ThompsonCreek
Mining Company

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February 20, 2013

VIA E-MAIL & UPS

Dan Pitman, Senior Engineer
Air Quality Division
Idaho Department of Environmental Quality
1445 N. Orchard
Boise, Idaho 83706

Re: Air Permit Application to Convert Tier II Operating Permit No. T2-050508 to a Permit to Construct

Dan:

Consistent with the outcome of our meeting with you and Cheryl Robinson at IDEQ's offices in Boise in August 2012, and our subsequent communications with you and Bill Rogers, enclosed please find a completed and executed Air Permit Application, a check for the required application fee, an inventory of emissions from the operations at the Thompson Creek Mine and a modeling protocol prepared by AECOM in consultation with Division modeling staff (Ms. Robinson). The purpose of the air permit application is to convert our existing Tier II Operating Permit to a Permit to Construct (PTC). Based on our prior communications, we understand that filing the enclosed application, application fee and supporting materials will initiate the permit conversion process, which process will be subject to the protections provided in Section 404.04 of the Division's air rules (i.e., permit expiration will not affect the continued operation of the Thompson Creek sources or facilities during the administrative application processing period).

Please confirm for me your receipt of the enclosed application and supporting materials, and feel free to call me, at your convenience, with any questions you may as you commence your review of the application.

I certify based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

Thank you.

Sincerely yours,

Bert Doughty

Bert Doughty
Manager, Environmental Affairs

Enclosures

ThompsonCreek
Mining Company

Air Permit Application to Convert Tier II Operating Permit to a Permit to Construct

Facility:
Thompson Creek Mine

Submitted to:
Idaho Division of Environmental Quality
Air Quality Permitting Bureau
1410 N. Hilton
Boise, Idaho 83706

Submitted By:
Thompson Creek Mining Company
PO Box 62
Clayton, Idaho 83227

February 19, 2013

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1 Introduction and Background

This document is the Thompson Creek Mining Company's air permit application to convert our existing Tier II Operating Permit to a Permit to Construct (PTC). This application is submitted to the Idaho Division of Environmental Quality (IDEQ). The Thompson Creek Mine is a molybdenum disulfide mining, milling, and concentration facility located in Custer County, Idaho. The facility is currently following the conditions of Tier II Operating Permit No. 37-00001 (T2-050508) and is in compliance with this permit. Ownership and control of the Thompson Creek Mine has not changed from the issuance of Tier II Operating Permit No. 37-00001(T2-050508).

The following sections of this renewal application summarize the Thompson Creek Mine Project from mining of ore and over burden to the final product. In applying for previously issued air quality permits, the Thompson Creek Mining Company (TCMC) has submitted to IDEQ a substantial amount of technical information describing the equipment and processes associated with the facility. As requested by IDEQ, TCMC is providing a summary of this information in this application document. To keep the size of this document manageable, TCMC is not resubmitting copies of previously supplied information (i.e. source test reports) with this application. Hence, TCMC requests that, whenever possible, IDEQ staff obtain equipment information and specifications that may be available in IDEQ files. Should IDEQ require additional information to conduct determinations or evaluations required by Idaho air quality regulations, TCMC will provide IDEQ with the relevant information in TCMC's possession.

This application includes an emission inventory which is comprised of the following components: emission factors, process data, point sources, and fugitive sources. The emissions inventory along with a description of each source is located in the Appendices of this document.

An air dispersion modeling protocol for this application is attached to this application and can be found in the Appendices of the document. The modeling protocol was developed by AECOM in consultation with Division modeling staff (Ms. Robinson).

A completeness determination was conducted for this application. The determination was made by TCMC staff and is found in Section 4 of this document.

2 Facility Location

The Thompson Creek Mine is located in Custer County, Idaho; refer to the Figure 1 below.

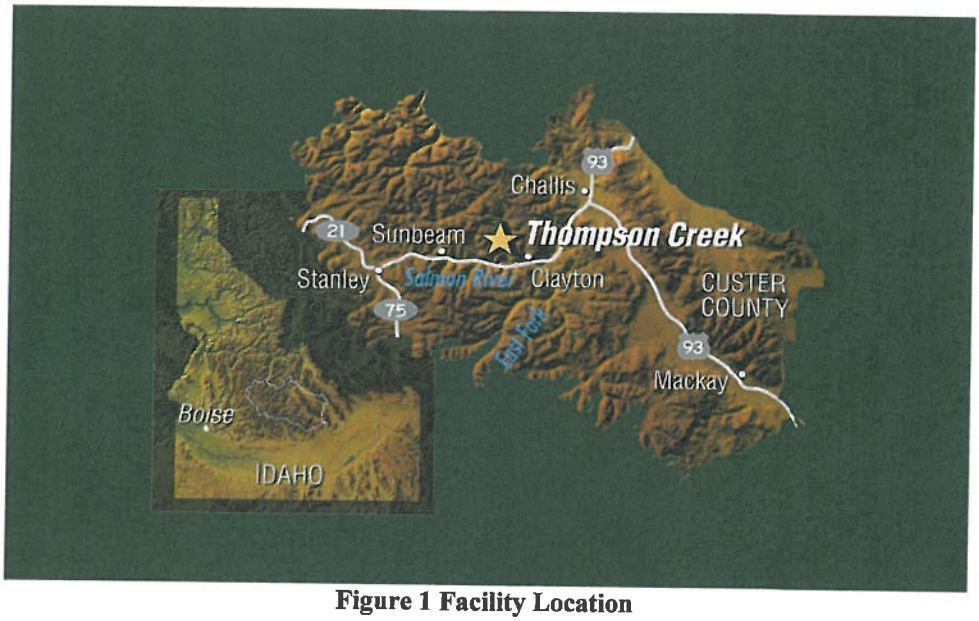


Figure 1 Facility Location

The facility is located within a 15 square mile claim block straddling the boundary between Challis National Forest to the north and lands administered by the Bureau of Land Management to the south. A facility plot and topographic patent claim plans are located in the Appendices of this document. The facility is approximately five miles north of the Salmon River, 14 miles northwest of Clayton (population 90), and 40 miles southwest of Challis (population 1000). The mine area is situated in rough terrain at elevations near 8000 feet. Two major components of the facility includes the open pit mine and the milling facility for concentrating product. The mill is approximately 1.5 miles southeast of the mine at an elevation of 7550 feet.

3 Mineral Project General Description

This section presents a general description of the Thompson Creek Mining Company's molybdenum mining and concentrating operation. This narrative description of the facility explains the air pollution sources and how each source is associated with the facility operations. A process flow diagram is included in the Appendices.

3.1 Introduction

The Thompson Creek Mining Company operates an open pit molybdenum mine and concentrator in central Idaho. The operation produces 15-20 million pounds of molybdenum disulfide (MoS_2) per year. The operation involves a wide range of support facilities in addition to the actual mining and mineral-processing activities. The support facilities include the following: maintenance shops, warehouses, change-houses, s provisions for water supply, solid waste disposal, sewage treatment, road gravel crushing, and power transmission/distribution systems. The following sections provide a brief background description of the ore extracting and processing methodology whereby molybdenum is produced in a concentrated, into a saleable form. The basic steps described herein include:

- Mining the ore.
- Crushing and grinding the ore.
- Separating the valuable mineral by 'flotation', a concentration process carried out in a water medium.
- De-watering, drying, packaging and shipping the obtained concentrate.
- Discharging the final 'tailings' (a solids/liquid mixture) into a tailings impoundment area, and reclamation.

Two types of MoS_2 concentrate are produced at the Thompson Creek Mine, concentrate grade and lubricant grade. Concentrate grade is shipped off-site for further refining, mainly roasting. Concentrate grade leaves the Thompson Creek Mine at approximately fifty to fifty-eight percent Mo (eighty-three to ninety-six percent MoS_2). After roasting, this material is used as an alloy in steel production and trace amounts are used in pharmaceutical and food products. To produce lubricant grade, the MoS_2 concentrate goes through additional processing steps to produce a higher purity product. Lubricant grade is shipped directly to customers for use in various lubricant products with very little or no further refining. This high purity product leaves the Thompson Creek Mine at approximately ninety-eight percent or higher MoS_2. The production steps involved in producing each product are discussed in the sections below.

3.2 Mining

The two conventional hard rock mineral extraction methods are 'underground' and 'open-pit' mining. Open-pit mining is employed by Thompson Creek. The first step in this method is the removal of overlying waste material, or 'overburden', to expose the ore. Both the overburden and ore must be drilled and blasted so that the broken rock can be excavated with 28 or 45 yard electric shovels and hauled away in 200 ton haul trucks. Ore is defined as material having an assay result of 0.03 percent MoS_2 or higher.

Overburden removal and ore mining includes the following operations:

- Drilling, sampling, and assaying to closely define the grade of the material to be mined,
- Blasting to fragment the ore (About 10,000 tons per year of explosive will be consumed.), and
- Loading with electric shovels.

3.3 Crushing and Grinding

The broken ore excavated from the mine is reduced in size from rocks ranging greater than 8 inches to fine sand to powder in the crushing and grinding steps. The valuable mineral particles are released from the surrounding material and are then ready for subsequent separation and recovery.

Mined ore is delivered from the mine via haul trucks to the primary crusher located at an elevation of about 7250 feet. During crushing, the mined ore is reduced in size from 24 inches or greater in diameter to less than 8 inch; grinding then reduces the 8-inch material to a fine powder. Conventional crushing is a dry process carried out without water. In the primary crusher, one conical head gyrates within a larger stationary cone to provide the crushing action. The emissions from the primary crusher are controlled with a baghouse and vented to the atmosphere through a single stack (Primary Crusher Stack).

Crushed ore is then transported overland by a 60-inch belt conveyor to the concentrator, which is situated about 7200 feet southwest at an elevation of about 7500 feet. The overland conveyor system has a transfer point with additional belt drives to facilitate the uphill movement of the ore. This transfer is located in the Drive 1 building and the emissions are controlled with a baghouse and vented to the atmosphere through a single stack (Overland Conveyor Stack).

The ore is dropped from the overland conveyor at the mill ore stockpile. Two apron feeders, the East and West Ore Feeders, then transfer the ore from the bottom of the stockpile into the grinding process in the concentrator. Emissions from each ore feeder are controlled with individual wet venturi scrubbers and vented to the atmosphere through corresponding stacks (East Ore Feeder Stack and West Ore Feeder Stack). The scrubber blow-down water is recycled in the grinding circuit described below.

Grinding is normally a 'wet' operation where water is added to the crushed ore. Grinding is completed in two stages. The first stage is semi-autogenous grinding (SAG) where ore is fed to a rotating drum and the ore itself is the primary grinding media. At times, large steel balls are added to the SAG mills to aid in grinding when the ore is not hard enough to function as a self grinding medium. The second stage is ball milling, where ore is fed to a rotating drum containing steel balls as the grinding media.

3.4 Flotation Concentration

The slurry mixture of finely ground ore and water from the grinding mills next passes to the flotation step wherein the valuable mineral is separated from the waste materials. When mineral particles are coated with certain surface-active chemicals, they will preferentially attach themselves to air bubbles. In a series of mechanically agitated cells, flotation is accomplished by bubbling air through the slurry. Chemical reagents are added at this stage. Some of the reagents promote frothing so the desired mineral floats up with the froth bubbles, while other reagents depress certain minerals and waste so as to minimize their tendency to float. The process is called flotation concentration. At Thompson Creek, only one mineral, MoS_2, is recovered.

Additional concentration steps are sometimes required to meet customer grade requirements. When required, leaching is used to remove certain metals from the concentrate. Hydrochloric acid is used in leaching metals from lower grade material. Fumes from the leach plant are controlled by a caustic fume scrubber. Emissions from the scrubber are vented to the atmosphere through a single stack (Leach Fume Scrubber Stack).

3.5 Concentrate Grade Production

The separated concentrate slurry (solids/water mixture) flows to a thickener in which the solids are allowed to settle to the bottom and excess water is decanted from the top of the thickener tank. In this step the solids concentration is increased from 30-35% to 50-60%. The denser slurry is then pumped from the bottom of the thickener to a filter, which further removes water through a cloth medium. The wet filter cake

is dried by the Holo Flite Dryer #1 to a low moisture content dictated by shipping and marketing considerations usually ranging 5-8% water. The Holo Flite dryer indirectly heats the wet MoS_2 concentrate using a hot oil thermo-screw conveyor. After drying, the concentrate grade material is packaged for shipping. The water removed during the thickening and filtering step is recycled for use in the grinding and flotation steps. Emissions from the Holo Flite Dryer #1 are controlled by a wet venturi scrubber and then by an electrostatic precipitator and vented to the atmosphere through a single stack (Holo Flite Dryer #1 Stack). The scrubber blow-down water is recycled for use in the grinding and flotation steps.

3.6 Lubricant Grade Production

Lubricant grade MoS_2 concentrate or High Purity Molybdenum (HPM) material in produced by running the MoS_2 concentrate slurry through advanced flotation and cleaning processes. The final concentrating process involves using column cleaners and the resulting HPM slurry is transferred to stock tanks. From these stock tanks, the HPM slurry is dewatered in a filter press and then moved by screw conveyor to the Holo Flite dryer #2. The Holo Flite dryer indirectly heats the wet HPM using a hot oil thermo-screw conveyor. Water and some diesel are removed from the HPM. From the Holo Flite #2 the material is screw-conveyed to the electrically-heated rotary kiln dryer where most of the remaining diesel is removed. Each dryer can process 1,253 pounds of material per hour. Emissions from each of these dryers are controlled individually by a wet venturi scrubber and then the emissions are combined in one duct and controlled by an electrostatic precipitator and vented to the atmosphere through a single stack (Lube grade Dryer Stack). The scrubber blow-down water is recycled for use in the flotation steps.

The dried HPM may be processed and packaged into five different grades:

1. Large Particle HPM;
2. A Grade;
3. Tech Grade;
4. Tech Fine Grade; and
5. Super Fine Grade.

Annual production of HPM is 5,488.14 tons per year combined for all five grades. The equipment and process involved in producing each grade is summarized below:

- **Large Particle -** HPM is conveyed via a bucket elevator from the rotary kiln to the tech fine packaging bin at a rate of 1,253 pounds per hour. This material is graded as "large particle HPM" and is packaged from the tech fine packaging bin. Emissions from the tech fine packaging bin are controlled by the tech fine packaging baghouse. The tech fine packaging baghouse is also referred to as the "fugitive collector baghouse" by Mill operations personnel; however, this baghouse does not collect fugitive emissions. This baghouse is vented to the atmosphere by a single stack (Tech Fine Packaging Baghouse Stack) and the captured material is kept in the system.
- **Grade A** - HPM is conveyed via a bucket elevator from the Holo Flite dryer #2 to the tech fine packaging bin at a rate of 1,253 pounds per hour. This material is the only HPM not dried in rotary kiln and is graded as "A Grade." A Grade material is packaged from the tech fine packaging bin. Emissions from the tech fine packaging bin are controlled by the tech fine packaging baghouse. This baghouse is vented to the atmosphere by a single stack (Tech Fine Packaging Baghouse Stack) and the captured material is kept in the system.
- **Tech grade** – HPM is conveyed via a bucket elevator from the rotary kiln to the fully-enclosed jet mill feed bin to await size reduction in the jet mill. The jet mill micronizes the HPM by fluid energy (compressed air) resulting in "tech grade" material. To produce tech grade material, the jet mill runs at a process rate of 1,600 pounds per hour. The tech grade material is then pneumatically conveyed through the jet mill baghouse into the tech fine packaging bin at a rate of 1,600 pounds per hour. The jet mill baghouse removes air from the tech grade material before it is deposited in

the tech fine packaging bin. The jet mill baghouse is vented to the atmosphere through a single stack (Jet Mill Baghouse Stack) and the captured tech grade material is kept in the system. Tech grade material is packaged from the tech fine packaging bin. Emissions from the tech fine packaging bin are controlled by the tech fine packaging baghouse. This baghouse is vented to the atmosphere by a single stack (Tech Fine Packaging Baghouse Stack) and the captured material is kept in the system.

- **Tech fine grade** – To produce tech fine grade material, HPM is passed through the jet mill at a lower process rate with more air pressure than is used to produce tech grade material. After jet milling, the resulting "tech fine grade" is then pneumatically conveyed through the jet mill baghouse into the tech fine packaging bin. The jet mill baghouse removes air from the tech fine grade material before it is deposited in the tech fine packaging bin. The jet mill baghouse is vented to the atmosphere through a single stack (Jet Mill Baghouse Stack) and the captured material is kept in the system. Emissions from the tech fine packaging bin are controlled by the tech fine packaging baghouse. This baghouse is vented to the atmosphere by a single stack (Tech Fine Packaging Baghouse Stack) and the captured material is kept in the system. Tech fine grade material is packaged from the tech fine packaging bin.
- **Super fine grade** – To make super fine grade HPM, a batch of tech fine grade is pneumatically conveyed from the jet mill through the jet mill baghouse to the super fine feed bin, also know as the pancake feed bin, at a feed rate of 850 pounds per hour. Emissions from the pancake feed bin are controlled by the pancake mill feed bin baghouse. This baghouse is vented to the atmosphere by a single stack (Pancake Mill Feed Bin Baghouse Stack) and the captured material is kept in the system. From the pancake feed bin, the tech fine grade is fed through two 12-inch, high-energy pancake mills set up in series. After pancake milling, the resulting "super fine grade" HPM is then transferred to the super fine packaging bin at a rate of 331 ponds per hour. Emissions from the super fine packaging bin are controlled by the super fine packaging bin baghouse. This baghouse is vented to the atmosphere by a single stack (Super Fine Packaging Bin Baghouse Stack) and the captured material is kept in the system. Super fine grade material is packaged from the super fine packaging bin. Annual production of super fine HPM is 1,450 tons per year.

3.7 Tailings Disposal

The tailings which is waste rock and water slurry from the flotation cells, comprises 30-35% solids and is passed through a pipeline to the tailings impoundment area. The tailings flow initially by gravity, through a 24-inch diameter pipeline to the tailings impoundment 7,000 feet to the north. The pipeline is not buried. The tailings facility is located in the upper reaches of the Bruno Creek watershed. The ultimate crest of the tailings impoundment will be at an elevation of about 7640 feet. As the concentrator is located at an elevation of about 7550 feet, pumping of the tailings is required.

It is normal practice to pass the slurry through 'cyclones'; a water/solid separation and particle size classification device based on centrifugal force. The coarse fraction or 'sands' is deposited on the periphery of the impoundment area, serving as embankment building material. The fine fraction or 'slimes', along with most of the water, is allowed to flow into the impoundment area, or 'tailings pond', where the solids settle to the bottom. Water is reclaimed from the tailings pond and pumped back to the grinding and flotation plant. This system achieves containment of both the solid tailings and the water used in the process. It is a 'closed' water system wherein the water and entrained reagents are continuously recycled.

In the unlikely event of a break in the pipeline, flow-sensing devices will alert the operator in the control room and allow him to shut down. In addition, the pipeline is patrolled on a regular basis to detect minor leaks. Any spillage will flow into a ditch paralleling the pipeline and service road, which will carry the slurry by gravity into the tailing impoundment via the seepage interceptor system.

The reclaim water system consist of pumps on a floating barge in the impoundment, which deliver the water by a 24-inch diameter pipeline to a 1 million gallon storage tank located above and near the concentrator. Water flows by gravity from the storage tank back to the concentrator.

The embankment is always maintained at a height sufficient to capture the maximum flood run-off-event from the area above the dam. The water reclaim system was designed to pump a maximum of 7750 gallons per minute.

The tailings impoundment is designed to accommodate at least 240 million tons of tailings. The starter embankment was constructed prior to the commencement of production using material from a borrow source. The main embankment is constructed from the coarse tailings obtained from the cyclones stationed along the starter embankment crest. The underflow from the cyclones is deposited downstream and mechanically placed and compacted by bulldozer to provide a slope of three horizontals to 1 vertical.

The impoundment area receives the fine particles from the cyclone overflow. Discharge points of the tailings are controlled to keep the water reclaim pool as remote as practicable from the embankment section. A water reclaim barge is located in the pond to pump water back to the concentrator.

Systems of blanket and finger drains were constructed within the embankment and at the foundation level to drain the embankment. Additionally some water seeps into the soils and rock underlying the embankment. To control the quality of water flowing downstream, two systems were constructed:

- Seepage return dam to capture surface water.
- A network of wells to monitor subsurface water around the impoundment area.
- Water from the settling pond is pumped back to the impoundment or directly to process water storage.

3.8 Reagents

Several reagents are used in the concentrator process. The table below lists these reagents.

Table 1 Reagent List

Reagent	Physical State	Use
1. Diesel Fuel	Liquid	Used as a molybdenum collector in floatation and added to the sag mill and ball mill.
2. NALCO Frother	Liquid	Used as a frother for floatation and add to the ball mills
3. Flocculent	Liquid	Used in the floatation thickeners to collect and sink particles.
4. Nokes	Liquid	Used in the cleaner circuit to depress cooper, lead, and iron.
5. Pebble Lime	Solid	Used mostly in floatation and leaching to control pH.
6. Rock Salt	Solid	Used in leaching to add chloride, this holds lead in solution during filtering process.
7. Ferric Chloride	Liquid	Used in leaching to remove gamma radiation from the final product.
8. Liquid Nitrogen	Liquid	Used in the HPM circuit to keep product from oxidizing during drying.
9. Hydrochloric Acid (HCL)	Liquid Solid	Used in leaching to liquefy lead from lower grade material.
10. Caustic Soda	Liquid	Used in the leach fume scrubber to neutralize all of the acid fumes collected by the scrubber.
11. Potassium amyl xanthate (PAX)	Pellets	Used in pyrite flotation as an iron collector.

