STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0000647**

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the *"Act"*),

COMPASS MINERALS OGDEN INC ("Compass")

is hereby authorized to discharge from its facility located at 765 North 10500 West, Ogden, Utah with the outfalls located at the following:

Outfall	Latitude	Longitude	To receiving waters named
001	41° 16' 09" N	112° 14' 39"W,	Great Salt Lake, Bear River Bay
001-B	41°16'43" N	112° 13' 59"W	Internal discharge from the Steam plant to onsite storm water system to the Great Salt Lake, Bear River Bay.
002	41°16'07" N	112°14'43" W,	Great Salt Lake, Bear River Bay
003	41°15'33" N	112°16'39" W,	Great Salt Lake, Bear River Bay
004	41°14'42" N	112°16'38" W,	Great Salt Lake, Bear River Bay
005	41°14'18" N	112°19'13" W,	Great Salt Lake, Bear River Bay
006	41°16'10" N	112°20'11" W,	Great Salt Lake, Bear River Bay
007	41°16'15" N	112°21'26" W,	Great Salt Lake, Bear River Bay
008	41°13'54" N	112°21'42" W,	Great Salt Lake, Bear River Bay
009	41°15'44" N	112°53'29" W,	Great Salt Lake, Gunnison Bay

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on October 5, 2021.

This permit expires at midnight on October 4, 2026.

Signed this 5th day of October, 2021.

Erica Brown Gaddis, PhD
Director

DWQ-2021-006775

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Points. The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number	Location of Discharge Point
001	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'09" and Longitude 112°14'39"
001-B	Internal discharge from the Steam plant to onsite storm water system to the Great Salt Lake, Bear River Bay. Latitude 41°16'43" and Longitude 112°13'12"
002	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'07" and Longitude 112°14'43"
003	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°15'33" and Longitude 112°16'39"
004	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°14'42" and Longitude 112°16'38"
005	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°14'18" and Longitude 112°19'13"
006	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'10" and Longitude 112°20'11"
007	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'15" and Longitude 112°21'26"
008	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°13'54" and Longitude 112°21'42"
009	Discharge to the Great Salt Lake, Gunnison Bay. Latitude 41°15'44" and Longitude 112°53'29"

B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001, Outfall 002, Outfall 003, Outfall 004, Outfall 005, Outfall 006, Outfall 007, Outfall 008 and Outfall 009 as defined in *Part VIII.A.4&8* of this permit.

2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001 Outfall 001B, Outfall 002, Outfall 003, Outfall 004, Outfall 005, Outfall 006, Outfall 007, Outfall 008 and Outfall 009. Such discharges shall be limited and monitored by the permittee as specified below

a. Narrative Effluent Limitations. Outfalls 003, 004, 005, 006, 007, 008 and 009 shall be subject to the following narrative effluent limitations.

There shall be no discharge of process wastewater pollutants to navigable waters except as follows:

1) unused bitterns may be returned to the Great Salt Lake, including excess brines that are returned to the Lake and brines that are pumped into the Behrens Trench for transport across the Lake; and

2) the prohibition against discharge of process wastewater pollutants shall be applied on a net basis.

b. Numeric Effluent Limitations.

(1) Outfalls 001shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD_5, mg/L	25.0	35.0	NA	NA
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD
BOD_5	Monthly	Grab	mg/L
Oil & Grease	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
Metals c/	Quarterly	Grab	mg/L

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee

can affirmatively demonstrate that representative values are being obtained.

b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

c/ The following metals should be monitored for Reasonable Potential.

Metals to be Monitored for RP		
Parameter	Sample Type	Units
Total Arsenic	Grab	mg/L
Total Cadmium	Grab	mg/L
Total Chromium	Grab	mg/L
Total Copper	Grab	mg/L
Total Cyanide	Grab	mg/L
Total Lead	Grab	mg/L
Total Mercury	Grab	mg/L
Total Nickel	Grab	mg/L
Total Silver	Grab	mg/L
Total Zinc	Grab	mg/L

(2) Outfalls 001-B shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations d/			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0
Total Suspended Solids, mg/L	25.0	NA	NA	35.0
Total Residual Chlorine, mg/L /e	0.2	NA	NA	0.5
Total Dissolved Oxygen, mg/L	NA	NA	4.5	NA
Total Chromium, mg/L	0.2	NA	NA	0.2
Total Zinc, mg/L	1.0	NA	NA	1.0

NA – Not Applicable

d/ EPA's 126 priority pollutants that are contained in chemicals added for boiler maintenance, except for Chromium and Zinc, shall not be present in any detectable amount.

e/ If total residual chlorine (TRC) exceeds the Daily Maximum limit of 0.5 mg/L, the facility is permitted to take a second sample at the primary Outfall 001. If the TRC level is below the state water quality standard of 0.019 mg/L, the exceedance shall not be considered a violation at Outfall 001B.

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD

Oil & Grease	Monthly	Visual c/	mg/L
pH	Monthly	Instantaneous	SU
Total Suspended Solids	Monthly	Grab	mg/L
Total Residual Chlorine	Monthly	Grab	mg/L
Total Dissolved Oxygen	Monthly	Grab	mg/L
Total Chromium	Monthly	Grab	mg/L
Total Zinc	Monthly	Grab	mg/L

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
c/ A grab sample for Oil and Grease will be required when a visible sheen is observed in the effluent.

(3) Outfalls 002, 003, 004, 005, 006, 007, 008 and 009 shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD
Oil & Grease	Monthly	Visual c/	mg/L
pH	Monthly	Grab	SU

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
c/ A grab sample for Oil and Grease will be required when a visible sheen is observed in the effluent.

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into

* Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on November 28, 2021. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G*), and submitted by NetDMR, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

II. INDUSTRIAL PRETREATMENT REQUIREMENTS

A. Discharge to POTW. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters. At a minimum the discharge, into a POTW, must met the requirements of Part VI of the permit.

B. Hazardous Waste Notification. The permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

C. Hauled Hazardous Waste. Notification must be provided to the Pretreatment Coordinator for the Division of Water Quality 14 days prior to discharge to a POTW which does not have an approved pretreatment program.

D. General and Specific Prohibitions.

1. General Prohibitions. The permittee may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph 2. of this section apply to the introducing pollutants into a POTW whether or not the permittee is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Requirements.

2. Specific Prohibitions. The following pollutants shall not be introduced into a POTW:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140˚F (60˚C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104˚F (40˚C));

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   g. Pollutants, which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;

h. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or

i. Any pollutant that causes pass through or interference at the POTW.

j. Any specific pollutant which exceeds any local limitation established by the POTW.

E. Categorical Standards. In addition to the general and specific limitations expressed in *Part VI. C.* of this section, applicable National Categorical Pretreatment Standards must be met by all industrial users discharging into a POTW. These standards are published in the federal regulations at *40 CFR 405 through 471*.

F. Definitions. For this section the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.

2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

   a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

   b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

3. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

4. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

5. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:

a. Has a process wastewater flow of 25,000 gallons or more per average work day;

b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

c. Is subject to Categorical Pretreatment Standards, or

d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

6. *User or Industrial User (IU)* means a source of Indirect Discharge.

III. BIOSOLIDS REQUIREMENTS

A. Biosolids Treatment and Disposal. The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503does not apply. As a result, there are no specific biosolids requirements in this permit.

IV. STORM WATER REQUIREMENTS.

A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.

C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* and *40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H*, *Upset Conditions*.);

   d. Violation of a daily discharge limitation for any of the pollutants listed in the permit; or,

   e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected;

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part I.D*, *Reporting of Monitoring Results*.

I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3.*

J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions. The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part VI.G*, *Bypass of Treatment Facilities* and *Part VI.H*, *Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

      (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

      (3) The permittee submitted notices as required under *section VI.G.3*.

   b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

   a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

      (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

      (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

      (3) Description of specific measures to be taken to minimize environmental and public health impacts;

      (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

      (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

      (6) Any additional information requested by the Director.

   b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H*, Twenty-Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required under *Part V.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

d. The permittee complied with any remedial measures required under *Part VI.D*, *Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. Changes in Discharge of Toxic Substances. Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

a. One hundred micrograms per liter (100 ug/L);

b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,

d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. Five hundred micrograms per liter (500 ug/L);

   b. One milligram per liter (1 mg/L) for antimony:

   c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,

   d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

VII. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Director, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized

representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph *2* above.

N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.

P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.

Q. Toxicity Limitation - Reopener Provision. Use the following paragraph if WET testing is required at the facility:

This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act*.

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC_{50}").

5. "Annual Loading Cap" is the highest allowable phosphorus loading discharged over a calendar year, calculated as the sum of all the monthly loading discharges measured during a calendar year divided by the number of monthly discharges measured during that year.

6. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

7. "Chronic toxicity" occurs when the IC_{25}< XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.

8. "IC_{25}" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

9. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous sample volume, with sample collection rate proportional to flow rate.

10. "CWA" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

11. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

12. "EPA," means the United States Environmental Protection Agency.

13. "Director," means Director of the Division of Water Quality.

14. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

15. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

16. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

17. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

FACT SHEET AND STATEMENT OF BASIS
COMPASS MINERALS OGDEN, INC
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0000647
MINOR INDUSTRIAL

FACILITY CONTACTS

Person Name:	Holly Hurst, PE
Position:	Director of Environmental Compliance
Phone Number:	(801) 732-3251
Facility Name:	Compass Minerals Ogden, Inc.
Mailing and Facility Address:	765 North 10500 West Ogden UT 84404
Telephone:	(801) 732-3212

DESCRIPTION OF FACILITY AND PROCESSES

Compass Minerals Ogden, Inc (Compass) removes water from the Great Salt Lake (GSL), and by the process of evaporation, concentrates and removes salt, potash, and magnesium chloride. During this process, more sodium chloride is produced than any other product, but the potash and magnesium chloride are many times more valuable per ton than sodium chloride. In fact, the Company has large amounts of sodium chloride left in the ponds after harvesting which must, by contract with the State, be returned to the Great Salt Lake (GSL). The salt is returned to the lake by the facility pumping water from the Bear River Bay of the Great Salt Lake, dissolving the remaining salt found in the evaporation ponds and returning them to Bear River Bay.

The solar evaporation mineral mining operation has been operating on the shores of the Great Salt Lake west of Ogden, Utah since approximately 1968 and has been owned and operated by Compass Minerals since 1993. The facility extracts minerals from the GSL by pumping lake water through a series of solar evaporation ponds where salts are precipitated, harvested, and processed to produce three saleable products. The primary product is potassium sulfate (K_2SO_4) or sulfate of potash (SOP), a primary ingredient in many fertilizers. Potassium is a plant macronutrient, while sulfur is a plant micronutrient, and both are needed to support agricultural operations throughout the world. The two other final products are sodium chloride (NaCl) and magnesium chloride ($MgCl_2$). Sodium chloride salt is commonly used for water softening, table salt, deicing, and as a chemical process ingredient among other uses. Magnesium chloride is primarily used for deicing in winter and as a dust palliative in summer. The processing of the lake water into final product takes an average of three years. The production process is described in chronologic order below.

1) Lake water is pumped from Gunnison Bay of the GSL into the West Desert solar ponds on the west side of the GSL. Here, the salt water concentrates to a higher density than the raw lake water.
2) Once the concentrated brine is to a sufficient density, it is discharged through Outfall 009 (Behrens Trench) where the dense concentrated brine flows through the trench below the lake surface to a pump station at Promontory Point.
3) From Promontory Point, the brine is pumped into a series of solar evaporation ponds where the primary precipitate is NaCl and the liquid brine becomes saturated with potassium and magnesium salts.
4) Once saturation of potassium salts is achieved, the brines are transferred to a series of potash ponds where the potassium salts precipitate. The remaining brine contains high concentrations of $MgCl_2$.
5) At the culmination of the three-year solar evaporation process, select ponds are drained in the fall and the sodium and potassium salts are harvested with scrapers, loaders, and haul trucks and transported to the

Salt Plant or SOP Plant. The $MgCl_2$ brine is conveyed to the Magnesium Plant. Each processing facility is described in more detail below.
6) After processing, the products are shipped offsite via truck and rail.
7) Periodically, minerals are returned to the GSL by filling select ponds with fresh water from the Bear River to dissolve salt deposits and are then drained to the GSL.

Magnesium Chloride Processing
The residual brine drained from the east solar evaporation ponds contains approximately 30 percent magnesium chloride. This brine is either sold directly to end users for deicing and dust control on roads or further processed into a number of liquid and solid products. The brine directed to the Magnesium Chloride Plant contains trace amounts of sulfate, which is considered an impurity for the purposes of the manufacturing process. This impurity is removed from the brine in a chemical de-sulfating process. The de-sulfated brine, with or without additional additives to improve the performance of the product, may be marketed as a liquid deicing or dust suppression product, or may be processed further into a solid hexahydrate flake. During the flaking process, sodium hypochlorite may be added to the de-sulfated brine solution to improve the color of the final product and is heated using evaporators to create a magnesium solution that can be cooled into a solid hexahydrate flake on a water-cooled belt.

Much of the effluent generated by the Magnesium Chloride Plant is pumped to a nearby pond where discharges to groundwater are covered by the Ground Water Permit-By-Rule under UAC R317-6-6. However, a number of flows, including discharges from air pollution control equipment, intermittent wash-down of production equipment, and cooling tower blowdown, are discharged to the Great Salt Lake through Outfall 001.

Salt (NaCl) Plant
Harvested NaCl is transferred to the salt plant via haul roads where it is washed to remove organic material and other impurities. After washing, the wet salt is either sold as a highway de-icing product or is, dried, and further processed into saleable products. The majority of these products are unaltered, though a portion may be treated with certain additives to improve the quality of the final product. Final products from the Salt Plant include bulk road salt used throughout the intermountain region, bulk chemical salt for the chloro-alkali industry, and various consumer grade products in unit quantities such as water softening salt.

Effluent generated by the Salt Plant, including salt wash water, discharges from air pollution control equipment, intermittent wash-down of production equipment, rail and truck rinse water and dissolution of off-specification salt treated with citric acid, are discharged to the Great Salt Lake through Outfall 001.

Sulfate of Potash (SOP) Plant
Harvested potassium salts are transported to the SOP plant and converted to schoenite (K2SO4-MgSO4-6H2O) in a chemical process. Once at the desired concentration, the slurry is heated to approximately 120˚F, which converts the schoenite into SOP. Once dried, a portion of the SOP material is conveyed to the silos as finished standard SOP product. The remaining SOP is sent through the compaction process, where a number of formed products are produced with the addition of a binding agent. Finished SOP products are conveyed from the silos to the SOP loadout facility where the majority is treated with a dust suppressant prior to loading into railcar or trucks for transport offsite.
Effluent generated by the remainder of the SOP Plant, including wash-down of production equipment, cooling tower blowdown and rail and truck rinse water, are discharged to the Great Salt Lake through Outfall 001. The SOP Plant utilizes natural gas fired boilers for process heating, and boiler blowdown is discharged through Outfall 001-B and enters the GSL through Outfall 001. Additionally, the boiler feed water is treated via carbon filtration, water softening, and reverse osmosis. Reject water from this system is also discharged through Outfall 001.

Processing Plant Effluent Reuse
Flows generated from the schoenite conversion circuit contain recoverable levels of potassium salts. These flows as well as well as excess MgCl2 brine are "back mixed" with salt brine prior to reaching saturation with potassium salts. This back mixing causes the brine to become supersaturated with NaCl, while remaining below saturation for potassium salts. The excess NaCl precipitates in the final series of salt ponds (West Buffers) before being transferred to the potash recovery ponds.

Miscellaneous Process Flows
The Outfall 001 discharges specifically include: effluent from the rinsing of truck and railcars that were previously used to ship product; effluent from the use of steam to clean railcar and truck loading chutes; effluent from the washout of buildings, production equipment and general housekeeping; compressor blowdown treated to remove oil prior to discharge; and effluent from the washing of mobile equipment and vehicles where degreasers or chemicals may be used so long as these chemicals are approved for direct release under the EPA's Safer Choice program.

Mineral Return
Because NaCl precipitates earlier in the evaporation process and precipitated volumes far exceed market demand, large amounts of sodium chloride remain in various ponds after evaporation. In accordance with a royalty agreement with the Utah Division of Natural Resources, this excess NaCl must be returned to the GSL. Fresh water is pumped from the Bear River into the salt ponds to dissolve the accumulated minerals. The water maybe discharged through Outfalls 002 – 008, as operations dictate, into the GSL and Bear River Bay. Ponds and Outfalls used for mineral return rotate on an annual basis with Outfall 006 being the primary Outfall used in the previous permit term. Mineral return operations typically occur in the non-solar season and are limited by fresh water flows from the Bear River. In high water years, it is feasible to conduct mineral return activities year-round. However, in most years, mineral return ceases in late March as upstream water users increase agricultural diversions and flow at the pump station will not sustain operations.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The facility requested 4 substantial changes be made to their previous permit, which have been made as outlined below.

1). Citric Acid Salt Dissolution: The facility produces a line of salt products that is treated with citric acid at a concentration of 0.15% by weight. Citric acid is a naturally occurring, weak organic acid with the molecular formula of $C_6H_8O_7$. It is an intermediate in the Citric acid cycle, which occurs in the metabolism of all aerobic organisms. The facility produces an excess from this process of approximately 1,000 lbs/day (455 Kg) on a daily basis. The facility has been trucking this waste materials off site for disposal as a solid waste. The facility requested the ability to dissolve the material in their waste water and discharge it from Outfall 001. There are no numeric water quality standards for the Great Salt Lake with regards to this organic acid. The biggest concerns would be pH alteration due to the acidic nature of the material and an increase in Biological oxygen demand (B.O.D.) and Chemical oxygen demand (C.O.D.). Due to the relatively low concentration of material in a high volume of waste water, it is not anticipated that the discharge will significantly alter the pH of the discharge. The facility will still be limited to the pH range of 6.5 – 9 standard units as in previous permits. Citric acid has a biological oxygen demand of approximately 0.42 mg/g. Based upon the maximum amount of waste the facility anticipates discharging, this works out to a load of 191.1 Kg/day of BOD load or about 420 lbs/day. Based upon these numbers, BOD limits will be placed in the permit. These BOD limits where BOD shall not exceed 25 mg/L for a 30-day period, nor shall the arithmetic mean exceed 35 mg/L during any 7-day period are based on best professional judgement. The final concentration of Citric acid in the final effluent is expected to be 0.075 mg/L.
2). Air compressor blowdown water: The facility has requested the ability to discharge blowdown water from 9 air compressors used for industrial process located at the facility. This blowdown water has the potential to be impacted by oil and grease. The facility treats this water using several oil water separators around the facility. Previously, this wastewater was pumped into totes and disposed off-site. The facility has installed new oil water separators that can achieve treatment levels below 5 mg/L which is below the O&G limit of 10 mg/L at the final outfall. This low volume of waste water would then be intermixed with the large volume of effluent to the final Outfall 001. The requirement that a grab sample for oil and grease only be conducted if a sheen is observed will be eliminated in lieu of a monthly grab sample for oil and grease at Outfall 001.

3). Biocide treatment for the steam boilers: The facility has a 4,100 gallon Reverse Osmosis concentrate tank at the steam plant. Approximately 3 times a year, the facility has to clean and decontaminate the tank to eliminate algae and biofilms that develop on the inside of the tank. Currently, this is done using a concentrated bleach solution. The facility then dilutes the water and tests it for Total Residual Chlorine before discharging to Outfall 001B where it must not exceed a maximum daily TRC limit of 0.5 mg/L. The facility has requested the ability to use a second cleaning agent that is not chlorine based.

4). Cooling tower treatment. The makeup water to the cooling towers at the facility is not currently treated in any way. As a result, these cooling towers have a marked decrease in reliability and are prone to premature failure. The facility has requested the ability to treat each cooling tower with conventional cooling tower treatment methods to control corrosion, scaling and biological film development. These conventional treatment methods will not contain a chemical identified as a priority pollutant in 40 CFR Part 423, Appendix A. Based on the extremely low concentrations predicted at Outfall 001, DWQ believes that treating the cooling towers poses little risk to the Great Salt Lake.

Additionally, the facility requested the following, an extension of the mineral return activity season to correspond with Bear River flows. The facility also requested to conduct mineral return activity from ponds 88, 89, 91, 94, 95 and 99 through Outfall 001 or Outfall 002. Based upon the results of the pervious mineral

return studies, these requests are being granted. The facility also requested that the compliance schedule for monitoring the mineral return flows in the previous permit not be renewed since they had completed the terms of the previous compliance schedule. This provision is also granted.

The facility has been limited to a daily maximum for total residual chlorine (TRC) of 0.5 mg/L. This is based upon 40 CFR 423.15 (j)(10)(i) - Steam Electric Power Generations Point Source Category New Source Performance (NSPS). Since Outfall 001B is an internal Outfall and does not discharge directly to navigable waters, if total residual chlorine (TRC) exceeds the Daily Maximum limit of 0.5 mg/L, the facility is permitted to take a second sample at the primary Outfall 001. If the TRC level is below the state water quality standard of 0.019 mg/L, the exceedance shall not be considered a violation at Outfall 001B.

During the course of the renewal process, it was discovered that the location of Outfall 002 was incorrect. The location of the Outfall in the previous permit was about ¼ mile from the actual outfall location. The permit has been corrected for this location.

DISCHARGE

DESCRIPTION OF DISCHARGE

The renewal permit for Compass Minerals will contain 10 Outfalls,

Outfall Number	Location of Discharge Point
001	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'09" and Longitude 112°14'39"
001-B	Internal discharge from the Steam plant to onsite storm water system to the Great Salt Lake, Bear River Bay. Latitude 41°16'43" and Longitude 112°13'12"
002	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'07" and Longitude 112°14'43"
003	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°15'33" and Longitude 112°16'39"
004	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°14'42" and Longitude 112°16'38"
005	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°14'18" and Longitude 112°19'13"
006	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'10" and Longitude 112°20'11"
007	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°16'15" and Longitude 112°21'26"
008	Discharge to the Great Salt Lake, Bear River Bay. Latitude 41°13'54" and Longitude 112°21'42"
009	Discharge to the Great Salt Lake, Gunnison Bay. Latitude 41°15'44" and Longitude 112°53'29"

RECEIVING WATERS AND STREAM CLASSIFICATION

The Facility discharges to the Great Salt Lake through Outfalls 001, Outfall 001-B, Outfall 002, Outfall 003, Outfall 004. Outfall 005. Outfall 006, Outfall 007, Outfall 008 and Outfall 009. Specifically, Outfalls 001-008 discharge to Bear River Bay which is Classified as Class5c. Outfall 009 to the Behrens Trench in Gunnison Bay which is Classified as Class 5B. The Great Salt Lake is Classified as Class 5 according to Utah Administrative Code (UAC) R317-2-13:

Class 5 -- The Great Salt Lake.

Class 5B Gunnison Bay
Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation north of the Union Pacific Causeway and west of the Promontory Mountains, excluding salt evaporation ponds.

Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Class 5C Bear River Bay
Geographical Boundary -- All open waters at or below approximately 4,208-foot elevation north of the Union Pacific Causeway and east of the Promontory Mountains, excluding salt evaporation ponds.
Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

BASIS FOR EFFLUENT LIMITATIONS

No numeric water quality standards have been established for the Great Salt Lake with the exception of Selenium in Gilbert Bay. Since this facility does not discharge to Gilbert Bay, the Selenium standards do not apply to this discharge.

Regulations contained in 40 CFR 436 Subpart L (Mineral, Mining and Processing Point Source Category - Subpart L - Saline from Brine lake Subcategory) are applicable to discharges from the salt evaporation, washing and mineral return activities of the facility. This directs that there should be no discharge of process waste water pollutants into navigable waters, and that this shall be applied on a net basis if the source of the permittees water supply is the same body of water into which the discharge is made. Since the facility has requested a change in activities for Outfall 001, *40 CFR 436 Subpart L* will only apply to Outfall 001 and Outfall 002 for the activities related to salt evaporation, washing and mineral return activities. It will not apply to Outfall 001 and Outfall 002 for the activates listed above where process wastewater pollutants are added to the final discharge. Furthermore, the mineral return flows from various evaporation ponds are not covered under this permit because on a net basis, no discharge is occurring as this water is not interacting with the processing facility and no other constituents are added to these waters.

The steam generation plant at the facility is only used to generate steam for use in Sulfate of Potash plant and the magnesium chloride plant operations. Compass Minerals will not operate an electric generation turbine, will not generate electric power and will not distribute electricity internally or to the external power grid. There are no Effluent Limitation Guidelines for Steam Generating facilities that do not generate electricity. As such, this facility will be regulated using Best Professional Judgment, with the effluent limitations based upon the effluent limitations and guidelines found under 40 CFR 423 – Steam Electric Power Generations Point Source Category. Since the steam generation facility was constructed in 2012, the steam plant is subject to the New Source Performance Standards as found in 40 CFR 423.15. These parameters are pH, Oil and grease, TSS and Total Residual Chlorine. In addition, 40 CFR 423.15 (j)(1) also identifies Total Chromium and Total Zinc as pollutants on the priority pollutant list that should monitored and limited in the discharge.

No sanitary waste will be discharged through Outfall 001. Therefore, no fecal or total coliform limits will be necessary in this permit.

Based on UAC R317-1-3.2C, pH must remain in the range of 6.5 to 9.0 standard units.

Because oil and grease sources are present in the processing and shipping areas, the potential exists for their addition to process water discharged from Outfall 001. Therefore, based on best professional judgment, the permit will require oil and grease to be monitored on a monthly basis via a grab sample at Outfall 001. At Outfall 001-B, a grab sample for Oil and Grease will only be required if a visible sheen is observed in the effluent at Outfall 001-B. This facility has open channels of process water that run through portions of

facility grounds where truck maintenance, and other activities, increase the potential for oil and grease contamination through the final discharges. Visual monitoring for Oil and Grease will be required at Outfalls 002, 003, 004, 005, 006, 007, 008 and 009. A grab sample at these outfalls will be required id a sheen is observed. Oil and Grease concentrations at all outfalls will be limited to 10 mg/L and based on best professional judgement.

An Antidegradation Level II review is required because of the requested operation changes at the facility. The completed application including the Level II ADR form is attached as an appendix to this document. The permittee is expected to be able to comply with these limitations.

REASONABLE POTENTIAL ANALYSIS

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). To complete a RP analysis, more than 10 data points per parameter are needed. Compass was not required to sample for metal parameters in their previous permit, therefore, analysis data is not available to perform a RP analysis. For this permit cycle, Compass will be required to permit, at a minimum, quarterly metal sampling. If additional sampling is performed, it shall be reported to DWQ. Less than 10 data points may affect the RP outcomes which may require additional monitoring in the future. After at least 10 samples have been collected, the facility can request RP be run to evaluate the facilities reasonable potential to discharge these pollutants.

EFFLUENT, SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Outfall 001 shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD_5, mg/L	25.0	35.0	NA	NA
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD
BOD_5	Monthly	Grab	mg/L
Oil & Grease	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
Metals c/	Quarterly	Grab	mg/L

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

c/ The following metals should be monitored for Reasonable Potential.

Metals to be Monitored for RP		
Parameter	Sample Type	Units
Total Arsenic	Grab	mg/L
Total Cadmium	Grab	mg/L
Total Chromium	Grab	mg/L
Total Copper	Grab	mg/L
Total Cyanide	Grab	mg/L
Total Lead	Grab	mg/L
Total Mercury	Grab	mg/L
Total Nickel	Grab	mg/L
Total Silver	Grab	mg/L
Total Zinc	Grab	mg/L

Outfalls 001-B shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations d/			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0
Total Suspended Solids, mg/L	25.0	NA	NA	35.0
Total Residual Chlorine, mg/L /e	0.2	NA	NA	0.5
Total Dissolved Oxygen, mg/L	NA	NA	4.5	NA
Total Chromium, mg/L	0.2	NA	NA	0.2
Total Zinc, mg/L	1.0	NA	NA	1.0

NA – Not Applicable

d/ EPA's 126 priority pollutants that are contained in chemicals added for boiler maintenance, except for Chromium and Zinc, shall not be present in any detectable amount.

e/ If total residual chlorine (TRC) exceeds the Daily Maximum limit of 0.5 mg/L, the facility is permitted to take a second sample at the primary Outfall 001. If the TRC level is below the state water quality standard of 0.019 mg/L, the exceedance shall not be considered a violation at Outfall 001b.

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD
Oil & Grease	Monthly	Visual c/	mg/L
pH	Monthly	Instantaneous	SU
Total Suspended Solids	Monthly	Grab	mg/L
Total Residual Chlorine	Monthly	Grab	mg/L
Total Dissolved Oxygen	Monthly	Grab	mg/L
Total Chromium	Monthly	Grab	mg/L
Total Zinc	Monthly	Grab	mg/L

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
c/ A grab sample for Oil and Grease will be required when a visible sheen is observed in the effluent.

Outfalls 002, 003, 004, 005, 006, 007, 008 and 009 shall also be subject to the following numeric effluent limitations. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow a/ b/	Monthly	Measured	MGD
Oil & Grease	Monthly	Visual c/	mg/L
pH	Monthly	Grab	SU

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

b/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
c/ A grab sample for Oil and Grease will be required when a visible sheen is observed in the effluent.

BIOSOLIDS

The facility is a minor industrial facility that uses solar evaporation for mineral mining of salt. It does not produce biosolids. For this reason, there are not requirements or conditions related to biosolids in the permit.

