State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-AN105710049-24

September 23, 2024

Jenny Esker
Rio Tinto Kennecott Utah Copper LLC
4700 Daybreak Parkway
South Jordan, UT 84095
jenny.esker@riotinto.com

Dear Ms. Esker:

Re: Approval Order: Modification to Approval Order to DAQE-AN105710044-18, to Add Generators
Project Number: N105710049

The attached Approval Order (AO) is issued pursuant to the Notice of Intent (NOI) received on February 9, 2024. Rio Tinto Kennecott Utah Copper LLC must comply with the requirements of this AO, all applicable state requirements (R307), and Federal Standards.

The project engineer for this action is **Tad Anderson**, who can be contacted at (385) 306-6515 or tdanderson@utah.gov. Future correspondence on this AO should include the engineer's name as well as the DAQE number shown on the upper right-hand corner of this letter. No public comments were received on this action.

Sincerely,

Bryce C. Bird
Director

BCB:TA:jg

cc: Salt Lake County Health Department
EPA Region 8

STATE OF UTAH
Department of Environmental Quality
Division of Air Quality

APPROVAL ORDER
DAQE-AN105710049-24
Modification to Approval Order to DAQE-AN105710044-18, to Add Generators

Prepared By
Tad Anderson, Engineer
(385) 306-6515
tdanderson@utah.gov

Issued to
Rio Tinto Kennecott Utah Copper LLC - Mine & Copperton Concentrator

Issued On
September 23, 2024

Issued By

Bryce C. Bird
Director
Division of Air Quality

TABLE OF CONTENTS

GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name
Rio Tinto Kennecott Utah Copper LLC

Source Name
Kennecott Utah Copper LLC –
Mine & Copperton Concentrator

Mailing Address
4700 Daybreak Parkway
South Jordan, UT 84095

Physical Address
8362 West 10200 South
Bingham Canyon, UT 84006

Source Contact
Name: Jenny Esker
Phone: (801) 569-6494
Email: jenny.esker@riotinto.com

UTM Coordinates
407,000 m Easting
4,493,000 m Northing
Datum NAD27
UTM Zone 12

SIC code 1021 (Copper Ores)

SOURCE INFORMATION

General Description
Rio Tinto Kennecott Utah Copper LLC (Kennecott) operates the Copperton Concentrator that receives the ore from the Bingham Canyon Mine, which is run through the grinding lines and made into a slurry. The slurry from the ore is fed into the flotation circuits, which are mixed with reagents and aerated to float the copper from the ore and routed to the refinery to be further processed.

NSR Classification
Minor Modification at Minor Source

Source Classification
Located in Salt Lake City UT $PM_{2.5}$ NAA, Salt Lake County SO_2 NAA
Salt Lake County
Airs Source Size: B

Applicable Federal Standards
NSPS (Part 60), A: General Provisions
NSPS (Part 60), LL: Standards of Performance for Metallic Mineral Processing Plants
NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
NSPS (Part 60), JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for

Stationary Reciprocating Internal Combustion Engines
Title V (Part 70) Area Source

Project Description
Kennecott is proposing to use some of the tailings generated at the Concentrator as feed material for the Paste Plant at the Bingham Canyon Mine. Kennecott requires the use of an emergency generator (250-kW standby emergency generator, (EPA) Tier 4 certified engine) to have backup power at the Concentrator in the event of a power failure. During a power failure, the materials being directed at the Paste Plant could slide back through the pipe to the Concentrator where the force of the material would present a dangerous scenario to equipment and people in the area. The emergency generator would ensure that pumping capacity remains in place in the event of a power outage to mitigate the potential hazards.

Kennecott is also proposing to add a mobile diesel-powered air compressor unit (540-HP diesel engine, (EPA) Tier 4 certified engine) to meet compressed air needs at the Concentrator.

Both engines require hour limitations that have been included in the permit modification.

Process Description
Ore from the Bingham Canyon Mine is stockpiled in the A-frame enclosure. The ore is fed from the enclosure to the grinding lines through the semi-autogenous grinding (SAG) mills and ball mill, making the ore into slurry. The slurry is sent through cyclone clusters, the cyclone overflow is fed into the flotation circuits, and the cyclone underflow is sent to the ball mills for further size reduction before being sent back to the cyclones and on to the flotation circuit.

In the flotation circuits, overflow is mixed with reagents and aerated to float copper and other valuable by-products from the ore. Concentrate is pumped to the existing regrinding circuit, while tailings gravity flows to a collection trench. Tailings from the collection trenches are fed to the tailings thickener feed distributor and then transported by gravity flow to the tailings impoundment for final deposition. Thickener overflow is pumped back to the process water reservoir.

SUMMARY OF EMISSIONS

The emissions listed below are an estimate of the total potential emissions from the source. Some rounding of emissions is possible.

