

# **TECHNICAL REVIEW**

AND DETERMINATION OF COMPLIANCE  
FOR:

## **LITHIUM NEVADA CORPORATION THACKER PASS PROJECT**

Humboldt County, Nevada  
HA 30A – Kings River Valley/Rio King  
HA 33A – Quinn River Valley/Orovada

### **Class II Air Quality Operating Permit**

AP1479-4334

FIN A1270

Air Case 10677 – New



NEVADA DIVISION OF

**ENVIRONMENTAL  
PROTECTION**

BY

STATE OF NEVADA  
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR POLLUTION CONTROL

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## 1.0 INTRODUCTION

On January 26, 2021, Lithium Nevada Corporation (Li NV) submitted an application for a new Class II Air Quality Operating Permit to the Nevada Division of Environmental Protection – Bureau of Air Pollution Control (BAPC). The Class II Air Quality Operating Permit application was deemed administratively complete on February 9, 2021.

Request for Information (RFI) #1, sent February 24, 2021, to request an Insignificant Activity Determination application be submitted for the Laboratory equipment. The application was received by the BAPC on March 31, 2021. This resulted in 35 stop days

Request for Information (RFI) #2, sent March 9, 2021, the BAPC asked for more information on the scrubber system that will be used for the acid plant. Request for Information (RFI) #3, sent March 31, 2021, the BAPC asked for more information on the scrubber system that will be used for the acid plant. The facility answered RFI #2 and #3 via email on April 4, 2021. This resulted in 24 stop days.

Request for Information (RFI) #4, sent May 13, 2021, the BAPC asked for more information on the neutralization tanks, lithium carbonate dryer, lime silo, and acid plant. The facility answered this RFI via email on May 24, 2021. This resulted in 11 stop days.

Request for Information (RFI) #5, sent August 18, 2021, the BAPC asked for more information on the leach tanks, neutralization filter system, and magnesium precipitation filter system. The facility answered this RFI via email on August 23, 2021. This resulted in 5 stop days.

Total stop days for this permitting action is **75** days.

In accordance with NAC 445B.3457(3)(b) the permit was to be issued 90 days after the official day of submittal (the day the application was deemed administratively complete) with the timeline being extended for any accumulated stop days this regulatory date was July 24, 2021. Based on the regulatory timeline the permit was to be issued on July 24, 2021. The permit is anticipated to be issued on February 25, 2022.

Public notice was required, because the Li NV facility is a new Class II Air Quality Operating Permit (NAC 445B.3457). Public notice started on October 18, 2021 and ended on November 18, 2021.

A public hearing was held at 6 pm (PST) at the Boys and Girls Club of Winnemucca in Winnemucca, NV on November 18, 2021. Public outreach, the public hearing, and public comments are further discussed in Section 2.5 of this report.

The principal operation at the Li NV facility constitutes a non-metallic mineral mine, as defined by the two-digit SIC code 14. Because the primary mineral recovered is lithium, the facility can be further classified by the SIC code 1479, defined as “establishments primarily engaged in mining, milling, or otherwise preparing chemical or fertilizer mineral raw materials, not elsewhere classified.” The list of minerals under SIC code 1479 includes lithium mineral mining. The NAICS code for the Li NV facility is 212393 for “Lithium mineral mining and/or beneficiating.”



## **2.0 DESCRIPTION OF FACILITY AND PROCESS**

### **2.1 FACILITY DESCRIPTION**

Li NV is proposing to develop an open-pit lithium mining and lithium processing operation located in northern Humboldt County, Nevada. The Li NV facility is located 62 miles north of Winnemucca and about 20 miles west of Orovada, Nevada. The Li NV facility is accessed from Orovada by traveling approximately 19 miles west from the US Route 95 junction on State Route 293, then turning north onto the Li NV facility main access road. The Li NV facility is situated at the southern end of the McDermitt Caldera at an approximate elevation between 4,200 and 5,650 feet above sea level.

The Li NV facility will consist of open-pit lithium mining and lithium processing operations designed to produce a lithium carbonate end product, with the potential to produce other battery-grade lithium products in the future. In the proposed Li NV facility, lithium carbonate is recovered through ore crushing, acid leaching, and lithium processing. The on-site facilities will include a sulfuric acid plant to supply sulfuric acid for leaching. The sulfuric acid plant will also generate steam for energy that will provide power to support the Li NV facility.

### **2.2 PROPOSED PERMIT ACTION**

The purpose of this permitting action is to issue a new Class II Air Quality Operating Permit. During this permitting process an Insignificant Activity (IA) determination was processed. The units included in this IA determination have been added to the IA list at the end of the Operating Permit.

### **2.3 PROCESS NARRATIVE**

#### **2.3.1 Mineral Processing (Systems 1 through 5)**

Ore from the ore stockpile is fed by loader into one of two hoppers (PF1.001 and PF1.003) with a combined throughput of 960 tons per hour and transferred to a common conveyor (PF1.002 and PF1.004) feeding a mineral sizer (PF1.005) controlled by water sprays. Sized material is then fed to the attrition scrubbing process (PF.1006) controlled by water sprays.

In the attrition scrubbers and classification circuit, high-grade fine lithium material is separated from the low-grade coarse gangue using agitators and hydro cyclones. Attrition scrubbing is a slurry-based wet process comprised of recycled water and ore, which is intensely agitated to primarily scrub fine particles from large particle surfaces as well as break-up agglomerated particles. The attrition scrubbers require saturated material and have no potential to emit any regulated air pollutant. Particulate emissions from the mineral sizer and transfer into the attrition scrubber are controlled by water sprays. The run-of-mine lithium ore is a non-metallic clay material, and as such, these ore processing sources are subject to 40 CFR Part 60, Subpart OOO.



From the attrition scrubbers the slurry is fed through a wet screen to remove oversize material prior to pumping the undersize slurry to the classification circuit. The oversize material is transferred to the oversize stockpile by a stacker conveyor (PF1.007 and PF1.008) with a maximum throughput of 16 tons per hour. In the classification circuit, coarse gangue material is separated from the fine lithium material using hydro cyclones. The coarse material is then passed through a wet screen at a maximum throughput of 430 tons per hour and conveyed to the gangue stockpile (PF1.009 through PF1.011). Particulate emissions from the oversize and gangue material transfers to the stockpiles are controlled by material moisture content (comparable to transfers after a wet trommel). As these transfer points are downstream of a wet material processing operation, per 40 CFR §60.670(a)(2), Subpart OOO is not applicable.

#### **2.3.1.1 Testing Requirements for Mineral Processing (Systems 1 through 5)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 1 through 5. System 4 – PF1.008 and System 5 – PF1.011 will require a moisture content sample that will need to be equal to or exceed 4% moisture content.

#### **2.3.2 Purified Lithium Solution (Systems 6 through 11, 13 and 14)**

Following the classification circuit, the ore slurry is thickened and pumped to the leaching process at a maximum throughput of 1,080 tons per hour. In the leach circuit, the lithium-bearing slurry is leached with sulfuric acid in a series of tanks (S2.001 through S2.003). Sulfuric acid mist and particulate (primarily consisting of sulfuric acid mist as condensable particulate matter) emissions from the leach tanks are controlled by a wet scrubber. Following leaching, the lithium-bearing solution is neutralized in a series of agitated tanks. Solids generated during leaching and neutralization are filtered and then conveyed to the clay tailings filter stack (CTFS) at a maximum throughput of 1,000 tons per hour (PF1.012 through PF1.022). Particulate emissions from the material transfers to the CTFS are controlled by material moisture content (comparable to transfers after a wet trommel).

Air pulses are used after the filtration step to push the slurry out of the neutralization filter pipes. These air pulses have the potential to cause particulate emissions as the air pulse follows the slurry out of the pipe, into the tank headspace, and out through one of four mist eliminators, that reduce any mist from the system and the particulate emissions from the filter vents (S2.004 through S2.007). The venting from these four vents is limited to 500 hours per year. The neutralization filter system also includes a filtrate blow vent (S2.008), with the potential for particulate emissions and is limited to 50 hour per year.

After neutralization, the lithium-bearing solution is purified by precipitation of magnesium, followed by ion exchange to remove residual magnesium and other divalent cations. The alkaline solids from the magnesium precipitation system are filtered, re-pulped, and reused in the neutralization tanks. Air pulses are used after the filtration step to push the slurry out of the magnesium precipitation filter pipes. These air pulses have the potential to cause particulate emissions as the air pulse follows the slurry out of the pipe, into the tank headspace, and out through one of two mist eliminators on the filter vents (S2.009 and S2.010). The venting from these two vents is limited to 200 hours per year. The magnesium precipitation filter system also includes a filtrate blow vent (S2.011), with the potential for particulate emissions and is limited to 50 hour per year.



### **2.3.2.1 Testing Requirements for Purified Lithium Solution (Systems 6 through 11, 13 and 14)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 6 through 11, 13 and 14. System 6 has initial and annual testing requirements for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and H<sub>2</sub>SO<sub>4</sub>. System 8 and System 14 will have initial and quarterly sampling requirements for total dissolved solids (TDS) content. System 9- PF1.013, PF1.015, PF1.017, and PF1.019; System 10- PF1.020; System 11- PF1.022 will require a moisture content sample that will need to be equal to or exceed 4% moisture content.

### **2.3.3 Lime and Soda Ash (Systems 19 and 20)**

Slaked lime and soda ash solution are added for the magnesium precipitation process. Lime (S2.016 and S2.017) and soda ash (S2.017) are trucked to site and stored in silos at a maximum throughput rate of 80 tons per hour. The lime silo is limited to 4,380 hours of operation per year. The soda ash silo is limited to an annual throughput of 153,900 tons per year. Particulate emissions from the lime truck unloading and transfer to silo via bucket elevator are controlled by a common baghouse. Particulate emissions from the soda ash silo loading are controlled by a vent filter. Both the lime and soda ash silos discharge through sealed transfers.

#### **2.3.3.1 Testing Requirements for Lime and Soda Ash (Systems 19 and 20)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 19 and 20. System 19 will be required to do initial and renewal testing for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>.

### **2.3.4 Lithium End Product (Systems 12, 15 through 18)**

After the removal of additional cations through ion exchange, lithium carbonate and sulfate salts (sodium sulfate and potassium sulfate) are extracted from the solution via crystallization. The sulfate salts are conveyed to the tailings collections conveyor and then to the CTFS (PF1.023 through PF1.025). Particulate emissions from the sulfate salts centrifuge discharge are controlled by an enclosure and the conveyor transfers are controlled by best operating practices.

The lithium carbonate crystals are dried (S2.012) and transferred via conveying hopper to the lithium carbonate storage bin (S2.013) at a maximum throughput rate of 5 tons per hour. From there, the lithium carbonate product is transferred to the packaging system (S2.014) where it is bagged for shipment to customers (S2.015). The packaging system has a maximum throughput of 16 tons per hour but is limited to 43,800 tons per year and 4,380 hours per year. The lithium carbonate dryer and packaging system are each controlled by a baghouse and the conveying hopper and lithium carbonate storage bin are each controlled by a vent filter.

#### **2.3.4.1 Testing Requirements for Lithium End Product (Systems 12, 15 through 18)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 12, 15 and 18. Systems 15 and 18 will be required to do initial and renewal testing for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>.



### 2.3.5 Sulfuric Acid Plant (Systems 21 through 24)

The sulfuric acid required for leaching the lithium bearing ore is produced on site in a sulfuric acid plant (S2.023). In the plant, molten sulfur at a maximum consumption rate of 51 tons per hour is reacted with air to produce sulfur dioxide, which is catalytically converted to sulfur trioxide and then absorbed in water to produce sulfuric acid. The process is strongly exothermic and produces a large amount of excess heat that is converted to steam and electricity. The plant is designed to produce 3,307 tons per day (3,000 metric tons per day) of sulfuric acid. In addition, the sulfuric acid plant produces carbon-free electricity that may help support the Li NV facility or may be sold to the grid.

Sulfur dioxide, sulfuric acid mist, and particulate (primarily consisting of sulfuric acid mist as condensable particulate matter) emissions from the sulfuric acid plant are controlled by a tail gas scrubber. The facility's proposed scrubber will have a Teflon outlet nozzle. Per NDEP's research, Teflon off-gases toxic particulates at 464°F. The temperature of the outlet is permitted to be approximately 79°F with a maximum temperature of 230°F. Per the facility: the Teflon outlet nozzle is manufactured from "Virgin" grade PTFE; PTFE is chemically inert, weatherable, and high temperature resistance; "Virgin" grade PTFE is FDA approved and is used in high temperature applications including in the food processing and services; Teflon nozzles in the DynaWave application last about 20 years; and the facility only replaces these nozzles due to any damage done to them during maintenance work.

The sulfuric acid plant is subject to 40 CFR Part 60, Subpart H. Given the state-of-the-art scrubber control for the plant tail gas, the sulfur dioxide and acid mist emissions from the sulfuric acid plant are well below the applicable emission standards (4 pounds SO<sub>2</sub> per ton of acid produced and 0.15 pounds H<sub>2</sub>SO<sub>4</sub> per ton of acid produced) in Subpart H. The manufacturer guarantee of emissions for SO<sub>2</sub> is 7.5 parts per million volume (ppmv) and H<sub>2</sub>SO<sub>4</sub> is 6 milligram per normal cubic meter of air (mg/N m<sup>3</sup>). In addition, per Subpart H, the sulfuric acid plant exhaust stack is limited to 10 percent opacity. The sulfuric acid plant also emits nitrogen dioxides from the combustion of sulfur in air, but it is not expected to emit any hazardous air pollutants (HAPs).

Subpart H requires that the Li NV facility install and maintain a SO<sub>2</sub> Continuous Emission Monitoring System (CEMS). The BAPC will also require the installation of NO<sub>x</sub> CEMS pursuant to NAC 445B.3405.

Sulfur for the sulfuric acid plant is delivered to the site and stored in one of two sulfur storage facilities (S2.019 and S2.020) at a maximum throughput of 47 tons per hour for each tank. Sulfur dioxide and hydrogen sulfide emissions from these storage facilities are controlled by caustic scrubbing. The scrubber solution also generates a small amount of particulate emissions.

During the initial startup of the sulfuric acid plant and after any maintenance downs, a propane-fired startup burner (S2.022) is required to heat the system prior to feeding molten sulfur. The startup burner has a maximum consumption rate of 315 gallons per hour with a maximum heat input of 28.82 million British thermal units per hour (MMBtu/hr). In addition, during initial startup and any time the sulfuric acid plant is down, a propane-fired package boiler (S2.021) is required to maintain heat and supply steam to the sulfur storage area and processing plant. The package boiler has a maximum consumption rate of 451 gallons per hour with a maximum heat input of 41.3 MMBtu/hr. The startup burner is limited to 200 hours per year of operation and the package boiler is limited to 550 hours per year. The startup burner and package boiler emit propane combustion products, including HAPs.



The package boiler is subject to 40 CFR Part 60, Subpart Dc as a steam generating unit with a heat input capacity greater than 10 MMBtu/hr and less than 100 MMBtu/hr, that combusts only natural gas fuel (liquefied petroleum gas) as defined in 40 CFR §60.41c.

#### **2.3.5.1 Testing Requirements for Sulfuric Acid Plant (Systems 21 through 24)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 21 through 24. System 21 will be required to do initial and renewal testing for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and H<sub>2</sub>S. System 22 will be required to do initial and renewal testing for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, CO and VOC. System and 23 will be required to do initial testing for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, CO and VOC. In addition to the CEMs unit mentioned above to monitor SO<sub>2</sub> emissions, System 24 will be required to do initial and annual testing for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and H<sub>2</sub>SO<sub>4</sub>.

#### **2.3.5.2 Monitoring (System 21)**

The sulfur used by Li NV will be source from the fuel energy industry that has the standard to treat the molten sulfur to 1,550 °F. Therefore, Li NV will be required to notify the Director within 72 hours if the molten sulfur is sourced from another source other than the fuel energy industry.

#### **Support Activities**

At the Li NV facility, several activities support mining and processing that are potential sources for emissions. These include emergency internal combustion (IC) engines, prill silo, cooling towers, fuel storage tanks, and a laboratory (discussed further below).

#### **2.3.6 IC Engines (Systems 25 and 26)**

The Li NV facility will operate two diesel-fired fire pumps (S2.024 and S2.025) that ensures fire water is available if the normal power supply is interrupted. These IC engines are process sources of combustion emissions, including HAPs. The two diesel-fired fire pump engines are rated for 422 horsepower (hp), will combust a maximum of 20.0 gallons, are manufactured on or after January 1, 2015, and are subject to 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, Subpart IIII.

The Li NV facility will operate two propane-fired emergency generators (S2.026 and S2.027) that supply power to maintain essential operations. These IC engines are process sources of combustion emissions, including HAPs. The two propane-fired emergency generator engines are rated for 168 hp, will combust a maximum of 13.9 gallons, are 4-stroke rich-burn engines manufactured on or after January 1, 2009, and are subject to 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, Subpart JJJJ.

#### **2.3.6.1 Testing Requirements for IC Engines (Systems 25 and 26)**

An initial opacity compliance demonstration will be required for each emission unit in Systems 25 and 26.



### 2.3.7 Gasoline Storage Tank (System 27) and Other Storage Tanks

A tank area with a 1,000-gallon gasoline tank (S2.028), a 25,000 gallons diesel tank (IA1.020), an 8,000 gallon highway diesel tank (IA1.021), a 20,000 gallon bulk oil tank (IA1.022), a 3,000 gallon bulk coolant storage tank (IA1.023), a 3,000 gallon bulk used oil tank (IA1.024), and a 3,000 gallon bulk used coolant tank (IA1.025) are located near the mine warehouse and shop. These storage tanks are potential sources of VOC emissions.

The 1,000-gallon gasoline storage tank is subject to 40 CFR Part 63, Subpart CCCCCC, as a gasoline dispensing facility with a monthly throughput of less than 10,000 gallons of gasoline. The diesel and other bulk storage tanks are insignificant activities per NAC 445B.288.2(d) (VOL tanks less than 40,000 gallons).

### 2.3.8 Cooling Towers

The Li NV facility includes two cooling towers (IA1.003 and IA1.004) to supply cool water to the sulfuric acid plant and lithium carbonate crystallization process. The cooling towers have the potential to emit particulates from the drift loss.

### 2.3.9 Laboratory

One small laboratory will be maintained on site for preparing and analyzing ore and waste rock samples. The laboratory may include various analytical instruments and sample preparation equipment, such as splitters/material transfers, crushers, screens, and pulverizers (IA1.005 through IA1.019). The sample preparation equipment has the potential to create particulate emissions. While the laboratory is controlled by a baghouse, this emission control is not considered in estimating potential uncontrolled emissions for the insignificant designation.

### 2.3.1 Ammonium Nitrate Prill Silo

The ammonium nitrate prill used for blasting is stored onsite in a storage silo (IA1.001 and IA1.002). The 80-ton silo has the potential to emit particulates from the silo loading and unloading.

## 2.4 PERMITTING DECISIONS

In the initial application for the Sulfuric Acid Plant Li NV requested that the SO<sub>2</sub> emissions be 6.5 ppmv. Based on an RFI response, Li NV requested that the SO<sub>2</sub> emission be increased to 7.5 ppmv. This increased SO<sub>2</sub> emission from 8.8 to 10.2 pounds per hour and 38.6 to 44.6 tons per year. This increase in emissions did not trigger any additional requirements.

12-month rolling averages will be required on Systems 1 and 24. This requirement will be reviewed to ensure its relevance at the next renewal.

Systems 4, 5, 9, 10 and 11 are required to conduct initial testing of the moisture content of the material discharged from these systems. There are no active controls for the transfers. However, Li NV claims that the material is saturated and therefore will be its own control. The BAPC agreed with the controls but requires initial testing with a minimum moisture content of 4%.





Emissions from System 8, 14, 15, 18, and 19 were calculated with an assumed maximum Total Dissolved Solids (TDS) concentration in the exhaust stack. The BAPC requires initial and quarterly sampling of the stack to determine continued compliance with the emission limit.

Due to the uncontrolled potential of sulfur compound emissions annual compliance testing will be required for Systems 6 and 24 (Sulfuric Acid Plant). Although, System 24 is required to operate and maintain a Continuous Emissions Monitoring System (CEMS) annual testing will still be required to serve as an extra protection measure to ensure the emission controls are working.

In addition, we requested that EPA, Region 9 review a draft of the permit. Based on their review we added some clarifying language to the permit if the facility sees visible emissions, some additional monitoring and recordkeeping requirements for their annual hours of operation on a monthly basis for systems with hourly restrictions, and the language “averaged over a daily basis” was added to hourly throughput limits on systems that have recordkeeping requirements averaged on a daily basis unless there was a maximum throughput requirement to not exceed.

## **2.5 PUBLIC OUTREACH, PUBLIC HEARING, AND PUBLIC COMMENT**

Due to the public interest about this project NDEP set up a website to keep the public up to date on the permitting process, to alert them to upcoming meetings, and allow access to videos and presentations from past meetings.

Multiple public outreach meetings were held for this project by the NDEP prior to the public comment period. Dates and a summary of what was presented at these meetings is listed below:

- March 8, 2021: NDEP presented to the Humboldt County Commissioners. This presentation gave the Commissioners an overview of the State permitting process and gave a general timeline for the applications that have been submitted to the state for the project.
- April 22, 2021: NDEP presented to the Thacker Pass Concerned Citizens group. This meeting gave an overview of the permitting process, discussed testing, inspections, reporting, monitoring, and enforcement; how the community could receive public notices and tips on making effective comments.
- May 25 and June 24, 2021: On May 25, 2021 NDEP staff traveled to Orovada, NV to give a presentation of concerns/questions that had been received from the Thacker Pass Concerned Citizens group. The Bureau of Mining Regulation and Reclamation presented at this meeting and questions were taken after each slide. It was only possible to get through about half of this presentation so two meeting times were set up on June 24, 2021 for the BAPC to give the rest of the presentation.

As previously discussed, the public notice started on October 18, 2021 and ended on November 18, 2021. A public hearing was held at 6 pm (PST) at the Boys and Girls Club of Winnemucca in Winnemucca, NV on November 18, 2021. It is estimated that between 40 and 60 people attended this hearing. There were many interruptions during this hearing and it was decided to close the meeting after 9 public comments were heard. The meeting attendees were notified that any people that were unable to give spoken comment could submit their comment to the email address set up for the project.

At the start of the public notice period a list of comments and responses, relevant to the air quality and the air quality operating permit, that had been received was put on the NDEP Thacker Pass website and a copy of these comments and responses have been provided in Appendix 3.



The BAPC received many comments during the public notice period. Some were relevant to the AQOP and some were general comments for the project or opposing the project. The BAPC has reviewed and responded to all comments received and this document is part of the public record.

The Public Noticed permit with marked up changes made between Public Notice and Issuance has been provided in Appendix 4.

On June 16, 2021 and November 30, 2021, the NDEP met with members of the Fort McDermitt Paiute Shoshone Tribe to discuss their concerns. On December 9, 2021, the NDEP received formal comments from the tribe. The NDEP responded to the comments.

### **3.0 APPLICABLE REGULATIONS**

#### **3.1 NEVADA REVISED STATUTES**

The Nevada Revised Statutes (NRS) are the current codified laws of the State of Nevada. The NRS is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in Title 40, Public Health and Safety, Chapter 445B, Air Pollution, NRS 445B.100 through NRS 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Since the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. The NRS provides broad authority for the adoption and implementation of air pollution control regulations. This project will be subject to the NRS and will need to comply with all applicable regulations under the NRS. The NRS may be viewed online.

#### **3.2 NEVADA ADMINISTRATIVE CODE**

The Nevada Administrative Code (NAC) contains the regulations adopted by the State Environmental Commission (SEC), pursuant to the authority granted by the Nevada Revised Statutes (NRS), relating to the control of air pollution. The NAC requires, where State regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM<sub>10</sub> (particulate matter less than 10 microns in diameter) and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of criteria air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC, specifically, the emission standards contained in NAC 445B.22027 through 445B.22033 for particulate matter, 445B.2204 through 445B.22047 for sulfur emissions, 445B.22017 for opacity, and the Nevada Ambient Air Quality Standards (NAAQS) as set forth in NAC 445B.310 through 445B.311. The NAC may be viewed online.

#### **3.3 NEVADA APPLICABLE STATE IMPLEMENTATION PLAN**

The Applicable State Implementation Plan (ASIP) is a document prepared by a state or local air regulatory agency and submitted to the United States Environmental Protection Agency (US EPA) for approval. Title I of the Clean Air Act is the statutory authority for the US EPA regulations that require a State to submit an ASIP. The contents of the ASIP are intended to show how a state, through the implementation and enforcement of the regulations contained in the ASIP, will either show how attainment of the NAAQS will be achieved or how a state will continue to maintain compliance with the national ambient air quality standards.



### 3.4 CODE OF FEDERAL REGULATIONS

The Code of Federal Regulations (CFR) are regulations adopted by the US EPA and published in the Federal Register pursuant to the authority granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements. The CFRs may be viewed online.

#### 3.4.1 NEW SOURCE PERFORMANCE STANDARDS

Section 111 of the Clean Air Act, “Standards of Performance for New Stationary Sources,” (NSPS) requires US EPA to establish federal emission standards for source categories which cause or contribute significantly to air pollution. Each NSPS defines the facilities subject to these requirements and prescribes emission limits for specified pollutants, compliance requirements, monitoring requirements, and test methods and procedures. These standards are intended to promote use of the best air pollution control technologies, taking into account the cost of such technology and any other non-air quality, health, and environmental impact and energy requirements. These standards apply to sources which have been constructed or modified since the proposal of the standard. These standards can be found in the CFR at Title 40 (Protection of Environment), Part 60 (Standards of Performance for New Stationary Sources).

Generally, state and local air pollution control agencies are responsible for implementation, compliance assistance, and enforcement of the NSPS. US EPA retains concurrent enforcement authority and is also available to provide technical assistance when a state or local agency seeks help. US EPA also retains a few of the NSPS responsibilities such as the ability to approve alternative monitoring methods to maintain a minimum level of national consistency.

**NSPS – 40 CFR Part 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants** – Systems 1, 2, and 3, are subject to the provisions of Subpart OOO.

**NSPS – 40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units** – System 22, is subject to the provisions of Subpart Dc. System 23 is not subject to this subpart because it does not produce steam.

**NSPS – 40 CFR Part 60 Subpart H – Standards of Performance for Sulfuric Acid Plants** – System 24, is subject to the provisions of Subpart H.

**NSPS – 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines** – System 25, is subject to the provisions of Subpart IIII.

**NSPS – 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines** – System 26, is subject to the provisions of Subpart JJJJ.



### 3.4.2 FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

National Emission Standards for Hazardous Air Pollutants (NESHAP) are established in the CFR pursuant to Section 112 of the Clean Air Act Amendments of 1990. These standards regulate air pollutants believed to be detrimental to human health. The NESHAP program applies to all sources, both existing and new. These standards are codified in Title 40 CFR Parts 61 and 63.

Part 61, which predates the Clean Air Act Amendments of 1990, includes specific standards, reporting and recordkeeping requirements, and test methods for the initial eight hazardous air pollutants (HAPs): asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride. The regulations covering these eight hazardous air pollutants focused on health-based considerations. NESHAPs were established for certain operations that commonly emit the eight hazardous air pollutants.

Other substances were included for consideration due to the serious health effects, including cancer, which may occur from ambient air exposure to those substances. However, no specific restrictions were placed on facilities that used or released these compounds.

Under the Clean Air Act Amendments of 1990, Congress greatly expanded the Air Toxics program, creating a list of 189 substances to be regulated as hazardous air pollutants. Rather than regulating individual pollutants by establishing health-based standards, the new Air Toxics program granted the US EPA the authority to regulate specific industrial major source categories with NESHAPs based on maximum achievable control technology (MACT) for each source category. Thus, a number of NESHAPs have been established to regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

The standards in 40 CFR Part 63 are independent of the NESHAPs contained in 40 CFR Part 61 which remain in effect until they are amended, if appropriate, and added to this part. More information on NESHAPs from the US EPA Unified Air Toxics Website may be viewed online.

NESHAPs may cover both major sources and area sources in a given source category. Major sources are defined as those facilities emitting, or having the potential to emit, 10 tons per year or more of one Hazardous Air Pollutant (HAP) or 25 tons per year or more of multiple HAPs. Major sources are required to comply with MACT standards. Area sources are defined as those facilities that are not major sources.

The Li NV facility is not a major source with respect to HAPs.

**NESHAP – 40 CFR Part 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines** – Systems 25 and 26, are subject to the provisions of Subpart ZZZZ

**NESHAP – 40 CFR Part 63 Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities** – System 27, is subject to the provisions of Subpart CCCCCC





**Table 4.1-1**

**Lithium Nevada Corporation - A1270 - AP1479-4334**

**Annual PTE (tons/year)**

	System	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> S	HAPs	CO <sub>2e</sub>
Sys	<b>Total</b>	<b>83.3</b>	<b>52.4</b>	<b>36.9</b>	<b>47.8</b>	<b>88.7</b>	<b>2.52</b>	<b>0.70</b>	<b>25.2</b>	<b>1.05</b>	<b>0.032</b>	<b>2,049.6</b>
5	System 5 - Gangue Handling Circuit	2.54	0.93	0.14								
6	System 6 - Leach Tanks	1.33	1.33	1.33					0.26			
7	System 7 - Neutralization Filter Vents	0.22	0.22	0.22								
8	System 8 - Neutralization Filter Filtrate Blow Vent	0.005	0.005	0.005								
9	System 9 - Tailings Feed Circuit	3.78	1.39	0.23								
10	System 10 - Tailings Collection	1.97	0.72	0.12								
11	System 11 - Tailings Stacking	3.94	1.45	0.24								
12a	System 12 - Sulfate Tailings Circuit	0.26	0.10	0.016								
12b	System 12 - Sulfate Tailings Circuit	1.05	0.39	0.064								
13	System 13 - Magnesium Precip. Filter Vents	0.029	0.029	0.029								
14	System 14 - Magnesium Precip. Filter Filtrate Blow Vent	0.0004	0.0004	0.0004								
15	System 15 - Lithium Carbonate Dryer	2.18	2.18	2.18								
16	System 16 - Lithium Carbonate Material Handling	0.053	0.031	0.005								
17	System 17 - Lithium Carbonate Storage Bin	0.022	0.007	0.001								
18	System 18 - Lithium Carbonate Packaging	1.46	1.46	1.46								
19	System 19 - Lime Silo	1.16	1.16	1.16								
20	System 20 - Soda Ash Silo	0.076	0.026	0.004								
21	System 21 - Sulfur Storage	0.88	0.88	0.88	2.98					1.05		
22	System 22 - Package Boiler	0.13	0.13	0.13	0.20	2.42	1.86	0.30			0.021	1,584.2
23	System 23 - Start-Up Burner	0.033	0.033	0.033	0.050	0.61	0.47	0.076			0.005	402.4
24	System 24 - Sulfuric Acid Plant	24.94	24.94	24.94	44.55	85.32			24.9			
25	System 25 - Fire Pumps	0.010	0.010	0.010	0.0004	0.24	0.06	0.008			0.001	45.7
26	System 26 - Emergency Generators	0.007	0.007	0.007	0.0005	0.074	0.12	0.074			0.004	17.3
27	System 27 - Gasoline Tank							0.22				



**Table 4.1-1**

**Lithium Nevada Corporation - A1270 - AP1479-4334**

**Annual PTE (tons/year)**

	System	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	H <sub>2</sub> SO <sub>4</sub>	H <sub>2</sub> S	HAPs	CO <sub>2e</sub>
Sys	<b>Total</b>	<b>83.3</b>	<b>52.4</b>	<b>36.9</b>	<b>47.8</b>	<b>88.7</b>	<b>2.52</b>	<b>0.70</b>	<b>25.2</b>	<b>1.05</b>	<b>0.032</b>	<b>2,049.6</b>
IA1	Ammonium Nitrate Prill Silo - Loading	0.58	0.20	0.03								
IA2	Sulfuric Acid Plant Cooling Tower	0.51	0.51	0.51								
IA3	Lithium Carbonate Cooling Tower	0.99	0.99	0.99								
IA4	Laboratory Equipment	0.99	0.37	0.06								
IA5	Diesel Tank, Off Road (Mine), 25,000 gallons							0.015				
IA6	Diesel Tank, Highway (Mine), 8,000 gallons							0.001				
IA7	Bulk Oil Tank, 20,000 gallons							0.003				
IA8	Bulk Coolant Tank, 3,000 gallons							0.00003				
IA9	Bulk Used Oil Tank, 3,000 gallons							0.001				
IA10	Bulk Used Coolant Tank, 3,000 gallons							0.00003				

## 5.0 AMBIENT AIR IMPACT ANALYSIS

### 5.1 INTRODUCTION/ PURPOSE

The purpose of this analysis is to determine the likely air quality impacts resulting from operation of the Li NV facility under the conditions specified in their draft Air Quality Operating Permit.