STORM WATER

Separate storm water permits will be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at http://stormwater.utah.gov.

PRETREATMENT REQUIREMENTS

Compass does not discharge to a POTW. Nor does Compass expect to haul wastewater to a POTW. Although Compass does not anticipate discharging to a POTW, any wastewater discharged to a POTW, either as a direct discharge or as a hauled waste, is subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of the CWA, the permittee shall comply with all applicable Federal Pretreatment Regulations promulgated at 40 CFR Part 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with 40 CFR Part 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if the permittee discharges any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR Part 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

The permittee is a minor industrial facility that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. Based on these considerations, and the absence of receiving stream water quality monitoring data, there is no reasonable potential for toxicity in the permittee's discharge (per State of Utah Permitting and Enforcement Guidance Document for WET Control). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Lonnie Shull, Discharge, Biomonitoring
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Carl Adams, Storm Water
Chris Bittner, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: August 26, 2021
Ended: September 27, 2021

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published on the Division of Water Quality's website from August 26, 2021 through September 27, 2021. No comments were received during the public comment period.

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

RESPONSIVENESS SUMMARY

No comments were received during the public comment period.

DWQ-2021-006778

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ATTACHMENT 1

Wasteload Analysis

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State of Utah
SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

M E M O R A N D U M

TO: Lonnie Shull III, Permit Writer

FROM: Chris Bittner, Standards Coordinator

DATE: April 3, 2021

SUBJECT: Level I Antidegradation Review for Compass Minerals
Permit Renewal UT0000647

Outfall 001. No substantive changes are observed for the effluents from Outfall 001 that would affect the conclusions that the effluent limits from the previous permit will protect the uses of Great Salt Lake (R317-2-6.5). Sampling for BOD_5 was added to the permit for this Outfall because of the addition of Citric Acid to the facility's wastewater. However, this is not expected to alter the above conclusions.

Outfalls 006, 007, and 008

Compass operates several outfalls for mineral return flows. The primary purpose of mineral return flows is to return the leftover salts in the evaporation ponds back to the Great Salt Lake. Water from Bear River Bay is conveyed to the various evaporation ponds and then back to Bear River Bay. The immediate receiving waters for the return flows are bound by railroad bridges to the north and south and are informally known as the Trapezoid (Figure 1). The Trapezoid is designated as Bear River Bay (R317-2-6.5.c.). However, the water quality characteristics of the Trapezoid are much more similar to Gilbert Bays south of the Union Pacific bridge than Bear River Bay upstream of the bridge that forms the northern boundary of the Trapezoid. This bridge is located at a land constriction where the dominant flow direction is from north to south and fresher to more saline. As indicated by the elevated salinity in the Trapezoid relative to upstream, more saline Gilbert Bay waters regularly influence the Trapezoid.

Compass Minerals does not add any substances to the evaporation ponds. All the substances in the return flows originated from the Lake. The primary purpose of the monitoring conducting during the mineral return flows is to confirm that the Narrative Standards (R317-2-7.2) are met. The results of the monitoring were reviewed to ensure that existing uses are protected (Level I antidegradation review; R317-2-3).

Figure 1 shows the monitoring locations for the mineral return flows. In addition to the return flow monitoring at Outfalls 006, 007 and 008, the receiving waters directly affected by return flows (Mid Trapezoid) and locations that represent ambient conditions for the Lake (Background North, GSL-NE and South Promontory Point) were also monitored.

Prior to 2017, the analyses for the mineral return samples were provided by the Geosciences laboratory at the University of Utah. Beginning in 2017, Brooks Applied Laboratories provided the analyses. In 2018, the samples were split between the University of Utah and Brooks Applied laboratories. The splits were analyzed to verify that the Brooks Applied Laboratory data were comparable to the University of Utah. Comparability is one of the EPA-recommended data quality objectives in addition to precision, accuracy, and completeness.

The tables presented on pages 10 through 13 provide the analytical results for 2017 return flow monitoring. The results for 2018, 2019, and 2020 are provided in the tables beginning on page 14. The results from the two laboratories for arsenic, lead, manganese and mercury are generally comparable whereas the results for cadmium, copper, nickel, selenium and zinc are generally different. The causes of the differences are unknown. Figures 2 and 3 illustrate these observations for results from the two laboratories for the GSL NE and Outfall 006 sample locations, respectively.

The general trends observed in concentrations over time are similar regardless of analyte. As expected, concentrations for the mineral return flows from Outfall 006 generally decrease over time (Figure 3). Based on the currently available information, the Brooks Applied Laboratory data are presumed to be the most representative because of completeness, more rigorous quality control documentation, and because DWQ has previously observed positive interferences with Great Salt Lake selenium analyses from the University of Utah laboratory.

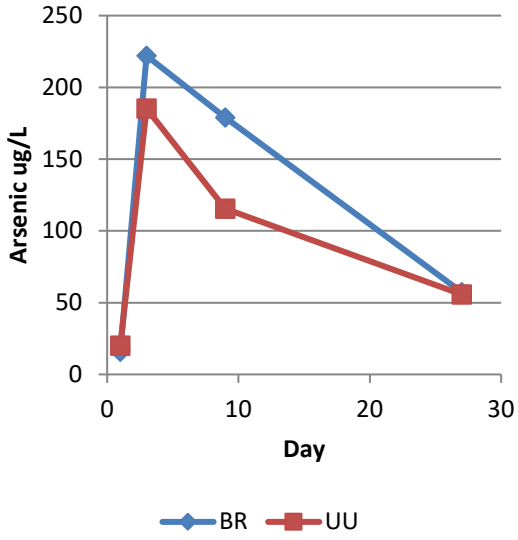
Figure 4 compares the concentrations observed at Outfall 006, Mid Trapezoid and GSL NE sample locations from the fall, 2018. These results are similar to the other years of mineral return flows. The fall 2018 results show that arsenic, mercury, nickel, selenium and zinc are initially present in the mineral return flows at concentrations 3 to 7 times greater than ambient waters in Gilbert Bay but by Day 27 the concentrations decreased to close to ambient concentrations. If the maximum concentrations are screened against Utah Class 3D freshwater criteria (Table 2.14.2, R317-2-14), only the arsenic and mercury screening criteria are exceeded. The rapid assimilation demonstrated by comparing the analytical results from the Outfall 006 to the Mid Trapezoid and GSL NE sample locations and the limited bird use documented by the Jacobs Engineering 2017-2018 bird survey supports that the mineral return flows are unlikely to adversely impact the designated uses of the receiving waters. These results also support that seasonal restrictions for the mineral return flows are unnecessary.

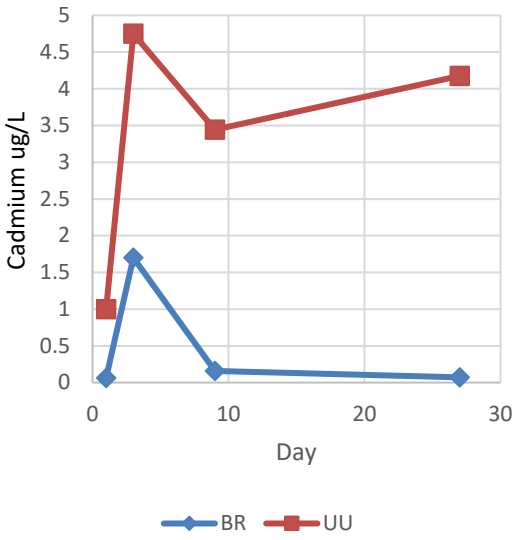
The facility has completed the compliance schedule in the previous permit. Supplemental monitoring is recommended but not required to continue until return flows for all outfalls and different return flow conditions and ponds have been characterized. The currently available results support that monitoring beyond about Day 28 of the return flows is unnecessary because concentrations approach ambient concentrations. At minimum, arsenic, mercury, nickel, selenium

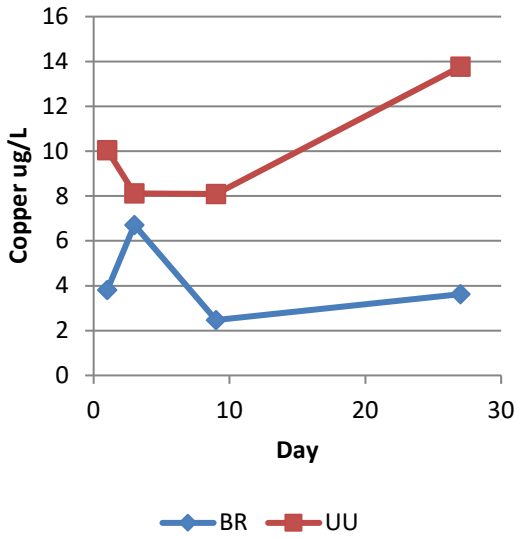
and zinc should be retained as target analytes. The summary monitoring and reporting should also include a measure of salinity such as conductivity.

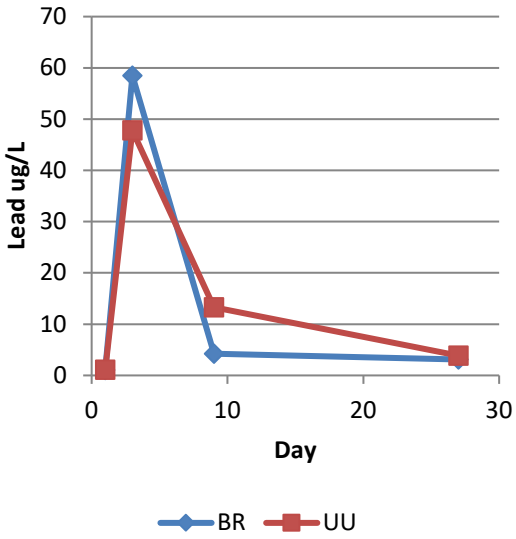
DWQ-2021-006762

Figure 1. Sampling locations for mineral return flow monitoring, Compass Minerals, Great Salt Lake, Utah


250
200
150
100
50
0
Arsenic ug/L
0
10
20
30
Day
BR
UU


5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Cadmium ug/L
0
10
20
30
Day
BR
UU


16
14
12
10
8
6
4
2
0
Copper ug/L
0
10
20
30
Day
BR
UU


70
60
50
40
30
20
10
0
Lead ug/L
0
10
20
30
Day
BR
UU

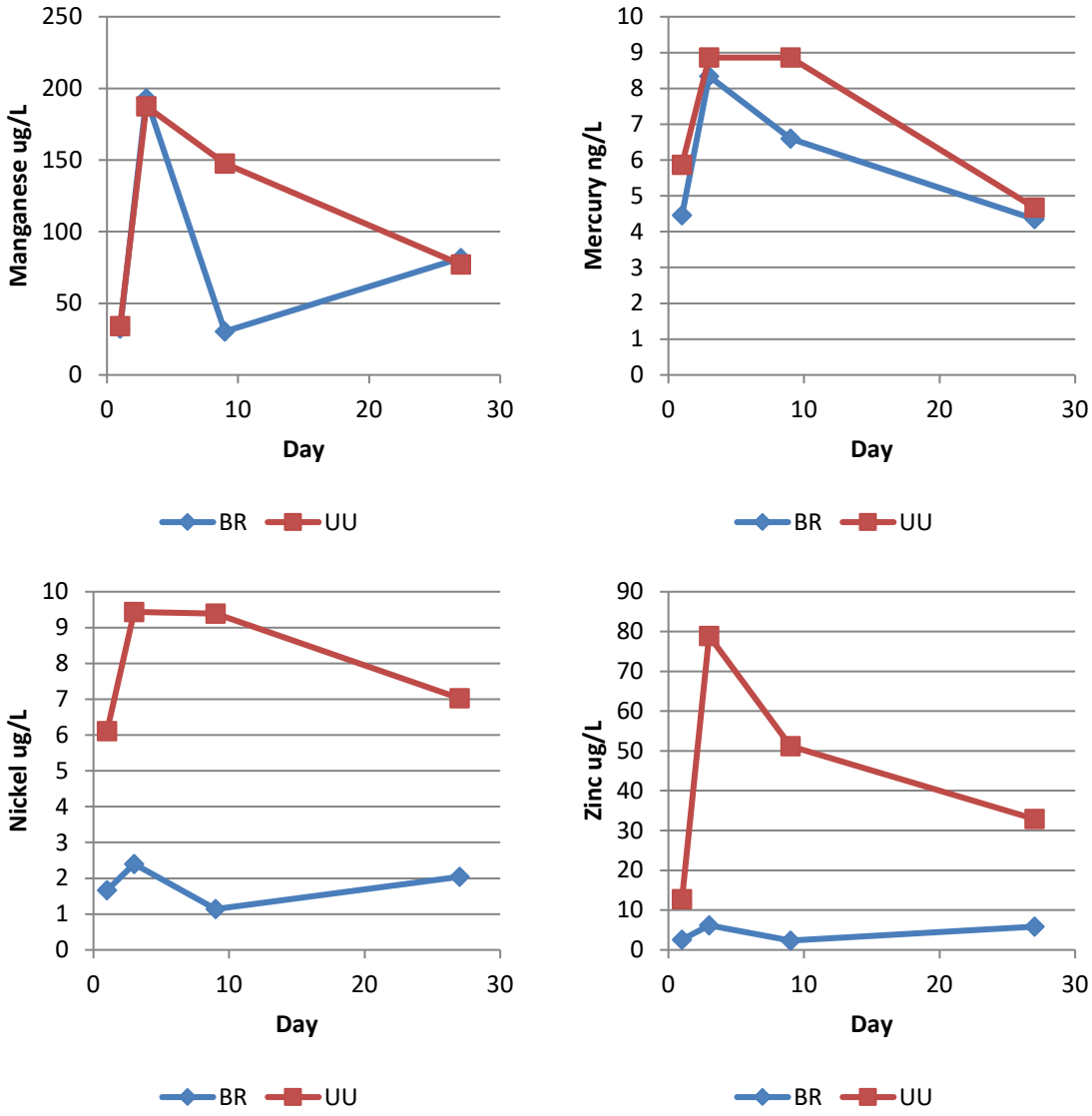
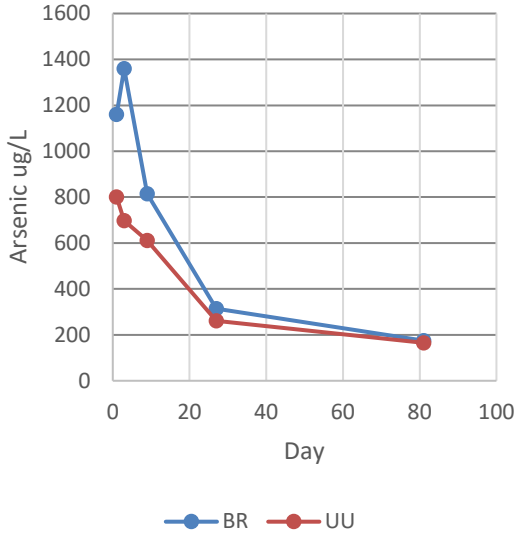
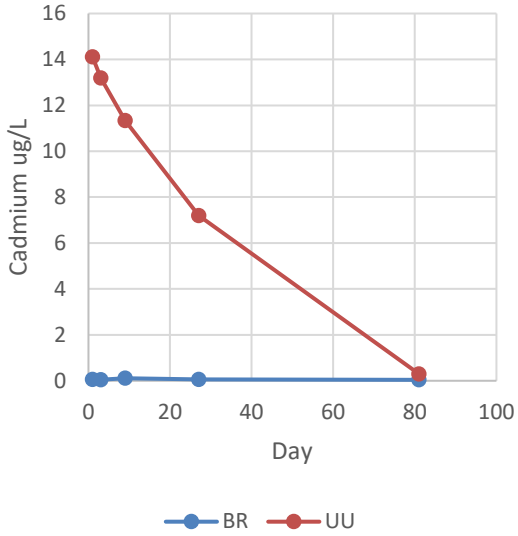
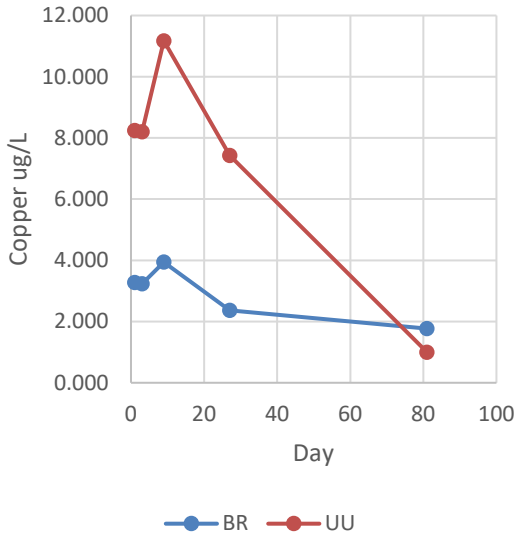
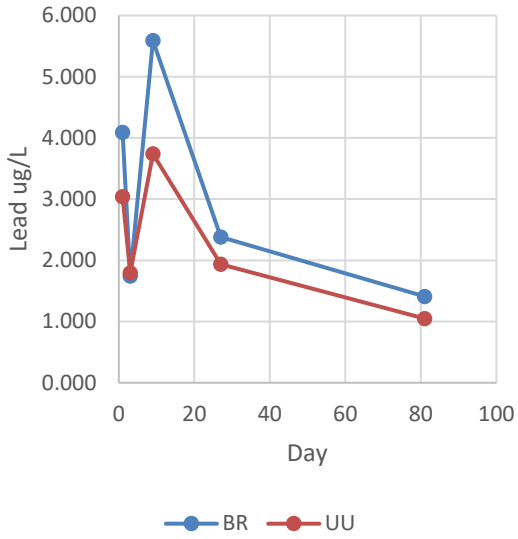


Figure 2. Comparisons of analytical results from Brooks Applied Laboratories (BR) and University of Utah Geosciences (UU) laboratories from GSL-NE sample location, November 2018


1600
1400
1200
1000
800
600
400
200
0
Arsenic ug/L
0
20
40
60
80
100
Day
BR
UU


16
14
12
10
8
6
4
2
0
Cadmium ug/L
0
20
40
60
80
100
Day
BR
UU


12.000
10.000
8.000
6.000
4.000
2.000
0.000
Copper ug/L
0
20
40
60
80
100
Day
BR
UU


6.000
5.000
4.000
3.000
2.000
1.000
0.000
Lead ug/L
0
20
40
60
80
100
Day
BR
UU

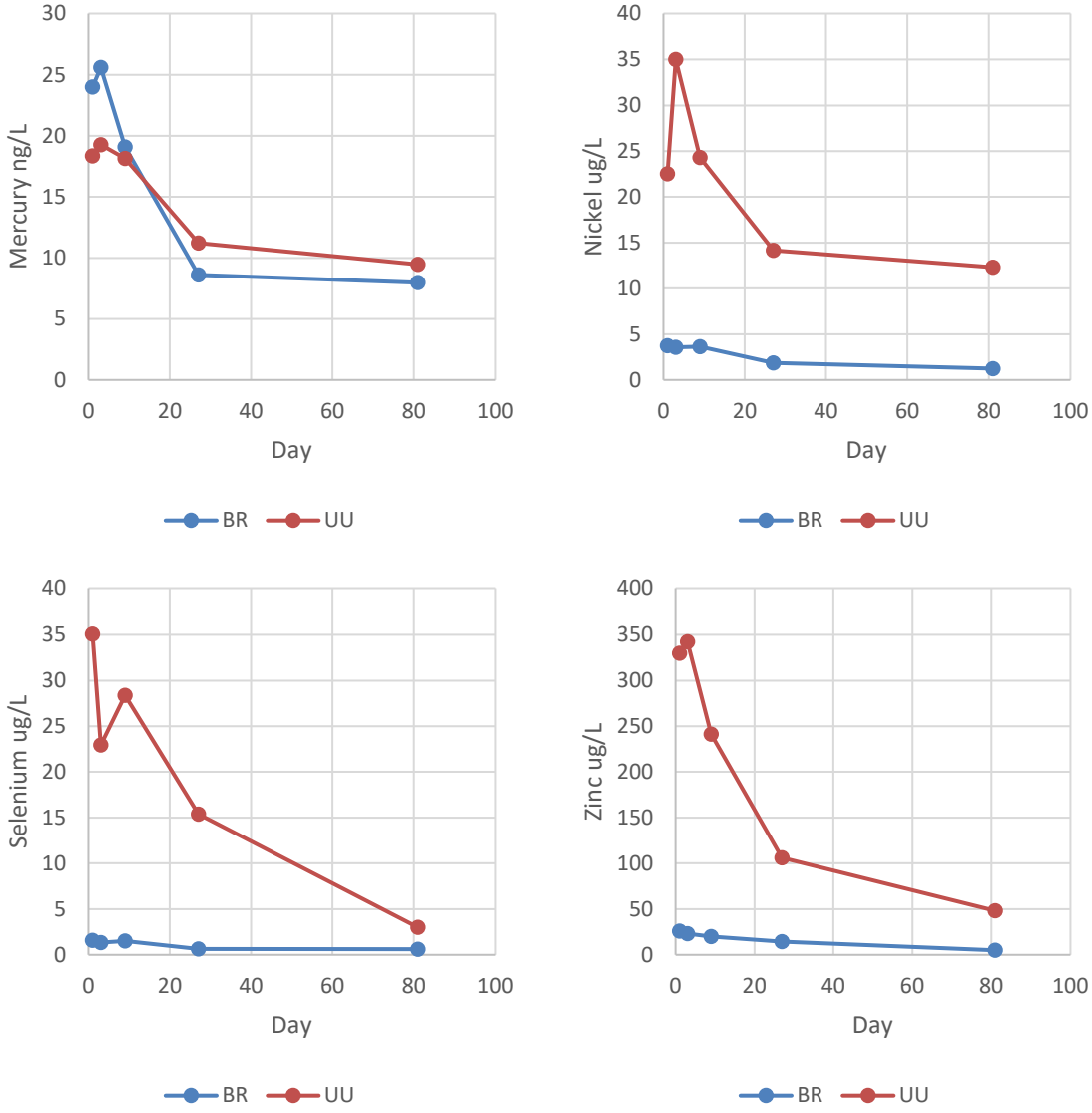
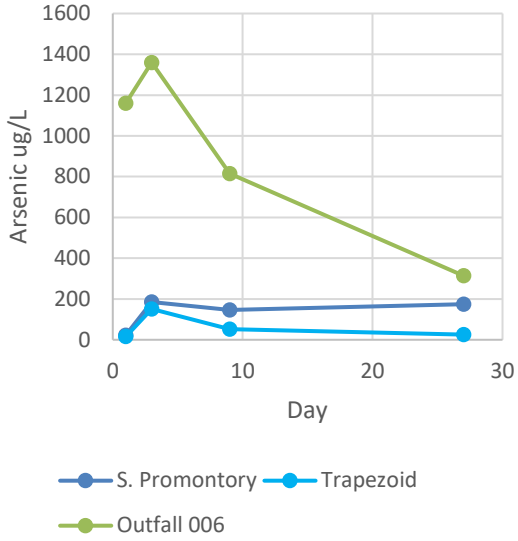
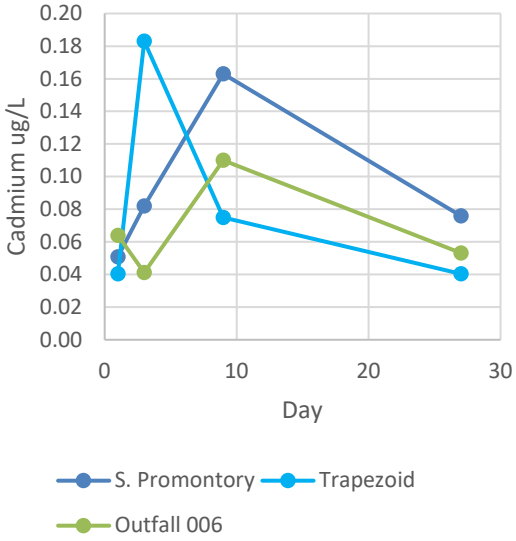
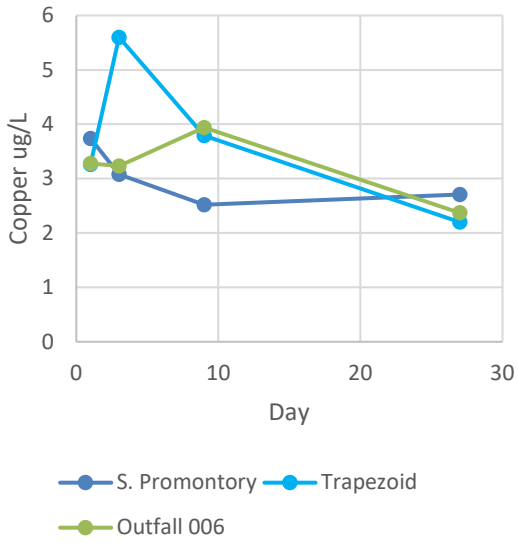
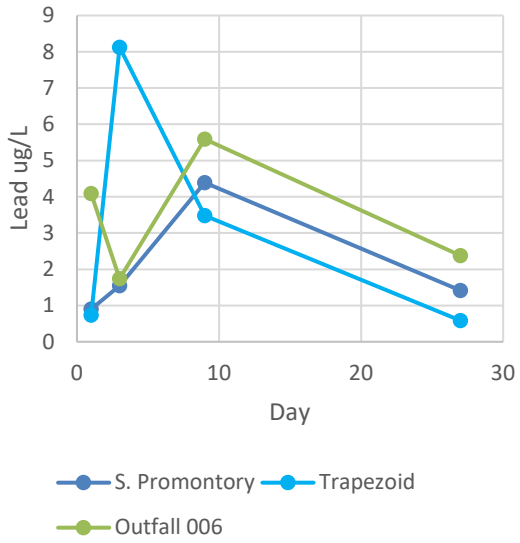


Figure 3. Comparisons of analytical results from Brooks Applied Laboratories (BR) and University of Utah Geosciences (UU) laboratories from Outfall 006, November 2018


Arsenic ug/L
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
Day
S. Promontory
Trapezoid
Outfall 006


Cadmium ug/L
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0
10
20
30
Day
S. Promontory
Trapezoid
Outfall 006


Copper ug/L
6
5
4
3
2
1
0
0
10
20
30
Day
S. Promontory
Trapezoid
Outfall 006


Lead ug/L
9
8
7
6
5
4
3
2
1
0
0
10
20
30
Day
S. Promontory
Trapezoid
Outfall 006

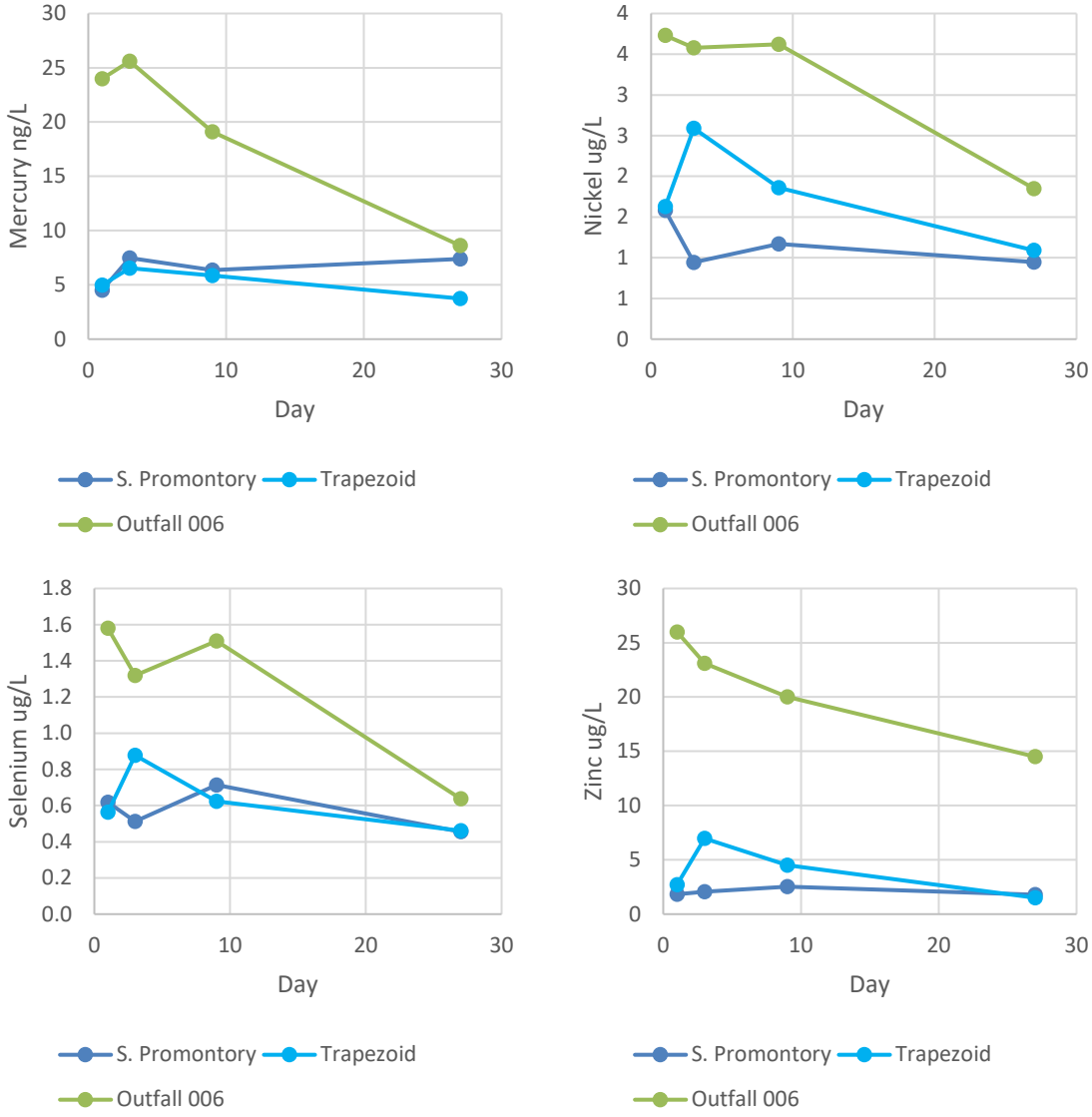


Figure 4. Comparisons of analytical results from South Promontory, Mid-Trapezoid, and Outfall 006 monitoring locations from the Brooks Applied laboratory for November 2018

