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. **UT0026140**

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

BLX MAYFLOWER, LLC

is hereby authorized to discharge from its facility to receiving waters named **McHENRY CREEK** and/or **GLENCOE CANYON CREEK**,

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

This permit shall become effective on December 1, 2020.

This permit expires at midnight on November 30, 2025.

Signed this 27th day of November, 2020.

Erica Brown Gaddis, PhD
Director

DWQ-2020-008064

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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 Numbers	Location of Discharge Outfalls
001	Located at latitude 40° 37' 15 " and longitude 111° 26' 15". The effluent is from the Mayflower Mine and flows into McHenry Creek.
002	Located at latitude 40° 36' 49.94" and longitude 111° 27' 41.82". The effluent is from the Star of Utah Mine and flows into Glencoe Canyon Creek.

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 Outfalls 001 and 002 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.4.* of this permit.

2.

a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations Outfall 001 *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.7	--	--	--	1.0
TSS, mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
pH, Standard Units	--	--	--	6.5	9
WET, Chronic Biomonitoring	--	--	--	--	IC_{25} > 78% effluent (from WLA)
Iron, mg/L *g	--	--	--	--	1.194
Zinc, mg/L	--	--	--	--	0.411

Self-Monitoring and Reporting Requirements Outfall 001 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Monthly	Measure	MGD
TSS	Monthly	Composite	mg/L
DO	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
WET – Biomonitoring *d	4 x Yearly		
Ceriodaphnia - Chronic	2nd & 4th Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1st & 3rd Quarter	Composite	Pass/Fail
Iron *g	Monthly	Composite	mg/L
Zinc	Monthly	Composite	mg/L
Metals, Effluent *e	Quarterly	Composite	mg/L

Self-Monitoring and Reporting Requirements Outfall 002 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Quarterly	Measure	MGD
TSS	Quarterly	Grab	mg/L
DO	Quarterly	Grab	mg/L
pH	Quarterly	Grab	SU
WET – Biomonitoring Ceriodaphnia – Chronic *f	Once during permit cycle	Composite	Pass/Fail
Metals, Effluent *e	Quarterly	Grab	mg/L

*a See Definitions, *Part VIII*, for definition of terms.

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

*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

*d The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters.

*e All metals results were reviewed. Only arsenic, cadmium, iron, and zinc appeared to be close to the limits suggested in the Wasteload. At this time metals need to be monitored quarterly, but this may change for next permit cycle.

*f WET Testing must be conducted at the frequency listed in the table, but can be done at any time during the year to accommodate access issues.

*g Iron parameter will be **monitoring only** from permit issue through December 31, 2022. If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

3. Compliance Schedule

a. Iron Daily Maximum Compliance Schedule

Mayflower Mine Parameter	Effluent Limitation Changes	
	Interim Limit (Effective from permit issue till December 31, 2022)	Final Limit (Effective January 1, 2023)
Daily Maximum Iron	Monthly monitoring only*	1.194 mg/L

* If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

b. At the time the final limit is instated, January 1, 2023, BLX Mayflower LLC must submit the Alternative Analysis Section of the Level II ADR. See ADR section in the FSSOB for more details.

4. Chronic Whole Effluent Toxicity (WET) Testing.

a. *Whole Effluent Testing – Chronic Toxicity*.
Starting immediately, the permittee shall quarterly, conduct chronic static renewal toxicity tests on a grab/composite sample of the final effluent at Outfall 001. The permitee shall also conduct one chronic test at Outfall 002 during the life of the permit. The samples shall be collected at the point of compliance before mixing with the receiving water.

Three samples are required and samples shall be collected on Monday, Wednesday and Friday of each sampling period or collected on a two day progression for each sampling period. This may be changed with Director approval.
The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition*, October 2002, *EPA—821-R-02-013* as per *40 CFR 136.3(a)* TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS . Test species shall consist of *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow).

A multi dilution test consisting of at least five concentrations and a control is required at two dilutions below and two above the receiving water concentration, if possible. If test acceptability criteria are not met for control survival, growth, or reproduction, the test shall be considered invalid. A valid replacement test is required within the specified sampling period to remain in compliance with this permit. Chronic toxicity occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC25) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to 78% effluent concentration (equivalent to the RWC). If a sample is found to be chronically toxic during a routine test, the monitoring frequency shall become biweekly (see *Part 1.C.3b Accelerated Testing).* (the Director may enter acceptable variations in the test procedure here as documented in the Fact Sheet Statement of Basis and based on the test acceptability criteria as contained in UPDES Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control February, 2018). If possible, dilution water should be obtained from the receiving stream.

If the permit contains a total residual chlorine limitation such that it may interfere with WET testing (>0.20 mg/L), the permittee may dechlorinate the sample in accordance with the standard method. If dechlorination is negatively affecting the test, the permittee may collect the sample just before chlorination with Director approval.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the required reporting period (e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with Appendix C of "UPDES Permitting and Enforcement Guidance Document for Whole Effluent Toxicity, Utah Division of Water Quality, February, 2018.

If the results for ten consecutive tests indicate no chronic toxicity, the permittee may submit a request to the Director to allow a reduction in chronic toxicity testing by alternating species, or using only the most sensitive species. The Director may approve or deny the request based on the results and other available information without public notice. If the request is approved, the test procedures are to be the same as specified above for the test species. Under no circumstances shall monitoring for WET at major facilities be reduced less than quarterly. Minor facilities may be less than quarterly at the discretion of the Director.

b. *Accelerated Testing*. When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.

c. *Pattern of Toxicity*. A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

If two (2) consecutive tests (not including the scheduled test which triggered the search for a pattern of toxicity) do not result in an exceedance of the acute or chronic toxicity criteria, no further accelerated testing will be required and no pattern of toxicity will be found to exist. The permittee will provide written verification to the Director within 5 days of determining no pattern of toxicity exists, and resume routine monitoring.

A pattern of toxicity may or may not be established based on the following:

WET tests should be run at least weekly (acute) or every two weeks (chronic) (note that only one test should be run at a time), for up to 5 tests, until either:

1) 2 consecutive tests fail, or 3 out of 5 tests fail, at which point a pattern of toxicity will have been identified, or

2) 2 consecutive tests pass, or 3 out of 5 tests pass, in which case no pattern of toxicity is identified.

d. *Preliminary Toxicity Investigation*.

(1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.

(2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the Director, will be incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit. With adequate justification, the Director may extend these deadlines.

(3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (see *Part 1.C.3e* Toxicity Reduction Evaluation).

(4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.

e. *Toxicity Reduction Evaluation (TRE)*. If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

(1) Phase I – Toxicity Characterization

(2) Phase II – Toxicity Identification Procedures

(3) Phase III – Toxicity Control Procedures

(4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If toxicity spontaneously disappears during the TIE/TRE, the permittee shall submit written notification to that effect to the Director.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee shall submit the following:

(a) An alternative control program for compliance with the numerical requirements.

(b) If necessary, as determined by the Director, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

This permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or modified WET testing requirements without public notice.

Failure to conduct an adequate TIE/TRE plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be considered a violation of this permit. After implementation of TIE/TRE plan, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit.

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 NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on January 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 according to the *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

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

II. STORM WATER REQUIREMENTS.

A. Industrial Storm Water Permit. The facility contains inactive metal mines which may require separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000) if storm water is coming in contact with overburden, raw material, intermediate product, finished product, byproduct, or waste product. DWQ will review this facility and provide separate notification of any industrial storm water permit requirements.

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.

III. 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 IV.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part IV.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 III.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.

IV. 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 IV.G*, *Bypass of Treatment Facilities* and *Part IV.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 IV.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 IV.G.2.a (1), (2) and (3)*.

3. Notice.

a. *Anticipated bypass*. Except as provided above in *section IV.G.2* and below in *section IV.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 IV.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 III.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 III.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part IV.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 Director 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 Director in accordance with *UAC R317-8-4.2(6)*.

K. Industrial Pretreatment. 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.

In addition, in accordance with *40 CFR 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 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).

V. 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 V.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 V.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 area wide 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. This permit may be reopened and modified (following proper administrative procedures) to include, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;

1. Toxicity is detected, as per *Part I.C.4.a* and *b* of this permit, during the duration of this permit.

2. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits and the Director concludes that numerical controls are appropriate.

3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.

4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the 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".

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

6. "Chronic toxicity" occurs when the IC_{25}< 78% effluent. The 78% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.

7. "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.

8. "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.

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

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

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

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

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

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

15. "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.

16. "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
BLX MAYFLOWER, LLC
NEW PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026140
MINOR INDUSTRIAL

FACILITY CONTACTS

Person Name:	Brooke Hontz
Position:	Asst. VP Development
Phone Number:	(435) 640-1941
Person Name:	Brad Rasmussen
Position:	Consultant, AQUA Engineering
Phone Number:	(801) 299-1327
Facility Name:	BLX Mayflower, LLC
Mailing and Facility Address:	2750 West Rasmussen Road, Suite 206 Park City, Utah 84098
Telephone:	(435) 640-1941
Actual Address:	TBD

DESCRIPTION OF FACILITY

Mayflower Mountain Resort is an all seasons resort to be constructed in Park City, Utah. When complete, the 5,600 acre resort will include at least seven ski lifts and will have the capacity to house more than 2,400 residents with new condos, single-family homes, townhomes, and three hotels. The property was purchased in November of 2017 by BLX Mayflower LLC (BLX Mayflower) – this property includes both inactive Mayflower and Star Mines, both of which still discharge into waters of the state. In November 2019 a pipe was installed to carry discharge water from the exit of the Mayflower Mine to McHenry Creek. Prior to this pipe, the mine discharge ran through a mine waste impoundment within Big Dutch Peat drainage which flows into Jordanelle Reservoir. The Star of Utah Mine (Star Mine) discharge water enters into Glencoe Canyon Creek, which then flows into McHenry Creek. McHenry Creek flows into Jordanelle Reservoir.

