Edit: Application Tracking

Air Case ID: 13258 Permit Id: 4169

FIN No.: A1270

Company Name: LITHIUM NEVADA CORPORATION

HA Basin No: 030A **Increment Tracked** ☐

Permit No: AP14794334 * Select a Permit No

Date App. Received: 10/12/2026 *

Permit Writer: Not Assigned (NA) *

Case Type: Class 2 Administrative Renewal w/o Public Notice *

Default ODS Date: 10/26/2026 *

Actual ODS Date:

Date App. to be Closed: 12/25/2026 *

Stop Days: **Actual Date App. to be Closed:** 12/25/2026

App. Incomplete? ☐

Date App. Closed:

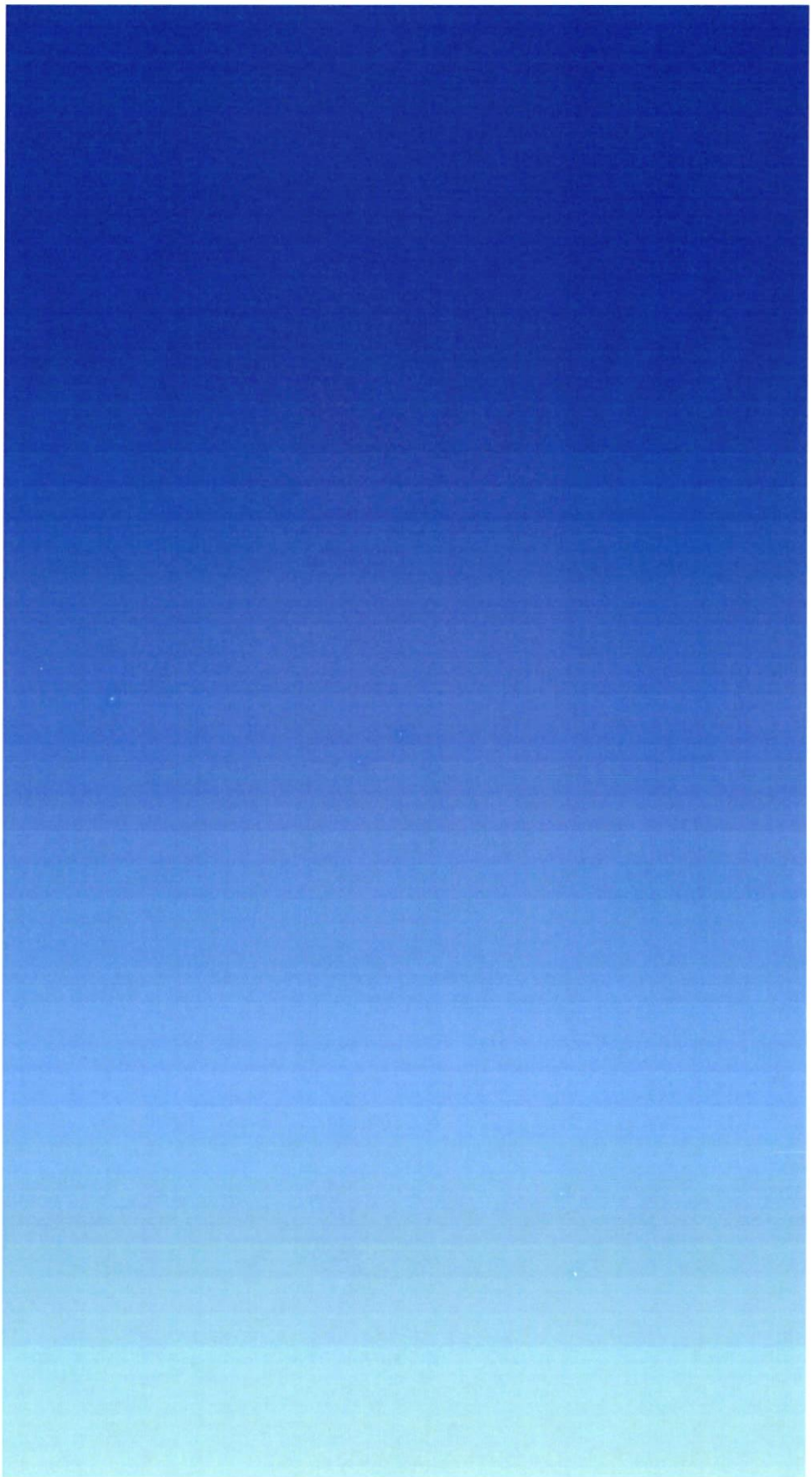
Fee Paid ($): 2000 *

Case Description:

Comments:

Flag (For Class 4) : None

Update Cancel



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Thacker Pass Project Class II Air Quality Operating Permit Administrative Renewal

PREPARED FOR:
LITHIUM NEVADA LLC

PROJECT NO. 270-3-11
OCTOBER 2026

LithiumAmericas

Lithium Nevada LLC
522 S Rock Blvd., Suite 200
Reno, Nevada 89502, USA

+1 775-827-3318
info@lithiumamericas.com

August 17, 2026

RECEIVED
OCT 12 2026
BAPC/BAQP

RECEIVED
OCT 12 2026
ENVIRONMENTAL PROTECTION

Ms. Tanya Soleta
Supervisor, Permitting Branch
Bureau of Air Pollution Control
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

RE: Lithium Nevada LLC – Thacker Pass Project, Class II Air Quality Operating Permit Administrative Renewal, AP1479-4334, FIN A1270

Dear Ms. Soleta,

Lithium Nevada LLC (Lithium Nevada) is pleased to submit the attached Administrative Renewal application for Class II Air Quality Operating Permit (AQOP) No. AP1479-4334 for the Thacker Pass Project. This application is consistent with the latest revision application submitted by Lithium Nevada on July 8, 2026, and does not require any additional changes to the Class II AQOP.

Consistent with the current Class II AQOP stipulations, the facility-wide potential to emit (PTE) from the Thacker Pass Project operating sources is summed separately from the facility-wide PTE for the construction-only sources (i.e., sources that will only operate during the construction phase). For construction-only sources, the Class II AQOP stipulates that each unit must be decommissioned prior to commencing operation of the sulfuric acid plant (SAP) (System 24). There are some generators that will operate both during construction and during the interim power period (the initial period of operation for the SAP while construction activities are being finalized), and these "Interim Units" are included in the total PTE for both the construction sources and the operating sources.

An electronic payment of $2,000 was submitted to cover the required renewal fee.

If you have any questions or require any additional information regarding this submittal, please contact Jennifer Schonlau at (925) 487-4261.

Sincerely,

Edward Grandy
Secretary and General Counsel
Lithium Nevada LLC

LithiumAmericas

Lithium Americas Corp.
522 S Rock Blvd., Suite 200
Reno, NV 89502, USA

+1 775-827-3318
info@lithiumamericas.com

October 7, 2026

Ms. Tanya Soleta
Supervisor, Permitting Branch
Bureau of Air Pollution Control
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

RE: Lithium Nevada LLC – Thacker Pass Project, Class II Air Quality Operating Permit Administrative Renewal, AP1479-4334, FIN A1270

Dear Ms. Soleta,

Lithium Nevada LLC (Lithium Nevada) is pleased to submit the attached Administrative Renewal application for Class II Air Quality Operating Permit (AQOP) No. AP1479-4334 for the Thacker Pass Project. This application is consistent with the latest revision application submitted by Lithium Nevada on July 17, 2026, (Air Case 13121) and does not require any additional changes to the Class II AQOP.

Consistent with the current Class II AQOP stipulations, the facility-wide potential to emit (PTE) from the Thacker Pass Project operating sources is summed separately from the facility-wide PTE for the construction-only sources (i.e., sources that will only operate during the construction phase). For construction-only sources, the Class II AQOP stipulates that each unit must be decommissioned prior to commencing operation of the sulfuric acid plant (SAP) (System 24). There are some generators that will operate both during construction and during the interim power period (the initial period of operation for the SAP while construction activities are being finalized), and these "Interim Units" are included in the total PTE for both the construction sources and the operating sources.

An electronic payment of $2,000 was submitted on October 5, 2026, to cover the required renewal fee.

If you have any questions or require any additional information regarding this submittal, please contact Jennifer Schonlau at (925) 487-4261.

Sincerely,

Edward Grandy
Secretary and General Counsel
Lithium Nevada LLC

Class I or II Air Quality Operating Permit (AQOP) Application Form

Facility Name: Lithium Nevada LLC - Thacker Pass Project

Permit Class: Class II

Existing Facility ID: A1270

Existing Permit Number: AP1479-4334

Type of Facility: Lithium Mine and Processing Operation

Total Number of Permitted Emission Units: 170

Total Number of Insignificant Activities: 44

Application Type:

Administrative Renewal of Existing AQOP

NDEP

Please Submit Application to:

Nevada Division of Environmental Protection
Bureau of Air Pollution Control, Permitting Branch
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249
Phone (775) 687-9349

September 2024
(Ver. 2)

IMPORTANT INFORMATION

- The Application packet contains:
  - General Company Information Form
  - Facility-Wide Potential to Emit Table
  - Surface Area Disturbance Form
  - Plant Boundary Coordinates Form if applicable
  - Plant Building Parameters Form if applicable
  - Application Certification Document with Required Attachments
- All items in the application must be addressed. If an item does not apply "N/A" or similar notation must be entered in the appropriate blank. All other information must be provided. Incomplete applications will be returned to the Responsible Official within 60 working days, for Class I, and within 10 working days, for Class II, of receipt of the application. The only exception is any items containing "if applicable" are only required if changes have been made to these items since the last permitting action.
- This application can **only** be used for an **Administrative Renewal** of either a Class I or a Class II Air Quality Operating Permit if the following criteria are met:
  - The facility has been issued a new or renewed operating permit that was issued on or after January 1, 2018;
  - The renewal does not require revisions to the existing operating permit; and
  - At the time of the operating permit renewal request, an environmental evaluation and an air pollutant dispersion model that were submitted within five years of the request are deemed adequate.
- If you are unclear on if your facility is eligible for an Administrative Renewal please contact the Bureau of Air Pollution Control (BAPC).
- A printed copy of the application must be submitted (mailed or hand delivered).
- The application fee required by Nevada Administrative Code (NAC) 445B.327 must be submitted with the completed application. Checks must be made payable to the "Nevada State Treasurer, Environmental Protection" with "BAPC" noted in the memo line. Fees may also be submitted electronically at https://epayments.ndep.nv.gov/.
- This application packet is not for use for an Administrative Amendment, a general permit, a Class I or Class II Renewal, a Class I or Class II Revision, a stand-alone Surface Area Disturbance (SAD) permit, nor for a Request for Change of Location Approval permit for a temporary source.
- An application for an administrative renewal of a Class I or Class II Air Quality Operating Permit must be signed by the Responsible Official, as defined in NAC 445B.156. The certification/signature page is the last page of the application and the original "wet" signature must be provided.
- For the administrative renewal of a Class I Operating Permit, a complete application and corresponding application fee must be submitted in accordance with NAC 445B.3443(2) at least 240 days prior to the expiration date of the current permit but not earlier than 18 months. The BAPC suggests that the application be submitted well in advance of the timeline outlined in NAC 445B.3443 to ensure the application is deemed complete. The BAPC has 60 days to deem the application complete or incomplete. As stated above, incomplete applications will be returned within 60 days of the receipt of the application. Therefore, the BAPC recommends the application be submitted at least 300 days prior to expiration of the current permit.
- For the administrative renewal of a Class II Operating Permit, a complete application and corresponding application fee must be submitted in accordance with NAC 445B.3473 at least 70 days prior to the expiration date of the current permit. The BAPC suggests that the application be submitted well in advance of the timeline outlined in NAC 445B.3473 to ensure the application is deemed complete.

GENERAL COMPANY INFORMATION FORM

1. **Briefly describe the permitted facility's process and include the Standard Industrial Classification (SIC) number and North American Industry Classification System (NAICS).**

   Open pit lithium mining and lithium processing operation.
   SIC: 1479 NAICS: 212393

2. **Company Name and Address that are to appear on the operating permit [NAC 445B.295(1)]:**

   Name: **Lithium Nevada LLC – Thacker Pass Project**
   Address: **522 S Rock Blvd., Suite 200**
   City: **Reno**
   State: **Nevada** Zip Code: **89502**

3. **Owner's Name and Address [NAC 445B.295(1)]:**

   Name: **Lithium Nevada LLC**
   Address: **522 S Rock Blvd., Suite 200**
   City: **Reno**
   State: **Nevada** Zip Code: **89502**

4. **Facility Name and Address, if different from #2 [NAC 445B.295(1)]:**

   Name: **Same as #2**
   Address:
   City:
   State: Zip Code:

5. **If records are required under the operating permit will be kept at a location other than the facility, specify that location [NAC 445B.295(7)]:**

   Name: **N/A. Records will be kept at the facility.**
   Address:
   City:
   State: Zip Code:

GENERAL COMPANY INFORMATION FORM (continued)

6. **Responsible Official Name, Title and Mailing Address [NAC 445B.295(1)]:**

Name:	**Edward Grandy**
Title:	**Secretary and General Counsel**
Address:	**4760 S. Highland Drive #212**
City:	**Salt Lake City**
State:	**Nevada** Zip Code: **89502**
Phone Number:	**(801) 209-5271**
Fax Number:	**N/A**
E-mail Address:	**ted.grandy@lithiumamericas.com**

Is this a new Responsible Official? ☐ Yes ☒ No

If yes, and the Responsible Official (RO) does not meet the definition under NAC 445B.156 then please fill out the "Responsible Official Identification/Designation/Change Request Form" and mail it in. (https://ndep.nv.gov/air/permitting/download-permit-forms)

7. **Plant Manager or other appropriate Contact Name, Title and Address [NAC 445B.295(1)]:**

Name:	**Jennifer Schonlau**
Title:	**Manager Sustainability & Environmental Engineering**
Address:	**522 S Rock Blvd., Suite 200**
City:	**Reno**
State:	**Nevada** Zip Code: **89502**
Phone Number:	**(925) 487-4261**
Fax Number:	**N/A**
E-mail Address:	**jennifer.schonlau@lithiumamericas.com**

8. **For Class II facilities, is the Facility located within 1,000 feet of a school, hospital, or residential area?**

☐ Yes ☒ No ☐ Not Class II

9. **For Class I facilities, will the facility violate any "Applicable requirement" pursuant to NAC 445B.019?**

☐ Yes ☐ No ☒ Not Class I

10. **For <u>Class I facilities only</u>, verify facility's compliance status for the following regulations and describe the reason for exemption if applicable: N/A**

FEDERALLY ENFORCEABLE REQUIREMENTS			
NAC 445B.225	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.315(3)(h)	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.315(3)(i)	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.315(3)(k)	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
40 CFR 52.21(r)(4)	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.252	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22067	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22093	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22037	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.227	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
40 CFR Parts 60.1-60.19, 61.01-61.19, 61.140-61.157, 63.1-63.15, and 70	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
40 CFR Part 82	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.230	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22017	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*

STATE REQUIREMENTS			
NRS 445B.470	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22013	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.326(1)	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 445B.22087	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*
NAC 459.952-459.95528	☐ Compliant	☐ Not Compliant	☐ Exempt, *Reason for Exemption*

FACILITY-WIDE POTENTIAL TO EMIT TABLE
(FOR ALL SOURCES INCLUDING INSIGNIFICANT ACTIVITIES)
(POUND/HOUR AND TON/YEAR)

Operating Sources and Interim Generators

Pollutant	Facility-Wide Potential to Emit (pound/hour)	Facility-Wide Potential to Emit (ton/year)
Total Particulate Matter (PM)	31.66	95.78
Total PM_{10}	24.57	72.15
Total $PM_{2.5}$	20.61	58.46
Total Sulfur Dioxide (SO_2)	11.45	36.89
Total Carbon Monoxide (CO)	124.25	55.07
Total Oxides of Nitrogen (NO_X)	120.85	99.21
Total Volatile Organic Compounds (VOC)	14.90	10.12
Total Lead (Pb)	N/A	Included with total HAPs
Total Hydrogen Sulfide (H_2S)	0.16	0.70
Total Sulfuric Acid Mist (H_2SO_4)	5.69	24.91
Total Hazardous Air Pollutants (HAPs)	N/A	0.68
Total Greenhouse Gases (CO_{2e})	N/A	112,399
Other Regulated Pollutants (Specify)	N/A	N/A

Construction-Only Sources and Construction and Interim Generators

Pollutant	Facility-Wide Potential to Emit (pound/hour)	Facility-Wide Potential to Emit (ton/year)
Total Particulate Matter (PM)	7.59	22.01
Total PM_{10}	4.45	8.42
Total $PM_{2.5}$	2.98	2.06
Total Sulfur Dioxide (SO_2)	0.25	0.24
Total Carbon Monoxide (CO)	122.40	89.61
Total Oxides of Nitrogen (NO_X)	87.83	40.95
Total Volatile Organic Compounds (VOC)	13.53	16.43
Total Lead (Pb)	N/A	Included with total HAPs
Total Hydrogen Sulfide (H_2S)	N/A	N/A
Total Sulfuric Acid Mist (H_2SO_4)	N/A	N/A
Total Hazardous Air Pollutants (HAPs)	N/A	0.48
Total Greenhouse Gases (CO_{2e})	N/A	26,305
Other Regulated Pollutants (Specify)	N/A	N/A

SURFACE AREA DISTURBANCE FORM

1. Total Acres of the Facility Site: **17,756**
2. Total Acres Disturbed: **8,829**
3. Add Surface Area Disturbance location as Township(s), Range(s) and Section
   T44N R34E S1, 12-13, 24; T44N R35E S1-24; T44N R36E S5-8, 14-23, 29
4. NAC 445B.22037 requires fugitive dust to be controlled (regardless of the size or amount of acreage disturbed), and requires an ongoing program, using best practical methods, to prevent particulate matter from becoming airborne. All activities which have the potential to adversely affect the local air quality must implement all appropriate measures to limit controllable emissions. Appropriate measures for dust control may consist of a phased approach to acreage disturbance rather than disturbing the entire area all at once; using wet suppression through such application methods as water trucks or water spray systems to control wind-blown dust; the application of soil binding agents or chemical surfactant to roadways and areas of disturbed soil; as well as the use of wind-break or wind limiting fencing designed to limit wind erosion soils.
5. If the Surface Area Disturbance is greater than 5 acres, please check each box that applies for Best Management Practices (BMPs) used for controlling dust on project's disturbed areas:

   ☒ Water trucks

   ☒ Graveling/paving of roadway storage areas and staging areas

   ☒ Dust palliatives

   ☐ Posting and limiting vehicle speeds to 10-15 miles per hour

   ☐ Ceasing operations during high wind events

   ☒ Fencing or berming to prevent unauthorized access to disturbed areas

   ☒ Application of water sprays on material storage piles on a regular basis

   ☐ Covering material storage piles with tarpaulin or geo-textiles; tenting

   ☒ Use of overhead water spray racks or water hoses

   ☒ Track-out controls (graveled entranced, exit area, and street sweeping)

   ☒ Landscape preservation and impact avoidance

   ☐ Wind fence

   ☒ Pre-watering of areas to be disturbed (including all unpaved onsite roads and staging areas)

   ☒ Inform all subcontractors (including truck drivers) of their responsibilities for the control of fugitive dust while they are on the project site

   ☒ Training of equipment operators to recognize fugitive dust generation and having the authority to shut down operations until water truck arrives and sprays water on the disturbed areas

   ☐ Other Applicable BMPs: N/A

   ☐ Other Applicable BMPs: N/A

   ☒ If using water trucks, list how many water trucks are used and their capacity in gallons:
   One 14,000 gallon truck and one 8,000 gallon truck

PLANT BOUNDARY COORDINATES FORM

N/A – No changes proposed

Corner Number	UTM Easting	UTM Northing

PLANT BUILDING PARAMETERS FORM

N/A – No changes proposed

Building Parameters

Building Name: _____ **Building Tier :** _____

Roof Height (ft): _____ **Building Diameter (ft):** _____

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing

Building Parameters

Building Name: _____ **Building Tier :** _____

Roof Height (ft): _____ **Building Diameter[4] (ft):** _____

Building UTM Coordinates

UTM Easting	UTM Northing	UTM Easting	UTM Northing

APPLICATION CERTIFICATION DOCUMENT

(With Required Attachments)

Please check boxes below to indicate the information has been provided in your application submittal:

- ☒ General Company Information Form
- ☒ Facility-Wide Potential to Emit Table
- ☒ Surface Area Disturbance Form
- ☐ Plant Boundary Coordinates Form *if applicable* – **Not Applicable**
- ☐ Plant Building Parameters Form *if applicable* – **Not Applicable**
- ☐ Detailed List of Requested Decrease in Hours of Operation, Decrease in Throughput, Removal of Systems, Emission Units, or Insignificant Activities. *if applicable* – **Not Applicable**
- ☒ Detailed Emission Calculations (for all emission units including IA units)
- ☒ Application Fee Attached or Electronically Submitted
- ☒ Application Certification Document with Original Responsible Official Signature

PLEASE NOTE THE FOLLOWING REQUIREMENTS WHICH APPLY TO PERMIT APPLICANTS DURING THE APPLICATION PROCESS:

A. A permit applicant must submit supplementary facts or corrected information upon discovery [NAC 445B.297(1)(b)].

B. A permit applicant is required to provide any additional information which the Director requests in writing within the time specified in the Director's request [NAC 445B.297(1)(c)].

C. Submission of fraudulent data or other information may result in prosecution for an alleged criminal offense [NRS 445B.470].

