GWE Consulting Inc

March 28, 2024

NNPH, AQMD
1001 E Ninth Street, Suite B171
Reno, NV 89512

Attention: NNPH Air Quality Specialist
Permitting Staff

Subject: Empire Mining Co., LLC
AAIR16-0933 Permit Revision

Dear Air Quality Specialist:

GWE Consulting Inc, on behalf of Empire Mining Co., LLC, is submitting the attached application for a revision the existing air quality permit ID# AAIR16-0933

The revision will add equipment and operations to the permit. There will be no changes made to the existing crushing and screening equipment or operations that are currently permitted.

Please note that the equipment to be added are not new to the site. The equipment has been located onsite for decades however it was mothballed for a time. The equipment was previously permitted for several years prior to the permit expiration.

Empire Mining Co. is proposing to restart the equipment and process different materials to product stucco materials that will be bagged and hauled offsite. Empire Mining Co. will be utilizing several baghouses across the entire process to ensure dust is mitigated to the highest extent possible.

It is being requested that an invoice for this permitting action be mailed to the permittee.

3311 South Rainbow Boulevard, Suite #148 · Las Vegas, NV 89146 · Telephone (702) 405-6241

Please contact the undersigned at Julie.gweconsulting@gmail.com or by telephone at 702-370-6890 should Permitting Staff require any additional information to process this revision.

Best Regards,

Julie Walker
GWE Consulting Inc

NORTHERN NEVADA Public Health | Air Quality

SYNTHETIC MINOR SOURCE APPLICATION INSTRUCTIONS

How to Complete this Application

- The application must be filled out completely for all items that are applicable, except where noted as optional. A supplemental emission unit and/or control device worksheet must be submitted with this application for each emission unit (EU) and/or control device. An emission unit (EU) is defined as "any part of a source that emits or would have the potential to emit any regulated pollutant and includes an electric utility steam generating unit". Worksheets can be found at OurCleanAir.com, under *"Air Quality Permit to Operate Requirements and Forms"*. All required supplemental documents must be attached for the application to be deemed complete.
- The application must have an **original wet-ink signature** by the Responsible Official. Responsible Official is defined in DBOH Regulations Governing Air Quality Management 010.1305:
  "a Corporation's Chairman, Chief executive officer, president, vice president in charge of a principal business function, secretary, treasurer or designated environmental representative of a corporation responsible for overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and approved in advance by the Control Officer; a general partner in a partnership; the proprietor of a sole-proprietorship; or the principal executive officer or ranking elected official of a public agency. For sources subject to Title IV of the act, the responsible official shall be the representative who meets the requirements promulgated in 40 CFR Part 72."
- The application, worksheets, and payment should be hand delivered to the AQMD drop box located (here), or mailed to:
  NNPH, AQMD
  1001 E. Ninth Street, Suite B171
  Reno, NV 89512
- Use the checklist on Page 2 to ensure that all the required information is included in your application. Include the checklist as a supplemental document with your application.
- More detailed instructions can be found on page 6.

Fees and Payments

- An application **fee of $3,796** must be submitted with this application. The Air Quality Management Division fee schedule can be found here: https://www.washoecounty.gov/health/resources/fees/air-quality-management-fees.php
- The application fee must be paid in full before the application is processed.
- All outstanding invoices for the facility and associated with the parent company of the facility must be paid in full; otherwise, the AQMD cannot issue the facility any permits. This includes the invoice for the permit fees resulting from this application.
- Invoices must be paid by check, money order, or credit card. Make checks and money orders payable to Northern Nevada Public Health, Air Quality Management Division or NNPH, AQMD. For payment with a credit card, the applicant will be notified by email once the invoice is ready for payment. Payment may be made with a credit card by following the instructions (here), or by calling the AQMD at 775-784.7200 Option 0 Monday-Friday 8am-4pm.

Assistance and Resources

The Business Environmental Program, operated through the University of Nevada, is a free and confidential program designed to help small businesses in Washoe County comply with local and federal environmental regulations. This service may be contacted at 800.882.3233 or help@unrbep.org. The Business Environmental Program may provide information on completing this air quality application. They can also provide assistance in reviewing options for emission control equipment and submitting annual emissions.

BEP BUSINESS ENVIRONMENTAL PROGRAM NEVADA

Visit this link to learn more about working with BEP: https://unrbep.org/about-bep/working-with-bep/

- District Board of Health Regulations Governing Air Quality Management:
  https://www.washoecounty.gov/health/programs-and-services/air-quality/regulations/index.php
- The Air Quality Management Division Permitting Department can be contacted at 775.784.7200 Option 6 or AQMDPermitting@NNPH.org.

NORTHERN NEVADA Public Health | Air Quality

SYNTHETIC MINOR SOURCE APPLICATION - COMPLETENESS CHECKLIST

This checklist must be included in your application. Check the appropriate box for each item. If an item is incomplete or not applicable, please detail why it is incomplete or not applicable in the "Notes" section at the end of the checklist. Reference Page 7 for more detailed information about the required supplemental documents.

Yes	No	N/A	
☒	☐	☐	Application for a Synthetic Minor Source Authority to Construct/Permit to Operate
☒	☐	☐	Site Map
☒	☐	☐	Process Flow Diagram (as applicable) • Clearly depict all emission units (EU's) and show emission unit ID numbers (EU ID #'s) • Indicate emission control application points
☒	☐	☐	Equipment List. Include the following areas of information: • Descriptions and specifications • Power/capacity ratings • EU ID Numbers • Dates of manufacture, installation, and operation
☒	☐	☐	Air Pollution Control Equipment/Measures List
☐	☐	☐	Emission unit and/or control device worksheet for each emission unit and/or control device.
☒	☐	☐	Detailed Emission Calculations • Emission calculations should be included for each (EU) and for each regulated pollutant (lbs/hr and tons/yr); Calculations should include controls, hours of operation, throughput/fuel usage, Emission Factors, etc. The calculations should also match the application forms. The following should also be included: o Potential to Emit (PTE) o Proposed allowable emissions after limitations. o Emissions Increase (existing facilities only). The prior PTE vs proposed PTE.
☐	☐	☐	Operational Information, include description of how limitations will be demonstrated to be in compliance.
☐	☐	☒	Safety Data Sheets (as applicable)
☐	☐	☒	Compliance Monitoring Devices List (as applicable)
☐	☐	☐	Exhaust Stack Information List (if not included in the required worksheet)
☐	☐	☐	Federal Performance Standards List (if not included in the required worksheet)
☐	☐	☐	Applicable Requirement Supplement (as applicable)
☐	☐	☐	Construction Schedule (as applicable)
☐	☐	☐	Applicable Requirements Exemption List (as applicable)
☐	☐	☐	Manufacturer specification sheet for each emission unit and/or control device and Manufacturer's Guarantee (if applicable, due to control efficiencies claimed)
☐	☐	☒	Source Testing Data (if referenced in calculations)
☐	☐	☐	Application Fee. The application fee must be paid in full before the application will be processed.

Notes:

No changes are being made to the existing permitted equipment and operations.

NORTHERN NEVADA Public Health | Air Quality

FOR AQMD USE ONLY
Permit No.:

APPLICATION FOR A SYNTHETIC MINOR SOURCE AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE

Facility Information

1. ☐ New Permit ☑ Permit Modification | 2. **Existing facilities only.** Permit Number: AAIR16-0933
3. Facility Name: Empire Mining Co., LLC | 4. NAICS: 327420
5. Facility Location: (Stationary) Portable
6. Facility Address: NV Highway 447 MP 68 | APN: 07-120-01
City: Empire | State: NV | ZIP Code: 89405
7. Facility latitude and longitude coordinates: 40.577705 -119.339865
8. Is the facility located within 1,000 feet of the outer boundary of a school, hospital, or residential area? ☐ Yes ☑ No
9. Operating Schedule: Hours Per Day: 12 Days Per Week: 5 Weeks Per Year: 52
10. On-Site Contact Name: Larry Etcheverry | Title: Site Manager
Phone Number: | Fax Number:
Email: letcheverry@empireminingco.com

Optional (#11-#13). If there are records required under the operating permit, and they will be kept at a location other than the facility, specify the location:

11. Facility Name: Empire Mining Co., LLC
12. Facility Address: PO Box 157
City: Gerlach | State: NV | ZIP Code: 89412
13. On-Site Contact Name: David Hornsby | Title: President COO
Phone Number: 775-800-4569 | Fax Number:
Email: dhornsby@empireminingco.com

Company Information (all fields must be completed)

14. **Existing facilities only.** Has the company ownership changed? ☐ Yes ☑ No N/A
If "Yes", submit an *Application for Change of Ownership* and Fee, in addition to this application.
15. Legal Company Name (as registered with the State of Nevada): Empire Mining Co., LLC
16. Mailing Information: Permitting & Licensing
Mailing Address: PO Box 157
City: Gerlach | State: NV | ZIP Code: 89412
Permitting Contact Name: David Hornsby | Title: President COO
Phone Number: 775-800-4569 | Fax Number:
Email: dhornsby@empireminingco.com

17. Billing Information:		
Billing Address: PO BOX 157		
City: Gerlach	State: NV	ZIP Code: 89412
Billing Contact Name: David Hornsby	Title: President COO	
Phone Number: 775-800-4569	Fax Number:	
Email: dhornsby@empireminingco.com		

Responsible Official Information		
Name of Responsible Official (as defined in *DBOH Regulations Governing Air Quality Management 010.1305*): David Hornsby		
Title: President COO		
Phone Number: 775-800-4569	Fax Number:	
Email: dhornsby@empireminingco.com		
Mailing Address: PO Box 157		
City: Gerlach	State: NV	ZIP Code: 89412

Facility Manager/Environmental Representative (Optional)		
Name: Larry Etcheverry	Title: Site Manager	
Phone Number:	Fax Number:	
Email: letcheverry@empireminingco.com		
Mailing Address: PO Box 157		
City: Gerlach	State: NV	ZIP Code: 89412

Environmental Consultant Information (Optional)		
By identifying a consultant, the RO consents that such consultant has the authority to communicate directly with the AQMD for the limited purpose of providing supplemental information and comments in support of the information already provided by the RO in the application. The RO acknowledges that any change to, or withdrawal of the application must be done by the RO.		
Name: Julie Walker	Title: President	
Phone Number: 702-370-6890	Fax Number:	
Email: julie.gweconsulting@gmail.com		
Mailing Address: 3311 S Rainbow Blvs, Suite 148		
City: Las Vegas	State: NV	ZIP Code: 89146

Application Description

Describe all equipment and processes being proposed in the application. Make sure the narrative matches the process flow diagram (as applicable). For existing facilities, make sure to describe any revisions or modifications being requested, and include any equipment to be removed and/or replaced. Reference the instructions on page 6 for more information.