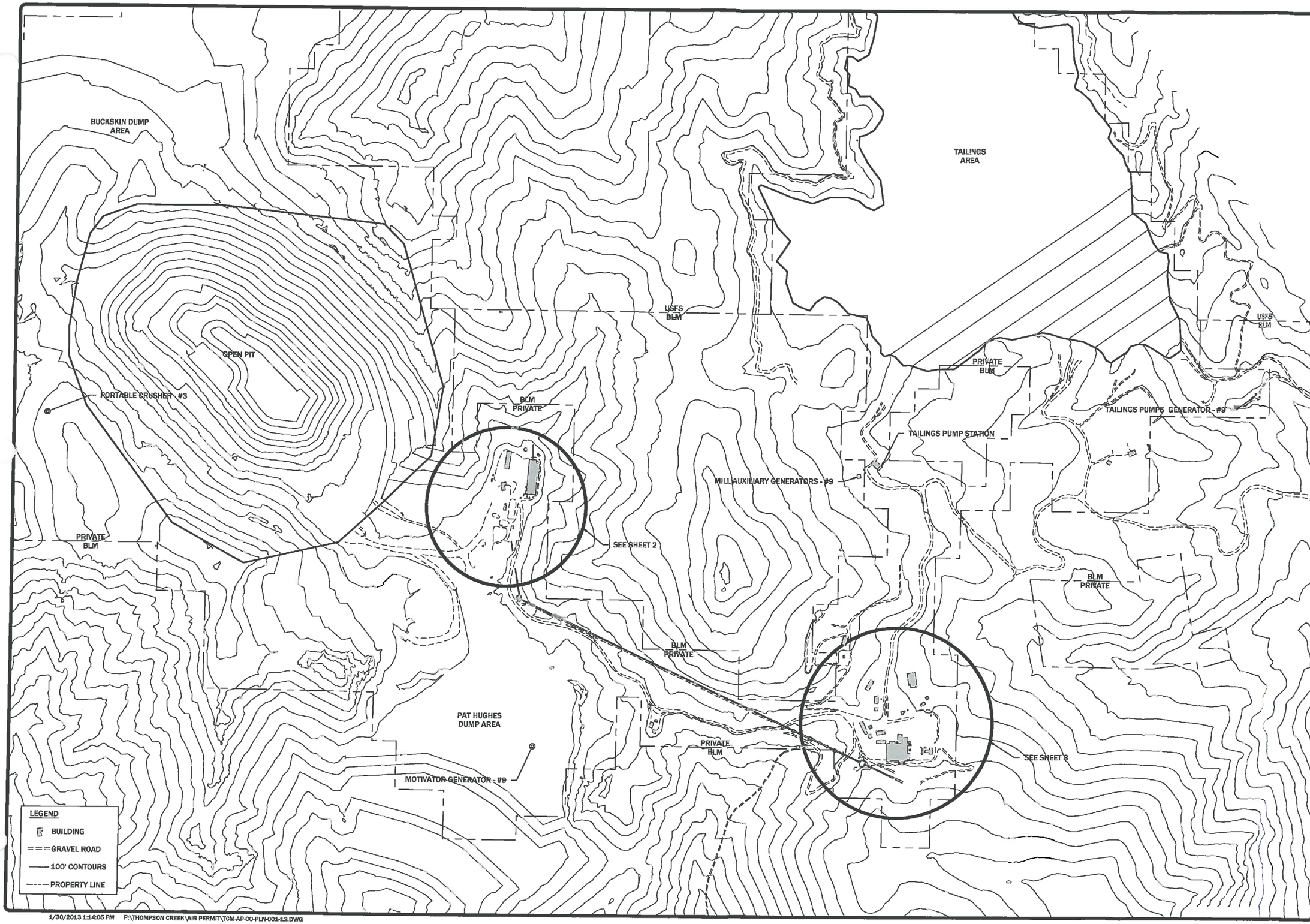
Pebble lime is delivered to the facility and pneumatically conveyed to the lime silo. Emissions from this transfer are controlled by a baghouse (Pebble Lime Baghouse) and vented to the atmosphere. The pebble lime is then mixed with water to form slurry and fed into the SAG mills, neutralization tank, or the tailings line.

4 Appendices

Appendix A Facility Plot Plan

Figure 2 Facility Plot Plan

Note:
Please refer to Figure 1 for facility location. Please refer to Appendix D for contour drawings.



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THOMPSON CREEK MINE AIR QUALITY OPERATIONS PERMIT

THOMPSON CREEK MINE SITE PLAN VIEW

PIONEER TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-8177

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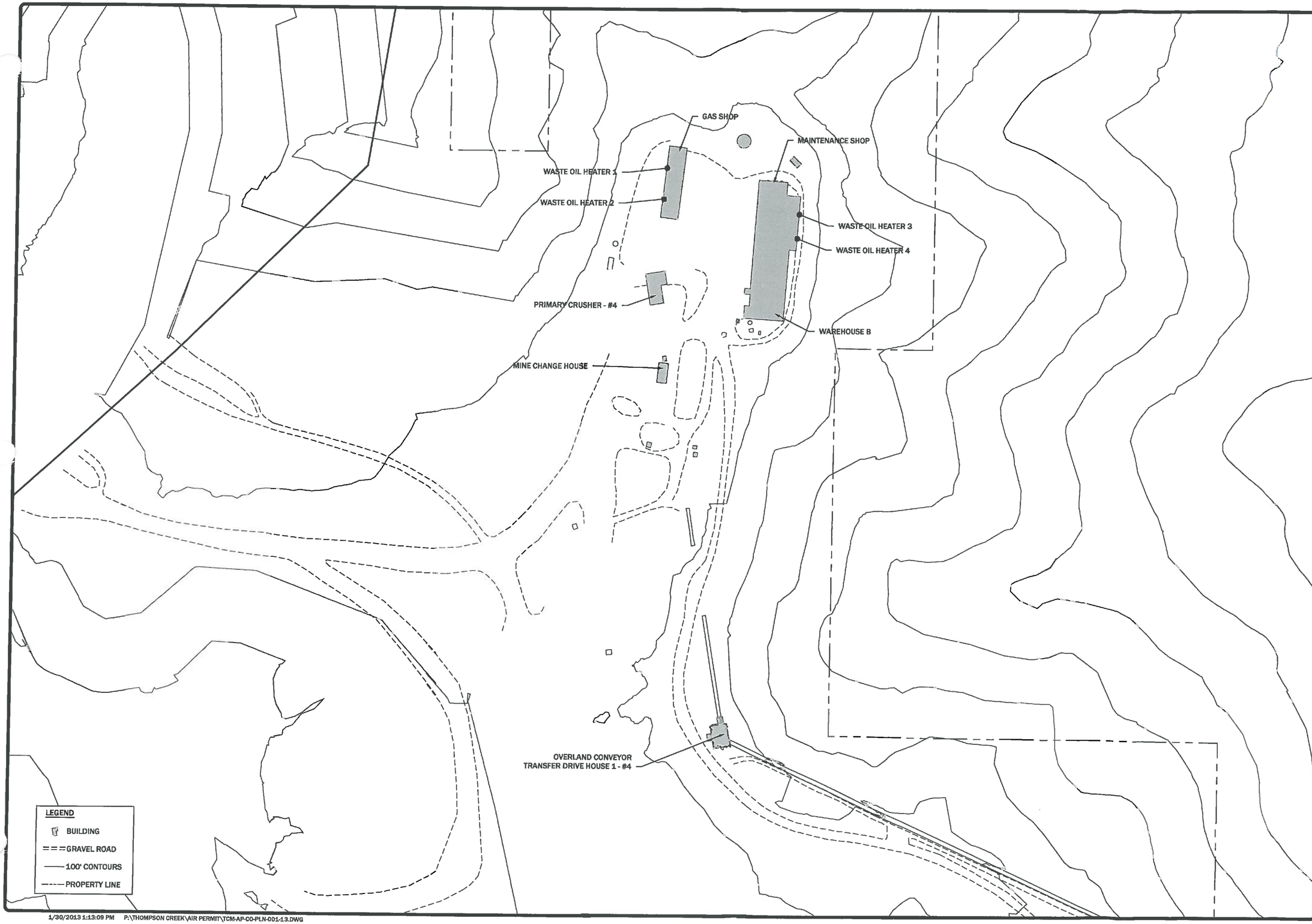

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THOMPSON CREEK MINE
AIR QUALITY
OPERATIONS PERMIT

THOMPSON CREEK
MINE
TRUCK SHOP
PLAN VIEW

PIONEER
TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

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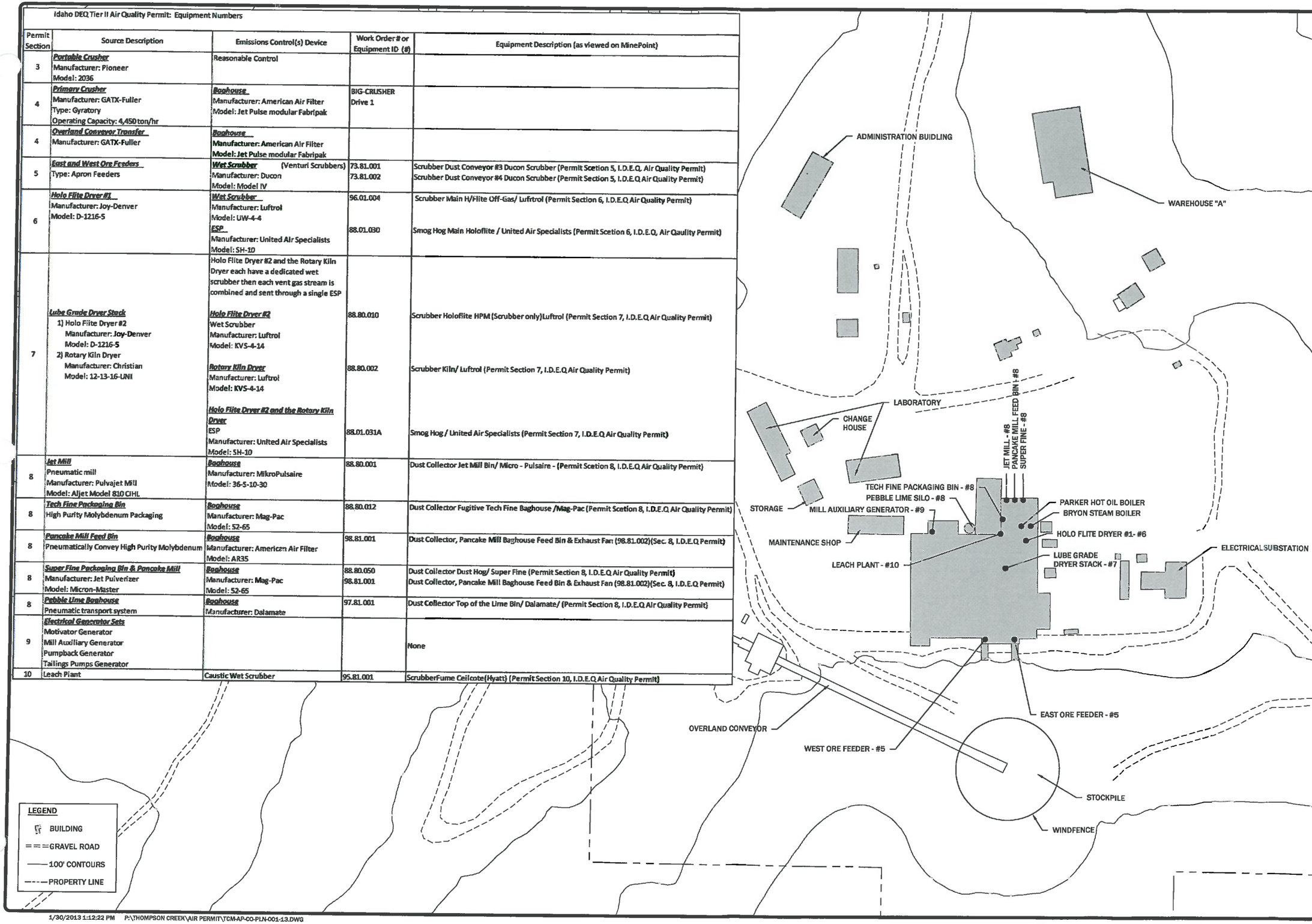
2

Idaho DEQ Tier II Air Quality Permit: Equipment Numbers

Permit Section	Source Description	Emissions Control(s) Device	Work Order # or Equipment ID (#)	Equipment Description (as viewed on MinePoint)
3	***Portable Crusher*** Manufacturer: Pioneer Model: 2036	Reasonable Control		
4	***Primary Crusher*** Manufacturer: GATX-Fuller Type: Gyratory Operating Capacity: 4,450 ton/hr	***Baghouse*** Manufacturer: American Air Filter Model: Jet Pulse modular Fabripak	BIG-CRUSHER Drive 1	
4	***Overland Conveyor Transfer*** Manufacturer: GATX-Fuller	***Baghouse*** Manufacturer: American Air Filter Model: Jet Pulse modular Fabripak		
5	***East and West Ore Feeders*** Type: Apron Feeders	***Wet Scrubber*** (Venturi Scrubbers) Manufacturer: Ducon Model: Model IV	73.81.001 73.81.002	Scrubber Dust Conveyor #3 Ducon Scrubber (Permit Scetion 5, I.D.E.Q. Air Quality Permit) Scrubber Dust Conveyor #4 Ducon Scrubber (Permit Section 5, I.D.E.Q Air Quality Permit)
6	***Holo Flite Dryer #1*** Manufacturer: Joy-Denver Model: D-1216-5	***Wet Scrubber*** Manufacturer: Luftrol Model: UW-4-4 ***ESP*** Manufacturer: United Air Specialists Model: SH-10	96.01.004 88.01.030	Scrubber Main H/Flite Off-Gas/ Lufrtrol (Permit Section 6, I.D.E.Q Air Quality Permit) Smog Hog Main Holoflite / United Air Specialists (Permit Scetion 6, I.D.E.Q. Air Qaulity Permit)
7	***Lube Grade Dryer Stack*** 1) Holo Flite Dryer #2 Manufacturer: Joy-Denver Model: D-1216-5 2) Rotary Kiln Dryer Manufacturer: Christian Model: 12-13-16-UNI	Holo Flite Dryer #2 and the Rotary Kiln Dryer each have a dedicated wet scrubber then each vent gas stream is combined and sent through a single ESP ***Holo Flite Dryer #2*** Wet Scrubber Manufacturer: Luftrol Model: KVS-4-14 ***Rotary Kiln Dryer*** Manufacturer: Luftrol Model: KVS-4-14 ***Holo Flite Dryer #2 and the Rotary Kiln Dryer*** ESP Manufacturer: United Air Specialists Model: SH-10	 88.80.010 88.80.002 88.01.031A	 Scrubber Holoflite HPM (Scrubber only)Luftrol (Permit Section 7, I.D.E.Q Air Quality Permit) Scrubber Kiln/ Luftrol (Permit Section 7, I.D.E.Q Air Quality Permit) Smog Hog / United Air Specialists (Permit Section 7, I.D.E.Q Air Quality Permit)
8	***Jet Mill*** Pneumatic mill Manufacturer: Pulvajet Mill Model: Aljet Model 810 CIHL	***Baghouse*** Manufacturer: MikroPulsaire Model: 36-5-10-30	88.80.001	Dust Collector Jet Mill Bin/ Micro - Pulsaire - (Permit Scetion 8, I.D.E.Q Air Quality Permit)
8	***Tech Fine Packaging Bin*** High Purity Molybdenum Packaging	***Baghouse*** Manufacturer: Mag-Pac Model: 52-65	88.80.012	Dust Collector Fugitive Tech Fine Baghouse /Mag-Pac (Permit Scetion 8, I.D.E.Q Air Quality Permit)
8	***Pancake Mill Feed Bin*** Pneumatically Convey High Purity Molybdenum	***Baghouse*** Manufacturer: American Air Filter Model: AR35	98.81.001	Dust Collector, Pancake Mill Baghouse Feed Bin & Exhaust Fan (98.81.002)(Sec. 8, I.D.E.Q Permit)
8	***Super Fine Packaging Bin & Pancake Mill*** Manufacturer: Jet Pulverizer Model: Micron-Master	***Baghouse*** Manufacturer: Mag-Pac Model: 52-65	88.80.050 98.81.001	Dust Collector Dust Hog/ Super Fine (Permit Section 8, I.D.E.Q Air Quality Permit) Dust Collector, Pancake Mill Baghouse Feed Bin & Exhaust Fan (98.81.002)(Sec. 8, I.D.E.Q Permit)
8	***Pebble Lime Baghouse*** Pneumatic transport system	***Baghouse*** Manufacturer: Dalamate	97.81.001	Dust Collector Top of the Lime Bin/ Dalamate/ (Permit Section 8, I.D.E.Q Air Quality Permit)
9	***Electrical Generator Sets*** Motivator Generator Mill Auxiliary Generator Pumpback Generator Tailings Pumps Generator			None
10	Leach Plant	Caustic Wet Scrubber	95.81.001	ScrubberFume Ceilcote(Hyatt) (Permit Section 10, I.D.E.Q Air Quality Permit)



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THOMPSON CREEK MINE
AIR QUALITY
OPERATIONS PERMIT

THOMPSON CREEK
MINE
MILL AREA
PLAN VIEW

PIONEER TECHNICAL SERVICES, INC.
1101 SOUTH MONTANA
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
3

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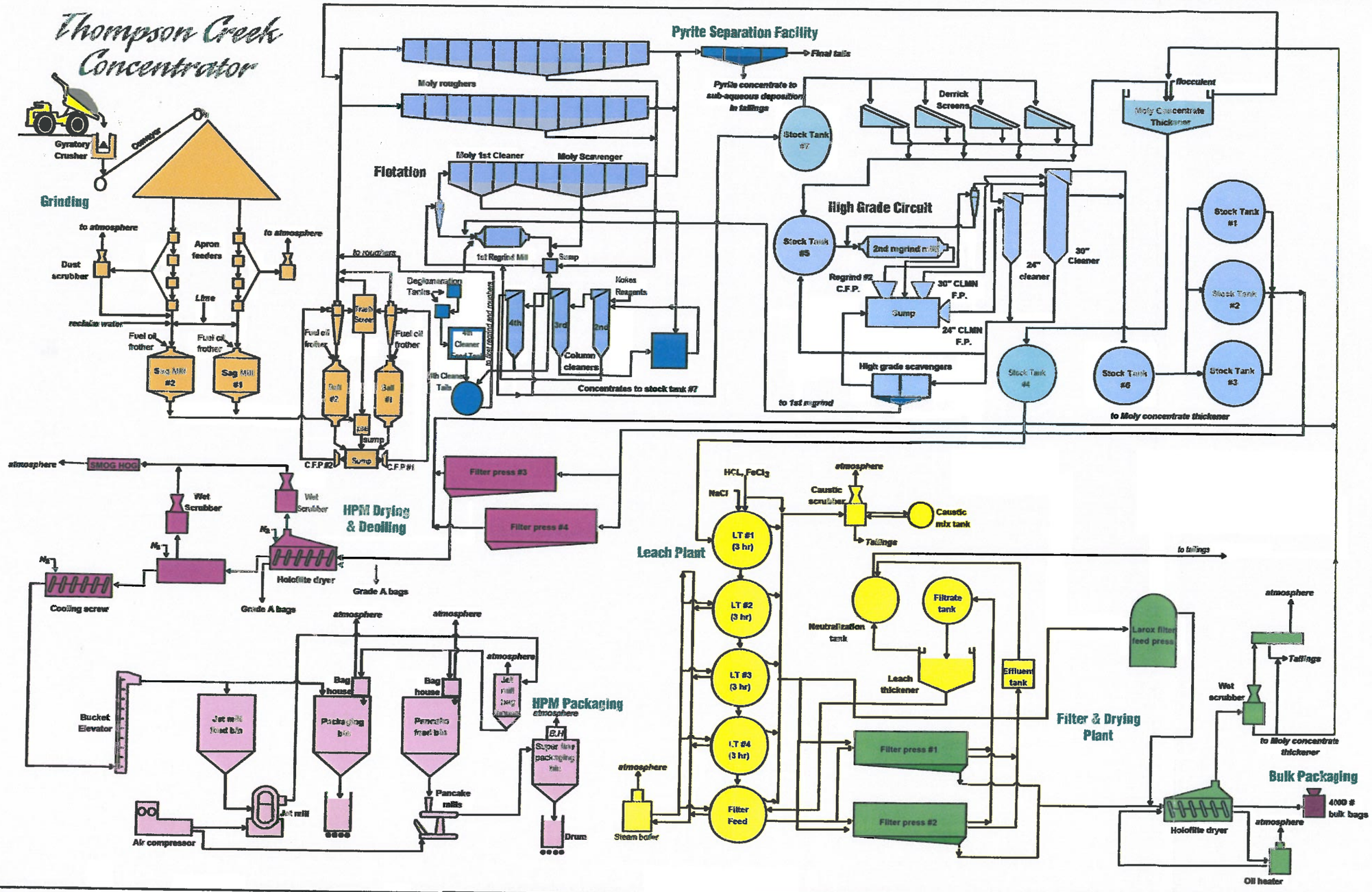
Appendix B Facility Process Flow Diagrams

THOMPSON CREEK MINING COMPANY QUALITY MANUAL

SECTION: APP. C	THOMPSON CREEK CONCENTRATOR FLOWSHEET	PAGE 1 OF 1
REVISION#: 1	DATE: 11/26/08	REFERENCE: NA



PREPARED BY:	DATE:	AUTHORIZED BY:	DATE:	APPROVED BY:	DATE:

Appendix C Application Forms

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

General Information **Form GI**
Revision 7
6/29/12

Please see instructions on back page before filling out the form. All information is required. If information is missing, the application will not be processed.

Identification

1. Facility name Cyprus Thompson Creek Mining Company

2. Existing facility identification number 037-00001 ☐ **Check if new facility (not yet operating)**

3. Brief project description Convert Existing Expiring Tier II Permit to PTC for molybdenum mine and mill.

Facility Information

4. Primary facility permitting contact name Bert Doughty **Contact type** Responsible official

Telephone number 208-838-3511 **E-mail** bdoughty@tcreek.com

5. Alternate facility permitting contact name Jeremy Wall **Alternate contact type** Facility permitting contact

Telephone number 208-838-3511 **E-mail** jwall@tcreek.com

6. Mailing address where permit will be sent (street/city/county/state/zip code) P.O. Box 62, Clayton, ID 83227

7. Physical address of permitted facility (if different than mailing address) (street/city/county/state/zip code) 35 Miles SW of Challis, Idaho, 2.5 miles north of Highway 75 between Thompson and Squaw Creek

8. Is the equipment portable? ☐ **Yes*** ☒ **No** ***If yes, complete and attach PERF; see instructions.**

9. NAICS codes: Primary NAICS 1061 **Secondary NAICS**

10. Brief business description and principal product produced Molybdenum mine and mill processing molybdenum ore into molybdenum concentrate

11. Identify any adjacent or contiguous facility this company owns and/or operates NA

12. Specify type of application ☒ **Permit to construct (PTC); application fee of $1,000 required. See instructions.**

☐ **Tier I permit** ☐ **Tier II permit** ☐ **Tier II/Permit to construct**

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.