Shortly after it acquired the property, BLX Mayflower entered the State of Utah's Voluntary Cleanup Program in May 2017. Since then, BLX Mayflower has been working with the Division of Environmental Response and Remediation to address historic contamination at the Mayflower site by ensuring that soils at the site meet EPA Regional Screening Levels and Division of Water Quality (DWQ) ground water protection standards, or are otherwise contained to avoid leaving the Mayflower site in the future.

Based on Table 1 below, the abandoned mines on this property can be described as an "inactive source(s) owned by someone with activity in an area, but not mining." This establishes a medium permitting priority for the facility. Based on the 1993 letter mentioned below, the priority for this site was previously low, but was increased when BLX Mayflower LLC acquired the property to build Mayflower Mountain Resort.

BASIS FOR PERMIT DETERMINATION

Mine adits are clearly defined point sources under Section 502(14) of the Clean Water Act (CWA) 33 U.S.C. § 1362(14). Therefore under the CWA, even historic, abandoned and long-term inactive mines require a permit to discharge to Waters of the State or Waters of the United States. However, due to

extensive numbers of these abandoned mines, questionable ownerships or former mining claims and limited federal and State resources, EPA Region VIII and the states in Region VIII have not made permitting these discharges a high priority. In December of 1993, EPA Region VIII issued a letter to the States in the region with a priority list for permitting historic mines in the region.

The Wasatch Mountains have long been mined for a variety of minerals including gold, silver and lead. Mining activity in these areas can be traced back to the 1870's and continued until the 1940's when mining activities became cost prohibitive. The Mayflower Mine and Star Mines are unique as they operated until 1972, after which it no longer was profitable to operate and were abandoned. The abandoned mines are now on private land owned by BLX Mayflower. BLX Mayflower has not conducted any active mining in the area since taking over the claims, nor do they plan to in the future. BLX Mayflower is still determining whether treatment of the mine discharge for metals removal will be necessary to meet Water Quality Standards in the future.

The 1993 EPA Region VIII letter set permitting priorities for historic mines in the region and suggested applicable effluent limits.

Table 1. NPDES Priorities at Historic mines and Applicable Effluent Limits.

Priority	Situation	Basis of NPDES Limits		Storm Water Permit
		Technology	Water Quality Standards	
High	Historic sources influence by active mining.	ELG – 40 CFR 440, BPT, BAT, or NSPS	Yes	Yes, combined with traditional permit
High	Historic Sources influenced by current mining activities (significant exploration, construction, etc.)	BPJ, usually equivalent to BAT	Yes	Yes
High	Historic Sources influenced by current mining activities (minor exploration, construction, etc.)	BPJ	Yes	Yes
Medium	Inactive sources created since 1972 owned by current operator	BPJ	Yes	Yes
Medium	Inactive sources owned by operator with nearby mining operations	BPJ	Yes	Yes
Medium	Inactive sources owned by someone with activity in an area, but not mining	BPJ	Yes	Yes
Low	Inactive sources owned by someone with no activity in the area.	BPJ	Yes	Yes

Compliance Schedule:

The Mayflower site is currently under construction and, as such, there are constant changes to storm water and surface flows. This, along with other factors, has led to uncertainly about final water flow infrastructure and potential water treatment needs. Due to this future uncertainty and the need for ongoing

changes during construction, BLX Mayflower requested a compliance schedule for iron, which has been approved by DWQ; limitations can be found below. This will allow BLX Mayflower to gather a stronger data set representative of condition, as well as provide time to develop plans for flow and treatment. To protect waters of the state, the DWQ has also included trigger for adjusting the compliance schedule if necessary. At the time the final limit is instated, January 1, 2023, BLX Mayflower, must submit the Alternative Analysis Section of the Level II ADR. See ADR section later in this FSSOB for more details.

	Effluent Limitations	
Mayflower Mine Parameter	Interim Limit (Effective from permit issue till December 31, 2022)	Final Limit (Effective January 1, 2023)
Daily Maximum Iron	Monthly monitoring only*	1.194 mg/L

* If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

DISCHARGE

DESCRIPTION OF DISCHARGE

Final discharge from Outfall 001 is exclusively from the inactive Mayflower Mine, and final discharge from Outfall 002 is exclusively from the inactive Star mine. There is a small additional discharge from a currently not understood origin exiting the site from the base of Big Dutch Pete. This discharge is not expected to negatively impact the receiving waters of the state, but if DWQ is presented evidence that there is potential for harm, item will be readdressed at that time. If there are any on site changes that impact Outfalls, such as additional flow as result of construction, BLX Mayflower shall notify DWQ immediately. At time this permit was issued there was additional storm water flow mixing with Mayflower Mine discharge at Outfall 001, which was piped from the base of Big Dutch Pete Hollow in the Spring of 2020 to avoid saturating the downhill mine waste repository. The storm water flow is expected to be rerouted into the Mayflower site's storm water system, once constructed.

Outfall	Description of Discharge Point
001	Located at latitude 40° 37' 15 " and longitude 111° 26' 15". The effluent is from the Mayflower Mine and flows into McHenry Creek.
002	Located at latitude 40° 36' 49.94" and longitude 111° 27' 41.82". The effluent is from the Star Mine and flows into Glencoe Canyon Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION

Discharge currently flows into Glencoe Canyon Creek, which flows into McHenry Creek, or directly into McHenry Creek. McHenry Creek flows into Jordanelle Reservoir, which is fed by the Provo River. Per UAC R317-2-13.5(b), the designated beneficial uses of Provo River and tributaries from Murdock Diversion to headwaters is 1C, 2B, 3A, and 4.

Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3A -- Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

Utah Administrative Code (UAC) R317-1-3.2 lists State secondary treatment standards for five-day biochemical oxygen demand (BOD5), total suspended solids (TSS), E. coli, and pH. Based on data provided in the original permit application, and because the effluent is composed only of abandoned mine water, BOD5 and E. coli limitations are not necessary, thus will not be included in this permit. However, pH and TSS are applicable to this discharge. The dissolved oxygen (DO) parameter is based on meeting water quality standards of the receiving water.

Total dissolved solids and ammonia nitrogen will not be included in this permit because there is no reasonable potential for these parameters to exceed water quality standards (effluent limitations that were derived from the wasteload allocation are much higher in concentration than that measured in the mine discharge/effluent). WET monitoring will be required for Outfall 001. Metals effluent limitations are based on the Wasteload Analysis.

Antidegradation Review (ADR)

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in the Wasteload Analysis.

A Level II ADR is required for this facility as these are newly permitted outfalls with the potential to increase concentrations and loads of pollutants to the receiving waters. The Level II ADR requirement will not be possible to fully complete without selecting the treatment method, but all but the alternative analysis can be completed at this time.

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). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on arsenic, cadmium, iron, and zinc for both Outfall 001 and Outfall 002 to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: iron and zinc for Outfall 001, and iron for Outfall 002. A copy of the RP analysis is included at the end of this Fact Sheet. The RP to exceed the standard for iron in Outfall 002 was based on the current dataset. The EPA ProUCL model was used to evaluate the data, which revealed one outlier. With this outlier

removed, there is no RP for iron to exceed the standard. There will be no permit limitations for Outfall 002 during this permit cycle. This will be re-evaluated at the end of this permit cycle, or when monitoring data illustrates exceedence of water quality standards.

The permit limitations are:

Parameter	Effluent Limitations Outfall 001 *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.7	--	--	--	1.0
TSS, mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
pH, Standard Units	--	--	--	6.5	9
WET, Chronic Biomonitoring	--	--	--	--	IC_{25} > 78% effluent (from WLA)
Iron, mg/L *g	--	--	--	--	1.194
Zinc, mg/L	--	--	--	--	0.411

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are being imposed because this is a new permit. Once more data has been collected throughout this permit cycle requirements may change. 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.

Self-Monitoring and Reporting Requirements Outfall 001 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Monthly	Measure	MGD
TSS	Monthly	Composite	mg/L
DO	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
WET – Biomonitoring *d Ceriodaphnia - Chronic Fathead Minnows - Chronic	4 x Yearly 2nd & 4th Quarter 1st & 3rd Quarter	 Composite Composite	 Pass/Fail Pass/Fail
Iron *g	Monthly	Composite	mg/L
Zinc	Monthly	Composite	mg/L
Metals, Effluent *e	Quarterly	Composite	mg/L
Self-Monitoring and Reporting Requirements Outfall 002 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Quarterly	Measure	MGD
TSS	Quarterly	Grab	mg/L
DO	Quarterly	Grab	mg/L
pH	Quarterly	Grab	SU

WET – Biomonitoring Ceriodaphnia – Chronic *f	Once during permit cycle	Composite	Pass/Fail
Metals, Effluent *e	Quarterly	Grab	mg/L

*a See Definitions, *Part VIII*, for definition of terms.

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

*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

*d The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters.

*e All metals results were reviewed. Only arsenic, cadmium, iron, and zinc appeared to be close to the limits suggested in the Wasteload. At this time metals need to be monitored quarterly, but this may change for next permit cycle.

*f WET Testing must be conducted at the frequency listed in the table, but can be done at any time during the year to accommodate access issues.

