

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. **UT0025712**

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

ENERGY QUEEN MINE

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named

WEST COYOTE WASH,

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

This permit shall become effective on September 1, 2018

This permit expires at midnight on August 31, 2023.

Signed this 25th day of July, 2018.


Kim Shelley
Acting Director

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I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Description of Discharge Point(s).

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are in violation 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*.

<u>Outfall Number</u>	<u>Location of Discharge Point(s)</u>
001	Located at latitude 38°18'45" and longitude 109°18'30". Discharge would be from the mine water treatment system into West Coyote Wash.
002	Located at latitude 38°18'45" and longitude 109°18'30". Discharge would be from the mine water treatment system into West Coyote Wash.
003	Located at latitude 38°18'45" and longitude 109°18'30". Discharge would be from the mine water treatment system into West Coyote Wash.

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 bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001, 002, and 003. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Limitations for Outfalls 001, 002, 003 b/, c/			
Parameter	Monthly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.5	NA	NA
TSS, mg/L	20	NA	30
Total Uranium, mg/L	2.0	NA	4.0
Total Radium 226, pCi/L	10	NA	30
Dissolved Radium 226, pCi/L	3	NA	10
COD, mg/L	100	NA	200
Total Zinc, mg/L	0.5	NA	1.0
Total Dissolved Solids, mg/L	NA	NA	1000
Total Dissolved Solids, tons/day a/	Report	NA	1.0
Oil & Grease, mg/L d/	NA	NA	10
pH, standard units	NA	6.5	9.0

NA – Not Applicable; MGD – million gallons per day; mg/L – milligrams per liter

Self-Monitoring and Reporting Requirements				
Parameter	Frequency	Sample Type	Units	Reporting Frequency
Total Flow	Continuous	Recorder	GPM	Monthly
TSS	Monthly	Grab	mg/L	Monthly
Total Uranium	Monthly	Grab	mg/L	Monthly
Total Radium 226	Monthly	Grab	pCi/L	Monthly
Dissolved Radium 226	Monthly	Grab	pCi/L	Monthly
COD	Quarterly	Grab	mg/L	Quarterly
Total Zinc	Quarterly	Grab	mg/L	Quarterly
Total Dissolved Solids	Quarterly	Grab	mg/L	Quarterly
Total Dissolved Solids	Quarterly	Grab	ton/day	Quarterly
Oil & Grease	Quarterly	Grab	mg/L	Quarterly
pH	Monthly	Grab	SU	Monthly

In addition to the above monitoring requirements, the permittee is required to sample and submit the analysis of the pollutants listed in 40 CFR Part 122 Appendix D Table III (Other Toxic Pollutants (Metals and Cyanide) and Total Phenols) occurring from the first discharge of the facility.

Part I
DISCHARGE PERMIT NO. UT0025712
WASTEWATER

- a/ TDS will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year, with daily maximum tonnages reported monthly. It is the permittee's responsibility to monitor and report the actual discharge of TDS for each monitoring period.
 - b/ There shall be no discharge of floating solids or visible foam in other than trace amounts.
 - c/ There shall be no discharge of sanitary wastes.
 - d/ An Oil and grease sample shall be taken when a sheen is visible.
2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the outfalls of the final treatment prior to mixing with any receiving water.

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 via NetDMR, or on a Discharge Monitoring Report Form (EPA No. 3320-1)¹, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part V.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

