opt
○	208VAC Coolant Heater	Opt
○	240VAC Coolant Heater	Opt
○	Other Coolant Heater_____	-
●	Closed Coolant Recovery System	Std
●	UV/Ozone resistant hoses	Std
●	Factory-Installed Radiator	Std
●	Radiator Drain Extension	Std

	Engine Electrical System	
●	Battery charging alternator	Std
●	Battery cables	Std
●	Battery tray	Std
○	Battery box	Opt
○	Battery heater	Opt
●	Solenoid activated starter motor	Std
○	2.5A UL battery charger	Opt
○	10A UL float/equalize battery charger	Opt
●	Rubber-booted engine electrical connections	Std

ALTERNATOR SYSTEM

●	UL2200 GENprotectTM	Std
○	Main Line Circuit Breaker	Opt
○	2nd Circuit Breaker	Opt
○	3rd Circuit Breaker	-
○	Alternator Upsizing	Opt
○	Anti-Condensation Heater	Opt
○	Tropical coating	Opt
○	Permanent Magnet Generator	Opt

CONTROL SYSTEM

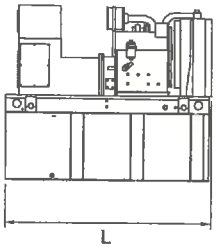
	Control Panel	
●	Digital H Control Panel - Dual 4x20 Display	Std
○	Digital G-100 Control Panel - Touchscreen	na
○	Digital G-200 Paralleling Control Panel - Touchscreen	na
●	Programmable Crank Limiter	Std
○	21-Light Remote Annunciator	Opt
○	Remote Relay Panel (8 or 16)	Opt
●	7-Day Programmable Exerciser	Std
●	Special Applications Programmable PLC	Std
●	RS-232	Std
●	RS-485	Std
●	All-Phase Sensing DVR	Std
●	Full System Status	Std
●	Utility Monitoring (Req. H-Transfer Switch)	Std
●	2-Wire Start Compatible	Std
●	Power Output (kW)	Std
●	Power Factor	Std
●	Reactive Power	Std
●	All phase AC Voltage	Std
●	All phase Currents	Std
●	Oil Pressure	Std
●	Coolant Temperature	Std
●	Coolant Level	Std
○	Oil Temperature	Opt
○	Fuel Pressure	na
●	Engine Speed	Std
●	Battery Voltage	Std
●	Frequency	Std
●	Date/Time Fault History (Event Log)	Std
○	Low-Speed Exercise	-
●	Isochronous Governor Control	Std
●	-40deg C - 70deg C Operation	Std
●	Waterproof Plug-In Connectors	Std
●	Audible Alarms and Shutdowns	Std
●	Not in Auto (Flashing Light)	Std
●	Auto/Off/Manual Switch	Std
●	E-Stop (Red Mushroom-Type)	Std
○	Remote E-Stop (Break Glass-Type, Surface Mount)	Opt
○	Remote E-Stop (Red Mushroom-Type, Surface Mount)	Opt
○	Remote E-Stop (Red Mushroom-Type, Flush Mount)	Opt
●	NFPA 110 Level I and II (Programmable)	Std
●	Remote Communication - RS232	Std
○	Remote Communication - Modem	Opt
○	Remote Communication - Ethernet	Opt
○	10A Run Relay	Opt

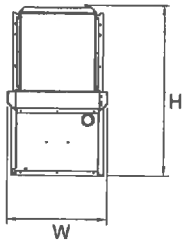
	Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)	
○	Low Fuel	Opt
●	Oil Pressure (Pre-programmed Low Pressure Shutdown)	Std
●	Coolant Temperature (Pre-programmed High Temp Shutdown)	Std
●	Coolant Level (Pre-programmed Low Level Shutdown)	Std
○	Oil Temperature	Opt
●	Engine Speed (Pre-programmed Overspeed Shutdown)	Std
●	Voltage (Pre-programmed Overvoltage Shutdown)	Std
●	Battery Voltage	Std

	Other Options
○	_____
○	_____
○	_____

SD100

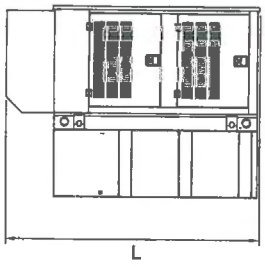
dimensions, weights and sound levels

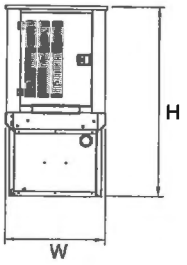




OPEN SET

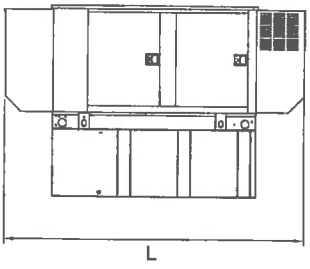
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	110	40	65	3104	87
12	90	110	40	77	3813	
30	220	110	40	89	4146	
48	350	110	40	101	4488	
70	510	117	47	105	4489	
81	589	128	49	107	4948	
95	693	136	53	107	4867	