Outfall 006 - Brooks Applied Labs													
		Day 1		Day 3		Day 3 (Dup 1)		Day 9		Day 27		Day 81	
	Units	11/07/2017 0730		11/09/2017 0730		11/09/2017		11/18/2017		12/07/2017		01/29/2018	
pH	SU	7.42		7.66		7.70		7.58		7.75		8.14	
Arsenic	µg/L	303		241		244		275		165		93.6	
Barium	µg/L	83.7		101		98.4		80.3		159		77.4	
Cadmium	µg/L	0.0901	J	0.0477	J	0.0585	J	0.0810	J	0.0424	J	0.0593	J
Cobalt	µg/L	1.63		0.944		0.949		1.39		0.713		0.486	
Copper	µg/L	2.64		2.10		1.90		2.74		2.01		2.31	
Iron	µg/L	350		273		186		299		361		186	
Iron	µg/L	461		191		271		219		220		143	
Mercury	ng/L	9.01	J-1	13.1		14.5		7.95		14.4		7.42	
Nickel	µg/L	404		321		314		422		264		223	
Manganese	µg/L	2.71		2.27		2.34		2.88		1.70		1.45	
Lead	µg/L	3.91		2.74		2.69		6.47		2.78		2.81	
Selenium	µg/L	0.830		0.734		0.768		0.917		0.464		0.566	
Zinc	µg/L	13.0		10.2		8.31		16.4		8.95		7.64	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Outfall 007 - Brooks Applied Labs							
		Day 1		Day 3		Day 9	
	Units	03/01/2018 1000		03/02/2018 1700		03/13/2018 0800	
pH	SU	7.56		7.57		7.48	
Arsenic	µg/L	129		147		123	
Barium	µg/L	175		211		211	
Cadmium	µg/L	0.107		0.116		0.0404	U
Cobalt	µg/L	0.366		0.594		0.326	
Copper	µg/L	2.71		5.09		2.92	
Iron	µg/L	165		596		108	
Iron	µg/L	285		821		95.8	
Mercury	ng/L	15.8		37.3		0.66	
Nickel	µg/L	70.2		106		54.4	
Manganese	µg/L	1.37		2.04		1.27	
Lead	µg/L	3.20		3.77		0.165	
Selenium	µg/L	0.515		0.566		0.442	
Zinc	µg/L	6.41		8.53		6.91	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Outfall 008 - Brooks Applied Labs											
		Day 1		Day 3		Day 9		Day 27		Day 81	
	Units	11/07/2017 0930		11/08/2017 1700		11/18/2017		12/07/2017		01/29/2018	
pH	SU	7.41		7.51		7.69		7.66		8.02	
Arsenic	µg/L	322		304		200		156		118	
Barium	µg/L	98.9		114				215		117	
Cadmium	µg/L	0.0404	U	0.0605	J	0.0694	J	0.170		0.0617	J
Cobalt	µg/L	0.549		0.515		0.364		0.260		0.271	
Copper	µg/L	2.59		2.84		2.67		2.16		2.92	
Iron	µg/L	86.0		99.6		103		118		69.8	
Iron	µg/L	134	J	64.6		152		77.3		68.6	J
Mercury	ng/L	2.52	J-1	4.08	J-1	5.55		20.2		6.74	
Nickel	µg/L	58.8		62.1		49.0		38.6		21.9	
Manganese	µg/L	1.92		2.13		1.50		1.03		1.02	
Lead	µg/L	1.47		2.45		2.19		3.04		1.50	
Selenium	µg/L	0.923		0.827		0.772		0.549		0.460	
Zinc	µg/L	14.0		9.66		4.78		10.5		6.19	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Background North / Ambient - Brooks Applied Labs											
		Day 1		Day 3		Day 9		Day 27		Day 81	
	Units	11/06/2017		11/08/2017		11/21/2017		12/06/2017		02/07/2018	
pH	SU	8.80		8.37		8.71		8.66		8.48	
Arsenic	µg/L	3.00		3.40		2.69		3.57		2.01	
Barium	µg/L	69.9		78.6		69.7		81.6		62.7	
Cadmium	µg/L	0.0162		0.0260		0.0193		0.0404	U	0.0648	J
Cobalt	µg/L	0.453		0.637		0.477		0.715		1.17	
Copper	µg/L	2.57		3.48		2.96		4.20		7.49	
Iron	µg/L	1170		1530		1010		1680		2620	
Iron	µg/L	1040		1440		1110		1380		2380	
Mercury	ng/L	1.23	J-1	2.25	J-1	1.63		2.38		3.38	
Nickel	µg/L	1.29		39.9		25.6		38.0		72.9	
Manganese	µg/L	26.9		1.75		1.44		1.98		3.00	
Lead	µg/L	1.19		1.76		1.14		1.71		3.62	
Selenium	µg/L	0.275		0.289		0.337		0.343		0.421	
Zinc	µg/L	9.29		12.3		9.51		18.5		23.6	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Mid-Trapezoid - Brooks Applied Labs													
		Day 1		Day 3		Day 9		Day 27		Day 81		Day 81 (Dup 4)	
	Units	11/06/2017		11/08/2017		11/21/2017		12/06/2017		02/07/2018		02/07/2018	
pH	SU	8.74		8.60		9.61		8.54		8.49		8.48	
Arsenic	µg/L	4.10		7.41		2.64		3.67		3.80		3.68	
Barium	µg/L	79.0		81.1		80.6		86.7		85.0		69.7	
Cadmium	µg/L	0.0400		0.0354		0.0241		0.0502	J	0.0974	J	0.0521	J
Cobalt	µg/L	0.770		0.723		0.585		0.950		1.50		0.926	
Copper	µg/L	4.28		4.38		3.66		5.89		9.77		6.75	
Iron	µg/L	1880		1810		1300		2190		3430		2220	
Iron	µg/L	1830		1660		1500		2020		3090		1890	
Mercury	ng/L	2.59	J-1	2.94	J-1	1.81		3.33		4.62		2.82	
Nickel	µg/L	54.1		53.0		35.8		63.0		109		62.2	
Manganese	µg/L	2.05		2.00		1.70		2.56		3.88		2.66	
Lead	µg/L	2.39		2.08		1.51		2.89		5.36		2.89	
Selenium	µg/L	0.252		0.290		0.305		0.313		0.402		0.380	
Zinc	µg/L	13.2		13.3		11.1		19.7		29.7		19.7	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Background South (Gilbert Bay) - Brooks Applied Labs											
		Day 1		Day 3		Day 9	Day 9 (Dup 2)		Day 27		Day 81	
	Units	11/06/2017		11/08/2017		11/21/2017	11/21/2017		12/06/2017		02/07/2018	
pH	SU	8.62		8.45		8.43	8.58		8.04		8.39	
Arsenic	µg/L	25.9		56.0		14.5	3.00		14.8		7.09	
Barium	µg/L	89.7		86.1		65.8	83.5		141		58.4	
Cadmium	µg/L	0.0912		0.0362		0.0251	0.0370		0.151		0.0404	U
Cobalt	µg/L	0.563		0.255		0.413	0.748		2.07		0.620	
Copper	µg/L	3.94		1.60		2.88	4.57		14.2		4.99	
Iron	µg/L	1130		269		890	2010		7380		1280	
Iron	µg/L	1120		229		824	1830		4420		1390	
Mercury	ng/L	4.53	J-1	1.99	J-1	2.13	2.43		16.1		2.34	
Nickel	µg/L	37.6		27.7		34.6	49.2		156		40.8	
Manganese	µg/L	1.79		1.03		1.32	2.09		5.19		1.83	
Lead	µg/L	2.51		0.952		1.13	2.13		8.00		1.76	
Selenium	µg/L	0.423		0.456		0.295	0.391		0.366		0.400	
Zinc	µg/L	10.5		3.09		8.05	18.1		42.6		14.8	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1: Estimated value. A full explanation is presented in the narrative
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

South Promontory Point - Brooks Applied Labs													
	Units	Day 1 11/06/2017		Day 3 11/08/2017		Day 9 11/21/2017		Day 27 12/06/2017		Day 27 (Dup 3) 12/06/2017		Day 81 02/07/2018	
pH	SU	not collected		8.27		8.59		8.08		8.10		8.30	
Arsenic	µg/L	not collected		113		0.565	U	114		112		7.29	
Barium	µg/L	not collected		129		67.3		129		141		54.0	
Cadmium	µg/L	not collected		0.0406		0.0142		0.0404	U	0.0588	J	0.0404	U
Cobalt	µg/L	not collected		0.269		0.245		0.311		0.324		0.326	
Copper	µg/L	not collected		2.40		1.59		2.99		3.10		2.79	
Iron	µg/L	not collected		230		341		307		304		519	
Iron	µg/L	not collected		196		374		265		202		694	
Mercury	ng/L	not collected		3.76	J-1	1.49		3.65		5.16		1.01	
Nickel	µg/L	not collected		13.8		24.6		32.8		21.6		17.8	
Manganese	µg/L	not collected		1.07		0.952		1.13		1.16		1.12	
Lead	µg/L	not collected		1.10		0.578		1.18		1.34		0.657	
Selenium	µg/L	not collected		0.448		0.0581	U	0.490		0.499		0.371	
Zinc	µg/L	not collected		3.22		3.82		6.02		5.57		7.79	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

J-1: Estimated value. A full explanation is presented in the narrative

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

Table 1 - Outfall 006
Mineral Return Data -
2018/2019 Mineral Return Season
Compass Minerals Ogden, Inc.

Outfall 006 - Brooks Applied Labs																					
	Units	Day 1		Duplicate		Day 3		Day 9		Day 27		Duplicate		Day 81		Last Day MR		Duplicate	
		10/27/2018		10/27/2018		10/31/2018		11/05/2018		11/21/2018		11/21/2018		01/17/2019		3/20/2019		3/20/2019	
Arsenic	µg/L	1160		1220		1360		815		314		311		175		251		251	
Iron	µg/L	107		96.7		88.6		229		128		143		103		379		395	
Mercury	ng/L	24		23.3		25.6		19.1		8.62		7.34		7.97		30.3		26.7	
Manganese	µg/L	524		460		409		456		197		199		139		356		372	
pH	SU	7.01		7.05		7.04		7.23		7.94		7.95		8.03		9.01	H	8.98	H
Selenium	µg/L	1.58		1.52		1.32		1.51		0.637		0.712		0.614		0.711		0.697	
Cadmium	µg/L	0.064	J	0.063		0.0412	J	0.11		0.0532	J	0.0534		0.0404	U	0.150		0.153	
Cobalt	µg/L	1.23		1.21		1.14		1.15		0.452		0.457		0.397		0.680		0.713	
Copper	µg/L	3.28		3.28		3.23		3.94		2.37		2.41		1.77		4.65		4.87	
Nickel	µg/L	3.73		3.69		3.58		3.62		1.85		1.88		1.24		2.04		2.11	
Lead	µg/L	4.09		3.98		1.74		5.59		2.38		2.39		1.41		8.19		8.58	
Zinc	µg/L	26		25.9		23.1		20		14.5		6.93		4.93		9.07		9.31	
Barium	µg/L	816	U	816	U	20.9		816	U	102		99.6		112		150		144	
Iron	µg/L	16300	U	16300	U	108		16300	U	191		187		61.9		296		342	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.

Samples were not submitted U of U Labs for the Last of Day of Mineral Return sampling event.

Outfall 006 - U of U Geoscience Lab													
	Units	Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
		10/27/2018		10/31/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	800		868		611		261		165			
Iron	µg/L	119		697		275		128		28			
Mercury	ng/L	18.36		19.28		18.16		11.23		9.47			
Manganese	µg/L	493		419		384		205		127			
Selenium	µg/L	35		23		28		15		<3			
Cadmium	µg/L	14		13		11		7		<0.3			
Cobalt	µg/L	25		32		21		9		1			
Copper	µg/L	8		8		11		7		<2			
Nickel	µg/L	23		35		24		14		12			
Lead	µg/L	3		2		4		2		1			
Zinc	µg/L	330		342		241		106		48			
Barium	µg/L	12		23		127		100		98			

Table 2 - Background North
Mineral Return Data -
2018/2019 Mineral Return Season
Compass Minerals Ogden, Inc.

Background North / Ambient - Brooks Applied Labs													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	5.43		14.5		11.3		6.87				7.74	
Iron	µg/L	16300	U	379		16300	U	219				845	
Mercury	ng/L	5.11		5.24		12.9		2.80				5.87	
Manganese	µg/L	40.6		39.8		286		20.3				23.5	
pH	SU	8.56		8.72		8.86		8.50				8.03	H
Selenium	µg/L	0.488		0.626		1.02		0.470				0.595	
Cadmium	µg/L	0.0413	J	0.0404	U	0.341		0.0404	U			0.0404	U
Cobalt	µg/L	0.459		0.357		2.70		0.185				0.483	
Copper	µg/L	3.15		2.68		14.5		1.92				2.63	
Nickel	µg/L	1.74		1.64		7.70		0.993				1.95	
Lead	µg/L	1.53		1.20		13.3		0.653				0.903	
Zinc	µg/L	4.46		3.89		28.6		1.64				5.04	
Barium	µg/L	816	U	74.9		816	U	55.5				65.8	
Iron	µg/L	721		405		5330		194				1180	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
Samples were not submitted U of U Labs for the Last of Day of Mineral Return sampling event.
Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Day 81 due to frozen conditions on the GSL.

Background North - U of U Geoscience Lab													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	mg/L	<9		11		14		<9					
Iron	mg/L	599		174		1319		100					
Mercury	ng/L	4.37		4.36		8.79		3.23					
Manganese	mg/L	46		36		96		17					
Selenium	mg/L	<5		<5		<5		<5					
Cadmium	mg/L	<2		<2		<2		<2					
Cobalt	mg/L	<0.9		<0.9		2		1					
Copper	mg/L	6.0		6.3		12.1		5.7					
Nickel	mg/L	2.6		3.0		10.1		3.5					
Lead	mg/L	1.5		1.0		4.2		0.8					
Zinc	mg/L	10.8		15.8		23.3		9.7					
Barium	mg/L	71		75		183		55					

Table 3 - Mid Trapezoid
Mineral Return Data -
2018/2019 Mineral Return Season
Compass Minerals Ogden, Inc.

Mid-Trapezoid - Brooks Applied Labs																	
		Day 1		Day 3		Duplicate		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	15.2		151		131		51.4		25.4				9.89	
Iron	µg/L	16300	U	849		1100		544		178				738	
Mercury	ng/L	4.93		7.98		8.41		6.11		2.22				4.03	
Manganese	µg/L	36.1		154		163		98.5		32.8				23.5	
pH	SU	8.82		8.19		8.45		8.28		8.45				8.09	H
Selenium	µg/L	0.564		0.878		0.809		0.623		0.461				0.472	
Cadmium	µg/L	0.0404	U	0.183		0.187		0.0749	J	0.0404	U			0.0404	U
Cobalt	µg/L	0.349		0.681		0.773		0.419		0.185				0.430	
Copper	µg/L	3.26		5.60		6.0		3.79		2.20				2.91	
Nickel	µg/L	1.63		2.59		2.85		1.86		1.09				1.77	
Lead	µg/L	0.991		11.5		11.1		3.20		0.731				0.835	
Zinc	µg/L	2.72		6.97		7.92		4.50		1.51				3.81	
Barium	µg/L	816	U	114		105		816	U	70.6				57.6	
Iron	µg/L	369		945		1320		16300	U	104				679	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.

Samples were not submitted U of U Labs for the Last of Day of Mineral Return sampling event.

Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Day 81 due to frozen conditions on the GSL.

Mid-Trapezoid - U of U Geoscience Lab													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	14.4		94.2		46.0		18.8					
Iron	µg/L	179		705		348		81					
Mercury	ng/L	4.99		6.54		5.87		3.74					
Manganese	µg/L	33		132		96		22					
Selenium	µg/L	<5		<5		<5		<5					
Cadmium	µg/L	<2		2.9		<2		<2					
Cobalt	µg/L	<0.9		3.5		1.8		0.9					
Copper	µg/L	2.7		306.7		8.1		3.5					
Nickel	µg/L	<2		6.7		4.9		2.6					
Lead	µg/L	0.7		8.1		3.5		0.6					
Zinc	µg/L	<6		43.6		33.9		9.0					
Barium	µg/L	112.3		100.0		118.3		67.6					

Table 4 - GSL - NE
(Formerly known as Background South)
Mineral Return Data -
2018/2019 Mineral Return Season
Compass Minerals Ogden, Inc.

GSL - Northeast - Brooks Applied Labs													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	15.9		222		179		57.3				43.7	
Iron	µg/L	16300	U	517		178		964				564	
Mercury	ng/L	4.46		8.34		6.6		4.35				4.97	
Manganese	µg/L	32.2		193		30.3		81.6				34.6	
Lead	µg/L	1.08		58.5		4.26		3.09				9.05	H
pH	SU	8.86		8.13		8.03		8.44				0.476	
Selenium	µg/L	0.538		0.983		0.506		0.527				0.0465	J
Cadmium	µg/L	0.0627	J	1.7		0.159		0.0733	J			0.379	
Cobalt	µg/L	0.34		0.602		0.277		0.62				3.40	
Copper	µg/L	3.81		6.71		2.47		3.62				1.61	
Nickel	µg/L	1.67		2.4		1.14		2.04				1.35	
Zinc	µg/L	2.56		6.17		2.35		5.82				3.61	
Barium	µg/L	816	U	117		816	U	80.1				78.5	
Iron	µg/L	321		692		16300	U	563				530	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.

Samples were not submitted U of U Labs for the Last of Day of Mineral Return sampling event.

Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Day 81 due to frozen conditions on the GSL.

Great Salt Lake NE - U of U Geoscience Lab													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	20		185		115		56					
Iron	µg/L	230		330		356		399					
Mercury	ng/L	5.87		8.86		8.86		4.67					
Manganese	µg/L	34		187		148		77					
Selenium	µg/L	<5		10		<5		<5					
Cadmium	µg/L	<2		5		3		4					
Cobalt	µg/L	<0.9		7		5		3					
Copper	µg/L	10.0		8.1		8.1		13.8					
Nickel	µg/L	6.1		9.4		9.4		7.0					
Lead	µg/L	1.1		47.8		13.3		3.9					
Zinc	µg/L	12.7		78.9		51.2		32.9					
Barium	µg/L	86		110		98		173					

Table 5 -South Promontory Pt
Mineral Return Data -
2018/2019 Mineral Return Season
Compass Minerals Ogden, Inc.

South Promontory Point - Brooks Applied Labs													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	22.8		185		147		174				157	
Iron	µg/L	16300	U	79		188		104				145	
Mercury	ng/L	4.52		7.48		6.35		7.38				8.10	
Manganese	µg/L	29.4		14.5		31.8		19.8				16.7	
pH	SU	8.7		8.16		8.28		8.19				9.03	H
Selenium	µg/L	0.619		0.512		0.714		0.455				0.536	
Cadmium	µg/L	0.0509	J	0.082	J	0.163		0.0759	J			0.0840	J
Cobalt	µg/L	0.273		0.228		0.293		0.223				0.251	
Copper	µg/L	3.74		3.08		2.52		2.71				4.19	
Nickel	µg/L	1.58		0.944		1.17		0.946				1.07	J
Lead	µg/L	0.9		1.55		4.39		1.41				1.47	
Zinc	µg/L	1.82		2.07		2.53		1.79				3.02	
Barium	µg/L	816	U	133		816	U	131				120	
Iron	µg/L	174		78.5	J	16300	U	86.2	J			131	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.

H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.

Samples were not submitted U of U Labs for the Last of Day of Mineral Return sampling event.

Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Day 81 due to frozen conditions on the GSL.

South Promontory Point - U of U Geoscience Lab													
		Day 1		Day 3		Day 9		Day 27		Day 81		Last Day MR	
	Units	10/26/2018		10/30/2018		11/05/2018		11/21/2018		01/17/2019		3/20/2019	
Arsenic	µg/L	19		154		165		163					
Iron	µg/L	171		168		205		91					
Mercury	ng/L	4.07		6.41		5.29		9.62					
Manganese	µg/L	32		19		36		31					
Selenium	µg/L	<5		6.82		7.69		13.99					
Cadmium	µg/L	<2		7.00		6.44		7.16					
Cobalt	µg/L	<0.9		5.69		4.78		5.93					
Copper	µg/L	6.97		8.83		6.29		4.30					
Nickel	µg/L	3.43		17.3		14.4		18.4					
Lead	µg/L	0.62		1.2		3.2		1.3					
Zinc	µg/L	14.5		48		49		51					
Barium	µg/L	84.2		159		134		141					

Table 1a -- Outfall 006
Mineral Return Data - 2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		Outfall 006: 2019 - 2020 MR Season											
		Day 1		Day 3		Day 9		Day 27		Last Day MR (Outfall 006 only)		Last Day MR (final return*)	
Parameter	Units	10/16/2019		10/16/2019		10/25/2019		11/15/2019		12/23/2019		3/30/2020	
Arsenic	µg/L	80.8		853		402		248		525		185	
Barium	µg/L	94.3		57.9		80.2		83.1		46.6		179	
Cadmium	µg/L	0.0421	J	0.125		0.0936	J	0.0765	J	0.13		0.0842	J
Cobalt	µg/L	0.418		1.44		0.991		0.656		1.16		0.453	
Copper	µg/L	1.73		3.62		2.47		1.9		3.27		2.19	
Iron	µg/L	376		301		527		204		229		253	
Iron	µg/L	415		230		282		259		234		357	
Mercury	ng/L	3.76		2.56		6.54		3.14		7.24		17.9	
Manganese	µg/L	37.8		499		373		367		426		86	
Nickel	µg/L	1.71		3.75		2.69		1.83		3.24		1.78	
Lead	µg/L	1.28		7.14		5.4		4.1		6.89		3.2	
pH	SU	8.58	H	7.41		7.77	H	7.92		7.77		7.56	M
Selenium	µg/L	0.489		1.28		0.821		0.63		0.868		0.548	
Zinc	µg/L	2.89		28.3		14		6.6		28.7		38.2	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
M: Duplicate precision (RPD) was not within acceptance critera.
* The last day of mineral return at Outfall 006 was December 23, 2019. Outfall 006 was briefly reactivated on March 25, 2020 and operated until March 30, 2020.

Table 1b -- Outfall 008
Mineral Return Data - 2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		Outfall 008: 2019 - 2020 MR Season									
		Day 1		Day 3		Day 9		Day 27		Last Day MR	
Parameter	Units	10/16/2019		10/16/2019		10/25/2019		11/15/2019		3/30/2020	
Arsenic	µg/L	533		554		234		132		160	
Barium	µg/L	136		142		127		112		193	
Cadmium	µg/L	0.0404	U	0.0404	U	0.134		0.0953	J	0.0477	J
Cobalt	µg/L	0.305		0.303		0.218		0.285		0.549	
Copper	µg/L	2.41		2.47		2.27		1.9		3.52	
Iron	µg/L	29.2	J	24.2	J	57.6		132		181	
Iron	µg/L	36.4	U	36.4	U	36.4	U	156		310	
Mercury	ng/L	6.02		1.39		6.88		4.28		10	
Manganese	µg/L	21.3		23.6		16.9		20.4		73.2	
Nickel	µg/L	1.78		1.83		1.03	J	0.987	J	1.83	
Lead	µg/L	0.161		0.149	J	2.53		1.81		1.92	
pH	SU	7.52	H	7.55		7.85	H	7.98		7.59	
Selenium	µg/L	1.17		1.05		0.601		0.499		0.539	
Zinc	µg/L	6.89		7.25		3.32		1.93		7.84	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
A sample was not collected at Outfall 008 for Day 81.

Table 2 - Background North
Mineral Return Data - 2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		Background North: 2019 - 2020 MR Season							
		Day 1		Day 3		Day 9		Last Day MR	
Parameter	Units	10/16/2019		10/18/2019		10/25/2019		3/30/2020	
Arsenic	µg/L	11.9		11.2		7.95		5.24	
Barium	µg/L	93.6		120		80.1		75.7	
Cadmium	µg/L	0.0465	J	0.0759	J	0.0427	J	0.0438	J
Cobalt	µg/L	0.675		1.03		0.824		0.933	
Copper	µg/L	2.57		3.99		2.88		3.13	
Iron	µg/L	800	M	2190	M	2640		1620	
Iron	µg/L	1110		1670		1360		1740	
Mercury	ng/L	3.11		6.18		2.99		3.67	
Manganese	µg/L	50.1		80.4		54.2		61.8	
Nickel	µg/L	1.98		2.74		2.2		2.76	
Lead	µg/L	2.39		4.26		2.51		2.79	
pH	SU	8.54	H	8.66		8.76	H	8.94	
Selenium	µg/L	0.348		0.376		0.286		0.35	
Zinc	µg/L	8.88		13.6		7.35		10.1	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
M: Duplicate precision (RPD) was not within acceptance critera.
Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Days 27 and 81 due to inaccessibility of an airboat and conditions on the GSL.

Table 3 - Mid Trapezoid
Mineral Return Data - 2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		Mid-Trapezoid : 2019 - 2020 MR Season							
		Day 1		Day 3		Day 9		Last Day MR	
Parameter	Units	10/16/2019		10/18/2019		10/25/2019		3/30/2020	
Arsenic	µg/L	10.7		13.4		17.5		7.33	
Barium	µg/L	91.5		118		97.8		78.8	
Cadmium	µg/L	0.0404	U	0.109		0.0404	U	0.0806	J
Cobalt	µg/L	0.393		1.35		0.478		1.45	
Copper	µg/L	2.39		5.9		2.13		5.22	
Iron	µg/L	643		2500		2170		2340	
Iron	µg/L	558		2380		631		2820	
Mercury	ng/L	6.67		8.02		2.82		6.47	
Manganese	µg/L	25.2		107		38.4		107	
Nickel	µg/L	1.38	J	3.34		1.54		3.99	
Lead	µg/L	1.34		5.88		1.73		4.92	
pH	SU	8.92	H	8.88		8.57	H	9.03	
Selenium	µg/L	0.323		0.429		0.35		0.42	
Zinc	µg/L	72.2		13.4		3.89		14.1	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Days 27 and 81 due to inaccessibility of an airboat and conditions on the GSL.

Table 4 - GSL - NE
(Formerly known as Background South) Mineral Return Data -
2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		GSL Northeast: 2019 - 2020 MR Season							
		Day 1		Day 3		Day 9		Last Day MR	
Parameter	Units	10/16/2019		10/18/2019		10/25/2019		3/30/2020	
Arsenic	µg/L	13.2		32.6		51.8		16.2	
Barium	µg/L	89.6		90.7		91.1		81	
Cadmium	µg/L	0.0404	U	0.0423	J	0.0404	U	0.0404	U
Cobalt	µg/L	0.36		0.34		0.308		0.728	
Copper	µg/L	1.95		1.75		1.27		2.66	
Iron	µg/L	378		404		554		1880	
Iron	µg/L	516		453		273		1290	
Mercury	ng/L	2.53		3.16		2.16		5.12	
Manganese	µg/L	26		24.7		39.2		50	
Nickel	µg/L	1.31	J	1.26	J	1.18	J	2.24	
Lead	µg/L	1.33		1.35		1.06		2.1	
pH	SU	8.53	H	8.6		8.23	H	8.94	
Selenium	µg/L	0.312		0.4		0.402		0.414	
Zinc	µg/L	16.5		2.84		1.91		6.56	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Days 27 and 81 due to inaccessibility of an airboat and conditions on the GSL.

Table 5 -South Promontory Pt
Mineral Return Data - 2019/2020 Mineral Return Season
Compass Minerals Ogden, Inc.

		South Promontory Point: 2019 - 2020 MR Season							
		Day 1		Day 3		Day 9		Last Day MR	
Parameter	Units	10/16/2019		10/18/2019		10/25/2019		3/30/2020	
Arsenic	µg/L	154		103		59		79.8	
Barium	µg/L	128		112		90.3		95.9	
Cadmium	µg/L	0.0615	J	0.0463	J	0.0404	U	0.447	J
Cobalt	µg/L	0.164		0.299		0.262		0.333	
Copper	µg/L	2.18		2		1.27		2.24	
Iron	µg/L	123		374		409		422	
Iron	µg/L	36.4	U	307		199		381	
Mercury	ng/L	4.32		4.06		2.19		4.31	
Manganese	µg/L	16.1		20.6		36.7		26.3	
Nickel	µg/L	0.801	J	1.17	J	1.08	J	1.34	J
Lead	µg/L	1.03		1.33		0.854		1.08	
pH	SU	8.2	H	8.36		8.26	H	8.67	
Selenium	µg/L	0.57		0.465		0.381		0.488	
Zinc	µg/L	1.21	J	4.78		1.56		4.15	

J: Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.