*g Iron parameter will be **monitoring only** from permit issue through December 31, 2022. If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

STORM WATER

STORM WATER REQUIREMENTS

The Mayflower site contains areas of historic mining. These inactive mines may be required to obtain coverage under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities if storm water is coming in contact with overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site. As noted above, BLX Mayflower is participating in the Voluntary Cleanup Program to address historic mine waste at the site, including eventual elimination of storm water contact with historic mine waste rock at the facility.

BLX Mayflower and/or its contractors have obtained and must maintain permit coverage under the Construction General Storm Water Permit (CGP) 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.

Because construction activities at the Mayflower site and participation in the Voluntary Cleanup program are ongoing, DWQ will continue to work with BLX Mayflower to require separate storm water permits, as necessary.

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 continuously discharging from Outfall 001. Given the RP analysis above indicates that there is reasonable potential for toxicity to be present. Therefore, numerical WET limitations are included in the permit for Outfall 001. The facility will be required to conduct quarterly chronic WET testing, using alternating species.

Outfall 002 discharges intermittently and toxicity is neither an existing concern, nor likely to be present in the discharge, based on data collected and reported thus far. The monitoring location is located just below the two mine portals (combined shortly after existing portals and considered one discharge), before flow continues down over/ through the Star Mine waste rock and 'deer camp' waste rock. This site is currently in Phase I of construction; this flow will be addressed in Phase II. While decisions concerning this discharge are being made and the site in a state of flux, this outfall will be **monitoring only.** 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.

PRETREATMENT REQUIREMENTS

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 CWA, the permittee shall comply with all applicable federal General 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 BLX Mayflower 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 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).

PERMIT DURATION

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

Drafted by
Danielle Lenz, Discharge
Lonnie Shull, Biomonitoring
Lisa Stevens, Storm Water
Danielle Lenz, Reasonable Potential Analysis
Jennifer Robinson, Pretreatment
Nick von Stackelberg, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: October 9, 2020
Ended: November 9, 2020

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

During the public comment period provided under UAC 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

There were no public comments received during the public notice period.

DWQ-2020-008062

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data

MAYFLOWER MINE

Dataset 1: Below is all data collected by BLX Mayflower LLC / Extell Development from July 2017 to March 2020. All parameters are reported in mg/L.

Ammonia	Nitrate	Nitrite	pH	Phosphate, Ortho as P	TDS	TSS	Antimony	Arsenic	Beryllium
<0.0500	<0.1	<0.1	7.34	<0.05	744	4	<0.005	0.00289	<0.001
<0.0500	<0.1	<0.1	7.3	<0.05	764	<4	<0.02	0.00281	<0.001
<0.2	<0.1	<0.1	7.3	<0.01	736	<4	<0.02	0.0052	<0.001
<0.2	<0.1	<0.1	7.6	<0.01	724	4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.2	<0.01	744	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.4	<0.02	776	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8.1	0.02	740	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8	0.02	724	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.3	0.02	752	7	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.2	0.02	728	<4	<0.02	<0.05	<0.001
<0.2			7.6	0.04	752		<0.02	<0.05	<0.001
			7.2	0.02	684			<0.05	
								<0.05	

Cadmium	Calcium	Chromium	Copper	Iron, Dissolved	Iron, Total	Lead	Magnesium	Manganese	Mercury
<0.00050	175	<0.002	<0.005	0.59	1.38	<0.002	25.4	1.63	<0.00015
<0.00050	152	<0.002	<0.005	0.6	0.84	<0.002	23.4	1.41	<0.00015
0.0013	173	<0.005	<0.005	0.09	1.03	0.0031	25.4	1.45	<0.0002
<0.005	178	<0.005	<0.005	0.13	1.24	<0.02	25.5	1.58	<0.0002
<0.005	182	<0.005	<0.005	0.09	0.92	<0.02	27.4	1.67	<0.0002
<0.005	173	<0.005	<0.005	0.09	0.95	<0.02	26.4	1.6	<0.0002
<0.005	171	<0.005	<0.005	0.34	0.89	<0.02	24.6	1.57	<0.0002
<0.005	178	<0.005	<0.005	0.53	1.11	<0.02	25.4	1.54	<0.0002
<0.005	167	<0.005	<0.005	0.61	1.29	<0.02	24.3	1.44	<0.0002
<0.005	184	<0.005	<0.005	0.62	0.85	<0.02	26.6	1.48	<0.0002
<0.005		<0.005	<0.005	0.24	0.63	<0.02			<0.0002
<0.005		<0.005		0.3	0.59	<0.02			<0.0002
<0.005		<0.005		0.28	0.72	<0.02			<0.0002
0.0008				0.26	1.08	0.0024			<0.0000005
0.0008				0.19	0.77	0.0026			<0.0002
0.0007				0.17	0.82	0.0026			<0.0002
0.0008				0.28	0.62	0.003			<0.0002
0.0007				0.27	1.32	0.0023			<0.0002
0.0002				1.29	1.21	0.0023			<0.0002
0.0007				0.89	1.25	0.0019			<0.0002
0.0007				1.09	1.03	0.0038			<0.0002
<0.0002				0.33	0.9	0.0029			<0.0002
0.0007				0.24	0.87	0.0026			<0.0002
0.0014				0.21	1.05	0.0029			<0.0002

0.0012					0.8	0.0027			<0.00023
0.0008					0.41	<0.015			<0.0002
0.0007					1.14	0.0021			<0.0002
0.0006					0.92	0.0027			<0.0002
0.0006					2.24	<0.015			<0.0002
0.0007					1.63	0.0032			<0.0002
					1.57	0.0029			<0.0002
					1.45	0.0024			<0.0002
					1.1	0.0026			<0.0002
					0.94	0.0031			<0.0002
					1.04	0.0027			<0.0002
						0.0027			<0.0002
						0.0024			<0.0002
						0.0027			<0.0003

Nickel	**Selenium**	**Silver**	**Thallium**	**Zinc**
<0.005	<0.002	<0.002	<0.0002	0.318
<0.005	<0.002	<0.002	<0.02	0.322
<0.005	<0.0005	<0.0005	<0.02	0.54
<0.005	<0.02	<0.002	<0.02	0.39
<0.005	<0.02	<0.005	<0.02	0.43
<0.005	<0.02	<0.005	<0.02	0.41
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	0.4
<0.005	<0.02	<0.005	<0.02	0.4
<0.005	<0.02	<0.005	<0.02	0.47
<0.005	<0.02	<0.005	<0.02	0.41
<0.005	<0.02	<0.005	<0.02	0.39
	<0.02	<0.005		0.41
	<0.08	<0.005		0.32
	0.0006	<0.0005		0.3
	0.0009	<0.0005		0.29
	<0.0005	<0.0005		0.35
	0.0006	<0.0005		0.42
	<0.0005	<0.0005		0.42
	<0.0005	<0.0005		0.33
	0.0005	<0.0005		0.41
	0.0008	<0.0006		0.41
	<0.0005	<0.0005		0.41
	0.0005	<0.0005		0.38
	0.0005	<0.0005		0.01
	0.0006	<0.0005		0.01
	0.0006	<0.0005		<0.01
	<0.0005	<0.0005		0.23
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		0.17
	<0.0005	<0.0005		0.15
	<0.02	<0.005		0.32
	<0.0005	<0.0005		0.31

	<0.0005	<0.0005		0.3
	<0.0005	<0.0005		0.26
	<0.0005	<0.0005		0.29
	0.0006	<0.0005		0.31
	<0.0005	<0.0005		0.34
	<0.0005	<0.0005		

Dataset 2: Below is all data collected during Pilot Study (in October and November of 2019) conducted by Aqua Engineering - this study was conducted to test metal removing technologies. All samples below were untreated. All parameters are reported in mg/L.

pH	TDS	Antimony	Arsenic	Cadmium	Calcium	Copper	Iron
7.2	708	ND	0.0047	0.0007	153	0.0050	1.43
7.3	728	ND	0.0037	0.0007	151	0.0032	1.03
7.3	676	ND	0.0041	0.0007	154	0.0041	1.09
7.4	692	ND	0.0040	0.0007	153	0.0038	1.00

Lead	Magnesium	Nickel	Selenium	Silver	Thallium	Zinc	Manganese
0.0040	24.2	0.0099	0.0005	ND	ND	0.33	1.40
0.0027	23.4	0.0101	0.0005	ND	ND	0.32	1.36
0.0044	23.6	0.0031	ND	ND	ND	0.32	
0.0052	23.4	0.0031	ND	ND	ND	0.32	

Dataset 3: Below is all data collected by BLX Mayflower LLC / Extell after pipe bypassing mine waste was installed at the Mayflower Mine site. Pipe was installed November 2019. All parameters are reported in mg/L.

Cadmium	Iron, Dissolved	Iron, Total	Lead	Mercury	Selenium	Silver	Zinc
0.0006	0.33	1.1	0.0027	<0.0002	0.0006	<0.0005	0.29
0.0006	0.24	0.94	0.0024	<0.0002	<0.0005	<0.0005	0.31
0.0007	0.21	1.04	0.0027	<0.0003	<0.0005	<0.0005	0.34

STAR MINE

Dataset 4: Below is all data collected by BLX Mayflower LLC / Extell Development from July 2017 to March 2020. All parameters are reported in mg/L.