### 5.2 CLASSIFICATION OF AIR BASIN

The facility is in Hydrographic Basin (HA) 30A – Kings River Valley/Rio King and HA33A – Quinn River/Orovada. HAs 30A and 33A are not triggered for any pollutant.

### 5.3 AIR QUALITY MODELING ANALYSIS

Nevada Division of Environmental Protection – Bureau of Air Quality Planning (BAQP) performed the air quality modeling analysis. The memo to BAPC from BAQP dated July 8, 2021 presents the results of the air quality analysis. The original results were updated from the original posting and was not updated when this technical review was originally drafted. The results of the latest analysis are presented below in Table 5.3-1 and in the memo is provided in Appendix 2. As can be seen, operation of Li NV will not result in violations of the Nevada AAQS, because the total impacts are less than the applicable AAQS values.





**Table 5.3-1**

**Lithium Nevada Corporation - A1270 - AP1479-4334  
Nevada Ambient Air Quality Impact Analysis**

Pollutant	Averaging Period	Modeled Concentration	Background Concentration <sup>c</sup>	Total Impact	NAAQS	Percent of Standard	Location (UTM)	
							mN	mE
PM <sub>2.5</sub>	24-hr (µg/m <sup>3</sup> ) <sup>a</sup>	7.4	8	15.5	35	44%	4,616,899	411,048
	Annual (µg/m <sup>3</sup> ) <sup>b</sup>	1.5	2.3	4.0	12	34%	4,616,645	414,250
PM <sub>10</sub>	24-hr (µg/m <sup>3</sup> )	67.0	10.2	77.9	150	52%	4,616,765	411,377
SO <sub>2</sub>	1-hr (ppb) <sup>c</sup>	41.1		41.3	75	55%	4,615,266	412,497
	3-hr (µg/m <sup>3</sup> )	81.9		81.9	1,300	6%	4,615,266	412,497
	24-hr (µg/m <sup>3</sup> )	10.3		10.3	365	3%	4,615,266	412,497
	Annual (µg/m <sup>3</sup> )	0.3		0.5	80	1%	4,616,646	414,231
NO <sub>2</sub>	1-hr (ppb) <sup>d</sup>	57.9		62.8	100	63%	4,616,651	414,078
	Annual (µg/m <sup>3</sup> )	2.4		4.2	100	4%	4,616,650	414,117
CO	1-hr (µg/m <sup>3</sup> )	97		130	40,500	0%	4,616,644	414,268
	8-hr (µg/m <sup>3</sup> )	31		31	7,000	0%	4,616,361	414,156
H <sub>2</sub> S	1-hr (µg/m <sup>3</sup> )	6.4		6.4	112	6%	4,616,640	414,381
Ozone	8-hr (ppm)	0.009		0.009	0.075	12%		

<sup>a</sup>98th percentile (8th high), averaged over 3 years

<sup>b</sup>Annual mean, averaged over 3 years

<sup>c</sup>99th percentile (4th high) of 1-hr daily maximum concentrations, averaged over 3 years

<sup>d</sup>98th percentile (8th high) of 1-hr daily maximum concentrations, averaged over 3 years

<sup>e</sup>PM<sub>2.5</sub> values are from the Jarbidge Wilderness Area. PM<sub>10</sub> values are from Lehman Caves (Great Basin NP).

Note: Averaging over years must still follow 40 CFR Part 51 Appendix W concerning 1 year of on-site MET data or 5 years of offsite MET data and must be the specific percentile for each individual year





BAPC

Lithium Nevada Corporation – Thacker Pass Project

FIN: A1270; AP1479-4334

February 25, 2022

Air Case 10677 - Class II New

Technical Review

## 6.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above review and supporting data and analyses, operation of the Li NV facility under the draft Class II Air Quality Operating Permit conditions will not result in violations of any applicable ambient air quality standards. Therefore, the BAPC recommends that the draft facility-wide operating permit be formally issued, with those applicable requirements, conditions, and restrictions contained therein:

Appendix 1 – BAPC Detailed Emission Inventory

Appendix 2 – NVAAQS Memo

Appendix 3 – Public Comments and Responses relevant to Air Quality Operating Permit Received Prior to October 18, 2021

Appendix 4 – Public Noticed Permit with Changes Shown

*Benjamin Kahue*

Ben Kahue, P.E.,

Permit Writer

Bureau of Air Pollution Control

2/25/2022

Date

*Ashley Taylor*

Ashley Taylor, P.E.,

Supervisor, Permitting Branch

Bureau of Air Pollution Control

2/25/2022

Date



*BAPC*

*Lithium Nevada Corporation – Thacker Pass Project*

*FIN: A1270; AP1479-4334*

*February 25, 2022*

*Air Case 10677 - Class II New*

*Technical Review*

# Appendix 1

BAPC Detailed Emission Inventory

**APPROVED**  
By Ashley Taylor at 2:13 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control				Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	Humboldt	New	Model Type: Facility Only				Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776	County: EASTING (m) 413,910	34E 35E 36E	SAD Acreage: 5,545					Approved:	

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/ Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>1 System 1 - Ore Handling Circuit</b>																							
PF1.001	ROM Feed Hopper 1 Loading	3-05-020-06	4,617,041	411,344		24	8,760			480	4,204,800	tons Ore			PM	0.0030	lb/ton			1.44	6.31	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.002	ROM Feed Hopper 1 transfer to Sizer Feed Conveyor (via feed belt)	3-05-020-06	4,617,041	411,344											PM10	0.0011	lb/ton			0.53	2.31	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.003	ROM Feed Hopper 2 loading	3-05-020-06	4,617,034	411,356											PM2.5	0.00018	lb/ton			0.09	0.38	PM2.5 = PM10*(0.053/0.35)	For each source
PF1.004	ROM Feed Hopper 2 transfer to Sizer Feed Conveyor (via feed belt)	3-05-020-06	4,617,034	411,356																			
					Drop Length (ft):	PF1.001 - 6 PF1.002 - 4 PF1.003 - 6 PF1.004 - 4																	
					Drop Height (ft.):	PF1.001 - 17 PF1.002 - 12 PF1.003 - 17 PF1.004 - 12																	
					Drop Horizontal Dimension 1 (ft):	PF1.001 - 10 PF1.002 - 3 PF1.003 - 10 PF1.004 - 3																	

<b>2 System 2 - Mineral Sizer</b>																							
PF1.005	Mineral Sizer and Associated Transfers (In: Sizer Feed Conveyor, Out: Scrubber Feed Conveyor)	3-05-020-03	4,616,990	411,439		24	8,760			960	8,409,600	tons Ore			PM	0.0014	lb/ton	Water Sprays	75.0%	1.30	5.68	AP-42 Table 11.19.2-2 Tertiary Crusher Uncontrolled	
															PM10	0.00060	lb/ton	Water Sprays	75.0%	0.58	2.52	AP-42 Table 11.19.2-2 Tertiary Crusher Uncontrolled	
															PM2.5	0.00010	lb/ton	Water Sprays	75.0%	0.10	0.42	PM2.5 = PM10*(0.053/0.35)	
					Drop Length (ft):	12.00																	
					Drop Height (ft.):	31.00																	
					Drop Horizontal Dimension 1 (ft):	3.00																	

<b>3 System 3 - Attrition Scrubber Feed</b>																							
PF1.006	Scrubber Feed Conveyor to Attrition Scrubber (wet process)	3-05-020-06	4,616,998	411,444		24	8,760			960	8,409,600	tons Ore			PM	0.00075	lb/ton	Water Sprays	75.0%	0.72	3.15	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM10	0.00028	lb/ton	Water Sprays	75.0%	0.26	1.16	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM2.5	0.000045	lb/ton	Water Sprays	75.0%	0.044	0.19	PM2.5 = PM10*(0.053/0.35)	
					Drop Length (ft):	6.00																	
					Drop Height (ft.):	20.00																	
					Drop Horizontal Dimension 1 (ft):	3.00																	

<b>4 System 4 - Oversize Material Handling Circuit</b>																							
PF1.007	Wet Screen to Oversize Conveyor	3-05-020-06	4,617,033	411,464		24	8,760			16	140,160	tons Gangue			PM	0.00045	lb/ton	Moisture Content	85.0%	0.0072	0.032	AP-42 Table 11.19.2-2 Conveyor Transfer (Uncontrolled)	For each source
PF1.008	Oversize Stacker to Oversize Stockpile	3-05-020-06	4,617,011	411,505											PM10	0.00017	lb/ton	Moisture Content	85.0%	0.0026	0.012	AP-42 Table 11.19.2-2 Conveyor Transfer (Uncontrolled)	For each source
															PM2.5	0.000025	lb/ton	Moisture Content	85.0%	0.00040	0.0018	PM2.5 = PM10*(0.053/0.35)	For each source
					Drop Length (ft):	PF1.007 - 6 PF1.008 - 11.5																	
					Drop Height (ft.):	PF1.007 - 10 PF1.008 - 23																	
					Drop Horizontal Dimension 1 (ft):	PF1.007 - 10 PF1.008 - 2																	

**APPROVED**  
By Ashley Taylor at 2:13 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control		Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only		Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776 44N 44N	EASTING (m): 413,910 34E 35E 36E	SAD Acreage: 5,545					

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>5 System 5 - Gangue Handling Circuit</b>																							
PF1.009	Gangue Dewatering Screen to Gangue Conveyor	3-05-020-06	4,617,236	414,414		24	8,760			430	3,766,800	tons Gangue			PM	0.00045	lb/ton	Moisture Content	85.0%	0.19	0.85	AP-42 Table 11.19.2-2 Conveyor Transfer (Uncontrolled)	For each source
PF1.010	Gangue Conveyor to Gangue Stack	3-05-020-06	4,617,280	414,458											PM10	0.00017	lb/ton	Moisture Content	85.0%	0.071	0.31	AP-42 Table 11.19.2-2 Conveyor Transfer (Uncontrolled)	For each source
PF1.011	Gangue Stack to Gangue Stockpile	3-05-020-06	4,617,326	414,453											PM2.5	0.000025	lb/ton	Moisture Content	85.0%	0.011	0.047	PM2.5 = PM10*(0.053/0.35)	For each source
					Drop Length (ft):	PF1.009 - 16 PF1.010 - 3 PF1.011 - 20																	
					Drop Height (ft.):	PF1.009 - 19 PF1.010 - 6 PF1.011 - 40																	
					Drop Horizontal Dimension 1 (ft):	PF1.009 - 4 PF1.010 - 3 PF1.011 - 3																	

<b>6 System 6 - Leach Tanks</b>																								
S2.001	Leach Tank 1	3-05-020-99	4,617,186	414,430	Height (ft):	60.0	24	8,760			1,080	9,460,800	tons Slurry			PM	0.0059	gr/dscf	Wet Scrubber		0.30	1.33	Engineering Estimates	Emissions are combined
S2.002	Leach Tank 2	3-05-020-99	4,617,186	414,430	Diameter (ft):	2.50										PM10	0.0059	gr/dscf	Wet Scrubber		0.30	1.33	Engineering Estimates	Emissions are combined
S2.003	Leach Tank 3	3-05-020-99	4,617,186	414,430	Temp (°F):	180										PM2.5	0.0059	gr/dscf	Wet Scrubber		0.30	1.33	Engineering Estimates	Emissions are combined
					Exit Vel (fps):	47.1																		
					Vol (ACFM):	13,869.0																		
					Vol (DSCFM):	6,006.0																		
					Equipment Dimensions (ft):	37D x 40H																		
					Release Type:	Vertical																		
																H2SO4	0.0011	gr/dscf	Wet Scrubber		0.06	0.26	Engineering Estimates	Emissions are combined

<b>7 System 7 - Neutralization Filter Vents</b>																								
S2.004	Neutralization Filter Vent 1	3-05-020-99	4,617,143	414,474	Height (ft):	30.0	24	500			1,080	540,000	Slurry			PM	0.0055	gr/dscf	Mist Eliminator		0.22	0.056	Engineering Estimates	For each source
S2.005	Neutralization Filter Vent 2	3-05-020-99	4,617,145	414,477	Diameter (ft):	1.70										PM10	0.0055	gr/dscf	Mist Eliminator		0.22	0.056	Engineering Estimates	For each source
S2.006	Neutralization Filter Vent 3	3-05-020-99	4,617,149	414,480	Temp (°F):	120										PM2.5	0.0055	gr/dscf	Mist Eliminator		0.22	0.056	Engineering Estimates	For each source
S2.007	Neutralization Filter Vent 4	3-05-020-99	4,617,152	414,483	Exit Vel (fps):	45.5																		
					Vol (ACFM):	6,200.0																		
					Vol (DSCFM):	4,709.0																		
					Release Type:	Vertical																		

<b>8 System 8 - Neutralization Filter Filtrate Blow Vent</b>																								
S2.008	Neutralization Filter Filtrate Blow Vent	3-05-020-99	4,617,147	414,479	Height (ft):	20.0	24	50					Slurry			PM	0.017	gr/dscf			0.20	0.0049	Engineering Estimates	
					Diameter (ft):	1.00										PM10	0.017	gr/dscf			0.20	0.0049	Engineering Estimates	
					Temp (°F):	Ambient										PM2.5	0.017	gr/dscf			0.20	0.0049	Engineering Estimates	
					Exit Vel (fps):	28.75																		
					Vol (ACFM):	1355.00																		
					Vol (DSCFM):	1355.00																		
					Release Type:	Vertical																		

**APPROVED**  
By Ashley Taylor at 2:14 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King		Increment Tracked: No	Air Case Number Application Log (Multiple Applications)		Nevada Division of Environmental Protection Bureau of Air Pollution Control				Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada		County: Humboldt	New		Model Type: Facility Only				Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776	EASTING (m): 34E 35E 36E		44N 44N	413,910		SAD Acreage: 5,545					

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/ Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>9 System 9 - Tailings Feed Circuit</b>																							
PF1.012	Neutralization Filter 1 to Discharge Feeder 1	3-05-020-06	4,617,139	414,490		24	8,760			240	2,102,400	tons Clay/Neutral Tailings			PM	0.00045	lb/ton	Moisture Content	85.0%	0.11	0.47	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	3-05-020-06	4,617,148	414,480											PM10	0.00017	lb/ton	Moisture Content	85.0%	0.040	0.17	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.014	Neutralization Filter 2 to Discharge Feeder 2	3-05-020-06	4,617,140	414,491											PM2.5	0.000027	lb/ton	Moisture Content	85.0%	0.0065	0.029	PM2.5 = PM10*(0.053/0.35)	For each source
PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	3-05-020-06	4,617,148	414,481																			
PF1.016	Neutralization Filter 3 to Discharge Feeder 3	3-05-020-06	4,617,141	414,492																			
PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	3-05-020-06	4,617,149	414,482																			
PF1.018	Neutralization Filter 4 to Discharge Feeder 4	3-05-020-06	4,617,142	414,493																			
PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	3-05-020-06	4,617,150	414,483																			
					Drop Length (ft):	PF1.012 - 13 PF1.013 - 12 PF1.014 - 13 PF1.015 - 12 PF1.016 - 13 PF1.017 - 12 PF1.018 - 13 PF1.019 - 12																	
					Drop Height (ft.):	PF1.012 - 29 PF1.013 - 16 PF1.014 - 29 PF1.015 - 16 PF1.016 - 29 PF1.017 - 16 PF1.018 - 29 PF1.019 - 16																	
					Drop Horizontal Dimension 1 (ft):	PF1.012 - 9 PF1.013 - 3 PF1.014 - 9 PF1.015 - 3 PF1.016 - 9 PF1.017 - 3 PF1.018 - 9 PF1.019 - 3																	

<b>10 System 10 - Tailings Collection</b>																							
PF1.020	Tailings Collection Conveyor to Tailings Conveyor 1	3-05-020-06	4,617,151	414,484		24	8,760			1,000	8,760,000	tons Clay/Neutral Tailings			PM	0.00045	lb/ton	Moisture Content	85.0%	0.45	1.97	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM10	0.00017	lb/ton	Moisture Content	85.0%	0.17	0.72	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM2.5	0.000027	lb/ton	Moisture Content	85.0%	0.027	0.12	PM2.5 = PM10*(0.053/0.35)	
					Drop Length (ft):	12.00																	
					Drop Height (ft.):	16.00																	
					Drop Horizontal Dimension 1 (ft):	3.00																	

<b>11 System 11 - Tailings Stacking</b>																							
PF1.021	Tailings Conveyor 1 to Tailings Stacker	3-05-020-06	4,617,251	414,584		24	8,760			1,000	8,760,000	tons Clay/Neutral Tailings			PM	0.00045	lb/ton	Moisture Content	85.0%	0.45	1.97	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.022	Tailings Stacker to Clay Tailings Filter Stack	3-05-020-06	4,617,231	414,625											PM10	0.00017	lb/ton	Moisture Content	85.0%	0.17	0.72	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
															PM2.5	0.000027	lb/ton	Moisture Content	85.0%	0.027	0.12	PM2.5 = PM10*(0.053/0.35)	For each source
					Drop Length (ft):	PF1.021 - 12 PF1.022 - 25																	
					Drop Height (ft.):	PF1.021 - 16 PF1.022 - 50																	
					Drop Horizontal Dimension 1 (ft):	PF1.021 - 3 PF1.022 - 3																	

**APPROVED**  
By Ashley Taylor at 2:14 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control		Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only		Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776	EASTING (m): 34E 35E 36E	413,910	SAD Acreage: 5,545				

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>12a System 12 - Sulfate Tailings Circuit</b>																							
PF1.023	Na/K Sulfate Centrifuge discharge to Na/K Conveyor 1	3-05-020-06	4,617,137	414,470		24	8,760			40	350,400	tons Sulfate Tailings			PM	0.0015	lb/ton	Enclosure	50.0%	0.060	0.26	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM10	0.00055	lb/ton	Enclosure	50.0%	0.022	0.096	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	
															PM2.5	0.000091	lb/ton	Enclosure	50.0%	0.0036	0.016	PM2.5 = PM10*(0.053/0.35)	
					Drop Length (ft):	2.00																	
					Drop Height (ft.):	22.00																	
					Drop Horizontal Dimension 1 (ft):	2.00																	

<b>12b System 12 - Sulfate Tailings Circuit</b>																							
PF1.024	Na/K Conveyor 1 transfer to Na/K Conveyor 2	3-05-020-06	4,617,139	414,471		24	8,760			40	350,400	tons Sulfate Tailings			PM	0.0030	lb/ton			0.12	0.53	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
PF1.025	Na/K Conveyor 2 to Tailings Collection Conveyor	3-05-020-06	4,617,141	414,474											PM10	0.0011	lb/ton			0.044	0.19	AP-42 Table 11.19.2-2 Conveyor Uncontrolled	For each source
															PM2.5	0.00018	lb/ton			0.0073	0.032	PM2.5 = PM10*(0.053/0.35)	For each source
					Drop Length (ft):	PF1.024 - 4 PF1.025 - 4																	
					Drop Height (ft.):	PF1.024 - 20 PF1.025 - 16																	
					Drop Horizontal Dimension 1 (ft):	PF1.024 - 2 PF1.025 - 2																	

<b>13 System 13 - Magnesium Precip. Filter Vents</b>																							
S2.009	Magnesium Precipitation Filter Vent 1	3-05-020-99	4,617,145	414,402	Height (ft):	38.0	24	200				Slurry			PM	0.0054	gr/dscf	Mist Eliminator		0.14	0.014	Engineering Estimates	For each source
S2.010	Magnesium Precipitation Filter Vent 2	3-05-020-99	4,617,148	414,405	Diameter (ft):	1.30									PM10	0.0054	gr/dscf	Mist Eliminator		0.14	0.014	Engineering Estimates	For each source
					Temp (°F):	120									PM2.5	0.0054	gr/dscf	Mist Eliminator		0.14	0.014	Engineering Estimates	For each source
					Exit Vel (fps):	50.8																	
					Vol (ACFM):	4,045.7																	
					Vol (DSCFM):	3,073.0																	
					Release Type:	Vertical																	

<b>14 System 14 - Magnesium Precip. Filter Filtrate Blow Vent</b>																							
S2.011	Magnesium Precipitation Filter Filtrate Blow Vent	3-05-020-99	4,617,147	414,404	Height (ft):	20.0	24	50				Slurry			PM	0.0034	gr/dscf			0.015	0.0004	Engineering Estimates	
					Diameter (ft):	0.50									PM10	0.0034	gr/dscf			0.015	0.0004	Engineering Estimates	
					Temp (°F):	Ambient									PM2.5	0.0034	gr/dscf			0.015	0.0004	Engineering Estimates	
					Exit Vel (fps):	42.3																	
					Vol (ACFM):	498.3																	
					Vol (DSCFM):	498.0																	
					Release Type:	Vertical																	

<b>15 System 15 - Lithium Carbonate Dryer</b>																							
S2.012	Lithium Carbonate Dryer transfer t	3-05-999-99	4,617,110	414,388	Height (ft):	60.0	24	8,760		5	43,800	tons Lithium Carbonate			PM	0.020	gr/dscf	Baghouse		0.50	2.18	BAPC Default Grain Loading	
					Diameter (ft):	1.00									PM10	0.020	gr/dscf	Baghouse		0.50	2.18	BAPC Default Grain Loading	
					Temp (°F):	302									PM2.5	0.020	gr/dscf	Baghouse		0.50	2.18	BAPC Default Grain Loading	
					Exit Vel (fps):	61.5																	
					Vol (ACFM):	2,898.1																	
					Vol (DSCFM):	2,897.0																	
					Release Type:	Vertical																	

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control				Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	Humboldt	New	Model Type: Facility Only				Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 44N 44N 44N	EASTING (m): 413,910	34E 35E 36E	413,910						
		Section: 1,12 2-17 7,8,14-23,29	Township: 44N 44N 44N	Range: 34E 35E 36E	SAD Acreage: 5,545							

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>16 System 16 - Lithium Carbonate Material Handling</b>																							
S2.013	Lithium Carbonate Material Handling transfer	3-05-011-08	4,617,108	414,385	Height (ft): 10.0	24	8,760			5	43,800	Lithium Carbonate			PM	0.0024	lb/ton	Vent Filter	50.0%	0.012	0.053	AP-42 Table 11.12-2 Hopper Loading Uncontrolled	
					Diameter (ft): 0.50										PM10	0.0014	lb/ton	Vent Filter	50.0%	0.0070	0.031	AP-42 Table 11.12-2 Hopper Loading Uncontrolled	
					Temp (°F): 101										PM2.5	0.00023	lb/ton	Vent Filter	50.0%	0.0012	0.0051	PM2.5 = PM10*(0.053/0.35)	
					Exit Vel (fps): 107.6																		
					Vol (ACFM): 1,267.6																		
					Vol (DSCFM): 1,268.0																		
					Release Type: Horizontal																		

<b>17 System 17 - Lithium Carbonate Storage Bin</b>																							
S2.014	Lithium Carbonate Storage Bin	3-05-011-07	4,617,112	414,380	Height (ft): 79.0	24	8,760			5	43,800	tons Lithium Carbonate			PM	0.0010	lb/ton	Vent Filter		0.0050	0.022	AP-42 Table 11.12-2: Cement Unloading to Elevated Storage Silo [Pneumatic] (Controlled)	
					Diameter (ft): 0.50										PM10	0.00034	lb/ton	Vent Filter		0.0017	0.0074	AP-42 Table 11.12-2: Cement Unloading to Elevated Storage Silo [Pneumatic] (Controlled)	
					Temp (°F): 101										PM2.5	0.000056	lb/ton	Vent Filter		0.00028	0.0012	PM2.5 = PM10*(0.053/0.35)	
					Exit Vel (fps): 107.6																		
					Vol (ACFM): 1,267.6																		
					Vol (DSCFM): 1,268.0																		
					Release Type: Horizontal																		

<b>18 System 18 - Lithium Carbonate Packaging</b>																							
S2.015	Lithium Carbonate Packaging	3-05-999-99	4,617,113	414,360	Height (ft): 20.0	24	4,380			16	43,800	tons Lithium Carbonate			PM	0.020	gr/dscf	Baghouse		0.67	1.46	BAPC Default Grain Loading	
					Diameter (ft): 1.00										PM10	0.020	gr/dscf	Baghouse		0.67	1.46	BAPC Default Grain Loading	
					Temp (°F): Ambient										PM2.5	0.020	gr/dscf	Baghouse		0.67	1.46	BAPC Default Grain Loading	
					Exit Vel (fps): 82.8																		
					Vol (ACFM): 3,900.0																		
					Vol (DSCFM): 3,900.0																		
					Release Type: Vertical																		

<b>19 System 19 - Lime Silo</b>																							
S2.016	Truck transfer of Lime to Underground Hopper	3-05-011-07	4,617,197	414,358	Height (ft): 100.0	24	4,380			80	350,400	ton Lime			PM	0.020	gr/dscf	Baghouse		0.53	1.16	BAPC Default Grain Loading	Emissions are combined
S2.017	Underground Hopper and transfer to Silo (silo unloading through sealed transfers)	3-05-011-07	4,617,197	414,358	Diameter (ft): 1.00										PM10	0.020	gr/dscf	Baghouse		0.53	1.16	BAPC Default Grain Loading	Emissions are combined
					Temp (°F): Ambient										PM2.5	0.020	gr/dscf	Baghouse		0.53	1.16	BAPC Default Grain Loading	Emissions are combined
					Exit Vel (fps): 65.8																		
					Vol (ACFM): 3,100.0																		
					Vol (DSCFM): 3,100.0																		
					Release Type: Vertical																		

<b>20 System 20 - Soda Ash Silo</b>																							
S2.018	Soda Ash Silo loading (silo unloading through sealed transfers)	3-05-011-07	4,617,088	414,456	Height (ft): 100.0	24	8,760			80	153,900	tons Soda Ash			PM	0.0010	lb/ton	Vent Filter		0.079	0.076	AP-42 Table 11.12-2: Cement Unloading to Elevated Storage Silo [Pneumatic] (Controlled)	
					Diameter (ft): 1.00										PM10	0.00034	lb/ton	Vent Filter		0.027	0.026	AP-42 Table 11.12-2: Cement Unloading to Elevated Storage Silo [Pneumatic] (Controlled)	
					Temp (°F): Ambient										PM2.5	0.000056	lb/ton	Vent Filter		0.0045	0.0043	PM2.5 = PM10*(0.053/0.35)	
					Exit Vel (fps): 41.0																		
					Vol (ACFM): 1,930.0																		
					Vol (DSCFM): 1,930.0																		
					Release Type: Horizontal																		

**APPROVED**  
By Ashley Taylor at 2:14 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control				Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only				Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776 44N 44N 44N	EASTING (m): 413,910 34E 35E 36E	SAD Acreage: 5,545						Approved:	

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>21 System 21 - Sulfur Storage</b>																							
S2.019	Sulfur Storage 1	3-01-023-99	4,616,946	414,290	Height (ft): 30.0	24	8,760			47	411,720	tons Molten Sulfur			PM	0.0051	gr/dscf	Caustic Scrubber		0.10	0.44	PM from scrubber effluent (LNC 2020), (Schonlau 2020a)	For each source
S2.020	Sulfur Storage 2	3-01-023-99	4,616,942	414,293	Diameter (ft): 3.00										PM10	0.0051	gr/dscf	Caustic Scrubber		0.10	0.44	PM from scrubber effluent (LNC 2020), (Schonlau 2020a)	For each source
					Temp (°F): 140										PM2.5	0.0051	gr/dscf	Caustic Scrubber		0.10	0.44	PM from scrubber effluent (LNC 2020), (Schonlau 2020a)	For each source
					Exit Vel (fps): 7.3										SO2	0.0172	gr/dscf	Caustic Scrubber		0.34	1.49	Engineer Estimates base on exhaust SO2 concentration of 15 ppmv	
					Vol (ACFM): 3,100.0																		
					Vol (DSCFM): 2,300.0																		
					Release Type: Vertical																		
															H2S	0.0061	gr/dscf	Caustic Scrubber		0.12	0.53	Engineer Estimates base on exhaust H2S concentration of 10 ppmv	For each source

<b>22 System 22 - Package Boiler</b>																							
S2.021	Package Boiler	1-02-006-02	4,616,986	414,165	Height (ft): 27.0	24	550	41.27	22,696.58	451	248,050	gallons Propane			PM	1.05	lb/1000 gallon			0.47	0.13	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Diameter (ft): 3.00										PM10	1.05	lb/1000 gallon			0.47	0.13	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Temp (°F): 363										PM2.5	1.05	lb/1000 gallon			0.47	0.13	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Exit Vel (fps): 35.0										SO2	1.59	lb/1000 gallon			0.72	0.20	Mass Balance with max Sulfur concentration of 185 ppm in Propane	
					Vol (ACFM): 14,832.0										NOX	19.5	lb/1000 gallon			8.79	2.42	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Vol (DSCFM): 8,606.0										CO	15.0	lb/1000 gallon			6.77	1.86	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Release Type: Vertical										VOC	2.40	lb/1000 gallon			1.08	0.30	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
															HAPS					7.65E-02	2.10E-02		
															CO2e					5760.7	1584.2		