U: Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
H: pH was measured upon arrival by Brooks Applied Labs, but outside of the 48 hour hold time.
Samples were not collected from Background North, Mid-Trapezoid, GSL-Northeast, or South Promontory Point for Days 27 and 81 due to inaccessibility of an airboat and conditions on the GSL.

ATTACHMENT 2

Permit Application

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UTAH DEPARTMENT of ENVIRONMENTAL QUALITY
WATER QUALITY

Division of Water Quality (DWQ)
UPDES Program

UPDES Industrial Permit Application

Part I. General Information (40 CFR 122.21(j)(1) and (9))

Permit Status: ☒ Renewal ☐ New Permit

UPDES Permit No.: UT0000647 ☐ New Permit; UPDES Permit # Not Available

Facility Name: Compass Minerals Ogden Inc.

Facility Location: 765 N 10500 W

City Ogden State UT Zip 84404

Facility Mailing Address: 765 N 10500 W

City Ogden State UT Zip 84404

Facility Contact: Holly Hurst **Title:** Director, Environmental Compliance

Phone Number: (801) 732-3251 **Email Address:** hursth@compassminerals.com

Name of Signatory: Dean Thomspon **Title:** Vice President, Operations

Is the applicant the facility owner, operator or both? (check only one response.)

☐ Owner ☐ Operator ☒ Both

Indicate below any existing environmental permits. (Check all that apply and type the corresponding permit number for each.)

☐ RCRA (hazardous waste) ☐ UIC (underground injection control) ☐ PSD (air emissions)

☒ Nonattainment program (CAA) DAQE-AN109170039-20 ☒ NESHAPs (CAA) TV OP 5700001003 ☐ Dredge or fill (CWA Section 404)

☐ Other (specify) DAQE-AN12439005-17

Nature of Business CFR (40 CFR 122.21(f)(8))

Describe the nature of your business

Compass Minerals Ogden Inc. harvest minerals from the Great Salt Lake through solar evaporation. This process produces a number of sodium chloride, sulfate of potash and magnesium chloride products.

UPDES Industrial Permit Application

Part II. Facility Information

Design and Actual Flow Rates See Attachment 2 for requested information.

Provide design and actual flow rates in designated spaces.

Design Flow Rate	
	mgd

Annual Average Flow Rates (Actual)					
Five Years Ago		**Four Years Ago**		**Three Years Ago**	
	mgd		mgd		mgd
Two Years Ago		**Last Year**		**Current Year**	
	mgd		mgd		mgd

Maximum Daily Flow Rates (Actual)					
Five Years Ago		**Four Years Ago**		**Three Years Ago**	
	mgd		mgd		mgd
Two Years Ago		**Last Year**		**Current Year**	
	mgd		mgd		mgd

Describe the treatment for each outfall* See Attachment 2 for requested information.

	Outfall Number		**Outfall Number**		**Outfall Number**	
Level of Treatment						
Primary	Treatment Unit		Treatment Unit		Treatment Unit	
	Size		Size		Size	
	Flow rate		Flow rate		Flow rate	
	Retention time		Retention time		Retention time	
	Other		Other		Other	
Equivalent to secondary	Treatment Unit		Treatment Unit		Treatment Unit	
	Size		Size		Size	
	Flow rate		Flow rate		Flow rate	
	Retention time		Retention time		Retention time	
	Other		Other		Other	

UPDES Industrial Permit Application

Part II. Facility Information *continued*

Describe the treatment for each outfall* *continued*

	Outfall #		**Outfall #**		**Outfall #**	
Secondary	Treatment Unit		Treatment Unit		Treatment Unit	
	Size		Size		Size	
	Flow rate		Flow rate		Flow rate	
	Retention time		Retention time		Retention time	
	Other		Other		Other	
Advanced	Treatment Unit		Treatment Unit		Treatment Unit	
	Size		Size		Size	
	Flow rate		Flow rate		Flow rate	
	Retention time		Retention time		Retention time	
	Other		Other		Other	
Other (specify)	Treatment Unit		Treatment Unit		Treatment Unit	
	Size		Size		Size	
	Flow rate		Flow rate		Flow rate	
	Retention time		Retention time		Retention time	
	Other		Other		Other	

* The data can be entered in the section above or an excel spreadsheet. Attached additional sheets if needed.

Production

Outfall Number	**Operation, Product, or Material**	**Quantity per Day**	**Unit of Measure**

UPDES Industrial Permit Application

Part II. Facility Information *continued*

BLUEPRINT: Attach a line drawing that shows the water flow through your facility with a water balance.

☒ Blueprint Attached See Attachment 1 for requested information.

MAP: Attach a USGS topographic map or aerial photo extending one mile beyond the property boundaries of the site, the facility or activity boundaries, any treatment area(s), outfall(s), major drainage patterns, and the receiving surface waters stated above.

☒ Map Attached See Attachment 1 for requested information.

Are improvements to the facility scheduled?

☐ YES If YES, explain below.

■ NO If NO, Skip to Part III

Briefly list and describe the schedule improvements.

1.	
2.	
3.	
4.	

Provide scheduled or actual dates of completion for improvements.

Scheduled or Actual Dates of Completion for Improvements

	Scheduled Improvement (from above)	Affected Outfalls (list outfall number)	Begin Construction (MM/DD/YYYY)	End Construction (MM/DD/YYYY)	Begin Discharge (MM/DD/YYYY)	Attainment of Operational Level (MM/DD/YYYY)
1.						
2.						
3.						
4.						

Division of Water Quality (DWQ)
UPDES Program

UPDES Industrial Permit Application

Part III. Sampling Information

Provide all parameter sampling data with analytical results, reporting limit and any laboratory flags on an Excel spreadsheet. *An Excel Spreadsheet will be provided upon request.*

Has WET testing been conducted during the last 5 years? ☐ YES ■ NO

Indicate the acute and chronic WET tests (PASS or FAIL) results for the past 5 years. If no WET testing for the quarter, then leave blank (e.g., for semi-annual or annual testing or missed testing events).

Year	Outfall No. ________				Outfall No. ________				Outfall No. ________			
	Acute		Chronic		Acute		Chronic		Acute		Chronic	
	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL
	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL
	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL
	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL
	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL
	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL
	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL
	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL
	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL
	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL
	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL
	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL
	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL
	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL
	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL
	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL
	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL	Qtr 1	☐ PASS ☐ FAIL
	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL	Qtr 2	☐ PASS ☐ FAIL
	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL	Qtr 3	☐ PASS ☐ FAIL
	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL	Qtr 4	☐ PASS ☐ FAIL

Describe any cause(s) of toxicity:

Were the above WET analysis submitted to Utah DWQ? ☐ YES ☐ NO

UPDES Industrial Permit Application

Part IV. Compliance Information

Has the facility had and parameter exceedances over the past five years? ☒ YES ☐ NO

If Yes, provide the below information:

Parameter	Exceedance	Month/Year	Cause
Total Chromium	Daily Max	12/2016	Undetermined, suspected pass through from WBWCD incoming water.
TSS	Daily Max	09/2018	Failed pH prove drove TSS formation.
TRC	Daily Max	09/2020	Undetermined, suspected pass through from WBWCD incoming water.
TRC	Daily Max	11/2020	Undetermined, suspected pass through from WBWCD incoming water.
TRC	Daily Max	12/2020	Undetermined, suspected pass through from WBWCD incoming water.

UPDES Industrial Permit Application

Part IV. Compliance Information ***continued***

Facility monitoring data. See Tables A-E for a summary of the requested data.

Please provide the past **five years** of all parameters required to be monitored in the UPDES permit. The data can be entered in the section below or an excel spreadsheet. Attached additional sheets if needed.

Month	Year	Parameter	Min	Max	Avg	MDL/RL*

*MDL/RL is the analysis method detection limit or reporting limit located on the laboratory analysis report.

UPDES Industrial Permit Application

Part V. Outfalls and Receiving Water(s) See Attachment 3 for requested information.

Provide the latitude and longitude to the nearest second for each dewatering outfall. The specified location should be after all treatment and before release to the receiving water. Provide the name of the initial receiving water. If the initial receiving water is unnamed, please also indicate the closed named drainage the receiving water flows into (i.e. unnamed tributary of City Creek). Attach additional sheets if necessary for more outfalls.

Each outfall to a different receiving water segment is subject to additional application fees and annual fees.

Outfall No.	Average daily flow rate	Latitude	Longitude	Receiving Surface Waters (Name)
	mgd	O ‘ “	O ‘ “	
	mgd	O ‘ “	O ‘ “	
	mgd	O ‘ “	O ‘ “	

Do any of the outfalls described above have a season or periodic discharges?

☒ YES ☐ NO

If so, provide the following information for each applicable outfall.

	Outfall No.		Outfall No.		Outfall No.	
Number of times per year discharges occurs						
Average duration of each discharge (specify units)						
Average flow of each discharge		mgd		mgd		mgd
Months in which discharge occurs						

UPDES Industrial Permit Application

Part VI. Effluent and Intake Characteristics

See Attachment 4 for requested information.

Table A.
Conventional and Non-Conventional Pollutants

Are you requesting a waiver for one or more pollutants listed Table A for any of your outfalls?

■ YES ☐ NO

If yes, indicate the applicable outfalls below. Attach the waiver request and other required information to the application.

Outfall Number		Outfall Number		Outfall Number	

Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application?

☐ YES ☐ NO; a waiver has been requested for all pollutants at all outfalls

Table B.
Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants

Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Appendix A?

■ YES ☐ NO ☐ Not applicable

Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?

■ YES ☐ NO

List the applicable primary industry categories and check the boxes indicating the required Gas Chromatography/Mass Spectrometry (GS/MS) Fraction(s) identified in Appendix A.

Primary Industry Category	Required Gas Chromatography/Mass Spectrometry (GS/MS) Fraction(s)
Inorganic Chemicals Manufacturing	■ Volatile ■ Acid ■ Base/Neutral ☐ Pesticide
	☐ Volatile ☐ Acid ☐ Base/Neutral ☐ Pesticide
	☐ Volatile ☐ Acid ☐ Base/Neutral ☐ Pesticide

Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions?

■ YES ☐ NO

Have you checked "Believe Present" or Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required?

■ YES ☐ NO

Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believe Present" in your discharge?

■ YES ☐ NO

Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge?

■ YES ☐ NO

UPDES Industrial Permit Application

Part VI. Effluent and Intake Characteristics *continued*

Table C.
Certain Conventional and Non-Conventional Pollutants

Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls?

☒ YES ☐ NO

Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an Effluent Limitation Guidelines and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believe Present"?

☒ YES ☐ NO

Table D.
Certain Hazardous Substances and Asbestos

Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table D for all outfalls?

☒ YES ☐ NO

Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available?

☒ YES ☐ NO

Table E.
2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)

Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed below:

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T)
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP)
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloro-propionate (Erbon)
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel)
- ☐ 2,4,5,-trichlorophenol (TCP)
- ☐ hexachlorophene (HCP).
- ☐ Or do you know of have reason to believe that TCDD is or may be present in the effluent?

☐ YES, Complete Table E ☒ NO, Skip to Part VII

Have you completed Table E by reporting qualitative data for TCDD?

☐ YES ☐ NO

Were any of the analyses reported in this section performed by a contract laboratory or consulting firm?

☐ YES ☐ NO, Skip to Part VII

Provide information for each contract laboratory or consulting firm below.

	Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
Name of laboratory/firm			
Laboratory address			
Phone Number			
Pollutant(s) analyzed			

UPDES Industrial Permit Application

Part VII. Used or Manufactured Toxics

Is any pollutant listed in Table B a substance or a component of a substance used or manufactured at your facility as an intermediate or final product or byproduct?

■ YES ☐ NO, Skip to Part VIII

List the pollutants below.

1. Arsenic	4. Lead	7. Selenium
2. Cadmium	5. Mercury	8. Zinc
3. Copper	6. Nickel	9.

The identified metals are found in trace amounts in the waters of the Great Salt Lake and are carried through to our final products.

UPDES Industrial Permit Application

Part IX. Biosolids Information

Was the Biosolids Annual Report submitted? ☐ YES ■ NO

☐ Attach a Biosolids Management Plan with application

Serve Connections? ____

Provide the total dry metric tons per the latest 365-day period of sewage sludge generated, treated, used and disposed of:

Practice	Dry Metric Tons per 365-day Period
Amount generated at the facility	
Amount treated at the facility	
Amount used (i.e., received from offsite) at the facility	
Amount disposed of at the facility	

Treatment Provided at Your Facility

Identify the treatment process(es) used at your facility to reduce pathogens in sewage sludge

- ☐ Preliminary operations (e.g., sludge grinding and degritting)
- ☐ Stabilization
- ☐ Composting
- ☐ Disinfection
- ☐ Heat drying
- ☐ Methane or biogas capture and recovery
- ☐ Thickening (concentration)
- ☐ Anaerobic digestion
- ☐ Conditioning
- ☐ Dewatering (e.g. centrifugation, sludge drying beds, sludge lagoons)
- ☐ Thermal reduction

Sewage Sludge Disposal Method

Land Application of Bulk Sewage Sludge

Is sewage sludge form your facility applied to the land? ☐ YES ■ NO If No, Skip to next section

Total dry metric tons per 365-day period of sewage sludge applied to all land sites:

Surface Disposal

Is sewage sludge from your facility placed on a surface disposal site?

☐ YES ■ NO If No, Skip to next section

Total dry metric tons of sewage sludge from your facility placed on all surface disposal sites per 365-day period: _____

Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?

☐ YES ☐ NO If No, complete the below information

Surface disposal site *you do not operate*

Site name _____

Mailing address _____

City _____ State _____ Zip _____

Contact Name _____ Title _____

Phone Number _____ Email Address _____

UPDES Industrial Permit Application

Part IX. Bisolids Information *continued*

Incineration

Is sewage sludge from your facility fired in a sewage sludge incinerator?
☐ YES ■ NO If No, Skip to next section

Total dry metric tons of sewage sludge from your facility fired in all sewage sludge incinerators per 365-day period: _____

Do you own or operate all sewage sludge incinerators in which sewage sludge from facility is fired?
☐ YES ☐ NO If No, complete the below information

Incinerator location *you do not operate*

Site name _____

Mailing address _____

City _____ State _____ Zip

Contact Name _____ Title _____

Phone Number _____ Email Address _____

Disposal in a Municipal Solid Waste Landfill

Is sewage sludge from your facility placed on a municipal solid waste landfill?
☐ YES ■ NO If No, Skip to next section

Total dry metric tons of sewage sludge from your facility placed in this municipal solid waste landfill per 365-day period: _____

Do you own or operate the municipal solid waste landfill in which sewage sludge is disposed?
☐ YES ☐ NO If No, complete the below information

Municipal Solid Waste Landfill *you do not operate*

Site name _____

Mailing address _____

City _____ State _____ Zip _____

Contact Name _____ Title _____

Phone Number _____ Email Address _____

UPDES Industrial Permit Application

Part X. Reuse Information

Is wastewater applied to land?
☐ YES ■ NO If YES, complete the below information.

Land Application Site and Discharge Data

Location	Size	Average Daily Volume Applied	How often
	acres	gpd	☐ Seasonal ☐ Continuous ☐ Intermittent
	acres	gpd	☐ Seasonal ☐ Continuous ☐ Intermittent
	acres	gpd	☐ Seasonal ☐ Continuous ☐ Intermittent

Seasonal land application.

Indicate months of seasonal land application

☐ January	☐ April	☐ July	☐ October
☐ February	☐ May	☐ August	☐ November
☐ March	☐ June	☐ September	☐ December

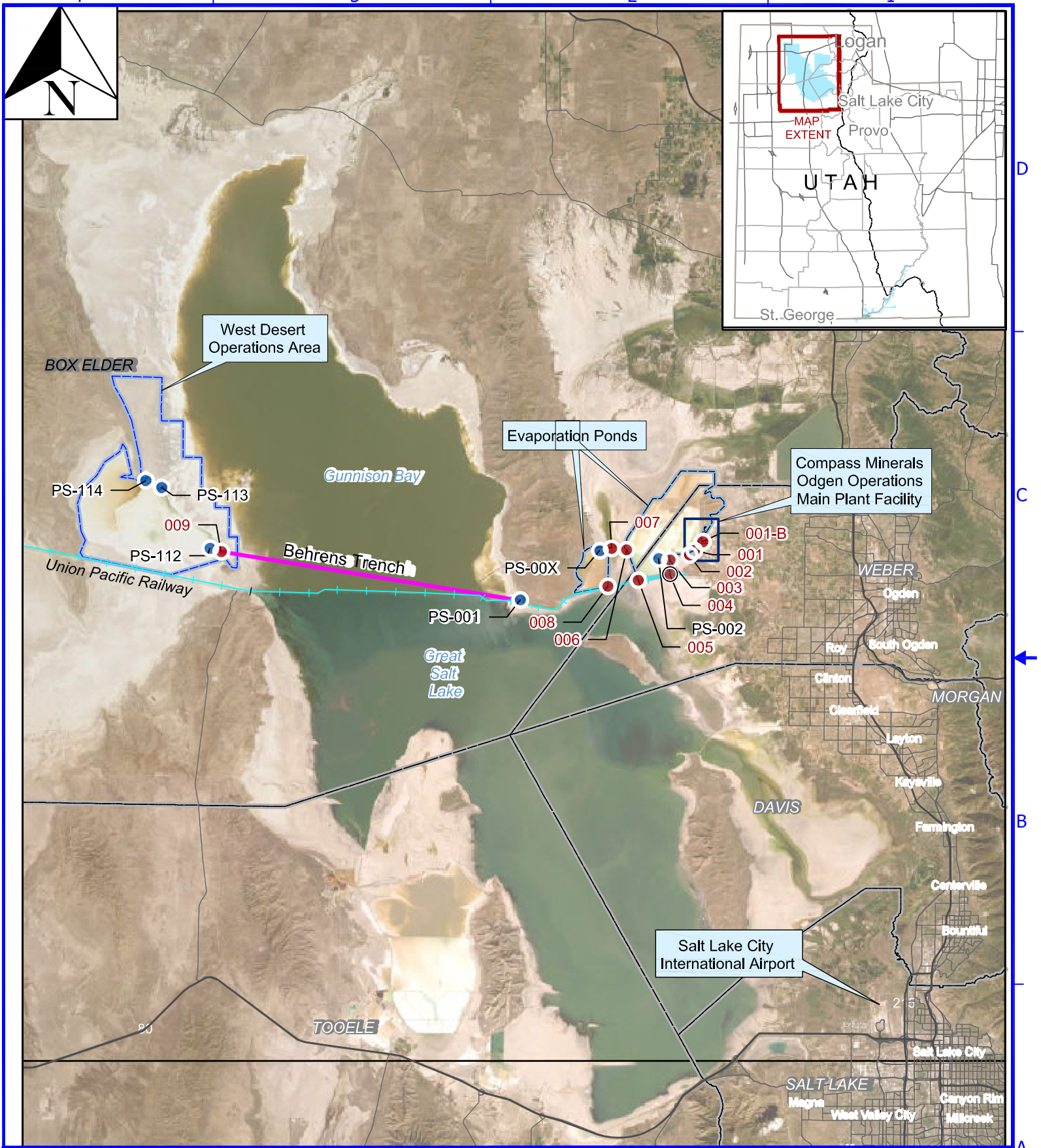
Where is the Reuse water distributed

- ☐ Residential irrigation
- ☐ Urban uses
  - ○ Non-residential landscape irrigation
  - ○ Golf course irrigation
  - ○ Toilet flushing
  - ○ Fire protection
- ☐ Irrigation of food crops (direct contact with edible part) – spray irrigation
- ☐ Irrigation of food crops *(Non direct contact with edible part) – no spray irrigation*
- ☐ Irrigation
  - ○ Sod farms
  - ○ Silviculture
  - ○ Limited access highway rights of way
  - ○ Other areas where human access is restrict or unlikely to occur
- ☐ Irrigation of animal feed crops other than pasture for milking animals
- ☐ Impoundment of wastewater where direct human contact is not allowed or is unlikely to occur
- ☐ Cooling water
- ☐ Soil compaction or duct control in construction areas
- ☐ Other

☐ **Attached an updated Reuse Project Plan**

An updated Reuse Project Plan is required during every permit renewal.

Attachment 1 – Site Map and Figures



Legend

- Outfall
- Pump Station
- Behren's Trench
- Union Pacific Causeway

DRAWN BY: Tanner Hill	DATE: 5/25/2021	
CHECKED BY:	DATE:	
ENGINEER:	DATE:	

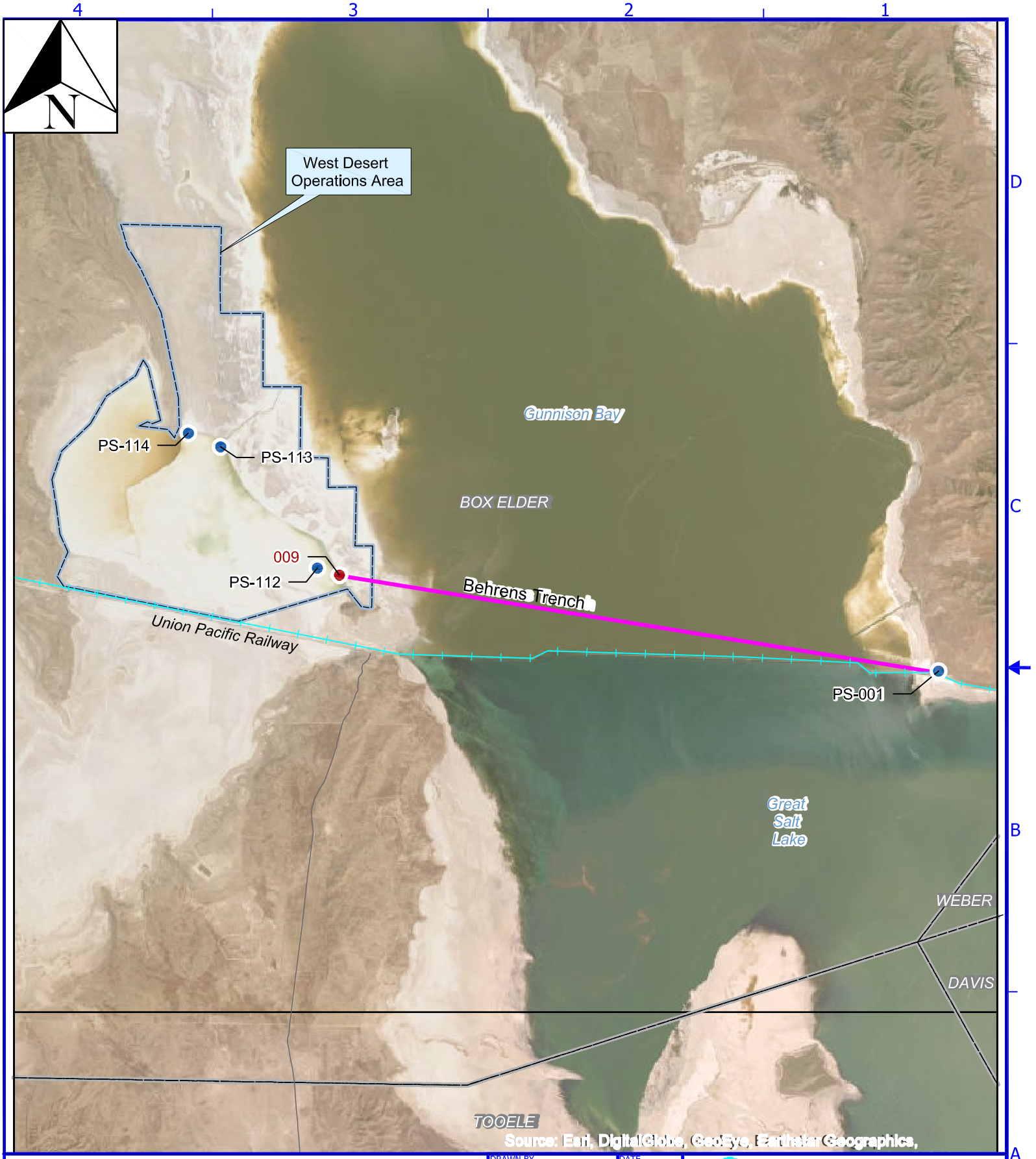
Compass Minerals
765 NORTH 10500 WEST, OGDEN UT 84404
PH (801) 731-3100 FX (801) 731-4881

TITLE

Figure 1
Location Map

SIZE	DWG NO	REV
D		0

SCALE | SHEET 1 OF 1



Legend

- Outfall
- Pump Station
- Behren's Trench
- Union Pacific Causeway

DRAWN BY: Tanner Hill	DATE: 5/25/2021	
CHECKED BY:	DATE:	
ENGINEER:	DATE:	

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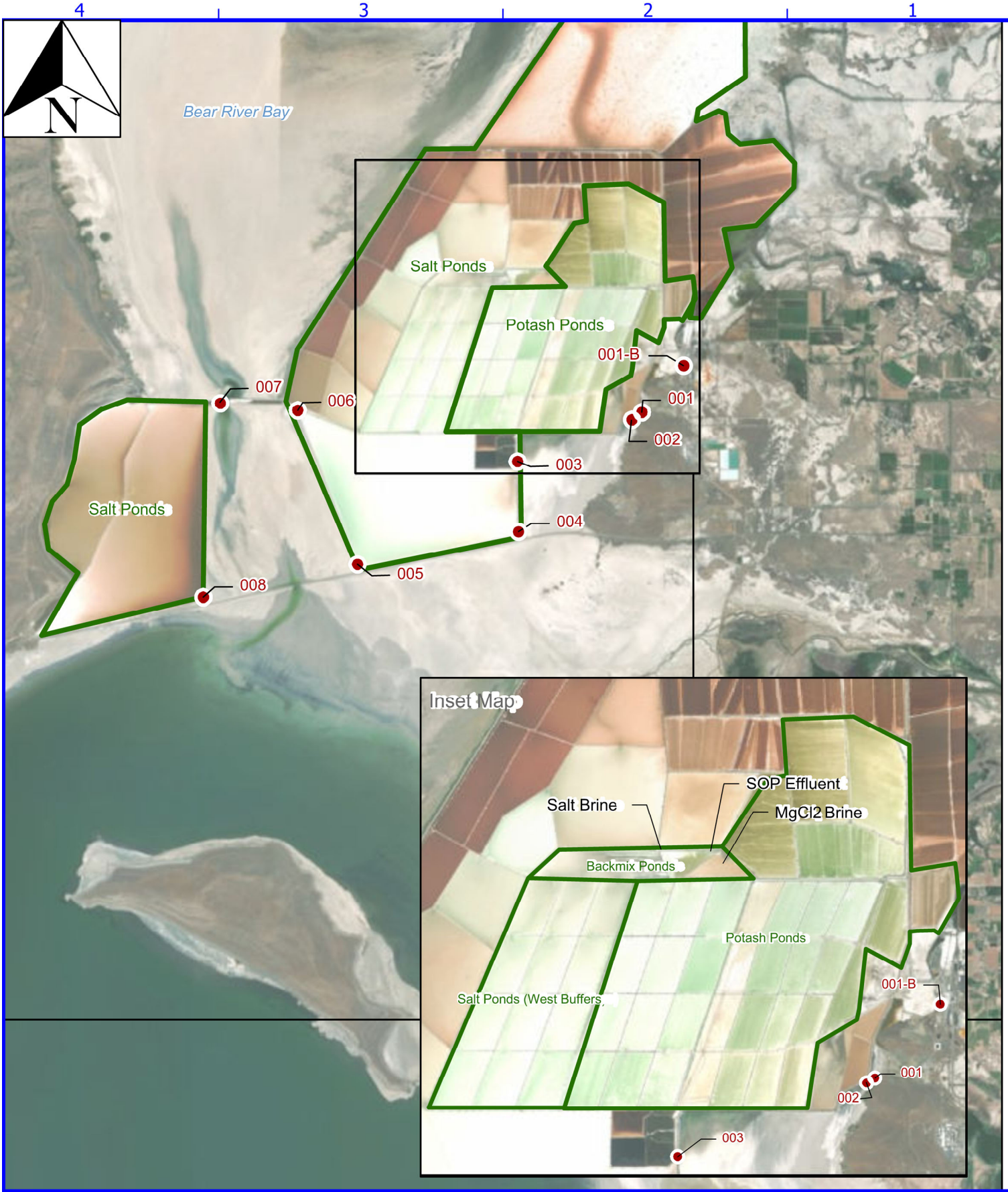
TITLE