Ammonia	Nitrate	Nitrite	pH	Phosphate, Ortho as P	TDS	TSS	Antimony	Arsenic	Beryllium
<0.2	<0.1	<0.1	7.7	<0.01	264	<4	0.0009	0.0022	<0.001
<0.2	<0.1	<0.1	8.1	0.01	252	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.6	<0.01	276	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8	0.02	268	<4	<0.02	<0.05	<0.001
0.2	<0.1	<0.1	8.1	0.02	264	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.8	0.02	300	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.7	0.03	268	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.8	0.03	308	<4	<0.02	<0.05	<0.001
	<0.1	<0.1	7.6	0.02	248	<4	<0.02	<0.05	<0.001

Cadmium	Calcium	Chromium	Copper	Iron, Dissolved	Iron, Total	Lead	Magnesium	Manganese	Mercury
<0.0002	61.8	<0.005	<0.005	0.16	0.07	<0.0005	9.8	0.063	<0.0002
<0.005	57.5	<0.005	<0.005	0.09	0.1	<0.02	10.4	0.058	<0.0002
<0.005	64.9	<0.005	<0.005	0.12	0.12	<0.02	10.7	0.061	<0.0002
<0.005	63.4	<0.005	<0.005	0.19	0.15	<0.02	10.2	0.06	<0.0002
<0.005	64.6	<0.005	<0.005	0.06	0.14	<0.02	10.8	0.056	<0.0002
<0.005	64.5	<0.005	<0.005	0.04	0.19	<0.02	10.8	0.056	<0.0002
<0.005	66.9	<0.005	<0.005		0.21	<0.02	11.1	0.062	<0.0002
<0.005	67.7	<0.005	<0.005		0.23	<0.02	11.8	0.065	<0.0002
<0.005	72.4	<0.005	<0.005		0.20	<0.02	12.9	0.065	<0.0002
<0.005					0.35	<0.0005			0.0000016
<0.005					0.35	<0.0005			<0.0002
<0.005					0.27	<0.0005			<0.0002
<0.005					0.38	<0.0005			<0.0002
0.0004					1.19	0.0044			<0.0002
<0.005					0.13	<0.0005			<0.0002
<0.005					0.13	<0.0005			<0.0002

Nickel	Selenium	Silver	Thallium	Zinc
<0.005	0.0010	<0.005	<0.0002	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.04	<0.005	<0.02	<0.01

	<0.0005	<0.0005		<0.01
	<0.0005	0.0007		<0.01
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		<0.01
	0.0006	<0.0005		0.13
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		<0.01

ATTACHMENT 2

Wasteload Analysis

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WASTELOAD ANALYSIS [WLA] Date: 8/13/2020

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	BLX Mayflower, Inc.		
UPDES No:	UT-0026140		
Outfall No:	001		
Permit Flow [MGD]:	1.0	Annual	Max. Daily
	0.7	Annual	Max. Monthly
Receiving Water:	McHenry Creek		
Stream Classification:	1C, 2B, 3A, 4		
Stream Flows [cfs]:	0.3	All Seasons	Critical Low Flow
Fully Mixed:	YES		
Acute River Width:	100%		
Chronic River Width:	100%		
Mixed Flow Acute Conditions [cfs]:	1.85		
Mixed Flow Chronic Conditions [cfs]:	1.38		
Mixed Hardness [mg/L]:	493.1		

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.

Effluent Limitations for Protection of Drinking Water Sources (Class 1C Waters)

	Maximum Concentration		
	Standard	**Background**	**Limit**
Dissolved Metals (µg/L)			
Arsenic	10.0	4.7	11.0
Barium	1000	0.09	1194
Beryllium	4.0	2.0	4.4
Cadmium	10.0	2.0	11.6
Chromium	50.0	5.5	58.6
Lead	15.0	47.4	15.0
Mercury	2.0	0.006	2.4
Selenium	50.0	0.6	59.6
Silver	50.0	1.0	59.5
Inorganics			
Bromate (mg/L)	0.0	0.0	0.0
Chlorite (mg/L)	1.0	0.0	1.0
Fluoride (mg/L)	4.0	0.0	4.0
Nitrates as N	10.0	0.0	10.0
Radiological			
Gross Alpha (pCi/L)	15.0	0.0	17.9
Gross Beta (mrem/yr)	4.0	0.0	4.8
Radium 226, 228 (pCi/L)	5.0	0.0	6.0
Strontium 90 (pCi/L)	8.0	0.0	9.6
Tritium (pCi/L)	20000	0.0	23881
Uranium (pCi/L)	30.0	0.0	35.8

Effluent Limitations for Protection of Recreation (Class 2B Waters)

Physical	Concentration	
Parameter	**Minimum**	**Maximum**
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Effluent Limitations for Protection of Aquatic Wildlife (Class 3A Waters)

Whole Effluent Toxicity (WET) Limits	**Maximum**	
Dilution Ratio	0.3	:1
IC25	78%	percent effluent

Temperature (deg C)	**Maximum**
Instantaneous	20.0
Change	2.0

Dissolved Oxygen (mg/L)	**Minimum Concentration**
Instantaneous	4.0
7-day Average	5.0
30-day Average	6.5

Metals-Total Recoverable

	Chronic (4-day ave)			Acute (1-hour ave)		
Parameter	**Standard[1]**	**Background**	**Limit**	**Standard[1]**	**Background**	**Limit**
Aluminum (µg/L)	87.0	43.5	N/A	750	43.5	887
Arsenic (µg/L)	150.0	4.7	190.3	340	4.7	405
Cadmium (µg/L)	2.0	2.0	2.0	6.5	2.0	7.4
Chromium VI (µg/L)	11.0	5.5	12.5	16.0	5.5	18.0
Chromium III (µg/L)	231	2.5	294	1,773	2.5	2,117
Copper (µg/L)	29.3	25.00	30.5	49.6	25.0	54.4
Cyanide (µg/L)[2]	5.2	2.6	5.9	22.0	2.6	25.8
Iron (µg/L)		0.52		1,000	0.52	1,194
Lead (µg/L)	10.9	47.4	10.9	281	47.4	326
Mercury (µg/L)[2]	0.012	0.006	0.014	2.4	0.006	2.9
Nickel (µg/L)	168	5.0	213	1,513	5.0	1,806
Selenium (µg/L)	4.6	0.6	5.7	18.4	0.6	21.9
Silver (µg/L)		1.0		34.9	1.0	41.5
Tributylin (µg/L)[2]	0.072	0.036	0.082	0.46	0.036	0.54
Zinc (µg/L)	382	217	428	379	217	411

1: Based upon a Hardness of 400 mg/l as CaCO3

2: Background concentration assumed 50% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaC03 in the receiving water after mixing, the 87 ug/1 chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/1 acute aluminum criterion (expressed as total recoverable).

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

	Maximum Concentration		
Parameter	**Standard**	**Background**	**Limit**
Total Dissolved Solids (mg/L)	1200	376	1360
Boron (mg/L)	0.75	0.38	0.82
Arsenic, Dissolved (µg/L)	100	4.7	118
Cadmium, Dissolved (µg/L)	10	2.0	11.6
Chromium, Dissolved (µg/L)	100	5.5	118
Copper, Dissolved (µg/L)	200	25.0	234
Lead, Dissolved (µg/L)	100	47.4	110
Selenium, Dissolved (µg/L)	50	0.6	60
Gross Alpha (pCi/L)	15	0.0	18

ATTACHMENT 3

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

Outcome A:	A new effluent limitation will be placed in the permit.
Outcome B:	No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C:	No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D:	No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on arsenic, cadmium, iron, and zinc. The initial screening check for metals showed that the full model does not need to be run on antimony, beryllium, calcium, chromium, copper, lead, magnesium, manganese, mercury, nickel, selenium, silver, and thallium.

RP was run on three different datasets. The first model was run using Dataset 1 and 2, which represents all data collected for Outfall 001. The second model was run using Dataset 3, which represents the data collected for Outfall 001 after a pipe was installed to carry water from the exit of the mine to McHenry Creek. Prior to this pipe, the mine discharge ran through a mine waste impoundment within Big Dutch Peak drainage. The third model was run using Dataset 4, which represents the data collected for Outfall 002.

Dataset 1 and 2:

The RP model was run on arsenic, cadmium, iron, and zinc using all the data available. This resulted in 17-42 data points for each constitute. The results of the models are: there is acute and chronic RP at 95% confidence and 99% for zinc (Outcome A), and there is acute RP at 95% confidence and 99% confidence for iron (Outcome A). There was no RP for arsenic or cadmium (Outcome B).

Dataset 3:

The RP model was run on cadmium, iron, and zinc using all the data available. No arsenic data was available. This resulted in 3 data points for each constitute. The results of the models are: there is chronic RP at 99% confidence for zinc (Outcome A), and there is acute and chronic RP at 95% confidence and 99% confidence for iron (Outcome A). There was no RP for cadmium (Outcome B).

Dataset 4:

The RP model was run on arsenic, cadmium, iron, and zinc using all the data available. This resulted in 9-16 data points for each constitute. The result of the model is there is acute RP at 95% confidence or 99% confidence for iron (Outcome A). There was no RP for arsenic, cadmium, or zinc. The EPA ProUCL model was used to re-evaluate the iron data, which revealed an outlier (1.19 mg/L). The model was run again with the outlier removed, which resulted in no RP (Outcome B).

A Summary of the RP Model inputs and outputs are included in the table below.

[1] See Reasonable Potential Analysis Guidance for definitions of terms

RP input/output summary

All data points are reported in mg/L.

Dataset 1 and 2:

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	17		34	
Maximum Reported Effluent Conc.	<0.05/0.0052*		<0.005/0.0014**	
Coefficient of Variation (CV)	0.23		0.48	
Acute Criterion	0.405		0.0074	
Chronic Criterion	0.1903		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.0069	0.0088	0.0018	0.0027
RP Multiplier	1.3	1.7	1.3	1.9
RP for Acute?	NO	NO	NO	NO
RP for Chronic?	NO	NO	NO	NO
Outcome	B		B	

*Ten out of the seventeen data points were reported as <0.05, which is higher than the Acute Criterion. To be able to run RP, these points were removed.