<b>23 System 23 - Start-Up Burner</b>																							
S2.022	Start-Up Burner	1-02-006-02	4,617,002	414,213	Height (ft): 50.0	24	200	28.82	5,764.50	315	63,000	gallon Propane			PM	1.05	lb/1000 gallon			0.33	0.033	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Diameter (ft): 5.00										PM10	1.05	lb/1000 gallon			0.33	0.033	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Temp (°F): 950										PM2.5	1.05	lb/1000 gallon			0.33	0.033	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Exit Vel (fps): 175.1										SO2	1.59	lb/1000 gallon			0.50	0.050	Mass Balance with max Sulfur concentration of 185 ppm in Propane	
					Vol (ACFM): 206,338.0										NOX	19.5	lb/1000 gallon			6.14	0.61	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Vol (DSCFM): 196,069.0										CO	15.0	lb/1000 gallon			4.73	0.47	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
					Release Type: Vertical										VOC	2.40	lb/1000 gallon			0.76	0.076	AP-42 Table 1.5-1 Propane Industrial Boilers w/ safety factor	
															HAPS					5.34E-02	5.34E-03		
															CO2e					4023.6	402.4		



<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A 33A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control		Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only		Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776	EASTING (m): 34E 35E 36E	413,910	SAD Acreage: 5,545			Approved:	

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/ Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>24 System 24 - Sulfuric Acid Plant</b>																							
S2.023	Sulfuric Acid Plant	3-01-023-01	4,617,058	414,255	Height (ft): 199.0	24	8,760			51	446,760	tons Sulfur			PM	0.0052	gr/dscf	Tail Gas Scrubber		5.69	24.9	Engineering Estimates: PM+H2SO4 - 12 mg/Nm <sup>3</sup>	
					Diameter (ft): 8.50										PM10	0.0052	gr/dscf	Tail Gas Scrubber		5.69	24.9	Engineering Estimates: PM+H2SO4 - 12 mg/Nm <sup>3</sup>	
					Temp (°F): 79										PM2.5	0.0052	gr/dscf	Tail Gas Scrubber		5.69	24.9	Engineering Estimates: PM+H2SO4 - 12 mg/Nm <sup>3</sup>	
					Exit Vel (fps): 48.2										SO2	0.0094	gr/dscf	Tail Gas Scrubber		10.17	44.6	Engineering Estimates: SO2 stack concentration = 7.5 ppmv	
					Vol (ACFM): 165,245.0										NOX	0.018	gr/dscf	Tail Gas Scrubber		19.48	85.3	Engineering Estimates: NOX stack concentration = 20 ppmv	
					Vol (DSCFM): 126,678.0																		
					Release Type: Vertical										H2SO4	0.0052	gr/dscf	Tail Gas Scrubber		5.69	24.9	Engineering Estimates: H2SO4 - 6 mg/Nm <sup>3</sup> ( with an additional X 2 Safety Factor)	

<b>25 System 25 - Fire Pumps</b>																							
S2.024	Fire Pump 1 (Mine)	2-02-001-02	4,617,714	410,835	Height (ft): 13.0	24	100	2.80	280.00	20	2,000	gallons Diesel	422.00	HP	PM	0.036	lb/MMBtu			0.10	0.0051	Manufacturer Specifications	For each source
S2.025	Fire Pump 2 (Process)	2-02-001-02	4,617,087	414,307	Diameter (ft): 0.50										PM10	0.036	lb/MMBtu			0.10	0.0051	Manufacturer Specifications	For each source
					Temp (°F): 891										PM2.5	0.036	lb/MMBtu			0.101	0.0051	Manufacturer Specifications	For each source
					Exit Vel (fps): 173.8										SO2	0.0015	lb/MMBtu			0.0042	0.00021	mass balance w/ 15 ppm S	For each source
					Vol (ACFM): 2,048.0										NOX	0.87	lb/MMBtu			2.45	0.12	Manufacturer Specifications	For each source
					Vol (DSCFM): 668.0										CO	0.23	lb/MMBtu			0.63	0.032	Manufacturer Specifications	For each source
					Release Type: Vertical										VOC	0.030	lb/MMBtu			0.084	0.0042	Manufacturer Specifications	For each source
															HAPS					1.06E-02	5.31E-04		
															CO2e					457.2	22.9		

<b>26 System 26 - Emergency Generators</b>																							
S2.026	Emergency Generator 1 (Mine)	2-02-010-01	4,617,211	410,977	Height (ft): 5.00	24	100	1.27	127.19	14	1,390	gallons Propane	168.00	HP	PM	0.054	lb/MMBtu			0.069	0.0034	CARB 1991	For each source
S2.027	Emergency Generator 2 (Mine)	2-02-010-01	4,617,211	410,979	Diameter (ft): 0.30								125.28	KW	PM10	0.054	lb/MMBtu			0.069	0.0034	CARB 1991	For each source
					Temp (°F): 960										PM2.5	0.054	lb/MMBtu			0.069	0.0034	CARB 1991	For each source
					Exit Vel (fps): 169.6										SO2	0.0038	lb/MMBtu			0.0049	0.00024	CARB 1991	For each source
					Vol (ACFM): 888.0										NOX	0.58	lb/MMBtu			0.74	0.037	40 CFR 60.4231(c) & 1048.101(b)(3)	For each source
					Vol (DSCFM): 275.0										CO	0.95	lb/MMBtu			1.21	0.060	40 CFR 60.4231(c) & 1048.101(b)(3)	For each source
					Release Type: Vertical										VOC	0.58	lb/MMBtu			0.74	0.037	40 CFR 60.4231(c) & 1048.101(b)(3)	For each source
															HAPS					4.12E-02	2.06E-03		
															CO2e					173.4	8.67		

<b>27 System 27 - Gasoline Tank</b>																							
S2.028	Gasoline Tank, 1,000 gallons	2-50-100-0120 2-50-199-5120	4,617,430	410,878		24	8,760				9,999	103,000	gallons Gasoline										
					Equipment Dimensions (ft): 6 H x 5.5 D										VOC	4.33	lb/1000 gallon			0.000	0.22	EPA Tanks	
					Release Type: Vertical																		

**APPROVED**  
By Ashley Taylor at 2:14 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control				Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only				Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 44N 44N 44N	EASTING (m): 34E 35E 36E	413,910	413,910						
		Section: 1,12 2-17 7,8,14-23,29	Township: 44N 44N 44N	Range: 34E 35E 36E	SAD Acreage: 5,545	5,545						

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/ Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>IA1 Ammonium Nitrate Prill Silo - Loading</b>																							
IA1.001	Ammonium Nitrate Prill Silo - Loading	3-01-027-09	4,618,149	412,174	Height (ft): 30.0	24	8,760			80	29,200	AN Prill			PM	0.020	lb/ton			1.60	0.29	AP-42 Table 8.3-2: Bulk Loading Operations (Uncontrolled)	For each source
IA1.002	Ammonium Nitrate Prill Silo - Unloading	3-01-027-09	4,618,149	412,174	Diameter (ft): 0.50										PM10	0.0070	lb/ton			0.56	0.10	PM10=PM*0.35	For each source
	Request for IA determination status to be granted on October 18, 2021.				Temp (°F): Ambient										PM2.5	0.0012	lb/ton			0.09	0.02	PM2.5=PM2.5/6.06	For each source
					Exit Vel (fps): 0.0030																		
					Vol (ACFM): 0.035																		

<b>IA2 Sulfuric Acid Plant Cooling Tower</b>																							
IA1.003	Sulfuric Acid Plant Cooling Tower	3-85-001-01	4,618,968	414,290	Height (ft): 35.0	24	8,760			278,000	2,435,280,000	gallons Water			PM	0.00042	lb/1000 gallon			0.12	0.51	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
	Request for IA determination status to be granted on October 18, 2021.				Diameter (ft): 36.0										PM10	0.00042	lb/1000 gallon			0.12	0.51	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
					Temp (°F): Ambient										PM2.5	0.00042	lb/1000 gallon			0.12	0.51	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
					Exit Vel (fps): 6.40																		
					Vol (ACFM): 388400.00																		

<b>IA3 Lithium Carbonate Cooling Tower</b>																							
IA1.004	Lithium Carbonate Cooling Tower	3-85-001-01	4,617,045	414,418	Height (ft): 35.0	24	8,760			539,100	4,722,516,000	gallons Water			PM	0.00042	lb/1000 gallon			0.23	0.99	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
	Request for IA determination status to be granted on October 18, 2021.				Diameter (ft): 36.0										PM10	0.00042	lb/1000 gallon			0.23	0.99	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
					Temp (°F): Ambient										PM2.5	0.00042	lb/1000 gallon			0.23	0.99	(NDEP 2017), 1000 ppm TDS, 0.005% drift loss (LNC 2020)	
					Exit Vel (fps): 12.30																		
					Vol (ACFM): 752800.00																		

<b>IA4 Laboratory Equipment</b>																							
IA1.005	Splitter 1	3-05-020-06	4,617,159	414,334	Height (ft): 40.0	24	8,760			1	8,760	tons Samples			PM	0.23	lb/ton			0.23	0.99	AP42 11.192.2-2 - Conveyor Transfer, Tert. Crushing, Screening, Fine Crushing	Emissions are combined
IA1.006	Splitter 2	3-05-020-06	4,617,159	414,334	Diameter (ft): 0.50										PM10	0.085	lb/ton			0.085	0.37	AP42 11.192.2-2 - Conveyor Transfer, Tert. Crushing, Screening, Fine Crushing	Emissions are combined
IA1.007	Splitter 3	3-05-020-06	4,617,159	414,334	Temp (°F): Ambient										PM2.5	0.014	lb/ton			0.014	0.061	PM2.5=PM10/6.06	Emissions are combined
IA1.008	Splitter 4	3-05-020-06	4,617,159	414,334	Exit Vel (fps): 212.20																		
IA1.009	Splitter 5	3-05-020-06	4,617,159	414,334	Vol (ACFM): 2500.00																		
IA1.010	Splitter 6	3-05-020-06	4,617,159	414,334	Vol (DSCFM): 2,500.0																		
IA1.011	Crusher 1	3-05-020-03	4,617,159	414,334																			
IA1.012	Crusher 2	3-05-020-03	4,617,159	414,334																			
IA1.013	Crusher 3	3-05-020-03	4,617,159	414,334																			
IA1.014	Screen 1	3-05-020-03	4,617,159	414,334																			
IA1.015	Screen 2	3-05-020-03	4,617,159	414,334																			
IA1.016	Screen 3	3-05-020-03	4,617,159	414,334																			
IA1.017	Pulverizer 1	3-05-020-03	4,617,159	414,334																			
IA1.018	Pulverizer 2	3-05-020-03	4,617,159	414,334																			
IA1.019	Pulverizer 3	3-05-020-03	4,617,159	414,334	0	Notes:																	
	Request for IA determination status to be granted on October 18, 2021.																						

<b>IA5 Diesel Tank, Off Road (Mine), 25,000 gallons</b>																							
IA1.020	Diesel Tank, Off Road (Mine), 25,000 gallons	4-04-003-16	4,617,430	410,867		24	8,760			725	6,350,000	gallons diesel			VOC	0.0047	lb/1000 gallon			0.003	0.015	EPA Tanks	
					Equipment Dimensions (ft): 30 H x 12 D																		
					Release Type: Vertical																		

**APPROVED**  
By Ashley Taylor at 2:14 pm, Feb 02, 2022

<b>Emissions Calculation Spreadsheet</b>		FIN: A1270	Basin: 30A	Kings River Valley/Rio King	Increment Tracked: No	Air Case Number Application Log (Multiple Applications)	Nevada Division of Environmental Protection Bureau of Air Pollution Control		Date: 2/2/2022	Ben Kahue
Lithium Nevada Corporation Thacker Pass Project 3685 Lakeside Drive, Reno, NV 89509		Permit No.: AP1479-4334	Class: Class II AQOP	Quinn River Valley/Orovada	County: Humboldt	New	Model Type: Facility Only		Date of Approval	Supervisor:
		Facility UTM Coordinates: 1,12 2-17 7,8,14-23,29	NORTHING (m): 4,616,776	EASTING (m): 34E 35E 36E	413,910	SAD Acreage: 5,545				

System #	Unit Description	SCC	Location UTM (Zone 11)		Stack/Fugitive Parameters	Operating Hours		Heat Input (MMBtu)		Throughput/ Fuel Usage		Power Output		Emission Factor			Controls		Permit Emission Rate		References	For Each Source or Combined?	
			North (m)	East (m)		Daily	Annual	Hour	Annual	Hour	Annual	Units	Amount	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lbs/hr)			Yearly (ton/yr)
<b>IA6 Diesel Tank, Highway (Mine), 8,000 gallons</b>																							
IA1.021	Diesel Tank, Highway (Mine), 8,000 gallons	4-04-003-16	4,617,430	410,873		24	8,760			5	40,000	gallons diesel			VOC	0.050	lb/1000 gallon			0.0002	0.0010	EPA Tanks	
					Equipment Dimensions (ft): 21.5 H x 8 D																		
					Release Type: Vertical																		
<b>IA7 Bulk Oil Tank, 20,000 gallons</b>																							
IA1.022	Bulk Oil Tank, 20,000 gallons	4-04-003-13	4,617,410	410,854		24	8,760			14	120,000	gallons Bulk Oil			VOC	0.050	lb/1000 gallon			0.0007	0.0030	EPA Tanks	
					Equipment Dimensions (ft): 18 H x 14 D																		
					Release Type: Vertical																		
<b>IA8 Bulk Coolant Tank, 3,000 gallons</b>																							
IA1.023	Bulk Coolant Tank, 3,000 gallons	4-07-056-04	4,617,410	410,847		24	8,760			3	24,000	gallons Coolant			VOC	0.0025	lb/1000 gallon			0.000007	0.000030	EPA Tanks	
					Equipment Dimensions (ft): 8 H x 8 D																		
					Release Type: Vertical																		
<b>IA9 Bulk Used Oil Tank, 3,000 gallons</b>																							
IA1.024	Bulk Used Oil Tank, 3,000 gallons	3-06-300-06	4,617,410	410,850		24	8,760			14	120,000	gallons Used Oil			VOC	0.017	lb/1000 gallon			0.0002	0.0010	EPA Tanks	
					Equipment Dimensions (ft): 8 H x 8 D																		
					Release Type: Vertical																		
<b>IA10 Bulk Used Coolant Tank, 3,000 gallons</b>																							
IA1.025	Bulk Used Coolant Tank, 3,000 gallons	4-07-056-04	4,617,420	410,844		24	8,760			3	24,000	gallons Used Coolant			VOC	0.0025	lb/1000 gallon			0.000007	0.000030	EPA Tanks	
					Equipment Dimensions (ft): 8 H x 8 D																		
					Release Type: Vertical																		



*BAPC*

*Lithium Nevada Corporation – Thacker Pass Project*

*FIN: A1270; AP1479-4334*

*February 25, 2022*

*Air Case 10677 - Class II New*

*Technical Review*

# Appendix 2

NVAAQS Memo

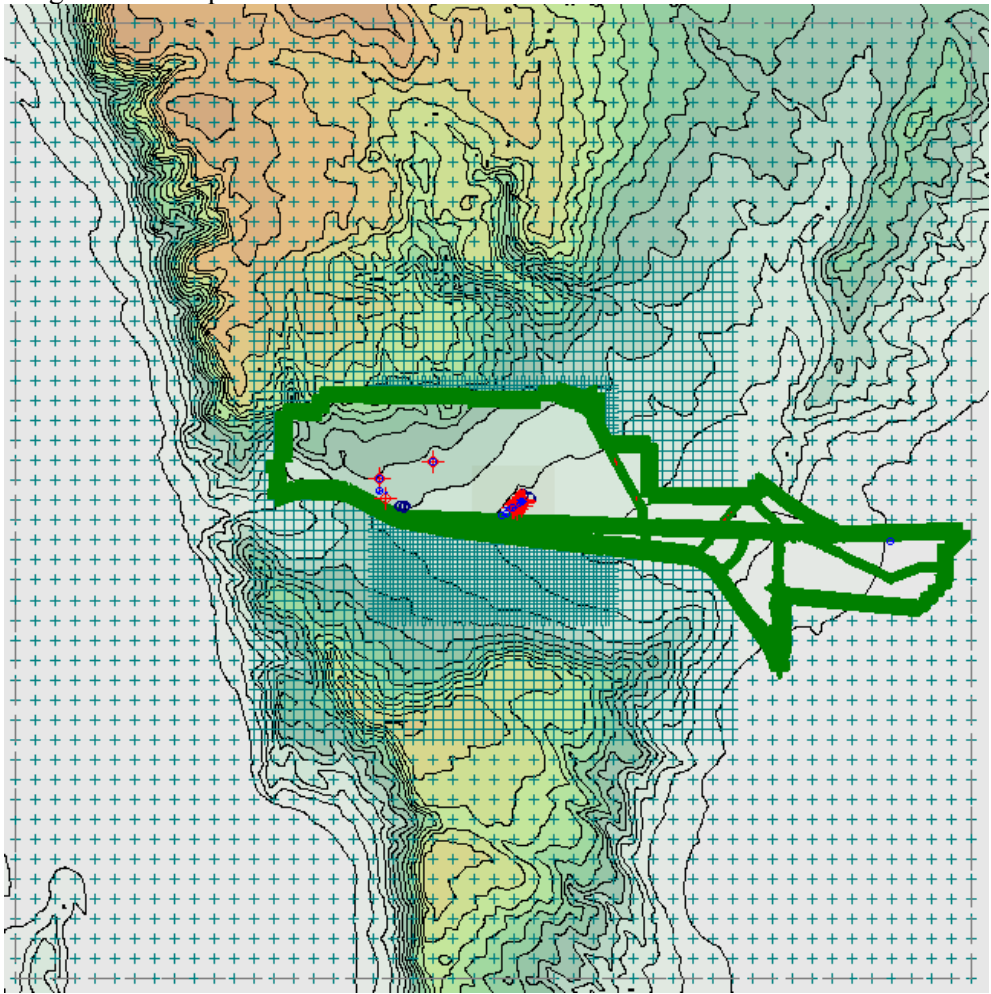
# Memo

To: Ben Kahue, Ashley Taylor, BAPC  
From: Scott Speckart, BAQP  
CC: Permitting Files by way of Permit Writer  
Date: 7/8/2021  
Re: NvAAQS/NAAQS Modeling Analysis – Lithium Nevada Corporation; Thacker Pass Project (A1270; AP1479-4334; AC10677)

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The BAQP performed a modeling analysis to show compliance with the Nevada Ambient Air Quality Standards, and the National Ambient Air Quality Standards for aforementioned proposed permitting action. The technical details of the modeling analysis are presented in the table below. Unless otherwise noted, all sources were characterized in accordance with the most recent BAQP policy, EPA Guidance, and regulatory default options as described in 40 CFR Part 51 Appendix W.

<b>NvAAQS Applicability Date</b>	05/16/2018	
<b>Hydrographic Area</b>	HA30A and 33A	
<b>AERMOD Version</b>	v.19191	
<b>Summary</b>	Lithium Nevada applied for a new air permit, AP1479-4334 for their Thacker Pass project.	
<b>Pollutants Analyzed</b>	CO <sup>(1-hr, 8-hr)</sup> , NO <sub>2</sub> <sup>(1-hr, Ann.)</sup> , PM <sub>2.5</sub> <sup>(24-hr, Ann.)</sup> , PM <sub>10</sub> <sup>(24-hr.)</sup> , SO <sub>2</sub> <sup>(1-hr, 3-hr, 24-hr, Ann.)</sup> , H <sub>2</sub> S <sup>(1-hr)</sup>	
<b>Met Station</b>	Surface: Lithium Nevada Onsite	Profile: Lithium Nevada Onsite
<b>Anemometer Elevation</b>	1597.0 m	
<b>Met Years Used</b>	2012-2013	
<b>AERMET Version</b>	v.19191	
<b>Modeling Datum</b>	NAD83	
<b>Model Source Parameter Notes</b>	Source location, release height, release temperature and flow rates were provided by the applicant and were verified based on the permit writer's spreadsheet. The emission rates are based on BAPC emissions calculations, which were based on the applicant requested operation parameters.	
<b>Plant Boundary</b>	The plant boundary was specified as was in the submitted model, but with the modification of receptors on roads and corridors that have been publicly accessible.	

<p><b>Model Receptors</b></p>	<p>19,741 receptors were utilized. The receptors were spaced 20 m along the plant boundary. The spacing increased to 500 m and covered an area of 576 km<sup>2</sup>. As noted previously, corridors with possible public access contained receptors. An image of the receptor field is shown below:</p> 	
<p><b>Modeled Buildings</b></p>	<p>Buildings were modeled as in the application.</p>	
<p><b>Terrain Processing</b></p>	<p>AERMAP v.18081 was used to process the terrain within the model boundary, and assign base elevations for all receptors, sources, and buildings.</p>	
<p><b>Terrain Data Used</b></p>	<p>USGS DEM 1-degree (30m)</p>	
<p><b>Background Concentrations</b></p>	<p>PM<sub>2.5</sub> Annual – 2.3 µg/m<sup>3</sup></p>	<p>PM<sub>10</sub> 24-hr – 10.2 µg/m<sup>3</sup> PM<sub>2.5</sub> 24-hr – 8.0 µg/m<sup>3</sup></p>
<p><b>Additional Modeling Analysis Comments</b></p>	<p>Adjusted ustar was utilized. Also, the ARM 2 ratio method was utilized with the default ratios of a minimum of 0.5 and a maximum of 0.9.</p>	
<p><b>Analysis Results</b></p>	<p>The BAQP’s analysis of the impacts of the proposed action to ambient air quality shows that the proposed action will not cause an exceedance of NvAAQS/NAAQS.</p>	



*BAPC*

*Lithium Nevada Corporation – Thacker Pass Project*

*FIN: A1270; AP1479-4334*

*February 25, 2022*

*Air Case 10677 - Class II New*

*Technical Review*

# Appendix 3

Public Comments and Responses relevant to  
Air Quality Operating Permit Received Prior to October 18, 2021



DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
2/26/2021	GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit	Sulfuric Acid Plant	Is technology required to be specified in the permit application? <i>[See GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit]</i>	In the submitted application to NDEP, the facility proposes to use a tail gas scrubber manufactured by DuPont Clean Technologies to control sulfur dioxide emissions out of the sulfuric acid plant. The tail gas scrubber will be a required air pollution control device in the air quality operating permit. We reviewed the submitted manufacturer's guarantee for the scrubber, the specifications for the scrubber, and the statistics at other installations which use this scrubber. If you wish to learn more, the information submitted by the facility on the scrubber technology can be found here (the permit number is AP1479-4334): <a href="https://documentviewerpublic.ndep.nv.gov/Common/Login.aspx?ReturnUrl=%2f">https://documentviewerpublic.ndep.nv.gov/Common/Login.aspx?ReturnUrl=%2f</a>	Permit Sections V.X (5) and (6)
2/26/2021	GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit	Sulfuric Acid Plant	How will NDEP ensure that the emission controls system yet to be specified will be able to control sulfur dioxide emissions? <i>[See GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit]</i>	The facility will ensure sulfur dioxide emissions are under permitted emission limits with initial and annual stack tests and the facility will be required to have a Continuous Emissions Monitoring (CEMS) Unit on the Acid Plant. The CEMS unit will have an initial certification test, daily calibration, and a quarterly audit. In addition, readings from the CEMS unit are transferred every second to a Data Acquisition and Handling System (DAHS) where the reading is recorded and stored. The data can then be reviewed in any time interval that is requested (e.g., 6-minute averages, 30-day rolling averages, etc.). The CEMS unit will allow the facility to be notified quickly if something with the unit is not operating properly.  NDEP will ensure that sulfur emissions are under permitted emission limits by reviewing records and the data logged by the CEMS unit, performing onsite inspections, observing testing related to the CEMS unit, and validating testing reports. NDEP will also review source tests to make sure they were done correctly, and no limits were exceeded.	Permit Sections V.X (5) and (6)



DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
2/26/2021	GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit	Sulfuric Acid Plant	How will future emissions be controlled during increases in production? [See GBRW / Basin and Range Watch / Wildlands Defense vs. BLM Lawsuit]	The facility will be required to submit a revision application if they want to increase production. The revision must be approved and issued before any increase in production will occur. It must be verified that all increases in production will meet ambient air quality standards.	Nevada Administrative Code (NAC) 445B.099, NAC 445B.3465
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Permitting	<p>BLM has approved Phase 1 and Phase 2. It appears NDEP is going to bifurcate Thacker Pass into Phase 1 and Phase 2. There is concern locally that this bifurcated process will allow the company to imply minimized impacts to the community. The company has already played the Phase 1 and Phase 2 game with the community (where they tout Phase 2 jobs, but only mention Phase 1 water use and sulfur use). If the bifurcated approach continues with NDEP; will all cumulative impacts of the entire mine be considered in a Phase 2 permit?</p> <p>A) There is specific concern about the acid plant and class 1 and class 2 air quality permitting. Can two acid plants avoid class 1 air quality permitting by considering each individually in Phase 1 and Phase 2?</p>	<p>For the facility to move from Phase 1 to Phase 2 will require a revision to the permit and will be looked at cumulatively. So, each acid plant would not be considered individually, and their emissions will all be in conjunction with the overall emissions from the facility. If the facility's total emissions, including those from both acid plants, go above Class 2 thresholds then the facility will be required to submit a class 1 application.</p> <p>If the facility proposed to increase production or add new units, they will be required to submit an application prior to implementing any of these changes. None of these changes can be implemented until we have evaluated the application and issued a revised permit.</p> <p>In addition, Public Notice is required on Class 2 Applications when one of the following two conditions are met: the facility is located within 1,000 feet of a school, hospital, or residential area; or the revision increases allowable emissions-specific thresholds. For example, it would appear that if the facility wanted to go from what was proposed in the application to emissions proposed in the phase 2 in the EIS public notice would be triggered by the increase in PM<sub>10</sub> and PM<sub>2.5</sub>.</p>	NAC 445B.187, NAC 445B.3457

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Permitting	Do you have a list of what NDEP considers Hazardous Air Pollutant and Regulated Air Pollutants for purposes of Class 1 and Class 2 permitting?	<p>There are 8 regulated pollutants and 187 hazardous air pollutants that we take into consideration during our analysis. The 8 regulated pollutants all have either national and/or Nevada air quality standards. Nevada air quality standards are the same as the federal limits with the exception of hydrogen sulfide which is a state only standard.:</p> <ul style="list-style-type: none"> <li>• PM<sub>10</sub> (particulate matter less than or equal to 10 microns in diameter)</li> <li>• PM<sub>2.5</sub> (particulate matter less than or equal to 2.5 microns in diameter)</li> <li>• SO<sub>2</sub> (Sulfur Dioxide)</li> <li>• NO<sub>2</sub> (Nitrogen Dioxide)</li> <li>• CO (Carbon Monoxide)</li> <li>• Pb (Lead)</li> <li>• O<sub>3</sub> (Ozone) (emissions calculated as Volatile Organic Compounds)</li> <li>• H<sub>2</sub>S (Hydrogen Sulfide) (State only ambient air quality standard)</li> </ul> <p>An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health. Secondary standards are set to protect plants, forests, crops and materials from damage due to exposure to the regulated pollutants.</p> <p>When we do our analysis of the application that has been submitted, we evaluate whether the applicant has taken into account all stationary equipment that has the potential to emit these pollutants based on the information provided in the application.</p> <p>The hazardous air pollutants from the Thacker Pass project are generated from fuel combustion from stationary equipment such as startup burners or boilers. These emissions are calculated utilizing a standardized method developed by the EPA.</p>	NAC 445B.084, NAC 445B.153, NAC 445B.22097, <a href="https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications">https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications</a>

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Emergency Planning	<p>Does NDEP consider the potential for mine accidents (i.e. 13,000 tons of molten sulfur, 14,000 tons of sulfuric acid, and 92,000 gallons of diesel (plant+mine) will be stored at the mine)? Or does NDEP assume the plant/mine will operate without accidents?</p> <p>A) For purposes of bonding? <i>[See NDEP-BMRR]</i></p> <p>B) For purposes of potential air quality and groundwater pollution?</p>	<p>A) Scheduled maintenance, testing, or scheduled repairs which may result in excess emissions of regulated air pollutants must be approved in advance by the NDEP's Bureau of Air Pollution Control (BAPC) and performed during a time designated by NDEP as being favorable for atmospheric ventilation. If there is a malfunction or upset of the process equipment or equipment for controlling pollution or during start-up or shutdown of that equipment, the facility must notify BAPC within 24 hours. Within 15 days, the facility must submit additional information so the seriousness of the excess emissions can be determined by BAPC. The facility must estimate the magnitude of emissions and include the time and duration, as well as the steps that were taken to remedy the malfunction or prevent the reoccurrence. The BAPC will make a determination if a violation occurred.</p>	Permit Section I.G
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Ambient Air Quality Standards	<p>Has NDEP made any on the ground field observance of Thacker Pass? Specifically:</p> <p>A) Water levels and conditions of LNC wells? <i>[See NDEP-BMRR]</i></p> <p>B) Baseline air quality conditions?</p>	<p>B) NDEP has a series of ambient air quality monitors throughout the State; the closest monitor is in Elko. Some Title V (Class I Major Sources) facilities are required to monitor background levels prior to commencing construction but this is not a requirement for any Class 2 Facility. NDEP does apply a background concentration for modeling purposed for PM<sub>10</sub> and PM<sub>2.5</sub>.</p>	NAC 445B.22097

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Compliance	How much staff does NDEP have to independently verify compliance via inspections statewide?	<p>The BAPC has positions for 6 inspectors and 2 supervisors to verify compliance with Air Quality Operating Permits in all counties in Nevada with the exception of Clark and Washoe Counties. One inspector is specifically assigned to oversee all minor source facilities in Humboldt County in-order-to maintain continuity and institutional knowledge of the area.</p> <p>However, other inspectors and the supervisor may assist with compliance actions and/or investigations should more resources be required.</p>	

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Odors	If my property stinks or has smog as a result of the mine, does NDEP provide any remedy, if the mine is technically meeting air quality standards?	<p>If a property owner detects odors as a result of the mine operation, NDEP will investigate complaints by following applicable regulations.</p> <p>NAC 445B.22087(1) states, "No person may discharge or cause to be discharged, from any stationary source, any material or regulated air pollutant which is or tends to be offensive to the senses, injurious or detrimental to health and safety, or which in any way interferes with or prevents the comfortable enjoyment of life or property."</p> <p>Complaints of odors must be investigated pursuant to NAC 445B.22087(2), which states, "The Director shall investigate an odor when 30 percent or more of a sample of the people exposed to it believe it to be objectionable in usual places of occupancy. The sample must be at least 20 people or 75 percent of those exposed if fewer than 20 people are exposed. Possible violations for detected odors must be considered pursuant to NAC 445B.22087(3), which states, "The Director shall deem the odor to be a violation if he or she is able to make two odor measurements within a period of 1 hour. These measurements must be separated by at least 15 minutes. An odor measurement consists of a detectable odor after the odorous air has been diluted with eight or more volumes of odor-free air. The NDEP utilizes a Nasal Ranger, which is a portable odor detecting device capable of measuring odors with various dilutions in real time.</p> <p>If emissions coming from equipment on site are visible (i.e., smoke from a stack), the NDEP will perform an EPA Reference Method 9 visible emissions observation to determine the level of opacity and determine if a violation has occurred.</p>	NAC 445B.22087