Figure 2
West Desert Operations

SIZE	DWG NO	REV
D		0

SCALE | SHEET 1 OF 1



Legend

- Outfall
- Evaporation Pond

DRAWN BY: Tanner Hill	DATE: 5/25/2021	
CHECKED BY	DATE	
ENGINEER	DATE	

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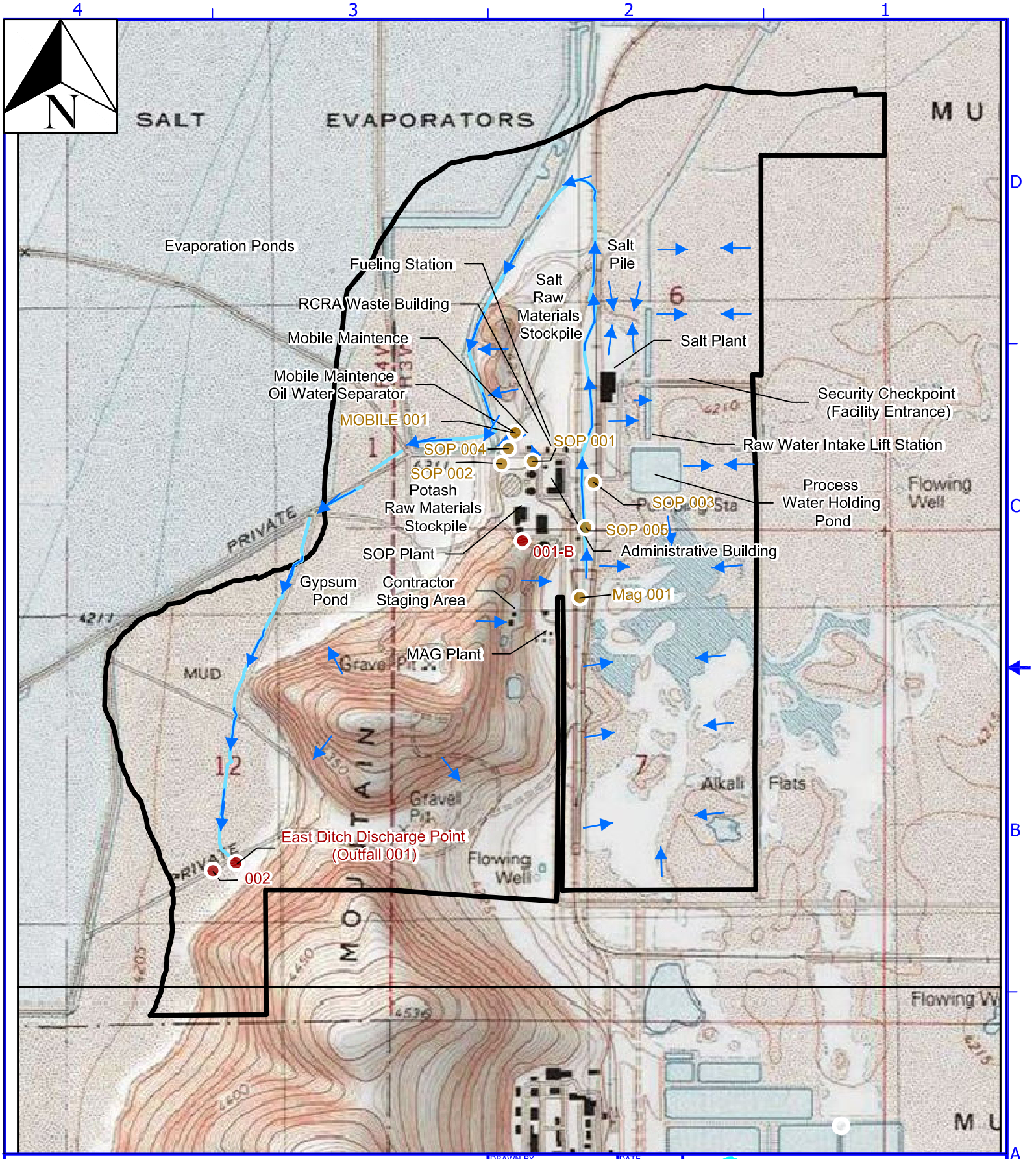
TITLE

Figure 3
East Ponds

SIZE	DWG NO	REV
D		0

SCALE | SHEET 1 OF 1



Legend

- Outfall
- Stormwater Outfall
- Effluent Ditch
- Predicted Drainage Direction
- Operations Property Boundary

DRAWN BY	Tanner Hill	DATE	5/25/2021
CHECKED BY		DATE	
ENGINEER		DATE	

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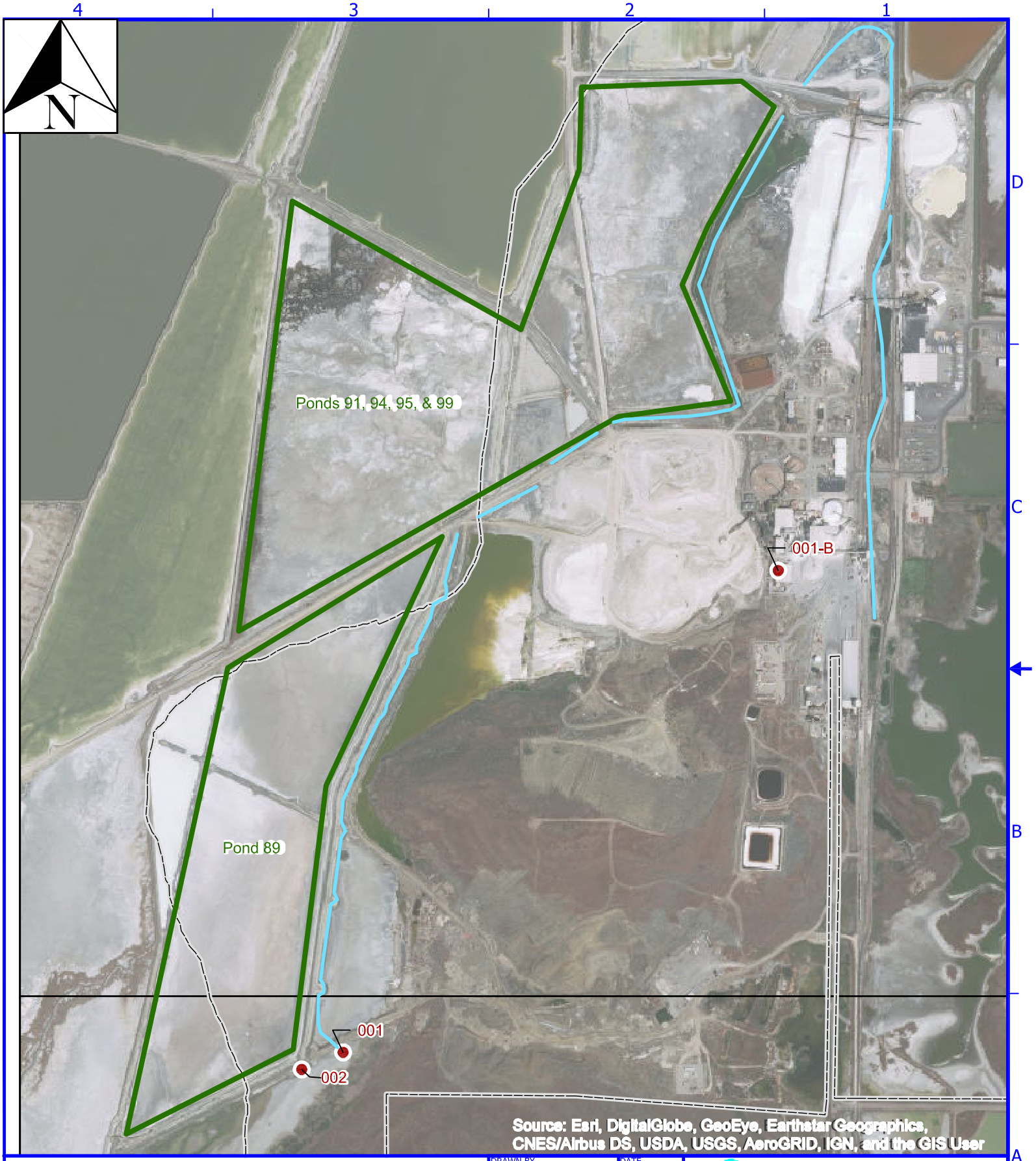
PH (801) 731-3100 FX (801) 731-4881

TITLE

Figure 4
Facility Layout

SIZE	DWG NO	REV
D		0

SCALE | SHEET 1 OF 1



Legend

- Outfall
- Evaporation Pond
- Effluent Ditch
- Operations Property Boundary

DRAWN BY: Tanner Hill	DATE: 5/25/2021	
CHECKED BY:	DATE:	
ENGINEER:	DATE:	

Compass Minerals
765 NORTH 10500 WEST, OGDEN UT 84404
PH (801) 731-3100 FX (801) 731-4881

TITLE

Figure 5
Ponds 89, 91, 94, 95, and 99

SIZE	DWG NO	REV
D		0

SCALE | SHEET 1 OF 1

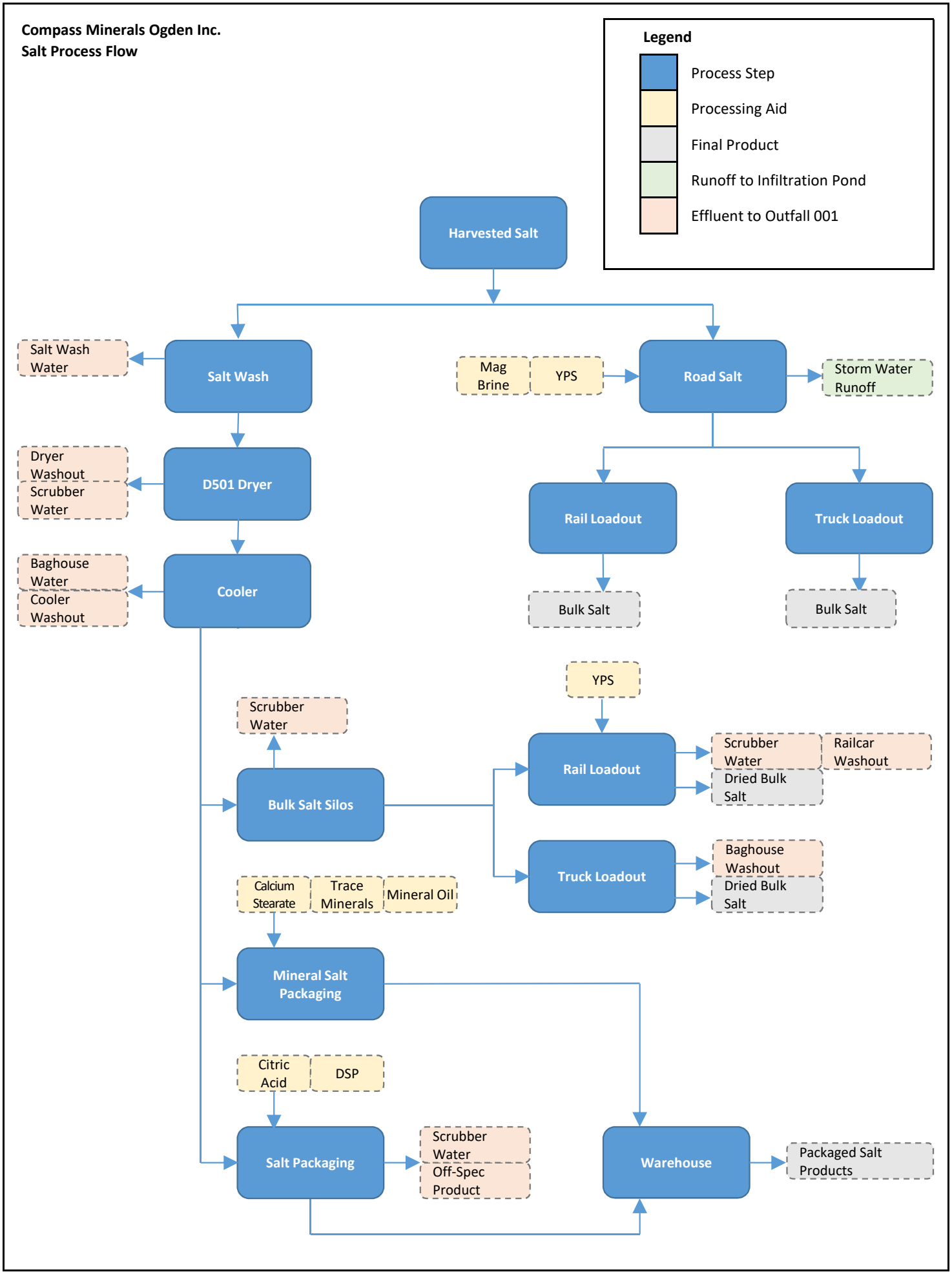


Figure 6. Salt Plant Process Flow Diagram.

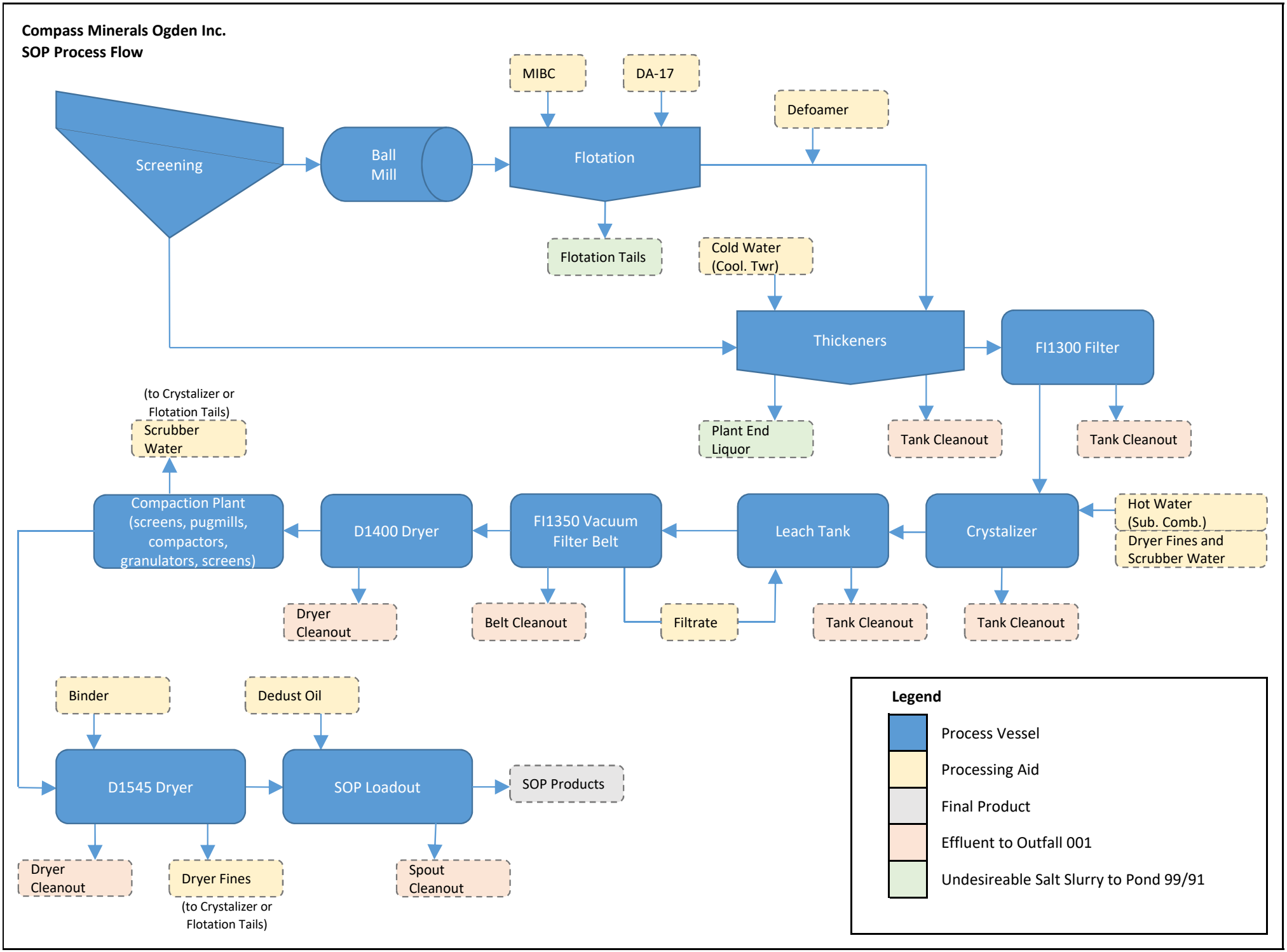


Figure 7. SOP Plant Process Flow Diagram.

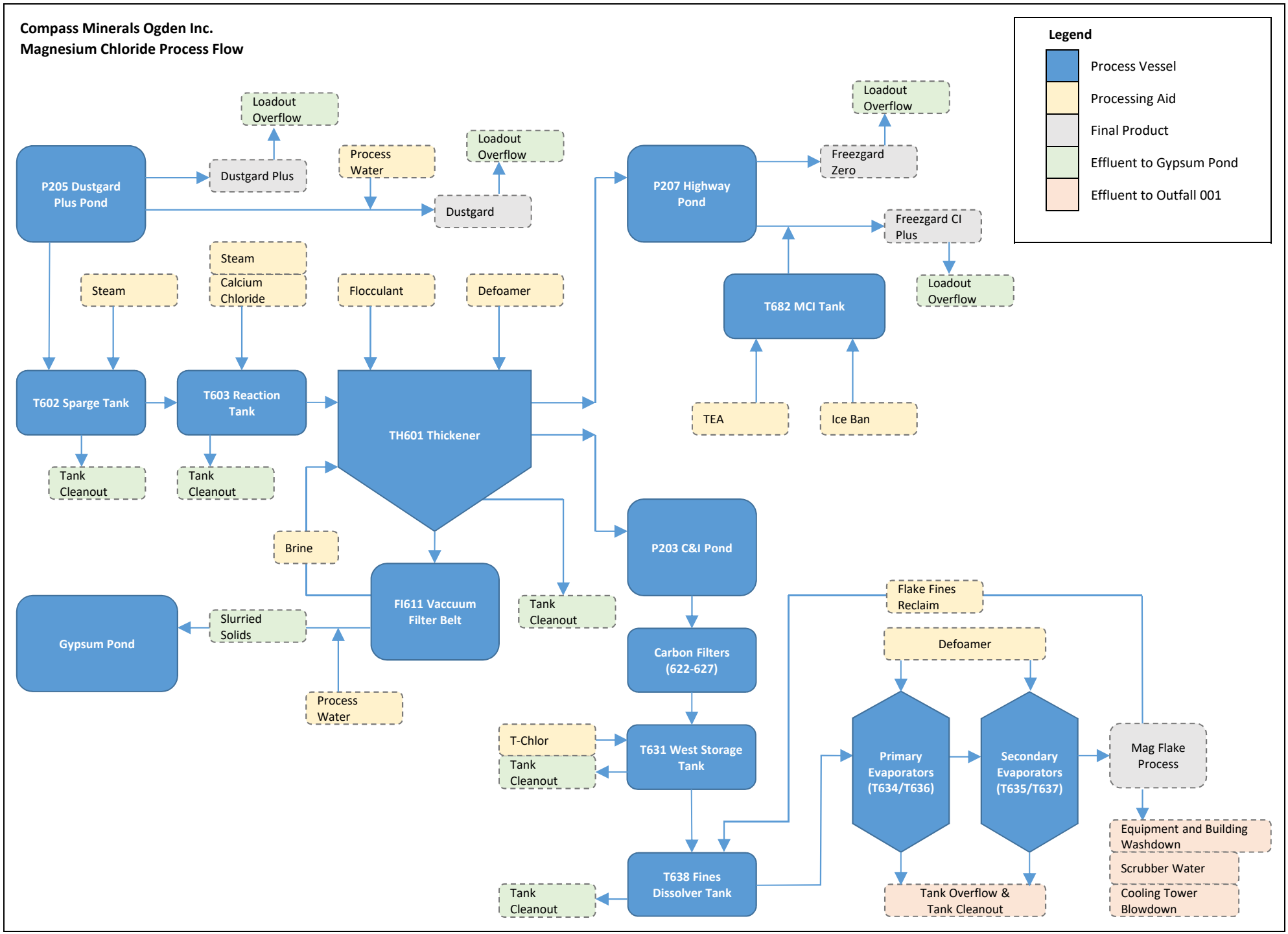


Figure 8. Magnesium Chloride Plant Process Flow Diagram.

Attachment 2 - Part II Additional Information

No traditional primary or secondary treatment is used at the facility. However, the extended length of the effluent ditch prior to discharge to the Great Salt Lake at Outfall 001 provides a degree of sedimentation. Additionally, portions of the flow to Outfall 001 pass through an oil/water separator prior to combining flows in the effluent ditch. Outfalls 002 through Outfall 008 are used for the flushing of salts that are undesirable for the process from the solar evaporation ponds complex and do not receive any form of treatment prior to discharge. Below is a description of the tables provided in this attachment to supplement the information in Part II of the UPDES Industrial Permit Application.

- Table 1 provides actual flows for each outfall for the current and previous five years.
- Table 2 provides a list of sources contributing flows to Outfall 001.

Table 1. Actual Flow Rates

	Annual Average Flow (MGD)						Maximum Daily Flow (MGD)					
Outfall	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**
001	3.6	4.0	3.3	5.0	4.4	3.6	5.7	8.1	6.5	9.3	11.4	10.0
001B	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.3
002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
006	34.8	45.6	59.9	84.2	68.8	54.3	45.6	45.6	104.9	109.9	93.9	99.0
007	0.0	0.0	0.0	59.9	0.0	0.0	0.0	0.0	0.0	59.9	0.0	0.0
008	64.1	67.3	70.1	66.7	56.6	0.0	81.5	86.4	73.3	84.4	68.6	0.0
009	0.0	70.9	59.5	54.0	62.1	38.4	0.0	82.3	59.5	62.9	66.5	57.6

Table 2. Sources Contributing Flow to Outfall 001

Area	Flow Description
Boiler Plant	Boiler blowdown at internal Outfall 001B
Boiler Plant	Intermittent wash-down of process equipment, carbon filter backwash, pretreatment system cleanout and water softener regeneration at internal Outfall 001B
Ponds Complex	Flushing of undesireable salts from ponds 88, 89, 91, 94, 95 and 99 (proposed addition, see Attachment 6)
Salt Plant	Salt wash water
Salt Plant	Discharges from air pollution control equipment where mineral additives are not used (baghouses and scrubbers)
Salt Plant	Intermittent wash-down of production equipment (e.g., dryer, cooler, conveyors, hoppers, loading chutes, etc.)
Salt Plant	Rail car and truck rinse water
Salt Plant	Dissolution of off-specification salt treated with citric acid (proposed addition, see Attachment 6)
Magnesium Chloride Plant	Air scrubber blowdown
Magnesium Chloride Plant	Intermittent wash-down of production equipment (e.g., brine evaporators, conveyor, hoppers, chutes, etc.)
Magnesium Chloride Plant	Cooling tower blowdown (proposed addition, see Attachment 6)
Magnesium Chloride Plant	Rail car and truck rinse water
Sulfate of Potash Plant	Intermittent wash-down of production equipment (e.g., tanks, dryers, conveyors, hoppers, loading chutes, etc.)
Sulfate of Potash Plant	Cooling tower blowdown
Sulfate of Potash Plant	Rail car and truck rinse water
Mobile Shop	Rinse water from the washing of vehicles (treated to remove oil prior to discharge)
Plant-Wide	Rinse water from the washout of production and administrative buildings where no detergents are used
Plant-Wide	Compressor blowdown (treated to remove oil prior to discharge)
Plant-Wide	Commingled storm water and process water

Attachment 3 – Part V Additional Information

Compass Minerals has nine Outfalls and one sub-Outfall that flows into Outfall 001. Outfall 001 discharges flows that are generated in the processing areas and general storm water. See Table 2 for a list of sources that contribute flow to Outfall 001. Outfalls 002 – 008 are used exclusively for mineral return operations where undesirable salts remaining in the evaporation ponds are dissolved with freshwater and returned to the Great Salt Lake. Outfall 009 discharges bitterns to the Behrens trench on the west side of Gunnison Bay for transport to the east ponds at Bear River Bay. The location of each Outfall and frequency of use is provided in Table 3. Typical flows from each outfall were provided previously in Table 1.

Table 3. Compass Minerals Outfall Locations

Outfall	Receiving Water	Latitude	Longitude	Frequency of Use	Average Duration of Discharge	Months When Discharge Occurs[2]
001	Great Salt Lake, Bear River Bay	41° 16’ 39" N	112° 14' 09" W	Continuous	Continuous	Year-Round
001B	Boiler plant internal discharge to the storm water system. Discharges at Outfall 001.	41° 16' 43" N	112° 13' 59" W	Continuous	Continuous	Year-Round
002	Great Salt Lake, Bear River Bay	41° 16’ 7” N	112° 14’ 43” W	Inactive[1]	Inactive[1]	October - June
003	Great Salt Lake, Bear River Bay	41° 15' 33" N	112° 16' 39" W	Inactive[1]	Inactive[1]	October - June
004	Great Salt Lake, Bear River Bay	41° 14' 42" N	112° 16' 38" W	Inactive[1]	Inactive[1]	October - June
005	Great Salt Lake, Bear River Bay	41° 14' 18" N	112° 19' 13" W	Inactive[1]	Inactive[1]	October - June
006	Great Salt Lake, Bear River Bay	41° 16' 10" N	112° 20' 11" W	Periodic	180 days	October - June
007	Great Salt Lake, Bear River Bay	41° 16' 15" N	112° 21' 26" W	Periodic	180 days	October - June
008	Great Salt Lake, Bear River Bay	41° 13' 54" N	112° 21' 42" W	Periodic	180 days	October - June
009	Great Salt Lake, Gunnison Bay	41° 15' 44" N	112° 53' 29" W	Periodic	120 days	May - September

1. Inactive during last permit term. May be used in the future as needed.

2. Current permit allows for mineral return activity during the months of October through March. Compass Minerals proposes to extend mineral return discharge through June and potentially year-round. See Attachment 6 for additional details.

Attachment 4 – Part VI Tables

Summaries of the information requested on Tables A, B and C of the UDWQ UPDES Industrial Permit Application are provided below. None of the pollutants identified in Tables D and E are believed to be present at any outfall. Therefore, these tables have been omitted.