**Twelve of the thirty four data points were reported as <. To be able to run RP, these points were removed.

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Iron, Total		Zinc	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	39		42*	
Maximum Reported Effluent Conc.	2.24		0.54	
Coefficient of Variation (CV)	0.32		1.1	
Acute Criterion	1.194		0.411	
Chronic Criterion	NA		0.428	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	2.400	3.200	0.670	1.500
RP Multiplier	1.1	1.4	1.3	2.8
RP for Acute?	YES	YES	YES	YES
RP for Chronic?	NA	NA	YES	YES
Outcome	A		A	

*Three of the forty two data points were reported as <. To be able to run RP, these points were removed.

Dataset 3:

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	0		3	
Maximum Reported Effluent Conc.	NA		0.0007	
Coefficient of Variation (CV)	NA		0.089	
Acute Criterion	0.405		0.0074	
Chronic Criterion	0.1903		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	NA	NA	0.0008	0.0009
RP Multiplier	NA	NA	1.2	1.3
RP for Acute?	NA	NA	NO	NO
RP for Chronic?	NA	NA	NO	NO
Outcome	NA		B	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Iron, Total		Zinc	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	3		3	
Maximum Reported Effluent Conc.	1.1		0.34	
Coefficient of Variation (CV)	0.080		0.080	
Acute Criterion	1.194		0.411	
Chronic Criterion	NA		0.428	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	1.300	1.400	0.400	0.4400
RP Multiplier	1.2	1.3	1.2	1.3
RP for Acute?	YES	YES	NO	YES
RP for Chronic?	NA	NA	NO	YES
Outcome	A		A	

Dataset 4:

RP Procedure Output	Outfall Number: 002 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	9*		16**	
Maximum Reported Effluent Conc.	0.0022		0.0004	
Coefficient of Variation (CV)	NA		NA	
Acute Criterion	0.010		0.0065	
Chronic Criterion	0.150		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.0022	0.0022	0.0004	0.0004
RP Multiplier	NA	NA	NA	NA
RP for Acute?	NO	NO	NO	NO
RP for Chronic?	NO	NO	NO	NO
Outcome	B		B	

*Eight out of the nine data points were reported as <0.05, which is higher than the Acute Criterion. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

**Fifteen out of the sixteen data points were reported as <. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

RP Procedure Output	Outfall Number: 002 Data Units: mg/L					
Parameter	Iron, Total		Iron, Total (Outlier Removed)		Zinc	
Distribution	Lognormal		Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010		0.0010	
Significant Figures	2		2		2	
Effluent Data Points	16		15		16**	
Maximum Reported Effluent Conc.	1.19*		0.38		0.13	
Coefficient of Variation (CV)	0.75		0.53		NA	
Acute Criterion	1		1		0.379	
Chronic Criterion	NA		NA		0.382	
Confidence Interval	95	95	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	1.900	3.600	0.5500	0.8800	0.13	0.13
RP Multiplier	1.6	3.0	1.4	2.3	NA	NA
RP for Acute?	YES	YES	NO	NO	NO	NO
RP for Chronic?	NA	NA	NO	NO	NO	NO
Outcome	A		B		B	

*The EPA ProUCL model was used to evaluate the data. 1.19 mg/L is an Outlier. Results are below.

Dixon's Outlier Test

Number of Observations = 16

10% critical value: 0.454

5% critical value: 0.507

1% critical value: 0.595

1. Observation Value 1.19 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.785

For 10% significance level, 1.19 is an outlier.

For 5% significance level, 1.19 is an outlier.

For 1% significance level, 1.19 is an outlier.

**Fifteen out of the sixteen data points were reported as <. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

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FACT SHEET AND STATEMENT OF BASIS
BLX MAYFLOWER, LLC
NEW PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026140
MINOR INDUSTRIAL

FACILITY CONTACTS

Person Name:	Brooke Hontz
Position:	Asst. VP Development
Phone Number:	(435) 640-1941
Person Name:	Brad Rasmussen
Position:	Consultant, AQUA Engineering
Phone Number:	(801) 299-1327
Facility Name:	BLX Mayflower, LLC
Mailing and Facility Address:	2750 West Rasmussen Road, Suite 206 Park City, Utah 84098
Telephone:	(435) 640-1941
Actual Address:	TBD

DESCRIPTION OF FACILITY

Mayflower Mountain Resort is an all seasons resort to be constructed in Park City, Utah. When complete, the 5,600 acre resort will include at least seven ski lifts and will have the capacity to house more than 2,400 residents with new condos, single-family homes, townhomes, and three hotels. The property was purchased in November of 2017 by BLX Mayflower LLC (BLX Mayflower) – this property includes both inactive Mayflower and Star Mines, both of which still discharge into waters of the state. In November 2019 a pipe was installed to carry discharge water from the exit of the Mayflower Mine to McHenry Creek. Prior to this pipe, the mine discharge ran through a mine waste impoundment within Big Dutch Peat drainage which flows into Jordanelle Reservoir. The Star of Utah Mine (Star Mine) discharge water enters into Glencoe Canyon Creek, which then flows into McHenry Creek. McHenry Creek flows into Jordanelle Reservoir.

Shortly after it acquired the property, BLX Mayflower entered the State of Utah's Voluntary Cleanup Program in May 2017. Since then, BLX Mayflower has been working with the Division of Environmental Response and Remediation to address historic contamination at the Mayflower site by ensuring that soils at the site meet EPA Regional Screening Levels and Division of Water Quality (DWQ) ground water protection standards, or are otherwise contained to avoid leaving the Mayflower site in the future.

Based on Table 1 below, the abandoned mines on this property can be described as an "inactive source(s) owned by someone with activity in an area, but not mining." This establishes a medium permitting priority for the facility. Based on the 1993 letter mentioned below, the priority for this site was previously low, but was increased when BLX Mayflower LLC acquired the property to build Mayflower Mountain Resort.

BASIS FOR PERMIT DETERMINATION

Mine adits are clearly defined point sources under Section 502(14) of the Clean Water Act (CWA) 33 U.S.C. § 1362(14). Therefore under the CWA, even historic, abandoned and long-term inactive mines require a permit to discharge to Waters of the State or Waters of the United States. However, due to

extensive numbers of these abandoned mines, questionable ownerships or former mining claims and limited federal and State resources, EPA Region VIII and the states in Region VIII have not made permitting these discharges a high priority. In December of 1993, EPA Region VIII issued a letter to the States in the region with a priority list for permitting historic mines in the region.

The Wasatch Mountains have long been mined for a variety of minerals including gold, silver and lead. Mining activity in these areas can be traced back to the 1870's and continued until the 1940's when mining activities became cost prohibitive. The Mayflower Mine and Star Mines are unique as they operated until 1972, after which it no longer was profitable to operate and were abandoned. The abandoned mines are now on private land owned by BLX Mayflower. BLX Mayflower has not conducted any active mining in the area since taking over the claims, nor do they plan to in the future. BLX Mayflower is still determining whether treatment of the mine discharge for metals removal will be necessary to meet Water Quality Standards in the future.

The 1993 EPA Region VIII letter set permitting priorities for historic mines in the region and suggested applicable effluent limits.

Table 1. NPDES Priorities at Historic mines and Applicable Effluent Limits.

Priority	Situation	Basis of NPDES Limits		Storm Water Permit
		Technology	Water Quality Standards	
High	Historic sources influence by active mining.	ELG – 40 CFR 440, BPT, BAT, or NSPS	Yes	Yes, combined with traditional permit
High	Historic Sources influenced by current mining activities (significant exploration, construction, etc.)	BPJ, usually equivalent to BAT	Yes	Yes
High	Historic Sources influenced by current mining activities (minor exploration, construction, etc.)	BPJ	Yes	Yes
Medium	Inactive sources created since 1972 owned by current operator	BPJ	Yes	Yes
Medium	Inactive sources owned by operator with nearby mining operations	BPJ	Yes	Yes
Medium	Inactive sources owned by someone with activity in an area, but not mining	BPJ	Yes	Yes
Low	Inactive sources owned by someone with no activity in the area.	BPJ	Yes	Yes

Compliance Schedule:

The Mayflower site is currently under construction and, as such, there are constant changes to storm water and surface flows. This, along with other factors, has led to uncertainly about final water flow infrastructure and potential water treatment needs. Due to this future uncertainty and the need for ongoing

changes during construction, BLX Mayflower requested a compliance schedule for iron, which has been approved by DWQ; limitations can be found below. This will allow BLX Mayflower to gather a stronger data set representative of condition, as well as provide time to develop plans for flow and treatment. To protect waters of the state, the DWQ has also included trigger for adjusting the compliance schedule if necessary. At the time the final limit is instated, January 1, 2023, BLX Mayflower, must submit the Alternative Analysis Section of the Level II ADR. See ADR section later in this FSSOB for more details.