The proposed permitting action will add new equipment. No changes are being requested to the existing permitted equipment and operations.
The equipment list referencing the existing permitting equipment and the proposed new equipment is attached for staff review.
Processed materials are fed to a hopper and conveyed to rock storage tanks. From the rock storage tanks the materials are conveyed via enclosed screw conveyors to mills for additional size reduction. The mills are connected to propane fired dryers and are vented to baghouses for emission control purposes. The materials are conveyed to classifiers via enclosed screw conveyors for size classification. From the classifiers the materials are conveyed via enclosed screw conveyor to LP storage tanks. Materials are stored in tanks until they are conveyed via enclosed screw conveyors to kettles. The five (5) kettles are heated by propane burners and each is connected a baghouse for emisssion control purposes. From the kettles the materials are dropped into five (5) hot holding tanks. From the hot holding tanks the materials are conveyed via enclosed screw conveyors to a elevator. The hot holding tanks and screw conveyor are vented to a baghouse for emission control purposes. The materials are conveyed via an enclosed screw conveyor to a stucco storage tank (located outside) where the materials are stored until needed. From the stucco tank the materials are coveyed via an eclosed screw conveyor to a second elevator and on to a scalping screen. At the scalping screen any oversized materials are filtered out. The undersized materials are conveyed to a weigh hopper via an enclosed screw conveyor. From the weigh hopper materials are dropped in to a mixer where additives could be added by hand if needed. The materials are bagged by weight and type of materials.
Flow diagrams of the various portions of the existing and new equipment are attched for review.

NOTE: Applicant agrees to allow on-site inspection during and after construction by the Air Quality Management Division (AQMD) during working hours and without prior notice. The operator must notify the AQMD when the facility commences and completes construction. An official Permit to Operate will not be issued until a final inspection is made and all required test data has been forwarded to the AQMD showing the equipment meets all district, state, and federal regulations.

This application is submitted in accordance with the provisions of Section 030.000, and under penalty of perjury, to the best of my knowledge the information supplied in this document is true and correct.

Responsible Official Signature — Date: 2/14/2024

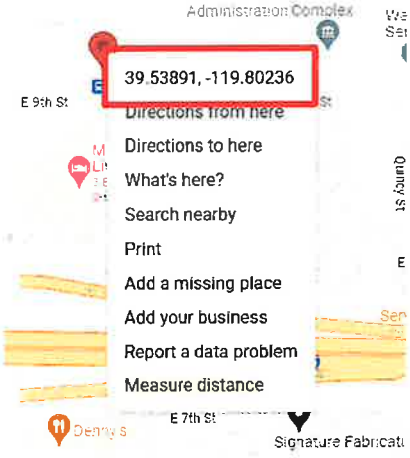
David Hornsby — Print Name

President COO — Title

DETAILED APPLICATION INSTRUCTIONS

Facility Information

1. Specify if the application is for a new permit or for modification of an existing permit by checking the appropriate box. Modification means any potential to emit (PTE) emissions increase of a regulated source pollutant resulting from a modification at an existing source.
2. **For existing facilities only.** Provide the permit number, which can be found at the top of page 1 of the existing Permit to Operate (ex. AAIRXX-XXXX).
3. Provide the facility name as you'd like it to appear on the permit. If a permit already exists for this operation, enter the name as it appears on the existing permit, which can be found at the top of page 1 of the existing Permit to Operate where it says, "Permit Issued To".
4. Provide the North American Industry Classification System (NAICS) code for the company. NAICS is a self-assigned system, meaning no one assigns you a NAICS code. This means that the facility should select the code that best depicts their primary business activity. A listing of NAICS codes can be found at, census.gov/naics/.
5. Specify whether the facility is stationary or portable throughout various locations in Washoe County by checking the appropriate box.
6. Provide the address for the facility. If the facility is portable, provide the address of the main office.
7. Provide the latitude and longitude coordinates for the facility. These coordinates uniquely identify geographic positions. To find these coordinates, go to Google Maps and search for the address of the facility. Then, right click on the facility location on the map. A box will appear with the facility coordinates as shown below. The values should be written as shown (39.53891, -119.80236). For portable facilities, provide the coordinates for the first location.



8. Specify if the facility is located within 1,000 feet of the outer boundary of a school, hospital, or residential area.
9. Specify the operating schedule of the facility in hours per day, days per week, and weeks per year.
10. Provide the name, title, phone and fax numbers, and email of the on-site contact at the facility.
11-13. **Optional.** If there are records required under the operating permit, and they will be kept at a location other than the facility, specify the location. Provide the facility name, street address, city, state, and ZIP Code. Also provide the name, title, phone and fax numbers, and email of the on-site contact.

Company Information. All fields in this section must be completed even if the information is the same. (ex. billing address is the same as the mailing address).

14. **For existing facilities only.** Specify if the company ownership has changed. If "Yes", submit an *Application for Change of Ownership* and Fee, in addition to this application. This form can be found at, OurCleanAir.com, under *"Air Quality Permit to Operate Requirements and Forms".*
15. Provide the legal company name, as registered with the State of Nevada. Nevada's Business Portal, Silver Flume, can be accessed at https://www.nvsilverflume.gov/home.
16. Facility Mailing Information.
    Provide the facility mailing address, permitting contact name, title, phone and fax numbers, and email address.

17. Facility Billing Information.
Provide the facility billing address, billing contact name, title, phone and fax numbers, and email address.

Responsible Official Information

Provide the name, title, phone and fax numbers, email, and mailing address of the Responsible Official. A Responsible Official is defined as:

> *"a Corporation's Chairman, Chief executive officer, president, vice president in charge of a principal business function, secretary, treasurer or designated environmental representative of a corporation responsible for overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and approved in advance by the Control Officer; a general partner in a partnership; the proprietor of a sole-proprietorship; or the principal executive officer or ranking elected official of a public agency. For sources subject to Title IV of the act, the responsible official shall be the representative who meets the requirements promulgated in 40 CFR Part 72."* (*DBOH Regulations Governing Air Quality Management 010.1305*).

Facility Manager/Environmental Representative Information (Optional)

Provide the name, title, phone and fax numbers, email address, and mailing address for the facility Plant Manager or Environmental Representative.

Environmental Consultant Information (Optional)

Provide the name, title, phone and fax numbers, email address, and mailing address of the Environmental Consultant. By identifying a consultant, the RO consents that such consultant has the authority to communicate directly with the AQMD for the limited purpose of providing supplemental information and comments in support of the information already provided by the RO in the application. The RO acknowledges that any change to, or withdrawal of the application must be done by the RO.

Application Description (Process Narrative)

Describe all equipment and processes being proposed in the application. Make sure the narrative matches the process flow diagram (as applicable). For existing facilities, make sure to describe any revisions or modifications being requested, and include any equipment to be removed and/or replaced.

- Specify the location of the facility and its parent company if part of a larger company.
- Include information that helps describe what the facility does and how it functions.
- Describe the emission units and/or control devices used at the facility and how they relate to the facility functions. An emission unit (EU) is defined as "any part of a source that emits or would have the potential to emit any regulated pollutant and includes an electric utility steam generating unit". A supplemental emission unit and/or control device worksheet must be submitted with this application for each emission unit (EU) and/or control device. Worksheets can be found at OurCleanAir.com, under *"Air Quality Permit to Operate Requirements and Forms"*.
- Characterize all regulated air pollutants that may be emitted by each emission unit.
- If the facility is requesting a revision or modification, explain what is going to change and why it is necessary.
- Describe how and where the facility will be monitoring throughput to show compliance.
- Specify the actual or projected date an emission unit will be fully constructed and ready for use.
- Explain proposed limitations to be taken to be considered a Synthetic Minor source and how compliance will be demonstrated.