☐ **Co-process Tier I modification and PTC** ☐ **Incorporate PTC at the time of Tier I renewal** ☐ **Administratively amend the Tier I permit to incorporate the PTC upon applicant's request (IDAPA 58.01.01.209.05.a, b, or c)**

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.

13. Responsible official's name Bert Doughty **Official's title** Environmental Manager

Official's address P.O. Box 62, Clayton, ID 83227

Telephone number 208-838-3511 **E-mail** bdoughty@tcreek.com

Official's signature Bert Doughty **Date** 2/19/2013

☒ **14. Check here to indicate that you want to review the draft permit before final issuance.**

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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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	Cyprus Thompson Creek Mining Company
2. Facility Name	Thompson Creek Mine 3. Facility ID No. 037-00001
4. Brief Project Description - One sentence or less	Convert Existing expiring Tier II Permit to PTC for molybdenum mine and mill.

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	Please specify number of EU0s attached: 19	☐
☒	☐	Form EU1– Industrial Engine Information	Please specify number of EU1s attached: 5	☐
☐	☒	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 EU4s attached: ____	☐
☒	☐	Form EU5 – Boiler Information	Please specify number of EU5s attached: 2	☐
☐	☒	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	Please specify number of ESPs attached: 2	☐
☒	☐	Form BCE– Baghouses Control Equipment	Please specify number of BCEs attached: 7	☐
☒	☐	Form SCE– Scrubbers Control Equipment	Please specify number of SCEs attached: 1	☐
☒	☐	Form VSCE – Venturi Scrubber Control Equipment	Please specify number of VSCEs attached: 5	☐
☐	☒	Form CAM – Compliance Assurance Monitoring		☐
☒	☐	Forms EI– Emissions Inventory		☐
☒	☒	PP – Plot Plan		☐
☐	☒	Forms MI1 – MI4 – Modeling **included in separate modeling report** (Excel workbook, all 4 worksheets)		☐
☒	☐	Form FRA – Federal Regulation Applicability		☐

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	PORTABLE CRUSHER
6. EU ID Number:	PTC AREA
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8. Manufacturer:	PIONEER
9. Model:	2036
10.. Maximum Capacity:	700,000 TONS PER YEAR
11. Date of Construction:	1981
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	2080 HOURS/YEAR
23. Maximum Operation:	3500 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☒ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	
☐ Production Limit(s):	4,800 TPD & 700,000 TPY
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description:

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	PRIMARY CRUSHER
6.	EU ID Number:	PRIMCRUS
7.	EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	GATX-FULLER
9.	Model:	
10..	Maximum Capacity:	16,242,500 TONS/YEAR
11.	Date of Construction:	
12.	Date of Modification (if any):	
13.	Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Primary Crusher Baghouse
15. Date of Installation:	1981 16. Date of Modification (if any):
17. Manufacturer and Model Number:	American Air Filter / Jet Pulse Modular Fabripak
18. ID(s) of Emission Unit Controlled:	Primary Crusher
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	
23.	Maximum Operation:	8760 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	
☒ Production Limit(s):	106,800 TPD & 16,242,500 TPY
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

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1410 N. Hilton, Boise, ID 83706
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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: American Air Filter	5. Baghouse Model: Jet Pulse Modular Fabripak	6. Baghouse Equipment ID: Primary Crusher Baghouse

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☒ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description:

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	OVERLAND CONVEYOR DRIVE 1
6.	EU ID Number:	OVERCONV
7.	EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	GATX-FULLER
9.	Model:	
10..	Maximum Capacity:	
11.	Date of Construction:	1981
12.	Date of Modification (if any):	
13.	Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Overland Conveyor Drive 1 Baghouse
15. Date of Installation:	1981 16. Date of Modification (if any):
17. Manufacturer and Model Number:	American Air Filter / Jet Pulse Modular Fabripak
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	
23.	Maximum Operation:	8760 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	
☒ Production Limit(s):	106,800 TPD & 16,242,500 TPY
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

DEQ AIR QUALITY PROGRAM
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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: American Air Filter	5. Baghouse Model: Jet Pulse Modular Fabripak	6. Baghouse Equipment ID: Overland Conveyor Drive 1 Baghouse

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☒ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name: EAST ORE FEEDER
6. EU ID Number: EASTORE
7. EU Type: ☐ New Source ☐ Unpermitted Existing Source ☒ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:
9. Model:
10.. Maximum Capacity:
11. Date of Construction: 1981
12. Date of Modification (if any):
13. Is this a Controlled Emission Unit? ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Venturi Wet Scrubber
15. Date of Installation: 1981 16. Date of Modification (if any):
17. Manufacturer and Model Number: Ducon Model IV
18. ID(s) of Emission Unit Controlled:
19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	95%	95%	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:
23. Maximum Operation: 8760 HRS/YR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)
- ☐ Operation Hour Limit(s):
- ☒ Production Limit(s): 50,000 TPY & 18,250,000 TPY TOTAL E/W ORE FEEDERS
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Venturi Scrubber Control Equipment - **Form VSCE**
Revision 2
08/28/08

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

IDENTIFICATION					
1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name:	Thompson Creek Mine	3. Facility ID No.:	031-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate				

EMISSION UNIT ID				SCRUBBER						
5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Efficiency (PM_{10}@70%, SO_2@50%, etc.)	Basis for Efficiency (i.e., guarantee, source test, etc.)	Design Scrubbing Liquid Flow (gpm)	Design Pressure Drop (in H_2O)	Design pH (for acid gas control)
East Ore Feeder	EASTORE			Ducon	IV	95%				

Describe the maintenance required to assure the scrubber operates as designed (i.e. frequency of inspection, nozzle inspection, nozzle cleaning, etc.). (Provide an attachment if necessary.)

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name: WEST ORE FEEDER
6. EU ID Number: WESTORE
7. EU Type: ☐ New Source ☐ Unpermitted Existing Source ☒ Modification to a Permitted Source – Previous Permit #: Date Issued:
8. Manufacturer:
9. Model:
10.. Maximum Capacity:
11. Date of Construction: 1981
12. Date of Modification (if any):
13. Is this a Controlled Emission Unit? ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Venturi Wet Scrubber
15. Date of Installation: 1981 16. Date of Modification (if any):
17. Manufacturer and Model Number: Ducon Model IV
18. ID(s) of Emission Unit Controlled:
19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	95%	95%	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:
23. Maximum Operation: 8760 HRS/YR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)
- ☐ Operation Hour Limit(s):
- ☒ Production Limit(s): 50,000 TPY & 18,250,000 TPY TOTAL E/W ORE FEEDERS
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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

Venturi Scrubber Control Equipment - **Form VSCE**
Revision 2
08/28/08

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

IDENTIFICATION					
1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name:	Thompson Creek Mine	3. Facility ID No.:	031-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate				

EMISSION UNIT ID				SCRUBBER						
5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Efficiency (PM_{10}@70%, SO_2@50%, etc.)	Basis for Efficiency (i.e., guarantee, source test, etc.)	Design Scrubbing Liquid Flow (gpm)	Design Pressure Drop (in H_2O)	Design pH (for acid gas control)
West Ore Feeder	WESTORE			Ducon	IV	95%				

Describe the maintenance required to assure the scrubber operates as designed (i.e. frequency of inspection, nozzle inspection, nozzle cleaning, etc.). (Provide an attachment if necessary.)

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Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name: LEACH PLANT
6. EU ID Number:
7. EU Type: ☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8. Manufacturer:
9. Model:
10.. Maximum Capacity:
11. Date of Construction: 1981
12. Date of Modification (if any): NA
13. Is this a Controlled Emission Unit? ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Caustic Wet Scrubber
15. Date of Installation: 1981 16. Date of Modification (if any):
17. Manufacturer and Model Number: Cellicote SPT-82
18. ID(s) of Emission Unit Controlled:
19. Is operating schedule different than emission units(s) involved? ☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:
23. Maximum Operation: 8,760 HRS/YR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☐ Yes ☒ No (If Yes, indicate all that apply below)
    - ☐ Operation Hour Limit(s):
    - ☐ Production Limit(s):
    - ☐ Material Usage Limit(s):
    - ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
    - ☐ Other:
25. Rationale for Requesting the Limit(s):

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

Scrubber Control Equipment - **Form SCE**
Revision 5
08/28/08

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

IDENTIFICATION			
1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	3. Facility ID No.: 037-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate		

EMISSION UNIT ID				SCRUBBER					
5.	6.	7.	8.	9.	10.	11.	12.	13	14.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Type	Dimensions In Feet (Ht x Dia x L)	Water Flow (gpm)	Pressure Drop (in H_2O)
Leach Plant				Ceilicote	SPT-82	Caustic			

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HOLOFLITE DRYER #1
6. EU ID Number:	HOLODRYR
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	JOY-DENVER
9. Model:	D-1216-5
10.. Maximum Capacity:	
11. Date of Construction:	
12. Date of Modification (if any):	
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Venturi Wet Scrubber
15. Date of Installation:	1981 16. Date of Modification (if any):
17. Manufacturer and Model Number:	Luftrol UW-4-4
18. ID(s) of Emission Unit Controlled:	Holofilte Dryer #1
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency			NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	
23. Maximum Operation:	8760 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	
☒ Production Limit(s):	247.7 TPD & 81,030 TPY
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Venturi Scrubber Control Equipment - **Form VSCE**
Revision 2
08/28/08

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

IDENTIFICATION

1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name:	Thompson Creek Mine	3. Facility ID No.:	031-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate				

EMISSION UNIT ID				SCRUBBER						
5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Efficiency (PM_{10}@70%, SO_2@50%, etc.)	Basis for Efficiency (i.e., guarantee, source test, etc.)	Design Scrubbing Liquid Flow (gpm)	Design Pressure Drop (in H_2O)	Design pH (for acid gas control)
Holofite Dryer #1	HOLODRY R1			Luftrol	UW-4-4	99.9% w/ESP				

Describe the maintenance required to assure the scrubber operates as designed (i.e. frequency of inspection, nozzle inspection, nozzle cleaning, etc.). (Provide an attachment if necessary.)

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

Electrostatic Precipitator **Form ESP**
Revision 3
12/13/10

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

IDENTIFICATION

1. Company Name	2. Facility Name:
Cyprus Thompson Creek Mining comapny	Thompson Creek Mine
3. Brief Project Description:	Molybdenum mining and milling complex Holoflyte Dryer #1 ESP

ELECTROSTATIC PRECIPITATOR (ESP) INFORMATION

Equipment Description

4. Manufacturer:	United Air Specialists	5. Model Number:	SH-10

6. Precipitator Characteristics:	Number of fields: _____ Number of chambers: _____ Potential applied: _____ kV/in Type of ESP: ☒ Wet ☐ Dry Inlet flow rate: _____ acfm Plate cleaning system: ☐ Rapping ☐ Other: _____	Number of plates: _____ Residence time: _____ sec Can isolate chambers? ☐ Yes ☐ No Cross sectional area of precipitator: _____ ft^2 Type of collecting plate: ☐ Tubular ☐ Plate
7. Operating Parameters: (Note: You must fill in all fields in this section)	Secondary amperage: _____ Secondary voltage: _____ Spark rate: _____ Manufacturer's specifications? ☐ Yes ☐ No Note: If yes, attach a copy; if no, provide basis for operating parameters provided.	Amperage averaging period (minute, hour, etc): _____ Voltage averaging period (minute, hour, etc): _____ Spark rate averaging period (minute, hour, etc): _____

8. Pre-treatment device:	☐ Cyclone ☐ Pre-cooler ☐ Pre-heater ☐ Knock-out chamber ☐ None
9. Blower:	Blower rating: _____ hp Design flow rate: _____ scfm Draft: ☐ Forced ☐ Induced
10. Method of removal of particulate from ESP:	☐ Closed container ☐ Enclosed screw conveyor ☒ Other method: Drain

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name: ROTARY KILN DRYER
6. EU ID Number:
7. EU Type: ☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer: CHRISTIAN
9. Model: 12-13-16-UNI
10.. Maximum Capacity:
11. Date of Construction:
12. Date of Modification (if any):
13. Is this a Controlled Emission Unit? ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Venturi Wet Scrubber
15. Date of Installation: 1989 16. Date of Modification (if any):
17. Manufacturer and Model Number: Luftrol KVS4-14
18. ID(s) of Emission Unit Controlled: Rotary Kiln Dryer
19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:
23. Maximum Operation:

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)
- ☐ Operation Hour Limit(s):
- ☒ Production Limit(s): 24 tpd, 5,448 tpy
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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

Venturi Scrubber Control Equipment - **Form VSCE**
Revision 2
08/28/08

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

IDENTIFICATION

1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name:	Thompson Creek Mine	3. Facility ID No.:	031-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate				

EMISSION UNIT ID				SCRUBBER						
5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Efficiency (PM_{10}@70%, SO_2@50%, etc.)	Basis for Efficiency (i.e., guarantee, source test, etc.)	Design Scrubbing Liquid Flow (gpm)	Design Pressure Drop (in H_2O)	Design pH (for acid gas control)
Rotary Kiln Dryer	Kiln			Luftrol	KVS4-14	99.9% w/ESP				

Describe the maintenance required to assure the scrubber operates as designed (i.e. frequency of inspection, nozzle inspection, nozzle cleaning, etc.). (Provide an attachment if necessary.)

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HOLO FLITE DRYER # 2
6. EU ID Number:	HOLODRYR2
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	JOY-DENVER
9. Model:	D-1216-5
10.. Maximum Capacity:	
11. Date of Construction:	
12. Date of Modification (if any):	
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Venturi Wet Scrubber
15. Date of Installation:	1989 16. Date of Modification (if any):
17. Manufacturer and Model Number:	Luftrol KVS4-14
18. ID(s) of Emission Unit Controlled:	Holoflite Dryer #2
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:

23. Maximum Operation:

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	
☒ Production Limit(s):	24 TPD, 5,488 TPY
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Venturi Scrubber Control Equipment - **Form VSCE**
Revision 2
08/28/08

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

IDENTIFICATION					
1. Company Name:	Cyprus Thompson Creek Mining Company	2. Facility Name:	Thompson Creek Mine	3. Facility ID No.:	031-00001
4. Brief Project Description:	Molybdenum Mine and Mill producing molybdenum concentrate				

EMISSION UNIT ID				SCRUBBER						
5.	6.	7.	8.	9.	10.	11.	12.	13	14.	15.
Emission Unit	EU ID No.	CE ID No.	Stack ID No.	Manufacturer Name	Model No.	Efficiency (PM_{10}@70%, SO_2@50%, etc.)	Basis for Efficiency (i.e., guarantee, source test, etc.)	Design Scrubbing Liquid Flow (gpm)	Design Pressure Drop (in H_2O)	Design pH (for acid gas control)
Holo Flite Dryer #2	HOLODRY R2			Luftrol	KVS4-14	99.9% w/ESP				

Describe the maintenance required to assure the scrubber operates as designed (i.e. frequency of inspection, nozzle inspection, nozzle cleaning, etc.). (Provide an attachment if necessary.)

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name: LUBE GRADE DRYER
6. EU ID Number: LUBEDRYR
7. EU Type: ☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:
9. Model:
10.. Maximum Capacity:
11. Date of Construction:
12. Date of Modification (if any):
13. Is this a Controlled Emission Unit? ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Smog Hog (ESP)
15. Date of Installation: 1989 16. Date of Modification (if any):
17. Manufacturer and Model Number: United Air Specialists SHN-10
18. ID(s) of Emission Unit Controlled: Lube Grade Dryer Stack & Holo Flite Dryer #2 & Rotary Kiln Dryer
19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No
20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:
23. Maximum Operation: 8760 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)
- ☐ Operation Hour Limit(s):
- ☒ Production Limit(s): 24 TPD, 5,488 TPY
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Electrostatic Precipitator **Form ESP**
Revision 3
12/13/10

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

IDENTIFICATION

1. Company Name	2. Facility Name:
Cyprus Thompson Creek Mining comapny	Thompson Creek Mine
3. Brief Project Description:	Molybdenum mining and milling complex Holoflyte Dryer #2 & Rotary Kiln Dryer ESP

ELECTROSTATIC PRECIPITATOR (ESP) INFORMATION

Equipment Description

4. Manufacturer:	United Air Specialists	5. Model Number:	SH-10

6. Precipitator Characteristics:	Number of fields: _____ Number of chambers: _____ Potential applied: _____ kV/in Type of ESP: ☒ Wet ☐ Dry Inlet flow rate: _____ acfm Plate cleaning system: ☐ Rapping ☐ Other: _____	Number of plates: _____ Residence time: _____ sec Can isolate chambers? ☐ Yes ☐ No Cross sectional area of precipitator: _____ ft^2 Type of collecting plate: ☐ Tubular ☐ Plate
7. Operating Parameters: (Note: You must fill in all fields in this section)	Secondary amperage: _____ Secondary voltage: _____ Spark rate: _____ Manufacturer's specifications? ☐ Yes ☐ No Note: If yes, attach a copy; if no, provide basis for operating parameters provided.	Amperage averaging period (minute, hour, etc): _____ Voltage averaging period (minute, hour, etc): _____ Spark rate averaging period (minute, hour, etc): _____
8. Pre-treatment device:	☐ Cyclone ☐ Pre-cooler ☐ Pre-heater ☐ Knock-out chamber ☐ None	
9. Blower:	Blower rating: _____ hp Design flow rate: _____ scfm Draft: ☐ Forced ☐ Induced	
10. Method of removal of particulate from ESP:	☐ Closed container ☐ Enclosed screw conveyor ☒ Other method: Drain	

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HPM MILLING & PACKAGING/LIME SILO JET MILL
6. EU ID Number:	JETMILL
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	MiKRO PULSAIRE
9. Model:	36-S-10-30
10.. Maximum Capacity:	1600 LB/HR
11. Date of Construction:	1989
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Jet Mill Baghouse
15. Date of Installation:	1989 16. Date of Modification (if any):
17. Manufacturer and Model Number:	MIKRO PULSAIRE
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%				

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	7200 HOURS/YEAR
23. Maximum Operation:	7200 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	7200HR/YR
☐ Production Limit(s):	1600 lb/hr
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

DEQ AIR QUALITY PROGRAM
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For assistance, call the
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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name:
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: Mikro Pulsaire	5. Baghouse Model: 36-S-10-30	6. Baghouse Equipment ID: Jet Mill JETMILL

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☐ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

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

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HPM MILLING & PACKAGING/LIME SILO TECH FINE BIN
6. EU ID Number:	PACKBIN
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	MAG-PAC
9. Model:	52-65
10.. Maximum Capacity:	1600 LB/HR
11. Date of Construction:	1989
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Tech Fine Packaging Baghouse
15. Date of Installation:	1989 16. Date of Modification (if any):
17. Manufacturer and Model Number:	MAG-PAC
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%				

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	7200 HOURS/YEAR
23. Maximum Operation:	7200 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	7200HR/YR
☐ Production Limit(s):	1600 lb/hr
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

DEQ AIR QUALITY PROGRAM
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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: Mag-Pac	5. Baghouse Model: 52-65	6. Baghouse Equipment ID: Tech Fine Packaging Bin - PACKBIN

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☐ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HPM MILLING & PACKAGING/LIME SILO PANCAKE MILL BIN
6. EU ID Number:	PANMILL
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	AMERICAN AIR FILTER
9. Model:	AR35
10.. Maximum Capacity:	850 LB/HR
11. Date of Construction:	1992
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Pancake Feed Bin Baghouse
15. Date of Installation:	1992 16. Date of Modification (if any):
17. Manufacturer and Model Number:	American Air Filter
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%				

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	3412 HOURS/YEAR
23. Maximum Operation:	3412 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	3412 HR/YR
☐ Production Limit(s):	850 LB/HR
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: American Air Filter	5. Baghouse Model: AR35	6. Baghouse Equipment ID: Pancake Mill Feed Bin PANMILL

7 (a). Baghouse particulate matter emission concentration. **Note: Provide Information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☐ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HPM MILLING & PACKAGING/LIME SILO SUPER FINE BIN
6. EU ID Number:	SFSTOR
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8. Manufacturer:	MAG-PAC
9. Model:	5265
10.. Maximum Capacity:	331 LB/HR
11. Date of Construction:	1992
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Super Fine Packaging Bin Baghouse
15. Date of Installation:	1992 16. Date of Modification (if any):
17. Manufacturer and Model Number:	MAG-PAC
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%				

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	8760 HOURS/YEAR
23. Maximum Operation:	8760 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	8760 HR/YR
☐ Production Limit(s):	331 LB/HR
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name:
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine

3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: Mag-Pac	5. Baghouse Model: 52-65	6. Baghouse Equipment ID: Super Fine Packaging Bin - SFSTOR

7 (a). Baghouse particulate matter emission concentration. **Note: Provide Information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☐ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	HPM MILLING & PACKAGING/LIME SILO PEBBLE LIME SILO
6. EU ID Number:	PEBBLELM
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	DALAMATE
9. Model:	
10.. Maximum Capacity:	12 ton/hr
11. Date of Construction:	1981
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:	Lime Silo Baghouse
15. Date of Installation:	1981 16. Date of Modification (if any):
17. Manufacturer and Model Number:	DLM-
18. ID(s) of Emission Unit Controlled:	
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☒ No
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99%	99%				

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	416.667 HOURS/YEAR
23. Maximum Operation:	416.667 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☐ Operation Hour Limit(s):	416.667HR/YR
☐ Production Limit(s):	12 TON/HR
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	

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Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION	
1. Company Name	2. Facility Name:
Cyprus/Thompson Creek Mining Company	Thompson Creek Mine
3. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate	

BAGHOUSE INFORMATION		
4. Baghouse Manufacturer: Dalamate	5. Baghouse Model: DLM-V-20-10F6	6. Baghouse Equipment ID: Pebble Lime Silo - PEBBLELM

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	_____ gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	99 % PM control 99 % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☐ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

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Emissions Units - Industrial Boiler Information **Form EU5**
Revision 5
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3 Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	

4. Brief Project Description: Open Pit Molybdenum mine and mill in which we produce molybdenum concentrate. Boiler #1

EXEMPTION

Please see IDAPA 58.01.01.222 for a list of industrial boilers that are exempt from Permit to Construct requirements.