	Effluent Limitations	
Mayflower Mine Parameter	Interim Limit (Effective from permit issue till December 31, 2022)	Final Limit (Effective January 1, 2023)
Daily Maximum Iron	Monthly monitoring only*	1.194 mg/L

* If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

DISCHARGE

DESCRIPTION OF DISCHARGE

Final discharge from Outfall 001 is exclusively from the inactive Mayflower Mine, and final discharge from Outfall 002 is exclusively from the inactive Star mine. There is a small additional discharge from a currently not understood origin exiting the site from the base of Big Dutch Pete. This discharge is not expected to negatively impact the receiving waters of the state, but if DWQ is presented evidence that there is potential for harm, item will be readdressed at that time. If there are any on site changes that impact Outfalls, such as additional flow as result of construction, BLX Mayflower shall notify DWQ immediately. At time this permit was issued there was additional storm water flow mixing with Mayflower Mine discharge at Outfall 001, which was piped from the base of Big Dutch Pete Hollow in the Spring of 2020 to avoid saturating the downhill mine waste repository. The storm water flow is expected to be rerouted into the Mayflower site's storm water system, once constructed.

Outfall	Description of Discharge Point
001	Located at latitude 40° 37' 15 " and longitude 111° 26' 15". The effluent is from the Mayflower Mine and flows into McHenry Creek.
002	Located at latitude 40° 36' 49.94" and longitude 111° 27' 41.82". The effluent is from the Star Mine and flows into Glencoe Canyon Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION

Discharge currently flows into Glencoe Canyon Creek, which flows into McHenry Creek, or directly into McHenry Creek. McHenry Creek flows into Jordanelle Reservoir, which is fed by the Provo River. Per UAC R317-2-13.5(b), the designated beneficial uses of Provo River and tributaries from Murdock Diversion to headwaters is 1C, 2B, 3A, and 4.

Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3A -- Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

Utah Administrative Code (UAC) R317-1-3.2 lists State secondary treatment standards for five-day biochemical oxygen demand (BOD5), total suspended solids (TSS), E. coli, and pH. Based on data provided in the original permit application, and because the effluent is composed only of abandoned mine water, BOD5 and E. coli limitations are not necessary, thus will not be included in this permit. However, pH and TSS are applicable to this discharge. The dissolved oxygen (DO) parameter is based on meeting water quality standards of the receiving water.

Total dissolved solids and ammonia nitrogen will not be included in this permit because there is no reasonable potential for these parameters to exceed water quality standards (effluent limitations that were derived from the wasteload allocation are much higher in concentration than that measured in the mine discharge/effluent). WET monitoring will be required for Outfall 001. Metals effluent limitations are based on the Wasteload Analysis.

Antidegradation Review (ADR)

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in the Wasteload Analysis.

A Level II ADR is required for this facility as these are newly permitted outfalls with the potential to increase concentrations and loads of pollutants to the receiving waters. The Level II ADR requirement will not be possible to fully complete without selecting the treatment method, but all but the alternative analysis can be completed at this time.

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). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on arsenic, cadmium, iron, and zinc for both Outfall 001 and Outfall 002 to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: iron and zinc for Outfall 001, and iron for Outfall 002. A copy of the RP analysis is included at the end of this Fact Sheet. The RP to exceed the standard for iron in Outfall 002 was based on the current dataset. The EPA ProUCL model was used to evaluate the data, which revealed one outlier. With this outlier

removed, there is no RP for iron to exceed the standard. There will be no permit limitations for Outfall 002 during this permit cycle. This will be re-evaluated at the end of this permit cycle, or when monitoring data illustrates exceedence of water quality standards.

The permit limitations are:

Parameter	Effluent Limitations Outfall 001 *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.7	--	--	--	1.0
TSS, mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
pH, Standard Units	--	--	--	6.5	9
WET, Chronic Biomonitoring	--	--	--	--	IC_{25} > 78% effluent (from WLA)
Iron, mg/L *g	--	--	--	--	1.194
Zinc, mg/L	--	--	--	--	0.411

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are being imposed because this is a new permit. Once more data has been collected throughout this permit cycle requirements may change. 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.

Self-Monitoring and Reporting Requirements Outfall 001 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Monthly	Measure	MGD
TSS	Monthly	Composite	mg/L
DO	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
WET – Biomonitoring *d Ceriodaphnia - Chronic Fathead Minnows - Chronic	4 x Yearly 2nd & 4th Quarter 1st & 3rd Quarter	 Composite Composite	 Pass/Fail Pass/Fail
Iron *g	Monthly	Composite	mg/L
Zinc	Monthly	Composite	mg/L
Metals, Effluent *e	Quarterly	Composite	mg/L
Self-Monitoring and Reporting Requirements Outfall 002 *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Quarterly	Measure	MGD
TSS	Quarterly	Grab	mg/L
DO	Quarterly	Grab	mg/L
pH	Quarterly	Grab	SU

WET – Biomonitoring Ceriodaphnia – Chronic *f	Once during permit cycle	Composite	Pass/Fail
Metals, Effluent *e	Quarterly	Grab	mg/L

*a See Definitions, *Part VIII*, for definition of terms.

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

*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

*d The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters.

*e All metals results were reviewed. Only arsenic, cadmium, iron, and zinc appeared to be close to the limits suggested in the Wasteload. At this time metals need to be monitored quarterly, but this may change for next permit cycle.

*f WET Testing must be conducted at the frequency listed in the table, but can be done at any time during the year to accommodate access issues.

*g Iron parameter will be **monitoring only** from permit issue through December 31, 2022. If three daily maximum iron values are reported above 1.5 mg/L, compliance schedule may be adjusted.

STORM WATER

STORM WATER REQUIREMENTS

The Mayflower site contains areas of historic mining. These inactive mines may be required to obtain coverage under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities if storm water is coming in contact with overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site. As noted above, BLX Mayflower is participating in the Voluntary Cleanup Program to address historic mine waste at the site, including eventual elimination of storm water contact with historic mine waste rock at the facility.

BLX Mayflower and/or its contractors have obtained and must maintain permit coverage under the Construction General Storm Water Permit (CGP) 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.

Because construction activities at the Mayflower site and participation in the Voluntary Cleanup program are ongoing, DWQ will continue to work with BLX Mayflower to require separate storm water permits, as necessary.

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 continuously discharging from Outfall 001. Given the RP analysis above indicates that there is reasonable potential for toxicity to be present. Therefore, numerical WET limitations are included in the permit for Outfall 001. The facility will be required to conduct quarterly chronic WET testing, using alternating species.

Outfall 002 discharges intermittently and toxicity is neither an existing concern, nor likely to be present in the discharge, based on data collected and reported thus far. The monitoring location is located just below the two mine portals (combined shortly after existing portals and considered one discharge), before flow continues down over/ through the Star Mine waste rock and 'deer camp' waste rock. This site is currently in Phase I of construction; this flow will be addressed in Phase II. While decisions concerning this discharge are being made and the site in a state of flux, this outfall will be **monitoring only.** 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.

PRETREATMENT REQUIREMENTS

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 CWA, the permittee shall comply with all applicable federal General 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 BLX Mayflower 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 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).

PERMIT DURATION

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

Drafted by
Danielle Lenz, Discharge
Lonnie Shull, Biomonitoring
Lisa Stevens, Storm Water
Danielle Lenz, Reasonable Potential Analysis
Jennifer Robinson, Pretreatment
Nick von Stackelberg, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: October 9, 2020
Ended: November 9, 2020

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

During the public comment period provided under UAC 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

There were no public comments received during the public notice period.

DWQ-2020-008062

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data

MAYFLOWER MINE

Dataset 1: Below is all data collected by BLX Mayflower LLC / Extell Development from July 2017 to March 2020. All parameters are reported in mg/L.

Ammonia	Nitrate	Nitrite	pH	Phosphate, Ortho as P	TDS	TSS	Antimony	Arsenic	Beryllium
<0.0500	<0.1	<0.1	7.34	<0.05	744	4	<0.005	0.00289	<0.001
<0.0500	<0.1	<0.1	7.3	<0.05	764	<4	<0.02	0.00281	<0.001
<0.2	<0.1	<0.1	7.3	<0.01	736	<4	<0.02	0.0052	<0.001
<0.2	<0.1	<0.1	7.6	<0.01	724	4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.2	<0.01	744	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.4	<0.02	776	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8.1	0.02	740	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8	0.02	724	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.3	0.02	752	7	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.2	0.02	728	<4	<0.02	<0.05	<0.001
<0.2			7.6	0.04	752		<0.02	<0.05	<0.001
			7.2	0.02	684			<0.05	
								<0.05	

Cadmium	Calcium	Chromium	Copper	Iron, Dissolved	Iron, Total	Lead	Magnesium	Manganese	Mercury
<0.00050	175	<0.002	<0.005	0.59	1.38	<0.002	25.4	1.63	<0.00015
<0.00050	152	<0.002	<0.005	0.6	0.84	<0.002	23.4	1.41	<0.00015
0.0013	173	<0.005	<0.005	0.09	1.03	0.0031	25.4	1.45	<0.0002
<0.005	178	<0.005	<0.005	0.13	1.24	<0.02	25.5	1.58	<0.0002
<0.005	182	<0.005	<0.005	0.09	0.92	<0.02	27.4	1.67	<0.0002
<0.005	173	<0.005	<0.005	0.09	0.95	<0.02	26.4	1.6	<0.0002
<0.005	171	<0.005	<0.005	0.34	0.89	<0.02	24.6	1.57	<0.0002
<0.005	178	<0.005	<0.005	0.53	1.11	<0.02	25.4	1.54	<0.0002
<0.005	167	<0.005	<0.005	0.61	1.29	<0.02	24.3	1.44	<0.0002
<0.005	184	<0.005	<0.005	0.62	0.85	<0.02	26.6	1.48	<0.0002
<0.005		<0.005	<0.005	0.24	0.63	<0.02			<0.0002
<0.005		<0.005		0.3	0.59	<0.02			<0.0002
<0.005		<0.005		0.28	0.72	<0.02			<0.0002
0.0008				0.26	1.08	0.0024			<0.0000005
0.0008				0.19	0.77	0.0026			<0.0002
0.0007				0.17	0.82	0.0026			<0.0002
0.0008				0.28	0.62	0.003			<0.0002
0.0007				0.27	1.32	0.0023			<0.0002
0.0002				1.29	1.21	0.0023			<0.0002
0.0007				0.89	1.25	0.0019			<0.0002
0.0007				1.09	1.03	0.0038			<0.0002
<0.0002				0.33	0.9	0.0029			<0.0002
0.0007				0.24	0.87	0.0026			<0.0002
0.0014				0.21	1.05	0.0029			<0.0002