SUPPLEMENTAL DOCUMENTS

Attach the following as supplemental documents, as applicable:

- **Site Map.** A map that depicts the physical location of the facility which must identify the main entrance, property boundaries, and all buildings and structures on the site as they relate to the facility emission units (EU's). For portable equipment, the supplemental map must delineate the first location of the portable equipment and the maximum proposed area for the source's operation.
- **Process Flow Diagram (as applicable).** A detailed diagram that clearly depicts all emission units (EU), pollution control equipment, stack/vents/emission points, monitoring equipment, and throughput and exhaust streams. A unique identification number should be assigned to each EU presented in the flow diagram. Indicate all emission control application points. An example can be found (here). A process flow diagram is not required for sources that do not move materials/products from one EU to another (e.g., gasoline stations), or for sources with standalone EU's (e.g., emergency backup generators or industrial boilers).
- **Equipment List.** A complete list of emission units (EU's) or activities that emit one or more regulated air pollutants to the atmosphere that contains the following areas of information (if not already included in a supplemental worksheet):
  - **Descriptions and Specifications.** Descriptive information about the types of EU's and any insignificant equipment/activities which includes manufacturer name and model and serial numbers.
  - **Power/Capacity Ratings.** The design power or capacity output for all EU's. The manufacturer's documentation must be included to support these specifications.
  - **Emission Unit ID Number.** A unique identification number corresponding to each EU that is presented in the flow diagram (as applicable). The number is fictitious for a new EU, and as listed in the Permit to Operate for an existing EU.
  - **Dates of Manufacture, Installation, and Operation for each EU.**
- **Air Pollution Control Equipment (as applicable).** Pollution control devices or measures that reduce the amount of regulated air pollutants emitted to the atmosphere. The following information must be included in an application for all new or modified emission units (EU's), if not already included in a supplemental worksheet.
  - **Air Pollution Control Equipment List.** Identification and description of each control device that shall include design specifications (including capture and control efficiencies), manufacturer, model & serial number, and associated EU's and processes.
  - **Air Pollution Control Measure List.** Description of each control measure that shall include how/where it is applied, how much control is applied, control efficiency, and associated EU's and processes.
- **Emission Unit (EU) and Control Device Worksheet.** Complete and attach the appropriate Emission Unit and/or Control Device Worksheet for each EU and air pollution control device. Worksheets can be found at OurCleanAir.com, under "*Air Quality Permit to Operate Requirements and Forms*". If a worksheet isn't available for a specific type of equipment or process, be sure to include all required information that is described in this section, "Supplemental Documents".
- **Source Emissions.** Estimates of each regulated air pollutant that will be emitted to the atmosphere. The following types of emissions must be included in ALL applications for ALL new or modified emission units and insignificant activities, as noted.
  - **Emission Factor(s).** The short-term rate at which regulated air pollutants can be emitted from an EU or insignificant activity, generally presented as an hour rate (lb/hr) or a rate based on throughput of materials (lb/ton). The amount of pollutant contained within a product can also serve as an emission factor, typically presented as weight of pollutant per volume of product (lb/gal).
  - **Potential to Emit (PTE).** The maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Emissions associated with insignificant activities shall be included in the calculation of potential to emit for the facility. Secondary emissions do not count in determining

the potential to emit of a stationary source.

- **Proposed permitted Allowable Emissions.** What is the PTE after introducing controls, hourly or throughput limitations to be considered as a Synthetic Minor source? How will compliance be demonstrated as a result of this limitation?
- **Emissions Increase (existing facilities only).** For modifying sources applying for a permit modification, the emissions increase is the difference between the proposed PTE and the current PTE. Any increase in emissions may trigger a new application requirement.

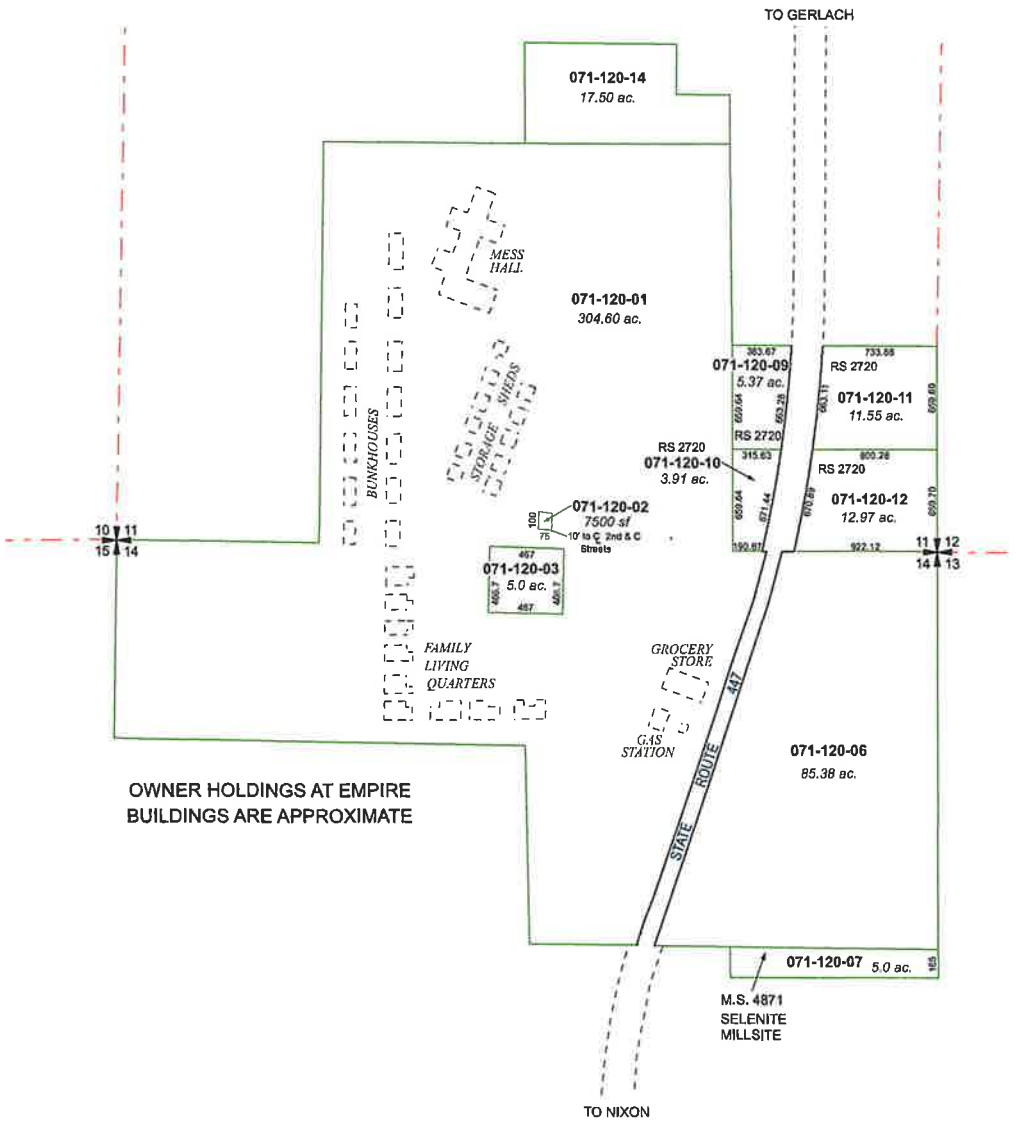
- **Operational Information (as applicable).** If the information isn't included in the required emission unit and/or control device worksheet(s), provide a list of production rates, fuel types (with consumption rates), raw materials (with throughput rates), and operating schedules. Provide enough information to calculate hourly and annual emissions. List any inherent limitations on operations (not to include self-imposed limits) or work practice standards affecting emissions. For Synthetic Minor application also include a detailed description of requested allowable emissions due to self imposed limitations and how this compares the PTE. How will compliance be demonstrated?
- **Safety Data Sheet (SDS).** As applicable, provide a detailed document prepared by the manufacturer or importer of a hazardous chemical that describes its physical and chemical properties. In all cases, attach the most current SDS for each specific or class of VOC-containing material (paints, solvents, thinners, etc.) in use. Attach SDS's for all proposed materials to new applications; attach SDS's for new/existing materials to revision applications that propose changes to the weighted average VOC content.
- **Compliance Monitoring Devices (as applicable).** Provide identification and description of each air pollution compliance monitoring device or activity, including design specifications, manufacturers, model & serial numbers, and all associated emission units and processes.
- **Stack Information List (as applicable).** If not included in the required worksheet, provide emissions (exhaust) stack location, height above grade, diameter (inside or effective), exhaust gases, flow rate (in actual cubic feet per minute), and temperature (in degrees Fahrenheit).
- **Federal Performance Standards List (as applicable).** A list of the federal performance standards, emission limits, and requirements that apply to the source (i.e., NSPS, NESHAP, and MACT). If the source has an EPA or AQMD approved exemption for one or more performance standards, attach the exemption approval(s) to the application.
- **Applicable Requirement Supplement (as applicable).** Provide requirements of federal, state, or local jurisdictions that are not included in DBOH Regulations Governing Air Quality Management 030.000-030.995. These may be specified in a court order, Hearing Officer or Hearing Board order, consent decree, compliance plan, etc.

Other Supplemental Documents (attach as applicable)

- **Construction Schedule.** A schedule outlining the timeline for constructing a new or modified source. Dates can be approximate. Not applicable to sources that have already been constructed or do not require construction.
- **Applicable Requirement Exemption List.** Provide a detailed list of requested exemptions from otherwise applicable requirements. Include detailed justification to support each request for an exemption.
- **Existing Facilities.** Include in the narrative any equipment to be removed/replaced as a result of this permit action.


Empire Mining Co., LLC
Empire, NV
Legend
Feature 1
Reno
Gerlach
Empire
PYRAMID LAKE PAIUTE RESERVATION
Pyramid Lake
Google Earth
Image Landsat / Copernicus
40 mi
N
80
95
395
Spanish Springs
Fernley
Reno
Fallon