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

II. STORMWATER DISCHARGE REQUIREMENTS

A. Coverage of This Section.

1. Discharges Covered Under This Section. The requirements listed under this section shall apply to storm water discharges from active and inactive metal mining and ore dressing facilities [Standard Industrial Classification (SIC) Major Group 10] if the storm water has come into contact with, or is contaminated by, any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the operation. SIC Major Group 10 includes establishments primarily engaged in mining, developing mines, or exploring for metallic minerals (ores) and also includes all ore dressing and beneficiating operations, whether performed at mills operated in conjunction with the mines served or at mills, such as custom mills, operated separately. For the purposes of this part of the permit, the term "metal mining" includes all ore mining and/or dressing and beneficiating operations, whether performed at mills operated in conjunction with the mines served or at mills, such as custom mills, operated separately. All storm water discharges from inactive metal mining facilities and the storm water discharges from the following areas of active, and temporarily inactive, metal mining facilities are the only discharges covered by this section of the permit: topsoil piles; offsite haul/access roads if off active area; onsite haul roads if not constructed of waste rock or if spent ore and mine water is not used for dust control; runoff from tailings dams/dikes when not constructed of waste rock/tailings and no process fluids are present; concentration building, if no contact with material piles; mill site, if no contact with material piles; chemical storage area; docking facility, if no excessive contact with waste product; explosive storage; reclaimed areas released from reclamation bonds prior to December 17, 1990; and partially/inadequately reclaimed areas or areas not released from reclamation bonds.
2. Limitations on Coverage. The following storm water discharges associated with industrial activity are not authorized by this permit.
 - a. Discharges from active metal mining facilities that are subject to the effluent limitation guidelines for the Ore Mining and Dressing Point Source Point Source Category (40 CFR Part 440). Coverage under this permit does not include adit drainage or contaminated springs or seeps at active facilities, temporarily inactive facilities, or inactive facilities. Also see Limitations on Coverage, *Part 1.b.*
 - b. Storm water discharges associated with an industrial activity that the Director has determined to be, or may reasonably be expected to be, contributing to a violation of a water quality standard.
 - c. Storm water discharges associated with industrial activity from inactive mining operations occurring on Federal lands where an operator cannot be

identified.

3. Co-Located Industrial Activity. When an industrial facility, described by paragraph *a.* above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility. The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.
- B. Special Definitions. The following definitions are only for this section of the permit and are not intended to supersede the definitions of active and inactive mining facilities established by *40 CFR 122.26(b)(14)(iii)*:
1. "Active Metal Mining Facility" is a place where work or other related activity to the extraction, removal, or recovery of metal ore is being conducted. With respect to surface mines, an "active metal mining facility" does not include any area of land on or in which grading has been completed to return the earth to a desired contour and reclamation work has begun.
 2. "Inactive Metal Mining Facility" means a site or portion of a site where metal mining and/or milling activities occurred in the past but is not an active metal mining facility, as defined in this permit and that portion of the facility does not have an active mining permit issued by the applicable (federal or state) governmental agency.
 3. "Temporarily Inactive Metal Mining Facility" means a site or portion of a site where metal mining and/or milling activities occurred in the past, but currently are not being actively undertaken, and the facility has an active mining permit issued by the applicable (federal or state) government agency that authorizes mining at the site.
- C. Storm Water Pollution Prevention Plan Requirements.
1. Contents of Plan for Active and Temporarily Inactive Metal Mining Facilities. The plan shall include, at a minimum, the following items:
 - a. Pollution Prevention Team. Identification of a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities

of the team shall address all aspects of the facility's storm water pollution prevention plan.

- b. Description of Mining Activities. A description of the mining and associated activities taking place at the site that affect or may affect storm water runoff intended to be covered by this permit. The description shall report the total acreage within the mine site, an estimate of the number of acres of disturbed land and an estimate of the total amount of land proposed to be disturbed throughout the life of the mine. A general description of the location of the mining site relative to major transportation routes and communities shall also be provided.
- c. Description of Potential Pollutant Sources. A description of potential sources that may reasonably be expected to add significant amounts of pollutants (including sediment) to storm water discharges or that may result in the discharge of pollutants during dry weather. Each description shall identify all activities and significant materials that may potentially be significant storm water pollutant sources from the active mining activity (see paragraph a.), including, at a minimum:

- 1) Drainage.