0.0012					0.8	0.0027			<0.00023
0.0008					0.41	<0.015			<0.0002
0.0007					1.14	0.0021			<0.0002
0.0006					0.92	0.0027			<0.0002
0.0006					2.24	<0.015			<0.0002
0.0007					1.63	0.0032			<0.0002
					1.57	0.0029			<0.0002
					1.45	0.0024			<0.0002
					1.1	0.0026			<0.0002
					0.94	0.0031			<0.0002
					1.04	0.0027			<0.0002
						0.0027			<0.0002
						0.0024			<0.0002
						0.0027			<0.0003

Nickel	**Selenium**	**Silver**	**Thallium**	**Zinc**
<0.005	<0.002	<0.002	<0.0002	0.318
<0.005	<0.002	<0.002	<0.02	0.322
<0.005	<0.0005	<0.0005	<0.02	0.54
<0.005	<0.02	<0.002	<0.02	0.39
<0.005	<0.02	<0.005	<0.02	0.43
<0.005	<0.02	<0.005	<0.02	0.41
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	0.4
<0.005	<0.02	<0.005	<0.02	0.4
<0.005	<0.02	<0.005	<0.02	0.47
<0.005	<0.02	<0.005	<0.02	0.41
<0.005	<0.02	<0.005	<0.02	0.39
	<0.02	<0.005		0.41
	<0.08	<0.005		0.32
	0.0006	<0.0005		0.3
	0.0009	<0.0005		0.29
	<0.0005	<0.0005		0.35
	0.0006	<0.0005		0.42
	<0.0005	<0.0005		0.42
	<0.0005	<0.0005		0.33
	0.0005	<0.0005		0.41
	0.0008	<0.0006		0.41
	<0.0005	<0.0005		0.41
	0.0005	<0.0005		0.38
	0.0005	<0.0005		0.01
	0.0006	<0.0005		0.01
	0.0006	<0.0005		<0.01
	<0.0005	<0.0005		0.23
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		0.17
	<0.0005	<0.0005		0.15
	<0.02	<0.005		0.32
	<0.0005	<0.0005		0.31

	<0.0005	<0.0005		0.3
	<0.0005	<0.0005		0.26
	<0.0005	<0.0005		0.29
	0.0006	<0.0005		0.31
	<0.0005	<0.0005		0.34
	<0.0005	<0.0005		

Dataset 2: Below is all data collected during Pilot Study (in October and November of 2019) conducted by Aqua Engineering - this study was conducted to test metal removing technologies. All samples below were untreated. All parameters are reported in mg/L.

pH	TDS	Antimony	Arsenic	Cadmium	Calcium	Copper	Iron
7.2	708	ND	0.0047	0.0007	153	0.0050	1.43
7.3	728	ND	0.0037	0.0007	151	0.0032	1.03
7.3	676	ND	0.0041	0.0007	154	0.0041	1.09
7.4	692	ND	0.0040	0.0007	153	0.0038	1.00

Lead	Magnesium	Nickel	Selenium	Silver	Thallium	Zinc	Manganese
0.0040	24.2	0.0099	0.0005	ND	ND	0.33	1.40
0.0027	23.4	0.0101	0.0005	ND	ND	0.32	1.36
0.0044	23.6	0.0031	ND	ND	ND	0.32	
0.0052	23.4	0.0031	ND	ND	ND	0.32	

Dataset 3: Below is all data collected by BLX Mayflower LLC / Extell after pipe bypassing mine waste was installed at the Mayflower Mine site. Pipe was installed November 2019. All parameters are reported in mg/L.

Cadmium	Iron, Dissolved	Iron, Total	Lead	Mercury	Selenium	Silver	Zinc
0.0006	0.33	1.1	0.0027	<0.0002	0.0006	<0.0005	0.29
0.0006	0.24	0.94	0.0024	<0.0002	<0.0005	<0.0005	0.31
0.0007	0.21	1.04	0.0027	<0.0003	<0.0005	<0.0005	0.34

STAR MINE

Dataset 4: Below is all data collected by BLX Mayflower LLC / Extell Development from July 2017 to March 2020. All parameters are reported in mg/L.

Ammonia	Nitrate	Nitrite	pH	Phosphate, Ortho as P	TDS	TSS	Antimony	Arsenic	Beryllium
<0.2	<0.1	<0.1	7.7	<0.01	264	<4	0.0009	0.0022	<0.001
<0.2	<0.1	<0.1	8.1	0.01	252	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.6	<0.01	276	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	8	0.02	268	<4	<0.02	<0.05	<0.001
0.2	<0.1	<0.1	8.1	0.02	264	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.8	0.02	300	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.7	0.03	268	<4	<0.02	<0.05	<0.001
<0.2	<0.1	<0.1	7.8	0.03	308	<4	<0.02	<0.05	<0.001
	<0.1	<0.1	7.6	0.02	248	<4	<0.02	<0.05	<0.001

Cadmium	Calcium	Chromium	Copper	Iron, Dissolved	Iron, Total	Lead	Magnesium	Manganese	Mercury
<0.0002	61.8	<0.005	<0.005	0.16	0.07	<0.0005	9.8	0.063	<0.0002
<0.005	57.5	<0.005	<0.005	0.09	0.1	<0.02	10.4	0.058	<0.0002
<0.005	64.9	<0.005	<0.005	0.12	0.12	<0.02	10.7	0.061	<0.0002
<0.005	63.4	<0.005	<0.005	0.19	0.15	<0.02	10.2	0.06	<0.0002
<0.005	64.6	<0.005	<0.005	0.06	0.14	<0.02	10.8	0.056	<0.0002
<0.005	64.5	<0.005	<0.005	0.04	0.19	<0.02	10.8	0.056	<0.0002
<0.005	66.9	<0.005	<0.005		0.21	<0.02	11.1	0.062	<0.0002
<0.005	67.7	<0.005	<0.005		0.23	<0.02	11.8	0.065	<0.0002
<0.005	72.4	<0.005	<0.005		0.20	<0.02	12.9	0.065	<0.0002
<0.005					0.35	<0.0005			0.0000016
<0.005					0.35	<0.0005			<0.0002
<0.005					0.27	<0.0005			<0.0002
<0.005					0.38	<0.0005			<0.0002
0.0004					1.19	0.0044			<0.0002
<0.005					0.13	<0.0005			<0.0002
<0.005					0.13	<0.0005			<0.0002

Nickel	Selenium	Silver	Thallium	Zinc
<0.005	0.0010	<0.005	<0.0002	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.02	<0.005	<0.02	<0.01
<0.005	<0.04	<0.005	<0.02	<0.01

	<0.0005	<0.0005		<0.01
	<0.0005	0.0007		<0.01
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		<0.01
	0.0006	<0.0005		0.13
	<0.0005	<0.0005		<0.01
	<0.0005	<0.0005		<0.01

ATTACHMENT 2

Wasteload Analysis

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WASTELOAD ANALYSIS [WLA] Date: 8/13/2020

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	BLX Mayflower, Inc.		
UPDES No:	UT-0026140		
Outfall No:	001		
Permit Flow [MGD]:	1.0	Annual	Max. Daily
	0.7	Annual	Max. Monthly
Receiving Water:	McHenry Creek		
Stream Classification:	1C, 2B, 3A, 4		
Stream Flows [cfs]:	0.3	All Seasons	Critical Low Flow
Fully Mixed:	YES		
Acute River Width:	100%		
Chronic River Width:	100%		
Mixed Flow Acute Conditions [cfs]:	1.85		
Mixed Flow Chronic Conditions [cfs]:	1.38		
Mixed Hardness [mg/L]:	493.1		

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.