BOILER (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

5. Type of Request: ☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #:

6. Use of Boiler: ☒ % Used For Process ☐ % Used For Space Heat ☐ % Used For Generating Electricity ☐ Other:

7. Boiler ID Number:	8. Rated Capacity: ☒ 6.4 Million British Thermal Units Per Hour (MMBtu/hr) ☐ 1,000 Pounds Steam Per Hour (1,000 lb steam/hr)	
9. Construction Date: 09-27-2007	10. Manufacturer: Byran Boilers	11. Model: RV600-S-150-FDGO
12. Date of Modification (if applicable): 10/2007	13. Serial Number (if available):	14. Control Device (if any): **Note: Attach applicable control equipment form(s)**

FUEL DESCRIPTION AND SPECIFICATIONS

15. Fuel Type	☒ Diesel Fuel (# 2) 46.72 (gal/hr)	☐ Natural Gas (cf/hr)	☐ Coal (unit: /hr)	☐ Other Fuels (unit: /hr)
16. Full Load Consumption Rate	46.72			
17. Actual Consumption Rate				
18. Fuel Heat Content (Btu/unit, LHV)	137,000 Btu/gal			
19. Sulfur Content wt%	0.0015			
20. Ash Content wt%		N/A		

STEAM DESCRIPTION AND SPECIFICATIONS

21. Steam Heat Content	NA	NA		
22. Steam Temperature (°F)	N/A	N/A		
23. Steam Pressure (psi)	N/A	N/A		
24 Steam Type	N/A	N/A	☐ Saturated ☐ Superheated	☐ Saturated ☐ Superheated

OPERATING LIMITS & SCHEDULE

25. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):	8,760 hr/yr
26. Operating Schedule (hours/day, months/year, etc.):	24 hours/day
27. NSPS Applicability: ☐ Yes ☒ No	If Yes, which subpart:

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Emissions Units - Industrial Boiler Information **Form EU5**
Revision 5
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3 Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	

4. Brief Project Description: Open pit molybdenum mine and mill producing molybdenum concentrate. Hot Oil Boiler

EXEMPTION

Please see IDAPA 58.01.01.222 for a list of industrial boilers that are exempt from Permit to Construct requirements.

BOILER (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

5. Type of Request: ☒ New Unit ☐ Unpermitted Existing Unit ☐ Modification to a Unit with Permit #:

6. Use of Boiler: ☒ % Used For Process ☐ % Used For Space Heat ☐ % Used For Generating Electricity ☐ Other:

7. Boiler ID Number:	8. Rated Capacity: ☒ 1.8 Million British Thermal Units Per Hour (MMBtu/hr) ☐ 1,000 Pounds Steam Per Hour (1,000 lb steam/hr)	
9. Construction Date:	10. Manufacturer: Parker	11. Model: HT1920
12. Date of Modification (if applicable): 10-2007	13. Serial Number (if available):	14. Control Device (if any): **Note: Attach applicable control equipment form(s)**

FUEL DESCRIPTION AND SPECIFICATIONS

15. Fuel Type	☒ Diesel Fuel (#) 13.14 (gal/hr)	☐ Natural Gas (cf/hr)	☐ Coal (unit: /hr)	☐ Other Fuels (unit: /hr)
16. Full Load Consumption Rate	13.14			
17. Actual Consumption Rate				
18. Fuel Heat Content (Btu/unit, LHV)	137,000 Btu/gal			
19. Sulfur Content wt%	0.0015			
20. Ash Content wt%		N/A		

STEAM DESCRIPTION AND SPECIFICATIONS

21. Steam Heat Content	NA	NA		
22. Steam Temperature (°F)	N/A	N/A		
23. Steam Pressure (psi)	N/A	N/A		
24 Steam Type	N/A	N/A	☐ Saturated ☐ Superheated	☐ Saturated ☐ Superheated

OPERATING LIMITS & SCHEDULE

25. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):	8760hours/year
26. Operating Schedule (hours/day, months/year, etc.):	24hours/day
27. NSPS Applicability: ☐ Yes ☐ No	If Yes, which subpart:

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	
3 Brief Project Description:	Molybdenum mining and milling complex- Motivator Generator	

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:	(liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☒ Emergency ☐ Non-Emergency		
8. Engine ID Number: 5262003964	9. Maximum Rated Engine Power: _____ Brake Horsepower (bhp)		
10. Construction Date: 1981	11. Manufacturer: Cummins (1,490 bhp Max Power)	12. Model: 1750REOZDC/T1238A36	13. Model Year: 1981
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any):	

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				
19. Actual Consumption Rate				
20. Sulfur Content wt%	0.0015	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
500 hours/year

22. Operating Schedule (hours/day, months/year, etc.):

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	
3 Brief Project Description:	Molybdenum mining and milling complex- Mill Auxillary Generator	

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:	(liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☒ Emergency ☐ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power: _____ Brake Horsepower (bhp)		
10. Construction Date: 1981	11. Manufacturer: Caterpillar (265 bhp Max Power)	12. Model: SR4	13. Model Year: 1981
14. Date of Modification (if applicable):	15. Serial Number (if available): 5N5060	16. Control Device (if any):	

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				
19. Actual Consumption Rate				
20. Sulfur Content wt%	0.0015	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
500 hours/year

22. Operating Schedule (hours/day, months/year, etc.):

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	
3 Brief Project Description:	Molybdenum mining and milling complex- Pumpback Emergency Generator	

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:	(liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☒ Emergency ☐ Non-Emergency		
8. Engine ID Number:	9. Maximum Rated Engine Power: _____ Brake Horsepower (bhp)		
10. Construction Date: 1981	11. Manufacturer: Caterpillar (450 bhp Max Power)	12. Model: SR4	13. Model Year: 1981
14. Date of Modification (if applicable):	15. Serial Number (if available): 1W0739	16. Control Device (if any):	

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				
19. Actual Consumption Rate				
20. Sulfur Content wt%	0.0015	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
500 hours/year

22. Operating Schedule (hours/day, months/year, etc.):

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	
3 Brief Project Description:	Molybdenum mining and milling complex- Tailings emergency generator #1	

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:	4.8 (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☒ Emergency ☐ Non-Emergency		
8. Engine ID Number: 5262003964	9. Maximum Rated Engine Power: _____ Brake Horsepower (bhp)		
10. Construction Date: January 10, 2010	11. Manufacturer: Detroit Diesel/MTU (2,561 bph Max)	12. Model: 12V4000 G83 T-123-8A36	13. Model Year: 2008
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any): Electronic Engine Control	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☒ Other Fuels (unit:gal/hr)
18. Full Load Consumption Rate	190			
19. Actual Consumption Rate	124			
20. Sulfur Content wt%	0.0015	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
500 hours/year

22. Operating Schedule (hours/day, months/year, etc.):

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine	
3 Brief Project Description:	Molybdenum mining and milling complex- Tailings emergency generator #2	

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:	4.8 (liters per cylinder)	6. Ignition Type:	☒ Compression ☐ Spark
7. Use	☒ Emergency ☐ Non-Emergency		
8. Engine ID Number: 5262003966	9. Maximum Rated Engine Power: _____ Brake Horsepower (bhp)		
10. Construction Date: January 10, 2010	11. Manufacturer: Detroit Diesel/MTU (2,561 bph Max)	12. Model: 12V4000 G83 T-123-8A36	13. Model Year: 2008
14. Date of Modification (if applicable):	15. Serial Number (if available):	16. Control Device (if any): Electronic Engine Control	

FUEL DESCRIPTION AND SPECIFICATIONS

17. Fuel Type	☒ Diesel Fuel (#2) (gal/hr)	☐ Gasoline Fuel (gal/hr)	☐ Natural Gas (cf/hr)	☒ Other Fuels (unit:gal/hr)
18. Full Load Consumption Rate	190			
19. Actual Consumption Rate	124			
20. Sulfur Content wt%	0.0015	N/A	N/A	

OPERATING LIMITS & SCHEDULE

21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):
500 hours/year

22. Operating Schedule (hours/day, months/year, etc.):

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	WASTE OIL HEATER #1
6.	EU ID Number:	WOILHTR1
7.	EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	CLEAN BURN INC
9.	Model:	CB 5000
10..	Maximum Capacity:	0.50 MMBTU/HR 3.6 GAL/HR
11.	Date of Construction:	2000
12.	Date of Modification (if any):	NA
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2800 HOURS/YEAR
23.	Maximum Operation:	2800 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☒ No (If Yes, indicate all that apply below)

- ☐ Operation Hour Limit(s): 2,800 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	WASTE OIL HEATER #2
6.	EU ID Number:	WOILHTR2
7.	EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	CLEAN BURN INC
9.	Model:	CB 5000
10..	Maximum Capacity:	0.5 MMBTU/HR 3.6 GAL/HR
11.	Date of Construction:	2000
12.	Date of Modification (if any):	NA
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2800 HOURS/YEAR
23.	Maximum Operation:	2800 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☒ No (If Yes, indicate all that apply below)

- ☐ Operation Hour Limit(s): 2,800 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s):

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Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	WASTE OIL HEATER #3
6. EU ID Number:	WOILHTR3
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	CLEAN BURN INC
9. Model:	CB 5000
10.. Maximum Capacity:	0.5 MMBTU/HR 3.6 GAL/HR
11. Date of Construction:	2000
12. Date of Modification (if any):	NA
13. is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	2800 HOURS/YEAR
23. Maximum Operation:	2800 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☒ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	2,800 HR/YR
☐ Production Limit(s):	
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

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Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

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

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Cyprus Thompson Creek Mining Company	Thompson Creek Mine	037-00001

4. Brief Project Description: Molybdenum Mine and Mill producing molybdenum concentrate

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5. Emissions Unit (EU) Name:	WASTE OIL HEATER #4
6. EU ID Number:	WOILHTR4
7. EU Type:	☐ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8. Manufacturer:	CLEAN BURN INC
9. Model:	CB 5000
10.. Maximum Capacity:	0.5 MMBTU/HR 3.6 GAL/HR
11. Date of Construction:	2000
12. Date of Modification (if any):	NA
13. Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22. Actual Operation:	2800 HOURS/YEAR
23. Maximum Operation:	2800 HOURS/YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☒ No (If Yes, indicate all that apply below)

☐ Operation Hour Limit(s):	2,800 HR/YR
☐ Production Limit(s):	
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s):

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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: Cyprus Thompson Creek Mining Company	2. Facility Name: Thompson Creek Mine
3. Brief Project Description: Convert Existing Expiring Tier II Permit to PTC for molybdenum mine and mill.	

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): **NSPS Subpart LL –see attached for detail** **NSPS Subpart IIII – see attached for detail** ☐ 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): **RICE MACT Subpart ZZZZ – see attached for detail** ☐ 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.

1.0 New Source Performance Standards

The new source performance standards (NSPS) are identified in Section 111 of the CAA and implemented under 40 CFR Part 60. The standards impose emission limitations and specify monitoring, recordkeeping and reporting requirements for individual types of sources. Equipment, processes and operations at sources regulated under NSPS are referred to as affected facilities. **Table 1-1** summarizes the NSPS standards and limitations that are applicable to each emission unit along with the initial and ongoing performance or compliance test requirements and periodic or continuous compliance monitoring requirements that are necessary to demonstrate compliance with each applicable standard for each emission unit.

1.1 NSPS Subpart LL - Metallic Mineral Processing Plants

40 CFR 60 Subpart LL, Standards of Performance for Metallic Mineral Processing Plants (NSPS LL) sets forth particulate matter standards for any affected facilities in metallic mineral processing plants that have commenced construction, modification, or reconstruction after August 24, 1982. Affected facilities consist of each crusher and screen in open-pit mines; each crusher, screen, bucket elevator, conveyor belt transfer point, thermal dryer, product packaging station, storage bin, enclosed storage area, truck loading station, truck unloading station, railcar loading station, and railcar unloading station at the mill or concentrator. Subpart LL also sets forth requirements for monitoring of operations (§60.674), test methods and procedures (§60.384), and recordkeeping and reporting (§60.385).

The following emission units at the Thompson Creek Mine are affected facilities per §60.380(a) & (b):

- Holo Flite Dryer #2
- Rotary Kiln Dryer
- Lube Grade Dryer Stack
- Jet Mill
- Tech Fine Packaging Bin
- Pancake Mill Feed Bin
- Super Fine Packaging Bin

Table 1-1 summarizes the Subpart LL standards and limitations that are applicable to each emission unit along with the initial and ongoing performance or compliance test requirements and periodic or continuous compliance monitoring requirements that demonstrate compliance with the applicable standard for each affected emission unit.

1.1.1 Standards for Particulate Matter (§60.382)

§60.382(a)(1) limits particulate matter from the Lube Grade Dryer stack 0.05 grams per dry standard cubic meter (0.05 g/dscm). Subpart LL also limits fugitive emissions from the Holo Flite Dryer #2 and Rotary Kiln Dryer to 7 percent opacity [§60.382(a)(2)(b)].

Subpart LL limits particulate matter from the Jet Mill baghouse stack, Tech Fine Packaging Bin baghouse stack, Pancake Mill Feed Bin baghouse stack, and the Super Fine Packaging Bin baghouse stack to 0.05 g/dscm [§60.382(a)(1)] and 7 percent opacity [§60.382(a)(2)(b)].

Table 1-1 NSPS Applicability (Standards and Limitations)

	Applicable Requirements				Performance Test Requirements			Monitoring to Demonstrate Compliance		
Description	NSPS Applicability	Pollutant/ Parameter	Citation	Limitation	Test Method(s)	Frequency	Citation	Monitoring Method(s)	Frequency	Citation
Portable Crusher	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Primary Crusher	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Overland Conveyor Transfer	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
East & West Ore Feeders	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Holo Flite Dryer #1	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Holo Flite Dryer #2	NSPS LL	Opacity	40 CFR 60.382(a)(2)(b)	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.386(c)	Scrubber pressure & liquid flow rate	continuous	§§60.384(a) & (b)
Rotary Kiln		Opacity	40 CFR 60.382(a)(2)(b)	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.386(c)			
Lube Grade Dryer Stack		PM	40 CFR 60.382(a)(1)	0.05 gr/dscm	M5	Initial	§§60.386(b)(1)			
Jet Mill	NSPS LL	PM	40 CFR 60.382(a)(1)	0.05 gr/dscm	M5	Initial	§§60.386(b)(1)			
	NSPS LL	Opacity	40 CFR 60.672(f) - Tbl 2	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.11			
Tech Fine Packaging Bin	NSPS LL	PM	40 CFR 60.382(a)(1)	0.05 gr/dscm	M5	Initial	§§60.386(b)(1)			
	NSPS LL	Opacity	40 CFR 60.672(f) - Tbl 2	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.11			
Pancake Mill Feed Bin	NSPS LL	PM	40 CFR 60.382(a)(1)	0.05 gr/dscm	M5	Initial	§§60.386(b)(1)			
	NSPS LL	Opacity	40 CFR 60.672(f) - Tbl 2	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.11			
Super Fine Packaging Bin	NSPS LL	PM	40 CFR 60.382(a)(1)	0.05 gr/dscm	M5	Initial	§§60.386(b)(1)			
	NSPS LL	Opacity	40 CFR 60.672(f) - Tbl 2	7 percent opacity	M9	Initial	§§60.386(b)(2) & 60.11			
Pebble Lime Baghouse	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Motivator Generator CI-ICE	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Mill Auxiliary Generator CI-ICE	**Not an Affected NSPS Facility - NSPS Not Applicable - Installed prior to Affected Date**									
Pumpback Generator CI-ICE	Not an Affected NSPS Facility - **NSPS Not Applicable - Installed prior to Affected Date**									
Tailings Pump Generator #1 CI-ICE	NSPS IIII	NO_x/ THC	40 CFR 60.4205(b)	6.4 g/kW-hr	Manufacturer's certification		§60.4202(b)	Maintain according to manufacturer's written instructions or procedures developed by owner or operator that are approved by the engine manufacturer.		§60.4211(c)
		CO	40 CFR 60.4205(b)	3.5 g/kW-hr	Manufacturer's certification		§60.4202(b)			§60.4211(c)
		PM	40 CFR 60.4205(b)	0.20 g/kW-hr	Manufacturer's certification		§60.4202(b)			§60.4211(c)
		fuel sulfur	40 CFR 60.4207	15 ppmw sulfur content	Fuel certification		40 CFR 80.510(b)			§60.4211(c)
Tailings Pump Generator #2 CI-ICE	NSPS IIII	NO_x/ THC	40 CFR 60.4205(b)	6.4 g/kW-hr	Manufacturer's certification		§60.4202(b)	Maintain according to manufacturer's written instructions or procedures developed by owner or operator that are approved by the engine manufacturer.		§60.4211(c)
		CO	40 CFR 60.4205(b)	3.5 g/kW-hr	Manufacturer's certification		§60.4202(b)			§60.4211(c)
		PM	40 CFR 60.4205(b)	0.20 g/kW-hr	Manufacturer's certification		§60.4202(b)			§60.4211(c)
		fuel sulfur	40 CFR 60.4207	15 ppmw sulfur content	Fuel certification		40 CFR 80.510(b)			§60.4211(c)
Leach Plant	Not an Affected NSPS Facility - **NSPS Not Applicable**									
Boiler #1	Not an Affected NSPS Facility - **NSPS Not Applicable**									
Hot Oil Boiler	Not an Affected NSPS Facility - **NSPS Not Applicable**									
Waste Oil Heaters	Not an Affected NSPS Facility - **NSPS Not Applicable**									

1.1.2 Monitoring of Operations (§60.384)

Monitoring provisions of §60.384(a) & (b) require each owner or operator of any affected facility that uses a wet scrubber (Holo Flite Dryer #2 & Rotary Kiln) to control emissions to install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubbers and a device for the continuous measurement of the scrubbing liquid flow rate to the scrubbers. The pressure monitoring device must be certified by the manufacturer to be accurate within ±1 inch water and must be calibrated on an annual basis in accordance with manufacturer's instructions. The scrubber liquid flow rate monitors must be certified by the manufacturer to be accurate within ±5 % of the design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with the manufacturer's instructions.

1.1.3 Recordkeeping and Reporting Requirements (§60.385)

Recordkeeping and reporting provisions of §60.385 require each owner or operator of any affected facility to record the pressure of the gas stream across each scrubber and the scrubbing liquid flow rate to each scrubber once each calendar week. In addition, the owner or operator must submit semiannual reports to DEQ of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ±30 percent from the average obtained during the most recent performance test. The reports shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

1.2 NSPS IIII – Stationary Compression Ignition Internal Combustion Engines (CI-ICE)

Subpart IIII of Part 60 sets forth emission standards for manufacturers, owners, and operators of stationary CI-ICE. For the purposes of this application only two of the five diesel-fired CI ICE are affected sources (Tailings Pump #1 & Tailings Pump #2 Generators) as they were manufactured in 2008, whereas the other three CI-ICE were manufactured in 1981 and hence not subject to NSPS IIII. §60.4205(b) states that owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. §60.4202(a)(2) states that for engines with a maximum engine power greater than or equal to 37 KW (50 HP), must meet the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. **Table 1-2** summarizes the emission limits for generator sets kW>560 for 2006 model year and later emergency engines.

Table 1-2 Summary of Applicable NSPS IIII Emissions Standards [1]

Rated Power	Model Year(s)	NMHC + NO_x	CO	PM
kW>560	2006	6.4 g/kW-hr	3.5 g/kW-hr	0.20 g/kW-hr

[1] From Table 1 of 40 CFR 89.112

In addition, the diesel-fired CI-ICEs are subject to the fuel requirements of NSPS IIII as outlined in §60.4207, which states that beginning October 1, 2010 owners and operators with a displacement of less than 30 liters per cylinder must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, which requires that diesel fuel have a maximum sulfur content of 15 part per million by weight (ppmw). In summary, beginning October 1, 2010 the CI-ICEs were required to burn diesel fuel that meets the following requirements [§60.4207(b)]:

1. Maximum sulfur content of 15 ppmw;
2. Minimum cetane number of 40; and
3. Maximum aromatic content of 35 percent by volume.

Compliance with the standards was demonstrated by purchasing a manufactured certified CI-ICE [§60.4211(c)]. The engines were installed, configured, operated, and maintained according to instructions provided by the CI-ICE manufacturer.

1.3 NESHAPs Applicability (40 CFR 63)

NESHAP for Source Categories known as MACT standards affect certain designated industrial sources referred to as "source categories" that may emit or have the potential to emit one or more of 188 designated HAP. MACT standards (subparts) are codified at 40 CFR Part 63.

Most MACT standards only regulate affected sources located at a "major source", defined in Subpart A (§63.2) as:

> *any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants . . .*

Pursuant to the Urban Air Toxics Strategy, USEPA has developed and is currently developing standards to control certain HAP compounds from "area" sources, defined as a source that is not a major source. As discussed further below, area source standards have been promulgated for the Reciprocating Internal Combustion Engines (RICE) - MACT via amendments to Subpart ZZZZ.

The following MACT rule that could reasonably be considered relevant to TCMC was reviewed for applicability to equipment comprising the project:

- Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary RICE-MACT.

Certain General Provisions set out at Subpart A of 40 CFR Part 63 also apply to any source affected by a relevant MACT. No other MACT rules are relevant to the mine.

The total potential HAP emissions from the entire Thompson Creek Mine are less than the major source thresholds of 10 tpy individual and 25 tpy aggregate. Calculated HAP emissions confirm that the facility is <u>not</u> a major HAP source. The facility will consequently be an area source of HAP emissions.

1.3.1 Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines

The RICE MACT (40 CFR 63, Subpart ZZZZ) affects certain stationary RICE at a major or area source of HAP emissions. An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Criteria for determining whether a stationary RICE is new, reconstructed or existing are set out in **Table 1-3** below.

Table 1-3 RICE-MACT Affected Source Designation Criteria for Stationary RICE >500 bhp

RICE Located at a . . .	Commenced Construction or Reconstruction . . .	Source Designation
Major Source	On or after December 19, 2002	New
Major Source	Before December 19, 2002	Existing
Area Source	On or after June 12, 2006	New
Area Source	Prior to June 12, 2006	Existing

For purposes of RICE-MACT, the CI-ICE located at the facility will are new affected source located at an area source. Under RICE-MACT, an affected source that is a new or reconstructed stationary RICE located at an area source must meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR part 60 Subpart IIII, for compression ignition engines or 40 CFR part 60 Subpart JJJJ, for spark ignition engines [§63.6590(c)]. No further requirements apply for such engines under Part 63. As discussed in Section 1.2, the engines at the facility are subject to and will comply with applicable provisions of NSPS Subpart IIII.