- a) A site topographic map that indicates, at a minimum: mining/milling site boundaries and access and haul roads; the location of each storm water outfall and an outline of the portions of the drainage area that are within the facility boundaries; equipment storage, fueling and maintenance areas; materials handling areas; storage areas for chemicals and explosives; areas used for storage of overburden, materials, soils or wastes; location of mine drainage (where water leaves mine) or any other process water; tailings piles/ponds, both proposed and existing; heap leach pads; points of discharge from the property for mine drainage or any other process water; springs, streams, wetlands and other surface waters; and boundary of tributary areas that are subject to effluent limitations guidelines. In addition, the map must indicate the types of discharges contained in the drainage areas of the outfalls.
- b) Prediction of the direction of flow, and identification of the types of pollutants (e.g., heavy metals, sediment) that are likely to be present in storm water discharges associated with industrial activity, for each area of the mine/mill site that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant

amounts of pollutants. Factors to consider include the mineralogy of the ore and waste rock (e.g., acid forming), toxicity and quantity of chemical(s) used, produced or discharged; the likelihood of contact with storm water; vegetation on site if any, and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

- c) **Inventory of Exposed Materials.** An inventory of the types of materials handled at the site that potentially may be exposed to precipitation for each storm water outfall that may be covered under this permit (see paragraph 1.). Such inventory shall include a narrative description of: significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the date of the submission of a Notice of Intent (NOI) to be covered under this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives. The inventory of exposed materials shall include, but shall not be limited to the significant materials stored exposed to storm water, and material management practices employed that were listed for the facility in the approved group application. A summary of any existing ore or waste rock/overburden characterization data, including results of testing for acid rock generation potential. If the ore or waste rock/overburden characterization data is updated due to a change in the ore type being mined, the storm water pollution prevention plan shall be updated with the new data.
- 2) **Spills and Leaks.** A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the date of submission of a *Notice of Intent (NOI)* to be covered under this permit. Such list shall be updated as appropriate during the term of the permit.
- 3) **Sampling Data.** A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility,

including a summary of sampling data collected during the term of this permit.

- 4) Risk Identification and Summary of Potential Pollutant Sources. A narrative description of the potential pollutant sources from the following activities associated with metal mining: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and onsite waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g., heavy metals, etc.) of concern shall be identified.
- d. Measures and Controls. A description of storm water management controls appropriate for the facility, and procedures for implementing such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
- 1) Good Housekeeping. Good housekeeping such as maintenance in a clean, orderly manner of areas that may contribute pollutants to storm water discharges. (For suggested measures for vehicle maintenance operations, see good housekeeping measures specified in *Appendix II.G.* for transportation facilities.)
 - 2) Preventive Maintenance. A narrative describing the program for timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspection and testing of facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems. Particular attention shall be given to erosion control and sediment control systems and devices.
 - 3) Spill Prevention and Response Procedures. Areas where potential spills that can contribute pollutants to storm water discharges, and their accompanying drainage points. The description area shall include, where appropriate, specific material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered; procedures for cleaning up spills and the method for making these plans and the necessary equipment to implement a cleanup available to the appropriate personnel.

- 4) Inspections. Provisions for qualified personnel to inspect designated equipment and mine areas at least on a monthly basis for active sites. The monthly inspections can be done at any time during the month and do not have to be done immediately following a precipitation event. For temporarily inactive sites, the inspections should be quarterly; however, inspections are not required when adverse weather conditions (e.g., snow) make the site inaccessible. All material handling areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion control systems and sediment control devices shall also be inspected to determine if they are working properly. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.
- 5) Employee Training. Outlines of employee training programs that inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping, and material management practices. The pollution prevention plan shall specify how often training shall take place, but in all cases training must be held at least annually (once per calendar year).
- 6) Recordkeeping and Internal Reporting Procedures. Descriptions of incidents (such as spills, major storm events, or other discharges), as well as information describing the quality and quantity of storm water discharges. Inspections, maintenance activities, and training sessions shall also be documented and records of such activities shall be incorporated into the plan.
- 7) Non-storm Water Discharges.
 - (a) Certification. A certification that any discharge has been tested or evaluated for the presence of non-storm water discharges, such as seeps or adit discharges or discharges subject to effluent limitation guidelines (e.g., *40 CFR Part 440*), such as mine drainage or process water of any kind. The certification shall include the identification of potential significant sources of non-storm water or water subject to effluent limitation guidelines at the site, a description of the