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Sulfuric Acid Plant – Emission Limits / Enforcement	<p>In NDEP permitting, the mine claims Sulfur dioxide emissions will only be 41.9 tons a year (in phase 1). Other sulfuric acid plants of comparable size emit 700-2400 tons of Sulfur Dioxide a year. Hence, the mine's figures have generated skepticism.</p> <p>A) Will the mine be bound to that 41.9 tons a year?</p> <p>B) What would the penalties be, if the mine had a minor exceedance (i.e. something like 43 tons a year)?</p> <p>C) What would the penalties be if the mine had a major exceedance (i.e. in excess of 100 tons a year)?</p>	<p>A) Yes, the mine will be bound to the limits that are in the permit. The facility will be required to conduct initial and annual performance tests and have a continuous emissions monitoring system to monitor Sulfur Dioxide Emissions.</p> <p>B) The penalty could vary considerably depending on the extent of the violations. If the only condition violated was the annual emissions limit the penalty could be as low as \$1,000. If the violation of the annual emission limit was due to other violations such as exceeding the permitted hourly emission limit or annual hours of operation penalties could go as high as \$10,000 per day per violation.</p> <p>C) Violations of this magnitude could result in the issuance of either a "Notice of Findings and Order" to limit operating parameters, as necessary, or a "Stop Order", especially if the facility exceeded the state or federal ambient air quality standards, the excess emissions significantly exceeded the permitted limit, or if the exceedance resulted in the facility not having an appropriate permit to match the actual emissions. Penalties could be up to \$10,000 per day per violation. Additionally, if the exceedance is such that the source would be subject to federal permitting requirements (Title V or PSD) the U.S. Environmental Protection Agency could initiate an enforcement action with penalties not limited by NRS 445B.470.</p>	<p>A) Permit Section V.X</p> <p>B) Nevada Revised Statutes (NRS) 445B.470.2</p> <p>C) NRS 445B.470.2</p>

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Stack Testing	Is there any way for citizens to independently verify emissions at Thacker Pass?	<p>The application and subsequent requests for information (RFI) are all public record. Citizens can access this application and RFI's from the NDEP website and review all the same information that we have been provided. In addition, the technical review and emission spreadsheet will be part of the public record and available for public review during the public notice period. These documents can be found here (the Permit number is AP14794334):  <a href="https://documentviewerpublic.ndep.nv.gov/Common/Login.aspx?ReturnUrl=%2f">https://documentviewerpublic.ndep.nv.gov/Common/Login.aspx?ReturnUrl=%2f</a></p>	

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4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Stack Testing	Does NDEP have any process for citizens hire a qualified professional to verify smokestack emissions (or other pollution problems)? Or can the company just lock everybody, except NDEP, out of this mine on public lands?	<p>The NDEP does not have the authority to require a facility to allow members of the public to conduct third party verifications.</p> <p>The facility is required to submit a “Stack Test Protocol” (a detailed plan of the intended timeline and procedures for testing) for NDEP review prior to conducting any testing. The “Stack Test Protocol”, as well as any related correspondence, are a public record and can be accessed by the public for review at the same location provided in the previous question. NDEP attends as many stack tests as possible to observe testing while it is conducted; prioritizing testing of facilities that may pose a greater risk to human health and the environment. NDEP inspectors also review all final reports of the testing and use our in-house program to verify the calculations and results that are presented. Upon review of all information, staff deems the test valid or invalid. Testing deemed invalid is required to be repeated in a timely manner.</p> <p>As defined in 40 CFR Part 50 – National Primary and Secondary Ambient Air Quality Standards, Ambient air means that portion of the atmosphere, external to buildings, to which the general public has access (40 CFR § 50.1(e)). As such, NDEP verifies the site meets air quality standards at the locations where the public has access.</p> <p>If there are access restriction requirements from the BLM or MSHA then that will need to be discussed with those agencies.</p>	NAC 445B.252, 40 CFR § 50.1(e)



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4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Enforcement	It has been asserted that there is billions of dollars' worth of lithium at Thacker Pass; can the mine just pay fines and keep violating air quality standards?	If a company fails to maintain or return to compliance, the NDEP has authority to issue violations and/or a Stop Order, depending on the severity of non-compliance and other circumstances involved in the specific situation. If a company violates the conditions of a "Stop Order" the NDEP has the ability to pursue an injunction through the courts.	NAC 445B.277
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Mobile Sources	It is our understanding that NDEP doesn't consider mobile emissions. LNC will burn over a semi load of diesel a day at the mine site (on mobile equipment). If my property is devalued by poor air quality (or I otherwise suffer injury); can the mine avoid regulation by NDEP by claiming emissions are mobile, instead of fixed emissions?	The facility can only claim that emissions are mobile if they meet the definition of non-road engines. This includes things such as portable generators. If an engine remains stationary for more than 12-months, then we would no longer consider that engine a non-road engine and it may need to be permitted.  Even though we do not permit these non-road engines, they are required to meet the emission standards set by EPA.	NAC 445B.113, NAC 445B.187(3), 40 CFR Part 1068.30
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Tailings Pile Emissions	LNC will import roughly 680,000 tons of sulfur each year, which will be burned creating 5,800 tons of sulfuric acid a day, and the resulting sulfur compounds from acid processing will be dumped on the tailings pile (millions of tons over the life of the mine). Sulfur compounds in landfills have been shown to break down into harmful gasses.  A) What division of NDEP would regulate gasses emitted from the tailings pile (Air Quality or Water Quality/Mining Divisions)?	A) The BAPC does not include gaseous emissions from tailings piles in our calculations for Class 2 sources. The tailings and gangue piles are not anticipated to have an environment that is both wet and has organic matter for bacteria to thrive to deplete the environment of oxygen to produce H <sub>2</sub> S.	

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4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Tailings Pile Emissions	<p>LNC will import roughly 680,000 tons of sulfur each year, which will be burned creating 5,800 tons of sulfuric acid a day, and the resulting sulfur compounds from acid processing will be dumped on the tailings pile (millions of tons over the life of the mine). Sulfur compounds in landfills have been shown to break down into harmful gasses.</p> <p>B) What about harmful chemical dust resulting from the tailings pile (Air Quality or Water Quality/Mining Divisions)</p>	B) According to an analysis provided in the BLM's EIS the Clay Tailings Facility for Phase 1 will be made up of 64% Acid leach filter cake (clay material), 17% Neutralization filter cake, 15% Magnesium sulfate salts, and 3% sodium/potassium sulfate salts (Table 4.21). The facility is required to control dust at all times.	Permit Section VIII, NAC 445B.22037
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Odors	The company assures us that this mine/plant will not smell. Is there any way we can hold the company to these promises? Does NDEP have standards for distances away from the mine?	See "Odors" Response Above	
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Odors / Ambient Air Quality Standards	If my property stinks and I can show elevated air pollutants above pre-mine background levels; is this grounds for NDEP regulation?	<p>See "Odors" Response Above</p> <p>The facility must meet Nevada and National Ambient Air Quality Standards at the fence line of the facility.</p>	NAC 445B.22097

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4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Ambient Air Quality Standards	What are the fines if the mine violates air quality standards?	<p>Penalty recommendations to the State Environmental Commission start with base penalties from the penalty matrix found as Attachment 8 of the SEC_Information_Packet_2021.pdf (nv.gov).</p> <p>The base penalties are determined by the Class of permit and the regulatory or permitting condition that has been violated. The base penalties are used in conjunction with the penalty calculation worksheet found as Attachment 9 of the SEC Information Packet. The penalty calculation worksheet considers the number of violations, the severity of the violations, and the facility's compliance history. If, for example, a facility fails a source test the penalty for a facility the size of the Thacker Pass Mine is \$5,000 per "synthetic minor" pollutant or \$3,000 for all other pollutants. If an emission unit at a facility was found emitting a synthetic minor pollutant at 150% of the permitted limit the penalty would increase from \$5,000 to \$7,500. If the facility has been issued any violations within the last 5 years, the recommended penalty increases by 5% for each prior violation and an additional 150% to 300% if a violation was issued for a similar issue (i.e., failed source test). The limit on penalties that can be levied is \$10,000 per day per violation pursuant to Nevada Revised Statutes (NRS) 445B.470.</p>	NRS 445B.470

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Compliance	What frequency would the mine be checked for air quality compliance, and are NDEP compliance checks of a specific required frequency?	<p>Per our agreement with EPA, NDEP shall conduct a Full Compliance Evaluation (FCE) (includes review of records, all required reports, and an on-site inspection) a minimum once every five years. The NDEP shall also, per the agreement, conduct a Partial Compliance Evaluation (PCE) (includes review of all required reports) on all other years that an FCE is not conducted.</p> <p>We have the discretion to conduct on-site inspections on a more frequent basis. And NDEP may also visit site on the basis of an odor or dust complaint.</p>	NDEP's Compliance Monitoring Strategy Plan for Federal Fiscal Years FY23-FY28
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Compliance	What methods does NDEP use to ensure sensor accuracy on emission smokestacks? Does NDEP use methods of determining smokestack emissions, aside from company provided sensors?	The Facility is required to install Continuous Emissions Monitoring System (CEMS) on the Sulfuric Acid Plant stack for sulfur dioxide (SO <sub>2</sub> ) emissions. The CEMS will be required to undergo daily calibrations and quarterly audits to ensure they are operating properly. The facility will also be required to have initial testing and annual testing of stack emissions conducted by a third-party vendor as additional comparisons to verify that the CEMS is continuing to produce accurate readings. In addition, there will be initial and annual or renewal stack test requirements.	Permit Section IV, Section V – Testing for individual units will be listed as required for each unit
4/12/2021	Thacker Pass Concerned Citizens (Edward Bartell)	Ambient Air Quality Standards	Will NDEP gather pre-mine background levels of air pollution, in the Kings River, and Orovada Valleys?	See "Ambient Air Quality Standards" Response Above	
4/22/2021	Thacker Pass Concerned Citizens Meeting (From Chat)	Mobile Sources	Carl Van Warmerdam @ 7:15 PM – Are trucks servicing the mine taken into consideration for air quality?	See "Mobile Sources" Response Above	

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4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Stack Testing	<p>Denise Cerri – You mentioned during the monitoring and compliance phase that there is 3rd party verification.</p> <ul style="list-style-type: none"> <li>• Who chooses the 3rd party verifier and who pays for it?</li> <li>• How can be we confident if it is paid for by the mine operator?</li> <li>• What confidence can we have in the results off these compliance tests?</li> </ul>	<p>Stack testing must follow stringent EPA test procedures. Tests, in many cases, are observed by compliance staff. The results of the tests must be submitted within 60 days after testing and certified as to their truth and accuracy by the testing company. [NAC 445B.252.8, Testing and Sampling. "All information and analytical results of testing and sampling must be certified as to their truth and accuracy and as to their compliance with all provisions of these regulations, and copies of these results must be provided to the Director no later than 60 days after the testing or sampling, or both."] The compliance team will audit the results. If test results show EPA test procedures were not followed, the test results can be invalidated. If the test results are invalidated, the facility will have to retest within 60 days. If test results show a system failed, the facility will also have to retest within 60 days.</p> <p>The compliance staff has the same training that stack testers get. We also have an in-house program that recalculates the results to ensure sure we get the same results. We work with 3rd parties stack testers frequently and are familiar with them and their personnel.</p>	Permit Section I.H, NAC 445B.252.8
4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	BLM EIS Differences with Air Permit Application Submitted to NDEP	Ed Bartell – Phase I acid plant is 2900 tons maximum capacity. In NDEP process, it is roughly 3300 tons. This is 400 tons more than approved in the Phase I EIS. How do you deal with that discrepancy?	NDEP's reviewed the proposed emissions inventory in the application submitted to us and we verify these emissions by developing and calculating our own emissions inventory. Our analysis also takes into account the location of the equipment. All of these factors will be considered in NDEP's air dispersion model. This model demonstrated that what the mine has proposed will comply with ambient air quality standards. The facility will be held to the emission limits and throughputs in the Air Quality Operating Permit by NDEP.	Permit Sections V.X (2) and (3)

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4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Sulfuric Acid Plant	Karen – Is there a plant similar in size or application and materials to compare this proposed plant to? <i>[From GBRW John Hadder – Kennecott Copper in AZ is the best in the US and LNC is claiming even lower emission levels]</i>	We reviewed the submitted manufacturer's guarantee for the scrubber, the specifications for the scrubber, and the statistics at other installations which use this scrubber. The facility will be required to verify the permitted emissions with initial and annual source tests. They will also be required to have a Continuous Emissions Monitoring System to continuously monitor SO <sub>2</sub> emissions. If the facility violates the limits of the permit, they will be subject to violations and associated fines.	Permit Sections V.X. (5) and (6), Section VI
4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Sulfuric Acid Plant	Karen – Smaller plants that are similar have a hard time meeting the limits that are set, and their plants are much smaller. If smaller plants are having a hard time meeting their emission limits, how is Thacker pass planning on meeting their limits considering this is a much larger plant?	See "Sulfuric Acid Plant" Response(s) Above	
4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Complaints	Terry Crawford – If an individual observes a suspected emission violation how can they report that (to NDEP)?	Individuals can report any suspected air emission violation to the BAPC at 775-687-9349.  They can report any suspected environmental violation to the 24/7 NDEP Spill Hotline at 775-687-9485, or 888-331-6337. Individuals can remain anonymous. Individuals will communicate with a live person when they call the NDEP Spill Hotline.	Permit Section I.G
4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Complaints	Terry Crawford – What is the response time if substantial information is provided?	The response time depends on the nature of the event, please note that NDEP is not an emergency response organization. Depending on the nature of the air issue or violation, we would respond according to when we are able and based on severity.  The facility is also required to report excess emissions within 24 hours and follow up with investigation/findings within 14 days after the initial report (15-day report).	Permit Section I.G

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4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Complaints	Terry Crawford – Different "sections" are issuing their "portions" of the permit. Are these issued as one, can one hold up the whole facility -- one for air, one for water, etc?	There are 3 different permits being issued to this facility from NDEP, 1 from the Air Bureau and 2 from the Mining Bureau. All 3 permits must be issued before the facility can start construction.	
4/22/2021	Thacker Pass Concerned Citizens Meeting (Spoken During Meeting)	Complaints	Terry Crawford – Are technical questions submitted to the facility available for public review?	All technical questions are public records.	
5/25/2021	Public Meeting	Coordinating Agencies	Can you communicate with other agencies regulating lithium mines?	Yes, NDEP is actively working with other agencies, and will continue to communicate any concerns that are applicable to the agency.	
5/25/2021	Public Meeting	Spills	Does NDEP anticipate that a number of spills will occur at the mine?	For BAPC, any emissions above those permitted would be considered excess emissions and a violation of the air permit.	Permit Section I.G
5/25/2021	Public Meeting	Uranium	How is uranium monitored?	Radiation regulations and laws from EPA can be found here: <a href="https://www.epa.gov/radiation/radiation-regulations-and-laws">https://www.epa.gov/radiation/radiation-regulations-and-laws</a> . The Clean Air Act and federal regulations have specific regulations for certain types of radiation sources. This facility is not one of the listed sources. If this were to change, specific monitoring requirements for uranium would be required from the facility.	



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5/25/2021	Public Meeting	Citizen Sampling	Would reports from the community or mining staff regarding sampling issues spark an investigation?	<p>Sampling required by the Air Quality Operating Permit will be required to be obtained by companies contracted by the facility or facility staff; and compliance staff will review the reports.</p> <p>If the community or mining staff have concerns regarding sampling issues, BAPC will consider the information and evaluate within the context of the Air Quality Operating Permit.</p>	
6/24/2021	Public Meeting @ 6 PM	Enforcement	How is a penalty against the mine assessed?	See "Enforcement" Response(s) Above	
6/24/2021	Public Meeting @ 6 PM	Ownership Change	If the mine is sold, how would the air permitting process change?	If the mine is sold the new owner would need to get the Air Quality Operating Permit transferred to them through an Administrative Amendment. The new owner would be required to comply with the requirements in the existing permit. If the new facility wanted to make changes that would increase emissions or add additional equipment the facility would be required to submit an application to revision the permit and will not be able to implement any of the proposed changes until a revised permit has been issued.	NAC 445B.287
6/24/2021	Public Meeting @ 6 PM	Sulfuric Acid Plant	Is the volume of gas (and the sensor) accurate; is there a way to measure the volume of gas being emitted?	<p>Exhaust flows will be determined during annual stack testing for particulate matter, sulfur dioxide, nitrogen oxide, and sulfuric acid mist. The emission rates and stack flows were determined by engineer design. There will be a Continuous Emissions Monitoring System (CEMS) that will continuously monitor the SO<sub>2</sub> concentration of the stack and the exhaust flow rate. From those measurements, a total gas flow rate can be calculated.</p> <p>In order for a CEMS to pass annual audits, the unit must meet a confidence level of 95%.</p>	Permit Sections V.X (5) and (6)



DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
6/24/2021	Public Meeting @ 6 PM	Citizen Sampling	Should concerned citizens work with NDEP to do independent monitoring?	See "Citizen Sampling" Response(s) Above	
6/24/2021	Public Meeting @ 6 PM	Enforcement	What regulations are these penalties based on?	See "Enforcement" Response(s) Above	
6/16/2021	Information Requests	Information Requests	How long does Lithium Nevada have to answer questions posed by NDEP?	For the application process the facility can take as long needed to answer the questions the BAPC asks. The regulatory timeframe is extended for as long as it takes for the facility to submit a complete response.	NRS 445B.210, NAC 445B.297, NRS 445B.300
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Compliance	"Who monitors the monitors?"	See "Compliance" Response(s) Above	
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	Do issues with mines in the past affect the permitting decision for this mine?	No. Each application is evaluated upon it's own merit. However, we do utilize institutional knowledge to update permit language based on previous compliance challenges.	
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	Is the State or the federal government more stringent with environmental protection laws; how does Nevada compare to other States?	<p>The Air Program uses both State and federal requirements to permit the facility. In cases where the requirements overlap with each other, the facility will need to meet both requirements. If one requirement is more stringent than the other, then less stringent requirement is met by the more stringent requirement.</p> <p>The Clean Air Act guides state permitting programs; however, states can add additional and more stringent requirements based on state specific air quality challenges.</p>	

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6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Ambient Air Quality Standards	How often will the site be monitored for impacts to air and water?	For the Air, the facility will be required to monitor hours of operation and throughput on a daily basis. In addition there will be initial and annual or renewal stack testing requirements on many of the systems. The facility will be required to have a Continuous Emissions Monitoring (CEMS) Unit on the Acid Plant for SO <sub>2</sub> emissions. The CEMS unit will have an initial certification test, daily calibration, and a quarterly audit. In addition, Readings from the CEMS unit are transferred every second to a Data Acquisition and Handling System (DAHS) where the reading is recorded and stored. The data can then be reviewed in any time interval that is requested (e.g., 6-minute averages, 30-day rolling averages, etc.). The CEMS unit will allow the facility to be notified quickly.	Permit Sections V and VI
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	How will people be notified of the public comment period for the intended permit decision?	The Public Notice will be posted to NDEP's website and NDEP's Thacker Pass website will be updated with this information as well. If you have signed up on our website to be notified about notices, you will get an email.	NAC 445B.3457
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	Are the permits for the mine updated?	The Air permit must be renewed by the facility every 5 years. At this time the facility will be required to submit a renewal application and the BAPC will revisit all calculations and will potentially ask more questions if new information has been provided or known; and will address any new standards that may be applicable to the facility.	NAC 445B.315
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Coordinating Agencies	How do the agencies involved coordinate with one another? Where in this process can the tribe voice its concern with the project?	See "Coordinating Agencies" Response Above.  The tribe can submit comments and/or request a meeting with NDEP at any time.	

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6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	If there is a difference between State and federal decisions, which decision is upheld?	The Air Program uses both State and federal requirements to permit the facility. In cases where the requirements overlap with each other, the facility will need to meet both requirements. If one requirement is more stringent than the other, then less stringent requirement is met by the more stringent requirement.	
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Ambient Air Quality Standards	Is there an increased air pollution risk by having other mining sites nearby?	Each stationary facility is modeled individually and emissions from each site must meet Nevada and National Ambient Air Quality Standards. And, for this facility, the closest mine or significant facility is over 25 miles away.	NAC 445B.310, NAC 445B.311
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Permitting	What are the steps for all agencies involved to finalize the project?	For the air permit, BAPC will post the documents for Public Notice and will hold a hearing at the end of the 30-day notice period. After this Public Notice period BAPC will review and respond to comments and make any changes to the permit that may be required. Once this review is complete a permit will be issued or denied.	NAV 445B.3457
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Ambient Air Quality Standards	Where are the nearest air monitors?	The nearest Meteorological site is in Winnemucca (Winnemucca NWS - 24128) and the nearest air monitor is in Elko and monitors PM <sub>10</sub> .	
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Compliance	Which agency regulates the mine?	For air emissions, this facility is regulated by NDEP's BAPC.	
6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Compliance	How is air pollution monitored?	See "Compliance" Response(s) Above	

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6/16/2021	Fort McDermitt Paiute and Shoshone Tribe Meeting	Ambient Air Quality Standards	Will the wind push air pollution into the valley?	Based on the expected emissions from the sources, and the modeling performed for the site, emissions will be below the Nevada and National Ambient Air Quality Standards at the boundary of the project area. The modeling was performed using the highest permitted emission limits and the worst-case weather situation that can produce the highest predicted concentration of pollutants outside the plant boundary.	NAC 445B.22097
6/24/2021	Public Meeting @ 1 PM	Odors	At the offload site in Winnemucca, while trucks are unloading chemicals, is there a way for residents near the facility to issue an odor complaint?	See "Odors" Response(s) Above	
6/24/2021	Public Meeting @ 1 PM	Odors	Can a household issue an odor complaint if it's less than 20 people?	See "Odors" Response(s) Above  Yes. A violation for odors can be issued if the BAPC makes two odor measurements within a one-hour period. The two measurements must be separated by at least 15 minutes. An odor measurement consists of a detectable odor after the odorous air has been diluted with eight or more volumes of odor-free air.	Permit Section I.D, NAC 445B.22087
6/24/2021	Public Meeting @ 1 PM	Stack Testing	For third-party emission testers, does Lithium Nevada hire the testers?	See "Stack Testing" Response(s) Above	

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6/24/2021	Public Meeting @ 1 PM	Sulfuric Acid Plant	Have you been able to conduct research on the control equipment being used at the facility; is it similar to how the tailpipe of a car works?	See "Sulfuric Acid Plant" Response(s) Above  Yes, Technically the emission controls work the same as in a car in that the initial emissions from the emission units will be reduced. However, most of the controls will be liquid based in order to control the emission of PM, Sulfur Compounds, and any other water-soluble compound produced. See <a href="https://cleantechnologies.dupont.com/technologies/mecs/technologies-technologies-mecsdupont-clean-technologies-mecs-processes/mecsr-dynawaver-reverse-jet-wet-gas-scrubber-technology/">https://cleantechnologies.dupont.com/technologies/mecs/technologies-technologies-mecsdupont-clean-technologies-mecs-processes/mecsr-dynawaver-reverse-jet-wet-gas-scrubber-technology/</a>	
6/24/2021	Public Meeting @ 1 PM	Dust	How will the dust be controlled?	The facility will use a combination of two water trucks (14,000 gallons and 8,000 gallon), graveling/paving of roadways, dust palliatives, fencing or berming to prevent unauthorized access to disturbed areas, application of water sprays on material storage piles on a regular basis, overhead water spray racks or water hoses, track-out controls, landscape preservation and impact avoidance, pre-watering of areas to be disturbed, and 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.	Permit Section VIII. Surface Area Disturbance Conditions
6/24/2021	Public Meeting @ 1 PM	Spills / Mobile Source	If sulfur trucks unload sulfuric acid, will the emissions (or spills) from that process be deemed mobile or static?	Emissions from the sulfur trucks will be considered mobile while in transit and staging prior to offloading. Emissions during offloading and into the storage facility will be considered static and regulated by the air permit. The BAPC does not permit spills; however, any emissions above those permitted would be considered excess emissions and a violation of the air permit.	NAC 445B.037, NAC 445B.187

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
6/24/2021	Public Meeting @ 1 PM	Mobile Sources	If the emissions are classified as mobile, will the odor regulations still apply?	Odor regulations are only regulated at stationary sources.	NAC 445B.22087
6/24/2021	Public Meeting @ 1 PM	Ambient Air Quality Standards	Is the impact to wildlife considered for air permitting?	Secondary ambient air quality standards have been put into place to provide protection against damage to animals. "The Clean Air Act identifies two types of national ambient air quality standards. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings." [ <a href="https://www.epa.gov/criteria-air-pollutants/naaq-table">https://www.epa.gov/criteria-air-pollutants/naaq-table</a> ]	NAC 445B.22097
6/24/2021	Public Meeting @ 1 PM	Sulfuric Acid Plant	Is there an example of a similar facility operating within emission limits; is this technology being used in the U.S.?	See "Sulfuric Acid Plant" Response(s) Above	
6/24/2021	Public Meeting @ 1 PM	Odors	What will the smell be like from the expected emissions; is there equipment to measure odor/emissions outside of the plant?	Based on expected emissions of H <sub>2</sub> S, the maximum 1-hr concentration of H <sub>2</sub> S will be 6.4 micrograms/cubic meter. The expected concentration of H <sub>2</sub> S will be 0.0052 ppm. Odor detection of H <sub>2</sub> S starts at 0.010 ppm. It is anticipated that there shouldn't be any detectable H <sub>2</sub> S odors from the stationary sources.	NAC 445B.22087
6/24/2021	Public Meeting @ 1 PM	Tailings Pile Emissions	Who regulates the gas coming from the tailings pile?	See "Tailings Pile Emissions" Response(s) Above	

DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
6/24/2021	Public Meeting @ 1 PM	BLM EIS Differences with Air Permit Application Submitted to NDEP	BLM EIS Differences with Air Permit Application Submitted to NDEP	See "BLM EIS Differences with Air Permit Application Submitted to NDEP" Response Above	
6/24/2021	Public Meeting @ 1 PM	EPA Review	Why is NDEP requesting review from EPA if it's not required; are documents from that review publicly available?	While not required, NDEP can request that EPA review a Class 2 permit. This may be done on projects with new processes with applicable federal requirements and/or a high level of public interest. The EPA provided comments and permit language changes were incorporated; and the draft permit will be available during the public notice process.	
6/24/2021	Public Meeting @ 1 PM	Mobile Sources	Will plant at offload site be considered mobile or stationary; will the plant be permitted?	If the offload plant only consists of loading of trains to trucks, then activities at that source would only be considered mobile sources. If the site had units such as boilers or conveyors, then the facility could potentially need to be permitted if the activities met the Class 2 thresholds.	NAC 445B.037, NAC 445B.187
6/24/2021	Public Meeting @ 1 PM	Sulfuric Acid Plant	Will NDEP be able to constantly review lithium Nevada's continuous monitoring system?	No, NDEP will not be able to constantly review the Continuous Monitoring System. However, the facility is required to submit reports every quarter. The facility's quarterly audit reports are reviewed by the BAPC. Also, the facility is required to self-report when emissions are exceeded. Additionally, a Relative Accuracy Test Audit (RATA) of the CEMS conducted by a source testing company must be performed annually and will also be reviewed by BAPC.	Permit Section VI.A.11



DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
6/24/2021	Public Meeting @ 6 PM	Citizen Sampling	Are there companies that do independent air monitoring; would NDEP accept their submissions?	<p>Information about NDEP Air Quality Monitoring can be found here: <a href="https://ndep.nv.gov/air/air-quality-monitoring">https://ndep.nv.gov/air/air-quality-monitoring</a>.</p> <p>In regard to monitoring a facility's air emissions, the public can review stack test documents and related correspondence including Stack Test Protocols, Stack Test Reports, and Stack Test Report Reviews on NDEP's Document Viewer. Source test invalidation letters and failed source test notifications can also be viewed on-line.</p> <p>If independent air monitoring is conducted and provided to NDEP, BAPC will consider the information and evaluate within the context of the Air Quality Operating Permit.</p>	Permit Section I.H
6/24/2021	Public Meeting @ 6 PM	Enforcement	Can NDEP stop a facility from operation immediately if there is a serious violation?	If there are serious violations of the Air Quality Operating Permit NDEP does have the authority to stop operations immediately.	NAC 445B.190, NAC 445B.277
6/24/2021	Public Meeting @ 6 PM	Enforcement	How is a penalty against the mine assessed?	See "Enforcement" Response(s) Above	
6/24/2021	Public Meeting @ 6 PM	Ownership Change	If the mine is sold, how would the air permitting process change?	If the mine is sold the new owner would need to get the Air Quality Operating Permit transferred to them through an Administrative Amendment. The new owner would be required to comply with the requirements in the existing permit. If the new facility wanted to make changes that would increase emissions or add additional equipment the facility would be required to submit an application to revision the permit and will not be able to implement any of the proposed changes until a revised permit has been issued.	NAC 445B.287



DATE	FROM	TOPIC	QUESTION	DIVISION RESPONSE	PERMIT SECTION / REGULATORY CITATION
6/24/2021	Public Meeting @ 6 PM	Sulfuric Acid Plant	Is the volume of gas (and the sensor) accurate; is there a way to measure the volume of gas being emitted?	<p>Exhaust flows will be determined during annual stack testing for particulate matter, sulfur dioxide, nitrogen oxide, and sulfuric acid mist. The emission rates and stack flows were determined by engineer design. There will be a Continuous Emissions Monitoring System (CEMS) that will continuously monitor the SO<sub>2</sub> concentration of the stack and the exhaust flow rate. From those measurements, a total gas flow rate can be calculated.</p> <p>In order for a CEMS to pass annual audits, the unit must meet a confidence level of 95%.</p>	Permit Sections V.X (5) and (6)
6/24/2021	Public Meeting @ 6 PM	Citizen Sampling	Should concerned citizens work with NDEP to do independent monitoring?	See "Citizen Sampling" Response(s) Above	
6/24/2021	Public Meeting @ 6 PM	Enforcement	What regulations are these penalties based on?	See "Enforcement" Response(s) Above	



*BAPC*

*Lithium Nevada Corporation – Thacker Pass Project*

*FIN: A1270; AP1479-4334*

*February 25, 2022*

*Air Case 10677 - Class II New*

*Technical Review*

# Appendix 4

Public Noticed Permit with Changes Shown



## Bureau of Air Pollution Control

901 SOUTH STEWART STREET SUITE 4001

CARSON CITY, NEVADA 89701-5249

p: 775-687-9349 • [ndep.nv.gov/air](http://ndep.nv.gov/air)

**Facility ID No. A1270**

**Permit No. AP1479-4334**

### CLASS II AIR QUALITY OPERATING PERMIT

**Issued to:** LITHIUM NEVADA CORPORATION (HEREINAFTER REFERRED TO AS PERMITTEE)

**Mailing Address:** 3685 LAKESIDE DRIVE, RENO, NV 89509

**Driving Directions:** FROM OROVADA TRAVEL APPROXIMATELY 19 MILES WEST FROM THE US ROUTE 95 JUNCTION ON STATE ROUTE 293, THEN TURN NORTH (RIGHT) ONTO THE PROJECT MAIN ACCESS ROAD.