Appendix D Emissions Inventory

TABLE 1
THOMPSON CREEK MINE
CRITERIA POLLUTANT EMISSIONS SUMMARY

Source Description	PM_{10}	$PM_{2.5}$	NO_x	CO	VOC	SO_2	CO_2e
Primary Crusher	4.06 tpy	1.19 tpy	--	--	--	--	--
Overland Conveyor	4.87 tpy	1.43 tpy	--	--	--	--	--
East Ore Feeder	13.69 tpy	4.03 tpy	--	--	--	--	--
West Ore Feeder	13.69 tpy	4.03 tpy	--	--	--	--	--
Holoflite Dryer #1	0.08 tpy	0.02 tpy	--	--	16.07 tpy	--	--
Leach Plant			--	--	--	--	--
Holoflite Dryer #2	Common vent to Lube Grade Dryer Stack						
Rotary Kiln							
Lube Grade Dryer Stack	0.004 tpy	0.004 tpy	--	--	1.90 tpy	--	--
Jet Mill Baghouse Stack	0.058 tpy	0.020 tpy	--	--	--	--	--
Tech Fine Packaging Baghouse	0.047 tpy	0.017 tpy	--	--	--	--	--
Pancake Mill Feed Bin Baghouse	0.002 tpy	0.001 tpy	--	--	--	--	--
Super Fine Packaging Bin Baghouse	0.105 tpy	0.037 tpy	--	--	--	--	--
Pebble Lime Baghouse	0.015 tpy	0.005 tpy	--	--	--	--	--
Boiler #1	0.47 tpy	0.32 tpy	4.09 tpy	1.02 tpy	0.07 tpy	0.04 tpy	4,580.3 tpy
Hot Oil Boiler	0.13 tpy	0.09 tpy	1.15 tpy	0.29 tpy	0.02 tpy	0.01 tpy	1,288.2 tpy
Waste Oil Heaters (4)	0.66 tpy	0.66 tpy	0.22 tpy	0.10 tpy	0.02 tpy	1.47 tpy	447.7 tpy
LPG Heating	0.01 tpy	0.01 tpy	0.00 tpy	0.02 tpy	0.00 tpy	0.00 tpy	159.8 tpy
Motivator	0.26 tpy	0.26 tpy	8.94 tpy	2.05 tpy	0.24 tpy	0.00 tpy	426.6 tpy
Mill Auxiliary Generator	0.15 tpy	0.15 tpy	2.05 tpy	0.45 tpy	0.04 tpy	0.00 tpy	75.9 tpy
Pumpback Generator	0.25 tpy	0.25 tpy	3.49 tpy	0.77 tpy	0.07 tpy	0.00 tpy	128.8 tpy
Tailings Pump Generator #1	0.21 tpy	0.21 tpy	6.74 tpy	3.68 tpy	0.74 tpy	0.01 tpy	733.2 tpy
Tailings Pump Generator #2	0.21 tpy	0.21 tpy	6.74 tpy	3.68 tpy	0.74 tpy	0.01 tpy	733.2 tpy
Total	**39.0 tpy**	**12.9 tpy**	**33.4 tpy**	**12.1 tpy**	**19.9 tpy**	**1.5 tpy**	**8,573.7 tpy**

Total Fugitive Emissions	**1,352.8 tpy**	**433.6 tpy**					

TABLE 2
THOMPSON CREEK MINE TSP EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
SECTION 2: FUEL BURNING EQUIPMENT							
See PM10 Emissions							
SECTION 3: PROCESS AND MANUFACTURING OPERATIONS							
Primary Crusher	16,242,500	0.5	4060.63	baghouse	99%	40.61 tpy	22.250 lb/hr
	tons/year	lb/ton					
Overland Conveyor	16,242,500	0.12	974.55	baghouse	99%	9.75 tpy	5.340 lb/hr
	tons/year	lb/ton					
East and West Ore Feeders	18,250,000	0.12	1,095	venturi	95%	54.75 tpy	12.500 lb/hr
	tons/yr	lbs/ton					
Holoflite Dryer #1	81,030	4.93	199.74	venturi/ESP	99.9%	0.20 tpy	0.046 lb/hr
	tons/year	lb/ton					
Lube Grade Dryer Stack		0.001	8760	venturi/ESP	99.9%	0.004 tpy	0.001 lb/hr
Holoflite Dryer #2		lb/hr	hr/yr				
Rotary Kiln							
Jet Mill Bagehouse	5,760	0.016	7200	baghouse	99.0%	0.058 tpy	0.016 lb/hr
Tech Fine Packaging Bin BH	5,760	0.013	7200	baghouse	99.0%	0.047 tpy	0.013 lb/hr
	tons/year	lb/hr	hr/yr				
Pancake Mill Feed Bin BH	1,450	0.001	3412	baghouse	99.0%	0.002 tpy	0.001 lb/hr
Super Fine Packaging Bin BH	1,450	0.024	8760	baghouse	99.0%	0.105 tpy	0.024 lb/hr
	tons/year	lb/hr	hr/yr				
Pebble Lime Baghouse	5,000	0.61	1.52	baghouse	99.0%	0.015 tpy	0.073 lb/hr
	tons/year	lb/ton					
Process Water Lime Silo	1,000	0.61	0.31	baghouse	99.0%	0.003 tpy	0.146 lb/hr
	tons/year	lb/ton					
TOTAL POINT SOURCE TSP							
						105.54 tpy	
						Tons/year	

TABLE 3
THOMPSON CREEK MINE PM10 EMISSONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
SECTION 2: FUEL BURNING EQUIPMENT							
Waste Oil Heaters							
Truck Shop 1	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Truck Shop 2	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Wash Bay 1	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Wash Bay 2	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
			gal/hr	hr/yr			
Boilers							
Boiler #1	409,226 gal/yr	2.30 lb/kgal	46.72 gal/hr	8,760 hr/yr	0.0%	0.47 tpy	0.11 lb/hr
Hot Oil Boiler	115,095 gal/yr	2.30 lb/kgal	13.14 gal/hr	8,760 hr/yr	0.0%	0.13 tpy	0.03 lb/hr
LPG Heating	25,000 gal/yr	0.40 lb/kgal	0.005 tpy		0.0%	0.005 tpy	
ELECTRIC POWER GENERATORS							
Motivator	500 hr/yr	0.0007 lb/hp-hr	1,490 bhp			0.26 tpy	1.04 lb/hr
Mill Auxiliary	500 hr/yr	0.0022 lb/hp-hr	265 bhp			0.15 tpy	0.58 lb/hr
Pumpback	500 hr/yr	0.0022 lb/hp-hr	450 bhp			0.25 tpy	0.99 lb/hr
Tailings Pump 1	500 hr/yr	0.20 g/kW-hr	2,561 bhp	1,910 bkW		0.21 tpy	0.84 lb/hr
Tailings Pump 2	500 hr/yr	0.20 g/kW-hr	2,561 bhp	1,910 bkW		0.21 tpy	0.84 lb/hr
SECTION 3: PROCESS AND MANUFACTURING OPERATIONS							
Primary Crusher	16,242,500 tons/yr	0.05 lb/ton	406.1 tpy	baghouse	99%	4.06 tpy	2.23 lb/hr
	tons/year	lb/ton					
Overland Conveyor	16,242,500 tons/yr	0.06 lb/ton	487.3 tpy	baghouse	99%	4.87 tpy	2.67 lb/hr
	tons/year	lb/ton					
East and West Ore Feeders	18,250,000 tons/yr	0.06 lb/ton	547.5 tpy	venturi	95%	27.38 tpy	6.25 lb/hr
	tons/yr	lbs/ton					

TABLE 3
THOMPSON CREEK MINE PM10 EMISSONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
Holoflite Dryer #1	81,030 tons/yr	1.97 lb/ton	79.8 tpy	venturi/ESP	99.9%	0.08 tpy	0.02 lb/hr
	tons/year	lb/ton					
Lube Grade Dryer Stack		0.001 lb/hr	8760	venturi/ESP	99.9%	0.004 tpy	0.0010 lb/hr
Holoflite Dryer #2		lb/hr	hr/yr				
Rotary Kiln							
Jet Mill Baghouse	5,760 tons/yr	0.016 lb/hr	7200	baghouse	99.0%	0.058 tpy	0.016 lb/hr
Tech Fine Packaging Bin BH	5,760 tons/yr	0.013 lb/hr	7200	baghouse	99.0%	0.047 tpy	0.013 lb/hr
	tons/year	lb/hr	hr/yr				
Pancake Feed Bin BH	1,450 tons/yr	0.001 lb/hr	3412	baghouse	99.0%	0.002 tpy	0.001 lb/hr
Super Fine Packaging Bin BH	1,450 tons/yr	0.024 lb/hr	8760	baghouse	99.0%	0.105 tpy	0.024 lb/hr
	tons/year	lb/hr	hr/yr				
Pebble Lime Baghouse	5,000 tons/yr	0.61 lb/ton	1.52 tpy	baghouse	99.0%	0.015 tpy	0.073 lb/hr
	tons/year	lb/ton					
Process Water Lime Silo	1,000 tons/yr	0.61 lb/ton	0.31 tpy	baghouse	99.0%	0.003 tpy	0.146 lb/hr
	tons/year	lb/ton					
TOTAL POINT SOURCE PM10						**38.97 tpy**	
						Tons/year	

TABLE 4
THOMPSON CREEK MINE PM2.5 EMISSONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
SECTION 2: FUEL BURNING EQUIPMENT							
Waste Oil Heaters							
Truck Shop 1	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Truck Shop 2	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Wash Bay 1	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
Wash Bay 2	10,000 gal/yr	33.15 lb/kgal	3.60 gal/hr	2,800 hr/yr	0.0%	0.17 tpy	0.12 lb/hr
			gal/hr	hr/yr			
Boilers							
Boiler #1	409,226 gal/yr	1.54 lb/kgal	46.72 gal/hr	8,760 hr/yr	0.0%	0.32 tpy	0.07 lb/hr
Hot Oil Boiler	115,095 gal/yr	1.54 lb/kgal	13.14 gal/hr	8,760 hr/yr	0.0%	0.09 tpy	0.02 lb/hr
LPG Heating	25,000 gal/yr	0.40 lb/kgal	0.005 tpy		0.0%	0.005 tpy	
ELECTRIC POWER GENERATORS							
Motivator	500 hr/yr	0.0007 lb/hp-hr	1,490 bhp			0.26 tpy	1.04 lb/hr
Mill Auxiliary	500 hr/yr	0.0022 lb/hp-hr	265 bhp			0.15 tpy	0.58 lb/hr
Pumpback	500 hr/yr	0.0022 lb/hp-hr	450 bhp			0.25 tpy	0.99 lb/hr
Tailings Pump 1	500 hr/yr	0.20 g/kW-hr	2,561 bhp	1,910 bkW		0.21 tpy	0.84 lb/hr
Tailings Pump 2	500 hr/yr	0.20 g/kW-hr	2,561 bhp	1,910 bkW		0.21 tpy	0.84 lb/hr
SECTION 3: PROCESS AND MANUFACTURING OPERATIONS							
Primary Crusher	16,242,500 tons/yr	0.015 lb/ton	119.4 tpy	baghouse	99%	1.19 tpy	0.65 lb/hr
	tons/year	lb/ton					
Overland Conveyor	16,242,500 tons/yr	0.018 lb/ton	143.3 tpy	baghouse	99%	1.43 tpy	0.79 lb/hr
	tons/year	lb/ton					
East and West Ore Feeders	18,250,000 tons/yr	0.018 lb/ton	161.0 tpy	venturi	95%	8.05 tpy	1.84 lb/hr
	tons/yr	lbs/ton					

TABLE 4
THOMPSON CREEK MINE PM2.5 EMISSONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
Holoflite Dryer #1	81,030 tons/yr	0.58 lb/ton	23.5 tpy	venturi/ESP	99.9%	0.02 tpy	0.01 lb/hr
	tons/year	lb/ton					
Lube Grade Dryer Stack		0.001 lb/hr	8760	venturi/ESP	99.9%	0.004 tpy	0.0010 lb/hr
Holoflite Dryer #2		lb/hr	hr/yr				
Rotary Kiln							
Jet Mill Baghouse	5,760 tons/yr	0.0056 lb/hr	7200	baghouse	99.0%	0.020 tpy	0.006 lb/hr
Tech Fine Packaging Bin BH	5,760 tons/yr	0.0046 lb/hr	7200	baghouse	99.0%	0.017 tpy	0.005 lb/hr
	tons/year	lb/hr	hr/yr				
Pancake Feed Bin BH	1,450 tons/yr	0.0004 lb/hr	3412	baghouse	99.0%	0.001 tpy	0.000 lb/hr
Super Fine Packaging Bin BH	1,450 tons/yr	0.0085 lb/hr	8760	baghouse	99.0%	0.037 tpy	0.008 lb/hr
	tons/year	lb/hr	hr/yr				
Pebble Lime Baghouse	5,000 tons/yr	0.22 lb/ton	0.54 tpy	baghouse	99.0%	0.005 tpy	0.026 lb/hr
	tons/year	lb/ton					
Process Water Lime Silo	1,000 tons/yr	0.22 lb/ton	0.11 tpy	baghouse	99.0%	0.001 tpy	0.052 lb/hr
	tons/year	lb/ton					
TOTAL POINT SOURCE PM2.5						**12.93 tpy**	
						Tons/year	

TABLE 5
THOMPSON CREEK MINE
NOx EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
FUGITIVE							
Mobile Sources							
Haul Trucks	175,200 hr/yr	4.12 lb/hr	360.6 tpy		0.0%	360.56 tpy	4.12 lb/hr
Dozers	43,800 hr/yr	1.26 lb/hr	27.6 tpy		0.0%	27.59 tpy	1.26 lb/hr
Wheeled Loaders	26,280 hr/yr	1.89 lb/hr	24.8 tpy		0.0%	24.83 tpy	1.89 lb/hr
Motor Graders	35,040 hr/yr	0.71 lb/hr	12.5 tpy		0.0%	12.49 tpy	0.71 lb/hr
Wheeled Dozers	26,280 hr/yr	4.12 lb/hr	54.1 tpy		0.0%	54.08 tpy	4.12 lb/hr
Drills	35,040 hr/yr	0.71 lb/hr	12.5 tpy		0.0%	12.49 tpy	0.71 lb/hr
Misc.	14,760 hr/yr	1.69 lb/hr	12.5 tpy		0.0%	12.48 tpy	1.69 lb/hr
		lb/hour					
Blasting	200	17				1.70 tpy	
	blasts/year	lb/blast				**506.24 tpy**	
POINT SOURCE							
Waste Oil Heaters	40,000.0 gal/yr	11.0 lb/kgal	0.2 tpy	14.40 gal/hr	0.0%	0.22 tpy	0.16 lb/hr
	gal/year	lb/1000 gal		gal/hr			
Boilers							
Boiler #1	409,226.3 gal/yr	20.0 lb/kgal	4.1 tpy		0.0%	4.09 tpy	0.93 lb/hr
Hot Oil Boiler	115,094.9 gal/yr	20.0 lb/kgal	1.2 tpy		0.0%	1.15 tpy	0.26 lb/hr
	gal/year	lb/1000 gal					
LPG Heating	25,000.0 gal/yr	0.014 lb/kgal	0.0002 tpy		0.0%	0.0002 tpy	
	gal/year	lb/1000 gal					
ELECTRIC POWER GENERATORS							
Motivator	500 hr/yr	0.024 lb/hp-hr	1,490 bhp			8.94 tpy	35.76 lb/hr
Mill Auxiliary	500 hr/yr	0.031 lb/hp-hr	265 bhp			2.05 tpy	8.22 lb/hr
Pumpback	500 hr/yr	0.031 lb/hp-hr	450 bhp			3.49 tpy	13.95 lb/hr
Tailings Pump 1	500 hr/yr	6.40 g/kW-hr	2,561 bhp	1,910 bkW		6.74 tpy	26.95 lb/hr
Tailings Pump 2	500 hr/yr	6.40 g/kW-hr	2,561 bhp	1,910 bkW		6.74 tpy	26.95 lb/hr
TOTAL POINT SOURCE						**33.4 tpy**	
TOTAL FUGITVE						**506.2 tpy**	
TOTAL NOx						**539.7 tpy**	

TABLE 6
THOMPSON CREEK MINE
CO EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
FUGITIVE							
Mobile Sources							
Haul Trucks	175,200 hr/yr	1.794 lb/hr	157.2 tpy		0.0%	157.15 tpy	1.79 lb/hr
Dozers	43,800 hr/yr	0.346 lb/hr	7.6 tpy		0.0%	7.58 tpy	0.35 lb/hr
Wheeled Loaders	26,280 hr/yr	0.572 lb/hr	7.5 tpy		0.0%	7.52 tpy	0.57 lb/hr
Motor Graders	35,040 hr/yr	0.151 lb/hr	2.6 tpy		0.0%	2.65 tpy	0.15 lb/hr
Wheeled Dozers	26,280 hr/yr	1.794 lb/hr	23.6 tpy		0.0%	23.57 tpy	1.79 lb/hr
Drills	35,040 hr/yr	0.151 lb/hr	2.6 tpy		0.0%	2.65 tpy	0.15 lb/hr
Misc. (Shovels, 6x6)	14,760 hr/yr	0.675 lb/hr	5.0 tpy		0.0%	4.98 tpy	0.68 lb/hr
		lb/hour				**206.09 tpy**	
POINT SOURCE							
Waste Oil Heaters	40,000 gal/yr	5.0 lb/kgal	0.1 tpy	14.4	0.0%	0.10 tpy	0.07 lb/hr
	gal/year	lb/1000 gal		gal/hr			
Boilers							
Boiler #1	409,226.3 gal/yr	5.0 lb/kgal	1.0 tpy		0.0%	1.02 tpy	0.23 lb/hr
Hot Oil Boiler	115,094.9 gal/yr	5.0 lb/kgal	0.3 tpy		0.0%	0.29 tpy	0.07 lb/hr
	gal/year	lb/1000 gal					
LPG Heating	25,000 gal/yr	1.9 lb/kgal	0.02 tpy		0.0%	0.02 tpy	
	gal/year	lb/1000 gal					
ELECTRIC POWER GENERATORS							
Motivator	500 hr/yr	0.0055 lb/hp-hr	1,490 bhp			2.05 tpy	8.20 lb/hr
Mill Auxiliary	500 hr/yr	0.0068 lb/hp-hr	265 bhp			0.45 tpy	1.80 lb/hr
Pumpback	500 hr/yr	0.0068 lb/hp-hr	450 bhp			0.77 tpy	3.06 lb/hr
Tailings Pump 1	500 hr/yr	3.50 g/kW-hr	2,561 bhp	1,910 bkW		3.68 tpy	14.74 lb/hr
Tailings Pump 2	500 hr/yr	3.50 g/kW-hr	2,561 bhp	1,910 bkW		3.68 tpy	14.74 lb/hr
TOTAL POINT SOURCE						**12.1 tpy**	
TOTAL FUGITIVE						**206.1 tpy**	
TOTAL CO						**218.2 tpy**	

TABLE 7
THOMPSON CREEK MINE
SOx EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
FUGITIVE							
Mobile Sources							
Haul Trucks	175,200 hr/yr	0.45 lb/hr	39.8 tpy		0.0%	39.77 tpy	0.45 lb/hr
Dozers	43,800 hr/yr	0.14 lb/hr	3.0 tpy		0.0%	3.00 tpy	0.14 lb/hr
Wheeled Loaders	26,280 hr/yr	0.18 lb/hr	2.4 tpy		0.0%	2.39 tpy	0.18 lb/hr
Motor Graders	35,040 hr/yr	0.09 lb/hr	1.5 tpy		0.0%	1.51 tpy	0.09 lb/hr
Wheeled Dozers	26,280 hr/yr	0.35 lb/hr	4.6 tpy		0.0%	4.57 tpy	0.35 lb/hr
Drills	35,040 hr/yr	0.09 lb/hr	1.5 tpy		0.0%	1.51 tpy	0.09 lb/hr
Misc.	14,760 hr/yr	0.14 lb/hr	1.1 tpy		0.0%	1.06 tpy	0.14 lb/hr
		lb/hour			**TOTAL**	**53.80 tpy**	
POINT SOURCES							
Waste Oil Heaters	40,000.0 gal/yr	73.50 lb/kgal	1.47 tpy	14.4	0.0%	1.47 tpy	1.06 lb/hr
	gal/year	lb/1000 gal		gal/hr			
Boilers							
Boiler #1	409,226.3 gal/yr	0.213 lb/kgal	0.044 tpy		0.0%	0.04 tpy	0.01 lb/hr
Hot Oil Boiler	115,094.9 gal/yr	0.213 lb/kgal	0.012 tpy		0.0%	0.01 tpy	0.00 lb/hr
	gal/year	lb/1000 gal					
LPG Heating	25,000.0 gal/yr	0.0144 lb/kgal	0.0002 tpy		0.0%	0.0002 tpy	
	gal/year	lb/1000 gal					
ELECTRIC POWER GENERATORS		S =	0.0015 wt %				
Motivator	500 hr/yr	0.0000121 lb/hp-hr	1,490 bhp			0.0045 tpy	0.018 lb/hr
Mill Auxiliary	500 hr/yr	0.0000121 lb/hp-hr	265 bhp			0.0008 tpy	0.003 lb/hr
Pumpback	500 hr/yr	0.0000121 lb/hp-hr	450 bhp			0.0014 tpy	0.005 lb/hr
Tailings Pump 1	500 hr/yr	0.0000121 lb/hp-hr	2,561 bhp			0.0078 tpy	0.031 lb/hr
Tailings Pump 2	500 hr/yr	0.0000121 lb/hp-hr	2,561 bhp			0.0078 tpy	0.031 lb/hr
					TOTAL	**1.55 tpy**	
TOTAL FUGITIVE						**53.80 tpy**	
TOTAL POINT SOURCE						**1.55 tpy**	
TOTAL SOx						**55.35 tpy**	

Table 8-1. VOC EMISSIONS (Dryers not Included)

