State of Utah

SPENCER J. COX
Governor

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Lieutenant Governor

Department of
Environmental Quality

Tim Davis
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-IN130290008-25

April 17, 2025

Ladislao Garcia
Broken Arrow Inc.
8960 North Clinton Landing
Lake Point, UT 84074
lgarcia@brokenarrowusa.com

Dear Mr. Garcia:

Re: Intent to Approve: Modification to Approval Order DAQE-AN130290007-25 to Replace Equipment
Project Number: N130290008

The attached document is the Intent to Approve (ITA) for the above-referenced project. The ITA is subject to public review. Any comments received shall be considered before an Approval Order (AO) is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final AO.

Future correspondence on this ITA should include the engineer's name, **Mr. Enqiang He,** as well as the DAQE number as shown on the upper right-hand corner of this letter. Mr. Enqiang He, can be reached at (801) 556-1580 or ehe@utah.gov, if you have any questions.

Sincerely,

Alan D. Humpherys, Manager
New Source Review Section

ADH:EH:jg

cc: Tooele County Health Department

STATE OF UTAH
Department of Environmental Quality
Division of Air Quality

INTENT TO APPROVE
DAQE-IN130290008-25
Modification to Approval Order DAQE-AN130290007-25 to Replace Equipment

Prepared By
Mr. Enqiang He, Engineer
(801) 556-1580
ehe@utah.gov

Issued to
Broken Arrow Inc. - Broken Arrow Flux Operations

Issued On
April 17, 2025

New Source Review Section Manager
Alan D. Humpherys

TABLE OF CONTENTS

GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name
Broken Arrow Inc.

Source Name
Broken Arrow Inc. - Broken Arrow Flux Operations

Mailing Address
8960 North Clinton Landing
Lake Point, UT 84074

Physical Address
2600 North Ellerbeck Road
Grantsville, UT 84029

Source Contact
Name: Ladislao Garcia
Phone: (435) 840-4723
Email: lgarcia@brokenarrowusa.com

UTM Coordinates
368,170 m Easting
4,504,450 m Northing
Datum NAD83
UTM Zone 12

SIC code 1474 (Potash, Soda, & Borate Minerals)

SOURCE INFORMATION

General Description
Broken Arrow Inc. operates a salt processing plant located near Grantsville in Tooele County. The process dries, screens, and loads salt harvested from the Great Salt Lake for shipment to customers. The plant produces up to 500,000 tons of salt annually. The company also dries liquid magnesium chloride concentrate. The magnesium chloride concentrate is brought to the plant by the tanker trucks and dried by a natural gas-fired burner. The plant processes up to 21 million gallons of magnesium chloride concentrate a year.

NSR Classification
Minor Modification at Minor Source

Source Classification
Located in Northern Wasatch Front O3 NAA, Salt Lake City UT $PM_{2.5}$ NAA
Tooele County
Airs Source Size: B

Applicable Federal Standards
NSPS (Part 60), A: General Provisions
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), A: General Provisions

MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Project Description
Broken Arrow has requested a modification to AO DAQE-AN130290007-25 to replace the 40 MMBtu/hr dryer with a new rotary dryer rated at 75 MMBtu/hr. The burner is an ultra-low-NO_x burner. Emissions from the drying processes are controlled with a venturi wet scrubber. The new dryer will share the workload with the existing dyers, and the natural gas consumption will remain unchanged. Emissions as a result of the replacement will also remain the same.

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)
CO_2 Equivalent	0	16114.00
Carbon Monoxide	0	35.20
Nitrogen Oxides	0	11.54
Particulate Matter - PM_{10}	0	38.02
Particulate Matter - $PM_{2.5}$	0	36.77
Sulfur Dioxide	0	0.08
Volatile Organic Compounds	0	4.38

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)
Generic HAPs (CAS #GHAPS)	0	540
	Change (TPY)	**Total (TPY)**
Total HAPs	0	0.27

PUBLIC NOTICE STATEMENT

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Director.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Tooele Transcript on April 23, 2025. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing within 15 days of publication, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