CERTIFICATION:

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

Signature of Responsible Official

Edward Grandy, Secretary and General Counsel

Print or Type Name and Title

August 14, 2026

Date

Appendix 1: Detailed Emission Calculations

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
					Design Throughput				Operating Schedule		
Construction Source	System	System Description	Source ID	Source Description	unit/hr	unit/yr	units	Material	hr/day	hr/yr	Other
No	1	Ore Handling Circuit	PF1.001	ROM Feeder Breaker 1 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 1)	800 tot.	7,008,000	ton	Ore	24	8,760	
No	1	Ore Handling Circuit	PF1.003	ROM Feeder Breaker 2 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 2)	*See PF1.001 for combined total throug*		ton	Ore	24	8,760	
No	2	Mineral Sizer	PF1.005	Mineral Sizer 1 and associated transfers in (from Sizer Feed Conveyor 1) and out (to Log Washer Feed Conveyor 1)	800 tot.	7,008,000	ton	Ore	24	8,760	
No	2	Mineral Sizer	PF1.026	Mineral Sizer 2 and associated transfers in (from Sizer Feed Conveyor 2) and out (to Log Washer Feed Conveyor 1)	*See PF1.005 for combined total throug*		ton	Ore	24	8,760	
No	3	Log Washer Feed	PF1.027	Log Washer Feed Conveyor 1 to Log Washer Feed Conveyor 2	800	7,008,000	ton	Ore	24	8,760	
No	3	Log Washer Feed	PF1.006	Log Washer Feed Conveyor 2 to Log Washers (wet process)	800	7,008,000	ton	Ore	24	8,760	
No	4	Oversize Material Handling Circuit	PF1.007	Wet Screen 1 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	40	350,400	ton	Gangue	24	8,760	
No	4	Oversize Material Handling Circuit	PF1.028	Wet Screen 2 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	40	350,400	ton	Gangue	24	8,760	
No	5	Gangue Handling Circuit	PF1.009	Gangue Dewatering Screen 1 and associated transfers in (wet process) and out (Gangue Conveyor 1)	250	2,190,000	ton	Gangue	24	8,760	
No	5	Gangue Handling Circuit	PF1.030	Gangue Dewatering Screen 2 and associated transfers in (wet process) and out (Gangue Conveyor 1)	250	2,190,000	ton	Gangue	24	8,760	
No	5	Gangue Handling Circuit	PF1.010	Gangue Conveyor 1 to Gangue Stacker	580	5,080,800	ton	Gangue	24	8,760	
No	5	Gangue Handling Circuit	PF1.011	Gangue Stacker to Gangue Stockpile	580	5,080,800	ton	Gangue	24	8,760	
No	6	Leach Tanks	S2.001 - S2.003	Leach Tanks 1 - 3	1,020	8,935,200	ton, each	Slurry	24	8,760	
No	7	Neutralization Filter Vents	S2.004	Neutralization Filter Vent 1	1,030	798,250	ton	Slurry	24	775	
No	7	Neutralization Filter Vents	S2.005	Neutralization Filter Vent 2	*See S2.004 for combined total throughp*		-	Slurry	24	775	
No	7	Neutralization Filter Vents	S2.006	Neutralization Filter Vent 3	*See S2.004 for combined total throughp*		-	Slurry	24	775	
No	7	Neutralization Filter Vents	S2.007	Neutralization Filter Vent 4	*See S2.004 for combined total throughp*		-	Slurry	24	775	
No	9	Tailings Feed Circuit	PF1.012	Neutralization Filter 1 to Discharge Feeder 1	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.014	Neutralization Filter 2 to Discharge Feeder 2	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	

SOURCE DESCRIPTION		EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
PF1.001	ROM Feeder Breaker 1 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 1)	0.0054	0.0024	0.0004						lb/ton	*AP-42 Table 11.19.2-2 (08/04) tert. crush unctrl. (NDEP 2017)*	Enclosure	50%
PF1.003	ROM Feeder Breaker 2 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 2)											Enclosure	50%
PF1.005	Mineral Sizer 1 and associated transfers in (from Sizer Feed Conveyor 1) and out (to Log Washer Feed Conveyor 1)	0.0054	0.0024	0.0004						lb/ton	*AP-42 Table 11.19.2-2 (08/04) tert. crush unctrl. (NDEP 2017)*	Water Sprays	85%
PF1.026	Mineral Sizer 2 and associated transfers in (from Sizer Feed Conveyor 2) and out (to Log Washer Feed Conveyor 1)											Water Sprays	85%
PF1.027	Log Washer Feed Conveyor 1 to Log Washer Feed Conveyor 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Water Sprays	85%
PF1.006	Log Washer Feed Conveyor 2 to Log Washers (wet process)	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Water Sprays	85%
PF1.007	Wet Screen 1 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	0	0	0						lb/ton	*Wet Process*	Saturated Material	100%
PF1.028	Wet Screen 2 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	0	0	0						lb/ton	*Wet Process*	Saturated Material	100%
PF1.009	Gangue Dewatering Screen 1 and associated transfers in (wet process) and out (Gangue Conveyor 1)	0	0	0						lb/ton	*Wet Process*	Saturated Material	100%
PF1.030	Gangue Dewatering Screen 2 and associated transfers in (wet process) and out (Gangue Conveyor 1)	0	0	0						lb/ton	*Wet Process*	Saturated Material	100%
PF1.010	Gangue Conveyor 1 to Gangue Stacker	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.011	Gangue Stacker to Gangue Stockpile	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
S2.001 - S2.003	Leach Tanks 1 - 3	0.3	0.3	0.3						lb/hr	*Engineering Estimate (LNC 2020); (LiNV 2026a)*	Wet Scrubber	
S2.004	Neutralization Filter Vent 1	0.020	0.020	0.020						lb/hr	*see Detailed Calcs*	None	
S2.005	Neutralization Filter Vent 2	0.020	0.020	0.020						lb/hr	*see Detailed Calcs*	None	
S2.006	Neutralization Filter Vent 3	0.020	0.020	0.020						lb/hr	*see Detailed Calcs*	None	
S2.007	Neutralization Filter Vent 4	0.020	0.020	0.020						lb/hr	*see Detailed Calcs*	None	
PF1.012	Neutralization Filter 1 to Discharge Feeder 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.014	Neutralization Filter 2 to Discharge Feeder 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
PF1.001	ROM Feeder Breaker 1 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 1)	2.16	0.96	0.15						9.46	4.20	0.64					
PF1.003	ROM Feeder Breaker 2 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 2)	*See PF1.001 for combined total emissions*								*See PF1.001 for combined total emissions*							
PF1.005	Mineral Sizer 1 and associated transfers in (from Sizer Feed Conveyor 1) and out (to Log Washer Feed Conveyor 1)	0.65	0.29	0.044						2.84	1.26	0.19					
PF1.026	Mineral Sizer 2 and associated transfers in (from Sizer Feed Conveyor 2) and out (to Log Washer Feed Conveyor 1)	*See PF1.005 for combined total emissions*								*See PF1.005 for combined total emissions*							
PF1.027	Log Washer Feed Conveyor 1 to Log Washer Feed Conveyor 2	0.36	0.13	0.020						1.58	0.58	0.088					
PF1.006	Log Washer Feed Conveyor 2 to Log Washers (wet process)	0.36	0.13	0.020						1.58	0.58	0.088					
PF1.007	Wet Screen 1 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	0	0	0						0	0	0					
PF1.028	Wet Screen 2 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	0	0	0						0	0	0					
PF1.009	Gangue Dewatering Screen 1 and associated transfers in (wet process) and out (Gangue Conveyor 1)	0	0	0						0	0	0					
PF1.030	Gangue Dewatering Screen 2 and associated transfers in (wet process) and out (Gangue Conveyor 1)	0	0	0						0	0	0					
PF1.010	Gangue Conveyor 1 to Gangue Stacker	0.26	0.096	0.014						1.14	0.42	0.063					
PF1.011	Gangue Stacker to Gangue Stockpile	0.26	0.096	0.014						1.14	0.42	0.063					
S2.001 - S2.003	Leach Tanks 1 - 3	0.30	0.30	0.30						1.31	1.31	1.31					
S2.004	Neutralization Filter Vent 1	0.020	0.020	0.020						0.0078	0.0078	0.0078					
S2.005	Neutralization Filter Vent 2	0.020	0.020	0.020						0.0078	0.0078	0.0078					
S2.006	Neutralization Filter Vent 3	0.020	0.020	0.020						0.0078	0.0078	0.0078					
S2.007	Neutralization Filter Vent 4	0.020	0.020	0.020						0.0078	0.0078	0.0078					
PF1.012	Neutralization Filter 1 to Discharge Feeder 1	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.014	Neutralization Filter 2 to Discharge Feeder 2	0.059	0.021	0.0033						0.26	0.094	0.014					

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) oz type	vel (ft/s)
PF1.001	ROM Feeder Breaker 1 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 1)	413,825	4,617,337	1,461.0	VOLUME	14	10	6	17	elev src w/o bldg	
PF1.003	ROM Feeder Breaker 2 and associated transfers in (from feeder) and out (to Sizer Feed Conveyor 2)	413,857	4,617,277	1,461.0		14	10	6	17	elev src w/o bldg	
PF1.005	Mineral Sizer 1 and associated transfers in (from Sizer Feed Conveyor 1) and out (to Log Washer Feed Conveyor 1)	413,847	4,617,349	1,461.0	VOLUME	25	3	12	31	elev src w/o bldg	
PF1.026	Mineral Sizer 2 and associated transfers in (from Sizer Feed Conveyor 2) and out (to Log Washer Feed Conveyor 1)	413,879	4,617,288	1,461.0		25	3	12	31	elev src w/o bldg	
PF1.027	Log Washer Feed Conveyor 1 to Log Washer Feed Conveyor 2	413,915	4,617,221	1,461.0	VOLUME	10	3	4	12	elev src w/o bldg	
PF1.006	Log Washer Feed Conveyor 2 to Log Washers (wet process)	414,003	4,617,267	1,461.0	VOLUME	17	3	6	20	elev src w/o bldg	
PF1.007	Wet Screen 1 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	414,031	4,617,285	1,454.7	VOLUME	7	10	6	10	elev src w/o bldg	
PF1.028	Wet Screen 2 and associated transfers in (Wet Log Washers) and out (Gangue Conveyor 1)	414,034	4,617,281	1,454.4	VOLUME	7	10	6	10	elev src w/o bldg	
PF1.009	Gangue Dewatering Screen 1 and associated transfers in (wet process) and out (Gangue Conveyor 1)	414,023	4,617,301	1,455.8	VOLUME	11	4	16	19	elev src w/o bldg	
PF1.030	Gangue Dewatering Screen 2 and associated transfers in (wet process) and out (Gangue Conveyor 1)	414,025	4,617,297	1,455.5	VOLUME	11	4	16	19	elev src w/o bldg	
PF1.010	Gangue Conveyor 1 to Gangue Stacker	413,998	4,617,348	1,458.8	VOLUME	4.5	3	3	6	elev src w/o bldg	
PF1.011	Gangue Stacker to Gangue Stockpile	413,976	4,617,389	1,461.0	VOLUME	30	3	20	40	srf src	
S2.001 - S2.003	Leach Tanks 1 - 3	414,423	4,617,114	1,435.2	POINT	72	163	7,800	13,700	2.0	72.7
S2.004	Neutralization Filter Vent 1	414,703	4,617,212	1,435.2	POINT	0.3	153	3,887	5,500	1.5	51.9
S2.005	Neutralization Filter Vent 2	414,712	4,617,217	1,435.2	POINT	0.3	153	3,887	5,500	1.5	51.9
S2.006	Neutralization Filter Vent 3	414,721	4,617,221	1,435.2	POINT	0.3	153	3,887	5,500	1.5	51.9
S2.007	Neutralization Filter Vent 4	414,729	4,617,226	1,435.2	POINT	0.3	153	3,887	5,500	1.5	51.9
PF1.012	Neutralization Filter 1 to Discharge Feeder 1	414,703	4,617,212	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	
PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	414,703	4,617,212	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.014	Neutralization Filter 2 to Discharge Feeder 2	414,712	4,617,217	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
No	9	Tailings Feed Circuit	PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.016	Neutralization Filter 3 to Discharge Feeder 3	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.018	Neutralization Filter 4 to Discharge Feeder 4	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	9	Tailings Feed Circuit	PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	130	1,138,800	ton	Clay/Neut. Tailings	24	8,760	
No	10	Tailings Collection	PF1.020	Tailings Collection Conveyor to Tailings Stacker	520	4,555,200	ton	Clay/Neut. Tailings	24	8,760	
No	11	Tailings Stacking	PF1.022	Tailings Stacker to Clay Tailings Filter Stack	520	4,555,200	ton	Clay/Neut. Tailings	24	8,760	
No	12	ZLD Centrifuge	PF1.023	ZLD Centrifuge discharge to Sulfate Salts Collection Conveyor	40	350,400	ton	Sulfate Tailings	24	8,760	
No	12a	Magnesium Sulfate Circuit	PF1.038	Magnesium Sulfate Stage 3 Centrifuge 1 to Sulfate Salts Collection Conveyor	70	613,200	ton	Sulfate Tailings	24	8,760	
No	12a	Magnesium Sulfate Circuit	PF1.039	Magnesium Sulfate Stage 3 Centrifuge 2 to Sulfate Salts Collection Conveyor	70	613,200	ton	Sulfate Tailings	24	8,760	
No	12a	Magnesium Sulfate Circuit	PF1.040	Magnesium Sulfate Stage 4 Centrifuge 1 to Sulfate Salts Collection Conveyor	60	525,600	ton	Sulfate Tailings	24	8,760	
No	12a	Magnesium Sulfate Circuit	PF1.041	Magnesium Sulfate Stage 4 Centrifuge 2 to Sulfate Salts Collection Conveyor	60	525,600	ton	Sulfate Tailings	24	8,760	
No	12b	Sulfate Tailings Stacking	PF1.042	Sulfate Salts Collection Conveyor discharge to Sulfate Salts Tailings Stacker	300	2,628,000	ton	Sulfate Tailings	24	8,760	
No	12b	Sulfate Tailings Stacking	PF1.043	Sulfate Salts Tailings Stacker discharge to Clay Tailings Filter Stack	300	2,628,000	ton	Sulfate Tailings	24	8,760	
No	13	Magnesium Precip. Filter Vents	S2.009	Magnesium Precipitation Filter Vent 1			-	Slurry	24	240	
No	13	Magnesium Precip. Filter Vents	S2.010	Magnesium Precipitation Filter Vent 2			-	Slurry	24	240	
No	13a	Repulp Feed Circuit	PF1.044	Magnesium Precipitation Filter 1 to Magnesium Precipitation Discharge Conveyor 1	160	1,401,600	ton	Mg Solids	24	8,760	
No	13a	Repulp Feed Circuit	PF1.045	Magnesium Precipitation Discharge Conveyor 1 to Repulp Feed Conveyor 1	160	1,401,600	ton	Mg Solids	24	8,760	
No	13a	Repulp Feed Circuit	PF1.046	Magnesium Precipitation Filter 2 to Magnesium Precipitation Discharge Conveyor 2	160	1,401,600	ton	Mg Solids	24	8,760	

SOURCE DESCRIPTION		EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.016	Neutralization Filter 3 to Discharge Feeder 3	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.018	Neutralization Filter 4 to Discharge Feeder 4	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.020	Tailings Collection Conveyor to Tailings Stacker	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.022	Tailings Stacker to Clay Tailings Filter Stack	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.023	ZLD Centrifuge discharge to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Enclosure	50%
PF1.038	Magnesium Sulfate Stage 3 Centrifuge 1 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.039	Magnesium Sulfate Stage 3 Centrifuge 2 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.040	Magnesium Sulfate Stage 4 Centrifuge 1 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.041	Magnesium Sulfate Stage 4 Centrifuge 2 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.042	Sulfate Salts Collection Conveyor discharge to Sulfate Salts Tailings Stacker	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Enclosure	50%
PF1.043	Sulfate Salts Tailings Stacker discharge to Clay Tailings Filter Stack	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
S2.009	Magnesium Precipitation Filter Vent 1	0.24	0.24	0.24						lb/hr	*see Detailed Calcs*	None	
S2.010	Magnesium Precipitation Filter Vent 2	0.24	0.24	0.24						lb/hr	*see Detailed Calcs*	None	
PF1.044	Magnesium Precipitation Filter 1 to Magnesium Precipitation Discharge Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.045	Magnesium Precipitation Discharge Conveyor 1 to Repulp Feed Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.046	Magnesium Precipitation Filter 2 to Magnesium Precipitation Discharge Conveyor 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%

SOURCE DESCRIPTION		HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.016	Neutralization Filter 3 to Discharge Feeder 3	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.018	Neutralization Filter 4 to Discharge Feeder 4	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	0.059	0.021	0.0033						0.26	0.094	0.014					
PF1.020	Tailings Collection Conveyor to Tailings Stacker	0.23	0.086	0.013						1.02	0.38	0.057					
PF1.022	Tailings Stacker to Clay Tailings Filter Stack	0.23	0.086	0.013						1.02	0.38	0.057					
PF1.023	ZLD Centrifuge discharge to Sulfate Salts Collection Conveyor	0.060	0.022	0.0033						0.26	0.096	0.015					
PF1.038	Magnesium Sulfate Stage 3 Centrifuge 1 to Sulfate Salts Collection Conveyor	0.032	0.0116	0.0018						0.14	0.051	0.0077					
PF1.039	Magnesium Sulfate Stage 3 Centrifuge 2 to Sulfate Salts Collection Conveyor	0.032	0.0116	0.0018						0.14	0.051	0.0077					
PF1.040	Magnesium Sulfate Stage 4 Centrifuge 1 to Sulfate Salts Collection Conveyor	0.027	0.0099	0.0015						0.12	0.043	0.0066					
PF1.041	Magnesium Sulfate Stage 4 Centrifuge 2 to Sulfate Salts Collection Conveyor	0.027	0.0099	0.0015						0.12	0.043	0.0066					
PF1.042	Sulfate Salts Collection Conveyor discharge to Sulfate Salts Tailings Stacker	0.45	0.17	0.025						1.97	0.72	0.110					
PF1.043	Sulfate Salts Tailings Stacker discharge to Clay Tailings Filter Stack	0.90	0.33	0.050						3.94	1.45	0.22					
S2.009	Magnesium Precipitation Filter Vent 1	0.24	0.24	0.24						0.029	0.029	0.029					
S2.010	Magnesium Precipitation Filter Vent 2	0.24	0.24	0.24						0.029	0.029	0.029					
PF1.044	Magnesium Precipitation Filter 1 to Magnesium Precipitation Discharge Conveyor 1	0.072	0.026	0.0040						0.32	0.116	0.0176					
PF1.045	Magnesium Precipitation Discharge Conveyor 1 to Repulp Feed Conveyor 1	0.072	0.026	0.0040						0.32	0.116	0.0176					
PF1.046	Magnesium Precipitation Filter 2 to Magnesium Precipitation Discharge Conveyor 2	0.072	0.026	0.0040						0.32	0.116	0.0176					

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	414,712	4,617,217	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.016	Neutralization Filter 3 to Discharge Feeder 3	414,721	4,617,221	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	
PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	414,721	4,617,221	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.018	Neutralization Filter 4 to Discharge Feeder 4	414,729	4,617,226	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	
PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	414,729	4,617,226	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.020	Tailings Collection Conveyor to Tailings Stacker	414,936	4,617,333	1,438.5	VOLUME	10	3	12	16	elev src w/o bldg	
PF1.022	Tailings Stacker to Clay Tailings Filter Stack	414,934	4,617,378	1,440.5	VOLUME	37.5	3	25	50	srf src	
PF1.023	ZLD Centrifuge discharge to Sulfate Salts Collection Conveyor	414,759	4,617,076	1,430.9	VOLUME	5	2	2	6	elev src w/ bldg	
PF1.038	Magnesium Sulfate Stage 3 Centrifuge 1 to Sulfate Salts Collection Conveyor	414,785	4,617,090	1,430.9	VOLUME	5	2	2	6	elev src w/ bldg	
PF1.039	Magnesium Sulfate Stage 3 Centrifuge 2 to Sulfate Salts Collection Conveyor	414,796	4,617,096	1,430.9	VOLUME	5	2	2	6	elev src w/ bldg	
PF1.040	Magnesium Sulfate Stage 4 Centrifuge 1 to Sulfate Salts Collection Conveyor	414,807	4,617,101	1,430.9	VOLUME	5	2	2	6	elev src w/ bldg	
PF1.041	Magnesium Sulfate Stage 4 Centrifuge 2 to Sulfate Salts Collection Conveyor	414,818	4,617,107	1,430.9	VOLUME	5	2	2	6	elev src w/ bldg	
PF1.042	Sulfate Salts Collection Conveyor discharge to Sulfate Salts Tailings Stacker	415,003	4,617,208	1,430.5	VOLUME	8	3	4	10	elev src w/o bldg	
PF1.043	Sulfate Salts Tailings Stacker discharge to Clay Tailings Filter Stack	415,039	4,617,181	1,428.7	VOLUME	37.5	3	25	50	srf src	
S2.009	Magnesium Precipitation Filter Vent 1	414,686	4,617,203	1,435.2	POINT	80	118	3,085	4,100	1.5	38.7
S2.010	Magnesium Precipitation Filter Vent 2	414,695	4,617,207	1,435.2	POINT	80	118	3,085	4,100	1.5	38.7
PF1.044	Magnesium Precipitation Filter 1 to Magnesium Precipitation Discharge Conveyor 1	414,686	4,617,203	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	
PF1.045	Magnesium Precipitation Discharge Conveyor 1 to Repulp Feed Conveyor 1	414,686	4,617,203	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.046	Magnesium Precipitation Filter 2 to Magnesium Precipitation Discharge Conveyor 2	414,695	4,617,207	1,435.2	VOLUME	22.5	9	13	29	elev src w/ bldg	

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
No	13a	Repulp Feed Circuit	PF1.047	Magnesium Precipitation Discharge Conveyor 2 to Repulp Feed Conveyor 1	160	1,401,600	ton	Mg Solids	24	8,760	
No	13b	Repulp Feed Circuit	PF1.048	Repulp Feed Conveyor 1 to Repulp Tank	320	2,803,200	ton	Mg Solids	24	8,760	
No	15	Lithium Carbonate Dryer	S2.012	Lithium Carbonate Dryer	10	87,600	ton	Li_2CO_3	24	8,760	
No	15A	Lithium Carbonate Cooler	S2.121	Lithium Carbonate Cooler	10	87,600	ton	Li_2CO_3	24	8,760	
No	16	Lithium Carbonate Material Handling	S2.013	Lithium Carbonate Material Handling	10	87,600	ton	Li_2CO_3	24	8,760	
No	17	Lithium Carbonate Storage Bin	S2.014	Lithium Carbonate Storage Bin loading	10	87,600	ton	Li_2CO_3	24	8,760	
No	18	Lithium Carbonate Packaging	S2.015	Lithium Carbonate Packaging	20	87,600	ton	Li_2CO_3	24	4,380	
No	19	Lime Silo	S2.016	Lime Silo 1 loading Vent 1 (unload to Hydrator Feed Silo via sealed transfer)	50	262,800	ton	Lime	24	8,760	
No	19	Lime Silo	S2.017	Lime Silo 1 loading Vent 2 (unload to Hydrator Feed Silo via sealed transfer)	50	*See S2.016 for combined annual throughput*	ton	Lime	24	8,760	
No	19A	Lime Hydrator Feed Bin	S2.122	Lime Hydrator Feed Bin loading (unload to Hydrator via sealed transfers)	30	262,800	ton	Lime	24	8,760	
No	19B	Lime Hydrator	S2.123	Lime Hydrator	40	350,400	ton	Hydrated Lime	24	8,760	
No	19C	Hydrated Lime Silo	S2.124	Hydrated Lime Silo loading Vent 1	55	350,400	ton	Hydrated Lime	24	8,760	
No	19C	Hydrated Lime Silo	S2.125	Hydrated Lime Silo loading Vent 2	55	*See S2.124 for combined annual throughput*	ton	Hydrated Lime	24	8,760	
No	19C	Hydrated Lime Silo Unloadin	S2.116	Hydrated Lime Silo unloading to Slurry Tank	40	350,400	ton	Hydrated Lime	24	8,760	
No	20	Soda Ash Silo	S2.018	Soda Ash Silo 1 loading Vent 1	50	262,800	ton	Soda Ash	24	8,760	
No	20	Soda Ash Silo	S2.032	Soda Ash Silo 1 loading Vent 2	50	*See S2.018 for combined annual throughput*	ton	Soda Ash	24	8,760	
No	20	Soda Ash Silo Unloading	S2.117	Soda Ash Silo 1 unloading to Dissolution Tank	30	262,800	ton	Soda Ash	24	8,760	
No	21	Sulfur Storage	S2.019	Sulfur Storage	180	350,400	ton	Sulfur	24	8,760	
No	22	Package Boiler	S2.021	Package Boiler	0.890	768.960	kgal	Propane	24	8,760	70.1 MMBtu
No	23	Start-Up Burner	S2.022	Start-Up Burner	1.046	301.248	kgal	Propane	24	8,760	87.0 MMBtu
No	24	Sulfuric Acid Plant	S2.023	Sulfuric Acid Plant	40	350,400	ton	Sulfur	24	8,760	