Table A. Conventional and Non-Conventional Pollutants

Pollutant		Units	Outfall 001						Outfall 001B						Outfalls 002-005[1]					
			Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses	Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses	Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses
1.	Biochemical oxygen demand (BOD_5)	(mg/L)	No	47	26	4	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
2.	Chemical oxygen demand (COD)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
3.	Total organic carbon (TOC)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
4.	Total suspended solids (TSS)	(mg/L)	Yes	-	-	0	-	0	No	34	4	60	-	0	Yes	-	-	0	-	0
5.	Ammonia (as N)	(mg/L)	No	1.9	1.5	3	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
6.	Flow	(MGD)	No	11	4	65	-	0	No	0.34	0.18	60	-	0	No	-	-	0	-	0
7.	Temperature (winter)	(°F)	No	37.8	35.2	6	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
	Temperature (summer)	(°F)	No	37.8	35.2	6	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
8.	pH (minimum)	(S.U.)	No	7.14	8.22	67	-	0	No	7.10	7.93	60	-	0	No	-	-	0	-	0
	pH (maximum)	(S.U.)	No	8.74		67	-	0	No	8.90		60	-	0	No	-	-	0	-	0

Pollutant		Units	Outfall 006						Outfall 007						Outfall 008					
			Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses	Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses	Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses
1.	Biochemical oxygen demand (BOD_5)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
2.	Chemical oxygen demand (COD)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
3.	Total organic carbon (TOC)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
4.	Total suspended solids (TSS)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	Yes	-	-	0	-	0
5.	Ammonia (as N)	(mg/L)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	No	0.60	0.37	3	-	0
6.	Flow	(MGD)	No	110	62	24	-	0	No	60	60	1	-	0	No	86	66	20	-	0
7.	Temperature (winter)	(°F)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	No	30	29	3	-	0
	Temperature (summer)	(°F)	Yes	-	-	0	-	0	Yes	-	-	0	-	0	No	30	29	3	-	0
8.	pH (minimum)	(S.U.)	No	7.03	7.87	42	8.61	14	No	7.48	7.54	4	8.61	14	No	7.29	7.85	30	8.61	14
	pH (maximum)	(S.U.)	No	9.00		42	8.61	14	No	7.57		4	8.61	14	No	8.35		30	8.61	14

Pollutant		Units	Outfall 009					
			Waiver Req. (if applicable)	Eff. Daily Max	Eff. Daily Average	Eff. No. of Analyses	Inf. Daily Avg	Inf. No. of Analyses
1.	Biochemical oxygen demand (BOD_5)	(mg/L)	Yes	-	-	0	-	0
2.	Chemical oxygen demand (COD)	(mg/L)	Yes	-	-	0	-	0
3.	Total organic carbon (TOC)	(mg/L)	Yes	-	-	0	-	0
4.	Total suspended solids (TSS)	(mg/L)	Yes	-	-	0	-	0
5.	Ammonia (as N)	(mg/L)	Yes	-	-	0	-	0
6.	Flow	(MGD)	No	82	56	14	-	0
7.	Temperature (winter)	(°F)	Yes	-	-	0	-	0
	Temperature (summer)	(°F)	Yes	-	-	0	-	0
8.	pH (minimum)	(S.U.)	No	7.62	7.07	14	-	0
	pH (maximum)	(S.U.)	No	7.62		14	-	0

1. Outfall was not used during the previous permit cycle. No monitoring data is available.

Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants

		Outfall 001						Outfall 001B							Outfalls 002-005[1]					
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
Section 1. Toxic Metals, Cyanide, and Total Phenols																					
1.	Antimony, Total (7440-36-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
2.	Arsenic, Total (7440-38-0)	No	Present	0.0631	0.0617	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.007	14
3.	Beryllium, Total (7440-41-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
4.	Cadmium, Total (7440-43-9)	No	Present	0.0000	0.0000	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.000	14
5.	Chromium, Total (7440-47-3)	No	Absent	-	-	0	-	0	No	Present	0.3430	0.0094	60	-	0	No	Absent	-	-	0	-	0
6.	Copper, Total (7440-50-8)	No	Present	0.0019	0.0018	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.004	14
7.	Lead, Total (7439-92-1)	No	Present	0.0006	0.0005	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.003	14
8.	Mercury, Total (7439-97-6)	No	Present	0.0023	0.0014	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.004	14
9.	Nickel, Total (7440-02-0)	No	Present	0.0063	0.0055	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.043	14
10.	Selenium, Total (7782-49-2)	No	Present	0.0006	0.0005	3	-	0	No	Absent	-	-	0	-	0	No	Present	-	-	0	0.000	14
11.	Silver, Total (7440-22-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
12.	Thallium, Total (7440-28-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
13.	Zinc, Total (7440-66-6)	No	Present	0.0106	0.0101	3	-	0	No	Present	0.1000	0.0112	60	-	0	No	Present	-	-	0	0.011	14
14.	Cyanide, Total (57-12-5)	No	Present	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
15.	Phenols, Total	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
Section 2. Organic Toxic Pollutants (GC/MS Fraction – Volatile Compounds)																					
1.	Acrolein (107-02-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	Acrylontrile (107-13-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	Benzene (71-43-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	Bromoform (75-25-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5.	Carbon tetrachloride (56-23-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	Chlorobenzene (108-90-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	Chlorodibrompmethane (124-48-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	Chloroethane (75-00-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9.	2-chloroethylvinyl either (110-75-80)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Chloroform (67-66-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	Dichlorobromomethane (75-27-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12.	1,1-dichloroethane (75-34-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13.	1,2-dichloroethane (78-875)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14.	1,1-dichloroethylene (75-35-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15.	1,2-dichloropropane (78-87-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16.	1,3-dichloropropylene (542-75-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17.	Ethylbenzene (100-41-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18.	Methyl bromide (74-83-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19.	Methyl chloride (74-87-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20.	Methylene chloride (75-09-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21.	1,1,2,2-tetrachloroethane (79-34-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22.	Tetrachloroethlyne (127-18-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23.	Toluene (108-88-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24.	1,2-trans- dichloroethylene (156-60-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25.	1,1,1-trichloroethane (71-55-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
26.	1,1,2-trichloroethane (79-00-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
27.	Trichloroethylene (79-01-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
28.	Vinyl chloride (75-01-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 3. Organic Toxic Pollutants (Gas Chromatography/Mass Spectrometry (GS/MS) Fraction – Acid Compounds)																					
1.	2-chlorophenol (95-57-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	2,4-dichlorophenol (120-83-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	2,4-dimethylphenol (105-67-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	4,6-dinitro-o-cresol (534-52-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5.	2,4-dinitrophenol (51-28-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	2-nitrophenol (88-75-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	4-nitrophenol (100-02-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	p-chloro-m-cresol (59-50-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

	Outfall 001							Outfall 001B							Outfalls 002-005[1]						
Pollutant/Parameter (and CAS Number, if available)	**Testing Required**	**Believed Present/Absent**	**Eff. Max (mg/L)**	**Eff. Avg. (mg/L)**	**Eff. No. of Analyses**	**Inf. Avg (mg/L)**	**Inf. No. of Analyses**	**Testing Required**	**Believed Present/Absent**	**Eff. Max (mg/L)**	**Eff. Avg. (mg/L)**	**Eff. No. of Analyses**	**Inf. Avg (mg/L)**	**Inf. No. of Analyses**	**Testing Required**	**Believed Present/Absent**	**Eff. Max (mg/L)**	**Eff. Avg. (mg/L)**	**Eff. No. of Analyses**	**Inf. Avg (mg/L)**	**Inf. No. of Analyses**
9. Pentachlorophenol (87-86-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10. Phenol (108-95-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11. 2,4,6-trichlorophenol (88-05-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 4. Organic Toxic Pollutants (Gas Chromatography/Mass Spectrometry (GS/MS) Fraction – Base/Neutral Compounds)																					
1. Acenaphthene (83-32-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2. Acenaphthylene (208-96-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3. Anthracene (120-12-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4. Benzidine (92-97-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5. Benzo (a) anthracene (56-55-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6. Benzo (a) pyrene (50-32-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7. 3,4-benzofluoranthene (205-99-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8. Benzo (ghi) perylene (191-24-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9. Benzo (k) fluoranthene (207-08-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10. Bis (2-chloroethoxy) methane (111-91-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11. Bis (2-chloroethyl) ether (111-44-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12. Bis (2-chloroisopropyl) ether (102-80-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13. Bis (2-ethylhexyl) phthalate (85-68-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14. 4-bromophenyl phenyl ether (101-55-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15. Butyl benzyl phthalate (85-68-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16. 2-chlorophthalene (91-58-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17. 4-chlorophenyl phenyl ether (7005-72-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18. Chrysene (218-01-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19. Dibenzo (a,h) anthracene (53-70-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20. 1,2-dichlorobenzene (95-50-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21. 1,3-dichlorobenzene (541-73-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22. 1,4-dichlorobenzene (106-46-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23. 3,3-dichlorobenzidine (91-94-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24. Diethyl phthalate (84-66-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25. Dimethyl phthalate (131-11-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
26. Di-n-butyl phthalate (84-74-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
27. 2,4-dinotrotoluene (121-14-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
28. 2,6-dinotrotoluene (121-14-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
29. Di-n-octyl phthalate (117-84-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
30. 1,2-Diphenylhydrazine (122-66-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
31. Fluoranthene (206-44-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
32. Fluorene (86-37-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
33. Hexachlorobenzene (118-74-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
34. Hexachlorobutadiene (87-68-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
35. Hexachlorocyclopentadiene (77-47-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
36. Hexachloroethane (67-72-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
37. Indeno (1,2,3-cd) pyrene (193-39-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
38. Isophorone (78-59-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
39. Naphthalene (91-20-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
40. Nitrobenzene (98-95-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
41. N-nitrosodimethylamine (62-75-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
42. N-nitrosodi-n- propylamine (621-64-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
43. N-nitrosodiphenylamine (86-30-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
44. Phenanthrene (85-01-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
45. Pyrene (129-00-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
46. 1,2,4-trichlorobenzene (120-82-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 5. Organic Toxic Pollutants (Gas Chromatography/Mass Spectrometry (GS/MS) Fraction – Pesticides)																					
1. Aldrin (309-00-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2. α-BHC (319-84-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3. β-BHC (319-85-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4. γ-BHC (58-89-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

		Outfall 001						Outfall 001B						Outfalls 002-005[1]					
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
5.	δ-BHC (319-86-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	Chlorodane (57-74-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	4,4'-DDT (50-29-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	4,4'-DDE (72-55-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9.	4,4'-DDD (72-54-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Dieldrin (60-57-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	α-endosulfan (115-29-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12.	β-endosulfan (115-29-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13.	Endosulfan sulfate (1031-07-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14.	Endrin (72-20-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15.	Endrin aldehyde (7421-93-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16.	Heptachlor (76-44-8)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17.	Heptachlor epoxide (1024-57-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18.	PCB-1242 (53469-21-9)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19.	PCB-1254 (11097-69-1)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20.	PCB-1221 (11104-28-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21.	PCB-1232 (11141-16-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22.	PCB-1248 (12672-29-6)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23.	PCB-1260 (11096-82-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24.	PCB-1016 (12674-11-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25.	Toxaphene (8001-35-2)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle. Although indicated pollutant has been detected at similar mineral return outfalls, no monitoring data is available.

2. No monitoring data is available, although indicated pollutant has been detected at similar outfalls.

Table B. Toxic Metals, Cyanide, Total Phenols, and

		Outfall 006							Outfall 007							Outfall 008						
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
Section 1. Toxic Metals, Cyanide, and Total Phen																						
1.	Antimony, Total (7440-36-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
2.	Arsenic, Total (7440-38-0)	No	Present	1.3600	0.4398	17	0.007	14	No	Present	0.1470	0.1330	3	0.007	14	No	Present	0.5540	0.2485	13	0.007	14
3.	Beryllium, Total (7440-41-7)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
4.	Cadmium, Total (7440-43-9)	No	Present	0.0002	0.0001	17	0.000	14	No	Present	0.0001	0.0001	3	0.000	14	No	Present	0.0002	0.0001	13	0.0001	14
5.	Chromium, Total (7440-47-3)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
6.	Copper, Total (7440-50-8)	No	Present	0.0048	0.0027	17	0.004	14	No	Present	0.0051	0.0036	3	0.004	14	No	Present	0.0040	0.0028	13	0.004	14
7.	Lead, Total (7439-92-1)	No	Present	0.0084	0.0041	17	0.003	14	No	Present	0.0373	0.0137	3	0.003	14	No	Present	0.0030	0.0018	13	0.003	14
8.	Mercury, Total (7439-97-6)	No	Present	0.0285	0.0121	17	0.004	14	No	Present	0.0158	0.0064	3	0.004	14	No	Present	0.0628	0.0179	13	0.004	14
9.	Nickel, Total (7440-02-0)	No	Present	0.4220	0.0977	17	0.043	14	No	Present	0.0702	0.0247	3	0.043	14	No	Present	0.0621	0.0185	13	0.043	14
10.	Selenium, Total (7782-49-2)	No	Present	0.0016	0.0009	17	0.000	14	No	Present	0.0006	0.0005	3	0.000	14	No	Present	0.0012	0.0007	13	0.000	14
11.	Silver, Total (7440-22-4)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
12.	Thallium, Total (7440-28-0)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
13.	Zinc, Total (7440-66-6)	No	Present	0.0382	0.0158	17	0.011	14	No	Present	0.0085	0.0073	3	0.011	14	No	Present	0.0194	0.0083	13	0.011	14
14.	Cyanide, Total (57-12-5)	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
15.	Phenols, Total	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0	No	Absent	-	-	0	-	0
Section 2. Organic Toxic Pollutants (GC/MS Fracti																						
1.	Acrolein (107-02-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	Acrylontrile (107-13-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	Benzene (71-43-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	Bromoform (75-25-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5.	Carbon tetrachloride (56-23-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	Chlorobenzene (108-90-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	Chlorodibrompmethane (124-48-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	Chloroethane (75-00-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9.	2-chloroethylvinyl either (110-75-80)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Chloroform (67-66-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	Dichlorobromomethane (75-27-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12.	1,1-dichloroethane (75-34-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13.	1,2-dichloroethane (78-875)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14.	1,1-dichloroethylene (75-35-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15.	1,2-dichloropropane (78-87-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16.	1,3-dichloropropylene (542-75-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17.	Ethylbenzene (100-41-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18.	Methyl bromide (74-83-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19.	Methyl chloride (74-87-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20.	Methylene chloride (75-09-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21.	1,1,2,2-tetrachloroethane (79-34-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22.	Tetrachloroethlyne (127-18-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23.	Toluene (108-88-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24.	1,2-trans- dichloroethylene (156-60-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25.	1,1,1-trichloroethane (71-55-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
26.	1,1,2-trichloroethane (79-00-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
27.	Trichloroethylene (79-01-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
28.	Vinyl chloride (75-01-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 3. Organic Toxic Pollutants (Gas Chromat																						
1.	2-chlorophenol (95-57-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	2,4-dichlorophenol (120-83-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	2,4-dimethylphenol (105-67-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	4,6-dinitro-o-cresol (534-52-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5.	2,4-dinitrophenol (51-28-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	2-nitrophenol (88-75-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	4-nitrophenol (100-02-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	p-chloro-m-cresol (59-50-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

		Outfall 006							Outfall 007							Outfall 008						
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
9.	Pentachlorophenol (87-86-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Phenol (108-95-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	2,4,6-trichlorophenol (88-05-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 4. Organic Toxic Pollutants (Gas Chromat																						
1.	Acenaphthene (83-32-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	Acenaphthylene (208-96-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	Anthracene (120-12-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	Benzidine (92-97-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
5.	Benzo (a) anthracene (56-55-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	Benzo (a) pyrene (50-32-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	3,4-benzofluoranthene (205-99-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	Benzo (ghi) perylene (191-24-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9.	Benzo (k) fluoranthene (207-08-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Bis (2-chloroethoxy) methane (111-91-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	Bis (2-chloroethyl) ether (111-44-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12.	Bis (2-chloroisopropyl) ether (102-80-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13.	Bis (2-ethylhexyl) phthalate (85-68-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14.	4-bromophenyl phenyl ether (101-55-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15.	Butyl benzyl phthalate (85-68-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16.	2-chlorophthalene (91-58-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17.	4-chlorophenyl phenyl ether (7005-72-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18.	Chrysene (218-01-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19.	Dibenzo (a,h) anthracene (53-70-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20.	1,2-dichlorobenzene (95-50-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21.	1,3-dichlorobenzene (541-73-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22.	1,4-dichlorobenzene (106-46-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23.	3,3-dichlorobenzidine (91-94-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24.	Diethyl phthalate (84-66-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25.	Dimethyl phthalate (131-11-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
26.	Di-n-butyl phthalate (84-74-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
27.	2,4-dinotrotoluene (121-14-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
28.	2,6-dinotrotoluene (121-14-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
29.	Di-n-octyl phthalate (117-84-0)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
30.	1,2-Diphenylhydrazine (122-66-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
31.	Fluoranthene (206-44-0)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
32.	Fluorene (86-37-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
33.	Hexachlorobenzene (118-74-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
34.	Hexachlorobutadiene (87-68-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
35.	Hexachlorocyclopentadiene (77-47-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
36.	Hexachloroethane (67-72-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
37.	Indeno (1,2,3-cd) pyrene (193-39-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
38.	Isophorone (78-59-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
39.	Naphthalene (91-20-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
40.	Nitrobenzene (98-95-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
41.	N-nitrosodimethylamine (62-75-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
42.	N-nitrosodi-n- propylamine (621-64-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
43.	N-nitrosodiphenylamine (86-30-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
44.	Phenanthrene (85-01-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
45.	Pyrene (129-00-0)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
46.	1,2,4-trichlorobenzene (120-82-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
Section 5. Organic Toxic Pollutants (Gas Chromat																						
1.	Aldrin (309-00-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
2.	α-BHC (319-84-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
3.	β-BHC (319-85-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
4.	γ-BHC (58-89-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

		Outfall 006							Outfall 007							Outfall 008						
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
5.	δ-BHC (319-86-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
6.	Chlorodane (57-74-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
7.	4,4'-DDT (50-29-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
8.	4,4'-DDE (72-55-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
9.	4,4'-DDD (72-54-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
10.	Dieldrin (60-57-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
11.	α-endosulfan (115-29-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
12.	β-endosulfan (115-29-7)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
13.	Endosulfan sulfate (1031-07-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
14.	Endrin (72-20-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
15.	Endrin aldehyde (7421-93-4)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
16.	Heptachlor (76-44-8)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
17.	Heptachlor epoxide (1024-57-3)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
18.	PCB-1242 (53469-21-9)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
19.	PCB-1254 (11097-69-1)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
20.	PCB-1221 (11104-28-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
21.	PCB-1232 (11141-16-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
22.	PCB-1248 (12672-29-6)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
23.	PCB-1260 (11096-82-5)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
24.	PCB-1016 (12674-11-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0
25.	Toxaphene (8001-35-2)	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0	Yes	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle
2. No monitoring data is available, although indicated p

Table B. Toxic Metals, Cyanide, Total Phenols, and

		Outfall 009[2]					
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
Section 1. Toxic Metals, Cyanide, and Total Phen								
1.	Antimony, Total (7440-36-0)	No	Absent	-	-	0	-	0
2.	Arsenic, Total (7440-38-0)	No	Present	-	-	0	0.007	14
3.	Beryllium, Total (7440-41-7)	No	Absent	-	-	0	-	0
4.	Cadmium, Total (7440-43-9)	No	Present	-	-	0	0.000	14
5.	Chromium, Total (7440-47-3)	No	Absent	-	-	0	-	0
6.	Copper, Total (7440-50-8)	No	Present	-	-	0	0.004	14
7.	Lead, Total (7439-92-1)	No	Present	-	-	0	0.003	14
8.	Mercury, Total (7439-97-6)	No	Present	-	-	0	0.004	14
9.	Nickel, Total (7440-02-0)	No	Present	-	-	0	0.043	14
10.	Selenium, Total (7782-49-2)	No	Present	-	-	0	0.000	14
11.	Silver, Total (7440-22-4)	No	Absent	-	-	0	-	0
12.	Thallium, Total (7440-28-0)	No	Absent	-	-	0	-	0
13.	Zinc, Total (7440-66-6)	No	Present	-	-	0	0.011	14
14.	Cyanide, Total (57-12-5)	No	Absent	-	-	0	-	0
15.	Phenols, Total	No	Absent	-	-	0	-	0
Section 2. Organic Toxic Pollutants (GC/MS Fracti								
1.	Acrolein (107-02-8)	No	Absent	-	-	0	-	0
2.	Acrylontrile (107-13-1)	No	Absent	-	-	0	-	0
3.	Benzene (71-43-2)	No	Absent	-	-	0	-	0
4.	Bromoform (75-25-2)	No	Absent	-	-	0	-	0
5.	Carbon tetrachloride (56-23-5)	No	Absent	-	-	0	-	0
6.	Chlorobenzene (108-90-7)	No	Absent	-	-	0	-	0
7.	Chlorodibrompmethane (124-48-1)	No	Absent	-	-	0	-	0
8.	Chloroethane (75-00-3)	No	Absent	-	-	0	-	0
9.	2-chloroethylvinyl either (110-75-80)	No	Absent	-	-	0	-	0
10.	Chloroform (67-66-3)	No	Absent	-	-	0	-	0
11.	Dichlorobromomethane (75-27-4)	No	Absent	-	-	0	-	0
12.	1,1-dichloroethane (75-34-3)	No	Absent	-	-	0	-	0
13.	1,2-dichloroethane (78-875)	No	Absent	-	-	0	-	0
14.	1,1-dichloroethylene (75-35-4)	No	Absent	-	-	0	-	0
15.	1,2-dichloropropane (78-87-5)	No	Absent	-	-	0	-	0
16.	1,3-dichloropropylene (542-75-6)	No	Absent	-	-	0	-	0
17.	Ethylbenzene (100-41-4)	No	Absent	-	-	0	-	0
18.	Methyl bromide (74-83-9)	No	Absent	-	-	0	-	0
19.	Methyl chloride (74-87-3)	No	Absent	-	-	0	-	0
20.	Methylene chloride (75-09-2)	No	Absent	-	-	0	-	0
21.	1,1,2,2-tetrachloroethane (79-34-5)	No	Absent	-	-	0	-	0
22.	Tetrachloroethlyne (127-18-4)	No	Absent	-	-	0	-	0
23.	Toluene (108-88-3)	No	Absent	-	-	0	-	0
24.	1,2-trans- dichloroethylene (156-60-5)	No	Absent	-	-	0	-	0
25.	1,1,1-trichloroethane (71-55-6)	No	Absent	-	-	0	-	0
26.	1,1,2-trichloroethane (79-00-5)	No	Absent	-	-	0	-	0
27.	Trichloroethylene (79-01-6)	No	Absent	-	-	0	-	0
28.	Vinyl chloride (75-01-4)	No	Absent	-	-	0	-	0
Section 3. Organic Toxic Pollutants (Gas Chromat								
1.	2-chlorophenol (95-57-8)	No	Absent	-	-	0	-	0
2.	2,4-dichlorophenol (120-83-2)	No	Absent	-	-	0	-	0
3.	2,4-dimethylphenol (105-67-9)	No	Absent	-	-	0	-	0
4.	4,6-dinitro-o-cresol (534-52-1)	No	Absent	-	-	0	-	0
5.	2,4-dinitrophenol (51-28-5)	No	Absent	-	-	0	-	0
6.	2-nitrophenol (88-75-5)	No	Absent	-	-	0	-	0
7.	4-nitrophenol (100-02-7)	No	Absent	-	-	0	-	0
8.	p-chloro-m-cresol (59-50-7)	No	Absent	-	-	0	-	0

		Outfall 009[2]						
	Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
9.	Pentachlorophenol (87-86-5)	No	Absent	-	-	0	-	0
10.	Phenol (108-95-2)	No	Absent	-	-	0	-	0
11.	2,4,6-trichlorophenol (88-05-2)	No	Absent	-	-	0	-	0
Section 4. Organic Toxic Pollutants (Gas Chromat								
1.	Acenaphthene (83-32-9)	No	Absent	-	-	0	-	0
2.	Acenaphthylene (208-96-8)	No	Absent	-	-	0	-	0
3.	Anthracene (120-12-7)	No	Absent	-	-	0	-	0
4.	Benzidine (92-97-5)	No	Absent	-	-	0	-	0
5.	Benzo (a) anthracene (56-55-3)	No	Absent	-	-	0	-	0
6.	Benzo (a) pyrene (50-32-8)	No	Absent	-	-	0	-	0
7.	3,4-benzofluoranthene (205-99-2)	No	Absent	-	-	0	-	0
8.	Benzo (ghi) perylene (191-24-2)	No	Absent	-	-	0	-	0
9.	Benzo (k) fluoranthene (207-08-9)	No	Absent	-	-	0	-	0
10.	Bis (2-chloroethoxy) methane (111-91-1)	No	Absent	-	-	0	-	0
11.	Bis (2-chloroethyl) ether (111-44-4)	No	Absent	-	-	0	-	0
12.	Bis (2-chloroisopropyl) ether (102-80-1)	No	Absent	-	-	0	-	0
13.	Bis (2-ethylhexyl) phthalate (85-68-7)	No	Absent	-	-	0	-	0
14.	4-bromophenyl phenyl ether (101-55-3)	No	Absent	-	-	0	-	0
15.	Butyl benzyl phthalate (85-68-7)	No	Absent	-	-	0	-	0
16.	2-chlorophthalene (91-58-7)	No	Absent	-	-	0	-	0
17.	4-chlorophenyl phenyl ether (7005-72-3)	No	Absent	-	-	0	-	0
18.	Chrysene (218-01-9)	No	Absent	-	-	0	-	0
19.	Dibenzo (a,h) anthracene (53-70-3)	No	Absent	-	-	0	-	0
20.	1,2-dichlorobenzene (95-50-1)	No	Absent	-	-	0	-	0
21.	1,3-dichlorobenzene (541-73-1)	No	Absent	-	-	0	-	0
22.	1,4-dichlorobenzene (106-46-7)	No	Absent	-	-	0	-	0
23.	3,3-dichlorobenzidine (91-94-1)	No	Absent	-	-	0	-	0
24.	Diethyl phthalate (84-66-2)	No	Absent	-	-	0	-	0
25.	Dimethyl phthalate (131-11-3)	No	Absent	-	-	0	-	0
26.	Di-n-butyl phthalate (84-74-2)	No	Absent	-	-	0	-	0
27.	2,4-dinotrotoluene (121-14-2)	No	Absent	-	-	0	-	0
28.	2,6-dinotrotoluene (121-14-2)	No	Absent	-	-	0	-	0
29.	Di-n-octyl phthalate (117-84-0)	No	Absent	-	-	0	-	0
30.	1,2-Diphenylhydrazine (122-66-7)	No	Absent	-	-	0	-	0
31.	Fluoranthene (206-44-0)	No	Absent	-	-	0	-	0
32.	Fluorene (86-37-7)	No	Absent	-	-	0	-	0
33.	Hexachlorobenzene (118-74-1)	No	Absent	-	-	0	-	0
34.	Hexachlorobutadiene (87-68-3)	No	Absent	-	-	0	-	0
35.	Hexachlorocyclopentadiene (77-47-4)	No	Absent	-	-	0	-	0
36.	Hexachloroethane (67-72-1)	No	Absent	-	-	0	-	0
37.	Indeno (1,2,3-cd) pyrene (193-39-5)	No	Absent	-	-	0	-	0
38.	Isophorone (78-59-1)	No	Absent	-	-	0	-	0
39.	Naphthalene (91-20-3)	No	Absent	-	-	0	-	0
40.	Nitrobenzene (98-95-3)	No	Absent	-	-	0	-	0
41.	N-nitrosodimethylamine (62-75-9)	No	Absent	-	-	0	-	0
42.	N-nitrosodi-n- propylamine (621-64-7)	No	Absent	-	-	0	-	0
43.	N-nitrosodiphenylamine (86-30-6)	No	Absent	-	-	0	-	0
44.	Phenanthrene (85-01-8)	No	Absent	-	-	0	-	0
45.	Pyrene (129-00-0)	No	Absent	-	-	0	-	0
46.	1,2,4-trichlorobenzene (120-82-1)	No	Absent	-	-	0	-	0
Section 5. Organic Toxic Pollutants (Gas Chromat								
1.	Aldrin (309-00-2)	No	Absent	-	-	0	-	0
2.	α-BHC (319-84-6)	No	Absent	-	-	0	-	0
3.	β-BHC (319-85-7)	No	Absent	-	-	0	-	0
4.	γ-BHC (58-89-9)	No	Absent	-	-	0	-	0

		Outfall 009[2]					
Pollutant/Parameter (and CAS Number, if available)	Testing Required	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
5. δ-BHC (319-86-8)	No	Absent	-	-	0	-	0
6. Chlorodane (57-74-9)	No	Absent	-	-	0	-	0
7. 4,4'-DDT (50-29-3)	No	Absent	-	-	0	-	0
8. 4,4'-DDE (72-55-9)	No	Absent	-	-	0	-	0
9. 4,4'-DDD (72-54-8)	No	Absent	-	-	0	-	0
10. Dieldrin (60-57-1)	No	Absent	-	-	0	-	0
11. α-endosulfan (115-29-7)	No	Absent	-	-	0	-	0
12. β-endosulfan (115-29-7)	No	Absent	-	-	0	-	0
13. Endosulfan sulfate (1031-07-8)	No	Absent	-	-	0	-	0
14. Endrin (72-20-8)	No	Absent	-	-	0	-	0
15. Endrin aldehyde (7421-93-4)	No	Absent	-	-	0	-	0
16. Heptachlor (76-44-8)	No	Absent	-	-	0	-	0
17. Heptachlor epoxide (1024-57-3)	No	Absent	-	-	0	-	0
18. PCB-1242 (53469-21-9)	No	Absent	-	-	0	-	0
19. PCB-1254 (11097-69-1)	No	Absent	-	-	0	-	0
20. PCB-1221 (11104-28-2)	No	Absent	-	-	0	-	0
21. PCB-1232 (11141-16-5)	No	Absent	-	-	0	-	0
22. PCB-1248 (12672-29-6)	No	Absent	-	-	0	-	0
23. PCB-1260 (11096-82-5)	No	Absent	-	-	0	-	0
24. PCB-1016 (12674-11-2)	No	Absent	-	-	0	-	0
25. Toxaphene (8001-35-2)	No	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle
2. No monitoring data is available, although indicated p

Table C. Certain Conventional and Non-Conventional Pollutants

		Outfall 001						Outfall 001B						Outfall 002-005[1]					
	Pollutant/Parameter (and CAS Number, if available)	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
1.	Bromide(24959-67-9)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
2.	Chlorine, total residual	Present	0.07	0.02	6	-	0	Present	0.50	0.06	60	-	0	Absent	-	-	0	-	0
3.	Color	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
4.	E.coli	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
5.	Fluoride(16984-48-8)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
6.	Nitrate	Present	0.3	0.2	3	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
7.	Nitrite	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
8.	Nitrogen, total organic (as N)	Present	4.5	4.4	3	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
9.	Oil and Grease	Present	8.0	0.1	64	-	0	Present	0.0	0.0	60	-	0	Present	-	-	0	-	0
10.	Phosphorus (as P), total(7723-14-0)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
11.	Sulfate (as SO4)(14808-798-)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
12.	Sulfide (as S)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
13.	Sulfite (as SO3)(14265-45-3)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
14.	Surfactants	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
15.	Aluminum, total(7429-90-5)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
16.	Barium, total(7440-39-3)	Present	0.128	0.127	3	-	0	Absent	-	-	0	-	0	Present	-	-	0	0.1829	14
17.	Boron, total(7440-42-8)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
18.	Cobalt, total(7440-48-4)	Present	0.001	0.001	3	-	0	Absent	-	-	0	-	0	Present	-	-	0	0.0008	14
19.	Iron, total(7439-89-6)	Present	0.083	0.065	6	-	0	Absent	-	-	0	-	0	Present	-	-	0	2.513	28
20.	Magnesium, total(7439-95-4)	Present	3,540	3,470	3	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
21.	Molybdenum, total(7439-95-4)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
22.	Manganese, total(7439-95-5)	Present	0.380	0.356	3	-	0	Absent	-	-	0	-	0	Present	-	-	0	0.0211	14
23.	Tin, total(7440-31-5)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
24.	Titanium, total(7440-32-6)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
25.	Radioactivity	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Alpha, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Beta, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Radium, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Radium 226, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle. Although indicated pollutant has been detected at similar mineral return outfalls, no monitoring data is available.