SECTION I: GENERAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

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

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.A THE APPROVED EQUIPMENT

II.A.1	**Broken Arrow Salt** Broken Arrow Flux Operations

II.A.2	**Two (2) Salt Dryers** Design Capacity: Rated at 70, 75 MMBtu/hr Fuel: Natural gas
II.A.3	**One (1) Salt Dryer - new** Design Capacity: Rated at 75 MMBtu/hr Fuel: Natural gas Burner: Ultra-Low-NO_x burner
II.A.4	**Venturi Wet Scrubber - new** Controls: new 75 MMBtu/hr dryer in II.A.3 with a screen Stack Height: 30' Stack Inside Dimension: 2.5' x 2.5'
II.A.5	**Baghouse 2** Controls: 70 MMBtu/hr dryer Flow Rate: 50,000 acfm Bag Diameter: 4.6" Bag Length: 12' Number of Bags: 494 Stack Height: 45' Stack Inside Dimension: 4' x 4'
II.A.6	**Baghouse 3** Controls: 75 MMBtu/hr dryer in II.A.2 Flow Rate: 80,000 acfm Bag Diameter: 4.5" Bag Length: 10' Number of Bags: 960 Stack Height: 45' Stack Inside Diameter: 5'
II.A.7	**One (1) Magnesium Chloride Dryer** Design Capacity: 10 MMBtu/hr Fuel: Natural gas Burner: Low NO_x burner
II.A.8	**Five (5) Screens** Design Capacity: One (1) rated at 50 tons/hr; two (2) rated at 150 tons/hr each; two (2) rated at 300 tons/hr each
II.A.9	**Seven (7) Storage Buildings** Storage Capacities: 500, 500, 2,000, 2,500, 4,500, 15,000, and 20,000 tons
II.A.10	**Miscellaneous Equipment** Associated conveyors, electric motors, front-end loaders and haul trucks
II.A.11	**One (1) Diesel Storage Tank** Capacity: 10,000 gallons
II.A.12	**One (1) Emergency Generator Engine** Maximum Rated Capacity: 1,474 hp (1,100 kW) Tier 4 certified Fuel: Diesel NSPS Applicability: Subpart IIII MACT Applicability: Subpart ZZZZ

II.A.13	**One (1) Emergency Generator Engine** Maximum Rated Capacity: 201 hp (150 kW) Fuel: Natural gas or propane NSPS Applicability: Subpart JJJJ MACT Applicability: Subpart ZZZZ

SECTION II: SPECIAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.B REQUIREMENTS AND LIMITATIONS

II.B.1	**Plant-Wide Requirements and Limitations**
II.B.1.a	The owner/operator shall not allow visible emissions to exceed the following limits: A. The screens - 7% opacity B. All conveyor transfer points - 7% opacity C. Conveyor drop points - 15% opacity D. The sodium chloride dryer stacks (through a baghouse or a scrubber) - 10% opacity E. The magnesium chloride dryer stack - 10% opacity F. The diesel-fired emergency generator engine - 20% opacity G. The natural gas/propane fired emergency generator engine - 10% opacity H. All other points - 15% opacity. [R307-309, R307-312-4, R307-401-8]
II.B.1.a.1	Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. [R307-401-8]
II.B.1.b	The owner/operator shall not exceed the following production and consumption limits: A. 500,000 tons of sodium chloride salt processed per rolling 12-month period B. 21 million gallons of magnesium chloride concentrate processed per rolling 12-month period C. 272,000 MMBtu of natural gas consumed per rolling 12-month period. [R307-401-8]