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
PF1.047	Magnesium Precipitation Discharge Conveyor 2 to Repulp Feed Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
PF1.048	Repulp Feed Conveyor 1 to Repulp Tank	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Moisture Content	85%
S2.012	Lithium Carbonate Dryer	0.02	0.02	0.02						gr/dscf	*NDEP Default (NDEP 2017)*	Baghouse	
S2.121	Lithium Carbonate Cooler	0.02	0.02	0.02						gr/dscf	*NDEP Default (NDEP 2017)*	Baghouse	
S2.013	Lithium Carbonate Material Handling	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Vent Filter	50%
S2.014	Lithium Carbonate Storage Bin loading	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.015	Lithium Carbonate Packaging	0.02	0.02	0.02						gr/dscf	*NDEP Default (NDEP 2017)*	Baghouse	
S2.016	Lime Silo 1 loading Vent 1 (unload to Hydrator Feed Silo via sealed transfer)	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.017	Lime Silo 1 loading Vent 2 (unload to Hydrator Feed Silo via sealed transfer)	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.122	Lime Hydrator Feed Bin loading (unload to Hydrator via sealed transfers)	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.123	Lime Hydrator	0.02	0.02	0.02						gr/dscf	*NDEP Default (NDEP 2017)*	Baghouse	
S2.124	Hydrated Lime Silo loading Vent 1	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.125	Hydrated Lime Silo loading Vent 2	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.116	Hydrated Lime Silo unloading to Slurry Tank	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Optional Wet Scrubber	
S2.018	Soda Ash Silo 1 loading Vent 1	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.032	Soda Ash Silo 1 loading Vent 2	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.117	Soda Ash Silo 1 unloading to Dissolution Tank	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Optional Wet Scrubber	
S2.019	Sulfur Storage	0.20	0.20	0.20			0.46		0.16	lb/hr	*15 ppmv SO2, 10 ppmv H2S (LNC 2024c) w/ safety factor*	Caustic Scrubber	
S2.021	Package Boiler	2.1	2.1	2.1	7.5	8.0	1.56	1		lb/kgal	*AP-42 Table 1.5-1 (07/08) Propane Industrial Boilers w/ PM 3x safety factor; NOX vendor data 1.4x safety factor; SO2: 185 ppm S*	None	
S2.022	Start-Up Burner	2.1	2.1	2.1	7.5	13	1.57	1		lb/kgal	*AP-42 Table 1.5-1 (07/08) Propane Industrial Boilers w/ PM 3x safety factor; SO2: 185 ppm S*	None	
S2.023	Sulfuric Acid Plant	5.63	5.63	5.63		16.8	7.68			lb/hr	*(MECS 2023) w/ 10% safety factor*	Tail Gas Scrubber	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
PF1.047	Magnesium Precipitation Discharge Conveyor 2 to Repulp Feed Conveyor 1	0.072	0.026	0.0040						0.32	0.116	0.0176					
PF1.048	Repulp Feed Conveyor 1 to Repulp Tank	0.144	0.053	0.0080						0.63	0.23	0.035					
S2.012	Lithium Carbonate Dryer	0.34	0.34	0.34						1.50	1.50	1.50					
S2.121	Lithium Carbonate Cooler	0.09	0.09	0.09						0.38	0.38	0.38					
S2.013	Lithium Carbonate Material Handling	0.024	0.014	0.0021						0.11	0.061	0.0093					
S2.014	Lithium Carbonate Storage Bin loading	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.015	Lithium Carbonate Packaging	0.17	0.17	0.17						0.38	0.38	0.38					
S2.016	Lime Silo 1 loading Vent 1 (unload to Hydrator Feed Silo via sealed transfer)	0.050	0.017	0.0026						0.13	0.045	0.0068					
S2.017	Lime Silo 1 loading Vent 2 (unload to Hydrator Feed Silo via sealed transfer)	0.050	0.017	0.003						*See S2.016 for combined annual emissions*							
S2.122	Lime Hydrator Feed Bin loading (unload to Hydrator via sealed transfers)	0.030	0.010	0.0015						0.13	0.04	0.007					
S2.123	Lime Hydrator	0.10	0.10	0.10						0.45	0.45	0.45					
S2.124	Hydrated Lime Silo loading Vent 1	0.054	0.019	0.0028						0.17	0.06	0.009					
S2.125	Hydrated Lime Silo loading Vent 2	0.054	0.019	0.0028						*See S2.124 for combined annual emissions*							
S2.116	Hydrated Lime Silo unloading to Slurry Tank	0.192	0.112	0.0170						0.84	0.49	0.074					
S2.018	Soda Ash Silo 1 loading Vent 1	0.050	0.017	0.0026						0.13	0.045	0.0068					
S2.032	Soda Ash Silo 1 loading Vent 2	0.050	0.017	0.0026						*See S2.018 for combined annual emissions*							
S2.117	Soda Ash Silo 1 unloading to Dissolution Tank	0.14	0.084	0.013						0.63	0.37	0.056					
S2.019	Sulfur Storage	0.20	0.20	0.20			0.46		0.16	0.88	0.88	0.88			2.01		0.70
S2.021	Package Boiler	1.87	1.87	1.87	6.68	7.12	1.39	0.89		0.81	0.81	0.81	2.88	3.08	0.60	0.38	
S2.022	Start-Up Burner	2.20	2.20	2.20	7.85	13.6	1.64	1.05		0.32	0.32	0.32	1.13	1.96	0.24	0.15	
S2.023	Sulfuric Acid Plant	5.63	5.63	5.63		16.8	7.68			24.7	24.7	24.7		73.6	33.7		

	SOURCE DESCRIPTION	NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
PF1.047	Magnesium Precipitation Discharge Conveyor 2 to Repulp Feed Conveyor 1	414,695	4,617,207	1,435.2	VOLUME	10	3	12	16	elev src w/ bldg	
PF1.048	Repulp Feed Conveyor 1 to Repulp Tank	414,620	4,617,205	1,435.2	VOLUME	10	3	12	16	elev src w/o bldg	
S2.012	Lithium Carbonate Dryer	414,591	4,617,024	1,430.9	POINT	37	223	2,000	2,152	0.5	182.7
S2.121	Lithium Carbonate Cooler	414,587	4,617,033	1,430.9	POINT	25	122	500	500	0.3	95.5
S2.013	Lithium Carbonate Material Handling	414,600	4,617,046	1,430.9	POINT	9	104	465	465	0.3	88.8
S2.014	Lithium Carbonate Storage Bin loading	414,566	4,617,024	1,430.9	POINTHOR	43	120	760	1,000	0.6	62.4
S2.015	Lithium Carbonate Packaging	414,561	4,617,019	1,430.9	POINT	27	Ambient	1,020	1,020	0.3	194.8
S2.016	Lime Silo 1 loading Vent 1 (unload to Hydrator Feed Silo via sealed transfer)	414,637	4,617,235	1,435.2	POINTHOR	87	Ambient	2,250	2,250	1.33	27.0
S2.017	Lime Silo 1 loading Vent 2 (unload to Hydrator Feed Silo via sealed transfer)	414,641	4,617,237	1,435.2	POINTHOR	87	Ambient	2,250	2,250	1.33	27.0
S2.122	Lime Hydrator Feed Bin loading (unload to Hydrator via sealed transfers)	414,629	4,617,234	1,435.2	POINTHOR	76	Ambient	2,400	2,400	1.00	50.9
S2.123	Lime Hydrator	414,625	4,617,232	1,435.2	POINT	84	197	600	12,534	2.7	37.4
S2.124	Hydrated Lime Silo loading Vent 1	414,607	4,617,223	1,435.2	POINTHOR	118	Ambient	2,250	2,250	1.33	27.0
S2.125	Hydrated Lime Silo loading Vent 2	414,609	4,617,219	1,435.2	POINTHOR	118	Ambient	2,250	2,250	1.33	27.0
S2.116	Hydrated Lime Silo unloading to Slurry Tank	414,621	4,617,216	1,435.2	POINT	23	Ambient	2,500	2,500	0.67	119.4
S2.018	Soda Ash Silo 1 loading Vent 1	414,612	4,616,934	1,430.9	POINTHOR	133	Ambient	1,600	1,600	0.68	1.2
S2.032	Soda Ash Silo 1 loading Vent 2	414,616	4,616,936	1,430.9	POINTHOR	133	Ambient	1,600	1,600	0.68	1.2
S2.117	Soda Ash Silo 1 unloading to Dissolution Tank	414,604	4,616,931	1,430.9	POINTHOR	45	Ambient	1,800	1,800	0.50	152.8
S2.019	Sulfur Storage	414,092	4,616,845	1,442.9	POINT	51	143	2,100	3,100	1.3	38.9
S2.021	Package Boiler	414,297	4,616,930	1,437.7	POINT	76	338	14,738	26,462	2.8	71.6
S2.022	Start-Up Burner	414,200	4,616,986	1,442.9	POINT	41	800	48,676	139,257	3.0	328.3
S2.023	Sulfuric Acid Plant	414,116	4,616,968	1,442.9	POINT	199	76	105,556	142,636	9.0	37.4

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
					Design Throughput				Operating Schedule		
Construction Source	System	System Description	Source ID	Source Description	unit/hr	unit/yr	units	Material	hr/day	hr/yr	Other
No	25	Fire Pump	S2.024	Fire Pump (261 kW, 2009 or newer)	261	26,100	kW	Diesel	24	100	16.1 gal/hr
No	26	Emergency Generators	S2.026	Emergency Generator 1 (Mine)	168	16,800	hp	Propane	24	100	13.9 gal/hr
No	26	Emergency Generators	S2.027	Emergency Generator 2 (Mine)	168	16,800	hp	Propane	24	100	13.9 gal/hr
Both	27	Gasoline Tank	S2.028	Gasoline Tank (Mine)		103,000	Gal	Gasoline	24	8,760	
Both	27	Gasoline Tank	S2.034	Gasoline Tank (Process Plant)		108,000	Gal	Gasoline	24	8,760	
Both	27A	Gasoline Tank	S2.082	Gasoline Tank (10k, Process)		200,000	Gal	Gasoline	24	8,760	
Both	27	Gasoline Tank	S2.083	Gasoline Tank #2 (Mine)		115,000	Gal	Gasoline	24	8,760	
Both	28	Quinn 1 Generator	S2.029	Quinn 1 Diesel Generator (130≤kW≤560, 2015 or newer)	560	4,905,600	kW	Diesel	24	8,760	37.5 gal/hr
No	29	Neutralization Flocculant Silo	S2.035	Neutralization Flocculant Silo loading (silo unloading through sealed transfers)	50	6,000	ton	Flocculant	24	8,760	
No	30	Limestone Feed	PF1.049	Limestone Truck discharge to Limestone Feeder	250	438,000	ton	Limestone	24	8,760	
No	30	Limestone Feed	PF1.050	Limestone Feeder to Limestone Conveyor 1	250	438,000	ton	Limestone	24	8,760	
No	30	Limestone Feed	PF1.051	Limestone Conveyor 1 to Limestone Stacker	250	438,000	ton	Limestone	24	8,760	
No	30	Limestone Feed	PF1.052	Limestone Stacker to Limestone Stockpile	250	438,000	ton	Limestone	24	8,760	
No	31A	Limestone Crusher Feed	PF1.091	Limestone Reclaim Feeder to Limestone Feed Conveyor	50	438,000	ton	Limestone	24	8,760	
No	31	Limestone Crushing and Screening	S2.086	Limestone Crusher Discharge Conveyor to Bucket Elevator	50	438,000	ton	Limestone	24	8,760	
No	31	Limestone Crushing and Screening	S2.087	Bucket Elevator to Limestone Storage Silo	50	438,000	ton	Limestone	24	8,760	
No	31	Limestone Crushing and Screening	S2.091	Limestone Crusher (IN from Feed Conveyor; OUT to Crusher Discharge Conveyor)	50	438,000	ton	Limestone	24	8,760	
No	32	Limestone Storage	PF1.053	Limestone Storage Silo (S2.087) unloading to Limestone Cyclones Feed Tank (wet process)	50	438,000	ton	Limestone	24	8,760	
Yes	34	North Batch Plant - Silos	S2.039	North Cement Silo 1 - Loading	60	350,400	ton	Cement	24	8,760	
Yes	34	North Batch Plant - Silos	S2.040	North Cement Silo 2 - Loading	60	350,400	ton	Cement	24	8,760	
Yes	34	North Batch Plant - Silos	S2.041	North Cement Silo 3 - Loading	60	350,400	ton	Cement	24	8,760	
Yes	34	North Batch Plant - Silos	PF1.066-68	North Cement Silos 1 - 3 Unloading to Mixer	40	350,400	ton	Cement	24	8,760	

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.024	Fire Pump (261 kW, 2009 or newer)	0.2	0.2	0.2	3.5	4.0	6.0E-03	1.53		g/kW-hr	*PM, CO, NOX: 40 CFR 60.4205(c) (Table 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (4/25)*	None	
S2.026	Emergency Generator 1 (Mine)	4.1E-04	4.1E-04	4.1E-04	7.2E-03	4.4E-03	2.9E-05	4.4E-03		lb/hp-hr	*CO, NOX, VOC: 40 CFR 60.4231(c) & 1048.101(b)(3); PM, SO2: (CARB 1991)*	None	
S2.027	Emergency Generator 2 (Mine)	4.1E-04	4.1E-04	4.1E-04	7.2E-03	4.4E-03	2.9E-05	4.4E-03		lb/hp-hr	*CO, NOX, VOC: 40 CFR 60.4231(c) & 1048.101(b)(3); PM, SO2: (CARB 1991)*	None	
S2.028	Gasoline Tank (Mine)							5.1E-02		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
S2.034	Gasoline Tank (Process Plant)							7.5E-02		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
S2.082	Gasoline Tank (10k, Process)							3.2E-01		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	Submerged Fill	
S2.083	Gasoline Tank #2 (Mine)							5.9E-02		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
S2.029	Quinn 1 Diesel Generator (130≤kW≤560, 2015 or newer)	0.02	0.02	0.02	0.5	0.015	6.5E-03	0.19		g/kW-hr	*PM & VOC: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO & NOX: Engine Data; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.035	Neutralization Flocculant Silo loading (silo unloading through sealed transfers)	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
PF1.049	Limestone Truck discharge to Limestone Feeder	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.050	Limestone Feeder to Limestone Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.051	Limestone Conveyor 1 to Limestone Stacker	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.052	Limestone Stacker to Limestone Stockpile	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.091	Limestone Reclaim Feeder to Limestone Feed Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
S2.086	Limestone Crusher Discharge Conveyor to Bucket Elevator	0.014	0.014	0.014						gr/dscf	*40 CFR Part 60, Subpart OOO, Table 2*	Baghouse	
S2.087	Bucket Elevator to Limestone Storage Silo											Baghouse	
S2.091	Limestone Crusher (IN from Feed Conveyor; OUT to Crusher Discharge Conveyor)											Baghouse	
PF1.053	Limestone Storage Silo (S2.087) unloading to Limestone Cyclones Feed Tank (wet process)	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	None	
S2.039	North Cement Silo 1 - Loading	0.00099	0.00034	5.1E-05						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.040	North Cement Silo 2 - Loading	0.00099	0.00034	5.1E-05						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.041	North Cement Silo 3 - Loading	0.00099	0.00034	5.1E-05						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
PF1.066-68	North Cement Silos 1 - 3 Unloading to Mixer	0.0184	0.0055	8.3E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) mixer loading ctrl. (NDEP 2017)*	Vent Filter or Enclosure	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.024	Fire Pump (261 kW, 2009 or newer)	0.12	0.12	0.12	2.01	2.30	0.0034	0.88		0.0058	0.0058	0.0058	0.10	0.12	0.00017	0.044	
S2.026	Emergency Generator 1 (Mine)	0.069	0.069	0.069	1.21	0.74	0.0049	0.74		0.0034	0.0034	0.0034	0.060	0.037	0.00024	0.037	
S2.027	Emergency Generator 2 (Mine)	0.069	0.069	0.069	1.21	0.74	0.0049	0.74		0.0034	0.0034	0.0034	0.060	0.037	0.00024	0.037	
S2.028	Gasoline Tank (Mine)							0.05								0.223	
S2.034	Gasoline Tank (Process Plant)							0.08								0.329	
S2.082	Gasoline Tank (10k, Process)							0.32								1.420	
S2.083	Gasoline Tank #2 (Mine)							0.06								0.257	
S2.029	Quinn 1 Diesel Generator (130≤kW≤560, 2015 or newer)	0.025	0.025	0.025	0.62	0.019	0.0080	0.23		0.11	0.11	0.11	2.70	0.081	0.035	1.03	
S2.035	Neutralization Flocculant Silo loading (silo unloading through sealed transfers)	0.050	0.017	0.0026						0.0030	0.00102	0.00015					
PF1.049	Limestone Truck discharge to Limestone Feeder	0.75	0.28	0.042						0.66	0.24	0.036					
PF1.050	Limestone Feeder to Limestone Conveyor 1	0.75	0.28	0.042						0.66	0.24	0.036					
PF1.051	Limestone Conveyor 1 to Limestone Stacker	0.75	0.28	0.042						0.66	0.24	0.036					
PF1.052	Limestone Stacker to Limestone Stockpile	0.75	0.28	0.042						0.66	0.24	0.036					
PF1.091	Limestone Reclaim Feeder to Limestone Feed Conveyor	0.15	0.06	0.008						0.66	0.24	0.036					
S2.086	Limestone Crusher Discharge Conveyor to Bucket Elevator	0.96	0.96	0.96						4.20	4.20	4.20					
S2.087	Bucket Elevator to Limestone Storage Silo	*See S2.086 for combined total emissions*								*See S2.086 for combined total emissions*							
S2.091	Limestone Crusher (IN from Feed Conveyor; OUT to Crusher Discharge Conveyor)	*See S2.086 for combined total emissions*								*See S2.086 for combined total emissions*							
PF1.053	Limestone Storage Silo (S2.087) unloading to Limestone Cyclones Feed Tank (wet process)	0.24	0.14	0.021						1.05	0.61	0.093					
S2.039	North Cement Silo 1 - Loading	0.059	0.020	0.0031						0.17	0.060	0.0090					
S2.040	North Cement Silo 2 - Loading	0.059	0.020	0.0031						0.17	0.060	0.0090					
S2.041	North Cement Silo 3 - Loading	0.059	0.020	0.0031						0.17	0.060	0.0090					
PF1.066-68	North Cement Silos 1 - 3 Unloading to Mixer	0.74	0.22	0.033						3.22	0.96	0.15					

	SOURCE DESCRIPTION	NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.024	Fire Pump (261 kW, 2009 or newer)	414,297	4,617,093	1,440.9	POINT	13	842	632	1,867	0.5	158.5
S2.026	Emergency Generator 1 (Mine)	413,377	4,616,951	1,466.8	POINT	5	960	275	888	0.3	169.6
S2.027	Emergency Generator 2 (Mine)	413,386	4,616,954	1,466.8	POINT	5	960	275	888	0.3	169.6
S2.028	Gasoline Tank (Mine)	413,463	4,616,934	1,466.2							
S2.034	Gasoline Tank (Process Plant)	414,434	4,616,961	1,433.6							
S2.082	Gasoline Tank (10k, Process)	414,496	4,616,830	1,428.1							
S2.083	Gasoline Tank #2 (Mine)	410,804	4,617,253	1,526.0							
S2.029	Quinn 1 Diesel Generator (130≤kW≤560, 2015 or newer)	425,332	4,616,150	1,281.2	POINTHOR	6	1,100	1,414	5,504	1.4	61.2
S2.035	Neutralization Flocculant Silo loading (silo unloading through sealed transfers)	414,613	4,617,133	1,435.2	POINTHOR	66	Ambient	1,100	1,100	0.5	93.4
PF1.049	Limestone Truck discharge to Limestone Feeder	414,138	4,617,041	1,443.6	VOLUME	0.5	3	1	1	srf src	
PF1.050	Limestone Feeder to Limestone Conveyor 1	414,134	4,617,052	1,443.6	VOLUME	5	3	2	6	elev src w/o bldg	
PF1.051	Limestone Conveyor 1 to Limestone Stacker	414,120	4,617,077	1,443.6	VOLUME	5	3	2	6	elev src w/o bldg	
PF1.052	Limestone Stacker to Limestone Stockpile	414,151	4,617,094	1,443.6	VOLUME	15	3	10	20	srf src	
PF1.091	Limestone Reclaim Feeder to Limestone Feed Conveyor	414,225	4,617,133	1,443.6	VOLUME	10.5	3	3	12	elev src w/o bldg	
S2.086	Limestone Crusher Discharge Conveyor to Bucket Elevator	414,228	4,617,126	1,443.6	POINT	80	Ambient	8,000	8,000	2.0	42.4
S2.087	Bucket Elevator to Limestone Storage Silo	414,228	4,617,126	1,443.6		80	Ambient	8,000	8,000	2.0	42.4
S2.091	Limestone Crusher (IN from Feed Conveyor; OUT to Crusher Discharge Conveyor)	414,228	4,617,126			80	Ambient	8,000	8,000	2.0	42.4
PF1.053	Limestone Storage Silo (S2.087) unloading to Limestone Cyclones Feed Tank (wet process)	414,223	4,617,120	1,443.6	VOLUME	7	2	2	8	elev src w/ bldg	
S2.039	North Cement Silo 1 - Loading	415,713	4,616,767	1,413.5	POINTHOR	50	Ambient	1,930	1,930	1.0	41.0
S2.040	North Cement Silo 2 - Loading	415,719	4,616,767	1,413.5	POINTHOR	50	Ambient	1,930	1,930	1.0	41.0
S2.041	North Cement Silo 3 - Loading	415,725	4,616,767	1,413.5	POINTHOR	50	Ambient	1,930	1,930	1.0	41.0
PF1.066-68	North Cement Silos 1 - 3 Unloading to Mixer	415,707	4,616,779	1,413.5	VOLUME	24	1	2	25	elev src w/o bldg	

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
Yes	35	North Batch Plant - Aggregate	PF1.084	North Feed Hoppers 1 & 2 Loading	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	35	North Batch Plant - Aggregate	PF1.085	North Feed Hoppers 1 & 2 Unloading to Batching Hopper Feed Conveyors 1 & 2	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	35	North Batch Plant - Aggregate	PF1.055	North Batching Hopper Loading	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	36	North Batch Plant - Aggregate	PF1.056	North Batching Hopper Unloading to Collection Conveyor	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	36	North Batch Plant - Aggregate	PF1.057	North Collection Conveyor to Feed Conveyor	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	36	North Batch Plant - Aggregate	PF1.058	North Feed Conveyor to Mixer	240	2,102,400	ton	Aggregate/ Sand	24	8,760	
Yes	40	Construction Generators - ROM Area	S2.045	ROM Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.69 gal/hr
Yes	42	Construction Generators - Process Plant	S2.047	Piping Field Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.69 gal/hr
Both	43A	Construction Generators - Process Plant	S2.049	Downstream Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.7 gal/hr
Both	43A	Construction Generators - Process Plant	S2.050	Upstream Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.7 gal/hr
Both	43A	Construction Generators - Process Plant	S2.054	Procurement Field Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.69 gal/hr
Yes	43B	Construction Generators - Process Plant	S2.051	SAP Field Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.69 gal/hr
Yes	44	Construction Generators - Process Plant	S2.057	Tanks Area Diesel Generator 1 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	44	Construction Generators - Process Plant	S2.058	Tanks Area Diesel Generator 2 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	44	Construction Generators - Process Plant	S2.059	Tanks Area Diesel Generator 3 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	44	Construction Generators - Process Plant	S2.060	SAP Five Wide Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	44	Construction Generators - Process Plant	S2.061	EPC Office 2 Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
PF1.084	North Feed Hoppers 1 & 2 Loading	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.085	North Feed Hoppers 1 & 2 Unloading to Batching Hopper Feed Conveyors 1 & 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.055	North Batching Hopper Loading	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.056	North Batching Hopper Unloading to Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.057	North Collection Conveyor to Feed Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.058	North Feed Conveyor to Mixer	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	Enclosure	50%
S2.045	ROM Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.047	Piping Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.049	Downstream Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.050	Upstream Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.054	Procurement Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.051	SAP Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.057	Tanks Area Diesel Generator 1 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.058	Tanks Area Diesel Generator 2 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.059	Tanks Area Diesel Generator 3 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.060	SAP Five Wide Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.061	EPC Office 2 Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
PF1.084	North Feed Hoppers 1 & 2 Loading	0.72	0.26	0.040						3.15	1.16	0.18					
PF1.085	North Feed Hoppers 1 & 2 Unloading to Batching Hopper Feed Conveyors 1 & 2	0.72	0.26	0.040						3.15	1.16	0.18					
PF1.055	North Batching Hopper Loading	0.72	0.26	0.040						3.15	1.16	0.18					
PF1.056	North Batching Hopper Unloading to Collection Conveyor	0.72	0.26	0.040						3.15	1.16	0.18					
PF1.057	North Collection Conveyor to Feed Conveyor	0.72	0.26	0.040						3.15	1.16	0.18					
PF1.058	North Feed Conveyor to Mixer	0.36	0.13	0.020						1.58	0.58	0.088					
S2.045	ROM Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.047	Piping Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.049	Downstream Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.050	Upstream Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.054	Procurement Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.051	SAP Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.057	Tanks Area Diesel Generator 1 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.058	Tanks Area Diesel Generator 2 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.059	Tanks Area Diesel Generator 3 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.060	SAP Five Wide Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.061	EPC Office 2 Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
PF1.084	North Feed Hoppers 1 & 2 Loading	415,701	4,616,767	1,413.5	VOLUME	7	12	6	10	elev src w/o bldg	
PF1.085	North Feed Hoppers 1 & 2 Unloading to Batching Hopper Feed Conveyors 1 & 2	415,701	4,616,767	1,413.5	VOLUME	2	3	2	3	elev src w/o bldg	
PF1.055	North Batching Hopper Loading	415,707	4,616,767	1,413.5	VOLUME	16	6	4	18	elev src w/o bldg	
PF1.056	North Batching Hopper Unloading to Collection Conveyor	415,707	4,616,767	1,413.5	VOLUME	9.5	20	1	10	elev src w/o bldg	
PF1.057	North Collection Conveyor to Feed Conveyor	415,707	4,616,775	1,413.5	VOLUME	8	2	2	9	elev src w/o bldg	
PF1.058	North Feed Conveyor to Mixer	415,707	4,616,779	1,413.5	VOLUME	17	2	2	18	elev src w/o bldg	
S2.045	ROM Office Diesel Generator (37≤kW<56, Tier 4F)	413,941	4,617,170	1,455.3	POINTHOR	5	1,100	139	541	1.1	9.0
S2.047	Piping Field Office Diesel Generator (37≤kW<56, Tier 4F)	416,235	4,616,996	1,418.0	POINTHOR	5	1,100	139	541	1.1	9.0
S2.049	Downstream Office Diesel Generator (37≤kW<56, Tier 4F)	414,766	4,617,010	1,430.9	POINTHOR	5	1,100	139	541	1.1	9.0
S2.050	Upstream Office Diesel Generator (37≤kW<56, Tier 4F)	414,601	4,617,254	1,435.2	POINTHOR	5	1,100	139	541	1.1	9.0
S2.054	Procurement Field Office Diesel Generator (37≤kW<56, Tier 4F)	416,414	4,616,792	1,411.5	POINTHOR	5	1,100	139	541	1.1	9.0
S2.051	SAP Field Office Diesel Generator (37≤kW<56, Tier 4F)	414,128	4,616,866	1,440.6	POINTHOR	5	1,100	139	541	1.1	9.0
S2.057	Tanks Area Diesel Generator 1 (56≤kW<130, Tier 4F)	414,382	4,617,258	1,442.9	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.058	Tanks Area Diesel Generator 2 (56≤kW<130, Tier 4F)	414,398	4,617,267	1,442.4	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.059	Tanks Area Diesel Generator 3 (56≤kW<130, Tier 4F)	414,415	4,617,276	1,442.0	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.060	SAP Five Wide Diesel Generator (56≤kW<130, Tier 4F)	414,238	4,616,796	1,430.9	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.061	EPC Office 2 Diesel Generator (56≤kW<130, Tier 4F)	414,272	4,616,816	1,430.9	POINTHOR	5	1,100	326	1,268	1.1	21.1