**General Facility Location:**

SECTIONS 1 AND 12, T 44 N, R 34 E, MDB&M  
SECTIONS 2 – 17, T 44 N, R 35 E, MDB&M  
SECTIONS 7, 8, 14 - 23, 29, T 44 N, R 36 E, MDB&M  
HA 30A – KINGS RIVER VALLEY/RIO KING  
HA 33A – QUINN RIVER VALLEY/OROVADA  
HUMBOLDT COUNTY  
NORTH 4,616,776 M, EAST 413,910 M, UTM ZONE 11, NAD 83

**Emission Unit List:**

**A. System 1 - Ore Handling Circuit**

- PF1.001 ROM Feed Hopper 1 Loading
- PF1.002 ROM Feed Hopper 1 transfer to Sizer Feed Conveyor (via feed belt)
- PF1.003 ROM Feed Hopper 2 loading
- PF1.004 ROM Feed Hopper 2 transfer to Sizer Feed Conveyor (via feed belt)

**B. System 2 - Mineral Sizer**

- PF1.005 Mineral Sizer and Associated Transfers (In: Sizer Feed Conveyor, Out: Scrubber Feed Conveyor)

**C. System 3 - Attrition Scrubber Feed**

- PF1.006 Scrubber Feed Conveyor to Attrition Scrubber (wet process)

**D. System 4 - Oversize Material Handling Circuit**

- PF1.007 Wet Screen to Oversize ~~Stacker~~ Conveyor
- PF1.008 Oversize Stacker to Oversize Stockpile

**E. System 5 - Gangue Handling Circuit**

- PF1.009 Gangue Dewatering Screen to Gangue Conveyor
- PF1.010 Gangue Conveyor to Gangue Stacker
- PF1.011 Gangue Stacker to Gangue Stockpile

**F. System 6 - Leach Tanks**

- S2.001 Leach Tank 1
- S2.002 Leach Tank 2
- S2.003 Leach Tank 3

**G. System 7 - Neutralization Filter Vents**

- S2.004 Neutralization Filter Vent 1
- S2.005 Neutralization Filter Vent 2
- S2.006 Neutralization Filter Vent 3
- S2.007 Neutralization Filter Vent 4



**Bureau of Air Pollution Control**

**Facility ID No. A1270**

**Permit No. AP1479-4334**

**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Emission Unit List: (continued)**

**H. System 8 - Neutralization Filter Filtrate Blow Vent**

S2.008 Neutralization Filter Filtrate Blow Vent

**I. System 9 – Tailings Feed Circuit**

- PF1.012 Neutralization Filter 1 to Discharge Feeder 1
- PF1.013 Discharge Feeder 1 to Tailings Collection Conveyor
- PF1.014 Neutralization Filter 2 to Discharge Feeder 2
- PF1.015 Discharge Feeder 2 to Tailings Collection Conveyor
- PF1.016 Neutralization Filter 3 to Discharge Feeder 3
- PF1.017 Discharge Feeder 3 to Tailings Collection Conveyor
- PF1.018 Neutralization Filter 4 to Discharge Feeder 4
- PF1.019 Discharge Feeder 4 to Tailings Collection Conveyor

**J. System 10 - Tailings Collection**

PF1.020 Tailings Collection Conveyor to Tailings Conveyor 1

**K. System 11 - Tailings Stacking**

- PF1.021 Tailings Conveyor 1 to Tailings Stacker
- PF1.022 Tailings Stacker to Clay Tailings Filter Stack

**L. System 12 - Sulfate Tailings Circuit**

- PF1.023 Na/K Sulfate Centrifuge discharge to Na/K Conveyor 1 ~~or Lithium Carbonate Dryer~~
- PF1.024 Na/K Conveyor 1 transfer to Na/K Conveyor 2
- PF1.025 Na/K Conveyor 2 to Tailings Collection Conveyor

**M. System 13 - Magnesium Precipitation Filter Vents**

- S2.009 Magnesium Precipitation Filter Vent 1
- S2.010 Magnesium Precipitation Filter Vent 2

**N. System 14 - Magnesium Precipitation Filter Filtrate Blow Vent**

S2.011 Magnesium Precipitation Filter Filtrate Blow Vent

**O. System 15 - Lithium Carbonate Dryer**

S2.012 Lithium Carbonate Dryer ~~transfer to Lithium Carbonate Material Handling~~

**P. System 16 - Lithium Carbonate Material Handling**

S2.013 Lithium Carbonate Material Handling ~~transfer to Lithium Carbonate Storage Bin Loading~~

**Q. System 17 - Lithium Carbonate Storage Bin**

S2.014 Lithium Carbonate Storage Bin Loading ~~transfer to Lithium Carbonate Packaging~~

**R. System 18 - Lithium Carbonate Packaging**

S2.015 Lithium Carbonate Packaging

**S. System 19 - Lime Silo**

- S2.016 Truck transfer of Lime to Underground Hopper
- S2.017 Underground Hopper and transfer to Silo (silo unloading through sealed transfers)



**Bureau of Air Pollution Control**

**Facility ID No. A1270**

**Permit No. AP1479-4334**

**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Emission Unit List: (continued)**

**T. System 20 - Soda Ash Silo**

S2.018 Soda Ash Silo loading (silo unloading through sealed transfers)

**U. System 21 - Sulfur Storage**

S2.019 Sulfur Storage 1

S2.020 Sulfur Storage 2

**V. System 22 - Package Boiler**

S2.021 Package Boiler

**W. System 23 - Start-Up Burner**

S2.022 Start-Up Burner

**X. System 24 - Sulfuric Acid Plant**

S2.023 Sulfuric Acid Plant

**Y. System 25 - Fire Pumps**

S2.024 Fire Pump 1 (Mine, 422 hp, John Deere, 2015 or newer)

S2.025 Fire Pump 2 (Process, 422 hp, John Deere, 2015 or newer)

**Z. System 26 - Emergency Generators**

S2.026 Emergency Generator 1 (Mine, 168 hp, Generac, 2009 or newer)

S2.027 Emergency Generator 2 (Mine, 168 hp, Generac, 2009 or newer)

**AA. System 27 - Gasoline Tank**

S2.028 Gasoline Tank, 1,000 gallons

**\*\*\*\*End of Emission Unit List\*\*\*\***



**Bureau of Air Pollution Control**

**Facility ID No. A1270**

**Permit No. AP1479-4334**

**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions**

- A. Prohibited acts; penalty; establishment of violation; request for prosecution (NRS 445B.470) (*State Only Requirement*)
1. A person shall not knowingly:
    - a. Violate any applicable provision, the terms or conditions of any permit or any provision for the filing of information;
    - b. Fail to pay any fee;
    - c. Falsify any material statement, representation or certification in any notice or report; or
    - d. Render inaccurate any monitoring device or method, required pursuant to the provisions of NRS 445B.100 to 445B.450, inclusive, or 445B.470 to 445B.640, inclusive, or any regulation adopted pursuant to those provisions.
  2. Any person who violates any provision of subsection 1 shall be punished by a fine of not more than \$10,000 for each day of the violation.
  3. The burden of proof and degree of knowledge required to establish a violation of subsection 1 are the same as those required by 42 U.S.C. § 7413(c), as that section existed on October 1, 1993.
  4. If, in the judgment of the Director of the Department or the Director's designee, any person is engaged in any act or practice which constitutes a criminal offense pursuant to NRS 445B.100 to 445B.640, inclusive, the Director of the Department or the designee may request that the Attorney General or the district attorney of the county in which the criminal offense is alleged to have occurred institute by indictment or information a criminal prosecution of the person.
  5. If, in the judgment of the control officer of a local air pollution control board, any person is engaged in such an act or practice, the control officer may request that the district attorney of the county in which the criminal offense is alleged to have occurred institute by indictment or information a criminal prosecution of the person.
- B. Visible emissions: Maximum opacity; determination and monitoring of opacity (NAC 445B.22017) (*Federally Enforceable SIP Requirement*)
1. Except as otherwise provided in this section and NAC 445B.2202, no owner or operator may cause or permit the discharge into the atmosphere from any emission unit which is of an opacity equal to or greater than 20 percent. Opacity must be determined by one of the following methods:
    - a. If opacity is determined by a visual measurement, it must be determined as set forth in Reference Method 9 in Appendix A of 40 CFR Part 60.
    - b. If a source uses a continuous monitoring system for the measurement of opacity, the data must be reduced to 6-minute averages as set forth in 40 CFR 60.13(h).
  2. The provisions of this section and NAC 445B.2202 do not apply to that part of the opacity that consists of uncombined water. The burden of proof to establish the application of this exemption is upon the person seeking to come within the exemption.
  3. If the provisions of 40 CFR Part 60, Subpart D or Da apply to an emission unit, the emission unit must be allowed one 6-minute period per hour of not more than 27 percent opacity as set forth in 40 CFR 60.42(a)(2) and 40 CFR 60.42a(b).
  4. The continuous monitoring system for monitoring opacity at a facility must be operated and maintained by the owner or operator specified in the permit for the facility in accordance with NAC 445B.256 to 445B.267, inclusive.
- C. Visible emissions: Exceptions for stationary sources (NAC 445B.2202) (*Federally Enforceable SIP Requirement*)
- The provisions of NAC 445B.22017 do not apply to:
1. Smoke from the open burning described in NAC 445B.22067;
  2. Smoke discharged in the course of training air pollution control inspectors to observe visible emissions, if the facility has written approval of the Commission;
  3. Emissions from an incinerator as set forth in NAC 445B.2207; or
  4. Emissions of stationary diesel-powered engines during warm-up for not longer than 15 minutes to achieve operating temperatures.



**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions (continued)**

D. Odors (NAC 445B.22087) (*State Only Requirement*)

1. No person may discharge or cause to be discharged, from any stationary source, any material or regulated air pollutant which is or tends to be offensive to the senses, injurious or detrimental to health and safety, or which in any way interferes with or prevents the comfortable enjoyment of life or property.
2. The Director shall investigate an odor when 30 percent or more of a sample of the people exposed to it believe it to be objectionable in usual places of occupancy. The sample must be at least 20 people or 75 percent of those exposed if fewer than 20 people are exposed.
3. The Director shall deem the odor to be a violation if he or she is able to make two odor measurements within a period of 1 hour. These measurements must be separated by at least 15 minutes. An odor measurement consists of a detectable odor after the odorous air has been diluted with eight or more volumes of odor-free air.

E. Prohibited Conduct: Concealment of Emissions (NAC 445B.225) (*Federally Enforceable SIP Requirement*)

No person may install, construct or use any device which conceals any emission without reducing the total release of regulated air pollutants to the atmosphere.

F. Prohibited conduct: Operation of source without required equipment; removal or modification of required equipment; modification of required procedure (NAC 445B.227) (*Federally Enforceable SIP Requirement*)

Except as otherwise provided in NAC 445B.001 to 445B.390, inclusive, no person may:

1. Operate a stationary source of air pollution unless the control equipment for air pollution which is required by applicable requirements or conditions of this Operating Permit is installed and operating.
2. Disconnect, alter, modify or remove any of the control equipment for air pollution or modify any procedure required by an applicable requirement or condition of the permit.

G. Excess Emissions (NAC 445B.232) (*State Only Requirement*)

1. Scheduled maintenance or testing or scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.390, inclusive, must be approved in advance by the Director and performed during a time designated by the Director as being favorable for atmospheric ventilation.
2. Each owner or operator shall notify the Director of the proposed time and expected duration at least 30 days before any scheduled maintenance or testing which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.390, inclusive. The scheduled maintenance or testing must not be conducted unless the scheduled maintenance or testing is approved pursuant to subsection 1.
3. Each owner or operator shall notify the Director of the proposed time and expected duration at least 24 hours before any scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.390, inclusive. The scheduled repairs must not be conducted unless the scheduled repairs are approved pursuant to subsection 1.
4. Each owner or operator shall notify the Director of any excess emissions within 24 hours after any malfunction or upset of the process equipment or equipment for controlling pollution or during start-up or shutdown of that equipment.





**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions (continued)**

G. Excess Emissions (NAC 445B.232) (*State Only Requirement*) (continued)

5. Each owner or operator shall provide the Director, within 15 days after any malfunction, upset, start-up, shutdown or human error which results in excess emissions, sufficient information to enable the Director to determine the seriousness of the excess emissions. The information must include at least the following:
  - a. The identity of the stack or other point of emission, or both, where the excess emissions occurred.
  - b. The estimated magnitude of the excess emissions expressed in opacity or in the units of the applicable limitation on emission and the operating data and methods used in estimating the magnitude of the excess emissions.
  - c. The time and duration of the excess emissions.
  - d. The identity of the equipment causing the excess emissions.
  - e. If the excess emissions were the result of a malfunction, the steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunction.
  - f. The steps taken to limit the excess emissions.
  - g. Documentation that the equipment for controlling air pollution, process equipment or processes were at all times maintained and operated, to a maximum extent practicable, in a manner consistent with good practice for minimizing emissions.
6. Each owner or operator shall ensure that any notification or related information submitted to the Director pursuant to this section is provided in a format specified by the Director.

H. Testing and Sampling (NAC 445B.252) (*Federally Enforceable SIP Requirement*)

1. To determine compliance with NAC 445B.001 to 445B.390, inclusive, before the approval or the continuance of an operating permit or similar class of permits, the Director may either conduct or order the owner of any stationary source to conduct or have conducted such testing and sampling as the Director determines necessary. Testing and sampling or either of them must be conducted and the results submitted to the Director within 60 days after achieving the maximum rate of production at which the affected facility will be operated, but not later than 180 days after initial start-up of the facility and at such other times as may be required by the Director.
2. Tests of performance must be conducted and data reduced in accordance with the methods and procedures of the test contained in each applicable subsection of this section unless the Director:
  - a. Specifies or approves, in specific cases, the use of a method of reference with minor changes in methodology;
  - b. Approves the use of an equivalent method;
  - c. Approves the use of an alternative method, the results of which the Director has determined to be adequate for indicating whether a specific stationary source is in compliance; or
  - d. Waives the requirement for tests of performance because the owner or operator of a stationary source has demonstrated by other means to the Director's satisfaction that the affected facility is in compliance with the standard.
3. Tests of performance must be conducted under such conditions as the Director specifies to the operator of the plant based on representative performance of the affected facility. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the performance test. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a performance test unless otherwise specified in the applicable standard.
4. The owner or operator of an affected facility shall give notice to the Director 30 days before the test of performance to allow the Director to have an observer present. A written testing procedure for the test of performance must be submitted to the Director at least 30 days before the test of performance to allow the Director to review the proposed testing procedures.
5. Each test of performance must consist of at least three separate runs using the applicable method for that test. Each run must be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the runs apply. In the event of forced shutdown, failure of an irreplaceable portion of the sampling train, extreme meteorological conditions or other circumstances with less than three valid samples being obtained, compliance may be determined using the arithmetic mean of the results of the other two runs upon the Director's approval.
6. All testing and sampling will be performed in accordance with recognized methods and as specified by the Director.





**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions (continued)**

H. Testing and Sampling (NAC 445B.252) (*Federally Enforceable SIP Requirement*) (continued)

7. The cost of all testing and sampling and the cost of all sampling holes, scaffolding, electric power and other pertinent allied facilities as may be required and specified in writing by the Director must be provided and paid for by the owner of the stationary source.
8. All information and analytical results of testing and sampling must be certified as to their truth and accuracy and as to their compliance with all provisions of these regulations, and copies of these results must be provided to the Director no later than 60 days after the testing or sampling, or both.
9. Notwithstanding the provisions of subsection 2, the Director shall not approve an alternative method or equivalent method to determine compliance with a standard or emission limitation contained in Part 60, 61 or 63 of Title 40 of the Code of Federal Regulations for:
  - a. An emission unit that is subject to a testing requirement pursuant to Part 60, 61 or 63 of Title 40 of the Code of Federal Regulations; or
  - b. An affected source.

I. Permit Revision (NAC 445B.287(1)(b)) (*Federally Enforceable SIP Requirement*)

If a stationary source is a Class II source, a revision of the operating permit or the permit to construct is required pursuant to the requirements of NAC 445B.3465 before the stationary source may be modified.

J. Violations: Acts constituting: notice (NAC 445B.275) (*Federally Enforceable SIP Requirement*)

1. Failure to comply with any requirement of NAC 445B.001 to 445B.390, inclusive, any applicable requirement or any condition of an operating permit constitutes a violation. As required by NRS 445B.450, the Director shall issue a written notice of an alleged violation to any owner or operator for any violation, including, but not limited to:
  - a. Failure to apply for and obtain an operating permit;
  - b. Failure to construct a stationary source in accordance with the application for an operating permit as approved by the Director;
  - c. Failure to construct or operate a stationary source in accordance with any condition of an operating permit;
  - d. Commencing construction or modification of a stationary source without applying for and receiving an operating permit or a modification of an operating permit as required by NAC 445B.001 to 445B.3477, inclusive, or a mercury operating permit to construct as required by NAC 445B.3611 to 445B.3689, inclusive;
  - e. Failure to comply with any requirement for recordkeeping, monitoring, reporting or compliance certification contained in an operating permit; or
  - f. Failure to pay fees as required by NAC 445B.327 or 445B.3689.
2. The written notice must specify the provision of NAC 445B.001 to 445B.390, inclusive, the condition of the operating permit or the applicable requirement that is being violated.
3. Written notice shall be deemed to have been served if delivered to the person to whom addressed or if sent by registered or certified mail to the last known address of the person.

K. Operating permits: Imposition of more stringent standards for emissions (NAC 445B.305)

(*Federally Enforceable SIP Requirement*)

1. The Director may impose standards for emissions on a proposed stationary source that are more stringent than those found in NAC 445B.001 to 445B.390, inclusive, as a condition of approving an operating permit for the proposed stationary source.



**Bureau of Air Pollution Control**

**Facility ID No. A1270**

**Permit No. AP1479-4334**

**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions (continued)**

- L. Contents of operating permits: Exception for operating permits to construct; required conditions (NAC 445B.315)  
(*Federally Enforceable SIP Requirement*)
1. Notwithstanding any provision of this section to the contrary, the provisions of this section do not apply to operating permits to construct.
  2. The Director shall cite the legal authority for each condition contained in an operating permit.
  3. An operating permit must contain the following conditions:
    - a. The term of the operating permit is 5 years.
    - b. The holder of the operating permit shall retain records of all required monitoring data and supporting information for 5 years after the date of the sample collection, measurement, report or analysis. Supporting information includes all records regarding calibration and maintenance of the monitoring equipment and all original strip-chart recordings for continuous monitoring instrumentation.
    - c. Each of the conditions and requirements of the operating permit is severable, and if any are held invalid, the remaining conditions and requirements continue in effect.
    - d. The holder of the operating permit shall comply with all conditions of the operating permit. Any noncompliance constitutes a violation and is a ground for:
      - (1) An action for noncompliance;
      - (2) Revising, revoking, reopening and revising, or terminating the operating permit by the Director; or
      - (3) Denial of an application for a renewal of the operating permit by the Director.
    - e. The need to halt or reduce activity to maintain compliance with the conditions of the operating permit is not a defense to noncompliance with any condition of the operating permit.
    - f. The Director may revise, revoke and reissue, reopen and revise, or terminate the operating permit for cause.
    - g. The operating permit does not convey any property rights or any exclusive privilege.
    - h. The holder of the operating permit shall provide the Director, in writing and within a reasonable time, with any information that the Director requests to determine whether cause exists for revising, revoking and reissuing, reopening and revising, or terminating the operating permit, or to determine compliance with the conditions of the operating permit.
    - i. The holder of the operating permit shall pay fees to the Director in accordance with the provisions set forth in NAC 445B.327 and 445B.331.
    - j. The holder of the operating permit shall allow the Director or any authorized representative, upon presentation of credentials, to:
      - (1) Enter upon the premises of the holder of the operating permit where:
        - (a) The stationary source is located;
        - (b) Activity related to emissions is conducted; or
        - (c) Records are kept pursuant to the conditions of the operating permit;
      - (2) Have access to and copy, during normal business hours, any records that are kept pursuant to the conditions of the operating permit;
      - (3) Inspect, at reasonable times, any facilities, practices, operations or equipment, including any equipment for monitoring or controlling air pollution, that are regulated or required pursuant to the operating permit; and
      - (4) Sample or monitor, at reasonable times, substances or parameters to determine compliance with the conditions of the operating permit or applicable requirements.
    - k. A responsible official of the stationary source shall certify that, based on information and belief formed after a reasonable inquiry, the statements made in any document required to be submitted by any condition of the operating permit are true, accurate and complete.



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**Permit No. AP1479-4334**

**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section I. General Provisions (continued)**

M. Operating permits: Assertion of emergency as affirmative defense to action for noncompliance (NAC 445B.326) *(State Only Requirement)*

1. A holder of an operating permit may assert an affirmative defense to an action brought for noncompliance with a technology-based emission limitation contained in the operating permit if the holder of the operating permit demonstrates through signed, contemporaneous operating logs or other relevant evidence, that:
  - a. An emergency occurred and the holder of the operating permit can identify the cause of the emergency;
  - b. The facility was being properly operated at the time of the emergency;
  - c. During the emergency, the holder of the operating permit took all reasonable steps to minimize excess emissions; and
  - d. The holder of the operating permit submitted notice of the emergency to the Director within 2 working days after the emergency. The notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken to restore the normal operation of the facility.
2. In any action for noncompliance, the holder of an operating permit who asserts the affirmative defense of an emergency has the burden of proof.

N. Operating permits: Revocation and reissuance (NAC 445B.3265) *(State Only Requirement)*

1. An operating permit may be revoked if the control equipment is not operating.
2. An operating permit may be revoked by the Director upon determining that there has been a violation of NAC 445B.001 to 445B.390, inclusive, or the provisions of 40 CFR 52.21, or 40 CFR Part 60 or 61, Prevention of Significant Deterioration, New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants, adopted by reference in NAC 445B.221.
3. The revocation is effective 10 days after the service of a written notice, unless a hearing is requested.
4. To reissue a revoked operating permit, the holder of the revoked permit must file a new application with the Director, accompanied by the fee for an initial operating permit as specified in NAC 445B.327. An environmental review of the stationary source must be conducted as though construction had not yet commenced.

O. Required contents of permit (NAC 445B.346) *(Federally Enforceable SIP Requirement)*

In addition to the conditions set forth in NAC 445B.315, Class II operating permits must contain, as applicable:

1. Emission limitations and standards, including those operational requirements and limitations that ensure compliance with the conditions of the operating permit.
2. All requirements for monitoring, testing and reporting that apply to the stationary source.
3. A requirement that the owner or operator of the stationary source promptly report any deviations from any requirements of the operating permit.
4. The terms and conditions for any reasonably anticipated alternative operating scenarios identified by the owner or operator of the stationary source in his or her application and approved by the Director. Such terms and conditions must require the owner or operator to keep a contemporaneous log of changes from one alternative operating scenario to another.
5. A schedule of compliance for stationary sources that are not in compliance with any applicable requirement or NAC 445B.001 to 445B.390, inclusive, at the time the operating permit is issued, including:
  - a. Semiannual progress reports and a schedule of dates for achieving milestones;
  - b. Prior notice of and explanations for missed deadlines; and
  - c. Any preventive or corrective measures taken.

**\*\*\*End of General Provisions\*\*\***



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**Section II. General Monitoring, Recordkeeping, and Reporting Conditions**

- A. Records Retention (NAC 445B.315(3)(b)) (*Federally Enforceable SIP Requirement*)  
The holder of the operating permit shall retain records of all required monitoring data and supporting information for 5 years after the date of the sample collection, measurement, report or analysis. Supporting information includes all records regarding calibration and maintenance of the monitoring equipment and all original strip-chart recordings for continuous monitoring instrumentation.
- B. Deviations (NAC 445B.346(3)) (*Federally Enforceable SIP Requirement*)  
Under the authority of NAC 445B.346(3), and in addition to the conditions set forth in NAC 445B.315, the owner or operator of the stationary source shall promptly report to the Director any deviations from the requirements of the operating permit. The report to the Director shall include the probable cause of all deviations and any action taken to correct the deviations. For the operating permit, prompt is defined as submittal of a report within 15 days of the deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 as reproduced in **Section I.G.**  
**E-mail notifications to: [enotify@ndep.nv.gov](mailto:enotify@ndep.nv.gov)**
- C. Yearly Reports (NAC 445B.315(3)(h), NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
Under the authority of NAC 445B.315(3)(h) and NAC 445B.346(2), the Permittee will submit yearly reports including, but not limited to, throughput, production, fuel consumption, hours of operation, and emissions. These reports will be submitted on the form provided by the Bureau of Air Pollution Control for all emission units/systems specified on the form. The completed form must be submitted to the Bureau of Air Pollution Control no later than March 1 annually for the preceding calendar year.

**\*\*\*End of General Monitoring, Recordkeeping, and Reporting Conditions\*\*\***



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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section III. General Construction Conditions**

A. Notification (NAC 445B.250; NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

Under the authority of NAC 445B.250 and NAC 445B.346; the Director shall be notified in writing of the following for **PF1.001 through PF1.025 and S2.001 through S2.028**:

1. The date construction (or reconstruction as defined under NAC 445B.247) of the affected facility is commenced, postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
2. The anticipated date of initial startup of an affected facility, postmarked no more than 60 days and no less than 30 days prior to such date.
3. The actual date of initial startup of the affected facility, postmarked within 15 days after such date.
4. The date upon which demonstration of the continuous monitoring system performance commences in accordance with NAC 445B.256 to 445B.267, inclusive. Notification must be postmarked not less than 30 days before such date.

**\*\*\*End of General Construction Conditions\*\*\***



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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section IV. Specific Construction Requirements**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2))  
(Federally Enforceable SIP Requirement)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below:

**Table IV-1: Initial Opacity Compliance Demonstration**

System	Emission Units	Pollutant To Be Tested	Testing Methods/Procedures
System 1 - Ore Handling Circuit	PF1.001 <u>and PF1.003</u>	Opacity	Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.
System 4 - Oversize Material Handling Circuit	PF1.007 - PF1.008		
System 5 - Gangue Handling Circuit	PF1.009 – PF1.011		
System 6 - Leach Tanks	S2.001 – S2.003		
System 7 - Neutralization Filter Vents	S2.004 – S2.007		
System 8 - Neutralization Filter Filtrate Blow Vent	S2.008		
System 9 - Tailings Feed Circuit	PF1.012 - PF1.019		
System 10 - Tailings Collection	PF1.020		
System 11 - Tailings Stacking	PF1.021 - PF1.022		
System 12 - Sulfate Tailings Circuit	PF1.023 - PF1.025		
System 13 - Magnesium Precipitation Filter Vents	S2.009 – S2.010		
System 14 - Magnesium Precipitation Filter Filtrate Blow Vent	S2.011		
System 15 - Lithium Carbonate Dryer	S2.012		
System 16 - Lithium Carbonate Material Handling	S2.013		
System 17 - Lithium Carbonate Storage Bin	S2.014		
System 18 - Lithium Carbonate Packaging	S2.015		
System 19 - Lime Silo	S2.016 – S2.017		
System 20 - Soda Ash Silo	S2.018		
System 21 - Sulfur Storage	S2.019 – S2.020		
System 22 - Package Boiler	S2.021		
System 23 - Start-Up Burner	S2.022		
System 24 - Sulfuric Acid Plant	S2.023		
System 25 - Fire Pumps	S2.024 – S2.025		
System 26 - Emergency Generators	S2.026 – S2.027		





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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

System	Emission Units	Pollutant To Be Tested	Testing Methods/Procedures
System 1 - Ore Handling Circuit	PF1.002 <u>and</u> PF1.004	Opacity	Method 9 in Appendix A-4 of 40 CFR Part 60.11 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations must be 30 minutes (five 6-minute averages).
System 2 - Mineral Sizer	PF1.005		
System 3 - Attrition Scrubber Feed	PF1.006		

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
System 4 - Oversize Material Handling Circuit	PF1.008	Moisture Content of Material	Material sample to be taken from drop location and analyzed for moisture content. Moisture content shall be equal to or exceed 4% moisture.
System 5 - Gangue Handling Circuit	PF1.011		
System 9 – Tailings Feed Circuit	PF1.013, PF1.015, PF1.017, and PF1.019		
J. System 10 - Tailings Collection	PF1.020		
System 11 - Tailings Stacking	PF1.022		



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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

- Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 6 - Leach Tanks</b>	S2.001 – S2.003	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
		PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.
		H <sub>2</sub> SO <sub>4</sub>	Method 8 in Appendix A of 40 CFR Part 60 <a href="#">and Conditional Test Method CTM-013</a> shall be used to determine the sulfuric acid mist concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 7— Neutralization Filter Vents</b>	S2.004— S2.007	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
<b>System 13— Magnesium Precipitation Filter Vents</b>	S2.009— S2.010	PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.





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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 8 – Neutralization Filter Filtrate Blow Vent</b>	S2.008	TDS Content	Sample TDS concentration in percent by weight. The TDS shall be determined by sampling methods approved in advance by the director
		PM	<del>Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.</del>
<b>System 14 – Magnesium Precipitation Filter Filtration Blow Vents</b>	S2.011	PM <sub>10</sub> /PM <sub>2.5</sub>	<del>Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.</del>

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 15 – Lithium Carbonate Dryer</b>	S2.012	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
<b>System 18 – Lithium Carbonate Packaging</b>	S2.015	PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A <del>and Method 202</del> in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.
<b>System 19 – Lime Silo</b>	S2.016 – S2.017		The Method 201A <del>and 202</del> test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 <del>and Method 202 in Appendix M of 40 CFR Part 51 test</del> . All particulate captured in the Method 5 <del>and Method 202</del> test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.



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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

**Table IV-2: Initial Performance Tests**

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 21 – Sulfur Storage</b>	S2.019 – S2.020	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
		PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.
		SO <sub>2</sub>	Method 6C in Appendix A of 40 CFR Part 60 shall be used to determine the sulfur dioxide concentration. Each test will be run for a minimum of one hour.
		H <sub>2</sub> S	Method 15 in Appendix A of 40 CFR Part 60 shall be used to determine the hydrogen sulfide concentration. Each test will be run for a minimum of one hour.



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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

**Table IV-2: Initial Performance Tests (continued)**

System	Emission Units	Pollutants To Be Tested	Testing Methods/Procedures
System 22 – Package Boiler	S2.021	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
		PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.
System 23 – Start-Up Burner	S2.022	NO <sub>x</sub>	Method 7E in Appendix A of 40 CFR Part 60 shall be used to determine the nitrogen oxides concentration. Each test will be run for a minimum of one hour.
		CO	Method 10 in Appendix A of 40 CFR Part 60 shall be used to determine the carbon monoxide concentration. Each test will be run for a minimum of one hour.
		VOC	Method 25A in Appendix A of 40 CFR Part 60 shall be used to determine the volatile organic compound concentration. Method 18 in Appendix A of 40 CFR Part 60 or Method 320 in Appendix A of CFR Part 63 may be used in conjunction with Method 25A to break out the organic compounds that are not considered VOC's by definition per 40 CFR 51.100(s). Each Method 25A test will be run for a minimum of one hour.