2. No monitoring data is available, although indicated pollutant has been detected at similar outfalls.

Table C. Certain Conventional and Non-Conventio

		Outfall 006						Outfall 007						Outfall 008					
	Pollutant/Parameter (and CAS Number, if available)	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses	Believed Present/Absent	Eff. Max (mg/L)	Eff. Avg. (mg/L)	Eff. No. of Analyses	Inf. Avg (mg/L)	Inf. No. of Analyses
1.	Bromide(24959-67-9)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
2.	Chlorine, total residual	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Present	0.06	0.03	3	-	0
3.	Color	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
4.	E.coli	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
5.	Fluoride(16984-48-8)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
6.	Nitrate	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Present	0.0	0.0	3	-	0
7.	Nitrite	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
8.	Nitrogen, total organic (as N)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Present	5.8	4.7	3	-	0
9.	Oil and Grease	Present	0.0	0.0	24	-	0	Present	0.0	0.0	1	-	0	Present	6.0	0.3	20	-	0
10.	Phosphorus (as P), total(7723-14-0)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
11.	Sulfate (as SO4)(14808-798-)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
12.	Sulfide (as S)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
13.	Sulfite (as SO3)(14265-45-3)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
14.	Surfactants	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
15.	Aluminum, total(7429-90-5)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
16.	Barium, total(7440-39-3)	Present	0.816	0.180	17	0.1829	14	Present	0.211	0.199	3	0.1829	14	Present	0.215	0.123	13	0.1829	14
17.	Boron, total(7440-42-8)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
18.	Cobalt, total(7440-48-4)	Present	0.002	0.001	17	0.0008	14	Present	0.001	0.000	3	0.0008	14	Present	0.001	0.000	13	0.0008	14
19.	Iron, total(7439-89-6)	Present	16.300	1.197	34	2.513	28	Present	0.821	0.345	6	2.513	28	Present	0.310	0.080	26	2.513	28
20.	Magnesium, total(7439-95-4)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Present	5,900	5,820	3	-	0
21.	Molybdenum, total(7439-95-4)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
22.	Manganese, total(7439-95-5)	Present	0.499	0.227	17	0.0211	14	Present	0.106	0.054	3	0.0211	14	Present	0.073	0.017	13	0.0211	14
23.	Tin, total(7440-31-5)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
24.	Titanium, total(7440-32-6)	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
25.	Radioactivity	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Alpha, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Beta, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Radium, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0
	Radium 226, total	Absent	-	-	0	-	0	Absent	-	-	0	-	0	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle
2. No monitoring data is available, although indicated p

Table C. Certain Conventional and Non-Conventio

		Outfall 009[2]					
	Pollutant/Parameter (and CAS Number, if available)	**Believed Present/Absent**	**Eff. Max (mg/L)**	**Eff. Avg. (mg/L)**	**Eff. No. of Analyses**	**Inf. Avg (mg/L)**	**Inf. No. of Analyses**
1.	Bromide(24959-67-9)	Absent	-	-	0	-	0
2.	Chlorine, total residual	Absent	-	-	0	-	0
3.	Color	Absent	-	-	0	-	0
4.	E.coli	Absent	-	-	0	-	0
5.	Fluoride(16984-48-8)	Absent	-	-	0	-	0
6.	Nitrate	Absent	-	-	0	-	0
7.	Nitrite	Absent	-	-	0	-	0
8.	Nitrogen, total organic (as N)	Absent	-	-	0	-	0
9.	Oil and Grease	Present	0.0	0.0	14	-	0
10.	Phosphorus (as P), total(7723-14-0)	Absent	-	-	0	-	0
11.	Sulfate (as SO4)(14808-798-)	Absent	-	-	0	-	0
12.	Sulfide (as S)	Absent	-	-	0	-	0
13.	Sulfite (as SO3)(14265-45-3)	Absent	-	-	0	-	0
14.	Surfactants	Absent	-	-	0	-	0
15.	Aluminum, total(7429-90-5)	Absent	-	-	0	-	0
16.	Barium, total(7440-39-3)	Present	-	-	0	0.1829	14
17.	Boron, total(7440-42-8)	Absent	-	-	0	-	0
18.	Cobalt, total(7440-48-4)	Present	-	-	0	0.0008	14
19.	Iron, total(7439-89-6)	Present	-	-	0	2.513	28
20.	Magnesium, total(7439-95-4)	Absent	-	-	0	-	0
21.	Molybdenum, total(7439-95-4)	Absent	-	-	0	-	0
22.	Manganese, total(7439-95-5)	Present	-	-	0	0.0211	14
23.	Tin, total(7440-31-5)	Absent	-	-	0	-	0
24.	Titanium, total(7440-32-6)	Absent	-	-	0	-	0
25.	Radioactivity	Absent	-	-	0	-	0
	Alpha, total	Absent	-	-	0	-	0
	Beta, total	Absent	-	-	0	-	0
	Radium, total	Absent	-	-	0	-	0
	Radium 226, total	Absent	-	-	0	-	0

1. Outfall was not used during the previous permit cycle
2. No monitoring data is available, although indicated p

Attachment 5 – Process Description

General Process Overview

The solar evaporation mineral mining operation has been operating on the shores of the Great Salt Lake (GSL) west of Ogden, Utah since approximately 1968 and has been owned and operated by Compass Minerals since 1993. The facility extracts and harvests salt and minerals from the Great Salt Lake to produce a number of Sulfate of Potash (SOP), salt, and magnesium chloride products. The processing of the lake water into final products occurs in four areas: the solar evaporation ponds complex, the Salt Plant, the SOP Plant, and the Magnesium Plant. Each processing area is described below and illustrated in the water balance figures provided in Attachment 1.

Solar Evaporation Ponds Complex

The mineral extraction process begins by pumping water from Gunnison Bay of the GSL into the West Desert solar ponds on the west side of the GSL. Here, the salt water concentrates through solar evaporation to a higher density than the raw lake water. Once the concentrated brine achieves a sufficient density, it is discharged through Outfall 009 (Behrens Trench) where the dense concentrated brine flows through the trench below the lake surface to a pump station at Promontory Point. From Promontory Point, the brine is pumped to the east solar evaporation ponds complex. Here, the brine slowly flows through a number of ponds where it continues to concentrate through solar evaporation.

As sodium chloride precipitates in the salt deposition ponds, the remaining liquid becomes increasingly saturated with potassium and magnesium salts. Once the brine becomes saturated with potassium salts, it is "back mixed" with recycle flows from the SOP Plant and excess magnesium chloride brine and pumped to the "West Buffer" ponds (see process descriptions below for the SOP and Magnesium Plants). This back mixing causes the brine to become supersaturated with sodium chloride, while remaining below saturation for potassium salts. The excess sodium chloride precipitates in the West Buffer before being transferred to the potash deposition ponds. After potash deposition, the remaining brine contains high concentrations of magnesium chloride, which is pumped to the Magnesium Plant to produce deicing and dust suppression products. At the end of the solar evaporation season, a number of salt and potash deposition ponds are drained to allow harvesting of the precipitated salts. Pond floors are scraped and the harvested minerals are loaded into haul trucks to be taken to the Salt and SOP Plants.

Because sodium chloride precipitates earlier in the evaporation process and precipitated volumes far exceed market demand, only a portion of the ponds are harvested annually and large amounts of sodium chloride remain in various ponds after evaporation. In accordance with a royalty agreement with the Utah Division of Natural Resources, this excess sodium chloride must be returned to the GSL. Fresh water is pumped from the Bear River into the salt ponds to dissolve the accumulated minerals and is discharged into the GSL and Bear River Bay through Outfalls 002 – 008, as operations dictate. Ponds and Outfalls used for mineral return rotate on an annual basis, with Outfalls 006 and 008 being the primary outfalls used in the previous permit term. Mineral return operations typically occur in the non-solar season and are limited by fresh water flows from the Bear River. In high water years, it is feasible to conduct mineral return activities year-round. However, in most years, mineral return ends in late March as upstream water users increase agricultural diversions and flow at the pump station will not sustain

operations. As outlined Attachment 6, Compass is requesting an extension of the mineral return activity season to correspond with Bear River flows. It is also requesting that the permit be amended to cover flushing of undesirable salt build up from ponds 88, 89, 91, 94, 95 and 99 through Outfall 001 and Outfall 002.

Salt Plant

Sodium chloride harvested from the solar evaporation pond complex is "washed" of organic material and other impurities. After washing, the wet salt is directed to either the "Road Salt" stockpile for highway de-icing operations or to a double-wing stacker and stockpiled for feed to the Salt Plant (see Figure 6). Salt directed to the Road Salt stockpile is treated with magnesium chloride brine and yellow prussiate of soda (YPS), an anti-caking compound. Overspray and storm water runoff from the Road Salt stockpile is directed to a nearby infiltration area to prevent discharges to the GSL.

The salt directed to the Salt Plant is used to produce a number of bulk or packaged products including: road deicing salt, chemical salt for the chloro-alkali industry, and various consumer grade products in unit quantities such as water softening salt, pool salt, and agricultural salt. The majority of these products are unaltered, though a portion may be treated with certain additives, such as calcium stearate, trace minerals, mineral oil, citric acid and disodium phosphate, to improve the quality of the final product. See Table 2 for a list of discharges from the Salt Plant that contribute flow to Outfall 001.

Sulfate of Potash Plant

Potassium salts harvested in the potash solar evaporation ponds contain a mixture of schoenite, kainite, carnalite, hexahydrite and halite. In the SOP Plant this potash is crushed, screened and then slurried with water and pumped to a flotation tank. In the flotation tank, the slurried potash is treated with a defoaming agent, a reducing agent, and a surfactant to drive the chemical conversion of potash to schoenite. The schoenite is then thickened in a series of tanks and a vacuum filter. The resulting cake is fed to a crystallizer to convert the schoenite to sulfate of potash (SOP). The SOP is then vacuum filtered again and dried. Once dried, a portion of the SOP material is conveyed to the silos as finished standard SOP product. The remaining SOP is sent through the compaction process, where a number of formed products are produced with the addition of a binding agent (see Figure 7). Finished SOP products are conveyed from the silos to the SOP loadout facility where the majority is treated with a dedust oil prior to loading into railcar or trucks for transport offsite. See Table 2 for a list of discharges from the SOP Plant that contribute flow to Outfall 001.

Effluent generated from the SOP manufacturing process contains recoverable levels of potassium salts and is recycled back to the evaporation ponds for additional mineral recovery. Solids settle out and are primarily retained in Ponds 91 and 99, and to a lesser extent in downstream Ponds 88, 89, 94, and 95. Residual liquids are "back mixed" with the incoming brine in the West Buffer.

Magnesium Chloride Plant

The residual brine drained from the east solar evaporation ponds contains approximately 30 percent magnesium chloride. This brine is either sold directly to end users for deicing and dust control on roads or further processed into a number of liquid and solid products (see Figure 8). The brine directed to the Magnesium Chloride Plant contains approximately 2% sulfate, which is considered an impurity for the

purposes of the manufacturing process. This impurity is removed from the brine by adding calcium chloride in the reaction tank to precipitate calcium sulfate (synthetic gypsum). Flocculent and defoamer are then added in the thickener tank to separate the gypsum from the desulfated brine.

This desulfated brine, with or without additional additives to improve the performance of the product, may be marketed as a liquid deicing or dust suppression product, or may be processed further into a solid hexahydrate flake. During the flaking process, sodium hypochlorite is added to the desulfated brine solution to improve the color of the final product and is heated using evaporators to create a magnesium solution that can be cooled into a solid hexahydrate flake on a water-cooled belt.

Effluent generated by the Magnesium Chloride Plant is primarily pumped to the Gypsum Pond, an unlined pond located on the west side of the Magnesium Chloride Plant. Flows from the air scrubber and cooling tower are discharged to the Great Salt Lake through Outfall 001 (see Table 2).

Miscellaneous Processes

In addition to the four processing areas detailed above, there are a number of minor ancillary process activities that contribute flows to Outfall 001.

Boiler Plant

The SOP and Magnesium Chloride Plants utilize natural gas fired boilers for process heating. Boiler feed water is supplied by Weber Basin Water and undergoes a three stage pretreatment process which includes: softening, carbon filtration, and reverse osmosis. These three stages purify the water by demineralization and solids removal. A foam suppressant may also be added in small amounts to the boiler feed water to minimize foam formation. Periodically the pretreatment system becomes fouled with biological growth and must be flushed using a conventional biocide. Pretreated feed water is passed through the boilers where the flow is treated with conventional buffering agents for scale control, corrosion inhibition, and dissolved oxygen scavenging. Blowdown from the boilers as well as reject and flush water from the pretreatment system flows to a central collection tank where pH is adjusted prior to discharge. Boiler plant flows may either be consumed in the SOP plant or discharged internally at Outfall 001B. See Table 2 for a list of discharges from the Boiler Plant that contribute flow to Outfall 001.

Cooling Towers

Cooling towers are used in the SOP and magnesium chloride process areas. Blowdown from the SOP Plant cooling towers is directed to the effluent ditch and is discharged to the Great Salt Lake through Outfall 001. Blowdown from the Magnesium Chloride Plant is directed to the Gypsum Pond. The water used in these cooling towers is untreated, which causes a number of corrosion and biofouling issues and leads to premature failure of the fill media. Compass Minerals is proposing to treat the water going to the cooling towers to extend the reliability and life of the equipment. Compass Minerals is also proposing to reroute blowdown from the Magnesium Chloride Plant cooling tower to Outfall 001. Additional details on these proposed changes are provided in Attachment 6.

Compressors

Compass Minerals has a number of large compressors on site that provide compressed air for industrial processes. Condensate from these compressors contains trace amounts of oil and grease at a typical concentration of 15 ppm. To minimize the potential for oil to reach the Great Salt Lake, compressor condensate is treated using a multi-stage absorption unit that can remove oil and grease down to 5

ppm.

Truck and Rail Washing

Trucks and railcars previously used for shipping sodium chloride, SOP and magnesium chloride products are periodically rinsed with fresh water or steam. Rinse waters are routed to the effluent ditch and discharged to the Great Salt Lake through Outfall 001.

Mobile Equipment Maintenance

Compass Minerals has an extensive fleet of mobile equipment and vehicles that is operated in corrosive conditions. Mobile equipment and vehicles are routinely rinsed using water or steam to remove corrosive salt buildup and prolong the reliability and life of the equipment. No detergents or other chemicals are used in these cleaning activities, but effluents many contain traces of oil. Rinse waters are directed through an oil/water separator prior to draining to the effluent ditch and being discharged through Outfall 001.

Air Pollution Control Equipment

A number of baghouses and scrubbers are used throughout the facility to control air emissions. Where the collected dust cannot be recycled back into the process, it is typically slurried and directed to Outfall 001. Air pollution control equipment may also be periodically washed out to control internal buildup of material. An exception to this practice is the baghouse that controls air emissions from the trace mineral processing line in the Salt Plant. Air borne dust collected from this process is disposed of offsite.

Processing Equipment

Processing equipment in the Salt and SOP Plants, such as tanks, conveyors, screens, coolers and dryers, are periodically rinsed to control internal buildup of material. The equipment associated with magnesium chloride flake process at the Magnesium Chloride Plant may also be periodically rinsed to control buildup of material. These wash waters are typically discharged to Outfall 001.

Periodic washout of tanks and equipment associated with the desulfating process at the Magnesium Chloride Plant are directed to the gypsum pond.

Attachment 6. Proposed Permit Changes

Compass Minerals is proposing the following changes to the permit to reflect current operations and requirements.

Outfall 009 Ditch Extension

Compass Minerals requests that the permit language be updated to identify the new ditch used to convey effluent from the West Desert Ponds to Outfall 009. As salt deposits increase over time, the hydraulics of the ponds were altered and a ditch was dug to transfer concentrated brine to Behrens Trench. This change is administrative and has no impact on effluent characteristics or quantities.

Outfall 002 Coordinates Correction

The coordinates for Outfall 002 are reported incorrectly in the UPDES permit as latitude 41°15'54" N and longitude 112°15'03" W. The correct coordinates for this outfall are latitude 41°16'7" N and longitude 112°14'43" W. This change is administrative and has no impact on effluent characteristics or quantities.

Compliance Schedule Removal

Compass Minerals requests that Section I.C.3 (Compliance Schedule) be removed from the permit. This section addresses the Sampling and Analysis Plan (SAP) developed in conjunction with the 2012 settlement agreement. Monitoring results from this effort confirm that mineral return effluent rapidly mixes with freshwater from the Bear River and is diluted to background levels by the time it reaches the Union Pacific Causeway, which satisfies the original intent of the SAP and addresses the concerns in the settlement. Because the settlement has been fully satisfied, the SAP requirement should be removed from the permit.

Extension of Mineral Return Season

Compass Minerals is proposing to extend the mineral return discharge period to correspond with Bear River flows. This would extend through June for most years with potential for year-round discharge in peak water years. This change has been discussed with various stakeholders on the GSL, including the UDWQ, and concerns over impacts to birds feeding in the bitterns near the Outfalls have been raised. To alleviate these concerns, Compass Minerals commissioned Jacobs Engineering Group Inc. to conduct a year-long Outfall Bird Survey at the mineral return Outfalls from September 2017 to September 2018. Results of this survey confirm that birds are not using the mineral return Outfall locations or using them only temporarily as they move to richer feeding grounds. Bird use appears to be more dependent on seasonal bird movements and not reflective of Compass Minerals' operations. A copy of the Outfall Bird Survey report is included in Attachment 7.

Additional Pond Flushing

Similar to the mineral return process for the solar ponds complex, Compass Minerals is proposing that the permit be modified to allow periodically flush buildup of salts undesirable for the process from ponds 88, 89, 91, 94, 95, and 99 to the Great Salt Lake through Outfalls 001 and Outfall 002. This proposal was first presented in Compass' "Report on Mineral Return Activity During 2012 thru 2015…"

submitted to the Utah Division of Water Quality in October 2015. These ponds receive underflow from the SOP flotation tanks ("flotation tails") as well as overflow from the thickeners ("plant end liquor") and primarily contain a slurry of salts that are considered undesirable for the SOP manufacturing process. Flows to these ponds could potentially contain trace amounts of the additives used in the SOP manufacturing process. However, these additives do not contain constituents that are considered toxic or pose risk to human health or the environment. Additionally, these additives are used in such small quantities that they are expected to be undetectable at practical quantitation limits.

Boiler Plant Feed Water Pretreatment System

The boiler plant at Compass Minerals uses a reverse osmosis (RO) system to purify the makeup water for the boilers. The 4,100 gallon RO concentrate tank develops algae and other biological films over time and must be cleaned approximately three times per year. The current method for cleaning the tank involves dosing the tank with a concentrated bleach solution and aerating the tank for several days. The water is then diluted and drained to the discharge vault where it is further diluted and tested for total residual chlorine (TRC) before being discharged to Outfall 001B. Often, the bleach solution is not completely effective and can lead to difficulty in meeting the TRC limits contained in the facility UPDES permit. Compass Minerals requests that the permit be amended to provide the operational flexibility to use alternative cleaning agents, such as Spectrus BD1507, as needed. Cleaning agents to be used in the boiler plant will not contain a chemical identified as a priority pollutant in 40 CFR Part 423, Appendix A.

Dissolution of Salt Treated with Citric Acid

Citric acid is blended with salt as a preservative in a number of packaged salt products. Currently, approximately 1,000 lbs of salt treated with citric acid is diverted from the production line as off-specification salt each day of operation. This off-specification salt is sent offsite for disposal at a local landfill. Compass Minerals requests that the permit be amended to allow salts treated with citric acid to be dissolved and directed to Outfall 001. Due to the nature of citric acid and the low concentration in the salt, the flows from this proposed activity would not contain any contaminant that may present a threat to human health, the environment or to the designated uses of the GSL.

Cooling Tower Treatment

The makeup water to the cooling towers at the facility is not currently treated in any way. As a result, these cooling towers have a marked decrease in reliability and are prone to premature failure. Compass Minerals proposes to treat each cooling tower with conventional cooling tower treatment methods to control corrosion, scaling and biological film development. These conventional treatment methods will not contain a chemical identified as a priority pollutant in 40 CFR Part 423, Appendix A. Additionally, Compass Minerals would like to reroute blowdown from the Magnesium Chloride Plant cooling tower to Outfall 001 to reduce flow to the gypsum pond.

Mobile Shop Degreaser

Due to the corrosive nature of the Compass Minerals operating environment, mobile equipment must frequently be washed to remove salt buildup. Additionally, if maintenance or repairs must be completed on mobile equipment, it often must be washed before repairs can be completed. Wash water from this activity is passed through an oil/water separator prior to draining to Outfall 001. Currently, no cleaners

or degreasers are used during cleaning of mobile equipment. Compass Minerals proposes that cleaners or degreasers be allowed under the UPDES permit, so long as those chemicals are certified for direct release under the EPA's Safer Choice program and do not contain a chemical identified as a priority pollutant in 40 CFR 423, Appendix A.

Attachment 7. Outfall Bird Survey

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Subject	**Compass Minerals Outfall Bird Surveys**
Attention	Joe Havasi/Compass Minerals
From	Gary Santolo/Jacobs Engineering Group (Jacobs)
Date	December 17, 2018
Copies to	Jeff Den Bleyker/Jacobs

Compass Minerals operates a 55,000-acre solar evaporation pond complex on the Great Salt Lake (GSL) for the purpose of extracting various salts (for example, sodium chloride, sulfate of potash, and magnesium chloride) from the lake's brines (see Figure 1). Brine from GSL's North Arm (Gunnison Bay) is pumped through solar evaporation into a series of shallow ponds on the west shore of Gunnison Bay where the lake brine is concentrated. Salts are precipitated in these west ponds and the concentrated brine is transferred to a series of shallow ponds located on the east shore of Bear River Bay via Outfall 009, the Behrens Trench, and a canal system (see Figure 1). The brine is then further concentrated through solar evaporation in another extensive series of shallow ponds, leaving behind crystallized minerals. Target minerals are gathered throughout the evaporative process and processed to produce all-natural products for the market. It typically takes approximately 3 years from withdrawal of brines from GSL to creation of the final mineral product.

Unused minerals, originally extracted from GSL during the original bulk withdrawal, remain in the ponds after target minerals are harvested. These must be returned to GSL as required by Compass Minerals' Royalty Agreement with the Utah Department of Natural Resources. Less-saline waters from various sources (for example, Bear River Bay) are pumped into the ponds to dissolve unused minerals. Dissolved minerals contain only materials native to and originally withdrawn from GSL and are then discharged back to GSL via Outfalls 001-008, as necessary.

Compass Minerals has historically discharged its dissolved minerals back to GSL during the non-solar season when flows in Bear River Bay are the greatest (November through March). This results in rapid mixing and short residence times within the "Trapezoid" area (see Figure 3) prior to crossing under the Union Pacific Railroad (UPRR) causeway and into GSL (see Figure 1). Sampling completed from 2012 to 2015 as part of the 2012 Settlement Agreement concluded that:

1) Metal concentrations in Trapezoid waters are at Gilbert Bay background levels by the time waters cross under the UPRR causeway.
2) The dissolved minerals are not raising the concentrations of metals found in Gilbert Bay above ambient concentrations.

Recent mineral return operations over the last 5 years, however, have resulted in an excess accumulation of unused minerals in the shallow ponds. Compass Minerals will need to extend its mineral return period beyond the typical end in March through the month of October to return the required minerals back to GSL. Compass Minerals desires to understand if and how extending the mineral return period may affect concentrations of metals in Gilbert Bay and habitat in the Trapezoid.

1.0 Objectives

Jacobs conducted a Point Count bird survey at each of Compass Minerals' Outfalls 001-009 (9 sites; Figure 1-3) at approximately 1-month intervals from September 2017 to September 2018 (12 survey events). The bird surveys followed the protocol described in Compass Minerals' Field Sampling Plan dated September 2017. Observers documented bird abundance, diversity, and patterns of use for feeding and nesting from a point near the terminus of each outfall site and generally documented observations of birds in the mudflats near Outfalls 001-004 and the Trapezoid (near Outfalls 005-008).

2.0 Site Description

Outfalls 001–008 from Compass Minerals' East Ponds are located on the northeast shore of GSL, north of the UPRR causeway, near the confluence of Bear River Bay with Gilbert Bay of GSL (see Figures 1, 2, and 3). These outfalls are accessible through Compass Minerals' main entrance located off Highway 39 west of Ogden, Utah. Outfall 009 is located at Compass Minerals' West Ponds in Gunnison Bay (see Figure 5). This outfall is accessible via a controlled access on the UPRR causeway. Safety and security are paramount, thus access to the outfalls along the causeway, berms, and dikes is tightly controlled by both Compass Minerals and UPRR.

Outfalls 001-004 discharge onto a mudflat area bounded by Compass Minerals' dikes on the north and west, UPRR's causeway on the south, and Little Mountain on the east (see Figure 2). If the area is not flooded by backwater from Bear River Bay, flows typically concentrate and flow along the toe of Compass Minerals' dikes to a wide channel area between Compass Minerals' dikes and UPRR's causeway near Outfall 004. Water then flows to the west and enters the Trapezoid area (see Figure 3). There is no vegetation in or along the channel conveying these waters to the Trapezoid.

Outfalls 005-008 discharge directly to the Trapezoid, an area bounded by Compass Minerals' causeway on the north, Compass Minerals' dikes on the east and west, and UPRR's causeway on the south (see Figure 3). The Trapezoid has typically been flooded by GSL (when lake levels are higher than 4,195 feet) or with flowing water from Bear River Bay (October to July) when Compass Minerals has discharged its dissolved minerals from its outfalls. Flow from these outfalls has typically entered the open water of the Trapezoid and conveyed into Gilbert Bay. If lake levels are low and there is no flow from Bear River Bay, effluent would likely disperse out onto the mudflats where it would infiltrate, evaporate, or possibly flow under UPRR's causeway and into Gilbert Bay. Proximity to fluctuating Gilbert Bay water levels and resulting high salinity in the soils of the Trapezoid precludes most vegetation from being established in this area.

Outfall 009 flows into the Behrens Trench, which discharges to Gunnison Bay. The Behrens Trench begins on the west mudflats of Gunnison Bay. The trench submerges under the waters of Gunnison Bay and conveys concentrated brines along the bottom of Gunnison Bay to the east where the brines are pumped into a canal for use in Compass Minerals' East Ponds (see Figures 4 and 5).