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
Both	44A	Construction Generators - Process Plant	S2.048	Tanks Field Office Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Both	44A	Construction Generators - Process Plant	S2.055	Training Yard Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Both	44A	Construction Generators - Process Plant	S2.062	Medical Building Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Both	45A	Construction Generators - Process Plant	S2.063	Warehouse Area Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Both	45A	Construction Generators - Process Plant	S2.064	Area 1310 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Both	45A	Construction Generators - Process Plant	S2.066	Tanks Assembly Lunch Tent Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Yes	45B	Construction Generators - Process Plant	S2.065	SAP Laydown Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Yes	45B	Construction Generators - Process Plant	S2.076	Food Services Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Yes	45B	Construction Generators - Laydown Area	S2.079	Equipment Shop Diesel Generator 2 (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
Both	46A	Construction Generators - Process Plant	S2.067	LNC & EPCM Office Diesel Generator (130≤kW≤560, Tier 4F)	560	2,044,000	kW	Diesel	24	3,650	37.5 gal/hr
Both	46B	Construction Generators - Process Plant	S2.068	Medical Area Diesel Generator (130≤kW≤560, Tier 4F)	560	2,044,000	kW	Diesel	24	3,650	37.5 gal/hr
Both	46B	Construction Generators - Process Plant	S2.113	Lunch Tent Diesel Generator (130≤kW≤560, Tier 4F)	560	2,044,000	kW	Diesel	24	3,650	37.5 gal/hr
Yes	47	Construction Generators - Laydown Area	S2.069	Electrical Laydown Field Office Diesel Generator (37≤kW<56, Tier 4F)	55	200,750	kW	Diesel	24	3,650	3.7 gal/hr
Yes	48A	Construction Generators - Laydown Area	S2.056	NDT Contractor Offices Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	48A	Construction Generators - Laydown Area	S2.071	General Services Diesel Generator 1 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.048	Tanks Field Office Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.055	Training Yard Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.062	Medical Building Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.063	Warehouse Area Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.064	Area 1310 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.066	Tanks Assembly Lunch Tent Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.065	SAP Laydown Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.076	Food Services Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.079	Equipment Shop Diesel Generator 2 (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.067	LNC & EPCM Office Diesel Generator (130≤kW≤560, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.068	Medical Area Diesel Generator (130≤kW≤560, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.113	Lunch Tent Diesel Generator (130≤kW≤560, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.069	Electrical Laydown Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.056	NDT Contractor Offices Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.071	General Services Diesel Generator 1 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.048	Tanks Field Office Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.055	Training Yard Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.062	Medical Building Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.063	Warehouse Area Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.064	Area 1310 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.066	Tanks Assembly Lunch Tent Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.065	SAP Laydown Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.076	Food Services Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.079	Equipment Shop Diesel Generator 2 (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
S2.067	LNC & EPCM Office Diesel Generator (130≤kW≤560, Tier 4F)	0.025	0.025	0.025	2.47	0.49	0.0080	0.23		0.05	0.05	0.05	4.5	0.90	0.015	0.43	
S2.068	Medical Area Diesel Generator (130≤kW≤560, Tier 4F)	0.025	0.025	0.025	2.47	0.49	0.0080	0.23		0.045	0.045	0.045	4.51	0.90	0.015	0.43	
S2.113	Lunch Tent Diesel Generator (130≤kW≤560, Tier 4F)	0.025	0.025	0.025	2.47	0.49	0.0080	0.23		0.045	0.045	0.045	4.51	0.90	0.015	0.43	
S2.069	Electrical Laydown Field Office Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.0014	0.34	
S2.056	NDT Contractor Offices Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.071	General Services Diesel Generator 1 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.048	Tanks Field Office Diesel Generator (56≤kW<130, Tier 4F)	414,346	4,617,240	1,443.6	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.055	Training Yard Diesel Generator (56≤kW<130, Tier 4F)	414,399	4,617,378	1,443.1	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.062	Medical Building Diesel Generator (56≤kW<130, Tier 4F)	416,015	4,616,963	1,416.6	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.063	Warehouse Area Diesel Generator (130≤kW≤300, Tier 4F)	414,542	4,617,063	1,430.9	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.064	Area 1310 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	414,788	4,617,140	1,430.9	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.066	Tanks Assembly Lunch Tent Diesel Generator (130≤kW≤300, Tier 4F)	414,343	4,617,186	1,435.2	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.065	SAP Laydown Diesel Generator (130≤kW≤300, Tier 4F)	414,354	4,616,841	1,437.7	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.076	Food Services Diesel Generator (130≤kW≤300, Tier 4F)	414,552	4,616,899	1,430.9	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.079	Equipment Shop Diesel Generator 2 (130≤kW≤300, Tier 4F)	414,725	4,616,897	1,430.9	POINTHOR	6	1,100	758	2,949	1.4	32.8
S2.067	LNC & EPCM Office Diesel Generator (130≤kW≤560, Tier 4F)	413,923	4,616,981	1,449.7	POINTHOR	8	1,100	1,414	5,504	1.6	45.9
S2.068	Medical Area Diesel Generator (130≤kW≤560, Tier 4F)	414,586	4,617,039	1,430.9	POINTHOR	8	1,100	1,414	5,504	1.6	45.9
S2.113	Lunch Tent Diesel Generator (130≤kW≤560, Tier 4F)	414,692	4,617,321	1,435.2	POINTHOR	8	1,100	1,414	5,504	1.6	45.9
S2.069	Electrical Laydown Field Office Diesel Generator (37≤kW<56, Tier 4F)	415,997	4,617,494	1,431.2	POINTHOR	5	1,100	139	541	1.1	9.0
S2.056	NDT Contractor Offices Diesel Generator (56≤kW<130, Tier 4F)	414,309	4,617,408	1,450.7	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.071	General Services Diesel Generator 1 (56≤kW<130, Tier 4F)	414,769	4,616,921	1,430.9	POINTHOR	5	1,100	326	1,268	1.1	21.1

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
Yes	48A	Construction Generators - Laydown Area	S2.072	General Services Diesel Generator 2 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	48A	Construction Generators - Laydown Area	S2.114	General Services Diesel Generator 3 (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	48A	Construction Generators - Laydown Area	S2.077	Fuel Station Diesel Generator (56≤kW<130, Tier 4F)	129	470,850	kW	Diesel	24	3,650	8.65 gal/hr
Yes	48B	Construction Generators - Laydown Area	S2.070	QA Lab Diesel Generator (37≤kW<56, Tier 4F)	55	481,800	kW	Diesel	24	8,760	3.69 gal/hr
Yes	48B	Construction Generators - Laydown Area	S2.073	Batching Area Diesel Generator 1 (37≤kW<56, Tier 4F)	55	240,900	kW	Diesel	24	4,380	3.69 gal/hr
Yes	48C	Construction Generators - Laydown Area	S2.074	Batching Area Diesel Generator 2 (150 kW, Interim Tier 4)	150	1,314,000	kW	Diesel	24	8,760	8.60 gal/hr
Both	50A	Construction Generators - Laydown Area	S2.078	Area 1410 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	300	1,095,000	kW	Diesel	24	3,650	20.1 gal/hr
No	51	Crude LiCO3 Centrifuges	PF1.069	Crude Li2CO3 Centrifuge 1 discharge to Crude Li2CO3 Belt Conveyor	15	131,400	ton	Li_2CO_3	24	8,760	
No	51	Crude LiCO3 Centrifuges	PF1.070	Crude Li2CO3 Centrifuge 2 discharge to Crude Li2CO3 Belt Conveyor	*See S2.069 for combined total throughp*		ton	Li_2CO_3	24	8,760	
No	51	Crude LiCO3 Centrifuges	PF1.071	Crude Li2CO3 Centrifuge 3 discharge to Crude Li2CO3 Belt Conveyor	*See S2.069 for combined total throughp*		ton	Li_2CO_3	24	8,760	
No	51	Li2CO3 Slurry Tank	PF1.075	Crude Li2CO3 Belt Conveyor to Li2CO3 Slurry Tank	15	131,400	ton	Li_2CO_3	24	8,760	
No	51	Refined LiCO3 Centrifuges	PF1.076	Refined Li2CO3 Centrifuge 1 discharge to Refined Li2CO3 Belt Conveyor	15	131,400	ton	Li_2CO_3	24	8,760	
No	51	Refined LiCO3 Centrifuges	PF1.077	Refined Li2CO3 Centrifuge 2 discharge to Refined Li2CO3 Belt Conveyor	*See S2.076 for combined total throughp*		ton	Li_2CO_3	24	8,760	
No	51	Refined LiCO3 Centrifuges	PF1.078	Refined Li2CO3 Centrifuge 3 discharge to Refined Li2CO3 Belt Conveyor	*See S2.076 for combined total throughp*		ton	Li_2CO_3	24	8,760	
No	51	Li2CO3 Dryer Feed	PF1.082	Refined Li2CO3 Belt Conveyor to Refined Li2CO3 Dryer Feed Conveyor	15	131,400	ton	Li_2CO_3	24	8,760	
No	51	Li2CO3 Dryer Feed	PF1.083	Refined Li2CO3 Dryer Feed Conveyor to Li2CO3 Dryer	15	131,400	ton	Li_2CO_3	24	8,760	

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.072	General Services Diesel Generator 2 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.114	General Services Diesel Generator 3 (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.077	Fuel Station Diesel Generator (56≤kW<130, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.070	QA Lab Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.073	Batching Area Diesel Generator 1 (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.074	Batching Area Diesel Generator 2 (150 kW, Interim Tier 4)	0.02	0.02	0.02	3.5	2	5.5E-03	0.19		g/kW-hr	*PM, CO, VOC: 40 CFR 60.4204(b) & 1039.102 Table 6 (Interim Tier 4); NOX alternate standard: 1039.102(e)(2); SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.078	Area 1410 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
PF1.069	Crude Li2CO3 Centrifuge 1 discharge to Crude Li2CO3 Belt Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.070	Crude Li2CO3 Centrifuge 2 discharge to Crude Li2CO3 Belt Conveyor											None	
PF1.071	Crude Li2CO3 Centrifuge 3 discharge to Crude Li2CO3 Belt Conveyor											None	
PF1.075	Crude Li2CO3 Belt Conveyor to Li2CO3 Slurry Tank	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.076	Refined Li2CO3 Centrifuge 1 discharge to Refined Li2CO3 Belt Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.077	Refined Li2CO3 Centrifuge 2 discharge to Refined Li2CO3 Belt Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.078	Refined Li2CO3 Centrifuge 3 discharge to Refined Li2CO3 Belt Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.082	Refined Li2CO3 Belt Conveyor to Refined Li2CO3 Dryer Feed Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
PF1.083	Refined Li2CO3 Dryer Feed Conveyor to Li2CO3 Dryer	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.072	General Services Diesel Generator 2 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.114	General Services Diesel Generator 3 (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.077	Fuel Station Diesel Generator (56≤kW<130, Tier 4F)	0.0057	0.0057	0.0057	0.57	0.11	0.0018	0.054		0.010	0.010	0.010	1.04	0.21	0.0034	0.099	
S2.070	QA Lab Diesel Generator (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.016	0.016	0.016	2.66	2.50	0.0034	0.81	
S2.073	Batching Area Diesel Generator 1 (37≤kW<56, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00078	0.19		0.0080	0.0080	0.0080	1.33	1.25	0.0017	0.41	
S2.074	Batching Area Diesel Generator 2 (150 kW, Interim Tier 4)	0.0066	0.0066	0.0066	1.16	0.66	0.0018	0.063		0.029	0.029	0.029	5.07	2.90	0.0080	0.28	
S2.078	Area 1410 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	0.013	0.013	0.013	1.32	0.26	0.0043	0.13		0.024	0.024	0.024	2.41	0.48	0.0078	0.23	
PF1.069	Crude Li2CO3 Centrifuge 1 discharge to Crude Li2CO3 Belt Conveyor	0.045	0.017	0.0025						0.20	0.072	0.011					
PF1.070	Crude Li2CO3 Centrifuge 2 discharge to Crude Li2CO3 Belt Conveyor	*See S2.069 for combined total emissions*								*See S2.069 for combined total emissions*							
PF1.071	Crude Li2CO3 Centrifuge 3 discharge to Crude Li2CO3 Belt Conveyor	*See S2.069 for combined total emissions*								*See S2.069 for combined total emissions*							
PF1.075	Crude Li2CO3 Belt Conveyor to Li2CO3 Slurry Tank	0.045	0.017	0.0025						0.20	0.072	0.011					
PF1.076	Refined Li2CO3 Centrifuge 1 discharge to Refined Li2CO3 Belt Conveyor	0.045	0.017	0.0025						0.20	0.072	0.011					
PF1.077	Refined Li2CO3 Centrifuge 2 discharge to Refined Li2CO3 Belt Conveyor	*See S2.076 for combined total emissions*								*See S2.076 for combined total emissions*							
PF1.078	Refined Li2CO3 Centrifuge 3 discharge to Refined Li2CO3 Belt Conveyor	*See S2.076 for combined total emissions*								*See S2.076 for combined total emissions*							
PF1.082	Refined Li2CO3 Belt Conveyor to Refined Li2CO3 Dryer Feed Conveyor	0.045	0.017	0.0025						0.20	0.072	0.011					
PF1.083	Refined Li2CO3 Dryer Feed Conveyor to Li2CO3 Dryer	0.045	0.017	0.0025						0.20	0.072	0.011					

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.072	General Services Diesel Generator 2 (56≤kW<130, Tier 4F)	414,798	4,616,823	1,430.9	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.114	General Services Diesel Generator 3 (56≤kW<130, Tier 4F)	414,782	4,616,928	1,430.9	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.077	Fuel Station Diesel Generator (56≤kW<130, Tier 4F)	414,408	4,617,399	1,443.0	POINTHOR	5	1,100	326	1,268	1.1	21.1
S2.070	QA Lab Diesel Generator (37≤kW<56, Tier 4F)	416,282	4,616,773	1,411.5	POINTHOR	5	1,100	139	541	1.1	9.0
S2.073	Batching Area Diesel Generator 1 (37≤kW<56, Tier 4F)	415,807	4,616,692	1,411.5	POINTHOR	5	1,100	139	541	1.1	9.0
S2.074	Batching Area Diesel Generator 2 (150 kW, Interim Tier 4)	415,730	4,616,761	1,411.5	POINTHOR	5	1,100	379	1,474	1.1	24.6
S2.078	Area 1410 - Construction Diesel Generator (130≤kW≤300, Tier 4F)	414,638	4,616,997	1,430.9	POINTHOR	6	1,100	758	2,949	1.4	32.8
PF1.069	Crude Li2CO3 Centrifuge 1 discharge to Crude Li2CO3 Belt Conveyor	414,633	4,617,037	1,430.9	VOLUME	4	2	2	5	elev src w/ bldg	
PF1.070	Crude Li2CO3 Centrifuge 2 discharge to Crude Li2CO3 Belt Conveyor	414,640	4,617,041	1,430.9		4	2	2	5	elev src w/ bldg	
PF1.071	Crude Li2CO3 Centrifuge 3 discharge to Crude Li2CO3 Belt Conveyor	414,647	4,617,044	1,430.9		4	2	2	5	elev src w/ bldg	
PF1.075	Crude Li2CO3 Belt Conveyor to Li2CO3 Slurry Tank	414,654	4,617,048	1,430.9	VOLUME	21	2	2	22	elev src w/ bldg	
PF1.076	Refined Li2CO3 Centrifuge 1 discharge to Refined Li2CO3 Belt Conveyor	414,612	4,617,026	1,430.9	VOLUME	4	2	2	5	elev src w/ bldg	
PF1.077	Refined Li2CO3 Centrifuge 2 discharge to Refined Li2CO3 Belt Conveyor	414,619	4,617,030	1,430.9		4	2	2	5	elev src w/ bldg	
PF1.078	Refined Li2CO3 Centrifuge 3 discharge to Refined Li2CO3 Belt Conveyor	414,626	4,617,033	1,430.9		4	2	2	5	elev src w/ bldg	
PF1.082	Refined Li2CO3 Belt Conveyor to Refined Li2CO3 Dryer Feed Conveyor	414,609	4,617,023	1,430.9	VOLUME	21	2	2	22	elev src w/o bldg	
PF1.083	Refined Li2CO3 Dryer Feed Conveyor to Li2CO3 Dryer	414,599	4,617,033	1,430.9	VOLUME	21	2	2	22	elev src w/o bldg	

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
No	52	Soda Ash Filter Media	S2.092	Soda Ash Filter Media Hopper loading	5	43,800	ton	Soda Ash Filter Media	24	8,760	
No	53	Off-Spec Material Handling	S2.095	Off-Spec Hopper loading	2	5,000	ton	Li_2CO_3	24	8,760	
No	54	Neutralization Tanks Vent	S2.096	Neutralization Tanks Vent	1,210	10,599,600	ton	Slurry	24	8,760	25 ppm
No	55	Acidulation Tanks Vent	S2.097	Acidulation Tanks Vent	96,000	840,960,000	Gal	Slurry	24	8,760	40 ppm
Both	56	Non-Emergency Blackstart Generators	S2.098	Non-Emergency Diesel Generator 1 (CAT C175-16; 4,376 HP; 2015 or newer)	3,264	979,200	kW	Diesel	24	300	202.1 gal/hr
Both	56	Non-Emergency Blackstart Generators	S2.099	Non-Emergency Diesel Generator 2 (CAT C175-16; 4,376 HP; 2015 or newer)	3,264	979,200	kW	Diesel	24	300	202.1 gal/hr
Both	57	Emergency Blackstart Generators	S2.100	Emergency Diesel Generator 1 (CAT 3516C; 2,937 HP; 2011 or newer)	2,191	219,100	kW	Diesel	24	100	133.6 gal/hr
Both	57	Emergency Blackstart Generators	S2.101	Emergency Diesel Generator 2 (CAT 3516C; 2,937 HP; 2011 or newer)	2,191	219,100	kW	Diesel	24	100	133.6 gal/hr
Yes	59	Construction Generators - Early Works	S2.103	LAC Trailer Diesel Generator (37≤kW<56, Tier 4F)	55.4	485,304	kW	Diesel	24	8,760	3.96 gal/hr
Both	59A	Construction Generators - Early Works	S2.104	Guard Shack Security Diesel Generator (37≤kW<56, Tier 4F)	55.4	485,304	kW	Diesel	24	8,760	3.96 gal/hr
Yes	60	Construction Generators - Early Works	S2.105	Sawtooth Trailer Diesel Generator (19≤kW<37, Tier 4F)	36	315,360	kW	Diesel	24	8,760	2.41 gal/hr
Yes	61	Construction Water Pumps	S2.106	East Construction Water Diesel Pump (37≤kW<56, Tier 4F)	55.4	110,800	kW	Diesel	24	2,000	3.96 gal/hr
Yes	61	Construction Water Pumps	S2.107	West Construction Water Diesel Pump (37≤kW<56, Tier 4F)	55.4	110,800	kW	Diesel	24	2,000	3.96 gal/hr
Yes	62	Construction Generators	S2.108	Mechanical/Electrical Equip. Diesel Generator (37≤kW<56, Tier 4F)	55.4	202,210	kW	Diesel	24	3,650	3.96 gal/hr
Yes	62	Construction Generators	S2.109	Insulation Yard Office Diesel Generator (37≤kW<56, Tier 4F)	55.4	202,210	kW	Diesel	24	3,650	3.96 gal/hr
Yes	62	Construction Generators	S2.110	FMR's Consumables Office Diesel Generator (37≤kW<56, Tier 4F)	55.4	202,210	kW	Diesel	24	3,650	3.96 gal/hr
Yes	62	Construction Generators	S2.112	Pipe Store Diesel Generator (37≤kW<56, Tier 4F)	55.4	202,210	kW	Diesel	24	3,650	3.96 gal/hr

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.092	Soda Ash Filter Media Hopper loading	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Optional Vent Filter	
S2.095	Off-Spec Hopper loading	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Optional Vent Filter	
S2.096	Neutralization Tanks Vent	1.00	1.00	1.00						lb/hr	*see Detailed Calcs*	None	
S2.097	Acidulation Tanks Vent	1.70	1.70	1.70						lb/hr	*see Detailed Calcs*	None	
S2.098	Non-Emergency Diesel Generator 1 (CAT C175-16; 4,376 HP; 2015 or newer)	0.03	0.03	0.03	3.5	0.67	6.0E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101 (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.099	Non-Emergency Diesel Generator 2 (CAT C175-16; 4,376 HP; 2015 or newer)	0.03	0.03	0.03	3.5	0.67	6.0E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101 (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.100	Emergency Diesel Generator 1 (CAT 3516C; 2,937 HP; 2011 or newer)	0.2	0.2	0.2	3.5	6.4	5.9E-03	0.43		g/kW-hr	*40 CFR 1039. Appendix I, Tier 2, kW > 560; SO2 Mass balance based on 15 ppm S; VOC AP-42, Table 3.4-1 (10/96)*	None	
S2.101	Emergency Diesel Generator 2 (CAT 3516C; 2,937 HP; 2011 or newer)	0.2	0.2	0.2	3.5	6.4	5.9E-03	0.43		g/kW-hr	*40 CFR 1039. Appendix I, Tier 2, kW > 560; SO2 Mass balance based on 15 ppm S; VOC AP-42, Table 3.4-1 (10/96)*	None	
S2.103	LAC Trailer Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.104	Guard Shack Security Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.105	Sawtooth Trailer Diesel Generator (19≤kW<37, Tier 4F)	0.03	0.03	0.03	5.5	4.7	6.5E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.106	East Construction Water Diesel Pump (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.107	West Construction Water Diesel Pump (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.108	Mechanical/Electrical Equip. Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.109	Insulation Yard Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.110	FMR's Consumables Office Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.112	Pipe Store Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.092	Soda Ash Filter Media Hopper loading	0.024	0.014	0.0021						0.11	0.061	0.0093					
S2.095	Off-Spec Hopper loading	0.010	0.006	0.0008						0.012	0.007	0.0011					
S2.096	Neutralization Tanks Vent	1.00	1.00	1.00						4.38	4.38	4.38					
S2.097	Acidulation Tanks Vent	1.70	1.70	1.70						7.45	7.45	7.45					
S2.098	Non-Emergency Diesel Generator 1 (CAT C175-16; 4,376 HP; 2015 or newer)	0.22	0.22	0.22	25.2	4.82	0.043	1.37		0.032	0.032	0.032	3.78	0.72	0.0065	0.21	
S2.099	Non-Emergency Diesel Generator 2 (CAT C175-16; 4,376 HP; 2015 or newer)	0.22	0.22	0.22	25.2	4.82	0.043	1.37		0.032	0.032	0.032	3.78	0.72	0.0065	0.21	
S2.100	Emergency Diesel Generator 1 (CAT 3516C; 2,937 HP; 2011 or newer)	0.97	0.97	0.97	16.9	30.9	0.028	2.07		0.048	0.048	0.048	0.85	1.55	0.0014	0.10	
S2.101	Emergency Diesel Generator 2 (CAT 3516C; 2,937 HP; 2011 or newer)	0.97	0.97	0.97	16.9	30.9	0.028	2.07		0.048	0.048	0.048	0.85	1.55	0.0014	0.10	
S2.103	LAC Trailer Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.016	0.016	0.016	2.67	2.51	0.0037	0.82	
S2.104	Guard Shack Security Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.016	0.016	0.016	2.67	2.51	0.0037	0.82	
S2.105	Sawtooth Trailer Diesel Generator (19≤kW<37, Tier 4F)	0.0024	0.0024	0.0024	0.44	0.37	0.00051	0.12		0.010	0.010	0.010	1.91	1.63	0.0022	0.53	
S2.106	East Construction Water Diesel Pump (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19	
S2.107	West Construction Water Diesel Pump (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19	
S2.108	Mechanical/Electrical Equip. Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0067	0.0067	0.0067	1.11	1.05	0.0015	0.34	
S2.109	Insulation Yard Office Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0067	0.0067	0.0067	1.11	1.05	0.0015	0.34	
S2.110	FMR's Consumables Office Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0067	0.0067	0.0067	1.11	1.05	0.0015	0.34	
S2.112	Pipe Store Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0067	0.0067	0.0067	1.11	1.05	0.0015	0.34	