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**Section IV. Specific Construction Requirements (continued)**

A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2)) (Federally Enforceable SIP Requirement) (continued)

1. Under the authority of NAC 445B.22017, NAC 445B.252, and NAC 445B.346, the Permittee, upon issuance of this operating permit, shall conduct initial opacity compliance demonstrations and/or initial performance tests within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup. The Permittee shall follow the test methods and procedures referenced in Table IV-1 and Table IV-2 below: (continued)

**Table IV-2: Initial Performance Tests**

System	Emission Unit	Pollutants To Be Tested	Testing Methods/Procedures
<b>System 24 - Sulfuric Acid Plant</b>	S2.023	PM	Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
		PM <sub>10</sub> /PM <sub>2.5</sub>	Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM <sub>10</sub> and PM <sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM <sub>2.5</sub> for determination of compliance.
		SO <sub>2</sub>	Method 6C in Appendix A of 40 CFR Part 60 shall be used to determine the sulfur dioxide concentration. Each test will be run for a minimum of one hour.
		NO <sub>x</sub>	Method 7E in Appendix A of 40 CFR Part 60 shall be used to determine the nitrogen oxides concentration. Each test will be run for a minimum of one hour.
		H <sub>2</sub> SO <sub>4</sub>	Method 8 in Appendix A of 40 CFR Part 60 and Conditional Test Method CTM-013 shall be used to determine the sulfuric acid mist concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.



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**Section IV. Specific Construction Requirements (continued)**

- A. Initial Opacity Compliance Demonstration and Initial Performance Tests (NAC 445B.22017, NAC 445B.252, NAC 445B.346(2))  
(*Federally Enforceable SIP Requirement*) (continued)
2. All initial opacity compliance demonstrations and initial performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of **Section I.H. Testing and Sampling** (NAC 445B.252) of this operating permit. Material sampling must be conducted in accordance with protocols approved by the Director. All initial performance test results shall be based on the arithmetic average of three valid runs. (NAC 445B.252(5))
  3. Testing shall be conducted on the exhaust stack (post controls).
  4. Initial opacity compliance demonstrations and initial performance tests, as specified in Table IV-1 and Table IV-2 above, must be conducted under such conditions as the Director specifies to the operator of the plant based on representative performance of the affected facility. The Permittee shall make available to the Director such records as may be necessary to determine the conditions of the initial opacity compliance demonstrations and initial performance tests. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of the initial opacity compliance demonstrations and initial performance tests unless otherwise specified in the applicable standard. (NAC 445B.252(3))
  5. The Permittee shall give notice to the Director 30 days before the initial opacity compliance demonstrations and initial performance tests to allow the Director to have an observer present. A written testing procedure must be submitted to the Director at least 30 days before the initial opacity compliance demonstrations and initial performance tests to allow the Director to review the proposed testing procedures. (NAC 445B.252(4) and 40 CFR Part 60.7(a)(6))
  6. Within 60 days after completing the initial opacity compliance demonstrations and initial performance tests contained in Table IV-1 and Table IV-2 of this section, the Permittee shall furnish the Director a written report of the results. All information and analytical results of testing and sampling must be certified as to the truth and accuracy and as to their compliance with NAC 445B.001 to 445B.390, inclusive. (NAC 445B.252(8))
  7. Initial opacity compliance demonstrations and initial performance tests required under this section that are conducted below the maximum allowable throughput, shall be subject to the Director's review to determine if the throughputs during the initial opacity compliance demonstrations and initial performance tests were sufficient to provide adequate compliance demonstration. Should the Director determine that the initial opacity compliance demonstrations and initial performance tests do not provide adequate compliance demonstration, the Director may require additional testing.

**\*\*\*\*End of Specific Construction Requirements\*\*\*\***



**Bureau of Air Pollution Control**

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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section V. Specific Operating Conditions**

**A. Emission Units PF1.001 through PF1.004**

System 1 - Ore Handling Circuit		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.001	ROM Feed Hopper 1 Loading	4,617,041	411,344
PF1.002	ROM Feed Hopper 1 transfer to Sizer Feed Conveyor (via feed belt)	4,617,041	411,344
PF1.003	ROM Feed Hopper 2 loading	4,617,034	411,356
PF1.004	ROM Feed Hopper 2 transfer to Sizer Feed Conveyor (via feed belt)	4,617,034	411,356

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
**PF1.001 through PF1.004, each**, have no add-on controls.
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.001 through PF1.004, each**, shall not exceed **480.0** tons of **Ore** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.001 through PF1.004, each**, may operate a total of **24** hours per day.
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.001 through PF1.004, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **1.44** pounds per hour, nor more than **6.31** tons per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.53** pounds per hour, nor more than **2.31** tons per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.087** pounds per hour, nor more than **0.38** tons per 12-month rolling period.
  - d. The opacity from **PF1.001 and PF1.003, each**, shall not equal or exceed **20** percent.
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.001 through PF1.004, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.001 through PF1.004, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. The Permittee, upon issuance of this operating permit, shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. (40 CFR 60.7(b))





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**Section V. Specific Operating Conditions (continued)**

**A. Emission Units PF1.001 through PF1.004 (continued)**

5. Federal Requirements (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants (40 CFR Part 60.670)

a. Emission Limits (40 CFR Part 60.672, Table 3)

On and after the sixtieth day after achieving the maximum production rate at which **PF1.002 and PF1.004** will be operated, but not later than 180 days after initial startup, the Permittee shall not discharge or cause the discharge into the atmosphere, the following pollutants in excess of the following specified limits:

- (1) Process fugitive emissions from **PF1.002 and PF1.004, each**, will not exceed **7 percent** opacity. (40 CFR Part 60.672(b)).
- (2) The opacity standard set forth in this part shall apply at all times except during period of startup, shutdown, and malfunction, and as otherwise provided in the applicable standard. (40 CFR 60.11(c))

b. Notifications and reports required under Subpart OOO and under subpart A of 40 CFR Part 60 to demonstrate compliance with Subpart OOO need only to be sent to the Director. (40 CFR 60.676(k))

c. At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **PF1.002 and PF1.004, each**, including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. (40 CFR Part 60.11(d))

d. A repeat performance test according to 40 CFR Part 60.11 of this part and 40 CFR Part 60.675 of this subpart within 5 years from the previous performance test for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in 40 CFR Part 60.674(b) and 60.676(b) are exempt from this 5-year repeat testing requirement. (40 CFR 60.672, Table 3)



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Section V. Specific Operating Conditions (continued)

B. Emission Units PF1.005

System 2 - Mineral Sizer		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.005	Mineral Sizer and Associated Transfers (In: Sizer Feed Conveyor, Out: Scrubber Feed Conveyor)	4,616,990	411,439

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
Emissions from **PF1.005** shall be controlled by **Water Sprays**.
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **PF1.005** shall not exceed **960.0** tons of **Ore** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.005** may operate a total of **24** hours per day.
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.005** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **1.30** pounds per hour, nor more than **5.68** tons per year per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.58** pounds per hour, nor more than **2.52** tons per year per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.10** pounds per hour, nor more than **0.42** tons per year per 12 month rolling period.
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.005** on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.005** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **Water Sprays** controlling **PF1.005** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - e. The Permittee of any affected facility that uses wet suppression to control emissions from the affected facility must perform **monthly** periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The Permittee must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the Permittee finds that water is not flowing properly during an inspection of the water spray nozzles. The Permittee must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken.
  - f. The Permittee, upon issuance of this operating permit, shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control





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equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. (40 CFR 60.7(b))

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**Section V. Specific Operating Conditions (continued)**

**B. Emission Units PF1.005 (continued)**

5. Federal Requirements (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants (40 CFR Part 60.670)
  - a. Emission Limits (40 CFR Part 60.672, Table 3)

On and after the sixtieth day after achieving the maximum production rate at which **PF1.005** will be operated, but not later than 180 days after initial startup, the Permittee shall not discharge or cause the discharge into the atmosphere, the following pollutants in excess of the following specified limits:

    - (1) Process fugitive emissions from **PF1.005** will not exceed **12 percent** opacity. (40 CFR Part 60.672(b)).
    - (2) The opacity standard set forth in this part shall apply at all times except during period of startup, shutdown, and malfunction, and as otherwise provided in the applicable standard. (40 CFR 60.11(c))
  - b. The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform **monthly** periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under 40 CFR 60.676(b). (40 CFR 60.674(b))
  - c. Notifications and reports required under Subpart OOO and under subpart A of 40 CFR Part 60 to demonstrate compliance with Subpart OOO need only to be sent to the Director. (40 CFR 60.676(k))
  - d. At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **PF1.005** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. (40 CFR Part 60.11(d))



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Section V. Specific Operating Conditions (continued)

C. Emission Units PF1.006

System 3 - Attrition Scrubber Feed		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.006	Scrubber Feed Conveyor to Attrition Scrubber (wet process)	4,616,998	411,444

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
Emissions from **PF1.006** shall be controlled by **Water Sprays**.
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **PF1.006** shall not exceed **960.0** tons of **Ore** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.006** may operate a total of **24** hours per day.
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.006** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.72** pounds per hour, nor more than **3.15** tons per year per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.26** pounds per hour, nor more than **1.16** tons per year per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.044** pounds per hour, nor more than **0.19** tons per year per 12 month rolling period.
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.006** on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.006** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **Water Sprays** controlling **PF1.006** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - e. The Permittee of any affected facility that uses wet suppression to control emissions from the affected facility must perform **monthly** periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The Permittee must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the Permittee finds that water is not flowing properly during an inspection of the water spray nozzles. The Permittee must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken.
  - f. The Permittee, upon issuance of this operating permit, shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. (40 CFR 60.7(b))



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**Section V. Specific Operating Conditions (continued)**

**C. Emission Units PF1.006 (continued)**

5. Federal Requirements (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants (40 CFR Part 60.670)
  - a. Emission Limits (40 CFR Part 60.672, Table 3)

On and after the sixtieth day after achieving the maximum production rate at which **PF1.006** will be operated, but not later than 180 days after initial startup, the Permittee shall not discharge or cause the discharge into the atmosphere, the following pollutants in excess of the following specified limits:

    - (1) Process fugitive emissions from **PF1.006** will not exceed **7 percent** opacity. (40 CFR Part 60.672(b)).
    - (2) The opacity standard set forth in this part shall apply at all times except during period of startup, shutdown, and malfunction, and as otherwise provided in the applicable standard. (40 CFR 60.11(c))
  - b. The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform **monthly** periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under 40 CFR 60.676(b). (40 CFR 60.674(b))
  - c. Notifications and reports required under Subpart OOO and under subpart A of 40 CFR Part 60 to demonstrate compliance with Subpart OOO need only to be sent to the Director. (40 CFR 60.676(k))
  - d. At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate **PF1.006** including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. (40 CFR Part 60.11(d))



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**Section V. Specific Operating Conditions (continued)**

**D. Emission Units PF1.007 and PF1.008**

System 4 - Oversize Material Handling Circuit		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.007	Wet Screen to Oversize <del>Stacker</del> Conveyor	4,617,033	411,464
PF1.008	Oversize Stacker to Oversize Stockpile	4,617,011	411,505

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
Emissions from **PF1.007 and PF1.008, each**, shall be controlled by **Moisture Carryover**.
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.007 and PF1.008, each**, shall not exceed **16.0** tons of **Gangue** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.007 and PF1.008, each**, operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.007 and PF1.008, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.0072** pounds per hour, nor more than **0.032** tons per year per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.0026** pounds per hour, nor more than **0.012** tons per year per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.00040** pounds per hour, nor more than **0.0018** tons per year per 12 month rolling period.
  - d. The opacity from **PF1.007 and PF1.008, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.007 and PF1.008, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.007 and PF1.008, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on **PF1.007 and PF1.008, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.



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**Section V. Specific Operating Conditions (continued)**

**E. Emission Units PF1.009 through PF1.011**

System 5 – Gangue Handling Circuit		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.009	Gangue Dewatering Screen to Gangue Conveyor	4,617,236	414,414
PF1.010	Gangue Conveyor to Gangue Stacker	4,617,280	414,458
PF1.011	Gangue Stacker to Gangue Stockpile	4,617,326	414,453

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
Emissions from **PF1.009 through PF1.011, each**, shall be controlled by **Moisture Carryover**.
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.009 through PF1.011, each**, shall not exceed **430.0** tons of **Gangue** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.009 through PF1.011, each**, may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.009 through PF1.011, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.19** pounds per hour, nor more than **0.85** tons per year per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.071** pounds per hour, nor more than **0.31** tons per year per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.011** pounds per hour, nor more than **0.047** tons per year per 12 month rolling period.
  - d. The opacity from **PF1.009 through PF1.011, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.009 through PF1.011, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.009 through PF1.011, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on **PF1.009 through PF1.011, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.





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**Section V. Specific Operating Conditions (continued)**

**F. Emission Units S2.001 through S2.003**

System 6 - Leach Tanks		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.001	Leach Tank 1	4,617,186	414,430
S2.002	Leach Tank 2	4,617,186	414,430
S2.003	Leach Tank 3	4,617,186	414,430

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. Emissions from **S2.001 through S2.003, combined, each**, shall be controlled by a **Wet Scrubber**.
  - b. Descriptive Stack Parameters  
 Stack Height: 60 feet  
 Stack Diameter: 2.5 feet  
 Stack Temperature: 180 °F  
 Exhaust Flow: 13,869 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **S2.001 through S2.003, each**, shall not exceed **1,080.0** tons of **Slurry** per any one-hour period averaged over a daily basis.
  - b. **S2.001 through S2.003, each**, shall not exceed the following parameters:
    - (1) The maximum **TDS** (Total Dissolved Solids) concentration of outlet leach solution shall not exceed **26** percent.
    - (2) The maximum **H<sub>2</sub>SO<sub>4</sub>** (Sulfuric Acid) concentration of outlet leach solution shall not exceed **5** percent.
  - c. Hours
    - (1) **S2.001 through S2.003, each**, may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.001 through S2.003, combined**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.30** pounds per hour, nor more than **1.33** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.30** pounds per hour, nor more than **1.33** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.30** pounds per hour, nor more than **1.33** tons per year per 12-month rolling period.
  - d. The discharge of **H<sub>2</sub>SO<sub>4</sub>** to the atmosphere shall not exceed **0.058** pounds per hour, nor more than **0.26** tons per year per 12-month rolling period.
  - e. The opacity from **S2.001 through S2.003, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.001 through S2.003, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **S2.001 through S2.003, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Sample the outlet leach solution of S2.001 through S2.003, each combined, on a quarterly basis for the **TDS** concentration in percent. The **TDS** shall be determined by sampling methods approved in advance by the Director.





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**Section V. Specific Operating Conditions (continued)**

**F. Emission Units S2.001 through S2.003 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record. (continued)
  - e. Sample the outlet leach solution of S2.001 through S2.003, combined each, on a quarterly basis for the H<sub>2</sub>SO<sub>4</sub> concentration in percent. The H<sub>2</sub>SO<sub>4</sub> shall be determined by sampling methods approved in advance by the Director.
  - f. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Wet Scrubber** controlling **S2.001 through S2.003** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - g. Inspect the **Wet Scrubber** installed on **S2.001 through S2.003** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the water spray nozzles), and any corrective actions taken.
  
5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct annual performance testing within 90 days of the anniversary date of the previous initial performance testing or annual performance testing, and annually thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine particulate matter emissions. All particulate captured in the Method 5 and Method 202 test shall be considered PM<sub>2.5</sub> for determination of compliance. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 8 in Appendix A of 40 CFR Part 60 shall be used to determine the sulfuric acid mist concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - e. The Method 8 test required in this section may be replaced by a Conditional Test Method CTM-013 test based on prior approval from the Administrator. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - ef. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.



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**Section V. Specific Operating Conditions (continued)**

**G. Emission Units S2.004 through S2.007**

System 7 - Neutralization Filter Vents		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.004	Neutralization Filter Vent 1	4,617,143	414,474
S2.005	Neutralization Filter Vent 2	4,617,145	414,477
S2.006	Neutralization Filter Vent 3	4,617,149	414,480
S2.007	Neutralization Filter Vent 4	4,617,152	414,483

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.004 through S2.007, each, ~~have no add-on control~~ shall be controlled by Mist Eliminator.**
  - b. Descriptive Stack Parameters  
 Stack Height: 30 feet  
 Stack Diameter: 1.7 feet  
 Stack Temperature: 120 °F  
 Exhaust Flow: 6,200 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **S2.004 through S2.007, each**, shall not exceed **1,080.0** tons of **Slurry** per any one-hour period averaged over a daily basis.
  - b. The maximum **PM** (particulate matter) concentration for **S2.004 through S2.007, each**, shall not exceed **10** ppmw (parts per million by weight).
  - c. Hours
    - (1) **S2.004 through S2.007, each**, may operate a total of **24** hours per day.
    - (2) **S2.004 through S2.007, each**, shall not operate in excess of **500** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.004 through S2.007, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** to the atmosphere shall not exceed **0.22** pounds per hour, nor more than **0.056** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.22** pounds per hour, nor more than **0.056** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.22** pounds per hour, nor more than **0.056** tons per year per 12-month rolling period.
  - d. The opacity from **S2.004 through S2.007, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.004 through S2.007, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **S2.004 through S2.007, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.



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**Section V. Specific Operating Conditions (continued)**

**G. Emission Units S2.004 through S2.007 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.  
(continued)
  - e. Conduct and record an observation of visible emissions (excluding water vapor) on the **stacks** of the **Mist Eliminator** controlling **S2.009 and S2.010, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - f. Inspect the **Mist Eliminator** installed on **S2.009 and S2.010** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results, and any corrective actions taken.
  - g. Maintain documentation onsite showing that the PM concentration at the outlet of the mist eliminators will not exceed the concentration specified in G.2.b of this section.

~~**G. Emission Units S2.004 through S2.007 (continued)**~~

- ~~5. Performance Testing (NAC 445B.346(2))  
The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:
  - a. ~~All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).~~
  - b. ~~Testing shall be conducted on the exhaust stack (post controls).~~
  - c. ~~Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dsef). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.~~
  - d. ~~Method 201A in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.~~
  - e. ~~The Method 201A test required in this section may be replaced by a Method 5 in Appendix A of~~
  - f. ~~40 CFR Part 60. All particulate captured in the Method 5 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.~~
  - g. ~~Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals), unless otherwise specified by an applicable subpart.~~~~



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**Section V. Specific Operating Conditions (continued)**

**H. Emission Units S2.008**

System 8 - Neutralization Filter Filtrate Blow Vent		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.008	Neutralization Filter Filtrate Blow Vent	4,617,147	414,479

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.008** has no add-on controls.
  - b. Descriptive Stack Parameters  
 Stack Height: 20 feet  
 Stack Diameter: 1.0 feet  
 Stack Temperature: Ambient °F  
 Exhaust Flow: 1,355 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum **TDS** (Total Dissolved Solids) concentration of **S2.008** shall not exceed **40** percent by weight.
  - b. Hours
    - (1) **S2.008** may operate a total of **24** hours per day.
    - (2) **S2.008** shall not operate in excess of **50** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.008** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.20** pounds per hour, nor more than **0.0049** tons ~~per year, per 12-month rolling period.~~
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.20** pounds per hour, nor more than **0.0049** tons ~~per year, per 12-month rolling period.~~
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.20** pounds per hour, nor more than **0.0049** tons ~~per year, per 12-month rolling period.~~
  - d. The opacity from **S2.008** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the total daily hours of operation for **S2.008**.
  - b. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.
  - c. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** for **S2.008** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. ~~If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A.~~ The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - d. Sample **S2.008** on a quarterly basis for the **TDS** concentration in percent by weight. The **TDS** shall be determined by sampling methods approved in advance by the director.



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**Section V. Specific Operating Conditions (continued)**

**I. Emission Units PF1.012 through PF1.019**

System 9 - Tailings Feed Circuit		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.012	Neutralization Filter 1 to Discharge Feeder 1	4,617,139	414,490
PF1.013	Discharge Feeder 1 to Tailings Collection Conveyor	4,617,148	414,480
PF1.014	Neutralization Filter 2 to Discharge Feeder 2	4,617,140	414,491
PF1.015	Discharge Feeder 2 to Tailings Collection Conveyor	4,617,148	414,481
PF1.016	Neutralization Filter 3 to Discharge Feeder 3	4,617,141	414,492
PF1.017	Discharge Feeder 3 to Tailings Collection Conveyor	4,617,149	414,482
PF1.018	Neutralization Filter 4 to Discharge Feeder 4	4,617,142	414,493
PF1.019	Discharge Feeder 4 to Tailings Collection Conveyor	4,617,150	414,483

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
Emissions from **PF1.012 through PF1.019, each**, shall be controlled by **Moisture Carryover**.
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.012 through PF1.019, each**, shall not exceed **240.0** tons of **Clay/Neutral Tailings** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.012 through PF1.019, each**, may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.012 through PF1.019, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.11** pounds per hour, nor more than **0.47** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.040** pounds per hour, nor more than **0.17** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.0065** pounds per hour, nor more than **0.029** tons per year per 12-month rolling period.
  - d. The opacity from **PF1.012 through PF1.019, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.012 through PF1.019, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.012 through PF1.019, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on **PF1.012 through PF1.019, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.





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**Section V. Specific Operating Conditions (continued)**

**J. Emission Units PF1.020**

System 10 - Tailings Collection		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.020	Tailings Collection Conveyor to Tailings Conveyor 1	4,617,151	414,484

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
Emissions from **PF1.020** shall be controlled by **Moisture Carryover**.
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.020** shall not exceed **1,000.0** tons of **Clay/Neutral Tailings** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.020** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.020** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.45** pounds per hour, nor more than **1.97** tons per year, per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.17** pounds per hour, nor more than **0.72** tons per year, per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.027** pounds per hour, nor more than **0.12** tons per year, per 12-month rolling period.
  - d. The opacity from **PF1.020** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.020** on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.020** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on **PF1.020** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.



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Section V. Specific Operating Conditions (continued)

K. Emission Units PF1.021 and PF1.022

System 11 – Tailings Stacking		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.021	Tailings Conveyor 1 to Tailings Stacker	4,617,251	414,584
PF1.022	Tailings Stacker to Clay Tailings Filter Stack	4,617,231	414,625

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
Emissions from **PF1.021 and PF1.022, each**, shall be controlled by **Moisture Carryover**.
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **PF1.021 and PF1.022, each**, shall not exceed **1,000.0** tons of **Clay/Neutral Tailings** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.021 and PF1.022, each**, may operate a total of **24** hours per day.
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (Federally Enforceable SIP Requirement)  
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.021 and PF1.022, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.45** pounds per hour, nor more than **1.97** tons per year per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.17** pounds per hour, nor more than **0.72** tons per year per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.027** pounds per hour, nor more than **0.12** tons per year per 12 month rolling period.
  - d. The opacity from **PF1.021 and PF1.022, each**, shall not equal or exceed **20** percent.
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **PF1.021 and PF1.022, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.021 and PF1.022, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on **PF1.021 and PF1.022, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.



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**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section V. Specific Operating Conditions (continued)**

**L. Emission Units PF1.023 through PF1.025**

System 12 - Sulfate Tailings Circuit		Location UTM (Zone 11, NAD 83)	
		m North	m East
PF1.023	Na/K Sulfate Centrifuge discharge to Na/K Conveyor 1 <del>or Lithium Carbonate Dryer</del>	4,617,137	414,470
PF1.024	Na/K Conveyor 1 transfer to Na/K Conveyor 2	4,617,139	414,471
PF1.025	Na/K Conveyor 2 to Tailings Collection Conveyor	4,617,141	414,474

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. Emissions from **PF1.023** shall be controlled by **Enclosure**.
  - b. **PF1.024 and PF1.025, each**, has no add-on controls.
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **PF1.023 through PF1.025, each**, shall not exceed **40.0 tons of Sulfate Tailings** per any one-hour period averaged over a daily basis.
  - b. Hours
    - (1) **PF1.023 through PF1.025, each**, may operate a total of **24 hours** per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.023** the following pollutants in excess of the following specified limits:
    - (1) The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.060 pounds** per hour, nor more than **0.26 tons** per year per 12-month rolling period.
    - (2) The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.022 pounds** per hour, nor more than **0.096 tons** per year per 12-month rolling period.
    - (3) The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.0036 pounds** per hour, nor more than **0.016 tons** per year per 12-month rolling period.
    - (4) The opacity from **PF1.023** shall not equal or exceed **20 percent**.
  - b. The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **PF1.024 and PF1.025, each**, the following pollutants in excess of the following specified limits:
    - (1) The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.12 pounds** per hour, nor more than **0.53 tons** per year per 12-month rolling period.
    - (2) The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.044 pounds** per hour, nor more than **0.19 tons** per year per 12-month rolling period.
    - (3) The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.0073 pounds** per hour, nor more than **0.032 tons** per year per 12-month rolling period.
    - (4) The opacity from **PF1.024 and PF1.025, each**, shall not equal or exceed **20 percent**.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)
 

The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.

  - a. Monitor and record the throughput for **PF1.023 through PF1.025, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **PF1.023 through PF1.025, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.





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**Section V. Specific Operating Conditions (continued)**

**L. Emission Units PF1.023 through PF1.025 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.  
(continued)
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the enclosure controlling **PF1.023** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - e. Inspect the **Enclosure** installed on **PF1.023** on a monthly basis to confirm that the enclosure is in place and functioning properly. If the enclosure is in disrepair, the Permittee shall initiate corrective action within 24 hours and complete corrective action as expeditiously as practical to ensure that the enclosure is functioning properly. The Permittee must record each inspection of the enclosures, including the date of each inspection and any corrective actions taken.



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Section V. Specific Operating Conditions (continued)

M. Emission Units S2.009 and S2.010

System 13 - Magnesium Precipitation Filter Vents		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.009	Magnesium Precipitation Filter Vent 1	4,617,145	414,402
S2.010	Magnesium Precipitation Filter Vent 2	4,617,148	414,405

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.009 and S2.010, each**, shall be controlled by **Mist Eliminator**.
  - b. Descriptive Stack Parameters  
 Stack Height: 38 feet  
 Stack Diameter: 1.30 feet  
 Stack Temperature: 120 °F  
 Exhaust Flow: 4,046 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum **PM** (particulate matter) concentration of **S2.009 and S2.010, each**, shall not exceed **10 ppmw** (parts per million by weight).
  - b. Hours
    - (1) **S2.009 and S2.010, each**, may operate a total of **24** hours per day.
    - (2) **S2.009 and S2.010, each**, shall not operate in excess of **200** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.009 and S2.010, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.14** pounds per hour, nor more than **0.014** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.14** pounds per hour, nor more than **0.014** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.14** pounds per hour, nor more than **0.014** tons per year per 12-month rolling period.
  - d. The opacity from **S2.009 and S2.010, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the total daily hours of operation for **S2.009 and S2.010, each**.
  - b. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year
  - c. Conduct and record an observation of visible emissions (excluding water vapor) on the **stacks** of the **Mist Eliminator** controlling **S2.009 and S2.010, each**, on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.



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**Section V. Specific Operating Conditions (continued)**

**M. Emission Units S2.009 and S2.010 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.  
(continued)
  - d. Inspect the **Mist Eliminator** installed on **S2.009 and S2.010** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results, and any corrective actions taken.
  - e. Maintain documentation onsite showing that the PM concentration at the outlet of the mist eliminators will not exceed the concentration specified in M.2.a of this section. Sample S2.009 through S2.010, each, on a quarterly basis for the PM concentration in ppmw. The PM shall be determined by sampling methods approved in advance by the director

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**Section V. Specific Operating Conditions (continued)**

**N. Emission Units S2.011**

System 14 - Magnesium Precipitation Filter Filtrate Blow Vent		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.011	Magnesium Precipitation Filtrate Blow Vent	4,617,147	414,404

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.011** has no add-on controls.
  - b. Descriptive Stack Parameters  
 Stack Height: 20 feet  
 Stack Diameter: 0.5 feet  
 Stack Temperature: Ambient °F  
 Exhaust Flow: 498 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum **TDS** (Total Dissolved Solids) concentration of **S2.011** shall not exceed **8.24** percent by weight.
  - b. Hours
    - (1) **S2.011** may operate a total of **24** hours per day.
    - (2) **S2.011** shall not operate in excess of **50** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.011** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.015** pounds per hour, nor more than **0.00037** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.015** pounds per hour, nor more than **0.00037** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.015** pounds per hour, nor more than **0.00037** tons per year per 12-month rolling period.
  - d. The opacity from **S2.011** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the total daily hours of operation for **S2.011**.
  - b. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.
  - c. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** for **S2.011** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - d. Sample **S2.011** on a quarterly basis for **TDS** concentration in percent by weight. The **TDS** shall be determined by sampling methods approved in advance by the director.



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Section V. Specific Operating Conditions (continued)

O. Emission Units S2.012

System 15 - Lithium Carbonate Dryer		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.012	Lithium Carbonate Dryer <a href="#">transfer to Lithium Carbonate Material Handling</a>	4,617,110	414,388

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.012** shall be controlled by a **Baghouse**.
  - b. Descriptive Stack Parameters  
 Stack Height: 60 feet  
 Stack Diameter: 1.0 feet  
 Stack Temperature: 302 °F  
 Exhaust Flow: 2,898 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.012** shall not exceed **5.0** tons of **Lithium Carbonate** per any one-hour period [averaged over a daily basis](#).
  - b. Hours  
 (1) **S2.012** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.012** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.50** pounds per hour, nor more than **2.18** tons [per year per 12 month rolling period](#).
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.50** pounds per hour, nor more than **2.18** tons [per year per 12 month rolling period](#).
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.50** pounds per hour, nor more than **2.18** tons [per year per 12 month rolling period](#).
  - d. The opacity from **S2.012** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.012** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.012** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Baghouse** controlling **S2.012** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. [If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken.](#) ~~If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A to eliminate visible emissions.~~
  - e. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken.



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- f. Inspect the **Baghouse** installed on **S2.012** on a monthly basis in accordance with the manufacturer’s operation and maintenance manual and record the results (e.g. the condition of the **Baghouse**) and any corrective actions taken.

**Section V. Specific Operating Conditions (continued)**

**O. Emission Units S2.012 (continued)**

- 5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 201A in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.
  - e. The Method 201A test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60. All particulate captured in the Method 5 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.
  - f. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.