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	PROCESS RATE	EMISSION FACTOR	EF SOURCE	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)
Truck Shop 1	10,000	1.00	Ap-42, Fifth Edition, Vol 1, Ch1.11	0.0%	0.005 tpy
Truck Shop 2	10,000	1.00	Ap-42, Fifth Edition, Vol 1, Ch1.11	0.0%	0.005 tpy
Wash Bay 1	10,000	1.00	Ap-42, Fifth Edition, Vol 1, Ch1.11	0.0%	0.005 tpy
Wash Bay 2	10,000	1.00	Ap-42, Fifth Edition, Vol 1, Ch1.11	0.0%	0.005 tpy
	0	lb/1000 gal			
Boilers					
Boiler #1	409,226	0.34	Ap-42, Fifth Edition, Table 1.3-3.	0.0%	0.070 tpy
Hot Oil Boiler	115,095	0.34	Ap-42, Fifth Edition, Table 1.3-3.	0.0%	0.020 tpy
	0	lbs/1000 gals			
LPG Heating	25,000	0.3	Ap-42, Fifth Edition, Vol 1, Ch1.5	0.0%	0.004 tpy
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS					
Motivator	500 hr/yr	0.00064 lb/hp-hr	AP-42, Fifth Edition, Table 3.4-1	1,490 bhp	0.24 tpy
Mill Auxiliary	500 hr/yr	0.00064 lb/hp-hr	AP-42, Fifth Edition, Table 3.4-1	265 bhp	0.04 tpy
Pumpback	500 hr/yr	0.00064 lb/hp-hr	AP-42, Fifth Edition, Table 3.4-1	450 bhp	0.07 tpy
Tailings Pump 1	500 hr/yr	0.70 g/kW-hr	NSPS IIII	1,910 bkW	0.74 tpy
Tailings Pump 2	500 hr/yr	0.70 g/kW-hr	NSPS IIII	1,910 bkW	0.74 tpy
FUEL EVAPORATIVE LOSES					
Gasoline					
Filling - submerged	75000	7.3	Ap-42, Fifth Edition, Vol 1, Ch 5.2		0.27 tpy
Breaking	75000	1	Ap-42, Fifth Edition, Vol 1, Ch 5.2		0.04 tpy
Fueling	75000	11	Ap-42, Fifth Edition, Vol 1, Ch 5.2		0.41 tpy
Spillage	75000	0.7	Ap-42, Fifth Edition, Vol 1, Ch 5.2		0.03 tpy
	gal/year	lb/1000 gal			
Diesel					
Loading - submerged	693000	0.014	Ap-42, Fifth Edition, Vol 1, Ch 5.2		0.00 tpy
	gal/year	lb/1000 gal			
				Total VOC	**2.70 tpy**

Table 8-2. VOC SPECIATED HAP EMISSIONS

Benzene					
FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.07E-06
Truck Shop 2	10,000	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.07E-06
Wash Bay 1	10,000	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.07E-06
Wash Bay 2	10,000	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.07E-06
Boiler #1	409,226	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		4.38E-05
Hot Oil Boiler	115,095	2.14E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.23E-05
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500 hr/yr	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	1,490 bhp	2.43E-03
Mill Auxiliary	500 hr/yr	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	265 bhp	4.33E-04
Pumpback	500 hr/yr	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	450 bhp	7.35E-04
Tailings Pump 1	500 hr/yr	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2,561 bhp	4.18E-03
Tailings Pump 2	500 hr/yr	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2,561 bhp	4.18E-03
		lb/hp-hr		hp	
Factor Conversion					
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr		
9.33E-04	9.33E-10	7,000	6.53E-06		
				Total Benzene	**1.20E-02 tons/yr**

Table 8-3. VOC SPECIATED HAP EMISSIONS
Ethylbenzene

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.18E-07
Truck Shop 2	10,000	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.18E-07
Wash Bay 1	10,000	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.18E-07
Wash Bay 2	10,000	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.18E-07
Boiler #1	409,226	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.30E-05
Hot Oil Boiler	115,095	6.36E-05	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.66E-06
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	2.43E-03
Mill Auxiliary	500	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	4.33E-04
Pumpback	500	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	7.35E-04
Tailings Pump 1	500	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	4.18E-03
Tailings Pump 2	500	6.53E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	4.18E-03
	hr/yr	lb/hp-hr		hp	
Factor Conversion					
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr		
9.33E-04	9.33E-10	7,000	6.53E-06		

Total Ethylbenzene **1.20E-02 tons/yr**

Table 8-4. VOC SPECIATED HAP EMISSIONS
Formaldehyde

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.65E-04
Truck Shop 2	10,000	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.65E-04
Wash Bay 1	10,000	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.65E-04
Wash Bay 2	10,000	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.65E-04
Boiler #1	409,226	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		6.75E-03
Hot Oil Boiler	115,095	3.30E-02	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.90E-03
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	5.37E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	2.00E-03
Mill Auxiliary	500	5.37E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	3.56E-04
Pumpback	500	5.37E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	6.04E-04
Tailings Pump 1	500	5.37E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.44E-03
Tailings Pump 2	500	5.37E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.44E-03
	hr/yr	lb/hp-hr		hp	

Factor Conversion

lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr
7.67E-04	7.67E-10	7,000	5.37E-06

Total Foraldehyde **1.91E-02 tons/yr**

Table 8-5. VOC SPECIATED HAP EMISSIONS
Naphthalene

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.65E-06
Truck Shop 2	10,000	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.65E-06
Wash Bay 1	10,000	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.65E-06
Wash Bay 2	10,000	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.65E-06
Boiler #1	409,226	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		2.31E-04
Hot Oil Boiler	115,095	1.13E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		6.50E-05
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	2.21E-04
Mill Auxiliary	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	3.93E-05
Pumpback	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	6.68E-05
Tailings Pump 1	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.80E-04
Tailings Pump 2	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.80E-04
	hr/yr	lb/hp-hr		hp	

Factor Conversion				
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr	
8.48E-05	8.48E-11	7,000	5.94E-07	

Total Naphthalene **1.41E-03 tons/yr**

Table 8-6. VOC SPECIATED HAP EMISSIONS
1,1,1-Trichloroethane

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.18E-06
Truck Shop 2	10,000	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.18E-06
Wash Bay 1	10,000	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.18E-06
Wash Bay 2	10,000	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.18E-06
Boiler #1	409,226	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		4.83E-05
Hot Oil Boiler	115,095	2.36E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.36E-05
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	2.21E-04
Mill Auxiliary	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	3.93E-05
Pumpback	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	6.68E-05
Tailings Pump 1	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.80E-04
Tailings Pump 2	500	5.94E-07	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	3.80E-04
	hr/yr	lb/hp-hr		hp	
Factor Conversion					
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr		
8.48E-05	8.48E-11	7,000	5.94E-07		

Total 1,1,1-Trichloroethane **1.15E-03 tons/yr**

Table 8-7. VOC SPECIATED HAP EMISSIONS
Toluene

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	**PROCESS RATE**	**EMISSION FACTOR**	**EF SOURCE**	**CONTROL EFFICIENCY**	**TOTAL EMISSIONS (TONS/YEAR)**
Truck Shop 1	10,000	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.10E-05
Truck Shop 2	10,000	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.10E-05
Wash Bay 1	10,000	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.10E-05
Wash Bay 2	10,000	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.10E-05
Boiler #1	409,226	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		1.27E-03
Hot Oil Boiler	115,095	6.20E-03	Ap-42, Fifth Edition, Vol 1, Ch1.3		3.57E-04
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	2.86E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	1.07E-03
Mill Auxiliary	500	2.86E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	1.90E-04
Pumpback	500	2.86E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	3.22E-04
Tailings Pump 1	500	2.86E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	1.83E-03
Tailings Pump 2	500	2.86E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	1.83E-03
	hr/yr	lb/hp-hr		hp	
Factor Conversion					
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr		
4.09E-04	4.09E-10	7,000	2.86E-06		

Total Toluene **6.99E-03 tons/yr**

Table 8-8. VOC SPECIATED HAP EMISSIONS
o-Xylene

FUEL BURNING EQUIPMENT					
Waste Oil Heaters	PROCESS RATE	EMISSION FACTOR	EF SOURCE	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)
Truck Shop 1	10,000	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.45E-07
Truck Shop 2	10,000	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.45E-07
Wash Bay 1	10,000	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.45E-07
Wash Bay 2	10,000	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		5.45E-07
Boiler #1	409,226	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		2.23E-05
Hot Oil Boiler	115,095	1.09E-04	Ap-42, Fifth Edition, Vol 1, Ch1.3		6.27E-06
	gal/year	lb/1000 gal			
ELECTRIC POWER GENERATORS				**POWER OUTPUT**	
Motivator	500	2.00E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	1490	7.43E-04
Mill Auxiliary	500	2.00E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	265	1.32E-04
Pumpback	500	2.00E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	450	2.24E-04
Tailings Pump 1	500	2.00E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	1.28E-03
Tailings Pump 2	500	2.00E-06	Ap-42, Fifth Edition, Vol 1, Ch3.3	2561	1.28E-03
	hr/yr	lb/hp-hr		hp	
Factor Conversion					
lb/MMBtu	lb/Btu	Btu/hp-hr	lb/hp-hr		
2.85E-04	2.85E-10	7,000	2.00E-06		

Total o-Xylene **3.69E-03 tons/yr**

Table 8-9. VOC-HAP EMISSIONS SUMMARY
All Sources (Dryers NOT Included)

Pollutant	Tons/year
VOC	2.70
VOC SPECIATED HAP's	
Benzene	1.20E-02
Ethylbenzene	1.20E-02
Formaldehyde	1.91E-02
Naphthalene	1.41E-03
1,1,1-Trichloroethane	1.15E-03
Toluene	6.99E-03
o-Xylene	3.69E-03
Total HAP's	**5.63E-02**

Tatel 8-10. Dryer VOC Emissions

Dryer	Hours Op per yr (hr/yr)	Production Rate (lb/hr)	Emission Factor (lb/hr)	Emissions Rate (tons/yr)	Emisson Factor Source
Holoflite #1	8760	11,998	3.67	**16.1**	Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Lube Circuit	8760	1,248	0.434	**1.9**	Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
				17.98	**TOTAL VOC EMISSONS FROM DRYERS (tons/yr)**
				2.70	**TOTAL NON-DRYER VOC EMISSIONS (tons/yr)(from Table 9)**
				20.67	**TOTAL FACILITY VOC EMISSIONS (tons/yr)**

Table 8-11. VOC SPECIATED HAP's
Holoflite #1

	Hours Op per yr (hr/yr)	Emission Factor (lb/hr)	Emissions Rate (tons/yr)		Emisson Factor Source
Benzene	8760	4.40E-05	**1.93E-04**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Ethylbenzene	8760	3.34E-04	**1.46E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Formaldehyde	8760	3.30E-02	**1.45E-01**		Ap-42, Fifth Edition, Vol 1, Ch1.3
Naphthalene	8760	1.13E-03	**1.45E-01**		Ap-42, Fifth Edition, Vol 1, Ch1.3
1,1,1-Trichloroethane	8760	4.30E-04	**1.88E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Toluene	8760	1.49E-04	**6.53E-04**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
o-Xylene	8760	9.69E-04	**4.24E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.

Table 8-12. VOC SPECIATED HAP's
Lube Circuit

	Hours Op per yr (hr/yr)	Emission Factor (lb/hr)	Emissions Rate (tons/yr)		Emisson Factor Source
Benzene	8760	7.48E-04	**3.28E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Ethylbenzene	8760	1.48E-04	**6.48E-04**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Formaldehyde	8760	3.30E-02	**1.45E-01**		Ap-42, Fifth Edition, Vol 1, Ch1.3
Naphthalene	8760	1.13E-03	**4.95E-03**		Ap-42, Fifth Edition, Vol 1, Ch1.3
1,1,1-Trichloroethane	8760	2.65E-04	**1.16E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
Toluene	8760	3.27E-04	**1.43E-03**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.
o-Xylene	8760	1.59E-04	**6.96E-04**		Stack Sampling, AMTEST AIR QUALITY, LLC, February 6-7, 2008.

Table 8-13. TOTAL VOC SPECIATED HAP'S

	Holoflite #1	Lube Circuit	Other (Table 9)	Total (tons/yr)
Benzene	1.93E-04	3.28E-03	1.20E-02	1.54E-02
Ethylbenzene	1.46E-03	6.48E-04	1.20E-02	1.41E-02
Formaldehyde	1.45E-01	1.45E-01	1.91E-02	3.08E-01
Naphthalene	1.45E-01	4.95E-03	1.41E-03	1.51E-01
1,1,1-Trichloroethane	1.88E-03	1.16E-03	1.15E-03	4.20E-03
Toluene	6.53E-04	1.43E-03	6.99E-03	9.08E-03
o-Xylene	4.24E-03	6.96E-04	3.69E-03	8.63E-03
		TOTAL		**5.11E-01**

Table 8-14. EMISSIONS SUMMARY TABLE
Total VOC & Speciated VOC HAP's
All Sources

Pollutant	Tons/year	Regulatory Limit (tons/yr)	Amount Under Limit (tons/yr)
VOC	20.67	100	79.33
VOC SPECIATED HAP's			
Benzene	1.54E-02	10	9.985
Ethylbenzene	1.41E-02	10	9.986
Formaldehyde	3.08E-01	10	9.692
Naphthalene	1.51E-01	10	9.849
1,1,1-Trichloroethane	4.20E-03	10	9.996
Toluene	9.08E-03	10	9.991
o-Xylene	8.63E-03	10	9.991
Total VOC HAP's	5.11E-01	25	24.49

TABLE 9
THOMPSON CREEK MINE
GREENHOUSE GAS EMISSIONS

GHG	CO_2	CO_2 EQ =		1
	PROCESS RATE	PROCESS RATE	EMISSION FACTOR	EMISSIONS (TONS/YEAR)
Waste Oil Heaters	40000 gal/year	14.4 gal/hr	22300 lb/1000 gal	446.00
Boilers				
Boiler #1	409,226		22300	4,562.87
Hot Oil Boiler	115,095 gal/year		22300 lb/1000 gal	1,283.31
LPG Heating	25,000 gal/year		12500 lb/1000 gal	156.25
Motivator	500 hr/yr	10.43 MMBtu/hr	73.96 kg/MMBtu	425.16
Mill Auxiliary	500 hr/yr	1.86 MMBtu/hr	73.96 kg/MMBtu	75.62
Pumpback	500 hr/yr	3.15 MMBtu/hr	73.96 kg/MMBtu	128.40
Tailings Pump 1	500 hr/yr	17.93 MMBtu/hr	73.96 kg/MMBtu	730.76
Tailings Pump 2	500 hr/yr	17.93 MMBtu/hr	73.96 kg/MMBtu	730.76
			TOTAL CO_2	**8,539.1 tpy**
			TOTAL CO_2 EQ	**8,539.1 tpy**

TABLE 9
THOMPSON CREEK MINE
GREENHOUSE GAS EMISSIONS

GHG	N_2O	CO_2 EQ =	310	
	PROCESS RATE	PROCESS RATE	EMISSION FACTOR	EMISSIONS (TONS/YEAR)
Waste Oil Heaters	40,000 gal/year	14.4 gal/hr	0.26 lb/1000 gal	0.0052
Boilers				
Boiler #1	409,226		0.26	0.05
Hot Oil Boiler	115,095 gal/year		0.26 lb/1000 gal	0.01
LPG Heating	25,000 gal/year		0.9 lb/1000 gal	0.01
Motivator	500 hr/yr	10.43 MMBtu/hr	0.0006 kg/MMBtu	0.003
Mill Auxiliary	500 hr/yr	1.86 MMBtu/hr	0.0006 kg/MMBtu	0.001
Pumpback	500 hr/yr	3.15 MMBtu/hr	0.0006 kg/MMBtu	0.001
Tailings Pump 1	500 hr/yr	17.93 MMBtu/hr	0.0006 kg/MMBtu	0.006
Tailings Pump 2	500 hr/yr	17.93 MMBtu/hr	0.0006 kg/MMBtu	0.006
			TOTAL N_2O	**0.10 tpy**
			TOTAL CO_2 EQ	**31.49 tpy**

TABLE 9
THOMPSON CREEK MINE
GREENHOUSE GAS EMISSIONS

GHG	CH_4	CO_2 EQ =	21	
	PROCESS RATE	PROCESS RATE	EMISSION FACTOR	EMISSIONS (TONS/YEAR)
Waste Oil Heaters	40000 gal/year	14.4 gal/hr	0.216 lb/1000 gal	0.0043
Boilers				
Boiler #1	409,226		0.216	0.04
Hot Oil Boiler	115,095 gal/year		0.216 lb/1000 gal	0.01
LPG Heating	25,000 gal/year		0.2 lb/1000 gal	0.0025
Motivator	500 hr/yr	10.43 MMBtu/hr	0.0030 kg/MMBtu	0.017
Mill Auxiliary	500 hr/yr	1.86 MMBtu/hr	0.0030 kg/MMBtu	0.003
Pumpback	500 hr/yr	3.15 MMBtu/hr	0.0030 kg/MMBtu	0.005
Tailings Pump 1	500 hr/yr	17.93 MMBtu/hr	0.0030 kg/MMBtu	0.030
Tailings Pump 2	500 hr/yr	17.93 MMBtu/hr	0.0030 kg/MMBtu	0.030
			TOTAL CH_4	0.15
			TOTAL CO_2 EQ	3.11

TOTAL GHG AS CO_2 EQ = **8,573.7 tpy**

7,777.9 M tpy

TABLE 10
THOMPSON CREEK MINE
METAL EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL TSP EMISSIONS (TONS/YEAR)	As Conc. (%)	Total As (tons/yr)
Holoflite Dryer #1	81,030	4.93	199.74	venturi/ESP	99.9%	0.1997	0.008557	1.71E-05
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.0044	0.008557	3.75E-07
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**1.75E-05**

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL TSP EMISSIONS (TONS/YEAR)	Pb Conc. (%)	Total Pb (tons/yr)
Holoflite Dryer #1	81,030	4.93	199.74	venturi/ESP	99.9%	0.1997	0.019561	3.91E-05
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.0044	0.019561	8.57E-07
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**8.57E-07**

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL TSP EMISSIONS (TONS/YEAR)	Cr Conc. (%)	Total Cr (tons/yr)
Assume 100% Cr in product								
Holoflite Dryer #1	81030	4.93	199.73895	venturi/ESP	0.999	0.19973895	0.0130	2.60E-05
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.00438	0.0130	5.69E-07
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**2.65E-05**

TABLE 10
THOMPSON CREEK MINE
METAL EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL TSP EMISSIONS (TONS/YEAR)	Cd Conc. (%)	Total Cd (tons/yr)
Assume 100% Cd in product								
Holoflite Dryer #1	81030	4.93	199.73895	venturi/ESP	0.999	0.19973895	0.0002	4.19E-07
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.00438	0.0002	9.20E-09
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**4.29E-07**
SOURCE	**PROCESS RATE**	**EMISSION FACTOR**	**UNCONTROLLED EMISSIONS (TONS/YEAR)**	**CONTROL SYSTEM**	**CONTROL EFFICIENCY**	**TOTAL TSP EMISSIONS (TONS/YEAR)**	**Co Conc. (%)**	**Total Co (tons/yr)**
Assume 100% Co in product								
Holoflite Dryer #1	81030	4.93	199.73895	venturi/ESP	0.999	0.19973895	0.000010	2.00E-08
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.00438	0.000010	4.38E-10
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**2.04E-08**
SOURCE	**PROCESS RATE**	**EMISSION FACTOR**	**UNCONTROLLED EMISSIONS (TONS/YEAR)**	**CONTROL SYSTEM**	**CONTROL EFFICIENCY**	**TOTAL TSP EMISSIONS (TONS/YEAR)**	**Be Conc. (%)**	**Total Be (tons/yr)**
Assume 100% Be in product								
Holoflite Dryer #1	81030	4.93	199.73895	venturi/ESP	0.999	0.19973895	0.000011	2.20E-08
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.00438	0.000011	4.82E-10
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**2.25E-08**

TABLE 10
THOMPSON CREEK MINE
METAL EMISSIONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL TSP EMISSIONS (TONS/YEAR)	Ni Conc. (%)	Total Ni (tons/yr)
Assume 100% Ni in product								
Holoflite Dryer #1	81030	4.93	199.73895	venturi/ESP	0.999	0.19973895	0.001300	2.60E-06
	tons/year	lb/ton						
Lube Grade Dryer Stack		0.001	8760	Stack test		0.00438	0.001300	5.69E-08
Holoflite Dryer #2		lb/hr	hr/yr					
Rotary Kiln								
							Total	**2.65E-06**
							TOTAL	**4.80E-05**

TABLE 11
THOMPSON CREEK MINE
HCl EMISSONS

SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)	TOTAL EMISSIONS (lb/hr)
Leach Plant	8,760	0.003		Scrubber	99.0%	0.01314	0.003
	hr/yr	lb/hr					
		Stack Test Data AMTEST, 1998					

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

SECTION 8: FUGITIVE EMISSIONS						
FUGITIVE SOURCES	**PROCESS RATE**					
Drilling	7,750					
	holes/year					
Blasting	200					
	blasts/year					
Overburden Removal						
25 yard shovel	9,475,000					
15 yard shovel	4,667,300					
loader	6,500,000					
	tons/year					
Ore Mining						
25 yard shovel	7,475,000					
15 yard shovel	0					
loader	0					
	tons/year					
Overburden Dumping	28,117,300					
	tons/year					
Hauling/Access Road						
haul trucks	386,167					
small vehicles	210,000					
	VMT					
Grading						
	8,200					
	VMT					
Bulldozing						
	4,400					
	hours					
Wind Erosion						
Exposed acres	1,260					
	acres					

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

FUGITIVE EMISSIONS TSP						
SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)
Drilling	7,750	1.3000	5.04 tpy	cyclone	99%	0.05 tpy
	holes/year	lb/hole				
Blasting	200	58.5000	5.85 tpy		0%	5.85 tpy
	blasts/year	lb/blast				
Overburden Removal						
25 yard shovel	9,475,000	0.0007	3.32 tpy		0%	3.32 tpy
15 yard shovel	4,667,300	0.0004	0.93 tpy		0%	0.93 tpy
loader	6,500,000	0.0004	1.30 tpy		0%	1.30 tpy
	tons/year	lb/ton				
Ore Mining						
25 yard shovel	7,475,000	0.0007	2.62 tpy		0%	2.62 tpy
15 yard shovel		0.0004	0.00 tpy		0%	0.00 tpy
loader		0.0004	0.00 tpy		0%	0.00 tpy
	tons/year	lb/ton				
Overburden Dumping	28,117,300	0.0032	44.99 tpy		0%	44.99 tpy
	tons/year	lb/ton				
Hauling/Access Road						
haul trucks	386,167	25.5000	4,923.63 tpy	water	75%	1,230.91 tpy
small vehicles	210,000	0.3900	40.95 tpy	water	75%	10.24 tpy
	VMT	lb/VMT				
Grading						
	8,200	19.5000	79.95 tpy		0%	79.95 tpy
	VMT	lb/VMT				
Bulldozing						
	4,400	8.6500	19.03 tpy		0%	19.03 tpy
	hours	lb/hour				