PORTION OF SECTIONS 11 & 14
T31N - R23E



Assessor's Map Number

071-12

STATE OF NEVADA

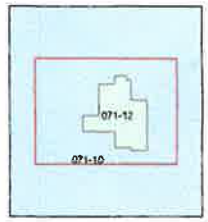
WASHOE COUNTY

ASSESSOR'S OFFICE

1001 East Ninth Street, Building D
Reno, Nevada 89512
(775) 328-2231

Feet
0 200 400 600 800

1 inch = 800 feet

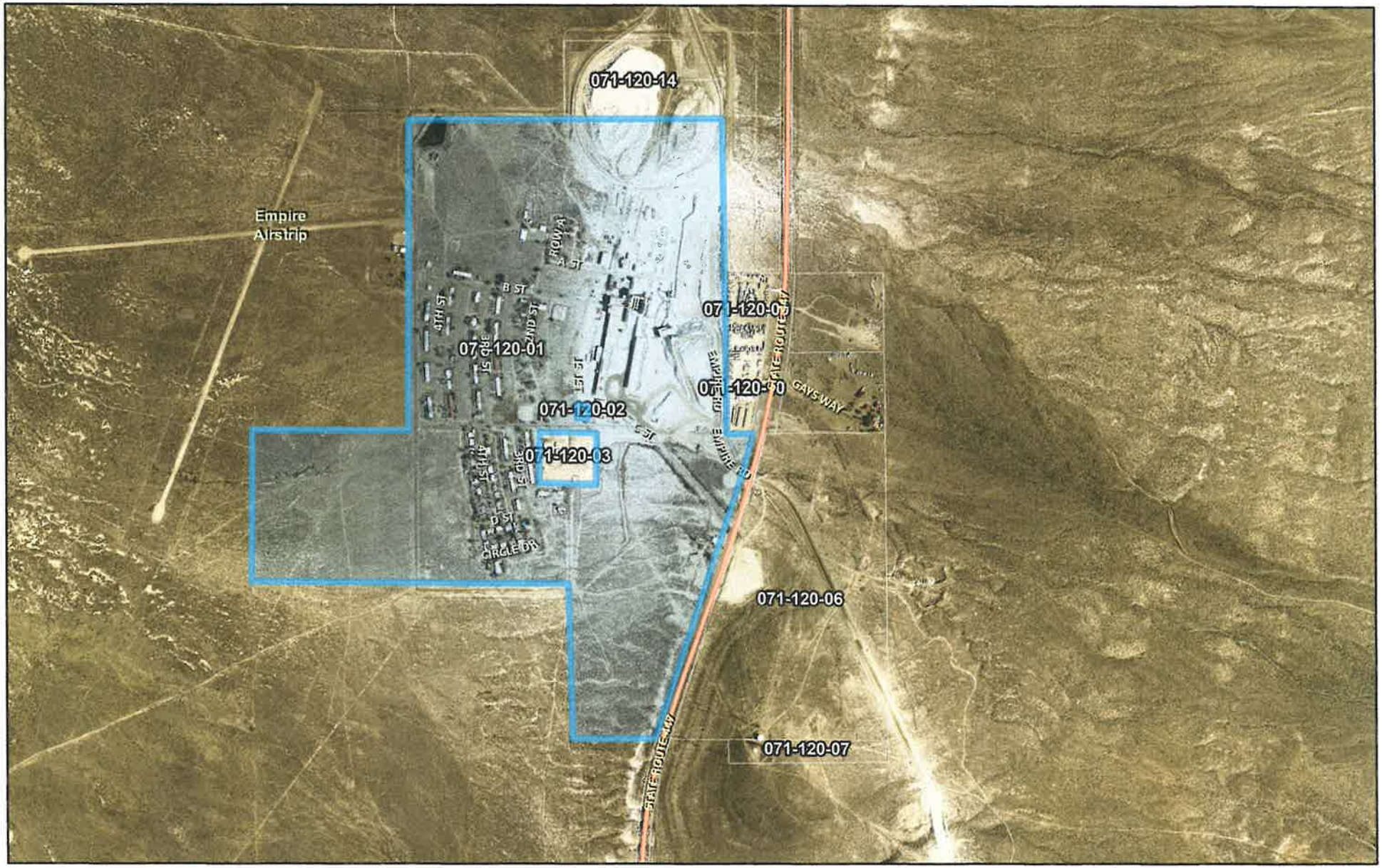


created by: TWT 11/23/2009

updated: TWT 4/09/15 KSB 3/10/23

area previously shown on map(s):

NOTE: This map was prepared for the use of t
Washoe County Assessor for assessment and
illustrative purposes only. It does not represen
a survey of the premises. No liability is assum
as to the sufficiency or accuracy of the data
delineated hereon.



February 6, 2024

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Washoe County GIS, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

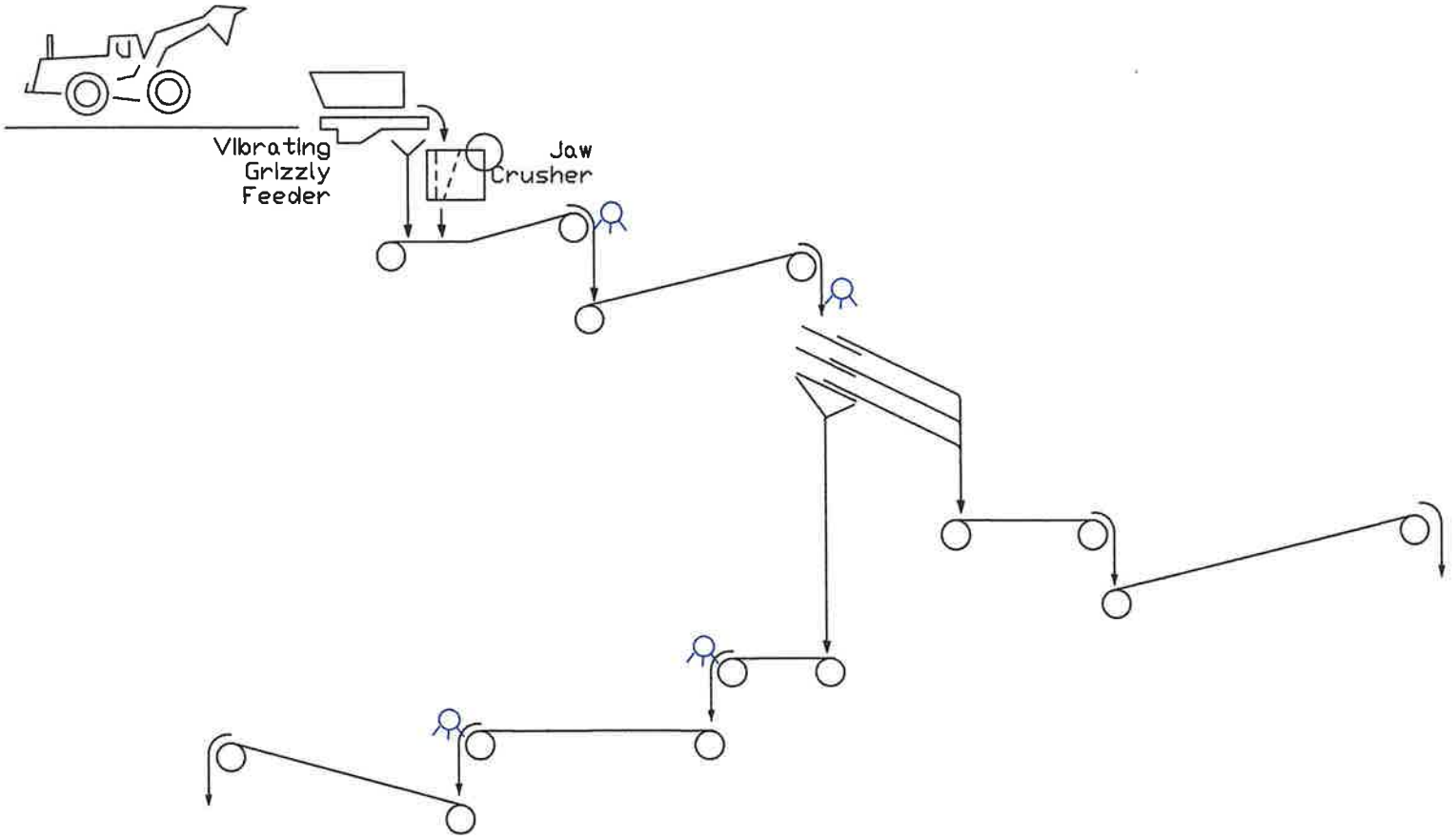
This information for illustrative puroposes only. Not be used for boundary

Empire Mining Co., LLC Equipment List Empire, Nevada Material Processing Operations	
Equipment Description	**Location**
Existing Equipment - Mineral Processing	
(1) Pioneer Jaw Crusher	Indoor
(1) Pioneer 8x19 Screen	Indoor
(1) Viking 130' Stacker	Indoor
(6) Conveyors	Indoor
(2) Splitter Boxes	Outdoor
(1) Canica 2500 Crusher	Outdoor
(1) Trio Crusher	Outdoor
(2) Texas Screen Plants	Outdoor
(1) KPI-JCI 150' Stacker	Outdoor
(21) Conveyors	Outdoor
Existing Equipment - Emergency Power Generation	
Detroit Diesel 319 kW Standby Generator	Outdoor
New Equipment - Mineral Processing	
(1) Hopper	Outdoor
(3) Conveyors	Indoor
(2) Rock Tanks with Screw Conveyors	Indoor
(3) Mills with Screw Conveyors	Indoor
(3) Propane Dryers connected to Mills	Indoor
(2) Classifiers	Indoor
(14) Screw Conveyors	Indoor
(7) LP Holding Tanks with Screw Connveyors	Indoor
(5) Kettles	Indoor
(5) Propane Burner connected to Kettles	Indoor
(5) Hot Holding Tanks with Screw Conveyors	Indoor
(2) Elevators	Indoor
(1) Scalping Screen	Indoor
(1) Stucco Tank	Outdoor
(1) Weigh Hopper	Indoor
(1) Mixer	Indoor
(2) Baggers	Indoor

Empire Mining Co., LLC
Water/Dust Suppression System Components
Empire, Nevada Crushing Operations