II.B.1.b.1	To determine compliance with a rolling 12-month total, the owner/operator shall: A. Calculate a new 12-month total by the 20th day of each month using data from the previous 12 months B. Determine production by scale house records or vendor receipts C. Keep the records of production on a daily basis D. Determine natural gas consumption by billing statements from a utility company. The records of billing statements shall be kept on a monthly basis E. Keep the records of production and natural gas consumption for all periods when the plant is in operation. [R307-401-8]
II.B.1.c	The owner/operator shall install partial enclosures on all outdoor screening operations that sort material that has been processed by the sodium chloride salt dryers. The enclosures must be installed in a way to maintain the opacity limits set in this AO. [R307-401-8]
II.B.2	**Sodium Chloride Salt Dryer Requirements**
II.B.2.a	The owner/operator shall only use natural gas as fuel in the sodium chloride salt dryers. [R307-401-8]
II.B.2.b	The owner/operator shall install a low NO_x burner in the 75 MMBtu/hr sodium chloride salt dryer (II.A.2) that is certified to meet a NO_x emission concentration of 30 ppm corrected to 3% oxygen. [R307-401-8]
II.B.2.b.1	The owner/operator shall keep a record of the manufacturer's certification of the emission concentration for the 75 MMBtu/hr sodium chloride salt dryer (II.A.2) on site. The record shall be kept for the life of the equipment. [R307-401-8]
II.B.2.c	The owner/operator shall install an ultra-low-NO_x burner in the new 75 MMBtu/hr sodium chloride salt dryer (II.A.3) that is certified to meet a NO_x emission concentration of 9 ppm or lower corrected to 3% oxygen. [R307-401-8]
II.B.2.c.1	The owner/operator shall keep a record of the manufacturer's certification of the emission concentration for the new 75 MMBtu/hr sodium chloride salt dryer (II.A.3) on site. The record shall be kept for the life of the equipment. [R307-401-8]
II.B.3	**Venturi Wet Scrubber Requirements**
II.B.3.a	The owner/operator shall use the venturi wet scrubber to control process streams from the new sodium chloride salt dryer (II.A.3). All exhaust air from the dryer shall be routed through the scrubber before being vented to the atmosphere. [R307-401-8]
II.B.3.b	The owner/operator shall maintain the following operating parameters within the ranges below: A. The pressure drop at the throat of the venturi between 20 and 25 inches of water column B. The exhaust gas flow rate between 20,000 and 35,000 CFM C. The water flow rate between 144 and 300 GPM. [R307-401-8]

II.B.3.b.1	The owner/operator shall install the pressure gauge and the flow meters such that an inspector/operator can safely read the indicators at any time. The owner/operator shall maintain and calibrate the indicators according to the manufacturers' instructions at least once every 12 months. Recording of the readings is required on a daily basis when the venturi wet scrubber operates. [R307-401-8]
II.B.3.c	The owner/operator shall install and operate a venturi wet scrubber that is guaranteed to achieve at least 99% control efficiency for particulate control. [R307-401-8]
II.B.3.c.1	The owner/operator shall keep a record of the manufacture's guarantee of the control efficiency. The record shall be kept for the life of the equipment. [R307-401-8]
II.B.4	**Baghouse Requirements**
II.B.4.a	The owner/operator shall use the baghouses to control process streams from their designated sodium chloride salt dryers. All exhaust air from the sodium chloride salt dryers (II.A.2) shall be routed through the baghouses before being vented to the atmosphere. [R307-401-8]
II.B.4.b	The owner/operator shall install a manometer or magnehelic pressure gauge to measure the differential pressure across each baghouse. The static pressure differential across each baghouse shall be between 2.0 to 5.0 inches of water column. The monitoring device shall be accurate within plus or minus one inch of water column. [R307-401-8]
II.B.4.b.1	Pressure drop readings shall be recorded daily while the baghouse is operating. Records documenting the pressure drop shall be kept in a log and shall include the following: A. Date of reading B. Unit identification C. Manufacturer-recommended pressure drop for the unit (if applicable) D. Daily pressure drop readings. [R307-401-8]
II.B.4.b.2	Each pressure gauge shall be located such that an inspector/operator can safely read the indicator at any time. [R307-401-8]
II.B.4.b.3	The instrument shall be calibrated in accordance with the manufacturer's instructions or recommendations or replaced at least once every 12 months. Documentation of calibrations or replacements shall be maintained. [R307-401-8]
II.B.4.c	The owner/operator shall install a baghouse that is certified to meet a PM_{10} emission concentration of 0.005 grains/dscf to control the 75 MMBtu/hr sodium chloride salt Dryer (II.A.2). [R307-401-8]
II.B.4.c.1	The owner/operator shall keep a record of the manufacturer's certification of the emission concentration. The record shall be kept for the life of the equipment. [R307-401-8]
II.B.5	**Magnesium Chloride Salt Dryer Requirements**
II.B.5.a	The owner/operator shall only use natural gas as fuel in the magnesium chloride salt dryer. [R307-401-8]
II.B.5.b	The owner/operator shall install a low-NO_x burner in the magnesium chloride salt dryer that is certified to meet a NO_x emission concentration of 30 ppm and a CO emission concentration of 100 ppm or less. [R307-401-8]