	SOURCE DESCRIPTION	NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.092	Soda Ash Filter Media Hopper loading	414,586	4,616,975	1,430.9	POINTHOR	13	Ambient	600	600	0.50	50.9
S2.095	Off-Spec Hopper loading	414,607	4,617,000	1,430.9	POINTHOR	15	Ambient	600	600	0.50	50.9
S2.096	Neutralization Tanks Vent	414,444	4,617,096	1,435.2	POINT	71	123	29,093	38,500	2.6	118.6
S2.097	Acidulation Tanks Vent	414,666	4,617,028	1,430.9	POINT	120	146	19,303	37,000	2.8	97.8
S2.098	Non-Emergency Diesel Generator 1 (CAT C175-16; 4,376 HP; 2015 or newer)	414,459	4,616,952	1,430.9	POINT	15	882	8,009	23,558	1.2	367.3
S2.099	Non-Emergency Diesel Generator 2 (CAT C175-16; 4,376 HP; 2015 or newer)	414,455	4,616,960	1,430.9	POINT	15	882	8,009	23,558	1.2	367.3
S2.100	Emergency Diesel Generator 1 (CAT 3516C; 2,937 HP; 2011 or newer)	414,451	4,616,967	1,430.9	POINT	14.6	752	5,739	15,293	1.0	324.5
S2.101	Emergency Diesel Generator 2 (CAT 3516C; 2,937 HP; 2011 or newer)	414,448	4,616,974	1,430.9	POINT	14.6	752	5,739	15,293	1.0	324.5
S2.103	LAC Trailer Diesel Generator (37≤kW<56, Tier 4F)	416,409	4,616,814	1,412.0	POINTHOR	5	1,100	140	545	1.1	9.1
S2.104	Guard Shack Security Diesel Generator (37≤kW<56, Tier 4F)	413,921	4,616,474	1,434.4	POINTHOR	5	1,100	140	545	1.1	9.1
S2.105	Sawtooth Trailer Diesel Generator (19≤kW<37, Tier 4F)	416,412	4,616,768	1,405.6	POINTHOR	5	1,100	91	354	1.1	5.9
S2.106	East Construction Water Diesel Pump (37≤kW<56, Tier 4F)	415,037	4,616,807	1,418.0	POINTHOR	5	1,100	140	545	1.1	9.1
S2.107	West Construction Water Diesel Pump (37≤kW<56, Tier 4F)	414,967	4,616,807	1,418.4	POINTHOR	5	1,100	140	545	1.1	9.1
S2.108	Mechanical/Electrical Equip. Diesel Generator (37≤kW<56, Tier 4F)	416,078	4,617,694	1,437.9	POINTHOR	5	1,100	140	545	1.1	9.1
S2.109	Insulation Yard Office Diesel Generator (37≤kW<56, Tier 4F)	415,997	4,617,166	1,422.3	POINTHOR	5	1,100	140	545	1.1	9.1
S2.110	FMR's Consumables Office Diesel Generator (37≤kW<56, Tier 4F)	416,225	4,617,321	1,426.0	POINTHOR	5	1,100	140	545	1.1	9.1
S2.112	Pipe Store Diesel Generator (37≤kW<56, Tier 4F)	414,752	4,616,841	1,430.9	POINTHOR	5	1,100	140	545	1.1	9.1

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
					Design Throughput				Operating Schedule		
Construction Source	System	System Description	Source ID	Source Description	unit/hr	unit/yr	units	Material	hr/day	hr/yr	Other
Both	63	Construction Generators	S2.111	Parking Area Diesel Generator (37≤kW<56, Tier 4F)	55.4	202,210	kW	Diesel	24	3,650	3.96 gal/hr
Both	65	Sawtooth Generators	S2.118	Sawtooth Diesel Generator 1 (56≤kW≤75, Tier 4F)	75	657,000	kW	Diesel	24	8,760	5.03 gal/hr
Both	65	Sawtooth Generators	S2.119	Sawtooth Diesel Generator 2 (56≤kW≤75, Tier 4F)	75	328,500	kW	Diesel	24	4,380	5.03 gal/hr
Both	65	Sawtooth Generators	S2.120	Sawtooth Diesel Generator 3 (56≤kW≤75, Tier 4F)	75	328,500	kW	Diesel	24	4,380	5.03 gal/hr
No	66	Evaporator Seed Material Handling	S2.126	Evaporator Seed Hopper loading	2	1,000	ton	CaSO4	24	8,760	
No	67	Water Truck Pumps	S2.127	Water Truck Fill Diesel Pump 1 (55 kW, Tier 4F)	55.0	40,150	kW	Diesel	24	730	4.40 gal/hr
No	67	Water Truck Pumps	S2.128	Water Truck Fill Diesel Pump 2 (55 kW, Tier 4F)	55.0	40,150	kW	Diesel	24	730	4.40 gal/hr
No	67A	Water Truck Pumps	S2.129	Water Truck Fill Diesel Pump 3 (55 kW, Tier 4F)	55.0	200,750	kW	Diesel	24	3,650	4.40 gal/hr
No	68	Jet Mill Li2CO3 Storage Bin	S2.130	Li2CO3 Storage Bin Dust Collector 1	10	87,600	ton	Li_2CO_3	24	8,760	
No	68	Jet Mill Li2CO3 Storage Bin	S2.131	Li2CO3 Storage Bin Dust Collector 2	10	87,600	ton	Li_2CO_3	24	8,760	
No	68	Jet Mill Li2CO3 Storage Bin	S2.132	Li2CO3 Storage Bin Dust Collector 3	10	87,600	ton	Li_2CO_3	24	8,760	
No	69	Jet Mill Li2CO3 Pneumatic Conveying	S2.133	Li2CO3 Pneumatic Conveyor 1	10	87,600	ton	Li_2CO_3	24	8,760	
No	69	Jet Mill Li2CO3 Pneumatic Conveying	S2.134	Li2CO3 Pneumatic Conveyor 2	10	87,600	ton	Li_2CO_3	24	8,760	
No	69	Jet Mill Li2CO3 Pneumatic Conveying	S2.135	Li2CO3 Pneumatic Conveyor 3	10	87,600	ton	Li_2CO_3	24	8,760	
No	69	Jet Mill Li2CO3 Pneumatic Conveying	S2.136	Li2CO3 Pneumatic Conveyor 4	10	87,600	ton	Li_2CO_3	24	8,760	
No	69	Jet Mill Li2CO3 Pneumatic Conveying	S2.137	Li2CO3 Pneumatic Conveyor 5	10	87,600	ton	Li_2CO_3	24	8,760	
No	70	Jet Mill Li2CO3 Mill Feed	S2.138	Jet Mill Feed	10	87,600	ton	Li_2CO_3	24	8,760	
No	71	Jet Mill	S2.139	Jet Mill	10	87,600	ton	Li_2CO_3	24	8,760	
No	72	Jet Mill DVMF Storage Bin	S2.140	DVMF Feed Storage Bin Dust Collector 1	10	87,600	ton	Li_2CO_3	24	8,760	
No	72	Jet Mill DVMF Storage Bin	S2.141	DVMF Feed Storage Bin Dust Collector 2	10	87,600	ton	Li_2CO_3	24	8,760	
No	72	Jet Mill DVMF Storage Bin	S2.142	DVMF Feed Storage Bin Dust Collector 3	10	87,600	ton	Li_2CO_3	24	8,760	

SOURCE DESCRIPTION		EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.111	Parking Area Diesel Generator (37≤kW<56, Tier 4F)	0.03	0.03	0.03	5	4.7	6.9E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.118	Sawtooth Diesel Generator 1 (56≤kW≤75, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.119	Sawtooth Diesel Generator 2 (56≤kW≤75, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.120	Sawtooth Diesel Generator 3 (56≤kW≤75, Tier 4F)	0.02	0.02	0.02	2	0.4	6.5E-03	0.19		g/kW-hr	*40 CFR 60.4204(b) & 1039.101(b) (Tier 4); CO: vendor requirement w/ engine cert.; SO2: mass balance w/ 15 ppm S (ULSD)*	None	
S2.126	Evaporator Seed Hopper loading	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Optional Vent Filter	
S2.127	Water Truck Fill Diesel Pump 1 (55 kW, Tier 4F)	0.03	0.03	0.03	5	4.7	7.7E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.128	Water Truck Fill Diesel Pump 2 (55 kW, Tier 4F)	0.03	0.03	0.03	5	4.7	7.7E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.129	Water Truck Fill Diesel Pump 3 (55 kW, Tier 4F)	0.03	0.03	0.03	5	4.7	7.7E-03	1.53		g/kW-hr	*PM, NOX, CO: 40 CFR 60.4204(b) & 1039.101(b) (Tier 4); SO2: mass balance w/ 15 ppm S (ULSD); VOC: AP-42 Table 3.3-1 (10/96)*	None	
S2.130	Li2CO3 Storage Bin Dust Collector 1	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.131	Li2CO3 Storage Bin Dust Collector 2	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.132	Li2CO3 Storage Bin Dust Collector 3	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.133	Li2CO3 Pneumatic Conveyor 1	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.134	Li2CO3 Pneumatic Conveyor 2	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.135	Li2CO3 Pneumatic Conveyor 3	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.136	Li2CO3 Pneumatic Conveyor 4	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.137	Li2CO3 Pneumatic Conveyor 5	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.138	Jet Mill Feed	0.0048	0.0028	4.2E-04						lb/ton	*AP-42 Table 11.12-2 (06/06) weigh hopper loading unctrl. (NDEP 2017)*	Vent Filter	50%
S2.139	Jet Mill	0.01	0.01	0.01						gr/dscf	*Vendor Requirement*	Baghouse	
S2.140	DVMF Feed Storage Bin Dust Collector 1	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.141	DVMF Feed Storage Bin Dust Collector 2	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.142	DVMF Feed Storage Bin Dust Collector 3	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.111	Parking Area Diesel Generator (37≤kW<56, Tier 4F)	0.0037	0.0037	0.0037	0.61	0.57	0.00084	0.19		0.0067	0.0067	0.0067	1.11	1.05	0.0015	0.34	
S2.118	Sawtooth Diesel Generator 1 (56≤kW≤75, Tier 4F)	0.0033	0.0033	0.0033	0.33	0.066	0.0011	0.031		0.014	0.014	0.014	1.45	0.29	0.0047	0.14	
S2.119	Sawtooth Diesel Generator 2 (56≤kW≤75, Tier 4F)	0.0033	0.0033	0.0033	0.33	0.066	0.0011	0.031		0.0072	0.0072	0.0072	0.72	0.14	0.0023	0.069	
S2.120	Sawtooth Diesel Generator 3 (56≤kW≤75, Tier 4F)	0.0033	0.0033	0.0033	0.33	0.066	0.0011	0.031		0.0072	0.0072	0.0072	0.72	0.14	0.0023	0.069	
S2.126	Evaporator Seed Hopper loading	0.010	0.006	0.0008						0.0024	0.0014	0.00021					
S2.127	Water Truck Fill Diesel Pump 1 (55 kW, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00094	0.19		0.0013	0.0013	0.0013	0.22	0.21	0.00034	0.07	
S2.128	Water Truck Fill Diesel Pump 2 (55 kW, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00094	0.19		0.0013	0.0013	0.0013	0.22	0.21	0.00034	0.07	
S2.129	Water Truck Fill Diesel Pump 3 (55 kW, Tier 4F)	0.0036	0.0036	0.0036	0.61	0.57	0.00094	0.19		0.0066	0.0066	0.0066	1.11	1.04	0.00171	0.34	
S2.130	Li2CO3 Storage Bin Dust Collector 1	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.131	Li2CO3 Storage Bin Dust Collector 2	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.132	Li2CO3 Storage Bin Dust Collector 3	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.133	Li2CO3 Pneumatic Conveyor 1	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.134	Li2CO3 Pneumatic Conveyor 2	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.135	Li2CO3 Pneumatic Conveyor 3	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.136	Li2CO3 Pneumatic Conveyor 4	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.137	Li2CO3 Pneumatic Conveyor 5	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.138	Jet Mill Feed	0.024	0.014	0.0021						0.11	0.061	0.0093					
S2.139	Jet Mill	1.17	1.17	1.17						5.11	5.11	5.11					
S2.140	DVMF Feed Storage Bin Dust Collector 1	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.141	DVMF Feed Storage Bin Dust Collector 2	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.142	DVMF Feed Storage Bin Dust Collector 3	0.0099	0.0034	0.00051						0.043	0.015	0.0023					

	SOURCE DESCRIPTION	NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.111	Parking Area Diesel Generator (37≤kW<56, Tier 4F)	413,564	4,616,713	1,456.8	POINTHOR	5	1,100	140	545	1.1	9.1
S2.118	Sawtooth Diesel Generator 1 (56≤kW≤75, Tier 4F)	413,375	4,616,970	1,466.8	POINTHOR	5	575	117	275	1.1	4.6
S2.119	Sawtooth Diesel Generator 2 (56≤kW≤75, Tier 4F)	413,377	4,616,970	1,466.8	POINTHOR	5	575	117	275	1.1	4.6
S2.120	Sawtooth Diesel Generator 3 (56≤kW≤75, Tier 4F)	413,379	4,616,970	1,466.8	POINTHOR	5	575	117	275	1.1	4.6
S2.126	Evaporator Seed Hopper loading	414,781	4,617,156	1,430.9	POINTHOR	15	Ambient	600	600	0.50	50.9
S2.127	Water Truck Fill Diesel Pump 1 (55 kW, Tier 4F)	414,971	4,616,807	1,418.4	POINTHOR	5	1,100	139	541	1.1	9.0
S2.128	Water Truck Fill Diesel Pump 2 (55 kW, Tier 4F)	415,038	4,616,808	1,418.0	POINTHOR	5	1,100	139	541	1.1	9.0
S2.129	Water Truck Fill Diesel Pump 3 (55 kW, Tier 4F)	411,042	4,617,162	1,523.9	POINTHOR	5	1,100	139	541	1.1	9.0
S2.130	Li2CO3 Storage Bin Dust Collector 1	414,589	4,617,046	1,430.9	POINTHOR	66	104	750	970	1.0	20.6
S2.131	Li2CO3 Storage Bin Dust Collector 2	414,593	4,617,047	1,430.9	POINTHOR	66	104	750	970	1.0	20.6
S2.132	Li2CO3 Storage Bin Dust Collector 3	414,597	4,617,049	1,430.9	POINTHOR	66	104	750	970	1.0	20.6
S2.133	Li2CO3 Pneumatic Conveyor 1	414,589	4,617,046	1,430.9	POINTHOR	9	104	39	50	1.0	1.1
S2.134	Li2CO3 Pneumatic Conveyor 2	414,593	4,617,047	1,430.9	POINTHOR	9	104	39	50	1.0	1.1
S2.135	Li2CO3 Pneumatic Conveyor 3	414,597	4,617,049	1,430.9	POINTHOR	9	104	39	50	1.0	1.1
S2.136	Li2CO3 Pneumatic Conveyor 4	414,596	4,617,054	1,430.9	POINTHOR	9	104	39	50	1.0	1.1
S2.137	Li2CO3 Pneumatic Conveyor 5	414,600	4,617,067	1,430.9	POINTHOR	9	104	39	50	1.0	1.1
S2.138	Jet Mill Feed	414,595	4,617,053	1,430.9	POINTHOR	9	104	541	700	1.0	14.9
S2.139	Jet Mill	414,590	4,617,050	1,430.9	POINT	80	338	13,600	24,900	3.0	58.7
S2.140	DVMF Feed Storage Bin Dust Collector 1	414,580	4,617,057	1,430.9	POINTHOR	119	104	750	970	1.0	20.6
S2.141	DVMF Feed Storage Bin Dust Collector 2	414,584	4,617,059	1,430.9	POINTHOR	119	104	750	970	1.0	20.6
S2.142	DVMF Feed Storage Bin Dust Collector 3	414,588	4,617,061	1,430.9	POINTHOR	119	104	750	970	1.0	20.6

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
					Design Throughput				Operating Schedule		
Construction Source	System	System Description	Source ID	Source Description	unit/hr	unit/yr	units	Material	hr/day	hr/yr	Other
No	72	Jet Mill DVMF Storage Bin	S2.143	DVMF Feed Storage Bin Dust Collector 4	10	87,600	ton	Li_2CO_3	24	8,760	
No	72	Jet Mill DVMF Storage Bin	S2.144	DVMF Feed Storage Bin Dust Collector 5	10	87,600	ton	Li_2CO_3	24	8,760	
No	IA	Insignificant Activities	IA1.003	Sulfuric Acid Plant Cooling Tower	208,500		Gal	Water	24	8,760	1,000 ppm
No	IA	Insignificant Activities	IA1.005 - 19	Laboratory	1	8,760	ton	Samples	24	8,760	
No	IA	Insignificant Activities	IA1.020	Diesel Tank 1, Off Road (20K, Mine)		360,000	Gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.021	Diesel Tank 2, Off Road (20K, Process)		360,000	Gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.022	Bulk Oil Tank 1		31,800	Gal	Oil	24	8,760	
No	IA	Insignificant Activities	IA1.023	Bulk Coolant Tank		6,400	Gal	Coolant	24	8,760	
No	IA	Insignificant Activities	IA1.024	Bulk Used Oil Tank		31,800	Gal	Oil	24	8,760	
No	IA	Insignificant Activities	IA1.025	Bulk Used Coolant Tank		6,400	Gal	Coolant	24	8,760	
No	IA	Insignificant Activities	IA1.026	HCl Storage Tank (35%)		1,495,000	Gal	HCl	24	8,760	
No	IA	Insignificant Activities	IA1.027	Magnesium Sulfate Cooling Tower	1,174,500		Gal	Water	24	8,760	750 ppm
No	IA	Insignificant Activities	IA1.028	Process Plant Cooling Tower	1,012,500		Gal	Water	24	8,760	750 ppm
No	IA	Insignificant Activities	IA1.031	Log Washer Feed Sampler to Ore Sampler Conveyor 1	0.3	2,628	ton	Ore	24	8,760	
No	IA	Insignificant Activities	IA1.053	Log Washer Feed Sampler 2 to Sample Collector	0.3	2,628	ton	Ore	24	8,760	
No	IA	Insignificant Activities	IA1.032	Ore Sampler Conveyor 1 to Ore Sampler Conveyor 2	0.3	2,628	ton	Ore	24	8,760	
No	IA	Insignificant Activities	IA1.033	Ore Sampler Conveyor 2 to Log Washer Feed Conveyor 1	0.3	2,628	ton	Ore	24	8,760	
No	IA	Insignificant Activities	IA1.034	Coarse Gangue Sampler to Coarse Gangue Sampler Conveyor 1	0.3	2,628	ton	Gangue	24	8,760	
No	IA	Insignificant Activities	IA1.054	Coarse Gangue Sampler 2 to Sample Collector	0.3	2,628	ton	Gangue	24	8,760	
No	IA	Insignificant Activities	IA1.035	Coarse Gangue Sampler Conveyor 1 to Coarse Gangue Sampler Conveyor 2	0.3	2,628	ton	Gangue	24	8,760	
No	IA	Insignificant Activities	IA1.036	Coarse Gangue Sampler Conveyor 2 to Gangue Conveyor 1	0.3	2,628	ton	Gangue	24	8,760	
No	IA	Insignificant Activities	IA1.037	ZLD Centrifuge Sampler to ZLD Sampler Conveyor 1	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.038	ZLD Sampler Conveyor 1 to ZLD Sampler Conveyor 2 or Sample Bucket	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.039	ZLD Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.043	Sulfate Salts Sampler to Sulfate Salts Sampler Conveyor 1	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.055	Sulfate Salts Sampler 2 to Sample Collector	0.3	2,628	ton	Sulfate Tailings	24	8,760	

	SOURCE DESCRIPTION	EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
S2.143	DVMF Feed Storage Bin Dust Collector 4	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
S2.144	DVMF Feed Storage Bin Dust Collector 5	0.00099	0.00034	0.00005						lb/ton	*AP-42 Table 11.12-2 (06/06) silo loading ctrl. (NDEP 2017)*	Vent Filter	
IA1.003	Sulfuric Acid Plant Cooling Tower	0.087	0.087	0.087						lb/hr	*(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2024a)*	None	
IA1.005 - 19	Laboratory	0.23	0.085	0.013						lb/hr	*IA Determination*	Baghouse	
IA1.020	Diesel Tank 1, Off Road (20K, Mine)							9.9E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.021	Diesel Tank 2, Off Road (20K, Process)							9.9E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.022	Bulk Oil Tank 1							4.0E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.023	Bulk Coolant Tank							4.6E-06		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.024	Bulk Used Oil Tank							1.1E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.025	Bulk Used Coolant Tank							4.6E-06		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.026	HCl Storage Tank (35%)									lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	Optional Wet Scrubber	
IA1.027	Magnesium Sulfate Cooling Tower	0.367	0.367	0.367						lb/hr	*(NDEP 2017), 750 ppm TDS, 0.005% drift loss*	None	
IA1.028	Process Plant Cooling Tower	0.317	0.317	0.317						lb/hr	*(NDEP 2017), 750 ppm TDS, 0.005% drift loss*	None	
IA1.031	Log Washer Feed Sampler to Ore Sampler Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.053	Log Washer Feed Sampler 2 to Sample Collector	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.032	Ore Sampler Conveyor 1 to Ore Sampler Conveyor 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.033	Ore Sampler Conveyor 2 to Log Washer Feed Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.034	Coarse Gangue Sampler to Coarse Gangue Sampler Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.054	Coarse Gangue Sampler 2 to Sample Collector	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.035	Coarse Gangue Sampler Conveyor 1 to Coarse Gangue Sampler Conveyor 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.036	Coarse Gangue Sampler Conveyor 2 to Gangue Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.037	ZLD Centrifuge Sampler to ZLD Sampler Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.038	ZLD Sampler Conveyor 1 to ZLD Sampler Conveyor 2 or Sample Bucket	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.039	ZLD Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.043	Sulfate Salts Sampler to Sulfate Salts Sampler Conveyor 1	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.055	Sulfate Salts Sampler 2 to Sample Collector	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
S2.143	DVMF Feed Storage Bin Dust Collector 4	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
S2.144	DVMF Feed Storage Bin Dust Collector 5	0.0099	0.0034	0.00051						0.043	0.015	0.0023					
IA1.003	Sulfuric Acid Plant Cooling Tower	0.087	0.087	0.087						0.381	0.381	0.381					
IA1.005 - 19	Laboratory	0.226	0.085	0.013						0.991	0.372	0.057					
IA1.020	Diesel Tank 1, Off Road (20K, Mine)							9.9E-04								0.004	
IA1.021	Diesel Tank 2, Off Road (20K, Process)							9.9E-04								0.004	
IA1.022	Bulk Oil Tank 1							4.0E-04								0.002	
IA1.023	Bulk Coolant Tank							4.6E-06								0.000	
IA1.024	Bulk Used Oil Tank							1.1E-04								0.000	
IA1.025	Bulk Used Coolant Tank							4.6E-06								0.000	
IA1.026	HCl Storage Tank (35%)																
IA1.027	Magnesium Sulfate Cooling Tower	0.367	0.367	0.367						1.61	1.61	1.61					
IA1.028	Process Plant Cooling Tower	0.317	0.317	0.317						1.39	1.39	1.39					
IA1.031	Log Washer Feed Sampler to Ore Sampler Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.053	Log Washer Feed Sampler 2 to Sample Collector	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.032	Ore Sampler Conveyor 1 to Ore Sampler Conveyor 2	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.033	Ore Sampler Conveyor 2 to Log Washer Feed Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.034	Coarse Gangue Sampler to Coarse Gangue Sampler Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.054	Coarse Gangue Sampler 2 to Sample Collector	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.035	Coarse Gangue Sampler Conveyor 1 to Coarse Gangue Sampler Conveyor 2	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.036	Coarse Gangue Sampler Conveyor 2 to Gangue Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.037	ZLD Centrifuge Sampler to ZLD Sampler Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.038	ZLD Sampler Conveyor 1 to ZLD Sampler Conveyor 2 or Sample Bucket	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.039	ZLD Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.043	Sulfate Salts Sampler to Sulfate Salts Sampler Conveyor 1	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.055	Sulfate Salts Sampler 2 to Sample Collector	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					