Criteria Pollutant	Change (TPY)	Total (TPY)
Ammonia	0.00	0.27
CO_2 Equivalent	729.0	10914.00
Carbon Monoxide	4.34	14.21
Nitrogen Oxides	0.59	11.26
Particulate Matter - PM_{10}	0.03	25.33
Particulate Matter - $PM_{2.5}$	0.03	13.89
Sulfur Dioxide	1.11	1.21
Volatile Organic Compounds	0.23	4.27

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)

Cyanide Compounds (CAS #143339)	0	100
Generic HAPs (CAS #GHAPS)	102	122
	Change (TPY)	**Total (TPY)**
Total HAPs	0.05	0.11

SECTION I: GENERAL PROVISIONS

I.1	All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
I.2	The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
I.3	Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]
I.4	All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of two (2) years. [R307-401-8]
I.5	At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating 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, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
I.6	The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
I.7	The owner/operator shall comply with UAC R307-150 Series. Emission Inventories. [R307-150]
I.8	The owner/operator shall submit documentation of the status of construction or modification to the Director within 18 months from the date of this AO. This AO may become invalid if construction is not commenced within 18 months from the date of this AO or if construction is discontinued for 18 months or more. To ensure proper credit when notifying the Director, send the documentation to the Director, attn.: NSR Section. [R307-401-18]

SECTION II: PERMITTED EQUIPMENT

II.A THE APPROVED EQUIPMENT

II.A.1	**Plant Wide** Copperton Concentrator

II.A.2	**One (1) Feed Dryer Oil Heater** Feed dryer oil heater for product molybdenite dryer Rated capacity: 5.7 MMBtu/hr Fuel type: Natural gas Product molybdenite dryer with venturi scrubber
II.A.3	**One (1) Product Dryer Oil Heater** Product dryer oil heater* for product molybdenite dryer Rated capacity: 2.2 MMBtu/hr Fuel type: Natural gas Product: molybdenite dryer with venturi scrubber *This equipment is listed for informational purposes only.
II.A.4	**Molybdenite Loading** Six (6) molybdenite storage bins
II.A.5	**Molybdenite Storage** Two (2) molybdenite storage bins
II.A.6	**Two (2) Cooling Towers** Closed-circuit fluid cooling tower for motors used in the grinding circuit
II.A.7	**Bag Loading** Molybdenite bag loading operations
II.A.8	**Cleaning System** Vacuum cleaning system with baghouse
II.A.9	**Ore Sorting Plant** Ore sorting baghouse and sample preparation baghouse
II.A.10	**Metallurgical Laboratory** Two (2) baghouses
II.A.11	**Three (3) Pebble Crushers** Pebble crushers with associated enclosed conveyors and enclosed drop points
II.A.12	**Degreasing Parts Washers**
II.A.13	**Four (4) Lime Silos** Controlled: bin vents
II.A.14	**Three (3) Storage Tanks** Capacity: 25,000 gallons (each) Contents: frother, collector, and fuel oil
II.A.15	**One (1) Emergency Generator** Fueled: Diesel (NEW) Maximum rating: 4,357 horsepower
II.A.16	**One (1) Emergency Generator** Fueled: Liquid propane-fired Maximum rating: 75 brake horsepower

II.A.17	**One (1) Air Compressor Engine** Fueled: Diesel (NEW) Maximum rating: 540 horsepower
II.A.18	**Miscellaneous Combustion Sources** Natural gas-fired equipment, including water heaters or comfort heaters that are each individually rated at less than 5 MMBTU/hr. This equipment is listed for informational purposes only.
II.A.19	**MH Pilot Plant** Feed Hopper Conveyors Baghouse on HM pilot ore treatment plant building with a control efficiency of 99%
II.A.20	**Cyanide Circuit** Two (2) sodium cyanide storage tanks Capacity: 8,500 gallons (each)
II.A.21	**Two (2) Lime Slaker Scrubbers** Type: Single stage

SECTION II: SPECIAL PROVISIONS

II.B REQUIREMENTS AND LIMITATIONS

II.B.1	**Plant Wide Requirements**
II.B.1.a	Visible emissions from the following emission points shall not exceed the following values: A. Pebble crushers (subject to NSPS, Subpart LL) - 7% opacity for building exterior. B. Cone crusher (subject to NSPS, Subpart LL) - 10% opacity. C. Fugitive emission points (subject to NSPS, Subpart LL) - 10% opacity. D. Liquid propane (LP) emergency generator - 10% opacity. E. All other points - 10% opacity. F. Baghouse on molybdenite storage bins (subject to NSPS, Subpart LL) - 7% opacity. G. Diesel-fired emergency equipment - 20% opacity. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. For sources that are subject to NSPS, opacity shall be determined by conducting observations in accordance with 40 CFR 60.11(b) and 40 CFR 60, Appendix A, Method 9. [40 CFR 60 Subpart LL, R307-305-3]