Equipment Description	Manufacturer	Model	Use
EXISTING EQUIPMENT			
Cashman 12,000 Gallon Water Tank Stand	Vale	W	Supply Water For Dust Suppression System
5 HP High-Pressure Pump	Goulds Water Technology	Baldor	Pump Water At High PSI Value To Dust Suppression System
3,000' of 3/4" Industrial Water Hose	Whippy		Transport Water To Spray Nozzles
200 High Pressure Fogger Nozzels - 1/4 gpm, 1/2 gpm, 1 gpm	Foggit Nozzle Company	Water-Fog	Provide and High Pressure Mist Above Drop Points
CAT 769 8,000 Gallon Water Truck	Caterpillar	769C	spray coverage for travel areas and stockpiles.
CAT 740 8,000 Gallon Water Truck	Caterpillar	740D	spray coverage for travel areas and stockpiles.
100' 1.75 Angle Iron For Hangers of Dust Suppression	Self		Hang Fog Sprayers
100' Black 3/4" Iron Pipe For Spray Bars	Self		Spray Bars For Dust Suppression
Qty 100 3/4 inch Ts	Self		Spray Bars and Foggers For Dust Suppression System
Qty 100 6 inch 3/4 nipples			Spray Bars and Foggers For Dust Suppression System
Qty 100 4 inch 3/4 nipples	Self		Spray Bars and Foggers For Dust Suppression System
Qty 100 2 inch 3/4 nipples	Self		Spray Bars and Foggers For Dust Suppression System
Qty 1 3 inch brass valve	Self		Spray Bars and Foggers For Dust Suppression System
Qty 1 2.5 inch brass valve	Self		Spray Bars and Foggers For Dust Suppression System
20 feet of 3 inch water hose	Self		Hose From Tank Stand To Pump For Pressure
Qty 50 ¾ barb to ¾ pipe thread coupler	Self		Spray Bars and Foggers For Dust Suppression System
Qty 75 ¾ slip to ¾ pipe thread	Self		Spray Bars and Foggers For Dust Suppression System
Qty 75 ¾ slip to ¾ hose thread	Self		Spray Bars and Foggers For Dust Suppression System
10 Feet 3 inch hard water line	Self		Spray Bars and Foggers For Dust Suppression System
Qty 4 3 inch camlocks	Self		Pump Distribution of Water
Qty 2 2.5 inch camlocks	Self		Pump Distribution of Water
Qty 100 ¾ hose clamps	Self		Pump Distribution of Water
Qty 24 Dramm ¼ gpm fog-it nozzles	Foggit Nozzle Company	Water-Fog	Provide and High Pressure Mist Above Drop Points
Qty 24 Dramm ½ gpm fog-it nozzles	Foggit Nozzle Company	Water-Fog	Provide and High Pressure Mist Above Drop Points
Qty 24 Dramm 1 gpm fog-it nozzles	Foggit Nozzle Company	Water-Fog	Provide and High Pressure Mist Above Drop Points
Qty 12 Dramm 2 gpm fog-it nozzles	Foggit Nozzle Company	Water-Fog	Provide and High Pressure Mist Above Drop Points
NEW EQUIPMENT			
Three (3) Baghouses on three (3) Mills			Venting emissions from each Mill
Baghouses on Aggregate Transfer Points			Venting feed to Rock Tanks
Five (5) Baghouses on five (5) Kettles			Venting emissions from each Kettle
One (1) Baghouse on Hot Holding Tanks & Screw Conveyor			Venting emissions from hot holding operations
One (1) Baghouse on Mixer			Venting emissions from mixer operations

Empire Mining Co., LLC Baghouse Information Empire, Nevada Crushing Operations			
Equipment Description	**# of Bags**	**Volume Cubic Feet**	**Use**
Kettle #1 Dust Collector	64	462	Venting Kettle with Burner
Kettle #2 Dust Collector	80	567	Venting Kettle with Burner
Kettle #3 Dust Collector	80	567	Venting Kettle with Burner
Kettle #4 Dust Collector	144	722	Venting Kettle with Burner
Kettle #5 Dust Collector	96	560	Venting Kettle with Burner
#1 Raymond Mill Dust Collector	150	800	Venting Mill with Burner
#2 Raymond Mill Dust Collector	128	700	Venting Mill with Burner
#3 Raymond Mill Dust Collector	128	700	Venting Mill with Burner
Hot Pit Dust Collector	48	425	Venting Hot Pit with Hot Holding Tanks and Screw
#1 & #1 Dust Collector	52	216	Venting aggregate materials transfer points
#3 Packout Dust Collector	96	480	Venting Mixer Operations
#4 Packer Dust Collector	48	324	Venting Bagger Equipent

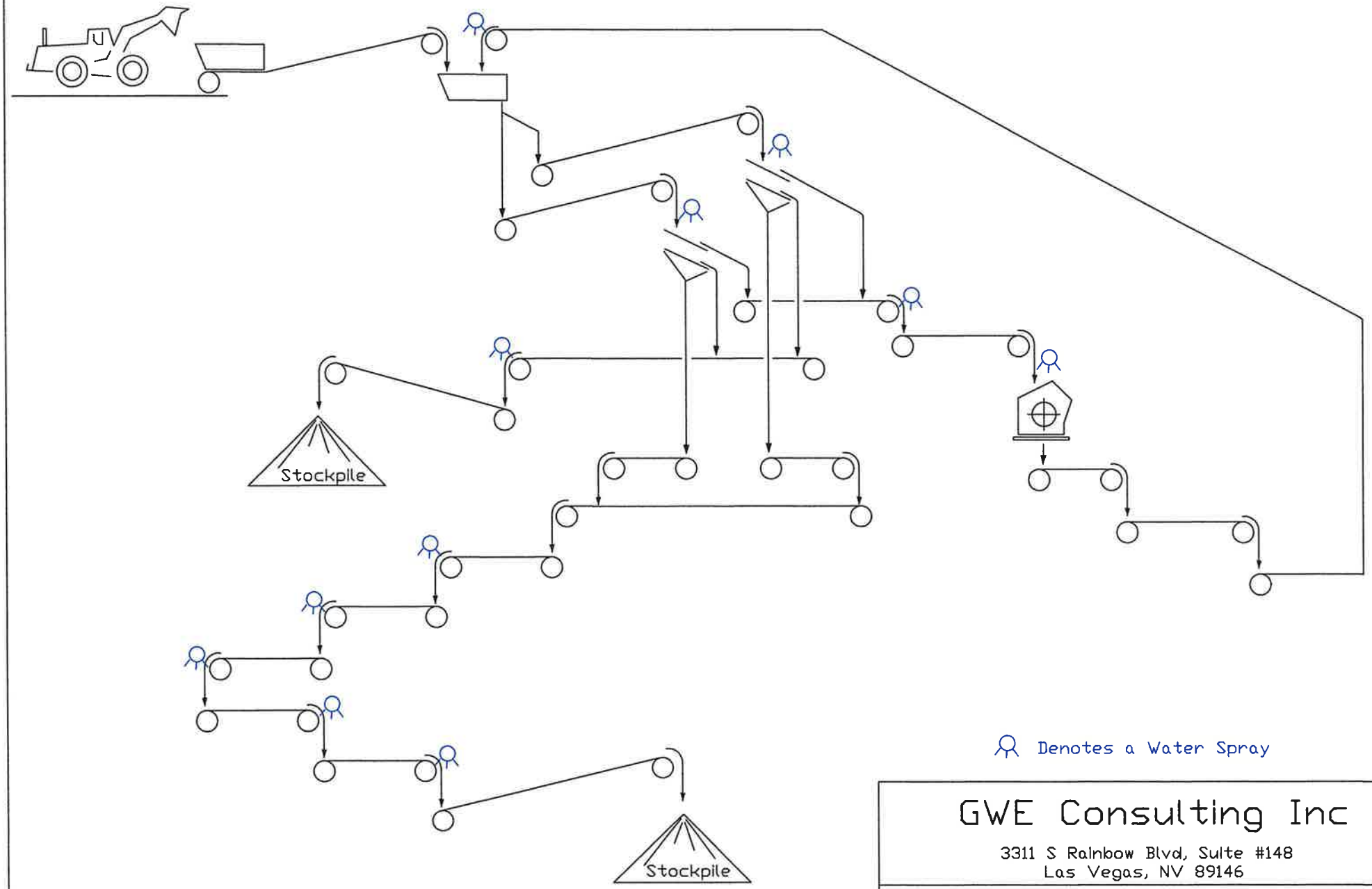


Denotes a Water Spray

GWE Consulting Inc

3311 S Rainbow Blvd, Suite #148
Las Vegas, NV 89146

DESCRIPTION	Empire Mining Co., LLC Existing Equipment - Indoor	
DRAWN BY: JDW	DATE 02/07/24	DWG. Indoor Crushing & Screening



Denotes a Water Spray

GWE Consulting Inc

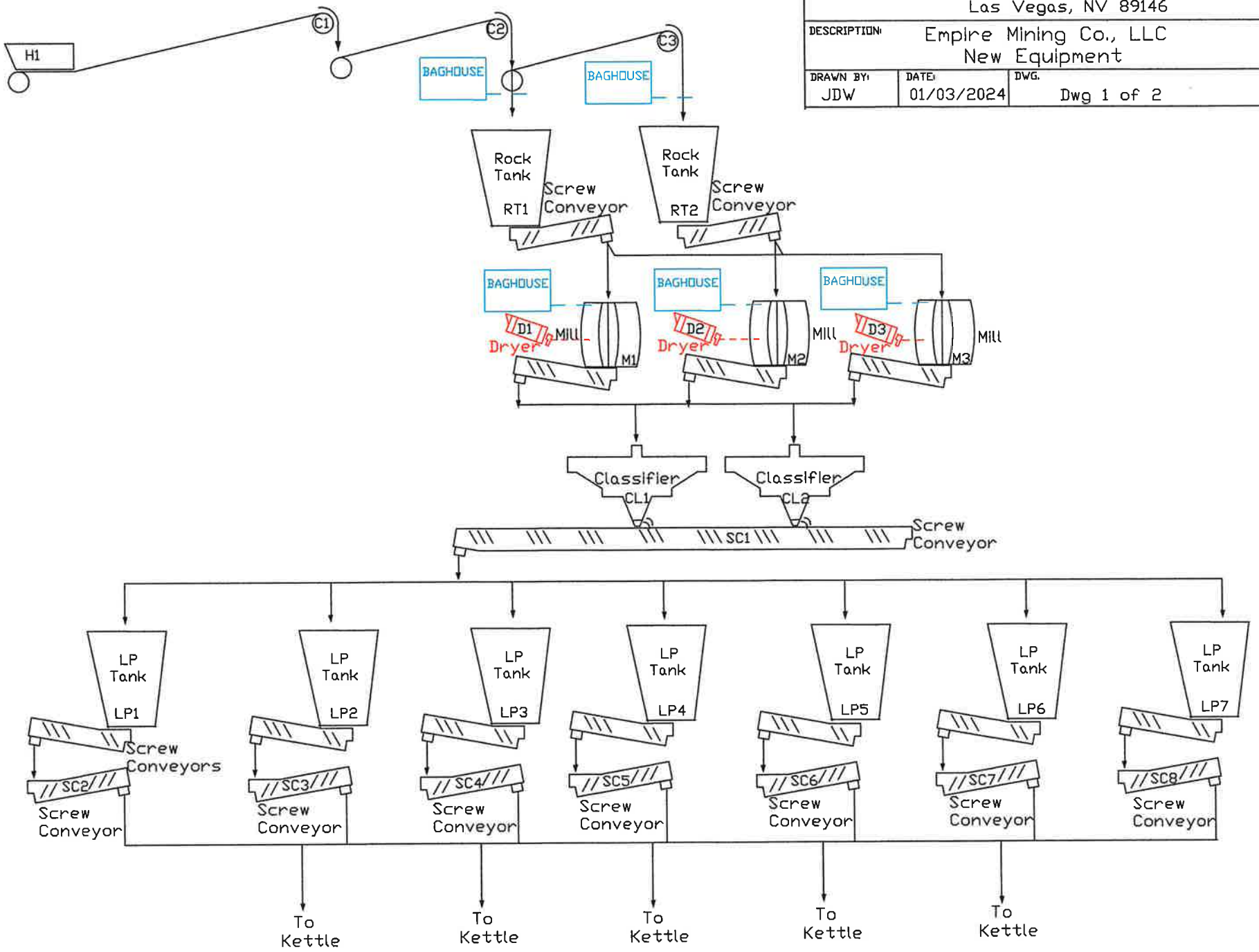
3311 S Rainbow Blvd, Suite #148
Las Vegas, NV 89146