	SOURCE DESCRIPTION	NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
S2.143	DVMF Feed Storage Bin Dust Collector 4	414,592	4,617,063	1,430.9	POINTHOR	119	104	750	970	1.0	20.6
S2.144	DVMF Feed Storage Bin Dust Collector 5	414,595	4,617,065	1,430.9	POINTHOR	119	104	750	970	1.0	20.6
IA1.003	Sulfuric Acid Plant Cooling Tower	414,122	4,616,896	1,443.0	POINT	25	Ambient	N/A	286,890	12.0	42.3
IA1.005 - 19	Laboratory	414,454	4,617,183	1,435.2	POINT	40	Ambient	2,500	2,500	0.5	212.2
IA1.020	Diesel Tank 1, Off Road (20K, Mine)	413,459	4,616,932	1,466.8							
IA1.021	Diesel Tank 2, Off Road (20K, Process)	414,442	4,616,944	1,430.9							
IA1.022	Bulk Oil Tank 1	413,362	4,616,962	1,466.8							
IA1.023	Bulk Coolant Tank	413,361	4,616,965	1,466.8							
IA1.024	Bulk Used Oil Tank	413,360	4,616,967	1,466.8							
IA1.025	Bulk Used Coolant Tank	413,359	4,616,969	1,466.8							
IA1.026	HCl Storage Tank (35%)	414,586	4,616,924	1,429.2		24	145	235	235	0.3	
IA1.027	Magnesium Sulfate Cooling Tower	414,823	4,617,178	1,430.9	POINT	40	Ambient	N/A	348,800	13.5	40.6
IA1.028	Process Plant Cooling Tower	414,749	4,616,998	1,430.9	POINT	40	Ambient	N/A	323,867	13.5	37.7
IA1.031	Log Washer Feed Sampler to Ore Sampler Conveyor 1	413,895	4,617,258	1,459.7	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.053	Log Washer Feed Sampler 2 to Sample Collector	413,894	4,617,274	1,460.4	VOLUME	3	1	4	5	elev src w/o bldg	
IA1.032	Ore Sampler Conveyor 1 to Ore Sampler Conveyor 2	413,901	4,617,265	1,459.8	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.033	Ore Sampler Conveyor 2 to Log Washer Feed Conveyor 1	413,889	4,617,270	1,460.4	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.034	Coarse Gangue Sampler to Coarse Gangue Sampler Conveyor 1	414,004	4,617,335	1,457.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.054	Coarse Gangue Sampler 2 to Sample Collector	414,003	4,617,319	1,457.3	VOLUME	3	1	4	5	elev src w/o bldg	
IA1.035	Coarse Gangue Sampler Conveyor 1 to Coarse Gangue Sampler Conveyor 2	413,994	4,617,330	1,458.1	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.036	Coarse Gangue Sampler Conveyor 2 to Gangue Conveyor 1	414,013	4,617,319	1,456.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.037	ZLD Centrifuge Sampler to ZLD Sampler Conveyor 1	414,761	4,617,076	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.038	ZLD Sampler Conveyor 1 to ZLD Sampler Conveyor 2 or Sample Bucket	414,767	4,617,079	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.039	ZLD Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	414,769	4,617,082	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.043	Sulfate Salts Sampler to Sulfate Salts Sampler Conveyor 1	414,945	4,617,175	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.055	Sulfate Salts Sampler 2 to Sample Collector	414,942	4,617,176	1,430.9	VOLUME	3	1	4	5	elev src w/o bldg	

SYSTEM DESCRIPTION			SOURCE DESCRIPTION		OPERATING LIMITS						
Construction Source	System	System Description	Source ID	Source Description	Design Throughput unit/hr	Design Throughput unit/yr	Design Throughput units	Material	Operating Schedule hr/day	Operating Schedule hr/yr	Other
No	IA	Insignificant Activities	IA1.044	Sulfate Salts Sampler Conveyor 1 to Sulfate Salts Sampler Conveyor 2	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.045	Sulfate Salts Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	0.3	2,628	ton	Sulfate Tailings	24	8,760	
No	IA	Insignificant Activities	IA1.029	Off Road Diesel 3 Tank (Mine)		360,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.030	Off Road Diesel 4 Tank (Mine)		360,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.046	Off Road Diesel 5 Tank (Process)		244,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.047	Off Road Diesel 6 Tank (Process)		244,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.048	Highway Diesel Tank		40,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.049	Bulk Oil Tank 2		31,800	gal	Oil	24	8,760	
No	IA	Insignificant Activities	IA1.050	Bulk Used Oil Tank 2		31,800	gal	Oil	24	8,760	
No	IA	Insignificant Activities	IA1.051	Sulfuric Acid Storage Tank 1		70,744,865	gal	H2SO4	24	8,760	
No	IA	Insignificant Activities	IA1.052	Sulfuric Acid Storage Tank 2		70,744,865	gal	H2SO4	24	8,760	
No	IA	Insignificant Activities	IA1.056	Wash Bay Water Heater	0.0044	38	kgal	Propane	24	8,760	0.4 MMBtu
No	IA	Insignificant Activities	IA1.057	Propane Vaporizer	0.0273	239	kgal	Propane	24	8,760	2.5 MMBtu
Both	IA	Insignificant Activities	IA1.058	Lube Trailer Bulk Used Oil Tank (1,000 gal)		12,000	gal	Oil	24	8,760	
Both	IA	Insignificant Activities	IA1.059	Lube Trailer Bulk Oil Tank 1 (1,000 gal)		12,000	gal	Oil	24	8,760	
Both	IA	Insignificant Activities	IA1.060	Lube Trailer Bulk Oil Tank 2 (1,000 gal)		12,000	gal	Oil	24	8,760	
Both	IA	Insignificant Activities	IA1.061	Lube Trailer Bulk Oil Tank 3 (500 gal)		6,000	gal	Oil	24	8,760	
Both	IA	Insignificant Activities	IA1.062	Lube Trailer Bulk Oil Tank 4 (500 gal)		6,000	gal	Oil	24	8,760	
No	IA	Insignificant Activities	IA1.063	Highway Diesel Tank (20K,		120,000	gal	Diesel	24	8,760	
No	IA	Insignificant Activities	IA1.064	Import/Export Sulfuric Acid Tank		117,908,108	gal	H2SO4	24	8,760	

SOURCE DESCRIPTION		EMISSION FACTORS										EMISSION CONTROLS	
Source ID	Source Description	PM	PM10	PM2.5	CO	NOX	SO2	VOC	H2S	unit	reference	control system	eff.
IA1.044	Sulfate Salts Sampler Conveyor 1 to Sulfate Salts Sampler Conveyor 2	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.045	Sulfate Salts Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	0.0030	0.0011	0.00017						lb/ton	*AP-42 Table 11.19.2-2 (08/04) conv. unctrl. (NDEP 2017)*	None	
IA1.029	Off Road Diesel 3 Tank (Mine)							9.9E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.030	Off Road Diesel 4 Tank (Mine)							9.9E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.046	Off Road Diesel 5 Tank (Process)							8.1E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.047	Off Road Diesel 6 Tank (Process)							8.1E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.048	Highway Diesel Tank							2.1E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.049	Bulk Oil Tank 2							4.0E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.050	Bulk Used Oil Tank 2							1.1E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.051	Sulfuric Acid Storage Tank 1	6.07E-06	6.07E-06	6.07E-06						lb/hr	*H2SO4 = total PM (see IA Determination calcs)*	None	
IA1.052	Sulfuric Acid Storage Tank 2	6.07E-06	6.07E-06	6.07E-06						lb/hr	*H2SO4 = total PM (see IA Determination calcs)*	None	
IA1.056	Wash Bay Water Heater	0.7	0.7	0.7	7.5	13	1.59	1		lb/kgal	*AP-42 Tables 1.5-1 (07/08) Propane Commercial Boilers; SO2 15.9 gr/100ft3 (185 ppm)*	None	
IA1.057	Propane Vaporizer	0.7	0.7	0.7	7.5	13	1.59	1		lb/kgal	*AP-42 Tables 1.5-1 (07/08) Propane Commercial Boilers; SO2 15.9 gr/100ft3 (185 ppm)*	None	
IA1.058	Lube Trailer Bulk Used Oil Tank (1,000 gal)							4.0E-05		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.059	Lube Trailer Bulk Oil Tank 1 (1,000 gal)							4.0E-05		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.060	Lube Trailer Bulk Oil Tank 2 (1,000 gal)							4.0E-05		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.061	Lube Trailer Bulk Oil Tank 3 (500 gal)							1.9E-05		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.062	Lube Trailer Bulk Oil Tank 4 (500 gal)							1.9E-05		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.063	Highway Diesel Tank (20K,							5.9E-04		lb/hr	*EPA Tanks 4.0.9d (EPA 2005)*	None	
IA1.064	Import/Export Sulfuric Acid Tank	1.01E-05	1.01E-05	1.01E-05						lb/hr	*H2SO4 = total PM (see IA Determination calcs)*	None	

	SOURCE DESCRIPTION	HOURLY EMISSIONS								ANNUAL EMISSIONS							
Source ID	Source Description	PM lb/hr	PM10 lb/hr	PM2.5 lb/hr	CO lb/hr	NOX lb/hr	SO2 lb/hr	VOC lb/hr	H2S lb/hr	PM ton/yr	PM10 ton/yr	PM2.5 ton/yr	CO ton/yr	NOX ton/yr	SO2 ton/yr	VOC ton/yr	H2S ton/yr
IA1.044	Sulfate Salts Sampler Conveyor 1 to Sulfate Salts Sampler Conveyor 2	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.045	Sulfate Salts Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	9.0E-04	3.3E-04	5.0E-05						3.9E-03	1.4E-03	2.2E-04					
IA1.029	Off Road Diesel 3 Tank (Mine)							0.001								0.004	
IA1.030	Off Road Diesel 4 Tank (Mine)							0.001								0.004	
IA1.046	Off Road Diesel 5 Tank (Process)							0.001								0.004	
IA1.047	Off Road Diesel 6 Tank (Process)							0.001								0.004	
IA1.048	Highway Diesel Tank							0.0002								0.001	
IA1.049	Bulk Oil Tank 2							0.0004								0.002	
IA1.050	Bulk Used Oil Tank 2							0.0001								0.0005	
IA1.051	Sulfuric Acid Storage Tank 1	6.1E-06	6.1E-06	6.1E-06						2.7E-05	2.7E-05	2.7E-05					
IA1.052	Sulfuric Acid Storage Tank 2	6.1E-06	6.1E-06	6.1E-06						2.7E-05	2.7E-05	2.7E-05					
IA1.056	Wash Bay Water Heater	0.0031	0.0031	0.0031	0.033	0.057	0.0070	0.0044		0.013	0.013	0.013	0.14	0.25	0.030	0.019	
IA1.057	Propane Vaporizer	0.0191	0.0191	0.0191	0.205	0.355	0.0434	0.0273		0.084	0.084	0.084	0.90	1.56	0.190	0.120	
IA1.058	Lube Trailer Bulk Used Oil Tank (1,000 gal)							4.0E-05								1.8E-04	
IA1.059	Lube Trailer Bulk Oil Tank 1 (1,000 gal)							4.0E-05								1.8E-04	
IA1.060	Lube Trailer Bulk Oil Tank 2 (1,000 gal)							4.0E-05								1.8E-04	
IA1.061	Lube Trailer Bulk Oil Tank 3 (500 gal)							1.9E-05								8.5E-05	
IA1.062	Lube Trailer Bulk Oil Tank 4 (500 gal)							1.9E-05								8.5E-05	
IA1.063	Highway Diesel Tank (20K,							5.9E-04								2.6E-03	
IA1.064	Import/Export Sulfuric Acid Tank	1.0E-05	1.0E-05	1.0E-05						4.4E-05	4.4E-05	4.4E-05					

SOURCE DESCRIPTION		NAD 83 LOCATION				RELEASE PARAMETERS INPUT					
Source ID	Source Description	UTM E m	UTM N m	elev m	POINT VOLUME	rel ht (ft) rel ht (ft)	temp (F) width (ft)	flow (dscfm) vert. ln (ft)	flow (acfm) grnd ht (ft)	dia (ft) σz type	vel (ft/s)
IA1.044	Sulfate Salts Sampler Conveyor 1 to Sulfate Salts Sampler Conveyor 2	414,940	4,617,181	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.045	Sulfate Salts Sampler Conveyor 2 to Sulfate Salts Collection Conveyor	414,937	4,617,170	1,430.9	VOLUME	4.5	1	1	5	elev src w/o bldg	
IA1.029	Off Road Diesel 3 Tank (Mine)	413,453	4,616,929	1,466.8							
IA1.030	Off Road Diesel 4 Tank (Mine)	413,450	4,616,928	1,466.8							
IA1.046	Off Road Diesel 5 Tank (Process)	414,449	4,616,923	1,430.9							
IA1.047	Off Road Diesel 6 Tank (Process)	414,453	4,616,916	1,430.9							
IA1.048	Highway Diesel Tank	413,445	4,616,927	1,466.8							
IA1.049	Bulk Oil Tank 2	413,358	4,616,971	1,466.8							
IA1.050	Bulk Used Oil Tank 2	413,357	4,616,974	1,466.8							
IA1.051	Sulfuric Acid Storage Tank 1	414,062	4,616,885	1,442.9	POINT	55	Ambient	No Active Venting	0.069	0.7	0.003
IA1.052	Sulfuric Acid Storage Tank 2	414,047	4,616,911	1,442.9	POINT	55	Ambient	No Active Venting	0.069	0.7	0.003
IA1.056	Wash Bay Water Heater	414,083	4,617,074	1,447.5	POINT	5	600	68	192	0.8	5.9
IA1.057	Propane Vaporizer	414,127	4,616,780	1,442.9	POINT	7	600	1,018	1,037	1.7	7.9
IA1.058	Lube Trailer Bulk Used Oil Tank (1,000 gal)	410,766	4,617,200	1,525.2							
IA1.059	Lube Trailer Bulk Oil Tank 1 (1,000 gal)	410,766	4,617,200	1,525.2							
IA1.060	Lube Trailer Bulk Oil Tank 2 (1,000 gal)	410,766	4,617,200	1,525.2							
IA1.061	Lube Trailer Bulk Oil Tank 3 (500 gal)	410,766	4,617,200	1,525.2							
IA1.062	Lube Trailer Bulk Oil Tank 4 (500 gal)	410,766	4,617,200	1,525.2							
IA1.063	Highway Diesel Tank (20K,	414,456	4,616,908	1,430.9							
IA1.064	Import/Export Sulfuric Acid Tank	414,034	4,616,936	1,442.9	POINT	26.5	Ambient	No Active Venting	0.069	0.7	0.003

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 1 OF: 4 SHEET: Detail Calcs
AIR EMISSION CALCULATIONS	SUBJECT: Detailed Emission Calcs.	DATE: April 19, 2024

System 6, Leach Tanks S2.001 - S2.003

Operating Data

H2SO4 Concentration in Leach Solution	5%	*LNC Leach System Design (Whitehead 2021)*
Total Dissolved Solids in Leach Solution	26%	*LNC Leach System Design (Whitehead 2021)*

Emission Control	Wet Scrubber	
Scrubber Outlet		
Exhaust Flow	13,700 acfm	*(LiNV 2026a)*
Exhaust Density	0.07 lb gas/ft3	*LNC Estimate*
H2SO4 Concentration	1 ppmw	*Bionomic Industries Proposal 042020-01BE*

H2SO4 Emissions

$$\frac{1 \text{ lb } H_2SO_4}{1.0E{+}06 \text{ lb gas}} \left| \frac{13{,}700 \text{ ft3}}{\text{min}} \right| \frac{60 \text{ min}}{\text{hr}} \left| \frac{0.07 \text{ lb gas}}{\text{ft3}} \right. = \frac{0.058 \text{ lb } H_2SO_4}{\text{hr}}$$

PM Emissions

$$\frac{0.058 \text{ lb H2SO4}}{\text{hr}} \left| \frac{\text{solution}}{5\% \text{ H2SO4}} \right| \frac{26\% \text{ solids}}{\text{solution}} = \frac{0.30 \text{ lb solids (PM)}}{\text{hr}}$$

Conversions

2,000 lb/ton	35.3147 ft3/m3	2.20462 lb/kg
60 min/hr	1.0E+06 mg/kg	359.038 dscf/lb-mol

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 2 OF: 4 SHEET: Detail Calcs
AIR EMISSION CALCULATIONS	SUBJECT: Detailed Emission Calcs.	DATE: April 19, 2024

System 7, Neutralization Filter Vent: S2.004 - S2.007

Operating Data

Emission Control None

Vent Outlet

Exhaust Flow	5,500	acfm	*(LNC 2024a)*
Exhaust Density	0.06	lb gas/ft3	*LNC Estimate*
Moisture Content in Exhaus	100	ppmw	*Max. estimate of entrained droplets in exhaust (D. Whitehead)*
TDS Content	1%		*LNC System Design (Whitehead 2023b)*

PM Emissions

$$\frac{100\ \text{lb}\ \cancel{\text{H2O}}}{1.0\text{E+}06\ \cancel{\text{lb gas}}} \times \frac{5{,}500\ \cancel{\text{ft3}}}{\cancel{\text{min}}} \times \frac{60\ \cancel{\text{min}}}{\text{hr}} \times \frac{0.06\ \cancel{\text{lb gas}}}{\cancel{\text{ft3}}} \times \frac{1\%\ \text{solids}}{\cancel{\text{H2O}}} = \frac{0.020\ \text{lb solids (PM)}}{\text{hr}}$$

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 3 OF: 4 SHEET: Detail Calcs
AIR EMISSION CALCULATIONS	SUBJECT: Detailed Emission Calcs.	DATE: April 19, 2024

System 13, Magnesium Precip. Filter Vents **S2.009 & S2.010**

Operating Data

Emission Control None

Vent Outlet

Exhaust Flow	4,100	acfm	*(LNC 2024a)*
Exhaust Density	0.06	lb gas/ft3	*LNC Estimate*
Moisture Content in Exhaus	100	ppmw	*Max. estimate of entrained droplets in exhaust (D. Whitehead)*
TDS Content	16.0%		*LNC System Design (Whitehead 2023b)*

PM Emissions

$$\frac{100\ \text{lb}\ \cancel{\text{H2O}}}{1.0\text{E+}06\ \cancel{\text{lb gas}}} \times \frac{4{,}100\ \cancel{\text{ft3}}}{\cancel{\text{min}}} \times \frac{60\ \cancel{\text{min}}}{\text{hr}} \times \frac{0.06\ \cancel{\text{lb gas}}}{\cancel{\text{ft3}}} \times \frac{16.0\%\ \text{solids}}{\cancel{\text{H2O}}} = \frac{0.24\ \text{lb solids (PM)}}{\text{hr}}$$

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 4 OF: 4 SHEET: Detail Calcs
AIR EMISSION CALCULATIONS	SUBJECT: Detailed Emission Calcs.	DATE: April 19, 2024

System 54, Neutralization Tanks Vent **S2.096**

Operating Data

Emission Control	None		
Vent Outlet			
Exhaust Flow	38,500	acfm	*(LiNV 2026a)*
Exhaust Density	0.06	lb gas/ft3	*LNC Estimate*
Moisture Content in Exhaus	25	ppmw	*(Whitehead 2024b)*
TDS Content	29%		*(Whitehead 2024a)*

PM Emissions

$$\frac{25\ \text{lb}\ \sout{\text{H2O}}}{1.0\text{E+}06\ \sout{\text{lb gas}}} \times \frac{38{,}500\ \sout{\text{ft3}}}{\sout{\text{min}}} \times \frac{60\ \sout{\text{min}}}{\text{hr}} \times \frac{0.06\ \sout{\text{lb gas}}}{\sout{\text{ft3}}} \times \frac{29\%\ \text{solids}}{\sout{\text{H2O}}} = \frac{1.00\ \text{lb solids (PM)}}{\text{hr}}$$

System 55, Acidulation Tanks Vent **S2.097**

Operating Data

Emission Control	None		
Vent Outlet			
Exhaust Flow	37,000	acfm	*(LiNV 2026a)*
Exhaust Density	0.06	lb gas/ft3	*LNC Estimate*
Moisture Content in Exhaus	40	ppmw	*(Whitehead 2024b)*
TDS Content	32%		*(Whitehead 2024a)*

PM Emissions

$$\frac{40\ \text{lb}\ \sout{\text{H2O}}}{1.0\text{E+}06\ \sout{\text{lb gas}}} \times \frac{37{,}000\ \sout{\text{ft3}}}{\sout{\text{min}}} \times \frac{60\ \sout{\text{min}}}{\text{hr}} \times \frac{0.06\ \sout{\text{lb gas}}}{\sout{\text{ft3}}} \times \frac{32\%\ \text{solids}}{\sout{\text{H2O}}} = \frac{1.70\ \text{lb solids (PM)}}{\text{hr}}$$

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 1 OF: 18 SHEET: Tanks
AIR EMISSION CALCULATIONS	SUBJECT: Storage Tanks	DATE: April 29, 2024

Storage Tanks[1]

			Dimensions		gpy Throughput	ppy Emissions[2]	
Storage Tank	Type	Capacity gal	Dia ft	L or H ft	gal/yr	lb/yr	ton/yr
Gasoline Tank (Mine)	vert cyl	1,000	5.5	6	103,000	445	0.223
Gasoline Tank (Process Plant)	horiz	1,400	4	15	108,000	658	0.329
Diesel Tank 1, Off Road (20K, Mine)	vert cyl	20,000	14.5	17	360,000	8.7	0.0044
Diesel Tank 2, Off Road (20K, Process)	vert cyl	20,000	14.5	17	360,000	8.7	0.0044
Bulk Oil Tank 1	vert cyl	19,000	14	16.5	31,800	3.5	0.002
Bulk Coolant Tank	vert cyl	3,000	8	8	6,400	0.04	0.00002
Bulk Used Oil Tank	vert cyl	3,000	8	8	31,800	1.0	0.0005
Bulk Used Coolant Tank	vert cyl	3,000	8	8	6,400	0.04	0.00002
HCl Storage Tank (35%)	vert cyl	8,000	11	12	1,495,000	612.2	0.306
Bulk DEF Tank	vert cyl	1,000	5.5	6	128,000	No regulated air pollutants	
Off Road Diesel 3 Tank (Mine)	vert cyl	25,000	12	30	360,000	8.7	0.004
Off Road Diesel 4 Tank (Mine)	vert cyl	25,000	12	30	360,000	8.7	0.004
Off Road Diesel 5 Tank (Process)	vert cyl	22,000	14.5	18	244,000	7.11	0.004
Off Road Diesel 6 Tank (Process)	vert cyl	22,000	14.5	18	244,000	7.11	0.004
Highway Diesel Tank	vert cyl	8,000	8	21.5	40,000	1.86	0.001
Gasoline Tank (10k, Process)	horiz	10,000	8	27	200,000	2,839.9	1.420
Gasoline Tank #2 (Mine)	horiz	1,000	4	11	115,000	514.1	0.257
Bulk Oil Tank 2	vert cyl	19,000	14	16.5	31,800	3.5	0.002
Bulk Used Oil Tank 2	vert cyl	3,000	8	8	31,800	1.0	0.0005
Lube Trailer Bulk Used Oil Tank (1,000	vert cyl	1,000	5.5	6	12,000	0.35	0.00018
Lube Trailer Bulk Oil Tank 1 (1,000 gal)	vert cyl	1,000	5.5	6	12,000	0.35	0.00018
Lube Trailer Bulk Oil Tank 2 (1,000 gal)	vert cyl	1,000	5.5	6	12,000	0.35	0.00018
Lube Trailer Bulk Oil Tank 3 (500 gal)	vert cyl	500	4.2	5	6,000	0.17	0.000085
Lube Trailer Bulk Oil Tank 4 (500 gal)	vert cyl	500	4.2	5	6,000	0.17	0.000085
Highway Diesel Tank (20K, Process)	vert cyl	20,000	14.5	17	120,000	5.20	0.0026

[1] *(LNC 2020); (Schonlau 2020a); (LNC 2023c); (Whitehead 2023a); (LiNV 2026a); (Sawtooth 2026a)*