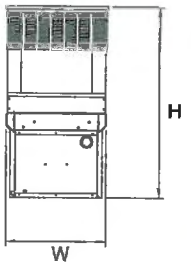




STANDARD ENCLOSURE

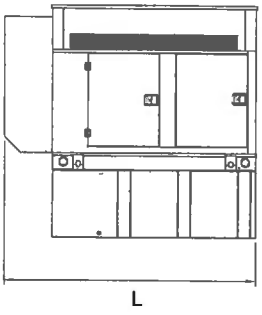
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	133	40	64	3954	83
12	90	133	40	77	4663	
30	220	133	40	89	4996	
48	350	133	40	101	5338	
70	510	133	47	105	5339	
81	589	133	49	107	5798	
95	693	136	53	107	5717	

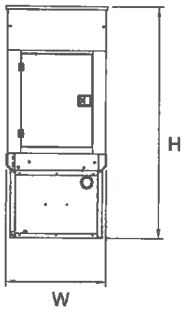




LEVEL 1 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	154	40	64	4354	79
12	90	154	40	77	5063	
30	220	154	40	89	5396	
48	350	154	40	101	5738	
70	510	154	47	105	5739	
81	589	154	49	107	6198	
95	693	154	53	107	6117	





LEVEL 2 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dBA*
NO TANK	-	145	40	81	4232	75.5
12	90	145	40	94	4941	
30	220	145	40	106	5274	
48	350	145	40	118	5616	
70	510	145	47	122	5617	
81	589	145	49	124	6076	
95	693	145	53	124	5995	

Note: Units upsized to 150 or 200kW alternators use a larger frame size.

*All measurements are approximate and for estimation purposes only. Weights are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Tank Options

○	MDEQ	OPT
○	Florida DERM/DEP	OPT
○	Chicago Fire Code	OPT
○	IFC Certification	CALL
○	ULC	CALL

Other Custom Options Available from your Generac Industrial Power Dealer

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

APPENDIX F

EPA TIER IV NON-ROAD ENGINE EMISSION FACTORS

Tier 4 Emission Standards

http://www.dieselnet.com/standards/us/nonroad.php

The Tier 4 emission standards—phased-in from 2008 through 2015—introduce substantial reductions of NOx (for engines above 56 kW) and PM (above 19 kW), as well as more stringent HC limits. CO emission limits remain unchanged from the Tier 2-3 stage.

Engines up to 560 kW. Tier 4 emission standards for engines up to 560 kW are listed in Table 3.

Table 3
Tier 4 Emission Standards—Engines up to 560 kW, g/kWh (g/bhp-hr)

Engine Power	Year	CO	NMHC	NMHC+NO_x	NO_x	PM
kW < 8 (hp < 11)	2008	8.0 (6.0)	-	7.5 (5.6)	-	0.4[a] (0.3)
8 ≤ kW < 19 (11 ≤ hp < 25)	2008	6.6 (4.9)	-	7.5 (5.6)	-	0.4 (0.3)
19 ≤ kW < 37 (25 ≤ hp < 50)	2008	5.5 (4.1)	-	7.5 (5.6)	-	0.3 (0.22)
	2013	5.5 (4.1)	-	4.7 (3.5)	-	0.03 (0.022)
37 ≤ kW < 56 (50 ≤ hp < 75)	2008	5.0 (3.7)	-	4.7 (3.5)	-	0.3[b] (0.22)
	2013	5.0 (3.7)	-	4.7 (3.5)	-	0.03 (0.022)
56 ≤ kW < 130 (75 ≤ hp < 175)	2012-2014[c]	5.0 (3.7)	0.19 (0.14)	-	0.40 (0.30)	0.02 (0.015)
130 ≤ kW ≤ 560 (175 ≤ hp ≤ 750)	2011-2014[d]	3.5 (2.6)	0.19 (0.14)	-	0.40 (0.30)	0.02 (0.015)

a - hand-startable, air-cooled, DI engines may be certified to Tier 2 standards through 2009 and to an optional PM standard of 0.6 g/kWh starting in 2010
b - 0.4 g/kWh (Tier 2) if manufacturer complies with the 0.03 g/kWh standard from 2012
c - PM/CO: full compliance from 2012; NOx/HC: Option 1 (if banked Tier 2 credits used)—50% engines must comply in 2012-2013; Option 2 (if no Tier 2 credits claimed)—25% engines must comply in 2012-2014, with full compliance from 2014.12.31
d - PM/CO: full compliance from 2011; NOx/HC: 50% engines must comply in 2011-2013