results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part V.G.* of this permit. Such certification may not be feasible if the facility operating the storm water discharge associated with industrial activity does not have access to an outfall, manhole, or other point of access to the ultimate conduit that receives the discharge. In such cases, the source identification section of the storm water pollution prevention plan shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-storm water at the site. A discharger that is unable to provide the certification required by this paragraph must notify the Director.

Alternatively, the plan may include a certification that any non-storm water discharge that mixes with storm water is subject to a separate *UPDES* permit that applies applicable effluent limitations prior to the mixing of non-storm water and storm water. In such cases, the certification shall identify the non-storm water discharge(s), the applicable *UPDES* permit(s), the effluent limitations placed on the non-storm water discharge by the *UPDES* permit(s), and the point(s) at which the limitations are applied.

- (1) Exceptions. Except for flows from fire fighting activities, sources of non-storm water listed in Part II.A.2 (Prohibition of Non-storm Water Discharges) of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
- (2) Failure to Certify. Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the Director within 180 days after submitting an NOI to be covered by this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water

discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State that are not authorized by a UPDES permit are unlawful, and must be terminated.

- 8) Sediment and Erosion Control. Identification of areas that, due to topography, activities, or other factors, have a high potential for significant erosion of soil and/or other materials, and measures to be used to limit erosion and/or remove sediment from storm water runoff. The measures to consider include diversion of flow away from areas susceptible to erosion (such as interceptor dikes and swales; diversion dikes curbs and berms; pipe slope drains; subsurface drains; and drainage/storm water conveyance systems [channels or gutters; open top box culverts, and water-bars; rolling dips and road sloping; roadway surface water deflector; and culverts]), stabilization methods to prevent or minimize erosion (such as temporary or permanent seeding; vegetative buffer strips; protection of trees; topsoiling; soil conditioning; contouring; mulching; geotextiles [matting; netting; or blankets]; riprap; gabions; and retaining walls), and structural methods for controlling sediment (such as check dams; rock outlet protection; level spreaders; gradient terraces; straw bale barriers; silt fences; gravel or stone filter berms; brush barriers; sediment traps; grass swales; pipe slope drains; earth dikes; other controls such as entrance stabilization, waterway crossings or wind breaks; or other equivalent measures).
- 9) Management of Runoff. A narrative consideration of the appropriateness of traditional storm water management practices (practices other than those that control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site and provisions for implementation and maintenance of measures that the permittee determines to be reasonable and appropriate. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity [see paragraph 3.A.3) of this section (Description of Potential Pollutant Sources)] shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices, or

impoundments.

- 10) Capping. Where capping of a contaminant source is necessary, the source being capped and materials and procedures used to cap the contaminant source must be identified. In some cases, the elimination of a pollution source through capping contaminant sources may be the most effective control measure for discharges from inactive ore mining and dressing facilities.
 - 11) Treatment. A description of how storm water will be treated prior to discharging to waters of the State if treatment of a storm water discharge is necessary. Storm water treatments include the following: chemical/physical treatment; oil/water separators; and artificial wetlands.
- e. Comprehensive Site Compliance Evaluation. Procedures for qualified personnel to conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall include:
- 1) Visual inspections of areas contributing to a storm water discharge associated with industrial activity for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
 - 2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with paragraph C.1.c) of this section (Description of Potential Pollutant Sources) and pollution prevention measures and controls identified in the plan in accordance with paragraph C.1.d) of this section (Measures and Controls) shall be revised as appropriate within 30 days of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation unless additional time is authorized by the Director.
 - 3) Preparation of a report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water

pollution prevention plan, and actions taken in accordance with paragraph C.1.e.2)) (above) of the permit shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part V.G. (Signatory Requirements) of this permit.