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

Wind Erosion						
	1,260	0.3800	0.24 tpy		0%	0.24 tpy
	acres	lb/acre				
MOBIL EQUIPMENT COMBUSTION						
Haul Trucks	175,200	0.0000	0.00 tpy		0.0%	0.00 tpy
Dozers	43,800	0.0000	0.00 tpy		0.0%	0.00 tpy
Wheeled Loaders	26,280	0.0000	0.00 tpy		0.0%	0.00 tpy
Motor Graders	35,040	0.0000	0.00 tpy		0.0%	0.00 tpy
Wheeled Dozers	26,280	0.0000	0.00 tpy		0.0%	0.00 tpy
Drills	35,040	0.0000	0.00 tpy		0.0%	0.00 tpy
Misc.	14,760	0.0000	0.00 tpy		0.0%	0.00 tpy
	hr/yr	lb/hour				
Ore drop to Mill Stockpile	16,242,500	0.0032	25.99 tpy		0%	25.99 tpy
	tons/year	lb/ton	tons/year			
Truck dumping into Crusher	16,242,500	0.0032	25.99 tpy	water	90%	2.60 tpy
	tons/year	lb/ton	tons/year			
Portable Crusher						
Truck unloading	700,000	0.0001	0.04 tpy		0%	0.04 tpy
Screening	700,000	0.0250	8.75 tpy		0%	8.75 tpy
Primary Crushing	700,000	0.5000	175.00 tpy	water	90%	17.50 tpy
Screening	700,000	0.0250	8.75 tpy		0%	8.75 tpy
Conveying	700,000	0.0030	1.05 tpy	water	90%	0.11 tpy
Secondary Crushing	700,000	0.5000	175.00 tpy		0%	175.00 tpy
Conveying	700,000	0.0030	1.05 tpy		0%	1.05 tpy
Drop process	700,000	0.0030	1.05 tpy		0%	1.05 tpy
	tons/year	lbs/ton				212.24 tpy
TOTALTSP FUGITIVE						**1,852.49 tpy**
						Tons/year

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

FUGITIVE EMISSIONS PM_{10}						
SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)
Drilling	7,750	0.0035	0.01 tpy	cyclone	99%	0.00 tpy
	holes/year	lb/hole				
Blasting	200	23.4000	2.34 tpy		0%	2.34 tpy
	blasts/year	lb/blast				
Overburden Removal						
25 yard shovel	9,475,000	0.0007	3.32 tpy		0%	3.32 tpy
15 yard shovel	4,667,300	0.0004	0.93 tpy		0%	0.93 tpy
loader	6,500,000	0.0004	1.30 tpy		0%	1.30 tpy
	tons/year	lb/ton				
Ore Mining						
25 yard shovel	7,475,000	0.0007	2.62 tpy		0%	2.62 tpy
15 yard shovel	0	0.0004	0.00 tpy		0%	0.00 tpy
loader	0	0.0004	0.00 tpy		0%	0.00 tpy
	tons/year	lb/ton				
Overburden Dumping	28,117,300	0.0015	21.09 tpy		0%	21.09 tpy
	tons/year	lb/ton				
Hauling/Access Road						
haul trucks	780,000	11.5400	4,500.60 tpy	water	75%	1,125.15 tpy
small vehicles	210,000	0.1900	19.95 tpy	water	75%	4.99 tpy
	VMT	lb/VMT				
Grading						
	16,400	9.9800	81.84 tpy		0%	81.84 tpy
	VMT	lb/VMT				
Bulldozing						
	4,400	4.3200	9.50 tpy		0%	9.50 tpy
	hours	lb/hour				

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

Wind Erosion						
	1,260	0.1900	0.12 tpy		0%	0.12 tpy
	acres	lb/acre				
MOBIL EQUIPMENT COMBUSTION						
Haul Trucks	175,200	0.2560	22.43 tpy		0.0%	22.43 tpy
Dozers	43,800	0.1120	2.45 tpy		0.0%	2.45 tpy
Wheeled Loaders	26,280	0.1720	2.26 tpy		0.0%	2.26 tpy
Motor Graders	35,040	0.0610	1.07 tpy		0.0%	1.07 tpy
Wheeled Dozers	26,280	0.1650	2.17 tpy		0.0%	2.17 tpy
Drills	35,040	0.1390	2.44 tpy		0.0%	2.44 tpy
Misc.	14,760	0.1390	1.03 tpy		0.0%	1.03 tpy
	hr/yr	lb/hour				
Ore drop to Mill Stockpile	16,242,500	0.0015	12.18 tpy		0%	12.18 tpy
	tons/year	lb/ton	tons/year			
Truck dumping into Crusher	16,242,500	0.0015	12.18 tpy	water	90%	1.22 tpy
	tons/year	lb/ton	tons/year			
Portable Crusher						
Truck unloading	700,000	0.0001	0.04 tpy		0%	0.04 tpy
Screening	700,000	0.0087	3.05 tpy		0%	3.05 tpy
Primary Crushing	700,000	0.0500	17.50 tpy	water	90%	1.75 tpy
Screening	700,000	0.0087	3.05 tpy		0%	3.05 tpy
Conveying	700,000	0.0011	0.39 tpy	water	90%	0.04 tpy
Secondary Crushing	700,000	0.0500	17.50 tpy		0%	17.50 tpy
Conveying	700,000	0.0011	0.39 tpy		0%	0.39 tpy
Drop process	700,000	0.0011	0.39 tpy		0%	0.39 tpy
	tons/year	lbs/ton				26.18 tpy
TOTAL PM_{10} FUGITIVE						**1,352.79 tpy**
						Tons/year

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

FUGITIVE EMISSIONS $PM_{2.5}$						
SOURCE	PROCESS RATE	EMISSION FACTOR	UNCONTROLLED EMISSIONS (TONS/YEAR)	CONTROL SYSTEM	CONTROL EFFICIENCY	TOTAL EMISSIONS (TONS/YEAR)
Drilling	7,750	0.0035	0.01 tpy	cyclone	99%	0.00 tpy
	holes/year	lb/hole				
Blasting	200	1.7550	0.18 tpy		0%	0.18 tpy
	blasts/year	lb/blast				
Overburden Removal						
25 yard shovel	9,475,000	0.000074	0.35 tpy		0%	0.35 tpy
15 yard shovel	4,667,300	0.000042	0.10 tpy		0%	0.10 tpy
loader	6,500,000	0.000042	0.14 tpy		0%	0.14 tpy
	tons/year	lb/ton				
Ore Mining						
25 yard shovel	7,475,000	0.000074	0.27 tpy		0%	0.27 tpy
15 yard shovel	0	0.000042	0.00 tpy		0%	0.00 tpy
loader	0	0.000042	0.00 tpy		0%	0.00 tpy
	tons/year	lb/ton				
Overburden Dumping	4,667,300	0.0002	0.40 tpy		0%	0.40 tpy
	6,500,000	lb/ton				
Hauling/Access Road						
haul trucks	780,000	3.8250	1,491.75 tpy	water	75%	372.94 tpy
small vehicles	210,000	0.0585	6.14 tpy	water	75%	1.54 tpy
	VMT	lb/VMT				
Grading						
	16,400	0.6045	4.96 tpy		0%	4.96 tpy
	VMT	lb/VMT				
Bulldozing						
	4,400	0.9083	2.00 tpy		0%	2.00 tpy
	hours	lb/hour				

TABLE 12
THOMPSON CREEK MINE
PM / PM10 / PM2.5
FUGITIVE EMISSIONS

Wind Erosion						
	1,260	0.0114	0.01 tpy		0%	0.01 tpy
	acres	lb/acre				
MOBIL EQUIPMENT COMBUSTION						
Haul Trucks	175,200	0.2560	22.43 tpy		0.0%	22.43 tpy
Dozers	43,800	0.1120	2.45 tpy		0.0%	2.45 tpy
Wheeled Loaders	26,280	0.1720	2.26 tpy		0.0%	2.26 tpy
Motor Graders	35,040	0.0610	1.07 tpy		0.0%	1.07 tpy
Wheeled Dozers	26,280	0.1650	2.17 tpy		0.0%	2.17 tpy
Drills	35,040	0.1390	2.44 tpy		0.0%	2.44 tpy
Misc.	14,760	0.1390	1.03 tpy		0.0%	1.03 tpy
	hr/yr	lb/hour				
Ore drop to Mill Stockpile	16,242,500	0.0002	1.38 tpy		0%	1.38 tpy
	tons/year	lb/ton	tons/year			
Truck dumping into Crusher	16,242,500	0.0002	1.38 tpy	water	90%	0.14 tpy
	tons/year	lb/ton	tons/year			
Portable Crusher						
Truck unloading	700,000	0.00003	0.01 tpy		0%	0.01 tpy
Screening	700,000	0.0026	0.90 tpy		0%	0.90 tpy
Primary Crushing	700,000	0.0147	5.15 tpy	water	90%	0.51 tpy
Screening	700,000	0.0026	0.90 tpy		0%	0.90 tpy
Conveying	700,000	0.0003	0.11 tpy	water	90%	0.01 tpy
Secondary Crushing	700,000	0.0147	5.15 tpy		0%	5.15 tpy
Conveying	700,000	0.0003	0.11 tpy		0%	0.11 tpy
Drop process	700,000	0.0003	0.11 tpy		0%	0.11 tpy
	tons/year	lbs/ton				7.70
TOTAL $PM_{2.5}$ FUGITIVE						**433.62**
						Tons/year

THOMPSON CREEK MINE
PROCESSING DATA

SECTION 2: FUEL BURNING EQUIPMENT								
Waste Oil Heaters	10,000 gal/yr	2,800 hr/yr	3.60 gal/hr	A =	0.65			
				S =	0.5			
Boilers				S =	0.0015 wt %			
Boiler #1	409,226.3 gal/yr	46.72 gal/hr	8,760 hr/yr	6.40 MMBtu/hr	137,000 Btu/gal			
Hot Oil Boiler	115,094.9 gal/yr	13.14 gal/hr	8,760 hr/yr	1.80 MMBtu/hr	137,000 Btu/gal			
LPG Heating	25,000			S =	0.16	gr/1000 ft3		
	gal/year							
ELECTRIC POWER GENERATORS								
Motivator	500 hr/yr	1,490 bhp		S =	0.0015 wt %			
Mill Auxiliary	500 hr/yr	265 bhp						
Pumpback	500 hr/yr	450 bhp						
Tailings Pump 1	500 hr/yr	2,561 bhp						
Tailings Pump 2	500 hr/yr	2,561 bhp						
MOBIL EQUIPMENT COMBUSTION				S =	0.0015 wt %			
Haul Trucks	175,200 hr/yr	780,000						
Dozers	43,800 hr/yr							
Wheeled Loaders	26,280 hr/yr							
Motor Graders	35,040 hr/yr	16,400						
Wheeled Dozers	26,280 hr/yr							
Drills	35,040 hr/yr							
Misc.	14,760 hr/yr							
	hr/yr	VMT						

THOMPSON CREEK MINE
PROCESSING DATA

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS								
Primary Crusher	16,242,500	3650	4450					
	tons/year	hr/yr	ton/hr					
Overland Conveyor	16,242,500	3650	4450					
	tons/year	hr/yr	ton/hr					
East and West Ore Feeders	18,250,000	8760	24	50,000	2,083	4,166,667		
	tons/year	hr/yr	hr/day	tons/day	ton/hr	lb/hr		
Holoflite Dryer #1	81,030	8760	9.25					
	tons/year	hr/yr	ton/hr					
Leach Plant	2,783	8760						
	tons/year	hr/yr						
LUBE GRADE HPM PRODUCTION								
Holoflite Dryer #2	1,253	24	365	8760	5488.14	Vented through a common stack		
Rotary Kiln	1,253	24	365	8760	5488.14	One source		
	lb/hr	hr/day	day/yr	hr/yr	ton/yr			
Jet Mill/Jet Mill Baghouse	1,600	24	300	7200	5760	feed from the JM feed bin discharge to JM BH		
Tech Fine Packaging Bin	1,600	24	300	7200	5760	feed from JM baghouse		
	lb/hr	hr/day	day/yr	hr/yr	ton/yr			
Pancake Mill Feed Bin	1,450	3412	850	feed coming from the jet mill to the pancake mill feed bin				
Super Fine Packaging Bin	1,450	8760	331	feed coming from the pancake mill to the super fine storage bin				
	tons/year	hr/yr	lb/hr					
Pebble Lime Baghouse	5,000	416.667	12					
	tons/year	hr/yr	ton/hr					
Process Water Lime Silo	1,000	41.667	24					
	tons/year	hr/yr	ton/hr					
Portable Crusher	700,000	3500	200					
	tons/year	hr/yr	ton/hr					

THOMPSON CREEK MINE
PROCESSING DATA

SECTION 5: STORAGE AND HANDLING OF LIQUID SOLVENTS & OTHER VOLATILE COMPOUNDS								
Gasoline								
Filling - submerged	75,000							
Breaking	75,000							
Fueling	75,000							
Spillage	75,000							
	gal/year							
Diesel								
Loading - submerged	693,000							
	gal/year							

THOMPSON EEK MINE
EMISSION FACTORS

SOURCE	EMISSION FACTOR TSP OR OTHER	EMISSION FACTOR PM_{10}	EMISSION FACTOR $PM_{2.5}$	FACTOR REFERENCE	
PROCESS AND MANUFACTURING OPERATIONS					
Primary Crusher	0.50 lb/ton	0.05 lb/ton	0.0147 lb/ton	AP 42 Volume 1, Fifth Edition, Table 11.24.2	
	lb/ton	lb/ton	Note 1 for PM2.5 Emission Factors	PM2.5 EF is estimated using EFs from AP42 Tbl 11.24-2, Table B.2.2 Category 3 - Mechanically Generated Aggregate Material & Unprocessed Ores, shows PM10 to be 51% of the particle distribution and PM2.5 to be 15%. Therefore, PM2.5 is estimated to be 29% of PM10 for operations, including matl handling & processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling, & drying.	0.294117647
Overland Conveyor	0.12 lb/ton	0.06 lb/ton	0.0176 lb/ton	AP 42 Volume 1, Fifth Edition, Section 11.24.2, Table 11.24-2	
	lb/ton	lb/ton	lb/ton	For PM2.5 See Note 1 above	
East and West Ore Feeders	0.12 lb/ton	0.06 lb/ton	0.0176 lb/ton	AP 42 Volume 1, Fifth Edition, Section 11.24.2, Table 11.24-2	
	lb/ton	lb/ton	lb/ton	For PM2.5 See Note 1 above	
Holoflite Dryer #1	4.93 lb/ton	1.97 lb/ton	0.5794 lb/ton	Request for Permit Modification, Thompson Creek Mining Company, March 1996 (Brown and Caldwell), Section D, Emissions Estimates.	
	lb/ton	lb/ton	lb/ton	For PM2.5 See Note 1 above	
Leach Plant	0.003 lb/hr			HCl Emission Rate, Stack Sampling, AMTEST AIR QUALITY, LLC, October 28, 1998	
	lb/hr				
Lube Grade Dryer Stack	0.001 lb/hr	0.001 lb/hr	0.001 lb/hr	Stack Sampling, AMTEST AIR QUALITY, LLC, February 28, 2000.	
Holoflite Dryer #2/Rotary Kill	lb/hr			For PM2.5 assume = to PM10	
Rotary Kiln					
Jet Mill Baghouse	0.016 lb/hr	0.016 lb/hr	0.006 lb/hr	Stack Sampling, AMTEST AIR QUALITY, LLC, October 27-28, 1998.	
Tech Fine Packaging Bin BH	0.013 lb/hr	0.013 lb/hr	0.005 lb/hr	Stack Sampling, AMTEST AIR QUALITY, LLC, October 27-28, 1998.	
	lb/hr	lb/hr	Note 2 for PM2.5 Emission Factors	PM2.5 EF is estimated using AP42 Table B.2.2 Category 4 - Mechanically Generated Aggregate Material & Unprocessed Ores, shows PM10 to be 51% of the particle distribution and PM2.5 to be 15%. Therefore, PM2.5 is estimated to be 29% of PM10 for operations, including matl handling & processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling, & drying.	0.352941176
Pancake Mill Feed Bin BH	0.001 lb/hr	0.001 lb/hr	0.0004 lb/hr	Stack Sampling, AMTEST AIR QUALITY, LLC, May 25, 1999.	
Super Fine Packaging Bin BH	0.024 lb/hr	0.024 lb/hr	0.008 lb/hr	Stack Sampling, AMTEST AIR QUALITY, LLC, May 26, 1999.	
	lb/hr	lb/hr	lb/hr	For PM2.5 See Note 2 above	
Pebble Lime Baghouse	0.61 lb/ton	0.61 lb/ton	0.22 lb/ton	Ap-42, Fifth Edition, Table 11.17-4.	
	lb/ton	lb/ton	lb/ton	For PM2.5 See Note 2 above	

THOMPSON EEK MINE
EMISSION FACTORS

SOURCE	EMISSION FACTOR TSP OR OTHER	EMISSION FACTOR PM_{10}	EMISSION FACTOR $PM_{2.5}$	FACTOR REFERENCE	
Process Water Lime Silo	0.61 lb/ton	0.61 lb/ton	0.22 lb/ton	Ap-42, Fifth Edition, Table 11.17-4.	
	lb/ton	lb/ton	lb/ton	For PM2.5 See Note 2 above	
FUEL BURNING EQUIPMENT					
Waste Oil Heaters	41.60 lb/kgal	33.15 lb/kgal	33.15 lb/kgal	Ap-42, Fifth Edition, Table 1.11-1. For PM2.5 assume = to PM10	
	lb/1000 gal	lb/1000 gal	lb/1000 gal	A = 0.65 (ash at 0.65%)	0.65
Boilers					
Boiler #1	0.0 lb/kgal	2.30 lb/kgal	1.54 lb/kgal	Ap-42, Fifth Edition, Table 1.3-2. [(2)*0.50] + (1.3) = lbs PM10/kgal;	
Hot Oil Boiler	0.0 lb/kgal	2.30 lb/kgal	1.54 lb/kgal	[(2)*0.12] + (1.3) = lbs PM2.5/kgal	
	lb/1000 gal	lbs/1000 gals	lbs/1000 gals		
LPG Heating	0.0 lb/kgal	0.4 lb/kgal	0.4 lb/kgal	Ap-42, Fifth Edition, Table 1.5-1.	
	lb/1000 gal	lb/1000 gal	lb/1000 gal	For PM2.5 assume = to PM10	
FUEL BURNING EQUIPMENT	**NOx**				
Waste Oil Heaters	11.0 lb/kgal			Ap-42, Fifth Edition, Table 1.11.2	
	lb/1000 gal				
Boilers					
Boiler #1	20.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-1.	
Hot Oil Boiler	20.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-1.	
	lb/1000 gal				
LPG Heating	14.0 lb/kgal			Ap-42, Fifth Edition, Table 1.5-1.	
	lb/1000 gal				
FUEL BURNING EQUIPMENT	**SOx**	S =	0.5		
Waste Oil Heaters	73.5 lb/kgal			Ap-42, Fifth Edition, Table 1.11.2	
	lb/1000 gal				
Boilers		S =	0.0015 wt %		
Boiler #1	0.213 lb/kgal			Ap-42, Fifth Edition, Table 1.3-1.	
Hot Oil Boiler	0.213 lb/kgal			Ap-42, Fifth Edition, Table 1.3-1.	
	lb/1000 gal				
LPG Heating	0.014 lb/kgal	0.14	gr/100 ft3	Ap-42, Fifth Edition, Table 1.5-1.	
	lb/1000 gal				
FUEL BURNING EQUIPMENT	**CO**				
Waste Oil Heaters	5.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-2.	
	lb/1000 gal				
Boilers					

THOMPSON EEK MINE
EMISSION FACTORS

SOURCE	EMISSION FACTOR TSP OR OTHER	EMISSION FACTOR PM_{10}	EMISSION FACTOR $PM_{2.5}$	FACTOR REFERENCE	
Boiler #1	5.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-2.	
Hot Oil Boiler	5.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-2.	
	lb/1000 gal				
LPG Heating	1.9 lb/kgal			Ap-42, Fifth Edition, Table 1.5-1.	
	lb/1000 gal				
ELECTRIC POWER GENERATORS	**NOx**				
Motivator	0.024 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Mill Auxiliary	0.031 lb/hp-hr			AP-42, Fifth Edition, Table 3.3-1	
Pumpback	0.031 lb/hp-hr			AP-42, Fifth Edition, Table 3.3-1	
Tailings Pump 1	6.40 g/kW-hr			NSPS IIII	
Tailings Pump 2	6.40 g/kW-hr			NSPS IIII	
ELECTRIC POWER GENERATORS	**CO**				
Motivator	0.0055 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Mill Auxiliary	0.0068 lb/hp-hr			AP-42, Fifth Edition, Table 3.3-1	
Pumpback	0.0068 lb/hp-hr			AP-42, Fifth Edition, Table 3.3-1	
Tailings Pump 1	3.50 g/kW-hr			NSPS IIII	
Tailings Pump 2	3.50 g/kW-hr			NSPS IIII	
ELECTRIC POWER GENERATORS	**SOx**	S =	0.0015 wt %		
Motivator	0.0000121 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Mill Auxiliary	0.0000121 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Pumpback	0.0000121 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Tailings Pump 1	0.0000121 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
Tailings Pump 2	0.0000121 lb/hp-hr			AP-42, Fifth Edition, Table 3.4-1	
GHG Facotrs					
FUEL BURNING EQUIPMENT	**CO2**				
Waste Oil Heaters	22,000.0 lb/kgal			Ap-42, Fifth Edition, Table 1.11.3.	
	lb/1000 gal				
Boilers					
Boiler #1	22,300.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-12.	
Hot Oil Boiler	22,300.0 lb/kgal			Ap-42, Fifth Edition, Table 1.3-12.	
	lb/1000 gal				
LPG Heating	12,500.0 lb/kgal			Ap-42, Fifth Edition, Table 1.5-1.	
	lb/1000 gal				