II.B.5.b.1	The owner/operator shall keep a record of the manufacturer's certification of the emission concentrations. The record shall be kept for the life of the equipment. [R307-401-8]
II.B.6	**Road and Fugitive Dust**
II.B.6.a	The owner/operator shall not allow visible fugitive dust emissions from haul-road traffic and mobile equipment in operational areas to exceed 15% opacity on site and 10% opacity at the property boundary. [R307-309-4, R307-309-5]
II.B.6.a.1	Visible emission determinations for fugitive dust emissions from haul-road traffic and mobile equipment in operational areas shall use procedures similar to Method 9. The normal requirement for observations to be made at 15-second intervals over a six-minute period, however, shall not apply. Visible emissions shall be measured at the densest point of the plume but at a point not less than 1/2 vehicle length behind the vehicle and not less than 1/2 the height of the vehicle. [R307-309-4, R307-401-8]
II.B.6.b	The owner/operator shall not allow the total length of the haul roads to exceed: A. 0.90 miles of unpaved haul roads for the tanker trucks transporting magnesium chloride concentrate. The owner/operator shall pave no less than 0.1 miles of haul road B. 0.81 miles of unpaved haul roads for the haul trucks transporting sodium chloride salt. The owner/operator shall pave no less than 300 feet of haul road. [R307-401-8]
II.B.6.c	The owner/operator shall apply water sprays and/or chemical suppressants to all unpaved roads and other unpaved operational areas that are used by mobile equipment to control fugitive dust. Treatment shall be of sufficient frequency and quantity to maintain the opacity limit in the AO. [R307-309, R307-401-8]
II.B.6.c.1	Records of water and/or chemical treatment shall be kept for all periods when the plant is in operation. The records shall include the following items: A. Date of treatment B. Number of treatments made, dilution ratio, and quantity C. Rainfall received if any, and approximate amount D. Time of day treatments were made E. Records of temperature if the temperature was below freezing. [R307-401-8]
II.B.6.d	The owner/operator shall periodically sweep or spray clean the paved haul road to maintain the opacity limit in the AO. [R307-401-8]
II.B.6.d.1	Records of cleaning the paved haul roads shall be kept for all periods the plant is in operation. [R307-401-8]
II.B.6.e	The owner/operator shall comply with all applicable requirements of R307-309 for fugitive emission and fugitive dust sources. [R307-309]

II.B.7	**Emergency Generator Engine Requirements**
II.B.7.a	The owner/operator shall install and operate the following emergency generator engines: A. One (1) diesel-fired engine rated up to 1,474 hp (1,100 kW). The engine shall comply with the following Tier 4 standards: HC = 0.14 g/hp-hr, NO_x = 0.5 g/hp-hr, and PM = 0.02 g/hp-hr B. One (1) natural gas/propane-fired engine rated up to 201 hp (150 kW). The engine shall comply with the following standards: NO_x = 2.0 g/hp-hr, CO = 4.0 g/hp-hr, and VOC = 1.0 g/hp-hr. [40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, R307-401-8]
II.B.7.a.1	To demonstrate compliance with the above requirements, the owner/operator shall keep records of the manufacturer's certifications of the emission rates. The records shall be kept for the life of the equipment. [R307-401-8]
II.B.7.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. [40 CFR 63 Subpart ZZZZ, R307-401-8]
II.B.7.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. [40 CFR 63 Subpart ZZZZ, R307-401-8]
II.B.7.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, 40 CFR 63 Subpart ZZZZ]
II.B.7.c	The owner/operator shall only use diesel fuel (e.g., fuel oil #1, #2, or diesel fuel oil additives) as fuel in the 1,474-hp (1,100-kW) emergency generator engine and natural gas or propane in the 201-hp (150-kW) emergency generator engine. [R307-401-8]
II.B.7.c.1	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.7.c.2	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.7.d	The owner/operator shall not test the emergency generator engines at the same time. [R307-410-4]

II.B.7.d.1	To comply with the above requirement, the owner/operator shall: A. Identify the engine to be tested B. Record the engine testing date C. Record the time the testing began and ended D. Keep the above records for all periods the plant is in operation. [R307-410-4]

PERMIT HISTORY

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

Supersedes	AO DAQE-AN130290007-25 dated January 8, 2025
Incorporates	NOI dated January 8, 2025
Incorporates	Additional information dated January 10, 2025
Incorporates	Additional information dated January 22, 2025
Incorporates	Additional information dated January 27, 2025

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