- 4) Where annual site compliance evaluations are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site evaluations required under this part shall be conducted at appropriate intervals specified in the plan, but, in no case less than once in 3 years.

D. Numeric Effluent Limitations. There are no additional numeric effluent limitations beyond those described in Part I.D of this permit.

E. Monitoring and Reporting Requirements.

1. Analytical Monitoring Requirements. Copper ore mining and dressing facilities must monitor their storm water discharges associated with industrial activity at least quarterly (4 times per year) during years 1 and 3 except as provided in paragraphs E.1.c) (Sampling Waiver), E.1.d) (Representative Discharge), and E.1.e) (Alternative Certification). Active copper ore mining and dressing facilities are required to monitor their storm water discharges for the pollutants of concern listed in Table below. Facilities must report in accordance with E.2. (Reporting). In addition to the parameters listed in Table below, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall measurements or estimates (in inches) of the storm event that generated the sampled runoff; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge sampled.

**Table G-1.
Monitoring Requirements for Active Facilities**

Pollutants of Concern	Monitoring Cut-Off Concentration
Chemical Oxygen Demand (COD)	120 mg/L
Total Suspended Solids (TSS)	100 mg/L
Nitrate plus Nitrite Nitrogen	0.68 mg/L

- a. Monitoring Periods. Active ore mining and dressing facilities shall monitor samples collected during the sampling periods of: January through March, April through June, July through September, and October through December for the years specified in paragraph 1. (above).
- b. Sample Type. A minimum of one grab sample shall be taken. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. If storm water discharges associated with industrial activity commingle with process or non-process water, then where practicable permittees must attempt to sample the storm water discharge before it mixes with the non-storm water discharge.
- c. Sampling Waiver.
 - 1) Adverse Conditions. When a discharger is unable to collect samples within a specified sampling period due to adverse climatic conditions, the discharger shall collect a substitute sample from a separate qualifying event in the next period and submit the data along with data for the routine sample in that period. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).
 - 2) Low Concentration Waiver. When the average concentration for a pollutant calculated from all monitoring data collected from an outfall during the monitoring period January 1, 2012, lasting through December 31, 2012, is less than the corresponding value for that pollutant listed in Table under the column Monitoring Cut-Off Concentration, a facility may waive monitoring and reporting requirements in the monitoring period beginning January 1, 2014, lasting through December 31, 2014. The facility must submit to the

Director, in lieu of the monitoring data, a certification that there has not been a significant change in industrial activity or the pollution prevention measures in area of the facility that drains to the outfall for which sampling was waived.

- d. Representative Discharge. When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan. The permittee shall include the description of the location of the outfalls, explanation of why outfalls are expected to discharge substantially identical effluents, and estimate of the size of the drainage area and runoff coefficient with the *Storm Water Discharge Monitoring Report (SWDMR)*.
 - e. Alternative Certification. A discharger is not subject to the monitoring requirements of this section provided the discharger makes a certification for a given outfall, or on a pollutant-by-pollutant basis in lieu of the monitoring reports required under paragraph 2) below, under penalty of law, signed in accordance with *Part V.G.* (Signatory Requirements), that material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, industrial machinery or operations, or significant materials from past industrial activity that are located in areas of the facility within the drainage area of the outfall are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. Such certification must be retained in the storm water pollution prevention plan. In the case of certifying that a pollutant is not present, the permittee must submit the certification along with the monitoring reports required under paragraph 2) below. If the permittee cannot certify for an entire period, they must submit the date exposure was eliminated and any monitoring required up until that date. This certification option is not applicable to compliance monitoring requirements associated with effluent limitations.
2. Reporting. Permittees with active copper ore mining and dressing facilities shall submit monitoring results for each outfall associated with industrial activity or a certification in accordance with sections c, d, or e above] obtained during the