THOMPSON EEK MINE
EMISSION FACTORS

SOURCE	EMISSION FACTOR TSP OR OTHER	EMISSION FACTOR PM_{10}	EMISSION FACTOR $PM_{2.5}$	FACTOR REFERENCE
FUEL BURNING EQUIPMENT	CH4			
Waste Oil Heaters	0.216 lb/kgal			Ap-42, Fifth Edition, Table 1.3-3.
	lb/1000 gal			
Boilers				
Boiler #1	0.216 lb/kgal			Ap-42, Fifth Edition, Table 1.3-3.
Hot Oil Boiler	0.216 lb/kgal			Ap-42, Fifth Edition, Table 1.3-3.
	lb/1000 gal			
LPG Heating	0.20 lb/kgal			Ap-42, Fifth Edition, Table 1.5-1.
	lb/1000 gal			
FUEL BURNING EQUIPMENT	N2O			
Waste Oil Heaters	0.26 lb/kgal			Ap-42, Fifth Edition, Table 1.3-8.
	lb/1000 gal			
Boilers				
Boiler #1	0.26 lb/kgal			Ap-42, Fifth Edition, Table 1.3-8.
Hot Oil Boiler	0.26 lb/kgal			Ap-42, Fifth Edition, Table 1.3-8.
	lb/1000 gal			
LPG Heating	0.90 lb/kgal			Ap-42, Fifth Edition, Table 1.5-1.
	lb/1000 gal			
ELECTRIC POWER GENERATORS	PM10			
Motivator		0.0007 lb/hp-hr	0.0007 lb/hp-hr	AP-42, Fifth Edition, Table 3.4-1
Mill Auxiliary	0	0.0022 lb/hp-hr	0.0022 lb/hp-hr	AP-42, Fifth Edition, Table 3.3-1
Pumpback	0	0.0022 lb/hp-hr	0.0022 lb/hp-hr	AP-42, Fifth Edition, Table 3.3-1
Tailings Pump 1	0	0.20 g/kW-hr	0.20 g/kW-hr	NSPS IIII
Tailings Pump 2	0	0.20 g/kW-hr	0.20 g/kW-hr	NSPS IIII
	lb/hp-hr			

Thompson Creek Mine
Metal Concentrations

Ore Concentations

Metal	ppm	%	Data Source	Boiling Point (C)	Max Dryer Temp (C)
Sb	0.20	0.000020	EIS	1750	677
As	76.00	0.007600	Blast hole analysis and EIS	707	677
Ba	30.00	0.003000	EIS	1400	677
Be	0.11	0.000011	EIS	2970	677
Cd	2.10	0.000210	EIS	765	677
Cr	130.00	0.013000	EIS	2672	677
Co	0.10	0.000010	EIS	1495	677
Cu	40.00	0.004000	EIS	2567	677
Pb	35.00	0.003500	Blast hole analysis and EIS	1740	677
Mn	185.00	0.018500	EIS	1962	677
Hg	0.00	0.000000	EIS	357	677
Mo	1146.00	0.114600	Blast hole analysis	5560	677
Ni	13.00	0.001300	EIS	2730	677
Se	0.00	0.000000	EIS	685	677
Ag	13.00	0.001300	EIS	2212	677
Tl	0.20	0.000020	EIS	1457	677
Zn	36.00	0.003600	EIS	907	677

Concentrate Concentations

Cu	Pb	As	
ppm	ppm	ppm	
212.91	195.61	85.57	TCM Concentrate Analysis
%	%	%	
0.0213	0.0196	0.0086	

THOMPSON CREEK MINE

FUGITIVE EMISSION FACTORS

SECTION 8: FUGITIVE EMISSIONS					
EMISSION FACTORS	TSP	PM_{10}	$PM_{2.5}$		
Drilling	1.3	0.0035	0.0035	Compilation of Air Pollutant Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 8.24, Western Surface Coal Mining, Updated Sept. 1988, Table - 8.24-4, Page 8.24-8.	
	lb/hole	lb/hole	lb/hole		
Blasting	58.5	23.4	1.755	Fugitive Dust Control Technology, General Fugitive Dust Emission Sources, Table 2.2.4-4, Page 54.	
	lb/blast	lb/blast	lb/blast		
Overburden Removal				Fugitive Dust Emissions Factors for the Mining Industry, July 1983, American Mining Congress, Page 49.	
25 yard shovel	0.0007	0.0007	0.000074	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
15 yard shovel	0.0004	0.0004	0.000042	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
loader	0.0004	0.0004	0.000042	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
	lb/ton	lb/ton	lb/ton		
Ore Mining				Fugitive Dust Emissions Factors for the Mining Industry, July 1983, American Mining Congress, Page 49.	
25 yard shovel	0.0007	0.0007	0.000074	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
15 yard shovel	0.0004	0.0004	0.000042	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
loader	0.0004	0.0004	0.000042	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	
	lb/ton	lb/ton	lb/ton		
Overburden Dumping	0.0032	0.0015	0.00017	Compilation of Air P ollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1. k = 0.053 for PM2.5	
	lb/ton	lb/ton	lb/ton		
Hauling/Access Road					
haul trucks	25.5	11.54	3.825	Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 13.2.22 Unpaved Roads, Equation 1, k = 0.15 for PM2.5	
small vehicles	0.39	0.19	0.0585		
	lb/VMT	lb/VMT	lb/VMT		
Grading				Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 8.24, Western Surface Coal Mining, Updated Sept. 1988, Table 8.24-2, Page 8.24-5.	
	19.5	9.98	0.6045	AP42 Tbl 11.9-1 - k = 0.031 for PM2.5	
	lb/VMT	lb/VMT	lb/VMT		
Bulldozing					
	8.65	4.32	0.90825	Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 8.24, Western Surface Coal Mining, Updated Sept. 1988, Table 8.24-2, Page 8.24-5.	
	lb/hour	lb/hour	lb/hour	AP42 Tbl 11.9-1 - k = 0.105 for PM2.5	

THOMPSON CREEK MINE
FUGITIVE EMISSION FACTORS

SECTION 8: FUGITIVE EMISSIONS					
EMISSION FACTORS	TSP	PM_{10}	$PM_{2.5}$		
Wind Erosion				Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 1127, Industrial Wind Erosion Updated sept. 1988, Page 11.2.7-4.	
Total exposed acreage 1260 acres	0.38	0.19	0.0114		
	lb/acre	lb/acre	lb/acre		
MOBIL EQUIPMENT COMBUSTION					
Mobil Equipment Combustion				Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section II-7, Heavy Duty Construction Equipment, Table II-7.1, Page II-7-4&5.	
Haul Trucks	0	0.256	0.256	assume PM2.5 = PM10	
Dozers	0	0.112	0.112		
Wheeled Loaders	0	0.172	0.172		
Motor Graders	0	0.061	0.061		
Wheeled Dozers	0	0.165	0.165		
Misc.	0	0.139	0.139		
	lb/hour	lb/hour	lb/hour		
Ore drop to Mill Stockpile	0.0032	0.0015	0.00017	Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1.	
(low moisture ore)	lb/ton	lb/ton	lb/ton	k = 0.053 for PM2.5	
Truck dumping into Crusher	0.0032	0.0015	0.00017	Compilation of Air Pollutants Emission Factors, Vol. 1, Stationary Point and Area Sources, Fourth Edition, Sept. 1985, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1.	
	lb/ton	lb/ton	lb/ton	k = 0.053 for PM2.5	
Portable Crusher				0.294117647	
Truck unloading	0.0001	0.0001	0.00003	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2.	PM2.5 EF is estimated using EFs from AP42 Tbl 11.24-2, Table B.2.2 Category 3 - Mechanically Generated Aggregate Material & Unprocessed Ores, shows PM10 to be 51% of the particle distribution and PM2.5 to be 15%. Therefore, PM2.5 is estimated to be 29% of PM10 for operations, including matl handling & processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling, & drying.
Screening	0.025	0.0087	0.00256	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2	
Primary Crushing	0.5	0.05	0.01471	AP 42 Volume 1, Fifth Edition, Table 11.24.2	
Screening	0.025	0.0087	0.00256	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2	
Conveying	0.003	0.0011	0.00032	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2	
Secondary Crushing	0.5	0.05	0.01471	AP 42 Volume 1, Fifth Edition, Table 11.24.2	
Conveying	0.003	0.0011	0.00032	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2	
Drop process	0.003	0.0011	0.00032	AP 42 Volume 1, Fifth Edition, Table 11.19.2-2	
	lbs/ton	lbs/ton	lbs/ton		

THOMPSON CREEK MINE
SOURCE GENERAL INFORMATION

SECTION 2: FUEL BURNING EQUIPMENT

SOURCE	DESCRIPTION	DATE INSTALLED	DATE LAST MODIFIED	MANUFACTURER	MAKE/MODEL	USED FOR PROCESS %	USED FOR SPACE HEAT %	FUEL TYPE	FUEL CODE	HEAT CONTENT Btu/gal
Waste Oil Heaters						0	100		O2	137000
Boilers										
Boiler #1	steam boiler	2007		Bryan Boiler	RV600-S-150-FDGO	100	0	fuel oil	O2	149600
Hot Oil Boiler	Hot oil boiler	2007		Parker	HT1920	100	0	fuel oil	O2	137000
LPG Heating							100			
GENERATORS										
Motivator	emergency power generator	1981		Cummins		100	0	fuel oil	O2	137000
Mill Auxiliary	emergency power generator	1981		Caterpillar	SR4 ARR:5N5060	100	0	fuel oil	O2	137000
Pumpback	emergency power generator	1981		Caterpillar	SR4 ARR:1W0739	100	0	fuel oil	O2	137000
Tailings Pumps (New) #1	emergency power generator	2010		MTU Detroit Diesel	T1238A36	100	0	fuel oil	O2	137000
Tailings Pumps (New) #2	emergency power generator	2010		MTU Detroit Diesel	T1238A36	100	0	fuel oil	O2	137000

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS

SOURCE	DESCRIPTION	DATE INSTALLED	DATE LAST MODIFIED	MANUFACTURER	MAKE/MODEL	POLLUTION CONTROL EQUIPMENT DESCRIPTION	QUANTITY	TYPE	CODE	MANUFACTOR	MAKE/MODEL
Primary Crusher	Gyratory Crusher	1981		GATX-Fuller		Baghouse	1	baghouse	O18	American Air Filter	jet pulse modular Fabripak
Overland Conveyor Drive 1	conveyor transfer point	1981		GATX-Fuller		Baghouse	1	baghouse	O18	American Air Filter	jet pulse modular Fabripak
East and West Ore Feeders	apron feeders	1981				Wet Scrubber	2	Venturi	O53	Ducon	multivane, Model IV
Holoflite Dryer #1	Holoflite Dryer	1981		Joy-Denver	D-1216-5	Wet Scrubber	1	Venturi	O53	Luftrol	UW-4-4
		1989				Smog Hog	1	ESP	O10	United Air Specialists	SHN-10
Leach Plant	Leach fume collection	1981				Caustic Scrubber	1	Packed	O70	Ceilicote	SPT-82
Lube Grade Dryer Stack		1989				Smog Hog	1	ESP	O10	United Air Specialists	SHN-10
Holoflite Dryer #2	Holoflite Dryer	1989		Joy-Denver	D-1216-5	Wet Scrubber	1	Venturi	O53	Luftrol	KVS4-14
Rotary Kiln	Rotary kiln dryer	1989		Christian	12-13-16-UNI	Wet Scrubber	1	Venturi	O54	Luftrol	KVS4-14
Jet Mill/Jet Mill Baghouse	pneumatic mill	1989		Pulvajet Mill	Aljet Model 810 CIHL	Baghouse	1	baghouse	O18	Mikro Pulsaire	36-S-10-30
Tech Fine Packaging Bin	packaging	1989				Baghouse	1	baghouse	O18	Mag-Pac	52-65
Pancake Mill Feed Bin	feed bin	1992				Baghouse	1	baghouse	O18	American Air Filter	AR35
Pancake Mill	pneumatic mill	1992		Jet Pulverizer	Micron-Master						
Super Fine Packaging Bin	packaging	1992				Baghouse	1	baghouse	O18	Mag-Pac	52-65
Pebble Lime Baghouse	pneumatic transport system	1981				Baghouse	1	baghouse	O18	Dalamate	
Portable Crusher	gravel crusher	1981		Pioneer	2036	Water Sprays		water spray	O61		

SECTION 5: STORAGE AND HANDLING OF LIQUID SOLVENTS & OTHER VOLATILE COMPOUNDS

DESCRIPTION	TANK TYPE	CONTENTS	TANK CAPACITY (gal)	VENT TYPE	LOCATION
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	60,000	open, turned down	Pat Hughes Dump
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	20,000	open, turned down	7900 Hot Start
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	10,000	open, turned down	east end Mill
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	1,000	open, turned down	south of Mill Lab
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	10,000	open, turned down	Upper Mill
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	500	open, turned down	Kelly Building
Diesel fuel storge, fueling	Horizontal cylinder, fixed roof	diesel fuel	1,500	open, turned down	Kelly Building
gasoline storage, fueling	Horizontal cylinder, fixed roof	gasoline	10,000	open, turned down	Kelly Building

THOMPSON CREEK MINE
STACK INFORMATION

STACK/SOURCE	HEIGHT (ft)	I.D. (in)	EXIT TEMP (F)	FLOWRATE (acfm)	DIRECTION	COVERED
PROCESS AND MANUFACTURING OPERATIONS						
Primary Crusher Stack	65.58	27.96	ambient	18000	vertical	no
Overland Conveyor Stack	10	18	ambient	10000	horizontal	no
East Ore Feeders Stack	85.33	18.5	ambient	6540	vertical	no
West Ore Feeders Stack	85.33	18.5	ambient	6540	vertical	no
Holoflite Dryer #1 Stack	81	11.75	ambient	650	vertical	no
Leach Fume Scrubber Stack	90.25	16	ambient	5341	vertical	no
Lube Grade Dryer Stack	90.25	8	ambient	500	vertical	no
Jet Mill Baghouse Stack	37.5	19.5	ambient	2300	vertical	yes
Tech Fine Packaging Baghouse Stack	38	6	ambient	150	horizontal	no
Pancake Mill Feed Bin Baghouse Stack	14.75	8.25	ambient	1500	horizontal	no
Super Fine Packaging Bin Baghouse Stack	25	6	ambient	593.7	horizontal	no
Pebble Lime Baghouse	68.88	12	ambient	2000	vertical	yes
FUEL BURNING EQUIPMENT						
Waste Oil Heaters						
Truck Shop 1	25	8	270	850	horizontal	no
Truck Shop 2	25	8	270	850	horizontal	no
Wash Bay 1	25	8	270	850	horizontal	no
Wash Bay 2	25	8	270	850	horizontal	no
Boilers						
Boiler #1	84	12	500	1427	vertical	no
Hot Oil Boiler	84	12	500	401	vertical	no
GENERATORS						
Motivator	15	4	900	2325	vertical	no
Mill Auxiliary	20	6	1200	1570	vertical	yes
Pumpback	12	6	900	2430	vertical	no
Tailings Pump #1	15	10	869	12925	horizontal	yes
Tailings Pump #2	15	10	869	12925	horizontal	yes

THOMPSON CREEK MINE
PCE DATA

SCRUBBER/SOURCE	PRESSURE DROP (" H2O)	LOW	HIGH	WATER FLOW RATE (gpm)	LOW	HIGH
East Ore Feeders Reclaim Dust Scrubber		6	16		14	17
West Ore Feeders Reclaim Dust Scrubber		6	16		14	17
Holoflite Dryer #1 Venturi Scrubber		0.13	0.23		6	12
Leach Fume Caustic Scrubber		2	10		N/A	58
Holoflite Dryer #2 Venturi Scrubber		0.13	0.23		6	12
Rotary Kiln Venturi Scrubber		0.12	0.22		7	13
BAGHOUSE/SOURCE	**PRESSURE DROP (" H2O)**	**LOW**	**HIGH**	**AIR-TO-CLOTH RATIO**		
Primary Crusher Baghouse		3	6	10:01		
Overland Conveyor Baghouse		1	6	7:01		
Jet Mill Baghouse		1	6	10:01		
Tech Fine Packaging Bin Baghouse		0.4	5	2:01		
Pancake Mill Feed Bin Baghouse		0.2	8	5:01		
Super Fine Packaging Bin Baghouse		1	6	1:01		
Pebble Lime Baghouse		0.3	5	9:01		
ESP						
Holoflite Dryer #1 Smog Hog	Triple Pass					
Lube Grade Dryer Stack Smog Hog	Triple Pass					

Appendix E
Ambient Air Quality Modeling Protocol

AECOM
1601 Prospect Parkway
Fort Collins, Colorado 80525

970-493-8878 tel
970-493-0213 fax

February 15, 2013

Ms. Cheryl A. Robinson, P.E.
Air Quality Engineer/Modeling Analyst
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

Subject: Modeling Protocol for the Conversion of Thompson Creek Mining Company's Tier II Operating Permit to a Permit to Construct

Dear Ms. Robinson:

On behalf of Thompson Creek Mining Company (TCMC), AECOM Technical Services, Inc. (AECOM) is submitting this letter to serve as a modeling protocol for an ambient air quality impact analysis that may be required for the conversion of TCMC's Tier II operating permit to a permit to construct (PTC). This letter reflects our understanding of your guidance and direction from our January 17 and February 5, 2013 phone calls.

As we discussed, the only sources that require a modeling evaluation for this conversion are the following:

- Two new replacement boilers;
- One new tailings pump #2 auxiliary emergency generator engine, authorized to operate 500 hr/yr; and
- A proposed increase in daily throughput from 40,000 ton/day to 50,000 ton/day for the East/West Ore Feeders.

Criteria Pollutant Modeling Requirements

We will compare the maximum potential to emit (PTE) for each criteria pollutant from the replacement boilers and tailings pump engine, in combination with the net emissions increase from the East/West Feeders to the IDEQ Level II Modeling Thresholds to determine which pollutants will need to be modeled against established significant impact levels (SILs). Because of the large ambient air boundary associated with the TCMC mine/facility, the IDEQ will allow for the comparison of the emissions described above to be evaluated against the Level II modeling thresholds in Table 2 of the IDEQ Modeling Guidance. The Level II thresholds consist of the following:

- CO 175 lb/hr
- NO_X 14 tpy and 2.4 lb/hr
- SO_2 14 tpy and 2.5 lb/hr
- PM_{10} 2.6 lb/hr
- $PM_{2.5}$ 4.1 tpy and 0.63 lb/hr
- Pb 14 lb/month

A preliminary assessment of the TCMC emissions described above confirms that only 1-hour NO_2 and 24-hour $PM_{2.5}$ will exceed Level II modeling thresholds. As such, a significant impact level (SIL) modeling analysis will be conducted for 1-hour NO_2 and 24-hour $PM_{2.5}$ to determine if the SILs are exceeded for these two pollutants and averaging periods. Only direct $PM_{2.5}$ emissions will be modeled. The remaining pollutants do not exceed the Level II modeling thresholds, and will therefore not be modeled.

Because the replacement boilers have different exhaust flow rates than the boilers they replace, the net change in ambient impacts will be considered in the SIL analysis. To account for not only the change in emission rates but also the change in flow rates (via the modeled exit velocity), the old boilers' stack parameters will be modeled using the old boilers' permitted PTE as negative emissions. The new replacement boilers will be modeled using the new PTE as positive emissions, along with the new stack parameters. These boiler "net" modeled impacts will be combined with modeled impacts from the emission increases from the East/West Ore Feeders and the new tailings pump engine's modeled impacts (using its PTE) for comparison against the SILs.

If the SILs for 1-hour NO_2 and 24-hour $PM_{2.5}$ are not exceeded, no further modeling of these two pollutants will be required. If the SILs are exceeded, then a full cumulative air quality impact analysis will be conducted for these pollutants and averaging periods. The cumulative analysis, if required, will include all sources at the facility plus background concentrations to demonstrate compliance with the National and Idaho ambient air quality standards. Note that PSD increment consumption will not be modeled since the permit conversion process and modification does not trigger PSD review. In addition, since PSD review is not triggered, the NO_2 SIL analysis can be refined by using the ambient ratio method (80% conversion of NO_X-to-NO_2 for 1-hour impacts and 75% conversion for the annual average impacts). All SIL modeling will compare high-first-high modeled impacts against the SILs.

Please note that in the event cumulative modeling is required for 1-hour NO_2 and 24-hour $PM_{2.5}$, we will contact you to obtain representative background ambient concentrations for these pollutants. We assume that since the TCMC facility is located in a remote setting away from significant off-site emission sources, modeling of off-site sources will not be required.

Toxic Air Pollutant Modeling Requirements

In accordance with IDEQ Modeling Guidance Section 3.3.4(e), we will compare the combined net change in individual toxic air pollutant (TAP) emissions from the replacement boilers (net increases in emissions) and tailings pump engine (PTE) against the screening emission levels (ELs) listed in Idaho Air Rules Section 585 for non-carcinogens and 586 for carcinogens. There are no TAP emissions from the East/West Feeders. The ELs are 24-hr lb/hr averages for non-carcinogens and annual lb/hr averages for carcinogens. For any TAPs that the exceed the ELs, modeling will be required for comparison against the acceptable ambient concentrations for non-carcinogens (AACs) and acceptable ambient concentrations for carcinogens (AACCs) specified in Sections 585 and 586, respectively. We understand that the net change in emissions is allowed for the TAPs modeling, similar to the SIL analysis discussed above, per Section 3.3.4(f) in the IDEQ Modeling Guidance.

Dispersion Model, Model Options, and Pre-Processors

AECOM will use the following models and pre-processors in the modeling:

- BPIP-PRIME Version 04274;
- AERMAP Version 11103; and
- AERMOD Version 12345.

We have reviewed the previously digitized facility building and stack locations against recent 2011 aerial imagery, and have confirmed that the previous digitization matches the current facility layout for the sources that will be modeled. AECOM will use the latest version of the BPIP-PRIME program to generate building downwash parameters for input to AERMOD. AERMOD model options will be set to their regulatory default values unless stacks are capped or horizontal, in which case the beta options (POINTCAP and POINTHOR)

will be used. If capped or horizontal stacks are to be modeled, the remaining model options will reflect the regulatory defaults.

A network of receptors will be created using an updated ambient air boundary provided by TCMC, AERMAP Version 11103, and electronic National Elevation Data. The receptor network will be sufficient to identify the maximum potential impacts from the project sources.

Meteorological Data

You provided AECOM with AERMOD-ready meteorological data on January 17, 2013 for Boise for the years 2005-2009, which will be used in any modeling analyses required for the PTC application. These data will be compatible with AERMOD Version 12345.

Modeling Report

AECOM will prepare a stand-alone modeling report that documents the modeling methods and inputs used in the ambient air quality impact analysis. The report will include tabular and graphical summaries of the modeling analysis along with a CD of all electronic data used in the analysis.

AECOM appreciates the opportunity to work with you and the IDEQ permitting group on this permit conversion project. Please contact either of the undersigned if you have any questions.

Sincerely,

Jamie Christopher

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PRM/

cc: Jeff Schwarz, CSMKF
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Pete Miller, AECOM