Effluent Limitations for Protection of Drinking Water Sources (Class 1C Waters)

	Maximum Concentration		
	Standard	**Background**	**Limit**
Dissolved Metals (µg/L)			
Arsenic	10.0	4.7	11.0
Barium	1000	0.09	1194
Beryllium	4.0	2.0	4.4
Cadmium	10.0	2.0	11.6
Chromium	50.0	5.5	58.6
Lead	15.0	47.4	15.0
Mercury	2.0	0.006	2.4
Selenium	50.0	0.6	59.6
Silver	50.0	1.0	59.5
Inorganics			
Bromate (mg/L)	0.0	0.0	0.0
Chlorite (mg/L)	1.0	0.0	1.0
Fluoride (mg/L)	4.0	0.0	4.0
Nitrates as N	10.0	0.0	10.0
Radiological			
Gross Alpha (pCi/L)	15.0	0.0	17.9
Gross Beta (mrem/yr)	4.0	0.0	4.8
Radium 226, 228 (pCi/L)	5.0	0.0	6.0
Strontium 90 (pCi/L)	8.0	0.0	9.6
Tritium (pCi/L)	20000	0.0	23881
Uranium (pCi/L)	30.0	0.0	35.8

Effluent Limitations for Protection of Recreation (Class 2B Waters)

Physical	Concentration	
Parameter	**Minimum**	**Maximum**
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Effluent Limitations for Protection of Aquatic Wildlife (Class 3A Waters)

Whole Effluent Toxicity (WET) Limits	**Maximum**	
Dilution Ratio	0.3	:1
IC25	78%	percent effluent

Temperature (deg C)	**Maximum**
Instantaneous	20.0
Change	2.0

Dissolved Oxygen (mg/L)	**Minimum Concentration**
Instantaneous	4.0
7-day Average	5.0
30-day Average	6.5

Metals-Total Recoverable

	Chronic (4-day ave)			Acute (1-hour ave)		
Parameter	**Standard[1]**	**Background**	**Limit**	**Standard[1]**	**Background**	**Limit**
Aluminum (µg/L)	87.0	43.5	N/A	750	43.5	887
Arsenic (µg/L)	150.0	4.7	190.3	340	4.7	405
Cadmium (µg/L)	2.0	2.0	2.0	6.5	2.0	7.4
Chromium VI (µg/L)	11.0	5.5	12.5	16.0	5.5	18.0
Chromium III (µg/L)	231	2.5	294	1,773	2.5	2,117
Copper (µg/L)	29.3	25.00	30.5	49.6	25.0	54.4
Cyanide (µg/L)[2]	5.2	2.6	5.9	22.0	2.6	25.8
Iron (µg/L)		0.52		1,000	0.52	1,194
Lead (µg/L)	10.9	47.4	10.9	281	47.4	326
Mercury (µg/L)[2]	0.012	0.006	0.014	2.4	0.006	2.9
Nickel (µg/L)	168	5.0	213	1,513	5.0	1,806
Selenium (µg/L)	4.6	0.6	5.7	18.4	0.6	21.9
Silver (µg/L)		1.0		34.9	1.0	41.5
Tributylin (µg/L)[2]	0.072	0.036	0.082	0.46	0.036	0.54
Zinc (µg/L)	382	217	428	379	217	411

1: Based upon a Hardness of 400 mg/l as CaCO3

2: Background concentration assumed 50% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaC03 in the receiving water after mixing, the 87 ug/1 chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/1 acute aluminum criterion (expressed as total recoverable).

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

	Maximum Concentration		
Parameter	**Standard**	**Background**	**Limit**
Total Dissolved Solids (mg/L)	1200	376	1360
Boron (mg/L)	0.75	0.38	0.82
Arsenic, Dissolved (µg/L)	100	4.7	118
Cadmium, Dissolved (µg/L)	10	2.0	11.6
Chromium, Dissolved (µg/L)	100	5.5	118
Copper, Dissolved (µg/L)	200	25.0	234
Lead, Dissolved (µg/L)	100	47.4	110
Selenium, Dissolved (µg/L)	50	0.6	60
Gross Alpha (pCi/L)	15	0.0	18

ATTACHMENT 3

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

Outcome A:	A new effluent limitation will be placed in the permit.
Outcome B:	No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C:	No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D:	No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on arsenic, cadmium, iron, and zinc. The initial screening check for metals showed that the full model does not need to be run on antimony, beryllium, calcium, chromium, copper, lead, magnesium, manganese, mercury, nickel, selenium, silver, and thallium.

RP was run on three different datasets. The first model was run using Dataset 1 and 2, which represents all data collected for Outfall 001. The second model was run using Dataset 3, which represents the data collected for Outfall 001 after a pipe was installed to carry water from the exit of the mine to McHenry Creek. Prior to this pipe, the mine discharge ran through a mine waste impoundment within Big Dutch Peak drainage. The third model was run using Dataset 4, which represents the data collected for Outfall 002.

Dataset 1 and 2:

The RP model was run on arsenic, cadmium, iron, and zinc using all the data available. This resulted in 17-42 data points for each constitute. The results of the models are: there is acute and chronic RP at 95% confidence and 99% for zinc (Outcome A), and there is acute RP at 95% confidence and 99% confidence for iron (Outcome A). There was no RP for arsenic or cadmium (Outcome B).

Dataset 3:

The RP model was run on cadmium, iron, and zinc using all the data available. No arsenic data was available. This resulted in 3 data points for each constitute. The results of the models are: there is chronic RP at 99% confidence for zinc (Outcome A), and there is acute and chronic RP at 95% confidence and 99% confidence for iron (Outcome A). There was no RP for cadmium (Outcome B).

Dataset 4:

The RP model was run on arsenic, cadmium, iron, and zinc using all the data available. This resulted in 9-16 data points for each constitute. The result of the model is there is acute RP at 95% confidence or 99% confidence for iron (Outcome A). There was no RP for arsenic, cadmium, or zinc. The EPA ProUCL model was used to re-evaluate the iron data, which revealed an outlier (1.19 mg/L). The model was run again with the outlier removed, which resulted in no RP (Outcome B).

A Summary of the RP Model inputs and outputs are included in the table below.

[1] See Reasonable Potential Analysis Guidance for definitions of terms

RP input/output summary

All data points are reported in mg/L.

Dataset 1 and 2:

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	17		34	
Maximum Reported Effluent Conc.	<0.05/0.0052*		<0.005/0.0014**	
Coefficient of Variation (CV)	0.23		0.48	
Acute Criterion	0.405		0.0074	
Chronic Criterion	0.1903		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.0069	0.0088	0.0018	0.0027
RP Multiplier	1.3	1.7	1.3	1.9
RP for Acute?	NO	NO	NO	NO
RP for Chronic?	NO	NO	NO	NO
Outcome	B		B	

*Ten out of the seventeen data points were reported as <0.05, which is higher than the Acute Criterion. To be able to run RP, these points were removed.

**Twelve of the thirty four data points were reported as <. To be able to run RP, these points were removed.

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Iron, Total		Zinc	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	39		42*	
Maximum Reported Effluent Conc.	2.24		0.54	
Coefficient of Variation (CV)	0.32		1.1	
Acute Criterion	1.194		0.411	
Chronic Criterion	NA		0.428	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	2.400	3.200	0.670	1.500
RP Multiplier	1.1	1.4	1.3	2.8
RP for Acute?	YES	YES	YES	YES
RP for Chronic?	NA	NA	YES	YES
Outcome	A		A	

*Three of the forty two data points were reported as <. To be able to run RP, these points were removed.

Dataset 3:

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	0		3	
Maximum Reported Effluent Conc.	NA		0.0007	
Coefficient of Variation (CV)	NA		0.089	
Acute Criterion	0.405		0.0074	
Chronic Criterion	0.1903		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	NA	NA	0.0008	0.0009
RP Multiplier	NA	NA	1.2	1.3
RP for Acute?	NA	NA	NO	NO
RP for Chronic?	NA	NA	NO	NO
Outcome	NA		B	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L			
Parameter	Iron, Total		Zinc	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	3		3	
Maximum Reported Effluent Conc.	1.1		0.34	
Coefficient of Variation (CV)	0.080		0.080	
Acute Criterion	1.194		0.411	
Chronic Criterion	NA		0.428	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	1.300	1.400	0.400	0.4400
RP Multiplier	1.2	1.3	1.2	1.3
RP for Acute?	YES	YES	NO	YES
RP for Chronic?	NA	NA	NO	YES
Outcome	A		A	

Dataset 4:

RP Procedure Output	Outfall Number: 002 Data Units: mg/L			
Parameter	Arsenic		Cadmium	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010	
Significant Figures	2		2	
Effluent Data Points	9*		16**	
Maximum Reported Effluent Conc.	0.0022		0.0004	
Coefficient of Variation (CV)	NA		NA	
Acute Criterion	0.010		0.0065	
Chronic Criterion	0.150		0.002	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.0022	0.0022	0.0004	0.0004
RP Multiplier	NA	NA	NA	NA
RP for Acute?	NO	NO	NO	NO
RP for Chronic?	NO	NO	NO	NO
Outcome	B		B	

*Eight out of the nine data points were reported as <0.05, which is higher than the Acute Criterion. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

**Fifteen out of the sixteen data points were reported as <. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

RP Procedure Output	Outfall Number: 002 Data Units: mg/L					
Parameter	Iron, Total		Iron, Total (Outlier Removed)		Zinc	
Distribution	Lognormal		Lognormal		Lognormal	
Reporting Limit	0.0010		0.0010		0.0010	
Significant Figures	2		2		2	
Effluent Data Points	16		15		16**	
Maximum Reported Effluent Conc.	1.19*		0.38		0.13	
Coefficient of Variation (CV)	0.75		0.53		NA	
Acute Criterion	1		1		0.379	
Chronic Criterion	NA		NA		0.382	
Confidence Interval	95	95	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	1.900	3.600	0.5500	0.8800	0.13	0.13
RP Multiplier	1.6	3.0	1.4	2.3	NA	NA
RP for Acute?	YES	YES	NO	NO	NO	NO
RP for Chronic?	NA	NA	NO	NO	NO	NO
Outcome	A		B		B	

*The EPA ProUCL model was used to evaluate the data. 1.19 mg/L is an Outlier. Results are below.

Dixon's Outlier Test

Number of Observations = 16

10% critical value: 0.454

5% critical value: 0.507

1% critical value: 0.595

1. Observation Value 1.19 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.785

For 10% significance level, 1.19 is an outlier.

For 5% significance level, 1.19 is an outlier.

For 1% significance level, 1.19 is an outlier.

**Fifteen out of the sixteen data points were reported as <. To be able to run RP, these points were removed, which only left one data point. This data point is below both Acute and Chronic Criterion, which results in Outcome B.

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