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Section V. Specific Operating Conditions (continued)

P. Emission Units S2.013

System 16 – Lithium Carbonate Material Handling		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.013	Lithium Carbonate Material Handling <del>transfer to Lithium Carbonate Storage Bin Loading</del>	4,617,108	414,385

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.013** shall be controlled by a **Vent Filter**.
  - b. Descriptive Stack Parameters for S2.013  
 Stack Height: 10 feet  
 Stack Diameter: 0.50 feet  
 Stack Temperature: 101 °F  
 Exhaust Flow: 1,268 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.013** shall not exceed **5.0 tons of Lithium Carbonate** per any one-hour period averaged over a daily basis.
  - b. Hours  
 (1) **S2.013** may operate a total of **24 hours** per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.013** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.012 pounds per hour**, nor more than **0.053 tons per year per 12-month rolling period**.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.0070 pounds per hour**, nor more than **0.031 tons per year per 12-month rolling period**.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.0012 pounds per hour**, nor more than **0.0051 tons per year per 12-month rolling period**.
  - d. The opacity from **S2.013** shall not equal or exceed **20 percent**.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.013** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.013** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **Stack** of the **Vent Filter** controlling **S2.013** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - f. Inspect the **Vent Filter** installed on **S2.013** on a monthly basis in accordance with the manufacturer’s operation and maintenance manual and record the results (e.g. the condition of the filter fabric), and any corrective actions taken.





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Section V. Specific Operating Conditions (continued)

Q. Emission Units S2.014

System 17 - Lithium Carbonate Storage Bin		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.014	Lithium Carbonate Storage Bin Loading <del>transfer to Lithium Carbonate Packaging</del>	4,617,112	414,380

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.014** shall be controlled by a **Vent Filter**.
  - b. Descriptive Stack Parameters for S2.014  
 Stack Height: 79 feet  
 Stack Diameter: 0.50 feet  
 Stack Temperature: 101 °F  
 Exhaust Flow: 1,268 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.014** shall not exceed **5.0** tons of **Lithium Carbonate** per any one-hour period averaged over a daily basis.
  - b. Hours  
 (1) **S2.014** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.014** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.0050** pounds per hour, nor more than **0.022** tons per 12 month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.0017** pounds per hour, nor more than **0.0074** tons per 12 month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.00028** pounds per hour, nor more than **0.0012** tons per 12 month rolling period.
  - d. The opacity from **S2.014** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.014** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.014** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **Stack of the Vent Filter** controlling **S2.014** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - f. Inspect the **Vent Filter** installed on **S2.014** on a monthly basis in accordance with the manufacturer’s operation and maintenance manual and record the results (e.g. the condition of the filter fabric), and any corrective actions taken.



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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

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Bureau of Air Pollution Control

Facility ID No. A1270

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CLASS II AIR QUALITY OPERATING PERMIT

Issued to: LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

Section V. Specific Operating Conditions (continued)

R. Emission Units S2.015

System 18 – Lithium Carbonate Packaging		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.015	Lithium Carbonate Packaging	4,617,113	414,360

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.015** shall be controlled by a **Baghouse**.
  - b. Descriptive Stack Parameters for S2.015  
 Stack Height: 20 feet  
 Stack Diameter: 1.0 feet  
 Stack Temperature: Ambient °F  
 Exhaust Flow: 3,900 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.015** shall not exceed **16.0 tons of Lithium Carbonate** per any one-hour period averaged over a daily basis, nor more than **43,800 tons per year per 12-month rolling period**.
  - b. Hours
    - (1) **S2.015** may operate a total of **24** hours per day.
    - (2) **S2.015** shall not operate in excess of **4,380** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.015** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.67** pounds per hour, nor more than **1.46 tons per year per 12-month rolling period**.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.67** pounds per hour, nor more than **1.46 tons per year per 12-month rolling period**.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.67** pounds per hour, nor more than **1.46 tons per year per 12-month rolling period**.
  - d. The opacity from **S2.015** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.015** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.015** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Monitor and record the total yearly throughput rate in tons per year. The annual throughput shall be determined as the sum of the monthly throughput rates for the year for all previous months of that year. Record the throughput rate of material (in tons) on a cumulative monthly basis, for each 12-month rolling period.
  - e. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year



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**Section V. Specific Operating Conditions (continued)**

**R. Emission Units S2.015 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.  
(continued)
  - f. Conduct and record an observation of visible emissions (excluding water vapor) on the **Stack** of the **Baghouse** controlling **S2.015** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - g. Inspect the **Baghouse** installed on **S2.015** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the filter fabric), and any corrective actions taken.
5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 201A in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.
  - e. The Method 201A test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60. All particulate captured in the Method 5 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.
  - f. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.



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Section V. Specific Operating Conditions (continued)

S. Emission Units S2.016 and S2.017

System 19 – Lime Silo		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.016	Truck transfer of Lime to Underground Hopper	4,617,197	414,358
S2.017	Underground Hopper and transfer to Silo (silo unloading through sealed transfers)	4,617,197	414,358

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.016 and S2.017, combined, each**, shall be controlled by a **Baghouse**.
  - b. Descriptive Stack Parameters for S2.016 and S2.017  
 Stack Height: 100 feet  
 Stack Diameter: 1.0 feet  
 Stack Temperature: Ambient °F  
 Exhaust Flow: 3,100 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.016 and S2.017, each**, shall not exceed **80.0** tons of **Lime** per any one-hour period averaged over a daily basis, nor more than **350,400** tons per 12-month rolling period.
  - b. Hours
    - (1) **S2.016 and S2.017, each**, may operate a total of **24** hours per day.
    - (2) **S2.016 and S2.017, each**, shall not operate in excess of **4,380** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.016 and S2.017, combined**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.53** pounds per hour, nor more than **1.16** tons per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.53** pounds per hour, nor more than **1.16** tons per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.53** pounds per hour, nor more than **1.16** tons per 12-month rolling period.
  - d. The opacity from **S2.016 and S2.017, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.016 and S2.017, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **S2.016 and S2.017, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Monitor and record the total yearly throughput rate in tons per year. The annual throughput shall be determined as the sum of the monthly throughput rates for the year for all previous months of that year. Record the throughput rate of material (in tons) on a cumulative monthly basis, for each 12-month rolling period.
  - e. Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.





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**Section V. Specific Operating Conditions (continued)**

**S. Emission Units S2.016 and S2.017 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.  
(continued)
  - f. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Baghouse S2.016 and S2.017** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - g. Inspect the **Baghouse** installed on **S2.016 and S2.017** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the filter fabric), and any corrective actions taken.
  
5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 201A in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.
  - e. The Method 201A test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60. All particulate captured in the Method 5 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.
  - f. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.





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**Section V. Specific Operating Conditions (continued)**

**T. Emission Units S2.018**

System 20 - Soda Ash Silo		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.018	Soda Ash Silo loading (silo unloading through sealed transfers)	4,617,088	414,456

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. Emissions from **S2.018** shall be controlled by a **Vent Filter**.
  - b. Descriptive Stack Parameters for S2.018  
 Stack Height: 100 feet  
 Stack Diameter: 1.0 feet  
 Stack Temperature: Ambient °F  
 Exhaust Flow: 1,930 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. The maximum allowable throughput rate for **S2.018** shall not exceed **80.0** tons of **Soda Ash** per any one-hour period averaged over a daily basis, nor more than **153,900** tons per year per 12-month rolling period.
  - b. Hours  
 (1) **S2.018** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.018** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.079** pounds per hour, nor more than **0.076** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.027** pounds per hour, nor more than **0.026** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.0045** pounds per hour, nor more than **0.0043** tons per year per 12-month rolling period.
  - d. The opacity from **S2.018** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.018** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.018** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Record the throughput rate of material (in tons) on a cumulative monthly basis, for each 12-month rolling period.
  - e. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Vent Filter** controlling **S2.018** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - f. Inspect the **Vent Filter** installed on **S2.018** on a monthly basis in accordance with the manufacturer’s operation and maintenance manual and record the results (e.g. the condition of the vent filter), and any corrective actions taken.



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Section V. Specific Operating Conditions (continued)

U. Emission Units S2.019 and S2.020

System 21 - Sulfur Storage		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.019	Sulfur Storage 1	4,616,946	414,290
S2.020	Sulfur Storage 2	4,616,942	414,293

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.019 and S2.020, each**, shall be controlled by **Caustic Scrubber**.
  - b. Descriptive Stack Parameters  
 Stack Height: 30 feet  
 Stack Diameter: 3.0 feet  
 Stack Temperature: 140 °F  
 Exhaust Flow: 3,100 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.019 and S2.020, each**, shall not exceed **47.0** tons of **Sulfur** per any one-hour period averaged over a daily basis.
  - b. Hours  
 (1) **S2.019 and S2.020, each**, may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.019 and S2.020, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.10** pounds per hour, nor more than **0.44** tons per 12-month rolling period per year.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.10** pounds per hour, nor more than **0.40, 44** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.10** pounds per hour, nor more than **0.44** tons per year per 12-month rolling period.
  - d. The discharge of **SO<sub>2</sub>** (Sulfur Dioxide) to the atmosphere shall not exceed **0.34** pounds per hour, nor more than **1.49** tons per year per 12-month rolling period.
  - e. The discharge of **H<sub>2</sub>S** (Hydrogen Sulfide) to the atmosphere shall not exceed **0.12** pounds per hour, nor more than **0.53** tons per year per 12-month rolling period.
  - f. The opacity from **S2.019 and S2.020, each**, shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.019 and S2.020, each**, on a daily basis.
  - b. Monitor and record the hours of operation for **S2.019 and S2.020, each**, on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. The Permittee shall notify the Director within 72 hours if sulfur will be sourced from a different supplier than the fuel energy industry.
  - d. Monitor and record the total yearly throughput rate in tons per year. The annual throughput shall be determined as the sum of the monthly throughput rates for the year for all previous months of that year.



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**Section V. Specific Operating Conditions (continued)**

**U. Emission Units S2.019 and S2.020 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record. (continued)
  - e. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Caustic Scrubber** controlling **S2.019 and S2.020** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.
  - f. Inspect the **Caustic Scrubber** installed on **S2.019 and S2.020** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the water spray nozzles), and any corrective actions taken.
  
5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing on **S2.019 and S2.020, each**, at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine particulate matter emissions. All particulate captured in the Method 5 and Method 202 test shall be considered PM<sub>2.5</sub> for determination of compliance. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 6C in Appendix A of 40 CFR Part 60 shall be used to determine the sulfur dioxide concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - e. Method 15 in Appendix A of 40 CFR Part 60 shall be used to determine the hydrogen sulfide concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - f. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.



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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section V. Specific Operating Conditions (continued)**

**V. Emission Unit S2.021**

System 22 - Package Boiler		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.021	Package Boiler	4,616,986	414,165

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.021** has no add-on controls.
  - b. Descriptive Stack Parameters  
 Stack Height: 27 feet  
 Stack Diameter: 3.0 feet  
 Stack Temperature: 363 °F  
 Exhaust Flow: 14,832 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.021** may consume only **Propane**.
  - b. The maximum allowable fuel consumption rate for **S2.021** shall not exceed **451.0 gallons** per any one-hour period averaged over a daily basis, nor more than **248,050 gallons per year** per 12-month rolling period.
  - c. Hours
    - (1) **S2.021** may operate a total of **24** hours per day.
    - (2) **S2.021** shall not operate in excess of **550** hours per year.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.021** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.47** pounds per hour, nor more than **0.13** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.47** pounds per hour, nor more than **0.13** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.47** pounds per hour, nor more than **0.13** tons per year per 12-month rolling period.
  - d. The discharge of **SO<sub>2</sub>** (sulfur dioxide) to the atmosphere shall not exceed **0.72** pounds per hour, nor more than **0.20** tons per year per 12-month rolling period.
  - e. The discharge of **NO<sub>x</sub>** (oxides of nitrogen) to the atmosphere shall not exceed **8.79** pounds per hour, nor more than **2.42** tons per year per 12-month rolling period.
  - f. The discharge of **CO** (carbon monoxide) to the atmosphere shall not exceed **6.77** pounds per hour, nor more than **1.86** tons per year per 12-month rolling period.
  - g. The discharge of **VOCs** (volatile organic compounds) to the atmosphere shall not exceed **1.08** pounds per hour, nor more than **0.30** tons per year per 12-month rolling period.
  - h. The opacity from **S2.021** shall not equal or exceed **20** percent.



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**Section V. Specific Operating Conditions (continued)**

**V. Emission Unit S2.021 (continued)**

4. Monitoring and Recordkeeping (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.

a. Monitor and record the hours of operation for **S2.021** on a daily basis.

b. Monitor and record the consumption rate of **Propane** on a daily basis for **S2.021** (in gallons).

c. Record the corresponding average hourly consumption rate of Propane in gallons per hour. The average hourly consumption rate shall be determined from the total daily consumption and the total daily hours of operation.

d. Monitor and record the total yearly consumption rate of Propane in gallons per year. The annual consumption shall be determined as the sum of the monthly consumption rates for the year for all previous months of that year. Record the consumption rate of Propane (in gallons) on a cumulative monthly basis, for each 12-month rolling period.

~~d.~~ Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.

5. Performance and Compliance Testing (NAC 445B.346(2)), (NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)

The Permittee, upon issuance of this operating permit, shall conduct renewal performance testing on **S2.021** at least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration of this operating permit, and every 5 years thereafter, in accordance with the following:

a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).

b. Testing shall be conducted on the exhaust stack (post controls).

c. Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine PM emissions. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.

d. Method 201A and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine PM<sub>10</sub> and PM<sub>2.5</sub> emissions. The sample time and sample volume collected for each test run shall be sufficient to collect enough mass to weigh accurately.

e. The Method 201A and 202 test required in this section may be replaced by a Method 5 in Appendix A of 40 CFR Part 60 and Method 202 in Appendix M of 40 CFR Part 51 test. All particulate captured in the Method 5 and Method 202 test performed under this provision shall be considered PM<sub>2.5</sub> for determination of compliance.

f. Method 7E in Appendix A of 40 CFR Part 60 shall be used to determine the nitrogen oxides concentration. Each test will be run for a minimum of one hour.

g. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.

h. Method 10 in Appendix A of 40 CFR Part 60 shall be used to determine the carbon monoxide concentration. Each test will be run for a minimum of one hour.

i. Method 25A in Appendix A of 40 CFR Part 60 shall be used to determine the volatile organic compound concentration. Method 18 in Appendix A of 40 CFR Part 60 or Method 320 in Appendix A of CFR Part 63 may be used in conjunction with Method 25A to break out the organic compounds that are not considered VOC's by definition per 40 CFR 51.100(s). Each Method 25A test will be run for a minimum of one hour.





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**Section V. Specific Operating Conditions (continued)**

**V. Emission Unit S2.021 (continued)**

6. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
  - a. Reporting and Recordkeeping Requirements (40 CFR Part 60.48c)
    - (1) The Permittee shall submit notification of the date of construction or reconstruction and actual startup, as provided by 40 CFR 60.7. This notification shall include: (40 CFR Part 60.48c(a))
      - (a) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility. (40 CFR 60.48c(a)(1))
      - (b) The annual capacity factor at which the permittee anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired. (40 CFR 60.48c(a)(3))
    - (2) Except as provided under 40 CFR 60.48(g)(2) and (g)(3), the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day. (40 CFR Part 60.48c(g))
      - (a) As an alternative to meeting the requirements of 40 CFR Part 60.48c (g)(1), the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in 40 CFR 60.48c(f) to demonstrate compliance with the SO<sub>2</sub> standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month. (40 CFR 60.48c(g)(2))
      - (b) As an alternative to meeting the requirements of 40 CFR 60.48c (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. (40 CFR Part 60.48c(g)(3))
    - (3) All records required under 40 CFR Part 60.48c shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. (40 CFR Part 60.48c(i))
    - (4) The reporting period for the reports required under 40 CFR Part 60, Subpart Dc, is each six-month period. All reports shall be submitted to the Director and shall be postmarked by the 30th day following the end of the reporting period. (40 CFR Part 60.48c(j))



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Section V. Specific Operating Conditions (continued)

W. Emission Unit S2.022

System 23 - Start-Up Burner		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.022	Start-Up Burner	4,617,002	414,213

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. S2.022 has no add-on controls.
  - b. Descriptive Stack Parameters  
 Stack Height: 50 feet  
 Stack Diameter: 5.0 feet  
 Stack Temperature: 950 °F  
 Exhaust Flow: 206,338 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. S2.022 may consume only **Propane**.
  - b. The maximum allowable fuel consumption rate for S2.022 shall not exceed **315.0 gallons** per any one-hour period averaged over a daily basis, nor more than **63,000 gallons per year** per 12-month rolling period.
  - c. Hours
    - (1) S2.022 may operate a total of **24** hours per day.
    - (2) S2.022 shall not operate in excess of **200** hours per 12-month rolling period.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from S2.022 the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.33** pounds per hour, nor more than **0.033** tons per year per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.33** pounds per hour, nor more than **0.033** tons per year per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.33** pounds per hour, nor more than **0.033** tons per year per 12-month rolling period.
  - d. The discharge of **SO<sub>2</sub>** (sulfur dioxide) to the atmosphere shall not exceed **0.50** pounds per hour, nor more than **0.050** tons per year per 12-month rolling period.
  - e. The discharge of **NO<sub>x</sub>** (oxides of nitrogen) to the atmosphere shall not exceed **6.14** pounds per hour, nor more than **0.61** tons per year per 12-month rolling period.
  - f. The discharge of **CO** (carbon monoxide) to the atmosphere shall not exceed **4.73** pounds per hour, nor more than **0.47** tons per year per 12-month rolling period.
  - g. The discharge of **VOCs** (volatile organic compounds) to the atmosphere shall not exceed **0.76** pounds per hour, nor more than **0.076** tons per year per 12-month rolling period.
  - h. The opacity from S2.022 shall not equal or exceed **20** percent.





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**Section V. Specific Operating Conditions (continued)**

**W. Emission Unit S2.022 (continued)**

4. Monitoring and Recordkeeping (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.

a. Monitor and record the hours of operation for **S2.022** on a daily basis.

b. Monitor and record the consumption rate of **Propane** on a daily basis for **S2.022** (in gallons).

~~c. Record the corresponding average hourly consumption rate of **Propane** in gallons per hour. The average hourly consumption rate shall be determined from the total daily consumption and the total daily hours of operation.~~

~~d. Monitor and record the total yearly consumption rate of **Propane** in gallons per year. The annual consumption shall be determined as the sum of the monthly consumption rates for the year for all previous months of that year.~~

~~e. Record the consumption rate of Propane (in gallons) on a cumulative monthly basis, for each 12 month rolling period.~~

~~de.~~ Record the monthly hours of operation and the corresponding annual hours of operation for the year. The monthly hours of operation shall be determined at the end of each month as the sum of daily hours of operation for each day of the month. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for the year.

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Section V. Specific Operating Conditions (continued)

X. Emission Units S2.023

System 24 - Sulfuric Acid Plant		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.023	Sulfuric Acid Plant	4,617,058	414,255

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. Emissions from **S2.023** shall be controlled by a **Tail Gas Scrubber**.
  - b. Descriptive Stack Parameters  
 Stack Height: 199 feet  
 Stack Diameter: 8.5 feet  
 Stack Temperature: 79 °F  
 Exhaust Flow: 165,245 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. The maximum allowable throughput rate for **S2.023** shall not exceed **51.0** tons of **Sulfur** per any one-hour period averaged over a daily basis.
  - b. Hours  
 (1) **S2.023** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B.22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.023** the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **5.69** pounds per hour, nor more than **24.9** tons per 12-month rolling period.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **5.69** pounds per hour, nor more than **24.9** tons per 12-month rolling period.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **5.69** pounds per hour, nor more than **24.9** tons per 12-month rolling period.
  - d. The discharge of **SO<sub>2</sub>** (Sulfur Dioxide) to the atmosphere shall not exceed **10.2** pounds per hour, nor more than **44.6** tons per 12-month rolling period.
  - e. The discharge of **NO<sub>x</sub>** (Oxides of Nitrogen) to the atmosphere shall not exceed **19.5** pounds per hour, nor more than **85.3** tons per 12-month rolling period.
  - f. The discharge of **H<sub>2</sub>SO<sub>4</sub>** (Sulfuric Acid) to the atmosphere shall not exceed **5.69** pounds per hour, nor more than **24.9** tons per 12-month rolling period.
  - g. The opacity from **S2.023** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput for **S2.023** on a daily basis.
  - b. Monitor and record the hours of operation for **S2.023** on a daily basis.
  - c. Record the corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate shall be determined from the total daily throughput and the total daily hours of operation.
  - d. Conduct and record an observation of visible emissions (excluding water vapor) on the **stack** of the **Tail Gas Scrubber** controlling **S2.023** on a **monthly** basis while operating. The observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented to their back. If visible emissions are observed and exceed the applicable opacity standard, the Permittee shall take immediate corrective action. If visible emissions are observed, the Permittee shall conduct and record a Method 9 visible emission test and take corrective actions. Each Method 9 visible emission test shall be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A. The Permittee shall maintain in a contemporaneous log the following recordkeeping: the



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calendar date of any required monitoring, results of the monthly observation of visible emissions, and any corrective actions taken to eliminate visible emissions.

**Section V. Specific Operating Conditions (continued)**

**X. Emission Units S2.023 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*) (continued)  
The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record. (continued)
  - e. Inspect the **Tail Gas Scrubber** installed on **S2.023** on a monthly basis in accordance with the manufacturer's operation and maintenance manual and record the results (e.g. the condition of the water spray nozzles), and any corrective actions taken.
  - f. Monitor and record the ~~pressure drop~~pH and water flow rate values for the **Tail Gas Scrubber**, when the Sulfuric Acid Plant is operating, at least once every hour.
    - (1) Sulfuric Acid Plant operation is defined as the combustion of Sulfur in air.
    - (2) Compare the values to the minimum water flow rate and ~~pressure drop~~pH established using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data.
5. Performance and Compliance Testing (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
The Permittee, upon issuance of this operating permit, shall conduct annual performance testing within 90 days of the anniversary date of the previous initial performance testing or annual performance testing, and annually thereafter, in accordance with the following:
  - a. All opacity compliance demonstrations and/or performance tests must comply with the advance notification, protocol review, operational conditions, reporting, and other requirements of Section I.H. Testing and Sampling (NAC 445B.252) of this operating permit. All performance test results shall be based on the arithmetic average of three valid runs (NAC 445B.252(5)).
  - b. Testing shall be conducted on the exhaust stack (post controls).
  - c. Method 5 and Method 202 in Appendix M of 40 CFR Part 51 shall be used to determine particulate matter emissions. All particulate captured in the Method 5 and Method 202 test shall be considered PM<sub>2.5</sub> for determination of compliance. The sample volume for each test run shall be at least 1.7 dscm (60 dscf). Test runs must be conducted for up to two hours in an effort to collect this minimum sample.
  - d. Method 6C in Appendix A of 40 CFR Part 60 shall be used to determine the sulfur dioxide concentration. Each test will be run for a minimum of one hour.
  - e. Method 7E in Appendix A of 40 CFR Part 60 shall be used to determine the nitrogen oxides concentration. Each test will be run for a minimum of one hour.
  - f. Method 8 in Appendix A of 40 CFR Part 60 ~~or Conditional Test Method CTM-013~~ shall be used to determine the sulfuric acid mist concentration. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - g. The Method 8 test required in this section may be replaced by a Conditional Test Method CTM-013 test based on prior approval from the Administrator. The sample volume for each test run shall be at least 1.15 dscm (40.6 dscf). Each test will be run for a minimum of one hour.
  - gh. Method 9 in Appendix A of 40 CFR Part 60 shall be used to determine opacity. Opacity observations shall be conducted concurrently with the applicable performance test. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15 second intervals), unless otherwise specified by an applicable subpart.



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**Section V. Specific Operating Conditions (continued)**

**X. Emission Units S2.023 (continued)**

6. Federal Requirements (NAC 445B.346(2)) (NAC 445B.252.1) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart H—Standards of Performance for Sulfuric Acid Plants

a. Emission Standards (40 CFR 60.82(a) and 60.83(a))

(1) Standard for sulfur dioxide (40 CFR 60.82(a))

On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, no owner or operator subject to the provisions of Subpart H shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of 2 kg per metric ton of acid produced (4 lb per ton/~~204 lbs per hour~~), the production being expressed as 100 percent H<sub>2</sub>SO<sub>4</sub>.

(2) Standard for acid mist (40 CFR 60.83(a))

On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, no owner or operator subject to the provisions of Subpart H shall cause to be discharged into the atmosphere from any affected facility any gases which:

(a) Contain acid mist, expressed as H<sub>2</sub>SO<sub>4</sub>, in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton/~~7.65 lbs per hour~~), the production being expressed as 100 percent H<sub>2</sub>SO<sub>4</sub>.

(b) Exhibit **10 percent opacity**, or greater.

b. Emission Monitoring (40 CFR 60.84)

(1) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under 40 CFR 60.13(d), shall be sulfur dioxide (SO<sub>2</sub>). Method 8 shall be used for conducting monitoring system performance evaluations under 40 CFR 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide. (40 CFR 60.84(a))

(2) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999-AP-13) and calculating the appropriate conversion factor for each eight-hour period as follows: (40 CFR 60.84(b))

$$CF = k[(1.000 - 0.015r)/(r - s)]$$

where:

CF = conversion factor (kg/metric ton per ppm, lb/ton per ppm).

k = constant derived from material balance. For determining CF in metric units, k = 0.0653. For determining CF in English units, k = 0.1306.

r = percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Director's approval.

s = percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under paragraph (a) of this section.

(3) The owner or operator shall record all conversion factors and values under paragraph (b) of this section from which they were computed (i.e., CF, r, and s). (40 CFR 60.84(c))



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Section V. Specific Operating Conditions (continued)

X. Emission Units S2.023 (continued)

6. Federal Requirements (NAC 445B.346(2)) (NAC 445B.252.1) (Federally Enforceable SIP Requirement)
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart H—Standards of Performance for Sulfuric Acid Plants (continued)

b. Emission Monitoring (40 CFR 60.84) (continued)

(4) Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO2, O2, and CO2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for the SO2 monitor shall be as specified in paragraph (b) of this section. The span value for CO2 (if required) shall be 10 percent and for O2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO2 emission rate as follows: (40 CFR 60.84(d))

Es = (Cs S)/[0.265 - (0.0126 %O2) - (A %CO2)]

where:

Es = emission rate of SO2, kg/metric ton (lb/ton) of 100 percent of H2SO4 produced.

Cs = concentration of SO2, kg/dscm (lb/dscf).

S = acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H2SO4 produced.

%O2 = oxygen concentration, percent dry basis.

- A = auxiliary fuel factor,
= 0.00 for no fuel.
= 0.0226 for methane.
= 0.0217 for natural gas.
= 0.0196 for propane.
= 0.0172 for No 2 oil.
= 0.0161 for No 6 oil.
= 0.0148 for coal.
= 0.0126 for coke.

%CO2 = carbon dioxide concentration, percent dry basis.

Note: It is necessary in some cases to convert measured concentration units to other units for these calculations:

Use the following table for such conversions:

Table with 3 columns: From, To, Multiply by. Rows include conversions for g/scm to kg/scm, mg/scm to kg/scm, ppm (SO2) to kg/scm, and ppm (SO2) to lb/scf.

(5) For the purpose of reports under 40 CFR 60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under X.6.a.(1) of this section or 40 CFR 60.82. (40 CFR 60.84(e))



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**Section V. Specific Operating Conditions (continued)**

**X. Emission Units S2.023 (continued)**

6. Federal Requirements (NAC 445B.346(2)) (NAC 445B.252.1) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart H—Standards of Performance for Sulfuric Acid Plants (continued)

c. Test Methods and Procedures (40 CFR 60.85)

(1) In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of 40 CFR Part 60 or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section. (40 CFR 60.85 (a))

(2) The owner or operator shall determine compliance with the SO<sub>2</sub> acid mist, and visible emission standards in **X.6.a.(1) and (2)** of this section or 40 CFR 60.82 and 60.83 as follows: (40 CFR 60.85 (a))

(a) The emission rate (E) of acid mist or SO<sub>2</sub> shall be computed for each run using the following equation:

$$E = (CQsd) / (PK)$$

where:

E = emission rate of acid mist or SO<sub>2</sub> kg/metric ton (lb/ton) of 100 percent H<sub>2</sub>SO<sub>4</sub> produced.

C = concentration of acid mist or SO<sub>2</sub>, g/dscm (lb/dscf).

Qsd = volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).

P = production rate of 100 percent H<sub>2</sub>SO<sub>4</sub>, metric ton/hr (ton/hr).

K = conversion factor, 1000 g/kg (1.0 lb/lb).

(b) Method 8 shall be used to determine the acid mist and SO<sub>2</sub> concentrations (C's) and the volumetric flow rate (Qsd) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(c) Suitable methods shall be used to determine the production rate (P) of 100 percent H<sub>2</sub>SO<sub>4</sub> for each run. Material balance over the production system shall be used to confirm the production rate.

(d) Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.

(3) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section: (40 CFR 60.85 (a))

(a) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O<sub>2</sub> concentration and, if required, CO<sub>2</sub> concentration.

(ii) The SO<sub>2</sub> or acid mist emission rate is calculated as described in **X.6.b.(4)** of this section or 40 CFR 60.84(d), substituting the acid mist concentration for Cs as appropriate.





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**Section V. Specific Operating Conditions (continued)**

**Y. Emission Units S2.024 and S2.025**

System 25 - Fire Pumps		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.024	Fire Pump 1 (Mine, 422 hp, John Deere, 2015 or newer)	4,617,714	410,835
S2.025	Fire Pump 2 (Process, 422 hp, John Deere, 2015 or newer)	4,617,087	414,307

1. Air Pollution Control Equipment (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.024 and S2.025, each**, have no add-on controls.
  - b. Descriptive Stack Parameters  
 Stack Height: 13.0 feet  
 Stack Diameter: 0.50 feet  
 Stack Temperature: 891 °F  
 Exhaust Flow: 2,048 actual cubic feet per minute (acfm)
  
2. Operating Parameters (NAC 445B.346(1)) (*Federally Enforceable SIP Requirement*)
  - a. **S2.024 and S2.025, each**, may consume only **diesel**.
  - b. The maximum allowable fuel consumption rate for **S2.024 and S2.025, each**, shall not exceed **20.0 gallons** per any one-hour period.
  - c. Hours
    - (1) **S2.024 and S2.025, each**, may operate a total of **24 hours** per day.
    - (2) **S2.024 and S2.025, each**, may operate a maximum of **100 hours** per year of non-emergency use. There is no time limit on operation in emergency situations.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (*Federally Enforceable SIP Requirement*)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.024 and S2.025, each**, the following pollutants in excess of the following specified limits:
  - a. The discharge of **PM** (particulate matter) to the atmosphere shall not exceed **0.10 pounds** per hour, nor more than **0.0051 tons** per year.
  - b. The discharge of **PM<sub>10</sub>** (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed **0.10 pounds** per hour, nor more than **0.0051 tons** per year.
  - c. The discharge of **PM<sub>2.5</sub>** (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed **0.10 pounds** per hour, nor more than **0.0051 tons** per year.
  - d. The discharge of **SO<sub>2</sub>** (sulfur dioxide) to the atmosphere shall not exceed **0.0042 pounds** per hour, nor more than **0.00021 tons** per year.
  - e. The discharge of **NO<sub>x</sub>** (oxides of nitrogen) to the atmosphere shall not exceed **2.45 pounds** per hour, nor more than **0.12 tons** per year.
  - f. The discharge of **CO** (carbon monoxide) to the atmosphere shall not exceed **0.63 pounds** per hour, nor more than **0.032 tons** per year.
  - g. The discharge of **VOCs** (volatile organic compounds) to the atmosphere shall not exceed **0.084 pounds** per hour, nor more than **0.0042 tons** per year.
  - h. The opacity from **S2.024 and S2.025, each**, shall not equal or exceed **20 percent**.