[2] *EPA Tanks 4.0.9d (EPA 2005)*

Additional Vertical Tank Parameters

Storage Tank	Roof Type	Max Liq. Height (ft)	Avg Liq. Height (ft)	Roof ht (ft)	Roof Radius (ft)
Gasoline Tank (Mine)	Dome	5.8	2.9	0.17	5.5
Diesel Tank 1, Off Road (20K, Mine)	Dome	16.5	8.25	0.45	14.5
Diesel Tank 2, Off Road (20K, Process	Dome	16.5	8.25	0.45	14.5
Bulk Oil Tank 1	Dome	16.5	8.25	0.44	14
Bulk Coolant Tank	Dome	8	4	0.25	8
Bulk Used Oil Tank	Dome	8	4	0.25	8
Bulk Used Coolant Tank	Dome	8	4	0.25	8
HCl Storage Tank (35%)	Dome	11.5	5.75	0.34	11
Bulk DEF Tank	Dome	5.8	2.9	0.17	5.5
Off Road Diesel 3 Tank (Mine)	Dome	29.5	14.75	0.38	12
Off Road Diesel 4 Tank (Mine)	Dome	29.5	14.75	0.38	12
Off Road Diesel 5 Tank (Process)	Dome	18	9	0.45	14.5
Off Road Diesel 6 Tank (Process)	Dome	18	9	0.45	14.5
Highway Diesel Tank	Dome	21.5	10.75	0.25	8
Bulk Oil Tank 2	Dome	16.5	8.25	0.44	14
Bulk Used Oil Tank 2	Dome	8	4	0.25	8
Lube Trailer Bulk Used Oil Tank (1,0(	Dome	5.8	2.9	0.17	5.5
Lube Trailer Bulk Oil Tank 1 (1,000 g	Dome	5.8	2.9	0.17	5.5
Lube Trailer Bulk Oil Tank 2 (1,000 g	Dome	5.8	2.9	0.17	5.5
Lube Trailer Bulk Oil Tank 3 (500 gal	Dome	4.8	2.4	0.13	4.2
Lube Trailer Bulk Oil Tank 4 (500 gal	Dome	4.8	2.4	0.13	4.2
Highway Diesel Tank (20K, Process)	Dome	16.5	8.25	0.45	14.5

Ethylene Glycol TANKS Chemical Parameters

Vapor Pressure of Ethylene Glycol ($C_2H_6O_2$)[1]

C	mmHg	F	psia	psia[2]
53	1	127.4	0.019	0.019
79.7	5	175.46	0.097	0.098
92.1	10	197.78	0.193	0.192
105.8	20	222.44	0.387	0.386
120	40	248	0.773	0.755
129.5	60	265.1	1.160	1.152
141.8	100	287.24	1.934	1.937
158.5	200	317.3	3.867	3.742
178.5	400	353.3	7.735	7.730

[1] *(Perry's 1997) p. 2-68*

[2] *psia = y = 10^-(3167.6/(x+280) - 7.7968)*

Ethylene Glycol Pressures for TANKD 4.0.9d

F	C	psia[2]
40	4.4	0.0005
50	10.0	0.0007
60	15.6	0.0012
70	21.1	0.0019
80	26.7	0.0029
90	32.2	0.0045
100	37.8	0.0067

$C_2H_6O_2$ Conc.	100%	wt.
Density	1.1132	g/cc
	9.2901	lb/gal
$C_2H_6O_2$ MW	62.068	g/mol
H2O MW	18.01528	g/mol
$C_2H_6O_2$ Sol'n MW	62.068	g/mol

Roof Height (cone or dome)
roof slope 0.0625 default value for vertical fixed roof *(EPA 1999)*
radius shell diameter, default
dome ht. = 1/2D*roof slope

Conversions
2,000 lb/ton
7.481 gal/ft3

Gasoline Tank (Mine) 445.36 lb/yr

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

Identification

User Identification:	LNC Gasoline 1k
City:	
State:	Nevada
Company:	Lithium Nevada Corp
Type of Tank:	Vertical Fixed Roof Tank
Description:	1,000 gal vertical gasoline tank

Tank Dimensions

Shell Height (ft):	6.00
Diameter (ft):	5.50
Liquid Height (ft) :	5.80
Avg. Liquid Height (ft):	2.90
Volume (gallons):	1,000.00
Turnovers:	103.00
Net Throughput(gal/yr):	103,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.17
Radius (ft) (Dome Roof)	5.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Gasoline 1k - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 9)	All	51.10	43.23	58.97	49.10	3.8582	3.2784	4.5181	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3

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

Emissions Report for: Annual

LNC Gasoline 1k - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 9)	290.30	155.06	445.36

Gasoline Tank (Process Plant) 657.62 lb/yr

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

Identification

User Identification:	LNC Gasoline 1.4k
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Horizontal Tank
Description:	

Tank Dimensions

Shell Length (ft):	15.00
Diameter (ft):	4.00
Volume (gallons):	1,400.00
Turnovers:	77.14
Net Throughput(gal/yr):	108,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Gasoline 1.4k - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 9)	All	51.10	43.23	58.97	49.10	3.8582	3.2784	4.5181	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3

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

Emissions Report for: Annual

LNC Gasoline 1.4k - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 9)	369.28	288.33	657.62

Diesel Tank 1, Off Road (20K, Mine) 8.71 lb/yr

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

Identification

User Identification:	LiNV Diesel 20K
City:	Winnemucca
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	20,000 gallon vertical diesel tank

Tank Dimensions

Shell Height (ft):	17.00
Diameter (ft):	14.50
Liquid Height (ft) :	16.50
Avg. Liquid Height (ft):	8.25
Volume (gallons):	20,000.00
Turnovers:	18.00
Net Throughput(gal/yr):	360,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.45
Radius (ft) (Dome Roof)	14.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LiNV Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LiNV Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	5.26	3.45	8.71

Diesel Tank 2, Off Road (20K, Process) 8.71 lb/yr

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

Identification

User Identification:	LINV Diesel 20K
City:	Winnemucca
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	20,000 gallon vertical diesel tank

Tank Dimensions

Shell Height (ft):	17.00
Diameter (ft):	14.50
Liquid Height (ft) :	16.50
Avg. Liquid Height (ft):	8.25
Volume (gallons):	20,000.00
Turnovers:	18.00
Net Throughput(gal/yr):	360,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.45
Radius (ft) (Dome Roof)	14.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LINV Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LINV Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	5.26	3.45	8.71

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 7 OF: 18 SHEET: Tanks
AIR EMISSION CALCULATIONS	SUBJECT: Storage Tanks	DATE: April 29, 2024

Bulk Oil Tank 1 3.5 lb/yr

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

Identification

User Identification:	LNC Oil 19K
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Vertical Fixed Roof Tank
Description:	19,000 gal vertical oil tank

Tank Dimensions

Shell Height (ft):	16.50
Diameter (ft):	14.00
Liquid Height (ft) :	16.50
Avg. Liquid Height (ft):	8.25
Volume (gallons):	19,000.00
Turnovers:	1.67
Net Throughput(gal/yr):	31,800.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.44
Radius (ft) (Dome Roof)	14.00

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Oil 19K - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LNC Oil 19K - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.46	3.03	3.50

Bulk Coolant Tank 0.04 lb/yr

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

Identification

User Identification:	LNC Coolant 3K
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Vertical Fixed Roof Tank
Description:	3,000 gal vertical coolant tank

Tank Dimensions

Shell Height (ft):	8.00
Diameter (ft):	8.00
Liquid Height (ft) :	8.00
Avg. Liquid Height (ft):	4.00
Volume (gallons):	3,000.00
Turnovers:	2.13
Net Throughput(gal/yr):	6,400.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.25
Radius (ft) (Dome Roof)	8.00

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Coolant 3K - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Ethylene Glycol	All	51.10	43.23	58.97	49.10	0.0008	0.0006	0.0011	62.0680			62.07	Option 1: VP50 = .0007 VP60 = .0012

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

Emissions Report for: Annual

LNC Coolant 3K - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Ethylene Glycol	0.01	0.04	0.04

Bulk Used Oil Tank 0.95 lb/yr

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

Identification

User Identification:	LNC Oil 3K
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Vertical Fixed Roof Tank
Description:	3,000 gal vertical oil tank

Tank Dimensions

Shell Height (ft):	8.00
Diameter (ft):	8.00
Liquid Height (ft) :	8.00
Avg. Liquid Height (ft):	4.00
Volume (gallons):	3,000.00
Turnovers:	10.60
Net Throughput(gal/yr):	31,800.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.25
Radius (ft) (Dome Roof)	8.00

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Oil 3K - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LNC Oil 3K - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.46	0.48	0.95

HCl Storage Tank (35%) 612.16 lb/yr

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

Identification

User Identification:	LNC HCl_36 8k
City:	
State:	Nevada
Company:	Lithium Nevada Corp
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	12.00
Diameter (ft):	11.00
Liquid Height (ft) :	11.50
Avg. Liquid Height (ft):	5.75
Volume (gallons):	8,000.00
Turnovers:	186.88
Net Throughput(gal/yr):	1,495,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.34
Radius (ft) (Dome Roof)	11.00

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC HCl_36 8k - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Hydrochloric Acid (38%)	All	51.10	43.23	58.97	49.10	1.1367	0.8892	1.4649	36.4600			24.66	Option 1: VP50 = 1.091 VP60 = 1.508

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

Emissions Report for: Annual

LNC HCl_36 8k - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Hydrochloric Acid (38%)	482.71	129.46	612.16

Off Road Diesel 5 Tank (Process) 7.11 lb/yr

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

Identification

User Identification:	LNC Diesel 22K
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Vertical Fixed Roof Tank
Description:	22,000 gal vertical diesel tank

Tank Dimensions

Shell Height (ft):	18.00
Diameter (ft):	14.50
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	9.00
Volume (gallons):	22,000.00
Turnovers:	11.09
Net Throughput(gal/yr):	244,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.45
Radius (ft) (Dome Roof)	14.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Diesel 22K - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LNC Diesel 22K - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	3.56	3.54	7.11

Highway Diesel Tank 1.86 lb/yr

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

Identification

User Identification:	LNC Diesel 8K
City:	
State:	Nevada
Company:	Lithium Nevada Corp.
Type of Tank:	Vertical Fixed Roof Tank
Description:	8,000 gal vertical diesel tank

Tank Dimensions

Shell Height (ft):	21.50
Diameter (ft):	8.00
Liquid Height (ft) :	21.50
Avg. Liquid Height (ft):	10.75
Volume (gallons):	8,000.00
Turnovers:	5.00
Net Throughput(gal/yr):	40,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.25
Radius (ft) (Dome Roof)	8.00

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Diesel 8K - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LNC Diesel 8K - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.58	1.27	1.86

Gasoline Tank (10k, Process) 2,839.91 lb/yr

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

Identification

User Identification:	LiNV Gasoline 10K
City:	Winnemucca
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Horizontal Tank
Description:	10,000 gallon horizontal gasoline tank

Tank Dimensions

Shell Length (ft):	27.00
Diameter (ft):	8.00
Volume (gallons):	10,000.00
Turnovers:	20.00
Net Throughput(gal/yr):	200,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LiNV Gasoline 10K - Horizontal Tank
Winnemucca, Nevada

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 9)	All	51.10	43.23	58.97	49.10	3.8582	3.2784	4.5181	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3

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

Emissions Report for: Annual

LiNV Gasoline 10K - Horizontal Tank
Winnemucca, Nevada

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 9)	1,230.95	1,608.97	2,839.91

Gasoline Tank #2 (Mine) 514.05 lb/yr

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

Identification

User Identification:	LNC Gasoline 1k
City:	
State:	Nevada
Company:	Lithium Nevada Corp
Type of Tank:	Horizontal Tank
Description:	1,000 gal horizontal gasoline tank

Tank Dimensions

Shell Length (ft):		11.00
Diameter (ft):		4.00
Volume (gallons):		1,000.00
Turnovers:		115.00
Net Throughput(gal/yr):		115,000.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemuoca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LNC Gasoline 1k - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg	Min.	Max.	Vapor Mol Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 9)	All	51.10	43.23	58.97	49.16	3.8582	3.2784	4.5181	67.0000			92.00	Option 4: RVP=9, ASTM Slope=3

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

Emissions Report for: Annual

LNC Gasoline 1k - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 9)	302.61	211.44	514.05

Lube Trailer Bulk Used Oil Tank (1,000 gal) 0.35 lb/yr

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

Identification

User Identification:	Sawtooth Used Oil 1k
City:	
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	6.00
Diameter (ft):	5.50
Liquid Height (ft) :	5.80
Avg. Liquid Height (ft):	2.90
Volume (gallons):	1,000.00
Turnovers:	12.00
Net Throughput(gal/yr):	12,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.17
Radius (ft) (Dome Roof)	5.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

Sawtooth Used Oil 1k - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

Sawtooth Used Oil 1k - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.18	0.18	0.35

Lube Trailer Bulk Oil Tank 1 (1,000 gal) 0.35 lb/yr

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

Identification

User Identification:	Sawtooth Oil 1k
City:	
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	6.00
Diameter (ft):	5.50
Liquid Height (ft) :	5.80
Avg. Liquid Height (ft):	2.90
Volume (gallons):	1,000.00
Turnovers:	12.00
Net Throughput(gal/yr):	12,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.17
Radius (ft) (Dome Roof)	5.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

Sawtooth Oil 1k - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

Sawtooth Oil 1k - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.18	0.18	0.35

Lube Trailer Bulk Oil Tank 3 (500 gal) 0.17 lb/yr

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

Identification

User Identification:	Sawtooth Oil 500 gal
City:	
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	4.20
Liquid Height (ft) :	4.80
Avg. Liquid Height (ft):	2.40
Volume (gallons):	500.00
Turnovers:	12.00
Net Throughput(gal/yr):	6,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.13
Radius (ft) (Dome Roof)	4.20

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

Sawtooth Oil 500 gal - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

Sawtooth Oil 500 gal - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.09	0.09	0.17

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 18 OF: 18 SHEET: Tanks
AIR EMISSION CALCULATIONS	SUBJECT: Storage Tanks	DATE: April 29, 2024

Highway Diesel Tank (20K, Process) 5.2 lb/yr

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

Identification

User Identification:	LINV Hwy Diesel 20K
City:	Winnemucca
State:	Nevada
Company:	Lithium Nevada
Type of Tank:	Vertical Fixed Roof Tank
Description:	20,000 gallon vertical diesel tank

Tank Dimensions

Shell Height (ft):	17.00
Diameter (ft):	14.50
Liquid Height (ft) :	16.50
Avg. Liquid Height (ft):	8.25
Volume (gallons):	20,000.00
Turnovers:	6.00
Net Throughput(gal/yr):	120,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.45
Radius (ft) (Dome Roof)	14.50

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Winnemucca, Nevada (Avg Atmospheric Pressure = 12.6 psia)

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

LINV Hwy Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	51.10	43.23	58.97	49.10	0.0047	0.0036	0.0063	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Emissions Report for: Annual

LINV Hwy Diesel 20K - Vertical Fixed Roof Tank
Winnemucca, Nevada

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1.75	3.45	5.20

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 1 OF: 3 SHEET: IA
AIR EMISSION CALCULATIONS	SUBJECT: Laboratory	DATE: June 22, 2026

Laboratory Sample Preparation

Operation 8,760 hr/yr
Throughput 1 ton/hr/unit

Laboratory Sample Preparation Equipment and Emission Factors

	Max	Emission Factors - lb/ton			
Equipment Type	Quantity	PM	PM10	PM2.5	Emission Factor Reference
Splitters (or other transfers)	6	0.003	0.0011	0.00017	*AP-42 Table 11.19.2-2 (08/04) conv. transfer unctrl. (NDEP 2017)*
Crushers	3	0.0054	0.0024	0.0004	*AP-42 Table 11.19.2-2 (08/04) tert. crush unctrl. (NDEP 2017)*
Screens	3	0.025	0.0087	0.0013	*AP-42 Table 11.19.2-2 (08/04) screening unctrl. (NDEP 2017)*
Pulverizers	3	0.039	0.015	0.0023	*AP-42 Table 11.19.2-2 (08/04) fines crush unctrl. (NDEP 2017)*

Per Unit Emissions

	Per Unit	PM Uncontrolled			PM10 Uncontrolled			PM2.5 Uncontrolled		
	Throughout	Potential Emissions			Potential Emissions			Potential Emissions		
Equipment Type	ton/hr	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
1 Splitter (or other transfers)	1	0.003	26.28	0.013	0.001	9.64	0.005	0.0002	1.49	0.001
1 Crusher	1	0.005	47.30	0.024	0.002	21.0	0.011	0.0004	3.50	0.002
1 Screen	1	0.025	219.0	0.110	0.009	76.2	0.038	0.0013	11.4	0.006
1 Pulverizer	1	0.039	341.6	0.171	0.015	131.4	0.066	0.0023	20.1	0.010

Total Emissions

	Total	Uncontrolled PM			Uncontrolled PM10			Uncontrolled PM2.5		
	Throughout	Potential Emissions			Potential Emissions			Potential Emissions		
Equipment Type	ton/hr	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr	lb/hr	lb/yr	ton/yr
6 Splitters (or other transfers)	6	0.018	157.68	0.079	0.007	57.82	0.029	0.0010	8.94	0.004
3 Crushers	3	0.016	141.91	0.071	0.007	63.07	0.032	0.0012	10.51	0.005
3 Screens	3	0.075	657.0	0.329	0.026	228.6	0.114	0.0039	34.2	0.017
3 Pulverizers	3	0.117	1024.9	0.512	0.045	394.2	0.197	0.0069	60.4	0.030
Total Laboratory Emissions		**0.226**	**1,981.5**	**0.991**	**0.085**	**743.7**	**0.372**	**0.0130**	**114.1**	**0.057**

Lab will include 3-5 hood vents which vent directly outside - trivial

Conversions
2,000 lb/ton

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 2 OF: 3 SHEET: IA
AIR EMISSION CALCULATIONS	SUBJECT: Cooling Towers	DATE: June 22, 2026

Cooling Towers

Sulfuric Acid Plant Cooling Tower

$$\frac{208{,}500\ \text{gal water}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal water}} \times 0.005\%\ \text{(drift)} \times \frac{1{,}000\ \text{lb PM}}{1{,}000{,}000\ \text{lb}} \times \frac{8{,}760\ \text{hr}}{\text{yr}} = \frac{762\ \text{lb PM}}{\text{yr}}$$

Magnesium Sulfate Cooling Tower

$$\frac{1{,}174{,}500\ \text{gal water}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal water}} \times 0.005\%\ \text{(drift)} \times \frac{750\ \text{lb PM}}{1{,}000{,}000\ \text{lb}} \times \frac{8{,}760\ \text{hr}}{\text{yr}} = \frac{3{,}218\ \text{lb PM}}{\text{yr}}$$

Process Plant Cooling Tower

$$\frac{1{,}012{,}500\ \text{gal water}}{\text{hr}} \times \frac{8.34\ \text{lb}}{\text{gal water}} \times 0.005\%\ \text{(drift)} \times \frac{750\ \text{lb PM}}{1{,}000{,}000\ \text{lb}} \times \frac{8{,}760\ \text{hr}}{\text{yr}} = \frac{2{,}774\ \text{lb PM}}{\text{yr}}$$

Conversions

8.34 lb H2O/gal

8,760 hr/yr

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 3 OF: 3 SHEET: IA
AIR EMISSION CALCULATIONS	SUBJECT: Sulfuric Acid Tanks	DATE: June 22, 2026

Sulfuric Acid Storage Tanks

			Reference
H2SO4 M.W. =	98.08	g/mol	*98% Sulfuric Acid SDS (Sigma Aldrich 2023)*
H2SO4 Density =	1.84	g/cc	*98% Sulfuric Acid SDS (Sigma Aldrich 2023)*
	114.9	lb/ft3	
	15.36	lb/gal	
Ambient Temperature =	68	degrees F	
	293.2	degrees K	
H2SO4 Vapor Pressure =	2.24E-08	bar	*EPA-745-R-97-007, Table 1a; 68 degF, 98% concentration*
	2.21E-08	atm	
R =	0.08206	l-atm/mol-K	*Ideal Gas Constant*
H2SO4 Vapor Concentration =	9.19E-10	mol/L	
	9.01E-08	g/L	
	7.52E-10	**lb/gal of throughput**	

Source	Description	Sulfuric Acid gal/yr	Operation hr/yr	H2SO4 Emission Factor lb/gal	H2SO4 Emissions lb/hr	ton/yr
IA1.051	Sulfuric Acid Storage Tank 1	70,744,865	8,760	7.52E-10	6.07E-06	2.66E-05
IA1.052	Sulfuric Acid Storage Tank 2	70,744,865	8,760	7.52E-10	6.07E-06	2.66E-05
IA1.064	Import/Export Sulfuric Acid Ta	117,908,108	8,760	7.52E-10	1.01E-05	4.43E-05
Total H2SO4					2.23E-05	9.76E-05

Sulfuric Acid Plant Capacity

$$\frac{2{,}480\ \text{ton H2SO4}}{\text{day}} \times \frac{365\ \text{day}}{\text{yr}} \times \frac{2{,}000\ \text{lb}}{\text{ton}} \times \frac{\text{gal}}{15.36\ \text{lb}} = \frac{117{,}908{,}108\ \text{gal}}{\text{yr}}$$

$$\frac{117{,}908{,}108\ \text{gal}}{\text{yr}} \times \frac{}{2\ \text{tanks}} \times 20\%\ \text{supplemental H2SO4} = 70{,}744{,}865\ \text{gal/yr, per tank}$$

Conversions

2,000 lb/ton	273.15 K at 0°C	365 day/yr
453.592 g/lb	1.80 °F/°C	
62.43 lb/ft3, water	1.01325 atm/bar	
7.48052 gal/ft3	3.79 L/gal	

Air Sciences Inc.	PROJECT TITLE: Thacker Pass	BY: E. Huelson
	PROJECT NO: 270-3-1	PAGE: 1 OF: 10 SHEET: HAP&GHG
AIR EMISSION CALCULATIONS	SUBJECT: HAP and GHG Emissions	DATE: April 19, 2023

Hazardous Air Pollutants and Greenhouse Gas Emissions - Stationary Sources

HAP Emissions Summary - Stationary Sources

Pollutant/Group		Emissions ton/yr
1,1,2,2-Tetrachloroethane		3.22E-06
1,1,2-Trichloroethane		1.95E-06
1,1-Dichloroethane		1.44E-06
1,2-Dichloroethane		1.44E-06
1,2-Dichloropropane		1.65E-06
1,3-Butadiene		4.01E-03
1,3-Dichloropropene		1.62E-06
2-Methylnaphthalene	POM	1.45E-06
2,2,4-Trimethylpentane		0.00E+00
3-Methylchloranthrene	POM	1.09E-07
7,12-Dimethylbenz(a)anthracene	POM	9.67E-07
Acenaphthene	POM	4.33E-04
Acenaphthylene	POM	1.08E-03
Acetaldehyde		7.89E-02
Acrolein		1.01E-02
Anthracene	POM	2.64E-04
Benz(a)anthracene	POM	2.07E-04
Benzene		**1.42E-01**
Benzo(a)pyrene	POM	3.49E-05
Benzo(e)pyrene		0.00E+00
Benzo(b)fluoranthene	POM	7.91E-05
Benzo(g,h,i)perylene	POM	8.37E-05
Benzo(k)fluoranthene	POM	2.92E-05
Biphenyl		0.00E+00
Carbon Tetrachloride		2.25E-06
Chlorobenzene		1.64E-06
Chloroform		1.74E-06
Chrysene	POM	1.31E-04
Dibenz(a,h)anthracene	POM	8.01E-05
Dichlorobenzene		7.25E-05
Ethylbenzene		3.15E-06
Ethylene Dibromide		2.71E-06
Fluoranthene	POM	1.01E-03
Fluorene	POM	3.73E-03
Formaldehyde		1.30E-01
Hexane		1.09E-01
Indeno(1,2,3-cd)pyrene	POM	6.35E-05
Methanol		3.89E-04
Methylene Chloride		5.24E-06
Naphthalene	POM	1.66E-02
PAH		1.79E-05
Phenanthrene	POM	5.49E-03
Phenol		0.00E+00
Pyrene	POM	7.10E-04
Styrene		1.51E-06
Toluene		5.88E-02
Vinyl Chloride		9.13E-07
Xylenes		4.06E-02

Pollutant/Group	Emissions ton/yr
Hydrochloric acid	3.06E-01
Arsenic	6.62E-05
Beryllium	9.81E-07
Cadmium	6.91E-05
Chromium	1.22E-04
Cobalt	5.08E-06
Lead	4.24E-05
Manganese	7.47E-04
Mercury	1.57E-05
Nickel	1.92E-04
Phosphorus	4.04E-04
Selenium	1.45E-06
POM Subtotal	*3.01E-02*
Highest Single HAP: Benzene	0.142
Total HAP	0.91