II.B.1.b	All baghouses shall be operated as follows: A. Whenever the vacuum cleaning system is in use, all exhaust gases from the vacuum cleaning system shall pass through the baghouse. B. All exhaust gases from the metallurgical laboratory sample preparation hoods shall pass through an operating baghouse. [R307-401-8]
II.B.1.c	The pH of the circuit using cyanide shall be maintained at a value no less than 9. [R307-401-8]
II.B.1.c.1	The pH shall be continuously monitored (+/- 0.5) in the flotation circuit upstream of the cyanide circuit. Records shall be maintained as per Condition I.4. [R307-401-8]
II.B.1.d	All wet scrubbers shall comply with 40 CFR 60.384 and 60.385. [40 CFR 60 Subpart A]
II.B.1.e	Kennecott shall use only natural gas as a primary fuel and liquid propane as a backup fuel in the dryer oil heaters and liquid propane as a fuel for the 75 hp emergency generator. [R307-401-8]
II.B.2	**Roads and Fugitives**
II.B.2.a	To control fugitive emissions, the following controls shall be applied: A. A baghouse shall control the PM_{10} and $PM_{2.5}$ from the MH Pilot Ore Treatment Plant. B. All copperton milling conveyors shall be partially enclosed. C. All copperton milling conveyor transfer points shall be enclosed. D. The pebble crushers shall be enclosed in a building. [R307-309, R307-401-8]
II.B.2.b	Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions: A. All pebble crusher feed conveyors. The sprays shall operate whenever dry conditions warrant or as determined necessary by the Director. [R307-309]
II.B.3	**Generator Engine Requirements**
II.B.3.a	Kennecott shall not exceed 2000 hours of operation of the diesel-fired air compressor per rolling 12-month total. [R307-401-8]
II.B.3.a.1	To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the 20th day of each month using data from the previous 12 months. Records documenting the operation of diesel-fired air compressor engine shall be kept in a log. [R307-401-8]
II.B.3.a.2	To determine the duration of operation, the owner/operator shall install a non-resettable hour meter for the diesel-fired air compressor engine. [R307-401-8]
II.B.3.b	The owner/operator shall not operate each emergency engine on site for more than 100 hours per rolling 12-month period during non-emergency situations. There is no time limit on the use of the engines during emergencies. [R307-401-8]

II.B.3.b.1	To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the 20th day of each month using data from the previous 12 months. Records documenting the operation of each emergency engine shall be kept in a log and shall include the following: a. The date the emergency engine was used. b. The duration of operation in hours. c. The reason for the emergency engine usage. [R307-401-8]
II.B.3.b.2	To determine the duration of operation, the owner/operator shall install a non-resettable hour meter for each emergency engine. [R307-401-8]
II.B.3.c	The owner/operator shall only use diesel fuel (e.g., fuel oil #1, #2, or diesel fuel oil additives) as fuel in each emergency engine. [R307-401-8]
II.B.3.d	The owner/operator shall only combust diesel fuel that meets the definition of ultra-low sulfur diesel (ULSD), which has a sulfur content of 15 ppm or less. [R307-401-8]
II.B.3.d.1	To demonstrate compliance with the ULSD fuel requirement, the owner/operator shall maintain records of diesel fuel purchase invoices or obtain certification of sulfur content from the diesel fuel supplier. The diesel fuel purchase invoices shall indicate that the diesel fuel meets the ULSD requirements. [R307-401-8]
II.B.3.e	The owner/operator shall limit the use of the ventilation system generators 6-9 to the following: a. Testing of the emergency generators shall be between 8 a.m. and 8 p.m. b. Only one (1) emergency generator shall be tested at the same time. [R307-410]
II.B.4	**SIP Requirement**
II.B.4.a	The emissions from the Product Molybdenite Dryers shall be controlled with a scrubber during operation of the dryers. [SIP Section IX.H.12]
II.B.4.a.1	During operation of the dryers, the static pressure differential between the inlet and outlet of the scrubber shall be within the manufacturer's recommended range and shall be recorded weekly. [R307-401]
II.B.4.a.2	The manometer or the differential pressure gauge shall be calibrated according to the manufacturer's instructions at least once per year. [R307-401]

PERMIT HISTORY

This Approval Order shall supersede (if a modification) or will be based on the following documents:

Supersedes	AO DAQE-AN105710044-18 dated August 21, 2018
Is Derived From	NOI dated February 9, 2024
Incorporates	Additional Information dated February 27, 2024

ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by Environmental Protection Agency to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent - Title 40 of the Code of Federal Regulations Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ/UDAQ	Division of Air Quality
DAQE	This is a document tracking code for internal Division of Air Quality use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - Title 40 of the Code of Federal Regulations 52.21 (b)(49)(i)
GWP	Global Warming Potential - Title 40 of the Code of Federal Regulations Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/YR	Pounds per year
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO_x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM_{10}	Particulate matter less than 10 microns in size
$PM_{2.5}$	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO_2	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
VOC	Volatile organic compounds