reporting period beginning January 1, 2012, lasting through December 31, 2012, on *Storm Water Discharge Monitoring Report (SWDMR)* form(s) postmarked no later than the 31st day of the following March. Monitoring results [or a certification in accordance with sections c, d, or e above] obtained during the period beginning January 1, 2014, lasting through December 31, 2014 shall be submitted on *SWDMR* form(s) postmarked no later than the 31st day of the following March. For each outfall, one signed *SWDMR* form must be submitted to the Director per storm event sampled. Signed copies of *SWDMR*, or said certifications, shall be submitted to the Director at the address listed in *Part V.B.* of this permit.

- a. Additional Notification. In addition to filing copies of *SWDMRs* in accordance with paragraph 2. (above), active ore mining and dressing facilities with at least one storm water discharge associated with industrial activity through a large or medium municipal separate storm sewer system (systems serving a population of 100,000 or more) must submit signed copies of discharge monitoring reports to the operator of the municipal separate storm sewer system in accordance with the dates provided in paragraph 2. (above).
3. Visual Examination of Storm Water Quality. Mining facilities covered under this sector shall perform and document a visual examination of storm water discharges associated with industrial activity from each outfall, except discharges exempted below. The examination must be made during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event. Mining facilities must examine storm water quality at least once in each of the following periods: January through March; April through June; July through September; and October through December.
- a. Sample and Data Collection. Examinations shall be made of grab samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where practicable, the same individual should carry out the collection and examination of discharges for entire permit term.
 - b. Visual Storm Water Discharge Examination Reports. Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the

storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

- c. Representative Discharge. When a facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may collect a sample of effluent of one of such outfalls and report that the examination data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.
- d. Adverse Conditions. When a discharger is unable to conduct one of the required visual examinations during the required period as a result of adverse climatic conditions or inaccessibility, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the records of the visual examination. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).
- e. Inactive and Unstaffed Site. When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

III. MONITORING, RECORDING AND 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.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10*, 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* or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. 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 three 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 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) 536-4123 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.*); or,
 - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.
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;
 - 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 III.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 III.D* are submitted. The reports shall contain the information listed in *Part III.I.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; and,
 - 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.

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 of 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.
- 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, sludges, or other pollutants removed in the course of treatment shall be buried or 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 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 judgment 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 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 G.2a. (1), (2) and (3).

3. Notice.

- a. Anticipated bypass. Except as provided above in section G.2. and below in section 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 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.I., 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.I., 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 R317-8-3.5(7)* or (10); or,
 - d. The level established by the Director 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 R317-8-3.5(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 pollutants discharged. 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 permittees 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 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*.
- 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. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.
- P. Toxicity Limitation-Reopener Provision This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is suspected during the life of this permit.
- Q. Storm Water-Reopener Provision. At anytime 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-the-State".

VI. DEFINITIONS

A. Definitions.

1. The "30-day and monthly average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
2. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.
3. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
4. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
5. "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 preventive maintenance, or careless or improper operation.
6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
7. "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.
8. "Director" means the Director of the Division of Water Quality.
9. "EPA" means the United States Environmental Protection Agency.
10. "Act" means the "*Utah Water Quality Act*".
11. "Best Management Practices" ("*BMP's*") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. *BMP's* also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

12. "CWA" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
13. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.
14. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311* of the *Clean Water Act* (see *40 CFR 110.10* and *40 CFR 117.21*) or *Section 102* of *CERCLA* (see *40 CFR 302.4*).
15. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

DWQ-2018-004624

**FACT SHEET AND STATEMENT OF BASIS
ENERGY QUEEN MINE
RENEWAL PERMIT: DISCHARGE, STORMWATER
UPDES PERMIT NUMBER: UT0025712
MINOR INDUSTRIAL FACILITY**