Figure 1. Vicinity Map, Compass Minerals and Great Salt Lake

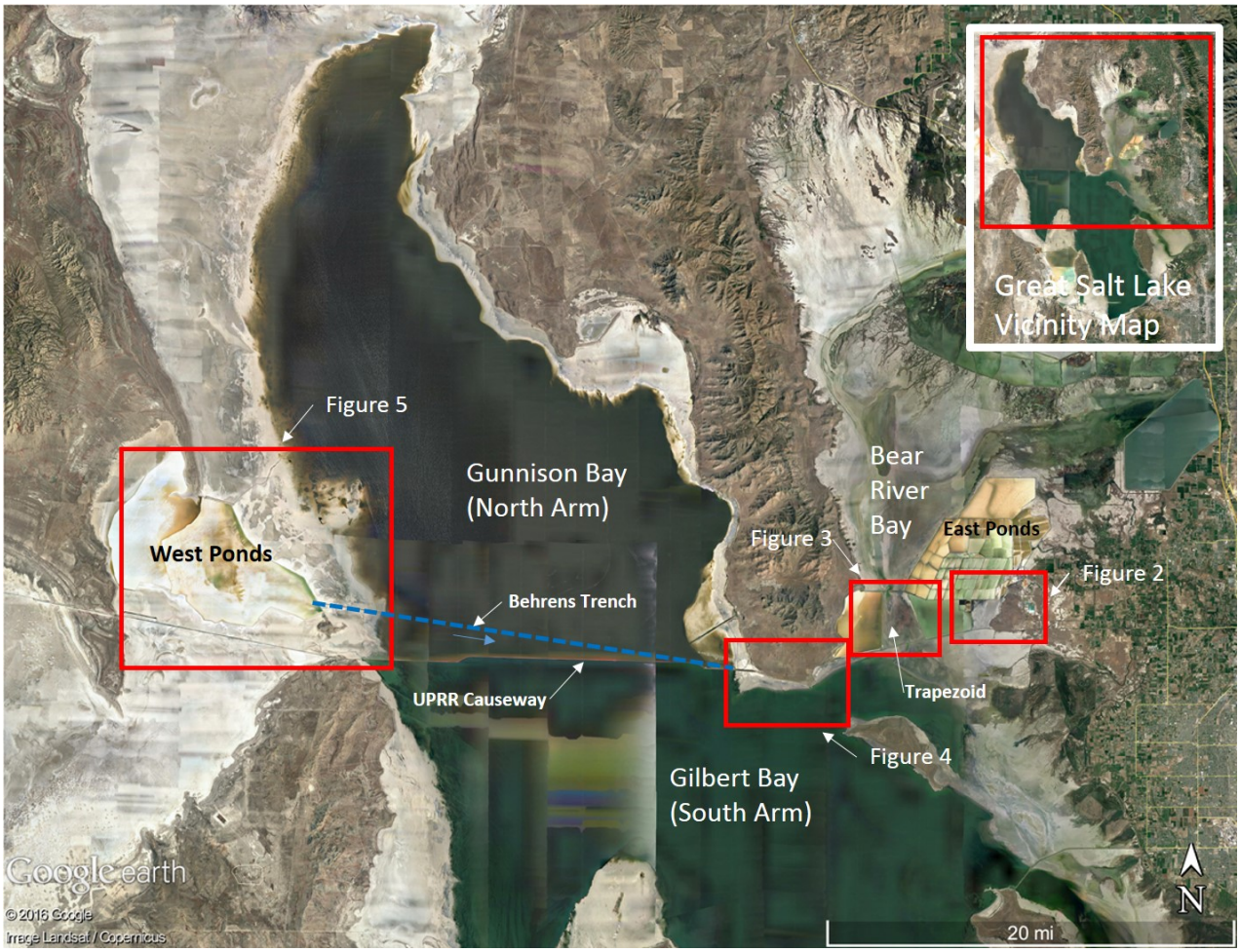


Figure 2. Sampling Locations at East Side Operation, Compass Minerals

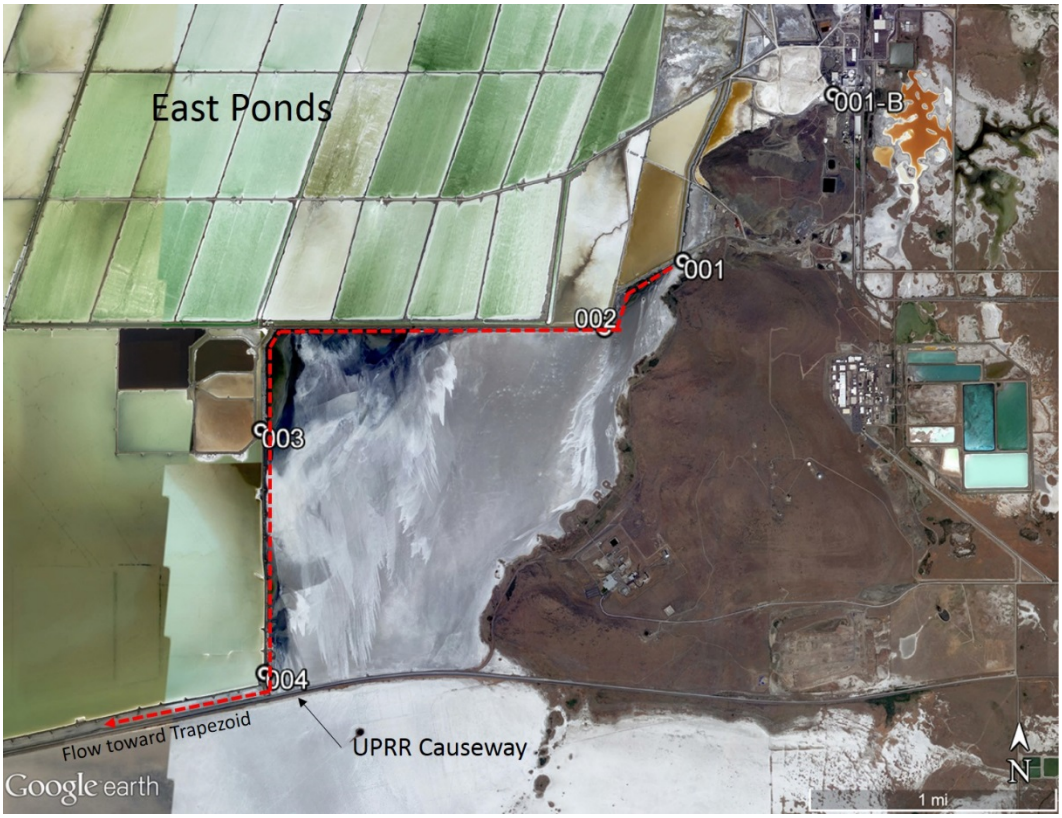


Figure 3. Sampling Locations at Trapezoid, Compass Minerals

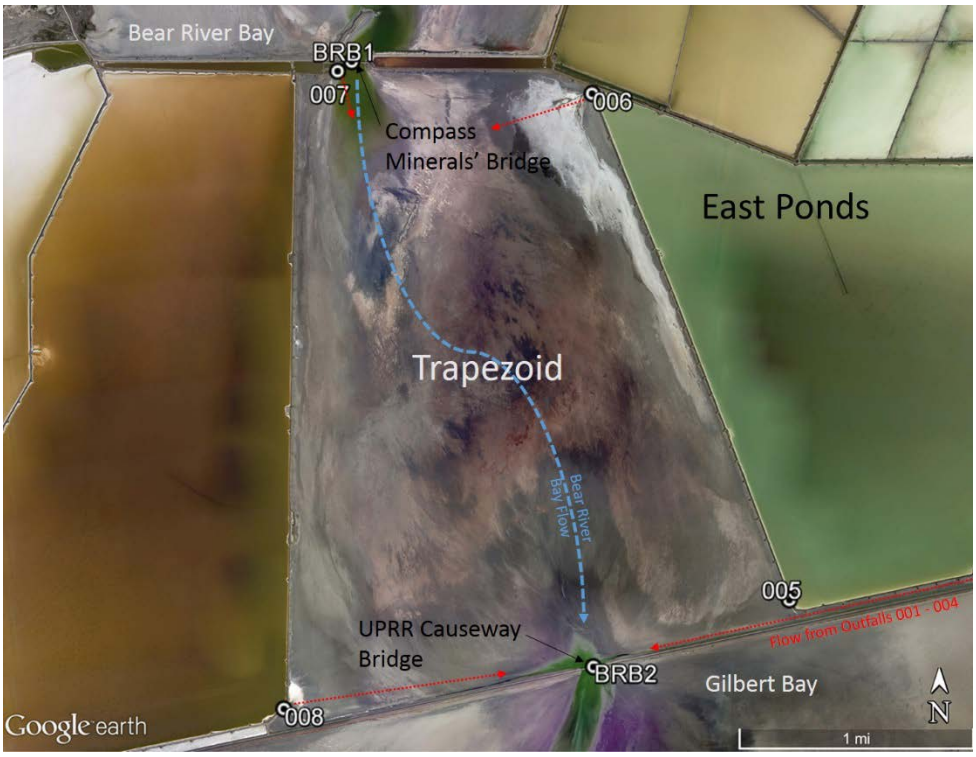
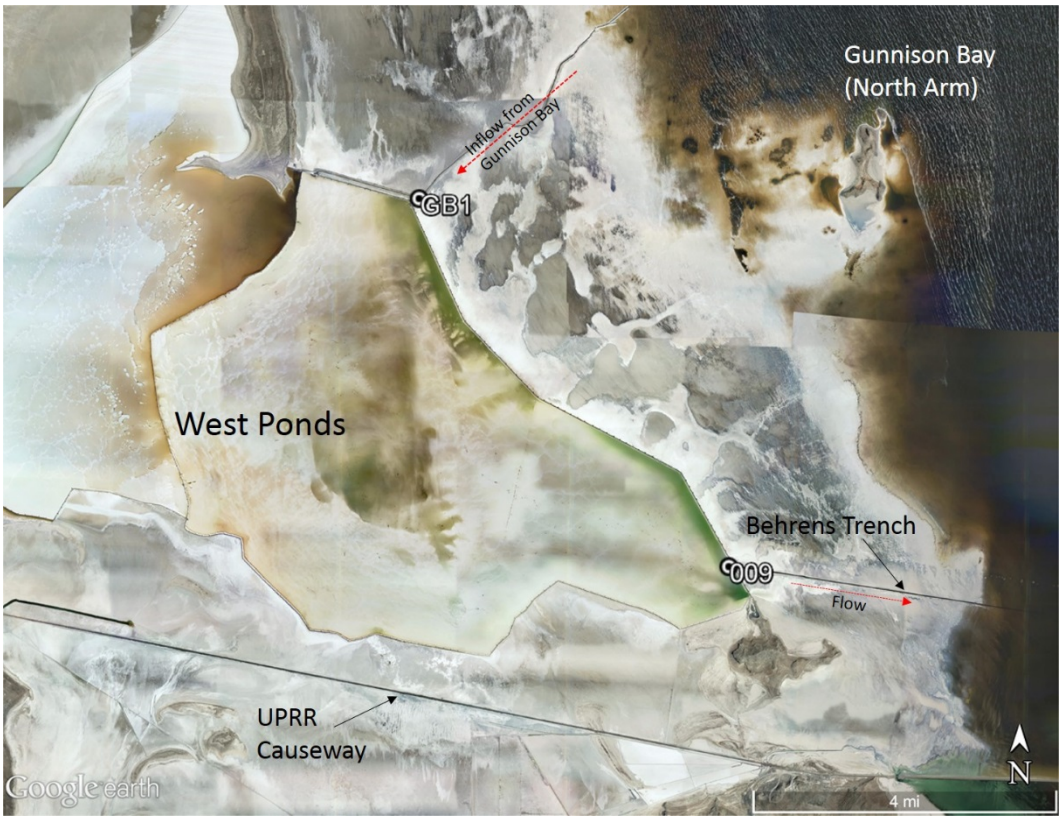


Figure 4. Sampling Locations at Gilbert Bay, Compass Minerals

Figure 5. Sampling Locations at West Side Operation, Compass Minerals



3.0 Survey Method

Bird surveys were conducted monthly at Outfalls 1 through 9 from September through December 2017 and January and March through September 2018. Equal efforts were made among the areas in the various outfalls to enable a realistic comparison of bird counts and diversity for unit effort. Using binoculars, the observer surveyed from the area where the access road crossed each outfall for 10 minutes, recording all birds observed. Surveys began in the morning by crossing the UPRR causeway and starting at Outfall 9 and were conducted in reverse order from Outfall 9 to Outfall 1. Bird activity, time of day, temperature, wind speed, humidity, location, species, and counts were recorded. Birds observed outside of the outfalls, including the UPRR Causeway Bridge and Breach, were recorded separately and were not included in diversity and abundance calculations. In addition, nesting activity and the presence of nests were noted and counted, if present, as a measure of habitat quality and bird use.

4.0 Results

Bird surveys were conducted at Outfalls 1 through 9 on September 19, October 26, November 30 and December 13 in 2017, and January 18, March 15, April 19, May 24, June 21, July 19, August 8, and September 20 in 2018. Birds were observed at Outfalls 3, 7, and 8 in September 2017; in Outfalls 6, 7, and 8 in October 2017; and at Outfall 7 in all months except January and July 2018. Only swallows were observed during surveys conducted in August and September 2018. No birds were observed during any of the surveys at Outfalls 1, 2, 4, and 5. Birds were observed at the UPRR Causeway Bridge and Breach at the North Arm from September through December 2017 and August 2018, often in high numbers. Birds were observed at the UPRR Causeway Bridge April through August 2018 and at the UPRR Causeway Breach in September 2018 (Figure 6).

A total of 2,231 individuals of 22 water-associated species were counted (Table 1). Seventy-nine songbirds, less than 4 percent of all birds observed at the outfalls, were counted (31 barn swallows [*Hirundo rustica*], 6 cliff swallows [*Petrochelidon pyrrhonota*], 22 common ravens [*Corvus corax*}, and 20 yellow-headed blackbirds [*Xanthocephalus xanthocephalus*]) were counted at Outfall 7. Not surprisingly, Outfall 7, which is adjacent to Bear River Bay inflows to GSL and had freshwater inflows for most surveys, had the largest numbers of birds (1,152; 52 percent) and species (25; 96 percent) using it. The numbers and species of birds using Outfalls 3, 5, 6, 7, 8, and 9 generally reflected the habitat and probably the food resources available to birds at various times.

Figure 6. Outfall discharging and presence and absence of birds at the nine outfalls and the UPRR Causeway Bridge and Breach during bird surveys conducted beginning September 19, 2017, and September 20, 2018.

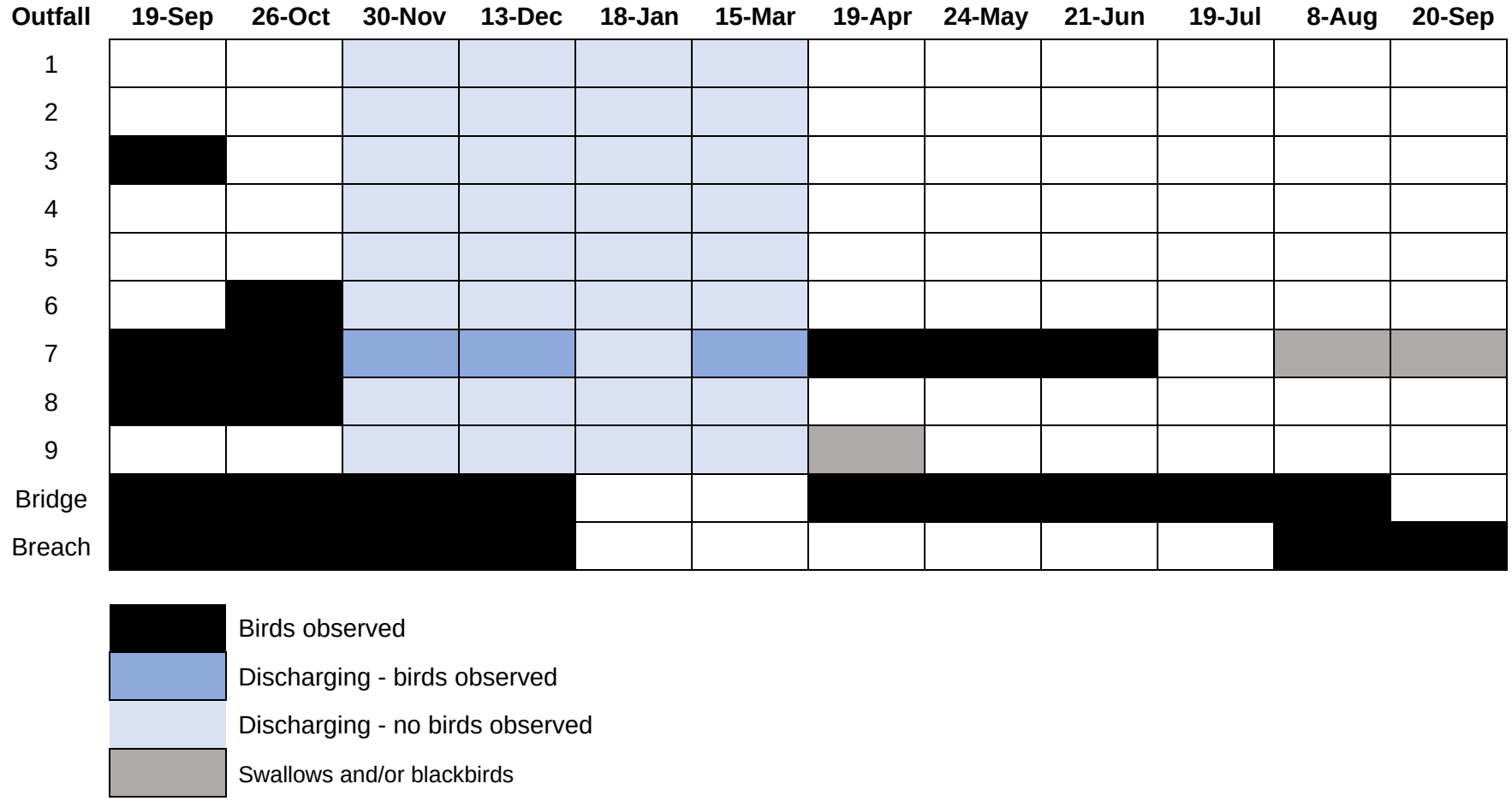


Table 1. Birds Observed and Aggregate Numbers during Surveys Conducted at Compass Minerals Outfalls 1 through 9 from September 19, 2017, to September 20, 2018.

Common Name	OF-9	OF-8	OF-7	OF-6	OF-5	OF-4	OF-3	0F-2	OF-1
Double-crested cormorant			2						
American white pelican			57						
Eared grebe			27						
American coot			25						
Canada goose			13						
Gadwall		30	69						
American wigeon			28						
Mallard		30	14						
Cinnamon teal		10	3						
Northern shoveler		60	282						
Northern pintail		20	44						
Green-winged teal			5						
Canvasback			8						
Redhead			45						
Ring-necked duck			10						
White-winged scoter			53						
Ruddy duck			10						
Mixed Waterfowl		500	290	250					
Black-necked stilt		50	10						
American avocet		20	58						
California gull		28	73				23		
Bonapart's gull			1						
Forster's tern			4						
Barn swallow	14	1	11	5					
Cliff swallow			6						
Common raven	1		4		17				
Yellow-headed blackbird	20								

California gulls (*Larus californicus*) were observed along the UPRR Causeway during all but two surveys (January and March 2018), often in large numbers; flocks of eared and pied-billed grebes (*Podiceps nigricollis*), and American avocets (*Recurvirostra americana*) were the most abundant shorebird observed. Terrestrial birds including horned larks (*Eremophila alpestris*) and western meadowlarks (*Sturnella neglecta*) were observed on the access roads. Other species noted between outfalls were sharp-shinned hawk (*Accipiter striatus*), peregrine falcon (*Falco peregrinus*), and loggerhead shrike (*Lanius ludovicianus*). Summaries of each of the surveys conducted, including site photographs, are presented in Appendix 1. No gull or other species nests were found at any of the outfalls. Overall, observations at the outfalls were as follows:

Outfall 1

No birds were observed during any of the surveys.

Outfall 2

No birds were observed during any of the surveys.

Outfall 3

Twenty-two California gulls were observed feeding and loafing in the water northeast of the outfall during the September 19, 2017 survey; in October, one gull was observed preening in the same location. No other birds were observed during any of the surveys.

Outfall 4

No birds were observed during any of the surveys.

Outfall 5

No birds were observed during any of the surveys.

Outfall 6

Waterfowl observed loafing during surveys conducted on October 26, 2017; no birds observed during other surveys.

Outfall 7

Birds observed during all surveys except January 18 and July 19, 2018. No waterbirds observed after July when Bear River was no longer flowing under the bridge.

Outfall 8

A flock of about 200 mixed waterfowl that included gadwall (*Anas strepera*), northern pintail (*Anas clypeata*), canvasback (*Aythya valisineria*), redhead (*Aythya americana*), ring-necked duck (*Aythya collaris*), and ruddy duck (*Oxyura jamaicensis*) were observed during the October 26, 2017 survey.

Outfall 9

Twenty yellow-headed blackbirds were observed during the April 19, 2018 survey perched on the bridge (see Figure 6), but these birds were likely just resting during their movements and were not foraging at Outfall 9. During the April survey, 12 American avocet were observed loafing in water west of the outfall (these weren't counted for the survey); again, these birds were likely resting during movement to other areas.

No survey was conducted at Outfall 9 on September 20, 2018; the gate was locked.

Bridge

Large flocks of California gulls and/or American avocets were observed during surveys conducted from September through December and April through August.

Breach

Large flocks of California gulls and/or American avocets were observed during surveys conducted from September through December and August through September.

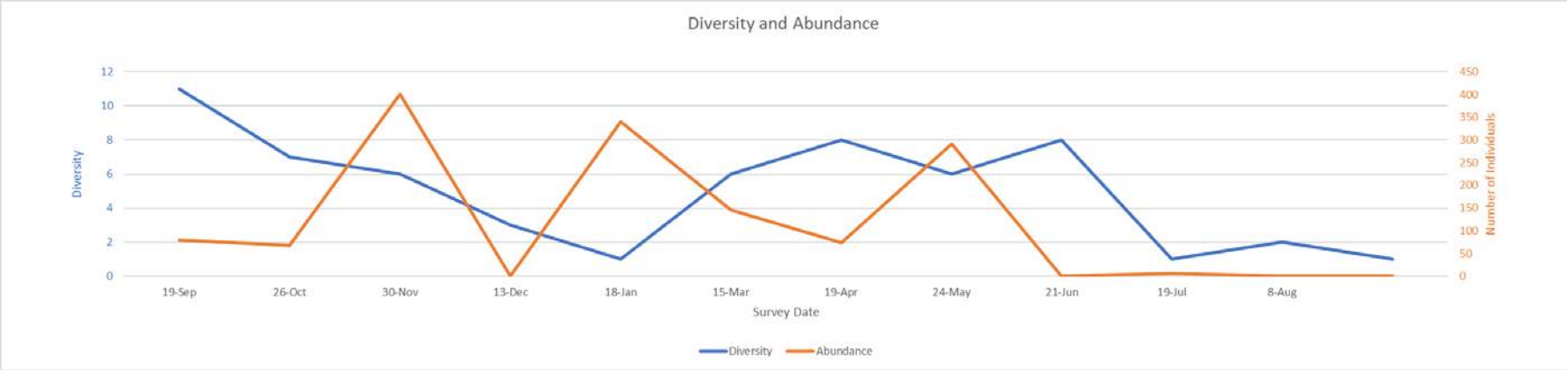
Outfall 7 Survey Results

Species diversity (the number of species observed) and abundance (the number of birds observed) varied by survey date (see Table 2 and Figure 3). Bird abundance can be greatly affected by a flock of any one species using the site during a survey period. At Outfall 7, large flocks of a few species were observed during the surveys. Overall, diversity and abundance were highest at Outfall 7 where the Bear River fresh water flowed into the Great Salt Lake and the mixing zone likely presented feeding opportunities not found at the other outfalls.

Table 2. Birds Observed, Dates, and Aggregate Numbers from Surveys Conducted at Compass Minerals Outfall 7 in 2017 and 2018.

Common Name	Scientific Name	19-Sep	26-Oct	30-Nov	13-Dec	18-Jan	15-Mar	19-Apr	24-May	21-Jun	19-Jul	8-Aug	20-Sep
		2017				2018							
Double-crested cormorant	*Phalacrocorax auritus*									2			
American white pelican	*Pelecanus erythrorhynchos*									57			
Eared grebe	*Podiceps nigricollis*							27					
Canada goose	*Branta canadensis*	2								11			
Gadwall	*Anas strepera*	13	10		20				26				
American wigeon	*Anas americana*						10	12					
Mallard	*Anas platyrhynchos*	10						4					
Cinnamon teal	*Anas cyanoptera*	3											
Northern shoveler	*Anas clypeata*	9		3	180		60	24					
Northern pintail	*Anas acuta*	15	5	20			10						
Green-winged teal	*Anas crecca*		5										
Canvasback	*Aythya valisineria*			3									
Redhead	*Aythya americana*		5				40						
Ring-necked duck	*Aythya collaris*		10										
White-winged scoter	*Melanitta fusca*			3			50						
Ruddy duck	*Oxyura jamaicensis*		5	5									
American coot	*Fulica americana*	25											
Black-necked stilt	*Himantopus mexicanus*	10											
American avocet	*Recurvirostra americana*	40							2	16			
California gull	*Larus californicus*	20						2	1	50			
Bonapart's gull	*Chroicocephalus philadelphia*							1					
Forster's tern	*Sterna forsteri*							3					
Barn swallow	*Hirundo rustica*								4	9		3	
Common raven	*Corvus corax*								4				

Figure 2. Outfall 7 Diversity (number of species) and Abundance (number of individuals) Observed during Surveys Conducted at Compass Minerals Outfall 7 from September 19, 2017 through September 20, 2018.



5.0 Conclusions

The UPRR Causeway Bridge and Breach had the greatest number of birds and reflected the numbers and types of birds observed along the causeway. Bird use along the causeway is likely somewhat dependent on seasonal bird movements and is not reflective of Compass Minerals' operations.

Observations indicated that most outfalls were not used or were used only sporadically by birds during their movement to other areas. This was true whether there was an active Compass Minerals' discharge or not, suggesting a lack of food resources at these sites. The only outfall with consistent bird use was Outfall 7, where freshwater from the Bear River flows into the GSL and provides a mixing zone with the Compass Minerals' discharge water. Low water flows from the Bear River from July through the end of the survey period in September 2018 was probably the reason for the lack of birds observed at Outfall 7 after June 2018. During this time, Compass Minerals outfalls (1 through 6, and 8 and 9) were not discharging water and water levels throughout the survey area appeared low. No nesting, other than swallows that nested under the bridges at Outfalls 7 and 9, and a common raven that nested near Outfall 2, was observed at any of the outfalls.

Attachment 8. Antidegradation Review Form for Outfalls 001 and 002

Compass Minerals proposes to periodically flush buildup of undesirable salts from ponds 88, 89, 91, 94, 95, and 99 to the Great Salt Lake through Outfall 001 and Outfall 002. This activity will expand the utilization of both outfalls and will result in the discharge of additional pollutants not specifically addressed in the permit. Below is the antidegradation review to address the proposed expanded utilization of Outfalls 001 and 002.

Utah Division of Water Quality
Antidegradation Review Form

Part A: Applicant Information

Facility Name: Compass Minerals Ogden Inc.

Facility Owner: Compass Minerals

Facility Location: Ogden, UT

Form Prepared By: Holly Hurst

Outfall Number: 001 and 002

Receiving Water: Great Salt Lake

What Are the Designated Uses of the Receiving Water (R317-2-6)?
Domestic Water Supply: None
Recreation: None
Aquatic Life: None
Agricultural Water Supply: None
Great Salt Lake: 5A - Gilbert Bay

Category of Receiving Water (R317-2-3.2, -3.3, and -3.4): Category 3

UPDES Permit Number (if applicable): UT0000647

Effluent Flow Reviewed: Flow will be variable, but likely will range from 30 to 120 MGD during seasonal operation.
Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

What is the application for? (check all that apply)

☐ A UPDES permit for a new facility, project, or outfall.

☐ A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.

☒ A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.

☐ A UPDES permit renewal with no changes in facility operations.

Part B. Is a Level II ADR required?

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

☒ **Yes** (Proceed to Part B2 of the Form)

☐ **No** No Level II ADR is required and there is no need to proceed further with review questions.

B2. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review. For a few pollutants, such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Refer to Section 3.3 of Implementation Guidance)

☒ **Yes** (Proceed to Part B3 of the Form)

☐ **No** No Level II ADR is required and there is no need to proceed further with review questions.

B3. Are water quality impacts of the proposed project temporary and limited (Section 3.3.3 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

☐ **Yes** Identify the reasons used to justify this determination in Part B3.1 and proceed to Part G. No Level II ADR is required.

☒ **No** A Level II ADR is required (Proceed to Part C)

B3.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.3 of Implementation Guidance):

☐ Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

a) The length of time during which water quality will be lowered:
b) The percent change in ambient concentrations of pollutants:
c) Pollutants affected:
d) Likelihood for long-term water quality benefits:
e) Potential for any residual long-term influences on existing uses:
f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts:

Additional justification, as needed:

Level II ADR

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name:

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located?

The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

Ponds 88, 89, 91, 94, 95, and 99 contain a slurry of salts that are undesirable for the SOP manufacturing process. These ponds have reached capacity and the material must be removed to allow for continued operation. Similar to the other solar evaporation ponds at the facility, the material contained in these ponds could not be excavated and disposed offsite without extraordinary expense and process changes.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

In accordance with a royalty agreement with the Utah Division of Natural Resources, unused salts must be returned to the GSL.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

There are no anticipated social or economic losses associated with the proposed expanded utliziation of Outfall 001.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

The material proposed to be flushed was derived from the waters of the GSL. No net assimilative capacity will be consumed in this process.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

None

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern.

Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.

Parameters of Concern:

Rank	Pollutant	Ambient		Effluent	
		Concentration / Units	Basis	Concentration / Units	Basis
1	TDS	Unknown		Unknown	
2	Oil and Grease	Unknown		Unknown	
3	Nitrate/Nitrite	Unknown		Unknown	
4	BOD5	Unknown		Unknown	
5	pH	Unknown		Unknown	
6					
7					
8					
9					
10					

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification
Metals	Unknown	Unknown	Pass through from GSL

Part E. Alternative Analysis Requirements of a Level II Antidegradation Review.

Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. For new and expanded discharges, the Alternatives Analysis must be prepared under the supervision of and stamped by a Professional Engineer registered with the State of Utah. DWQ may grant an exception from this requirement under certain circumstances, such as the alternatives considered potentially feasible do not include engineered treatment alternatives.More information regarding the requirements for the Alternatives Analysis is available in Section 5 of the Implementation Guidance.

E1. The UPDES permit is being renewed without any changes to flow or concentrations. Alternative treatment and discharge options including changes to operations and maintenance were considered and compared to the current processes. No economically feasible treatment or discharge alternatives were identified that were not previously considered for any previous antidegradation review(s).

☐ **Yes** (Proceed to Part F)

☒ **No or Does Not Apply** (Proceed to E2)

E2. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Facility Plan, if available.

Report Name: *No Feasible Alternative Treatment Options*

E3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

E4. Were any of the following alternatives feasible and affordable?

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	No	
Water Recycling/Reuse	No	
Land Application	No	
Connection to Other Facilities	No	
Upgrade to Existing Facility	No	
Total Containment	No	
Improved O&M of Existing Systems	No	
Seasonal or Controlled Discharge	No	
New Construction	No	
No Discharge	No	

E5. From the applicant's perspective, what is the preferred treatment option?

No Feasible Alternative Treatment Options

E6. Is the preferred option also the least polluting feasible alternative?

☒ **Yes**

☐ **No**

If no, what were less degrading feasible alternative(s)?

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

Ponds 88, 89, 91, 94, 95, and 99 contain a slurry of salts that are undesirable for the SOP manufacturing process. In accordance with a royalty agreement with the Utah Division of Natural Resources, unused salts must be returned to the GSL.

Part F. Optional Information

F1. Does the applicant want to conduct optional public review(s) in addition to the mandatory public review? Level II ADRs are public noticed for a thirty day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

☒ **No**

☐ **Yes**

F2. Does the project include an optional mitigation plan to compensate for the proposed water quality degradation?

☒ **No**

☐ **Yes**

Report Name: ☐

Part G. Certification of Antidegradation Review

G1. Applicant Certification

The form should be signed by the same responsible person who signed the accompanying permit application or certification.

Based on my inquiry of the person(s) who manage the system or those persons directly responsible for gathering the information, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name:_____

Signature:_____

Date:_____

G2. DWQ Approval

To the best of my knowledge, the ADR was conducted in accordance with the rules and regulations outlined in UAC R-317-2-3.

Print Name:_____

Signature:_____

Date:_____