TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 75547

I. INTRODUCTION

This Class II Synthetic Minor Air Quality Control Renewal permit is for the continued operation of Origin Mining Company ("MPI")'s Mineral Park Mine, which is located on <<Location>>. Permit #75547 renews and supersedes Permit #59615.

A. Company Information

Facility Name:	Mineral Park Mine
Mailing Address:	8275 N. Mineral Park Road
	Golden Valley, AZ 86413
Facility Location:	Mineral Park Road, 5 miles east of Hwy 93
	15 miles north of Kingman, Mohave County, AZ

B. Attainment Classification (Source: 40 CFR §81.303)

The source is located in Mohave County, AZ which is designated as an attainment area for all criteria pollutants.

II. PROCESS DESCRIPTION

A. Mining Operations

Holes are drilled and filled with an ammonium nitrate and fuel oil (ANFO) mixture. After blasting, haul trucks transport the sulfide ore to dump hoppers and the oxide ore to leach pads.

B. Sulfide Ore Milling and Concentration Operations

Sulfide ore is crushed in Jaw Crushers and then transported to two parallel wet semi-autogenous grinding (SAG) mills. Water, milk of lime, and other additives are added to the SAG mills to produce slurry.

Concentrating operations utilize a series of cells to separate the slurry into copper concentrate, molybdenum concentrate and tailings. Copper-molybdenum rougher, cleaner and recleaner flotation cells first separate tailings from the copper/molybdenum concentrate. Then molybdenum rougher, cleaner and recleaner cells separate the combined concentrate into copper concentrate and molybdenum concentrate. Tailings are sent to tailing storage areas.

Copper concentrate is sent to the copper concentrate filter. Copper concentrate cake with about 6.5% moisture is then sent to a stockpile in the copper concentrate storage building.Processes after the SAG mills through the remainder of the metal flotation/recovery process involve wet slurry or suspensions. Hence, there are negligible dust emissions.

Molybdenum concentrate is fed through a pressure filter to dewater the slurry. The wet filter cake (8% moisture) is dried in an electric dryer to a moisture content of about 4% and then transported to a load out system where it is packaged for distribution.

C. Oxide Ore Leaching and SX/EW Operations

Oxide ore is transported to leach pads where weak acid is applied to leach out copper and other metals from the ore. This metal rich solution is called pregnant leach solution (PLS).

PLS is pumped to solvent extraction units and is vigorously mixed with an organic solution containing a petroleum based diluent and a copper extraction reagent. During mixing, copper from the PLS is transferred to the organic solution. The solution is then transferred to settlers where the copper containing solution floats on top and the depleted PLS (raffinate) settles at the bottom. The copper containing solution is sent to strip mixer-settler units. In the mixer, the loaded organic is mixed with a strong sulfuric acid solution (lean electrolyte), and the copper selectively moves to the electrolyte. In the settler, the organic solution stripped of copper floats on top and the rich electrolyte settles. The barren organic solution is recycled for use in the extraction process and the rich electrolyte is sent to electrowinning cells where copper from the rich electrolyte gets deposited onto cathodes, and the remaining copper depleted lean electrolyte is returned to the solvent extraction facility.

D. Alternate Operating Scenario (AOS)

MPI proposes to utilize an AOS for the processing of oversize ore from the SAG mills. The oversize ore from the SAG mills is either stockpiled or sent to the recycle crusher. From the crusher, the ore can be sent to either of the SAG mills.

E. Control Devices

Dust emissions from the primary crusher and conveying systems are controlled by using a combination of water suppression sprays, dry fog suppression systems and wind barriers. Dust collectors are utilized at the SAG feed conveyors.

III. COMPLIANCE HISTORY

Since the issuance of Permit No. 59615, there have been 6 compliance certification submittals, 2 inspections and 1 performance test at the facility. No air quality cases or violations were issued during the permit term.

IV. EMISSIONS

The facility has a potential-to-emit (PTE) more than the major source thresholds of nitrogen oxides (NOx). The facility's PTE is provided in **Table *1*** below:

Table 1: Potential to Emit

Pollutant	Non-Fugitive Emissions without the AOS (tons per year)	Non-Fugitive Emissions with the AOS (tons per year)	Fugitive Emissions (tons per year)
PM	69.5	85.7	1431.6
PM_{10}	46.4	53.7	428.5
$PM_{2.5}$	33.3	34.6	52.49
CO	92.2		286.2
NO_x	93.8		73.5
SO_2	5.33		0.02
VOC	33		3.21
GHG (expressed as CO_2e)	176,203		2,420
HAPs	1.63		0.93

V. MINOR NSR APPLICABILITY

There are no changes being made as part of this renewal that result in increased emissions. Consequently, minor NSR is not triggered

VI. APPLICABLE REGULATIONS

Error! Reference source not found. identifies applicable regulations and verification as to why that standard applies.

Table 2: Applicable Regulations

Unit	Control Device	Rule	Discussion
Metallic Mineral Processing Equipment	Dry fog dust suppression, water spray, wind barriers, dust collectors	40 CFR 60 Subpart LL	Post-1982 affected facilities listed in 40 CFR 60.380 are subject to New Source Performance Standards (NSPS) 40 CFR 60 Subpart LL.