FACILITY CONTACT

Person Name: Scott Bakken, P.G., Director
Position: Permitting & Environmental Affairs
Phone Number: (303) 389-4156

Facility Name: Energy Fuels Resources (USA), Inc., Energy Queen Mine
Mailing Address: 225 Union Boulevard, Suite 600
Lakewood, CO 80228

DESCRIPTION OF FACILITY

Energy Fuels Resources Corporation leases and operates the Energy Queen Mine (Mine), which is an underground uranium and vanadium mine. The discharge treatment system for this facility consists of a chemical precipitation process with barium chloride. The intercepted mine water is pumped and mixed with barium chloride and then up to an initial treatment pond where the barium chloride assists in Radium reduction. The mine is located at 560 E. Highway 46, La Sal, UT 84535 in San Juan County, Utah at latitude 38°18'45" and longitude 109°18'30". The facility has a Standard Industrial Classification (SIC) code 1094, for Uranium mining.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

All limitations will remain the same as those in the previous permit. Based on the capacity of the existing treatment facility upon any future discharges, Energy Queen Mine is expected to be able to comply with the limitations.

DISCHARGE

DESCRIPTION OF DISCHARGE

The Energy Queen Mine is an existing, but inactive mine, which has not had a discharge of mine water for over 25 years. The Mine has been consistently reporting self-monitoring results on Discharge Monitoring Reports, via NetDMR on a monthly basis as required. There have been no discharges and no significant permit violations during the past five year permit term.

Outfall

Description of Discharge Point

001

Located at latitude 38°18'45" and longitude 109°18'30".
Discharge would be from the mine water treatment system into West Coyote Wash.

- 002 Located at latitude 38°18'45" and longitude 109°18'30".
Discharge would be from the mine water treatment system into West Coyote Wash.
- 003 Located at latitude 38°18'45" and longitude 109°18'30".
Discharge would be from the mine water treatment system into West Coyote Wash.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to an unnamed dry wash, which is tributary to Kane Springs Creek and classified as 2B, 3C and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

- Class 2B -- Protected for secondary contact recreation such as boating, wading, or similar uses.
- Class 3C -- Protected for nongame fish and other 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

Effluent limits for total suspended solids (TSS), total uranium, total radium 226, dissolved radium 226, chemical oxygen demand (COD), and total zinc are technology based standards for uranium ore mines found in 40 CFR 440.32 and 440.33. The pH limit is based on current Utah Secondary Treatment standards. The oil & grease limit is based on best professional judgment (BPJ) and is consistent with other industrial permitted facilities in Utah.

Total dissolved solids (TDS) limitations are based upon Utah Water Quality Standards for concentration values and the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable as authorized in *UAC R317-2-4*. Discharges from the Energy Queen Mine facility could potentially reach the Colorado River, which places it under the requirements of the CRBSCF. In accordance with the CRBSCF policies, the effluent will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year. The TDS concentration limit is the same as similar uranium mining facilities in the immediate area and is based on BPJ, which is more stringent than the Utah Water Quality Standard of 1,200 mg/L for TDS.

Effluent limitations may also be derived using a Wasteload Analysis (WLA). The WLA incorporated Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During the UPDES renewal development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was not required. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations. The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential (RP) analysis on all new and renewal applications received after that date following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). A formal RP analysis for this permit renewal was not conducted because there has been a lack of discharge data from the Mine, which currently remains inactive. Once the Mine begins operating and discharging regularly, a qualitative RP analysis can then be performed on subsequent permit renewals as appropriate.