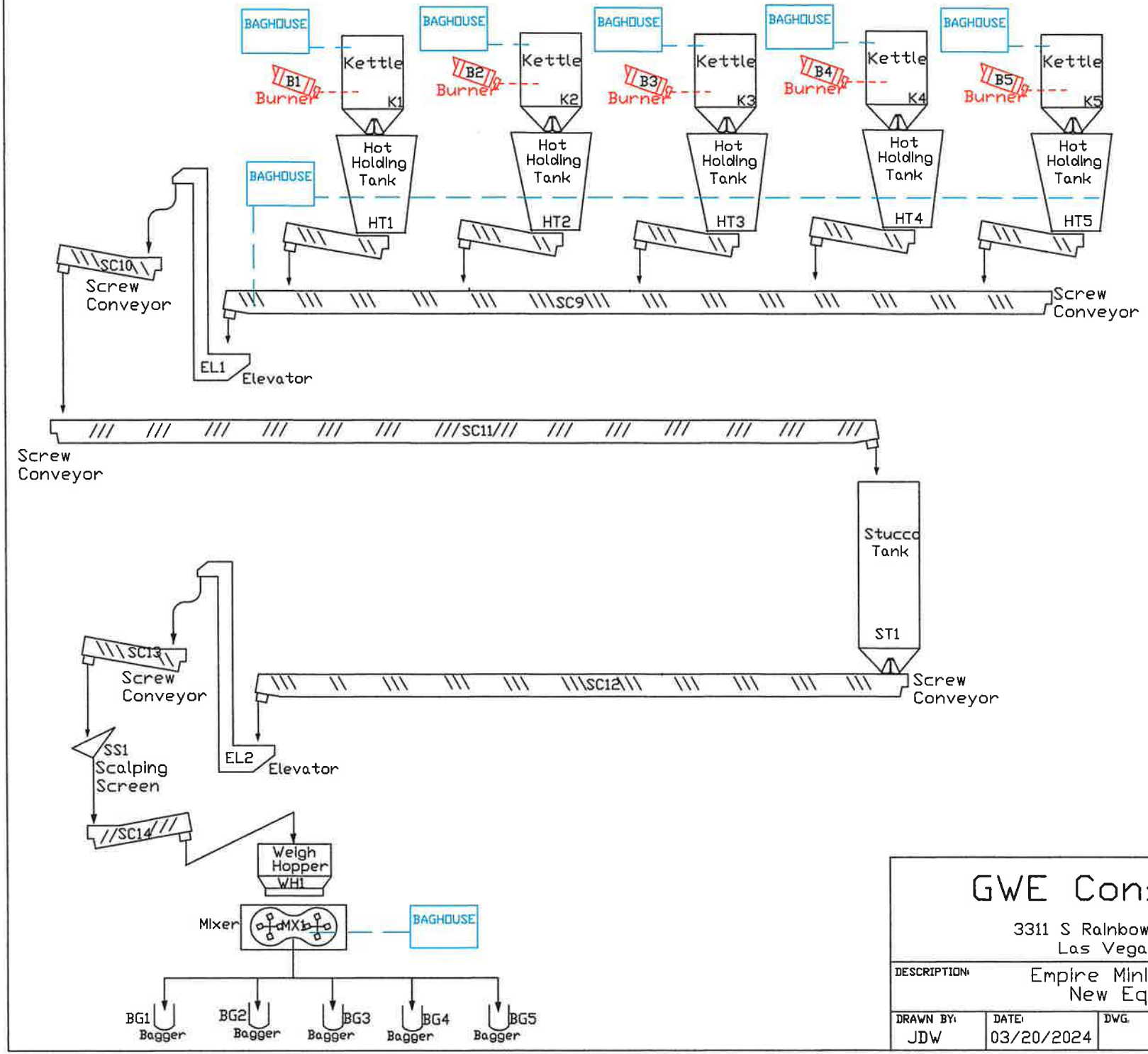
DESCRIPTION	Empire Mining Co., LLC Existing Equipment - Outdoor	
DRAWN BY: JDW	DATE 02/07/24	DWG. Outdoor Crushing & Screening

GWE Consulting Inc

3311 S Rainbow Blvd, Suite #148
Las Vegas, NV 89146

DESCRIPTION:		
Empire Mining Co., LLC New Equipment		
DRAWN BY:	DATE:	DWG.
JDW	01/03/2024	Dwg 1 of 2





GWE Consulting Inc

3311 S Rainbow Blvd, Suite #148
Las Vegas, NV 89146

DESCRIPTION:		
Empire Mining Co., LLC New Equipment		
DRAWN BY: JDW	DATE: 03/20/2024	DWG. Dwg 2 of 2

Emissions Inventory

Company: Empire Mining Co., LLC
Facility: Empire Mine
Address: NV Hwy 447 MP 68, Empire, NV 89405

Permit Number: AAIR16-0933

Date: February 12, 2023
Application Type: Revision

System #	Unit Description	Location UTM Zone 11 North (m)	Location UTM Zone 11 East (m)	Operating Hours Daily	Operating Hours Annual	Heat Input (MMBtu) Hour	Heat Input (MMBtu) Annual	Throughput/ Fuel Usage Hour	Throughput/ Fuel Usage Daily	Throughput/ Fuel Usage Units	Controls Technology	Controls Efficiency	Emission Factor Pollutant	Emission Factor Factor	Emission Factor Unit	Potential to Emit Emission Rate Hourly (lb/hr)	Potential to Emit Emission Rate Annual (ton/yr)	Permitted Emission Rate Hourly (lb/hr)	Permitted Emission Rate Annual (ton/yr)	Reference	Notes
01																					
D1	Manufacturer: Hauck Model #: PRN 1136 Serial #: Unknown	4,494,599.00	302,018.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
D2	Manufacturer: Hauck Model #: PRN 1136 Serial #: Unknown	4,494,597.00	302,017.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
D3	Manufacturer: Hauck Model #: PRN 1136 Serial #: Unknown	4,494,596.00	302,022.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
B1	Manufacturer: Hauck Model #: PPC 527ZX Serial #: Unknown	4,494,601.00	302,005.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
B2	Manufacturer: Hauck Model #: PPC 527ZX Serial #: Unknown	4,494,597.00	302,005.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
B3	Manufacturer: Hauck Model #: PPC 527ZX Serial #: Unknown	4,494,597.00	302,004.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
B4	Manufacturer: Hauck Model #: PPC 527ZX Serial #: Unknown	4,494,592.00	302,003.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								
B5	Manufacturer: Hauck Model #: PPC 527ZX Serial #: Unknown	4,494,589.00	302,003.00	12	2,750	2	5,500	2	24.00	MMBtu			PM	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													PM_{10}	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													$PM_{2.5}$	2.19E-03	lb/MMBtu	4.37E-03	1.91E-02	4.37E-03	6.01E-03	EPA AP42 Table 1.5-1 Commercial	
													SO_2	1.09E-03	lb/MMBtu	2.19E-03	9.57E-03	2.19E-03	3.01E-03	EPA AP42 Table 1.5-1 Commercial	
													NO_X	1.42E-01	lb/MMBtu	2.84E-01	1.24E+00	2.84E-01	3.91E-01	EPA AP42 Table 1.5-1 Commercial	
													CO	8.20E-02	lb/MMBtu	1.64E-01	7.18E-01	1.64E-01	2.25E-01	EPA AP42 Table 1.5-1 Commercial	
													VOC								
													HAPs								
													CO2e								

Emissions Inventory
Company: Empire Mining Co., LLC
Facility: Empire Mine
Address: NV Hwy 447 MP 68, Empire, NV 89405