Benzene 18 #N/A ok

GHG Emissions Summary - Stationary Sources

Source Category	CO2e *(ton/yr)*
Diesel Combustion	26,581
Propane Combustion	8,440
Lithium Processing Sources	87,033
Total GHGs	**122,053**

ok

ok ok-11

	HAP ton/yr	CO2e ton/yr
Construction Sources	0.48	26,305
Operating Sources	0.68	112,399

Conversions

2,000 lb/ton	1.341 hp/kW
907.18 kg/ton	1,000,000 Btu/MMBtu
0.0915 MMBtu/gal Propa	1,000 gal/10^3 gal
	0.14 MMBtu/gal diesel

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Stationary Source - Diesel Engines

Source Data

Thru_unit: Thru_hr = hr/yr

Source	Description	Power Rating kW	Power Rating hp	Operation hr/yr	Output hp-hr/yr	Fuel Consumption* MMBtu/hr	Fuel Consumption* MMBtu/yr	HAP ton/yr	CO2e ton/yr
S2.024	Fire Pump (261 kW, 2009 or newer)	261	350	100	35,000	2.25	225	4.4E-04	18.4
S2.029	Quinn 1 Diesel Generator (130≤kW≤56	560	751	8,760	6,578,410	5.26	46,049	3.6E-02	3,766.6
S2.045	ROM Office Diesel Generator (37≤kW·	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.047	Piping Field Office Diesel Generator (3	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.048	Tanks Field Office Diesel Generator (5	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.049	Downstream Office Diesel Generator (	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.050	Upstream Office Diesel Generator (37:	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.051	SAP Field Office Diesel Generator (37:	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.054	Procurement Field Office Diesel Gene	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.055	Training Yard Diesel Generator (56≤k	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.056	NDT Contractor Offices Diesel Genera	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.057	Tanks Area Diesel Generator 1 (56≤kW	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.058	Tanks Area Diesel Generator 2 (56≤kW	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.059	Tanks Area Diesel Generator 3 (56≤kW	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.060	SAP Five Wide Diesel Generator (56≤k	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.061	EPC Office 2 Diesel Generator (56≤kW	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.062	Medical Building Diesel Generator (56	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.063	Warehouse Area Diesel Generator (13(	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.064	Area 1310 - Construction Diesel Gener	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.065	SAP Laydown Diesel Generator (130≤	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.066	Tanks Assembly Lunch Tent Diesel Ge	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.067	LNC & EPCM Office Diesel Generator	560	751	3,650	2,741,004	5.26	19,187	1.5E-02	1,569.4
S2.068	Medical Area Diesel Generator (130≤k	560	751	3,650	2,741,004	5.26	19,187	1.5E-02	1,569.4
S2.069	Electrical Laydown Field Office Diesel	55	74	3,650	269,206	0.52	1,884	3.6E-03	154.1
S2.070	QA Lab Diesel Generator (37≤kW<56,	55	74	8,760	646,094	0.52	4,523	8.8E-03	369.9
S2.071	General Services Diesel Generator 1 (5	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.072	General Services Diesel Generator 2 (5	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.073	Batching Area Diesel Generator 1 (37≤	55	74	4,380	323,047	0.52	2,261	4.4E-03	185.0
S2.074	Batching Area Diesel Generator 2 (150	150	201	8,760	1,762,074	1.20	10,547	2.0E-02	862.7
S2.076	Food Services Diesel Generator (130≤k	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.077	Fuel Station Diesel Generator (56≤kW·	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.078	Area 1410 - Construction Diesel Gene	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.079	Equipment Shop Diesel Generator 2 (1	300	402	3,650	1,468,395	2.82	10,279	2.0E-02	840.8
S2.098	Non-Emergency Diesel Generator 1 (C	3,264	4,377	300	1,313,107	28.29	8,488	6.7E-03	694.3
S2.099	Non-Emergency Diesel Generator 2 (C	3,264	4,377	300	1,313,107	28.29	8,488	6.7E-03	694.3
S2.100	Emergency Diesel Generator 1 (CAT 3	2,191	2,938	100	293,813	18.70	1,870	1.5E-03	153.0
S2.101	Emergency Diesel Generator 2 (CAT 3	2,191	2,938	100	293,813	18.70	1,870	1.5E-03	153.0
S2.103	LAC Trailer Diesel Generator (37≤kW·	55.4	74	8,760	650,793	0.55	4,854	9.4E-03	397.0
S2.104	Guard Shack Security Diesel Generato	55.4	74	8,760	650,793	0.55	4,854	9.4E-03	397.0
S2.105	Sawtooth Trailer Diesel Generator (19:	36	48	8,760	422,898	0.34	2,960	5.7E-03	242.1

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Stationary Source - Diesel Engines - Continued

Thru_unit
Source Data Thru_hr hr/yr

Source	Description	Power Rating kW	Power Rating hp	Operation hr/yr	Output hp-hr/yr	Fuel Consumption* MMBtu/hr	Fuel Consumption* MMBtu/yr	HAP ton/yr	CO2e ton/yr
S2.106	East Construction Water Diesel Pump	55	74	2,000	148,583	0.55	1,108	2.1E-03	90.6
S2.107	West Construction Water Diesel Pum	55	74	2,000	148,583	0.55	1,108	2.1E-03	90.6
S2.108	Mechanical/Electrical Equip. Diesel G	55	74	3,650	271,164	0.55	2,023	3.9E-03	165.4
S2.109	Insulation Yard Office Diesel Generat	55	74	3,650	271,164	0.55	2,023	3.9E-03	165.4
S2.110	FMR's Consumables Office Diesel Gen	55	74	3,650	271,164	0.55	2,023	3.9E-03	165.4
S2.111	Parking Area Diesel Generator (37≤kW	55	74	3,650	271,164	0.55	2,023	3.9E-03	165.4
S2.112	Pipe Store Diesel Generator (37≤kW<5	55	74	3,650	271,164	0.55	2,023	3.9E-03	165.4
S2.113	Lunch Tent Diesel Generator (130≤kW	560	751	3,650	2,741,004	5.26	19,187	1.5E-02	1,569.4
S2.114	General Services Diesel Generator 3 (5	129	173	3,650	631,410	1.21	4,420	8.6E-03	361.5
S2.118	Sawtooth Diesel Generator 1 (56≤kW≤	75	101	8,760	881,037	0.70	6,169	1.2E-02	504.6
S2.119	Sawtooth Diesel Generator 2 (56≤kW≤	75	101	4,380	440,519	0.70	3,084	6.0E-03	252.3
S2.120	Sawtooth Diesel Generator 3 (56≤kW≤	75	101	4,380	440,519	0.70	3,084	6.0E-03	252.3
S2.127	Water Truck Fill Diesel Pump 1 (55 kW	55	74	730	53,841	0.62	450	8.7E-04	36.8
S2.128	Water Truck Fill Diesel Pump 2 (55 kW	55	74	730	53,841	0.62	450	8.7E-04	36.8
S2.129	Water Truck Fill Diesel Pump 3 (55 kW	55	74	3,650	269,206	0.62	2,248	4.4E-03	183.9
Total Small Diesel Engines (<=600 hp)					28,654,177	52.8	200,640		
Total Large Diesel Engines (>600 hp)					18,015,262	115.0	124,327		
								ok	ok

** Estimated brake specific fuel consumption for diesel generators* 7,000 *Btu/hp-hr* *AP-42, Sec. 3.3, (diesel engine fuel use per hp output)*

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Stationary Source - Diesel Engines - Continued

Diesel HAP Emission Factors and Emissions

Pollutant	POM	Emission Factor*		Emissions	
		Small Diesel Engines <=600 hp lb/MMBtu	Large Diesel Engines >600 hp lb/MMBtu	lb/hr	ton/yr
Benzene		9.33E-04	7.76E-04	1.39E-01	1.42E-01
Toluene		4.09E-04	2.81E-4	5.39E-02	5.85E-02
Xylenes		2.85E-04	1.93E-4	3.73E-02	4.06E-02
1,3-Butadiene		3.91E-05	0.00E+0	2.07E-03	3.92E-03
Formaldehyde		1.18E-03	7.89E-5	7.14E-02	1.23E-01
Acetaldehyde		7.67E-04	2.52E-5	4.34E-02	7.85E-02
Acrolein		9.25E-05	7.88E-6	5.79E-03	9.77E-03
Naphthalene	POM	8.48E-05	1.30E-4	1.94E-02	1.66E-02
Acenaphthylene	POM	5.06E-06	9.23E-6	1.33E-03	1.08E-03
Acenaphthene	POM	1.42E-06	4.68E-6	6.13E-04	4.33E-04
Fluorene	POM	2.92E-05	1.28E-5	3.02E-03	3.73E-03
Phenanthrene	POM	2.94E-05	4.08E-05	6.25E-03	5.49E-03
Anthracene	POM	1.87E-06	1.23E-06	2.40E-04	2.64E-04
Fluoranthene	POM	7.61E-06	4.03E-06	8.66E-04	1.01E-03
Pyrene	POM	4.78E-06	3.71E-06	6.79E-04	7.10E-04
Benz(a)anthracene	POM	1.68E-06	6.22E-07	1.60E-04	2.07E-04
Chrysene	POM	3.53E-07	1.53E-06	1.95E-04	1.31E-04
Benzo(b)fluoranthene	POM	9.91E-08	1.11E-06	1.33E-04	7.89E-05
Benzo(k)fluoranthene	POM	1.55E-07	2.18E-07	3.33E-05	2.91E-05
Benzo(a)pyrene	POM	1.88E-07	2.57E-07	3.95E-05	3.48E-05
Indeno(1,2,3-cd)pyrene	POM	3.75E-07	4.14E-07	6.74E-05	6.34E-05
Dibenz(a,h)anthracene	POM	5.83E-07	3.46E-07	7.06E-05	8.00E-05
Benzo(g,h,i)perylene	POM	4.89E-07	5.56E-07	8.98E-05	8.36E-05
POM Subtotal				*3.32E-02*	*3.00E-02*
Total HAP				3.86E-01	4.86E-01

** AP-42, Table 3.3-2, (10/96), Diesel Industrial Engines; Tables 3.4-3 & 3.4-4, (10/96), Large Stationary Diesel Engines*

Diesel GHG Emission Factors:	73.96 *kg CO_2/MMBtu*	*40 CFR Part 98, Table C-1 to Subpart C (11/2013) No.2*
	3.0E-03 *kg CH_4/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*
	6.0E-04 *kg N_2O/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*
Total Diesel Combustion	324,967	*MMBtu/yr*

Diesel GHG Emissions

Greenhouse Gas	Emissions ton/yr	Global Warming Potential*	CO2e ton/yr
CO2	26,493.6	1	26,493.6
CH4	1.1E+00	28	3.0E+01
N2O	2.1E-01	265	5.7E+01
Total GHG			26,580.7

** 40 CFR 98, Table A-1*

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Stationary Source - Propane External Combustion

Source Data Other Thru_yr

Source	Description	Fuel Consumption MMBtu/hr	Fuel Consumption MMBtu/yr	HAP ton/yr	CO2e ton/yr
S2.021	Package Boiler	70.1	70,360	6.5E-02	4,805
S2.022	Start-Up Burner	87.0	27,564	2.6E-02	1,882
IA1.056	Wash Bay Water Heater	0.4	3,504	3.2E-03	239
IA1.057	Propane Vaporizer	2.5	21,900	2.0E-02	1,496
Total		160.0	123,328	1.1E-01	8,422
				ok	ok

Propane GHG Emission Factors:

61.71 *kg CO_2/MMBtu*	*40 CFR Part 98, Table C-1 to Subpart C (11/2013) LPG*
3.0E-03 *kg CH_4/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*
6.0E-04 *kg N_2O/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*

Total Propane Combustion 123,328 *MMBtu/yr*

Propane GHG Emissions

Greenhouse Gas	Emissions ton/yr	Global Warming Potential*	CO2e ton/yr
CO2	8,389	1	8,389
CH4	4.1E-01	28	11.4
N2O	8.2E-02	265	21.6
Total GHG			8,422

** 40 CFR 98, Table A-1 (12/2014)*

Stationary Source - Propane External Combustion - Continued

Propane HAP Emission Factors and Emissions

		Emission Factor*		Emissions	
Pollutant	POM	lb/MMScf	lb/MMBtu**	lb/hr	ton/yr
2-Methylnaphthalene	POM	2.40E-05	2.35E-08	3.77E-06	1.45E-06
3-Methylchloranthrene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
7,12-Dimethylbenz(a)anthracen	POM	1.60E-05	1.57E-08	2.51E-06	9.67E-07
Acenaphthene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Acenaphthylene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Anthracene	POM	2.40E-06	2.35E-09	3.77E-07	1.45E-07
Benz(a)anthracene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Benzene		2.10E-03	2.06E-06	3.29E-04	1.27E-04
Benzo(a)pyrene	POM	1.20E-06	1.18E-09	1.88E-07	7.25E-08
Benzo(b)fluoranthene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Benzo(g,h,i)perylene	POM	1.20E-06	1.18E-09	1.88E-07	7.25E-08
Benzo(k)fluoranthene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Chrysene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Dibenz(a,h)anthracene	POM	1.20E-06	1.18E-09	1.88E-07	7.25E-08
Dichlorobenzene		1.20E-03	1.18E-06	1.88E-04	7.25E-05
Fluoranthene	POM	3.00E-06	2.94E-09	4.71E-07	1.81E-07
Fluorene	POM	2.80E-06	2.75E-09	4.39E-07	1.69E-07
Formaldehyde		7.50E-02	7.35E-05	1.18E-02	4.53E-03
Hexane		1.80E+00	1.76E-03	2.82E-01	1.09E-01
Indeno(1,2,3-cd)pyrene	POM	1.80E-06	1.76E-09	2.82E-07	1.09E-07
Naphthalene	POM	6.10E-04	5.98E-07	9.57E-05	3.69E-05
Phenanthrene	POM	1.70E-05	1.67E-08	2.67E-06	1.03E-06
Pyrene	POM	5.00E-06	4.90E-09	7.84E-07	3.02E-07
Toluene		3.40E-03	3.33E-06	5.33E-04	2.06E-04
Lead		5.00E-04	4.90E-07	7.84E-05	3.02E-05
Arsenic		2.00E-04	1.96E-07	3.14E-05	1.21E-05
Beryllium		1.20E-05	1.18E-08	1.88E-06	7.25E-07
Cadmium		1.10E-03	1.08E-06	1.73E-04	6.65E-05
Chromium		1.40E-03	1.37E-06	2.20E-04	8.46E-05
Cobalt		8.40E-05	8.24E-08	1.32E-05	5.08E-06
Manganese		3.80E-04	3.73E-07	5.96E-05	2.30E-05
Mercury		2.60E-04	2.55E-07	4.08E-05	1.57E-05
Nickel		2.10E-03	2.06E-06	3.29E-04	1.27E-04
Selenium		2.40E-05	2.35E-08	3.77E-06	1.45E-06
POM Subtotal				*1.10E-04*	*4.22E-05*
Total HAP				2.96E-01	1.14E-01

**AP-42, Table 1.4-3 & 1.4-4 (7/98) Natural Gas Combustion*

***Natural Gas Heating Value* 1,020 *MMBtu/MMScf* *NDEP Default*

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Stationary Source - Propane Engines

Source Data

Source	Description	Burn Type	Operation hr/yr	Other gal/hr	Fuel Consumption MMBtu/hr*	MMBtu/yr	HAP ton/yr	CO2e ton/yr
S2.026	Emergency Generator 1 (Mine)	Rich	100	13.9	1.3	127	2.1E-03	8.7
S2.027	Emergency Generator 2 (Mine)	Rich	100	13.9	1.3	127	2.1E-03	8.7
			Lean burn engines		0.0	0.0	0.0E+00	
			Rich burn engines		2.5	254	4.1E-03	
Total					2.5	254	4.1E-03	17.4
							chk	chk

** Heat Content of* 0.0915 MMBtu/gal Propane

Propane GHG Emission Factors:

61.71 *kg CO_2/MMBtu*	*40 CFR Part 98, Table C-1 to Subpart C (11/2013) LPG*
3.0E-03 *kg CH_4/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*
6.0E-04 *kg N_2O/MMBtu*	*40 CFR Part 98, Table C-2 to Subpart C (11/2013) Petroleum*

Total Propane Combustion 254 *MMBtu/yr*

Propane GHG Emissions

Greenhouse Gas	Emissions ton/yr	Global Warming Potential*	CO2e ton/yr
CO2	17.3	1	17.3
CH4	8.4E-04	28	2.4E-02
N2O	1.7E-04	265	4.5E-02
Total GHG			17.4

** 40 CFR 98, Table A-1 (12/2014)*

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Stationary Source - Propane Engines - Continued

Lean Rich

Propane HAP Emission Factors and Emissions

		Emission Factor***		Emissions	
		Lean Burn*	Rich Burn**		
Pollutant	POM	lb/MMBtu	lb/MMBtu	lb/hr	ton/yr
1,1,2,2-Tetrachloroethane		4.00E-05	2.53E-05	6.44E-05	3.22E-06
1,1,2-Trichloroethane		3.18E-05	1.53E-05	3.89E-05	1.95E-06
1,1-Dichloroethane		2.36E-05	1.13E-05	2.87E-05	1.44E-06
1,2-Dichloroethane		2.36E-05	1.13E-05	2.87E-05	1.44E-06
1,2-Dichloropropane		2.69E-05	1.30E-05	3.31E-05	1.65E-06
1,3-Butadiene		2.67E-04	6.63E-04	1.69E-03	8.43E-05
1,3-Dichloropropene		2.64E-05	1.27E-05	3.23E-05	1.62E-06
2-Methylnaphthalene	POM	3.32E-05	0.00E+00	0.00E+00	0.00E+00
2,2,4-Trimethylpentane		2.50E-04	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	POM	1.25E-06	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	POM	5.53E-06	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde		8.36E-03	2.79E-03	7.10E-03	3.55E-04
Acrolein		5.14E-03	2.63E-03	6.69E-03	3.34E-04
Benzene		4.40E-04	1.58E-03	4.02E-03	2.01E-04
Benzo(b)fluoranthene	POM	1.66E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(e)pyrene	POM	4.15E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(g,h,i)perylene	POM	4.14E-07	0.00E+00	0.00E+00	0.00E+00
Biphenyl	POM	2.12E-04	0.00E+00	0.00E+00	0.00E+00
Carbon Tetrachloride		3.67E-05	1.77E-05	4.50E-05	2.25E-06
Chlorobenzene		3.04E-05	1.29E-05	3.28E-05	1.64E-06
Chloroethane		1.87E-06	0.00E+00	0.00E+00	0.00E+00
Chloroform		2.85E-05	1.37E-05	3.48E-05	1.74E-06
Chrysene	POM	6.93E-07	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene		3.97E-05	2.48E-05	6.31E-05	3.15E-06
Ethylene Dibromide		4.43E-05	2.13E-05	5.42E-05	2.71E-06
Fluoranthene	POM	1.11E-06	0.00E+00	0.00E+00	0.00E+00
Fluorene	POM	5.67E-06	0.00E+00	0.00E+00	0.00E+00
Formaldehyde		5.28E-02	2.05E-02	5.21E-02	2.61E-03
Methanol		2.50E-03	3.06E-03	7.78E-03	3.89E-04
Methylene Chloride		2.00E-05	4.12E-05	1.05E-04	5.24E-06
Hexane		1.11E-03	0.00E+00	0.00E+00	0.00E+00
Naphthalene	POM	7.44E-05	9.71E-05	2.47E-04	1.23E-05
PAH	POM	2.69E-05	1.41E-04	3.59E-04	1.79E-05
Phenanthrene	POM	1.04E-05	0.00E+00	0.00E+00	0.00E+00
Phenol		2.40E-05	0.00E+00	0.00E+00	0.00E+00
Pyrene	POM	1.36E-06	0.00E+00	0.00E+00	0.00E+00
Styrene		2.36E-05	1.19E-05	3.03E-05	1.51E-06
Toluene		4.08E-04	5.58E-04	1.42E-03	7.10E-05
Vinyl Chloride		1.49E-05	7.18E-06	1.83E-05	9.13E-07
Xylenes		1.84E-04	1.95E-04	4.96E-04	2.48E-05
POM Subtotal				*6.06E-04*	*3.03E-05*
Total HAP				8.26E-02	4.13E-03

**AP-42, Table 3.2-2 (7/00) Natural Gas-fired 4-Stroke Lean-Burn Engines*

*** AP-42, Table 3.2-3(7/00) Natural Gas-fired 4-Stroke Rich-Burn Engines*

****Natural Gas HAPs assumed for propane*

Lithium Processing Sources - GHG Emissions

Lithium Processing CO2 Emissions

	CO2 Emissions ton/yr	
Gas Scrubber (Leach Tanks)	14,014	*(LNC 2024b)*
Carbonate Destruction	35,726	*(LNC 2024b)*
Neutralization	37,293	*(LNC 2024b)*
Total CO2	87,033	

Lithium Processing GHG Emissions

Greenhouse Gas	Emissions ton/yr	Global Warming Potential*	CO2e ton/yr
CO2	87,033	1	87,033

** 40 CFR 98, Table A-1 (12/2014)*

Lithium Processing Sources - Other Regulated Pollutant Emissions

Lithium Processing Sulfuric Acid Mist Emissions hr/yr

Source	Description		Operation hr/yr	H2SO4 Emissions lb/hr	ton/yr	
S2.001 - S	Leach Tanks 1 - 3		8,760	0.058	0.25	*See detailed calcs*
S2.023	Sulfuric Acid Plant	SAP	8,760	5.63	24.7	*(MECS 2023) w/ 10% safety factor*
Total H2SO4				5.69	24.91	

Lithium Processing HCl Emissions

Source	Description	Operation hr/yr	HCl Emissions lb/hr	ton/yr	
IA1.026	HCl Storage Tank (35%)	8,760	0.070	0.31	*EPA TANKS 4.0.9d*
Total HCl			0.07	0.31	

Conversions

2,000	lb/ton
8,760	hr/yr
1.10231	ton/t

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Cement Silos

Source Data

Source ID	Source Description	Activity	ton/yr	HAP ton/yr
S2.039	North Cement Silo 1 - Loading	Cement Silo Filling	350,400	7.78E-05
S2.040	North Cement Silo 2 - Loading	Cement Silo Filling	350,400	7.78E-05
S2.041	North Cement Silo 3 - Loading	Cement Silo Filling	350,400	7.78E-05
PF1.066-68	North Cement Silos 1 - 3 Unloading to Mixer	Central Mix	350,400	1.07E-03

*Cement Silo Emission Factors**

Pollutant	Cement Silo Filling lb/ton	Cement Supplement Silo Filling lb/ton	Central Mix Batching lb/ton	Truck Loading with Fabric Filter lb/ton
Arsenic	4.24E-09	1.00E-06	2.96E-07	6.02E-07
Beryllium	4.86E-10	9.04E-08	0.00E+00	1.04E-07
Cadmium	4.68E-09	1.98E-10	7.10E-10	9.06E-09
Chromium	2.90E-08	1.22E-06	1.27E-07	4.10E-06
Lead	1.09E-08	5.20E-07	3.66E-08	1.53E-06
Manganese	1.17E-07	2.56E-07	3.78E-06	2.08E-05
Nickel	4.18E-08	2.28E-06	2.48E-07	4.78E-06
Phosphorus	2.36E-07	3.54E-06	1.60E-06	1.23E-05
Selenium	0.00E+00	7.24E-08	0.00E+00	1.13E-07

**AP-42, Table 11.12-8 (6/06) Concrete Batching*

Cement Silo Emissions

Pollutant	Cement Silo Filling ton/yr	Cement Supplement Silo Filling ton/yr	Central Mix Batching ton/yr	Truck Loading ton/yr	Total ton/yr
Arsenic	2.23E-06	0.00E+00	5.19E-05	0.00E+00	5.41E-05
Beryllium	2.55E-07	0.00E+00	0.00E+00	0.00E+00	2.55E-07
Cadmium	2.46E-06	0.00E+00	1.24E-07	0.00E+00	2.58E-06
Chromium	1.52E-05	0.00E+00	2.23E-05	0.00E+00	3.75E-05
Lead	5.73E-06	0.00E+00	6.41E-06	0.00E+00	1.21E-05
Manganese	6.15E-05	0.00E+00	6.62E-04	0.00E+00	7.24E-04
Nickel	2.20E-05	0.00E+00	4.34E-05	0.00E+00	6.54E-05
Phosphorus	1.24E-04	0.00E+00	2.80E-04	0.00E+00	4.04E-04
Selenium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total HAP	2.33E-04	0.00E+00	1.07E-03	0.00E+00	1.30E-03

Conversion Factor

2,000 lb/ton