Unit	Control Device	Rule	Discussion
Metallic Mineral Processing Equipment	Dry fog dust suppression, water spray, wind barriers	A.A.C. R18-2-721	Pre-1982 metallic mineral processing equipment or equipment or processes not considered affected facilities under 40 CFR 60 Subpart LL are subject to A.A.C. R18-2-721.
Metallic Mineral Processing Equipment associated with the Alternate Operating Scenario	Water sprays	40 CFR 60 Subpart LL or A.A.C. R18-2-721	Post-1982 affected facilities listed in 40 CFR 60.380 are subject to New Source Performance Standards (NSPS) 40 CFR 60 Subpart LL. Conveyor transfer points to stockpiles are subject to A.A.C. R18-2-721.
Solvent Extraction and Electrowinning (SX/EW) operations	Foam, blankets, surfactants, thermal retention balls	A.A.C. R18-2-730 A.A.C. R18-2-702	These standards are applicable for unclassified sources.
Lime bins, cooling tower		A.A.C. R18-2-730 A.A.C. R18-2-702	These standards are applicable for unclassified sources.
Combustion Turbine		40 CFR 60 Subpart KKKK	These standards apply to stationary combustion turbines with a heat input of greater than 10 MMBtu/hr which commenced construction after February 18, 2005. National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart YYYY do not apply to the combustion turbine as the facility is not a major source of HAPs.
Emergency Generator		40 CFR 60, Subpart IIII	These standards apply to internal combustion engines manufactured after April 1, 2006. New engines subject to Subpart IIII meet the requirements of NESHAP Subpart ZZZZ by complying with the requirements of NSPS Subpart IIII.
Gasoline Storage and Dispensing Facilities		AAC R18-2-710 40 CFR 63 Subpart CCCCCC	A.A.C. R18-2-710 applies to the gasoline storage tanks. NESHAP Subpart CCCCCC applies to gasoline dispensing facilities at area sources of HAP emissions.

Unit	Control Device	Rule	Discussion
Fugitive dust sources	Water Trucks Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	A.A.C. R18-2 Article 6 is applicable to all fugitive non-point dust sources at the facility. A.A.C. R18-2-702 is applicable to all fugitive point dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.
Demolition/renovation operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.

VII. PREVIOUS PERMIT AND CONDITIONS

A. Previous Permit Conditions

Table 3 compares the substantive conditions in Permit No. 49504 with the conditions in this renewal permit and cross-references the previous permit conditions to their location in the renewal permit

Table 3: Previous Permit Conditions

Section No.	Determination			Comments
	Revised	Keep	Delete	
Att. "A"	X			General Provisions: Revised to represent the most recent template language
Att. "B" Section I	X			Facility wide requirements: Revised to represent the most recent template language
Att. "B" Section III	X			Updated to include all language in 40 CFR 60.386(b)(2)
Att. "C"	X			Equipment List: Revised to reflect the most recent equipment operating at the facility and to include equipment information provided.

VIII. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

A. Facility Wide

1. Along with the semiannual compliance certification, the Permittee is required to submit reports of all recordkeeping, monitoring and maintenance required by the permit.

2. The Permittee is required to maintain, on-site, records of the manufacturer's specifications or an Operation and Maintenance Plan for all equipment listed in the permit.

3. The Permittee is required to maintain records of the daily throughput of the combined crushing operations.

4. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform bi-weekly survey of visible emission from the process and fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard. The Permittee is required to keep records of surveys, method 9 observations and any corrective actions taken.

5. The Permittee is required to operate the facility in accordance with the ADEQ approved Dust Control Plan.

6. The Permittee is required to operate and maintain a Continuous Emission Monitoring System (CEMS) for monitoring NO_X and CO emissions from the combustion turbine.

7. The Permittee is required to keep records of the dates of operation for the AOS.

B. Fugitive Dust

1. The Permittee is required to keep record of the dates and types of dust control measures employed.

2. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform a monthly survey of visible emission from fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard.

3. The Permittee is required to keep records of the name of the observer, the time, date, and location of the observation and the results of all surveys and observations.

4. The Permittee is required to keep records of any corrective action taken to lower the opacity of any emission point and any excess emission reports.

C. Periodic Activities

1. The Permittee is required to record the date, duration and pollution control measures of any abrasive blasting project.

2. The Permittee is required to record the date, duration, quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.

3. The Permittee is required to maintain records of all asbestos related demolition or renovation projects. The required records include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

IX. TESTING REQUIREMENTS

Performance testing using EPA Reference Methods 5 or 17 is required once every 2 years for the SAG mill feed conveyor dust collectors.

X. LIST OF ABBREVIATIONS

A.A.C. ..... Arizona Administrative Code
AOS ..... Alternate Operating Scenario
ADEQ ..... Arizona Department of Environmental Quality
CEMS ..... Continuous Emissions Monitoring Systems
CFR ..... Code of Federal Regulations
CO ..... Carbon Monoxide
GHG ..... Greenhouse Gas
HAP ..... Hazardous Air Pollutant
hp ..... Horsepower
lb/hr ..... Pound per Hour
MSDS ..... Material Safety Data Sheet
NESHAP ..... National Emission Standards for Hazardous Air Pollutants
NO_x ..... Nitrogen Oxides
PLS ..... Pregnant Leach Solution
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter Nominally less than 10 Micrometers
PTE ..... Potential to Emit
SO_x ..... Sulfur Oxides
VOC ..... Volatile Organic Compound