Permit Number AAIR16-0933

Date February 13, 2023
Application Type Revision

System #	Unit Description	Location UTM Zone 11 North (m)	Location UTM Zone 11 East (m)	Operating Hours Daily	Operating Hours Annual	Heat Input (MMBtu) Hour	Heat Input (MMBtu) Annual	Throughput/ Fuel Usage Hour	Throughput/ Fuel Usage Daily	Throughput/ Fuel Usage Units	Controls Technology	Controls Efficiency	Emission Factor Pollutant	Emission Factor Factor	Emission Factor Unit	Potential to Emit Emission Rate Hourly (lb/hr)	Potential to Emit Emission Rate Annual (ton/yr)	Permitted Emission Rate Hourly (lb/hr)	Permitted Emission Rate Annual (ton/yr)	Reference	Notes
02																					
H1	Hopper Loading	4,494,596.83	302,054.44	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	2.70E-04	lb/ton	2.03E-02	8.87E-02	2.03E-02	2.78E-02	EPA AP42 Table 11.19.2-2	
C1	Conveyor	4,494,603.47	302,036.64	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	2.70E-04	lb/ton	2.03E-02	8.87E-02	2.03E-02	2.78E-02	EPA AP42 Table 11.19.2-2	
C2	Conveyor	4,494,609.95	302,022.96	12	2,750			75.00	900.00	tons	Baghouse	90%	PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03	EPA AP42 Table 11.19.2-2	
C3	Conveyor	4,494,603.43	302,020.49	12	2,750			75.00	900.00	tons	Baghouse	90%	PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03	EPA AP42 Table 11.19.2-2	
03																					
RT1	Rock Tank with Screw Conveyor	4,494,604.66	302,021.36	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03	EPA AP42 Table 11.19.2-2	
RT2	Rock Tank with Screw Conveyor	4,494,601.11	302,021.38	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03	EPA AP42 Table 11.19.2-2	
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03	EPA AP42 Table 11.19.2-2	
04																					
M1	Mill with Screw Conveyor	4,494,599.77	302,018.50	12	2,750			25.00	300.00	tons	Baghouse	90%	PM	1.20E-01	lb/ton	3.00E+00	1.31E+01	3.00E+00	4.13E+00	EPA AP42 Table 11.16-2	
													PM_{10}	3.96E-02	lb/ton	9.90E-01	4.34E+00	9.90E-01	1.36E+00		
													$PM_{2.5}$	1.08E-02	lb/ton	2.70E-01	1.18E+00	2.70E-01	3.71E-01		
M2	Mill with Screw Conveyor	4,494,597.59	302,017.72	12	2,750			25.00	300.00	tons	Baghouse	90%	PM	1.20E-01	lb/ton	3.00E+00	1.31E+01	3.00E+00	4.13E+00	EPA AP42 Table 11.16-2	
													PM_{10}	3.96E-02	lb/ton	9.90E-01	4.34E+00	9.90E-01	1.36E+00		
													$PM_{2.5}$	1.08E-02	lb/ton	2.70E-01	1.18E+00	2.70E-01	3.71E-01		
M3	Mill with Screw Conveyor	4,494,596.50	302,022.37	12	2,750			25.00	300.00	tons	Baghouse	90%	PM	1.20E-01	lb/ton	3.00E+00	1.31E+01	3.00E+00	4.13E+00	EPA AP42 Table 11.16-2	
													PM_{10}	3.96E-02	lb/ton	9.90E-01	4.34E+00	9.90E-01	1.36E+00		
													$PM_{2.5}$	1.08E-02	lb/ton	2.70E-01	1.18E+00	2.70E-01	3.71E-01		
05																					
CL1	Classifier	4,494,594.71	302,015.08	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03		
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03		
CL1	Classifier	4,491,592.60	302,015.08	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03		
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03		
SC1	Screw Conveyor	4,491,591.68	302,016.11	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03		
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03		
06																					
LP1	LP Holding Tank with Screw Conveyor	4,494,587.48	302,003.71	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
									99				PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP2	LP Holding Tank with Screw Conveyor	4,494,590.64	302,004.73	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP3	LP Holding Tank with Screw Conveyor	4,494,592.93	30,205.60	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP4	LP Holding Tank with Screw Conveyor	4,494,595.05	302,005.96	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP5	LP Holding Tank with Screw Conveyor	4,494,597.42	302,006.85	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP6	LP Holding Tank with Screw Conveyor	4,494,599.15	302,006.71	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
LP7	LP Holding Tank with Screw Conveyor	4,494,601.25	302,006.77	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC2	Screw Conveyor	4,494,589.48	302,003.71	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC3	Screw Conveyor	4,494,591.64	303,004.73	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC4	Screw Conveyor	4,494,593.93	302,005.60	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC5	Screw Conveyor	4,494,596.05	302,005.96	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC6	Screw Conveyor	4,494,598.42	302,006.85	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC7	Screw Conveyor	4,494,600.15	302,006.71	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		
SC8	Screw Conveyor	4,494,602.25	302,006.77	12	2,750			10.00	125.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.40E-03	6.13E-03	1.40E-03	1.93E-03	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	4.60E-04	2.01E-03	4.60E-04	6.33E-04		
													$PM_{2.5}$	1.30E-05	lb/ton	1.30E-04	5.69E-04	1.30E-04	1.79E-04		

Emissions Inventory
Company: Empire Mining Co., LLC
Facility: Empire Mine
Address: NV Hwy 447 MP 68, Empire, NV 89405

Permit Number AAIR16-9933

Date February 12, 2023
Application Type Revision

System #	Unit Description	Location UTM Zone 11 North (m)	Location UTM Zone 11 East (m)	Operating Hours Daily	Operating Hours Annual	Heat Input (MMBtu) Hour	Heat Input (MMBtu) Annual	Throughput/ Fuel Usage Hour	Throughput/ Fuel Usage Daily	Throughput/ Fuel Usage Units	Controls Technology	Controls Efficiency	Emission Factor Pollutant	Emission Factor Factor	Emission Factor Unit	Potential to Emit Emission Rate Hourly (lb/hr)	Potential to Emit Emission Rate Annual (ton/yr)	Permitted Emission Rate Hourly (lb/hr)	Permitted Emission Rate Annual (ton/yr)	Reference	Notes
07																					
K1	Kettle	4,494,601.69	302,005.70	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
K2	Kettle	4,494,597.39	302,005.17	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
K3	Kettle	4,494,597.76	302,004.72	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
K4	Kettle	4,494,592.31	302,003.97	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
K5	Kettle	4,494,589.88	302,003.74	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
HT1	Hot Holding Tank with Screw Conveyor	4,494,601.69	302,005.70	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
HT2	Hot Holding Tank with Screw Conveyor	4,494,597.39	302,005.17	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
HT3	Hot Holding Tank with Screw Conveyor	4,494,597.76	302,004.72	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
HT4	Hot Holding Tank with Screw Conveyor	4,494,592.31	302,003.97	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
HT5	Hot Holding Tank with Screw Conveyor	4,494,589.88	302,003.74	12	2,750			15.00	180.00	tons	Baghouse	90%	PM	6.00E-03	lb/ton	9.00E-02	3.94E-01	9.00E-02	1.24E-01	EPA AP42 Table 11.16.2	
													PM_{10}	1.98E-03	lb/ton	2.97E-02	1.30E-01	2.97E-02	4.08E-02		
													$PM_{2.5}$	5.40E-04	lb/ton	8.10E-03	3.55E-02	8.10E-03	1.11E-02		
08																					
SC9	Screw Conveyor	4,494,610.44	302,005.64	12	2,750			75.00	900.00	tons	Enclosed		PM	1.40E-04	lb/ton	1.05E-02	4.60E-02	1.05E-02	1.44E-02	EPA AP42 Table 11.19.2-2	
													PM_{10}	4.60E-05	lb/ton	3.45E-03	1.51E-02	3.45E-03	4.74E-03		
													$PM_{2.5}$	1.30E-05	lb/ton	9.75E-04	4.27E-03	9.75E-04	1.34E-03		
EL1	Elevator	4,494,613.44	302,005.64	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
SC10	Screw Conveyor	4,494,613.44	302,005.64	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
SC11	Screw Conveyor	4,494,612.30	302,002.35	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
ST1	Stucco Tank	4,494,609.52	302,999.52	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
SC12	Screw Conveyor	4,494,593.70	302,003.70	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
EL2	Elevator	4,494,585.95	302,003.34	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
SC13	Screw Conveyor	4,494,585.95	302,005.00	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
09																					
SS1	Scalping Screen	4,494,581.39	302,013.03	12	2,750			75.00	900.00	tons	None		PM	2.50E-02	lb/ton	1.88E+00	8.21E+00	1.88E+00	2.58E+00	EPA AP42 Table 11.19.2-2	
													PM_{10}	8.70E-03	lb/ton	6.53E-01	2.86E+00	6.53E-01	8.97E-01		
													$PM_{2.5}$	3.79E-03	lb/ton	2.84E-01	1.24E+00	2.84E-01	3.91E-01		
SC14	Screw Conveyor	4,494,581.39	302,013.03	12	2,750			75.00	900.00	tons	Enclosed		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
WH1	Weigh Hopper	4,494,577.55	302,003.70	12	2,750			75.00	900.00	tons	Enclosed		PM	4.80E-03	lb/ton	3.60E-01	1.58E+00	3.60E-01	4.95E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	2.80E-03	lb/ton	2.10E-01	9.20E-01	2.10E-01	2.89E-01		
													$PM_{2.5}$	7.27E-04	lb/ton	5.45E-02	2.39E-01	5.45E-02	7.50E-02		
MX1	Mixer	4,494,577.55	302,003.70	12	2,750			75.00	900.00	tons	Baghouse	90%	PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
BG1	Bagger	4,494,573.39	302,018.19	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
BG2	Bagger	4,494,573.39	302,018.19	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
BG3	Bagger	4,494,573.39	302,018.19	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
BG4	Bagger	4,494,573.39	302,018.19	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
BG5	Bagger	4,494,576.19	302,019.66	12	2,750			75.00	900.00	tons	None		PM	3.00E-03	lb/ton	2.25E-01	9.86E-01	2.25E-01	3.09E-01	EPA AP42 Table 11.19.2-2	
													PM_{10}	1.10E-03	lb/ton	8.25E-02	3.61E-01	8.25E-02	1.13E-01		
													$PM_{2.5}$	1.70E-04	lb/ton	1.28E-02	5.58E-02	1.28E-02	1.75E-02		
IA	**Insignificant Activities**																				

Emission Inventory

Company: Empire Mining Co., LLC
Facility: Empire Mine
Address: NV Hwy 447 MP 68, Empire, NV 89405