In engines of 56-560 kW rated power, the NOx and HC standards are phased-in over a few year period, as indicated in the notes to Table 3. The initial standards (PM compliance) are sometimes referred to as the 'interim Tier 4' (or 'Tier 4i'), 'transitional Tier 4' or 'Tier 4 A', while the final standards (NOx/HC compliance) are sometimes referred to as 'Tier 4 B'.

As an alternative to introducing the required percentage of Tier 4 compliant engines, manufacturers may certify all their engines to an *alternative NOx limit* in each model year during the phase-in period. These alternative NOx standards are:

- Engines 56-130 kW:
    - Option 1: NOx = 2.3 g/kWh = 1.7 g/bhp-hr (Tier 2 credits used to comply, MY 2012-2013)
    - Option 2: NOx = 3.4 g/kWh = 2.5 g/bhp-hr (no Tier 2 credits claimed, MY 2012-2014)
- Engines 130-560 kW: NOx = 2.0 g/kWh = 1.5 g/bhp-hr (MY 2011-2013)

Engines Above 560 kW. Tier 4 emission standards for engines above 560 kW are listed in Table 4. The 2011 standards are sometimes referred to as 'transitional Tier 4', while the 2015 limits represent final Tier 4 standards.

Table 4
Tier 4 Emission Standards—Engines Above 560 kW, g/kWh (g/bhp-hr)

Year	Category	CO	NMHC	NO_x	PM
2011	Generator sets > 900 kW	3.5 (2.6)	0.40 (0.30)	0.67 (0.50)	0.10 (0.075)
	All engines except gensets > 900 kW	3.5 (2.6)	0.40 (0.30)	3.5 (2.6)	0.10 (0.075)
2015	Generator sets	3.5 (2.6)	0.19 (0.14)	0.67 (0.50)	0.03 (0.022)
	All engines except gensets	3.5 (2.6)	0.19 (0.14)	3.5 (2.6)	0.04 (0.03)

Other Provisions. Existing Tier 2-3 smoke opacity standards and procedures continue to apply in some engines. Exempted from smoke emission standards are engines certified to PM emission standards at or below 0.07 g/kWh (because an engine of such low PM level has inherently low smoke emission).

The Tier 4 regulation does not require closed crankcase ventilation in nonroad engines. However, in engines with open crankcases, crankcase emissions must be measured and added to exhaust emissions in assessing compliance.

Similarly to earlier standards, the Tier 4 regulation includes such provisions as averaging, banking and trading of emission credits and FEL limits for emission averaging.

APPENDIX G

EPA TANKS OUTPUT FILE

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Lanes Creek Storage Tank
City:	Boise
State:	Idaho
Company:	Agrium
Type of Tank:	Horizontal Tank
Description:	Horizontal diesel Stroage Tank

Tank Dimensions

Shell Length (ft):	34.00
Diameter (ft):	10.00
Volume (gallons):	20,000.00
Turnovers:	58.20
Net Throughput(gal/yr):	1,164,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Pocatello, Idaho (Avg Atmospheric Pressure = 12.53 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Lanes Creek Storage Tank - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	48.21	41.93	54.49	46.37	0.0042	0.0034	0.0054	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Lanes Creek Storage Tank - Horizontal Tank

Annual Emission Calculations	
Standing Losses (lb):	2.8176
Vapor Space Volume (cu ft):	1,700.8623
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0448
Vented Vapor Saturation Factor:	0.9989
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,700.8623
Tank Diameter (ft):	10.0000
Effective Diameter (ft):	20.8116
Vapor Space Outage (ft):	5.0000
Tank Shell Length (ft):	34.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0042
Daily Avg. Liquid Surface Temp. (deg. R):	507.8766
Daily Average Ambient Temp. (deg. F):	48.3542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	506.0442
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,371.0030
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0448
Daily Vapor Temperature Range (deg. R):	25.1200
Daily Vapor Pressure Range (psia):	0.0020
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0042
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0034
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0054
Daily Avg. Liquid Surface Temp. (deg R):	507.8766
Daily Min. Liquid Surface Temp. (deg R):	501.5966
Daily Max. Liquid Surface Temp. (deg R):	514.1566
Daily Ambient Temp. Range (deg. R):	25.8250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9989
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0042
Vapor Space Outage (ft):	5.0000
Working Losses (lb):	10.4422
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0042
Annual Net Throughput (gal/yr.):	1,164,000.0000
Annual Turnovers:	58.2000
Turnover Factor:	0.8821
Tank Diameter (ft):	10.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	13.2599