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**Section V. Specific Operating Conditions (continued)**

**Y. Emission Units S2.024 and S2.025 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.

- a. Monitor and record the total daily hours of operation for **S2.024 and S2.025, each**, for each day of operation. The Permittee shall note which hours of operation are emergency hours, and which hours of operation are hours for non-emergency use.
- b. Monitor and record the consumption rate of **diesel** on a daily basis for **S2.024 and S2.025, each**, (in gallons) by multiplying the maximum hourly fuel consumption rate as stated in **Y.2.b** of this section and the total daily hours of operation.
- c. Monitor and record the total yearly hours of operation of **S2.024 and S2.025, each**, per year. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for all previous months of that year.
- d. The Permittee, upon issuance of this operating permit, shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. (40 CFR 60.7(b))

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)

New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

a. Emissions Standards (40 CFR 60.4202, 40 CFR 60.4205)

The Permittee must comply with the emission standards in Table 4 of 40 CFR Part 60 Subpart III, for all pollutants, for the same model year and National Fire Protection Association (NFPA) maximum engine power. (40 CFR 60.4202(d), 40 CFR 60.4205(c))

(1) For a 2009 model year and later stationary fire pump engine with a maximum engine power of  $225 \leq \text{KW} < 450$  ( $300 \leq \text{HP} < 600$ ) and less than 30 liters per cylinder: (40 CFR 60.4202(d), 40 CFR 60.4205(c), Table 4)

- (a) The discharge of PM to the atmosphere shall not exceed **0.20** gram/kW-hr (**0.15** gram/hp-hr) (**0.14** pounds per hour).
- (b) The discharge of non-methane hydrocarbon (NMHC) + NO<sub>x</sub> to the atmosphere shall not exceed **4.0** grams/kW-hr (**3.0** grams/hp-hr) (**2.79** pounds per hour).

b. Fuel Requirements (40 CFR 60.4207)

The Permittee must meet the following diesel requirements for non-road engine: (40 CFR 60.4207(b), 40 CFR 80.510(b))

- (1) Sulfur content to be 15 parts per million (ppm) maximum.
- (2) A minimum cetane index of 40; or
- (3) A maximum aromatic content of 35 volume percent.

c. Monitoring Requirements (40 CFR 60.4209)

If the CI ICE does not meet the standards applicable to non-emergency engines, the Permittee must install a non-resettable hour meter prior to startup of the engine. (40 CFR 60.4209(a))

d. Compliance Requirements (40 CFR 60.4206, 40 CFR 60.4211)

- (1) The Permittee must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4205 over the entire life of the engine. (40 CFR 60.4206)
- (2) Except as permitted in 40 CFR 60.4211(g), the Permittee must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; change only those emission-related settings that are permitted by the manufacturer; and meet the requirements of 40 CFR Part 89. (40 CFR 60.4211(a))



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**Section V. Specific Operating Conditions (continued)**

**Y. Emission Units S2.024 and S2.025 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*) (continued)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (continued)
  - d. Compliance Requirements (40 CFR 60.4206, 40 CFR 60.4211) (continued)
    - (3) The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in **Y.5.d.(5)** of this section. (40 CFR 60.4211(c))
    - (4) In order for the engine to be considered an emergency stationary ICE under Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs **Y.5.d.(4)(a) through (c)** of this section, is prohibited. If the Permittee do not operate the engine according to the requirements in paragraphs **Y.5.d.(4)(a) through (c)** of this section, the engine will not be considered an emergency engine under Subpart IIII and must meet all requirements for non-emergency engines. (40 CFR 60.4211(f))
      - (a) There is no time limit on the use of emergency stationary ICE in emergency situations. (40 CFR 60.4211(f)(1))
      - (b) The Permittee may operate the Permittee's emergency stationary ICE for any combination of the purposes specified in paragraphs **Y.5.d.(4)(b)** of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph **Y.5.d.(4)(c)** of this section counts as part of the 100 hours per calendar year. (40 CFR 60.4211(f)(2))
        - i. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. (40 CFR 60.4211(f)(2)(i))
    - (c) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph **Y.5.d.(4)(b)** of this section. Except as provided in paragraph **Y.5.d.(4)(c)** of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (40 CFR 60.4211(f)(3))
      - i. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the conditions in 40 CFR 60.4211(f)(3)(i)(A) through (E) are met. (40 CFR 60.4211(f)(3)(i))
  - (5) If the Permittee does not install, configure, operate, and maintain the Permittee's engine and control device according to the manufacturer's emission-related written instructions, or the Permittee change emission-related settings in a way that is not permitted by the manufacturer, the Permittee must demonstrate compliance as follows: (40 CFR 4211(g))
    - (a) For CI ICE greater than or equal to 100 HP and less than or equal to 500 hp, the Permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the Permittee must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the Permittee change emission-related settings in a way that is not permitted by the manufacturer. (40 CFR 60.4211(g)(2))



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**Section V. Specific Operating Conditions (continued)**

**Y. Emission Units S2.024 and S2.025 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*) (continued)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (continued)
  - e. National Emission Standards for Hazardous Air Pollutants for Source Categories – 40 CFR Part 63, Subpart ZZZZ – Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines:  
If the compression ignition engine meets the requirements of 40 CFR Part 60 Subpart IIII, 40 CFR Part 63 Subpart ZZZZ requirements are also met. (40 CFR Part 63.6590(c))

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Section V. Specific Operating Conditions (continued)

Z. Emission Units S2.026 and S2.027

Table with 3 columns: System 26 - Emergency Generators, Location UTM (Zone 11, NAD 83) m North, m East. Rows for S2.026 and S2.027.

- 1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
a. S2.026 and S2.027, each, have no add-on controls.
b. Descriptive Stack Parameters
Stack Height: 5.0 feet
Stack Diameter: 0.30 feet
Stack Temperature: 960 °F
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
a. S2.026 and S2.027, each, may consume only Propane.
b. The maximum allowable fuel consumption rate for S2.026 and S2.027, each, shall not exceed 13.9 gallons per any one-hour period.
c. Hours
(1) S2.026 and S2.027, each, may operate a total of 24 hours per day.
(2) S2.026 and S2.027, each, may operate a total of 100 hours per year of non-emergency use. There is no time limit on operation in emergency situations.
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)
The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from S2.026 and S2.027, each, the following pollutants in excess of the following specified limits:
a. The discharge of PM (particulate matter) to the atmosphere shall not exceed 0.069 pounds per hour, nor more than 0.0034 tons per year.
b. The discharge of PM10 (particulate matter less than or equal to 10 microns in diameter) to the atmosphere shall not exceed 0.069 pounds per hour, nor more than 0.0034 tons per year.
c. The discharge of PM2.5 (particulate matter less than or equal to 2.5 microns in diameter) to the atmosphere shall not exceed 0.069 pounds per hour, nor more than 0.0034 tons per year.
d. The discharge of SO2 (sulfur dioxide) to the atmosphere shall not exceed 0.0049 pounds per hour, nor more than 0.00024 tons per year.
e. The discharge of NOx (oxides of nitrogen) to the atmosphere shall not exceed 0.74 pounds per hour, nor more than 0.037 tons per year.
f. The discharge of CO (carbon monoxide) to the atmosphere shall not exceed 1.21 pounds per hour, nor more than 0.060 tons per year.
g. The discharge of VOCs (volatile organic compounds) to the atmosphere shall not exceed 0.74 pounds per hour, nor more than 0.037 tons per year.
h. The opacity from S2.026 and S2.027, each, shall not equal or exceed 20 percent.



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**Section V. Specific Operating Conditions (continued)**

**Z. Emission Units S2.026 and S2.027 (continued)**

4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (*Federally Enforceable SIP Requirement*)

The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.

- a. Monitor and record the total daily hours of operation for **S2.026 and S2.027, each**, for each day of operation. The Permittee shall note which hours of operation are emergency hours, and which hours of operation are hours for non-emergency use.
- b. Monitor and record the consumption rate of **Propane** on a daily basis for **S2.026 and S2.027, each**, (in gallons) by multiplying the maximum hourly fuel consumption rate as state in **Z.2.b** of this section and the total daily hours of operation.
- c. Monitor and record the total yearly hours of operation of **S2.026 and S2.027, each**, per year. The annual hours of operation shall be determined at the end of each month as the sum of the monthly hours of operation for all previous months of that year.
- d. The Permittee, upon issuance of this operating permit, shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative (40 CFR 60.7(b)).

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)

New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

a. Emissions Standards (40 CFR 60.4231, 40 CFR 60.4233, 40 CFR 60.4234, and 40 CFR ~~90.103~~1048.101)

- (1) The Permittee of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in 40 CFR 60.4230(a)(4) (January 1, 2009) that are rich burn engines that use LPG must comply with the emission standards in 40 CFR 60.4231(c) for their stationary SI ICE. (40 CFR 60.4233(c))
- (2) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in 40 CFR 60.4230(a)(2), or manufactured on or after the applicable date in 40 CFR 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in 40 CFR 60.4230(a)(4) to the Phase I emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc that are rich burn engines that use LPG to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate. (40 CFR 60.4231(c))
  - (a) For a 2007 model year and later (40 CFR 1048.101~~(b)~~(3), ~~Table 240~~ CFR 1048.101(a)(2)):
    - (i) The discharge of HC + NO<sub>x</sub> to the atmosphere shall not exceed ~~5.42.7~~ grams/kw-hr (1.490.74 pounds/hr).
    - (ii) The discharge of CO to the atmosphere shall not exceed ~~13.81.21~~ 50.4.4 grams/kw-hr (13.81.21 pounds/hr).
- (3) The Permittee of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine. (40 CFR 60.4234)

b. Other Requirements (40 CFR 60.4237)

- (1) Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the Permittee must install a non-resettable hour meter. The Permittee of



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~~an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, must install a non-resettable hour meter upon startup of the emergency engine. (40 CFR 60.4237(eb))~~

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**Section V. Specific Operating Conditions (continued)**

**Z. Emission Units S2.026 and S2.027 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (continued)
  - c. Compliance Requirements (40 CFR 60.4243)
    - (1) The Permittee of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in 40 CFR 60.4233(a) through (c), must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, the Permittee must meet one of the requirements specified in (a)(1) and (2) of 40 CFR 60.4243. (40 CFR 60.4243(a))
      - (a) If the Permittee operates and maintains the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the Permittee must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if the Permittee is an owner or operator. The Permittee must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to the Permittee. If the Permittee adjusts engine settings according to and consistent with the manufacturer's instructions, the Permittee's stationary SI internal combustion engine will not be considered out of compliance. (40 CFR 60.4243(a)(1))
      - (b) If the Permittee does not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the Permittee's engine will be considered a non-certified engine, and the Permittee must demonstrate compliance according to 40 CFR 60.4243(a)(2)(ii). (40 CFR 60.4243(a)(2))
        - (i) The Permittee of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup to demonstrate compliance. The Permittee of a stationary SI internal combustion engine less than 100 HP, the must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required. (40 CFR 60.4243(a)(2)(ii))
    - (2) If the Permittee owns or operates an emergency stationary ICE, the Permittee must operate the emergency stationary ICE according to the requirements in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3). In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60 Subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3), is prohibited. If the Permittee does not operate the engine according to the requirements in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3), the engine will not be considered an emergency engine under 40 CFR Part 60 Subpart JJJJ and must meet all requirements for non-emergency engines. (40 CFR 60.4243(d))
      - (a) There is no time limit on the use of emergency stationary ICE in emergency situations. (40 CFR 60.4243(d)(1))
      - (b) The Permittee may operate their emergency stationary ICE for any combination of the purposes specified in paragraph 40 CFR 60.4243(d)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph 40 CFR 60.4243(d)(3) counts as part of the 100 hours per calendar year allowed by 40 CFR 60.4243(d)(2). (40 CFR 60.4243(d)(2))
        - (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The Permittee may





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petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. (40 CFR 60.4243(d)(2)(i))

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**Section V. Specific Operating Conditions (continued)**

**Z. Emission Units S2.026 and S2.027 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (continued)
  - c. Compliance Requirements (40 CFR 60.4243) (continued)
    - (2) If the Permittee owns or operates an emergency stationary ICE, the Permittee must operate the emergency stationary ICE according to the requirements in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3). In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60 Subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3), is prohibited. If the Permittee does not operate the engine according to the requirements in paragraphs 40 CFR 60.4243(d)(1) through 40 CFR 60.4243(d)(3), the engine will not be considered an emergency engine under 40 CFR Part 60 Subpart JJJJ and must meet all requirements for non-emergency engines. (40 CFR 60.4243(d)) (continued)
      - (c) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph 40 CFR 60.4243(d)(2). (40 CFR 60.4243(d)(3))
  - d. Notification, Reports, and Records (40 CFR 60.4245)
    - (1) The Permittee of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements: (40 CFR 60.4245)
      - (a) The Permittee of all stationary SI ICE must keep records of the information in paragraphs 40 CFR 60.4245(a)(1) through 40 CFR 60.4245(a)(4). (40 CFR 60.4245(a))
        - (i) All notifications submitted to comply with this subpart and all documentation supporting any notification. (40 CFR 60.4245(a)(1))
        - (ii) Maintenance conducted on the engine. (40 CFR 60.4245(a)(2))
        - (iii) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable. (40 CFR 60.4245(a)(3))
        - (iv) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine meets the emission standards. (40 CFR 60.4245(a)(4))
      - (2) For all stationary SI emergency ICE greater than ~~25-130~~ HP and less than ~~130-500~~ HP manufactured on or after July 1, ~~2008~~2011, that do not meet the standards applicable to non-emergency engines, the Permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. (40 CFR 60.4245(b))
      - (3) The Permittee of an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.4243(d)(2)(ii) and (iii) or that operates for the purposes specified in 40 CFR 60.4243(d)(3)(i), must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section. (40 CFR 60.4245(e))
        - (a) The report must contain the following information: (40 CFR 60.4245(e)(1))
          - (i) Company name and address where the engine is located. (40 CFR 60.4245(e)(1)(ii))
          - (ii) Date of the report and beginning and ending dates of the reporting period. (40 CFR 60.4245(e)(1)(i))
          - (iii) Engine site rating and model year. (40 CFR 60.4245(e)(1)(iii))



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**Section V. Specific Operating Conditions (continued)**

**Z. Emission Units S2.026 and S2.027 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
New Source Performance Standards (NSPS) – 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (continued)
  - d. Notification, Reports, and Records (40 CFR 60.4245) (continued)
    - (3) The Permittee of an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.4243(d)(2)(ii) and (iii) or that operates for the purposes specified in 40 CFR 60.4243(d)(3)(i), must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section. (40 CFR 60.4245(e)) (continued)
      - (a) The report must contain the following information: (40 CFR 60.4245(e)(1))
        - (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (40 CFR 60.4245(e)(1)(iv))
        - (v) Hours operated for the purposes specified in 40 CFR 60.4243(d)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4243(d)(2)(ii) and (iii). (40 CFR 60.4245(e)(1)(v))
        - (vi) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR 60.4243(d)(2)(ii) and (iii). (40 CFR 60.4245(e)(1)(vi))
        - (vii) Hours spent for operation for the purposes specified in 40 CFR 60.4243(d)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4243(d)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. (40 CFR 60.4245(e)(1)(vii))
      - (b) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. (40 CFR 60.4245(e)(2))
      - (c) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4. (40 CFR 60.4245(e)(3))
    - e. National Emission Standards for Hazardous Air Pollutants for Source Categories – 40 CFR Part 63, Subpart ZZZZ – Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines:  
If the spark ignition engine meets the requirements of 40 CFR Part 60 Subpart JJJJ, 40 CFR Part 63 Subpart ZZZZ requirements are also met. (40 CFR Part 63.6590(c))



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Section V. Specific Operating Conditions (continued)

AA. Emission Unit S2.028

System 27 - Gasoline Tank		Location UTM (Zone 11, NAD 83)	
		m North	m East
S2.028	Gasoline Tank, 1,000 gallons	4,617,430	410,878

1. Air Pollution Control Equipment (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. **S2.028** shall be controlled by submerged fill.
  - b. Descriptive Tank Parameters  
 Shell Diameter: 5.5 feet  
 Shell Height: 6 feet  
 Capacity: 1,000 gallons
  
2. Operating Parameters (NAC 445B.346(1)) (Federally Enforceable SIP Requirement)
  - a. **S2.028** shall only be used to store **gasoline**.
  - b. The maximum allowable throughput rate for **S2.028** shall not exceed **9,999** gallons per month, nor more than **103,000** gallons per year.
  - c. Hours  
**S2.028** may operate a total of **24** hours per day.
  
3. Emission Limits (NAC 445B.305, NAC 445B.346(1), NAC 445B. 22017) (Federally Enforceable SIP Requirement)  
 The Permittee, upon issuance of this operating permit, shall not discharge or cause the discharge into the atmosphere from **S2.028** the following pollutants in excess of the following specified limits:
  - a. The discharge of **VOCs** (volatile organic compounds) to the atmosphere shall not exceed **0.22** tons per year.
  - b. The opacity from **S2.028** shall not equal or exceed **20** percent.
  
4. Monitoring, Recordkeeping, and Reporting (NAC 445B.346(2)) (Federally Enforceable SIP Requirement)  
 The Permittee, upon the issuance of this operating permit, shall maintain, in a contemporaneous log, the monitoring and recordkeeping specified in this section. All records in the log must be identified with the calendar date of the record.
  - a. Monitor and record the throughput of **gasoline**, in gallons, loaded into, or dispensed from, **S2.028**, on a monthly basis, as determined from vendor invoices for tank loading or fuel pump non-resettable meter for tank dispensing.
  - b. Monitor and record the total yearly throughput rate in gallons per year. The annual throughput shall be determined at the end of each month as the sum of the monthly throughput rates for the year for all previous months of that year.
  
5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (Federally Enforceable SIP Requirement)  
National Emission Standards for Hazardous Air Pollutants (NESHAP) – 40 CFR Part 63 Subpart CCCCCC – for Gasoline Dispensing Facilities
  - a. Permittee must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.11115)



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**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section V. Specific Operating Conditions (continued)**

**AA. Emission Unit S2.028 (continued)**

5. Federal Requirements (NAC 445B.346(2), NAC 445B.252(1)) (*Federally Enforceable SIP Requirement*)  
National Emission Standards for Hazardous Air Pollutants (NESHAP) – 40 CFR Part 63 Subpart CCCCCC – for Gasoline Dispensing Facilities (continued)
  - b. Permittee must not allow **gasoline** to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
    - (1) Minimize **gasoline** spills. (40 CFR 63.11116(a)(1))
    - (2) Clean up spills as expeditiously as practicable. (40 CFR 63.11116(a)(2))
    - (3) Cover all open **gasoline** containers and all **gasoline** storage tank fill-pipes with a gasketed seal when not in use. (40 CFR 63.11116(a)(3))
    - (4) Minimize **gasoline** sent to open waste collection systems that collect and transport **gasoline** to reclamation and recycling devices, such as oil/water separators. (40 CFR 63.11116(a)(4))
  - c. Permittee must have records available within 24 hours of a request by the Director to document your **gasoline** throughput. (40 CFR 63.111176(~~eb~~))

**\*\*\*\*End of Specific Operating Conditions\*\*\*\***



**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section VI. Continuous Emissions Monitoring System (CEMS) Conditions**

A. Continuous Emissions Monitoring System (CEMS) Requirements for **S2.023** (NAC 445B.3405)

1. On or before the date of start-up of **S2.023**, the Permittee shall install, calibrate, operate, and maintain an SO<sub>2</sub> and NO<sub>x</sub> CEMS in the exhaust stacks of **S2.023**. The CEMS sampling probe must be installed at an appropriate location in the exhaust stacks to accurately and continuously measure the concentration of SO<sub>2</sub> and NO<sub>x</sub> (in input appropriate concentration unit) from **S2.023**, in accordance with the requirements prescribed in Nevada Administrative Code (NAC) 445B.256 to NAC 445B.267, applicable subparts 40 CFR Part 60 Appendix B and Appendix F. Verification of the operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the devices.
2. The Permittee shall install CEMS as specified under 40 CFR Part 60 Appendix B Performance Specification (PS) 2 Section 8.1. (40 CFR Part 60 Appendix B PS-2 Section 8.1)
3. The Permittee shall conduct Calibration Drift (CD) tests for 7 consecutive calendar days according to the procedure given in 40 CFR Part 60 Appendix B PS-2 Sections 8.3.2 through 8.3.4. Alternatively, the CD test may be conducted over 7 consecutive unit operating days. (40 CFR Part 60 Appendix B PS-2 Section 8.3.1)
4. The Permittee shall conduct a Relative Accuracy (RA) test according to the procedure given in 40 CFR Part 60 Appendix B PS-2 Sections 8.4.2 through 8.4.6. (40 CFR Part 60 Appendix B PS-2 Section 8.4.1)
5. At a minimum, the Permittee shall summarize in tabular form the results of the CD tests and the RA tests or alternative RA procedure, as appropriate. Include all data sheets, calculations, charts (records of CEMS responses), cylinder gas concentration certifications, and calibration cell response certifications (if applicable) necessary to confirm that the performance of the CEMS met the performance specifications. (40 CFR Part 60 Appendix B PS-2 Section 8.5)
6. The Permittee shall comply with the following method performance specifications (40 CFR Part 60 Appendix B PS-2 Section 13.0):
  - a. Calibration Drift
  - b. Relative Accuracy
7. The Permittee shall develop and implement a Quality Control (QC) program. As a minimum, each QC program must include written procedures which should describe in detail, complete, step-by-step procedures and operations for each of the following activities (40 CFR Part 60 Appendix F Procedure 1 Section 3.0):
  - a. Calibration of CEMS
  - b. CD determination and adjustment of CEMS
  - c. Preventative maintenance of CEMS (including spare parts inventory)
  - d. Data recording, calculations, and reporting
  - e. Accuracy audit procedures including sampling and analysis methods
  - f. Program of corrective action for malfunctioning CEMS
8. The written procedures under **A.7.** of this section, must be kept on record and available for inspection by the Director. (40 CFR Part 60 Appendix F Procedure 1 Section 3.0)
9. The Permittee shall conduct a Calibration Drift Assessment according to 40 CFR Part 60 Appendix F Procedure 1 Sections 4.1 and 4.2. (40 CFR Part 60 Appendix F Procedure 1 Sections 4.1 and 4.2).
10. The Permittee shall record and report all CEMS data according to 40 CFR Part 60 Appendix F Procedure 1 Section 4.4. All measurements from the CEMS must be retained on file by the Permittee for at least 2 years. (40 CFR Part 60 Appendix F Procedure 1 Section 4.4)
11. Each CEMS must be audited at least once each calendar quarter. Successive quarterly audits shall occur no closer than 2 months. The audits shall be conducted as follows (40 CFR Part 60 Appendix F Procedure 1 Section 5.1):
  - a. The Relative Accuracy Test (RATA) shall be conducted once every four calendar quarters. (40 CFR Part 60 Appendix F Procedure 1 Section 5.1.1)
  - b. The Cylinder Gas Audit (CGA) shall be conducted every quarter except when a RATA is conducted. (40 CFR Part 60 Appendix F Procedure 1 Section 5.1.2)





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Section VI. Continuous Emissions Monitoring System (CEMS) Conditions (continued)

A. Continuous Emissions Monitoring System (CEMS) Requirements for S2.023 (NAC 445B.3405) (continued)

- 12. Unless specified otherwise in the applicable subpart, the Permittee shall comply with the relative accuracy criteria:
a. For RATA (40 CFR Part 60 Appendix F Procedure 1 Section 5.2.3(1)):
(1) For SO2 and NOx emissions, RA shall be less than or equal to 20% (if the value determined by the Reference Method (RM) is greater than 50% of the emission limit) or RA shall be less than or equal to 10% (if the value determined by the RM is less than 50% of the emission limit). (40 CFR Part 60 Appendix B PS-2 Section 13.2)

13.2 Relative Accuracy Performance Specification.

Table with 3 columns: Description, Calculate . . ., RA criteria (%). Rows include conditions for average emissions during RATA being ≥50% or <50% of emission standard, and specific criteria for SO2 emission standards.

- b. For CGA ±15 percent of the average audit value for or ±5 ppm, whichever is greater. (40 CFR Part 60 Appendix F Procedure 1 Section 5.2.3(2))
13. The Permittee shall conduct and report to the Director a quarterly audit as specified under 40 CFR Part 60 Appendix F Procedure 1 Section 7.0. (40 CFR Part 60 Appendix F Procedure 1 Section 7.0)

B. NAC 445B.265

Monitoring systems: Records; Reports

- 1. The Permittee subject to the provisions of NAC 445B.256 to 445B.267, inclusive, shall maintain records of the occurrence and duration of any start-up, shutdown or malfunction in the operation of an affected facility and any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.
2. The Permittee required to install a continuous monitoring system shall submit a written report of excess emissions to the Director for every calendar quarter. All quarterly reports must be postmarked by the 30th day following the end of each calendar quarter and must include the following information:
a. The magnitude of excess emissions computed in accordance with NAC 445B.256 to 445B.267, inclusive, any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions.
b. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns and malfunctions of the affected facility.
c. The nature and cause of any malfunction, if known, the corrective action taken or preventative measures adopted.
d. Specific identification of each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of any repairs or adjustments that were made.
(1) When no excess emissions have occurred and the continuous monitoring system has not been inoperative, repaired or adjusted, such information shall be included in the report.





**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section VI. Continuous Emissions Monitoring System (CEMS) Conditions (continued)**

B. NAC 445B.265 (continued)

3. The Permittee subject to the provisions of NAC 445B.256 to 445B.267, inclusive, shall maintain a file of all measurements, including:
  - a. Continuous monitoring systems, monitoring devices and performance testing measurements;
  - b. All continuous monitoring system performance evaluations;
  - c. All continuous monitoring systems or monitoring device calibration checks;
  - d. Adjustments and maintenance performed on these systems or devices; and
  - e. All other information required by NAC 445B.256 to 445B.267, inclusive, recorded in a permanent form suitable for inspection.
    - (1) The file shall be retained for at least 2 years following the date of the measurements, maintenance, reports and records.

**\*\*\*\*End of Continuous Emissions Monitoring System (CEMS) Conditions\*\*\*\***



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**Section VII. Emission Caps**

A. Not Applicable

**\*\*\*End of Emission Caps\*\*\***

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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section VIII. Surface Area Disturbance Conditions**

The surface area disturbance for the **Thacker Pass Project** is **5,545** acres.

A. Fugitive Dust (NAC 445B.22037) (*Federally Enforceable SIP Requirement*)

1. No person may cause or permit the handling, transporting or storing of any material in a manner which allows or may allow controllable particulate matter to become airborne.
2. Except as otherwise provided in subsection 4, no person may cause or permit the construction, repair, demolition, or use of unpaved or untreated areas without first putting into effect an ongoing program using the best practical methods to prevent particulate matter from becoming airborne. As used in this subsection, “best practical methods” includes, but is not limited to, paving, chemical stabilization, watering, phased construction and revegetation.
3. Except as otherwise provided in subsection 4, no person may disturb or cover 5 acres or more of land or its topsoil until he has obtained an operating permit for surface area disturbance to clear, excavate, or level the land or to deposit any foreign material to fill or cover the land.
4. The provisions of subsections 2 and 3 do not apply to:
  - a. Agricultural activities occurring on agricultural land; or
  - b. Surface disturbances authorized by a permit issued pursuant to NRS 519A.180 which occur on land which is not less than 5 acres or more than 20 acres.

**\*\*\*End of Surface Area Disturbance Conditions\*\*\***



**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section IX. Schedules of Compliance**

A. Not Applicable

**\*\*\*End of Schedule of Compliance\*\*\***

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**Bureau of Air Pollution Control**

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**CLASS II AIR QUALITY OPERATING PERMIT**

**Issued to:** LITHIUM NEVADA – THACKER PASS PROJECT (AS PERMITTEE)

**Section X. Amendments**

**This permit:**

1. Is non-transferable. (NAC 445B.287.3) (*Federally Enforceable SIP Requirement*)
2. Will be posted conspicuously at or near the stationary source. (NAC 445B.318.5) (*Federally Enforceable SIP Requirement*)
3. Will expire and be subject to renewal five (5) years from: MM DD, 2021 .  
(NAC 445B.315) (*Federally Enforceable SIP Requirement*)
4. A completed application for renewal of an operating permit must be submitted to the Director on the form provided by him with the appropriate fee at least 70 calendar days before the expiration date of this operating permit. (NAC 445B.3473.2) (*Federally Enforceable SIP Requirement*)
5. Any person aggrieved by a final decision of the Department may, not later than 10 days after notice of the action of the Department, appeal the decision by filing a request for a hearing before the Commission on a form 3\* with the State Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249. \*(See adopting agency for form.) (NAC 445B.890) (*State Only Requirement*)

**THIS PERMIT EXPIRES ON:** MM DD, 2021

**Signature:** \_\_\_\_\_

**Issued by:** [REDACTED]  
Supervisor, Permitting Branch  
Bureau of Air Pollution Control

**Phone:** \_\_\_\_\_ **Date:** MM DD, 2021



## Class II Insignificant Activities List

Appended to Permit #AP1479-4334

Emission Unit #	Emission Unit Description
IA1.001	Ammonium Nitrate Prill Silo - Loading
IA1.002	Ammonium Nitrate Prill Silo - Unloading
IA1.003	Sulfuric Acid Plant Cooling Tower
IA1.004	Lithium Carbonate Cooling Tower
IA1.005	Splitter 1
IA1.006	Splitter 2
IA1.007	Splitter 3
IA1.008	Splitter 4
IA1.009	Splitter 5
IA1.010	Splitter 6
IA1.011	Crusher 1
IA1.012	Crusher 2
IA1.013	Crusher 3
IA1.014	Screen 1
IA1.015	Screen 2
IA1.016	Screen 3
IA1.017	Pulverizer 1
IA1.018	Pulverizer 2
IA1.019	Pulverizer 3
IA1.020	Diesel Tank, Off Road (Mine), 25,000 gallons
IA1.021	Diesel Tank, Highway (Mine), 8,000 gallons
IA1.022	Bulk Oil Tank, 20,000 gallons
IA1.023	Bulk Coolant Tank, 3,000 gallons
IA1.024	Bulk Used Oil Tank, 3,000 gallons
IA1.025	Bulk Used Coolant Tank, 3,000 gallons