Permit Number AAIR16-0933

Date February 12, 2023
Application Type Revision

System #	Unit Description	Location UTM Zone 11 North (m)	Location UTM Zone 11 East (m)	Operating Hours Daily	Operating Hours Annual	Heat Input (MMBtu) Hour	Heat Input (MMBtu) Annual	Throughput/ Fuel Usage Hour	Throughput/ Fuel Usage Daily	Throughput/ Fuel Usage Units	Controls Technology	Controls Efficiency	Emission Factor Pollutant	Emission Factor Factor	Emission Factor Unit	Potential to Emit Emission Rate Hourly (lb/hr)	Potential to Emit Emission Rate Annual (ton/yr)	Permitted Emission Rate Hourly (lb/hr)	Permitted Emission Rate Annual (ton/yr)	Reference	Notes

			Facility-Wide Emission Rate	
			Hourly (lb/hr)	Annual (ton/yr)
PM	15.20	66.57	15.20	20.90
PM_{10}	5.27	23.09	5.27	7.25
$PM_{2.5}$	1.45	6.37	1.45	2.00
SO_2	0.02	0.08	0.02	0.02
NO_x	2.27	9.96	2.27	3.13
CO	1.31	5.74	1.31	1.80
VOC				
HAP				

Table 1.5-1. EMISSION FACTORS FOR LPG COMBUSTION[a]

EMISSION FACTOR RATING: E

Pollutant	Butane Emission Factor ($lb/10^3$ gal)		Propane Emission Factor ($lb/10^3$ gal)	
	Industrial Boilers[b] (SCC 1-02-010-01)	Commercial Boilers[c] (SCC 1-03-010-01)	Industrial Boilers[b] (SCC 1-02-010-02)	Commercial Boilers[c] (SCC 1-03-010-02)
PM, Filterable [d]	0.2	0.2	0.2	0.2
PM, Condensable	0.6	0.6	0.5	0.5
PM, Total	0.8	0.8	0.7	0.7
SO_2[e]	0.09S	0.09S	0.10S	0.10S
NO_x[f]	15	15	13	13
N_2O[g]	0.9	0.9	0.9	0.9
CO_2[h,j]	14,300	14,300	12,500	12,500
CO	8.4	8.4	7.5	7.5
TOC	1.1	1.1	1.0	1.0
CH_4[k]	0.2	0.2	0.2	0.2

[a] Assumes PM, CO, and TOC emissions are the same, on a heat input basis, as for natural gas combustion. Use heat contents of 91.5 x 10^6 Btu/10^3 gallon for propane, 102 x 10^6 Btu/10^3 gallon for butane, 1020 x 10^6 Btu/10^6 scf for methane when calculating an equivalent heat input basis. For example, the equation for converting from methane's emissions factors to propane's emissions factors is as follows: lb pollutant/10^3 gallons of propane = (lb pollutant /10^6 ft^3 methane) * (91.5 x 10^6 Btu/10^3 gallons of propane) / (1020 x 10^6 Btu/10^6 scf of methane). The NO_x emission factors have been multiplied by a correction factor of 1.5, which is the approximate ratio of propane/butane NO_x emissions to natural gas NO_x emissions. To convert from lb/10^3 gal to kg/10^3 L, multiply by 0.12. SCC = Source Classification Code.

[b] Heat input capacities generally between 10 and 100 million Btu/hour.

[c] Heat input capacities generally between 0.3 and 10 million Btu/hour.

[d] Filterable particulate matter (PM) is that PM collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train. For natural gas, a fuel with similar combustion characteristics, all PM is less than 10 μm in aerodynamic equivalent diameter (PM-10).

[e] S equals the sulfur content expressed in gr/100 ft^3 gas vapor. For example, if the butane sulfur content is 0.18 gr/100 ft^3, the emission factor would be (0.09 x 0.18) = 0.016 lb of SO_2/10^3 gal butane burned.

[f] Expressed as NO_2.

[g] Reference 12.

[h] Assuming 99.5% conversion of fuel carbon to CO_2.

[j] EMISSION FACTOR RATING = C.

[k] Reference 13.

TABLE 11.12-2 (ENGLISH UNITS)
EMISSION FACTORS FOR CONCRETE BATCHING [a]

Source (SCC)	Uncontrolled				Controlled			
	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating
Aggregate transfer [b] (3-05-011-04,-21,23)	0.0069	D	0.0033	D	ND		ND	
Sand transfer [b] (3-05-011-05,22,24)	0.0021	D	0.00099	D	ND		ND	
Cement unloading to elevated storage silo (pneumatic)[c] (3-05-011-07)	0.73	E	0.47	E	0.00099	D	0.00034	D
Cement supplement unloading to elevated storage silo (pneumatic)[d] (3-05-011-17)	3.14	E	1.10	E	0.0089	D	0.0049	E
Weigh hopper loading [e] (3-05-011-08)	0.0048	D	0.0028	D	ND		ND	
Mixer loading (central mix)[f] (3-05-011-09)	0.572 or Eqn. 11.12-1	B	0.156 or Eqn. 11.12-1	B	0.0184 or Eqn. 11.12-1	B	0.0055 or Eqn. 11.12-1	B
Truck loading (truck mix)[g] (3-05-011-10)	1.118	B	0.310	B	0.098 or Eqn. 11.12-1	B	0.0263 or Eqn. 11.12-1	B
Vehicle traffic (paved roads)	See AP-42 Section 13.2.1, Paved Roads							
Vehicle traffic (unpaved roads)	See AP-42 Section 13.2.2, Unpaved Roads							
Wind erosion from aggregate and sand storage piles	See AP-42 Section 13.2.5, Industrial Wind Erosion							

Table 11.16-2 (English Units). EMISSION FACTORS FOR GYPSUM PROCESSING[a]

EMISSION FACTOR RATING: D

Process	Filterable PM[b]	PM-10	CO_2[c]
Crushers, screens, stockpiles, and roads (SCC 3-05-015-05,-06,-07,-08)	—[d]	—[d]	NA
Rotary ore dryers (SCC 3-05-015-01)	$0.16(FFF)^{1.77}$[e]	$0.013(FFF)^{1.7}$	23[f]
Rotary ore dryers w/fabric filters (SCC 3-05-015-01)	0.040[g]	0.010	NA
Roller mills w/cyclones (SCC 3-05-015-02)	2.6[h]	ND	NA
Roller mills w/fabric filters (SCC 3-05-015-02)	0.12[h]	ND	NA
Roller mill and kettle calciner w/electrostatic precipitators (SCC 3-05-015-02,-11)	0.090[h,j]	ND	ND
Continuous kettle calciners and hot pit (SCC 3-05-015-11)	41[k]	26	ND
Continuous kettle calciners and hot pit w/fabric filters (SCC 3-05-015-11)	0.0060[k]	ND	NA
Continuous kettle calciners w/cyclones and electrostatic precipitators (SCC 3-05-015-11)	0.090[k]	ND	NA
Flash calciners (SCC 3-05-015-12)	37[m]	14[m]	110[n]
Flash calciners w/fabric filters (SCC 3-05-015-12)	0.040[m]	0.034[m]	ND
Impact mills w/cyclones (SCC 3-05-015-13)	100[p]	ND	NA
Impact mills w/fabric filters (SCC 3-05-015-13)	0.020[p]	ND	NA
Board end sawing--8-ft boards (SCC 3-05-015-21)	0.80[q]	ND	NA
Board end sawing--12-ft boards (SCC 3-05-015-22)	0.50[q]	ND	NA
Board end sawing w/fabric filters--8- and 12-ft boards (SCC 3-05-015-21,-22)	7.5[r]	5.7[r]	NA

[a] Factors represent uncontrolled emissions unless otherwise specified. All emission factors are lb/ton of output rate. SCC = Source Classification Codes. NA = not applicable. ND = no data.

Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton)[a]

Source [b]	Total Particulate Matter [r,s]	EMISSION FACTOR RATING	Total PM-10	EMISSION FACTOR RATING	Total PM-2.5	EMISSION FACTOR RATING
Primary Crushing (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Primary Crushing (controlled) (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Secondary Crushing (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Secondary Crushing (controlled) (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Tertiary Crushing (SCC 3-050030-03)	0.0054[d]	E	0.0024[o]	C	ND[n]	
Tertiary Crushing (controlled) (SCC 3-05-020-03)	0.0012[d]	E	0.00054[p]	C	0.00010[q]	E
Fines Crushing (SCC 3-05-020-05)	0.0390[e]	E	0.0150[e]	E	ND	
Fines Crushing (controlled) (SCC 3-05-020-05)	0.0030[f]	E	0.0012[f]	E	0.000070[q]	E
Screening (SCC 3-05-020-02, 03)	0.025[c]	E	0.0087[l]	C	ND	
Screening (controlled) (SCC 3-05-020-02, 03)	0.0022[d]	E	0.00074[m]	C	0.000050[q]	E
Fines Screening (SCC 3-05-020-21)	0.30[g]	E	0.072[g]	E	ND	
Fines Screening (controlled) (SCC 3-05-020-21)	0.0036[g]	E	0.0022[g]	E	ND	
Conveyor Transfer Point (SCC 3-05-020-06)	0.0030[h]	E	0.00110[h]	D	ND	
Conveyor Transfer Point (controlled) (SCC 3-05-020-06)	0.00014[i]	E	4.6×10^{-5}[i]	D	1.3×10^{-5}[q]	E
Wet Drilling - Unfragmented Stone (SCC 3-05-020-10)	ND		8.0×10^{-5}[j]	E	ND	
Truck Unloading -Fragmented Stone (SCC 3-05-020-31)	ND		1.6×10^{-5}[j]	E	ND	
Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32)	ND		0.00010[k]	E	ND	

a. Emission factors represent uncontrolled emissions unless noted. Emission factors in lb/Ton of material of throughput. SCC = Source Classification Code. ND = No data.

b. Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have as much influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with an appropriate control efficiency that best reflects the effectiveness of the controls employed.

c. References 1, 3, 7, and 8

d. References 3, 7, and 8