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Lanes Creek Storage Tank - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	10.44	2.82	13.26

APPENDIX H

AIR DISPERSION MODELING PROTOCOL
&
DEQ APPROVAL LETTER
(PROVIDED ON CD)

APPENDIX I

AIR DISPERSION MODELING FILES
(PROVIDED ON CD)

APPENDIX J

DIESEL FUEL MSDS

Safety Data Sheet

Material Name: Diesel Fuel, All Types

SDS No. 9909
US GHS

Synonyms: Ultra Low Sulfur Diesel; Low Sulfur Diesel; No. 2 Diesel; Motor Vehicle Diesel Fuel; Non-Road Diesel Fuel; Locomotive/Marine Diesel Fuel

* * * Section 1 - Product and Company Identification * * *

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

* * * Section 2 - Hazards Identification * * *

GHS Classification:

Flammable Liquids - Category 3
Skin Corrosion/Irritation – Category 2
Germ Cell Mutagenicity – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER

Hazard Statements

Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/mist/vapours/spray.

Response

In case of fire: Use water spray, fog or foam to extinguish.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep cool.
Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
68476-34-6	Fuels, diesel, no. 2	100
91-20-3	Naphthalene	<0.1

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: 100 mg/m3 TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)
Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: 10 ppm TWA
15 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 10 ppm TWA; 50 mg/m3 TWA
NIOSH: 10 ppm TWA; 50 mg/m3 TWA
15 ppm STEL; 75 mg/m3 STEL

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Clear, straw-yellow.	**Odor:**	Mild, petroleum distillate odor
Physical State:	Liquid	**pH:**	ND
Vapor Pressure:	0.009 psia @ 70 °F (21 °C)	**Vapor Density:**	>1.0
Boiling Point:	320 to 690 °F (160 to 366 °C)	**Melting Point:**	ND
Solubility (H2O):	Negligible	**Specific Gravity:**	0.83-0.876 @ 60°F (16°C)
Evaporation Rate:	Slow; varies with conditions	**VOC:**	ND
Percent Volatile:	100%	**Octanol/H2O Coeff.:**	ND
Flash Point:	>125 °F (>52 °C) minimum	**Flash Point Method:**	PMCC
Upper Flammability Limit (UFL):	7.5	**Lower Flammability Limit (LFL):**	0.6
Burning Rate:	ND	**Auto Ignition:**	494°F (257°C)

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This material has been positive in a mutagenicity study.

Carcinogenicity

A: General Product Information

Suspected of causing cancer.

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

B: Component Carcinogenicity

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Fuels, diesel, no. 2 (68476-34-6)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	35 mg/L [flow-through]	

Naphthalene (91-20-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	5.74-6.44 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	1.6 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	0.91-2.82 mg/L [static]	
96 Hr LC50 Pimephales promelas	1.99 mg/L [static]	

96 Hr LC50 Lepomis macrochirus	31.0265 mg/L [static]
72 Hr EC50 Skeletonema costatum	0.4 mg/L
48 Hr LC50 Daphnia magna	2.16 mg/L
48 Hr EC50 Daphnia magna	1.96 mg/L [Flow through]
48 Hr EC50 Daphnia magna	1.09 - 3.4 mg/L [Static]

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Mobility in Soil
No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging
Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

DOT Information
Shipping Name: Diesel Fuel
NA #: 1993 **Hazard Class:** 3 **Packing Group:** III
Placard:

* * * Section 15 - Regulatory Information * * *

Regulatory Information

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Naphthalene (91-20-3)

CERCLA: 100 lb final RQ; 45.4 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health	Chronic Health	Fire	Sudden Release of Pressure	Reactive
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION
This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right- To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

State Regulations

Component Analysis - State
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Fuels, diesel, no. 2	68476-34-6	No	No	No	Yes	No	No
Naphthalene	91-20-3	Yes	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - WHMIS IDL
No components are listed in the WHMIS IDL.

Additional Regulatory Information

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Fuels, diesel, no. 2	68476-34-6	Yes	DSL	EINECS
Naphthalene	91-20-3	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

NFPA® Hazard Rating

Health	1
Fire	2
Reactivity	0

HMIS® Hazard Rating

Health	1*	Slight
Fire	2	Moderate
Physical	0	Minimal
		*Chronic

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

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End of Sheet