The permit limitations are as follows:

Effluent Limitations for Outfalls 001, 002, 003 b/, c/			
Parameter	Monthly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.5	NA	NA
TSS, mg/L	20	NA	30
Total Uranium, mg/L	2.0	NA	4.0
Total Radium 226, pCi/L	10	NA	30
Dissolved Radium 226, pCi/L	3	NA	10
COD, mg/L	100	NA	200
Total Zinc, mg/L	0.5	NA	1.0
Total Dissolved Solids, mg/L	NA	NA	1000
Total Dissolved Solids, tons/day a/	NA	NA	1.0
Oil & Grease, mg/L d/	NA	NA	10
pH, standard units	NA	6.5	9.0

NA – Not Applicable; MGD – million gallons per day; mg/L – milligrams per liter

- a/ TDS will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year, with daily maximum tonnages reported monthly. It is the permittee's responsibility to monitor and report the actual discharge of TDS for each monitoring period.
- b/ There shall be no discharge of floating solids or visible foam in other than trace amounts.
- c/ There shall be no discharge of sanitary wastes.
- d/ An Oil and grease sample shall be taken when a sheen is present or visible. If no sheen is present or visible, report NA.

SELF-MONITORING AND REPORTING REQUIREMENTS

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

Self-Monitoring and Reporting Requirements				
Parameter	Frequency	Sample Type	Units	Reporting Frequency
Total Flow	Continuous	Recorder	GPM	Monthly
TSS	Monthly	Grab	mg/L	Monthly
Total Uranium	Monthly	Grab	mg/L	Monthly
Total Radium 226	Monthly	Grab	pCi/L	Monthly
Dissolved Radium 226	Monthly	Grab	pCi/L	Monthly
COD	Quarterly	Grab	mg/L	Quarterly
Total Zinc	Quarterly	Grab	mg/L	Quarterly
TDS	Quarterly	Grab	mg/L	Quarterly
TDS	Quarterly	Grab	ton/day	Quarterly
Oil & Grease	Quarterly	Visual/Grab	mg/L	Quarterly
pH	Monthly	Grab	SU	Monthly

The permittee is required to sample and submit the analysis of the pollutants listed in 40 CFR Part 122 Appendix D Table III (Other Toxic Pollutants (Metals and Cyanide) and Total Phenols) occurring from the first discharge of the facility.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include:

1. The development of a pollution prevention team:
2. Development of drainage maps and materials stockpiles:
3. An inventory of exposed materials:
4. Spill reporting and response procedures:
5. A preventative maintenance program:
6. Employee training:
7. Certification that storm water discharges are not mixed with non-storm water discharges:
8. Compliance site evaluations and potential pollutant source identification, and:
9. Visual examinations of storm water discharges.

PRETREATMENT REQUIREMENTS

This facility does not discharge process wastewater to a sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the state's pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

BIOMONITORING REQUIREMENTS

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

The permittee is a minor industrial facility that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. Also, the receiving waterway is regularly dry; therefore there is not any available data to conclude an impairment to the waterway. Based on these considerations and the absence of receiving stream water quality monitoring data, there is no reasonable potential for toxicity in the permittee's discharge (per State of Utah Permitting and Enforcement Guidance Document for WET Control). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

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

Drafted by
Jeff Studenka, Discharge
Lonnie Shull, Biomonitoring
Michael George, Storm Water
Nate Nichols, Reasonable Potential Analysis
Dave Wham, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300
Finalized July 11, 2018

ATTACHMENT 1: Wasteload Analysis

PUBLIC NOTICE INFORMATION (updated June 26, 2018)

Began: May 16, 2018
Ended: June 22, 108

The Public Notice of the draft permit was published in The San Juan Record.

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

ADDENDUM TO FSSOB

Comments were received during the public comment period. A comment response summary was sent to the commenter in conjunction with the reissuance of this permit. The final permit and conditions were not changed as a result of the comments received.

ATTACHMENT 1

Wasteload Analysis

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**Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review**

Date: March 28, 2018

Prepared by: Dave Wham
Standards and Technical Services

Facility: Energy Fuels Nuclear, Energy Queen Mine
UPDES No. UT- 0025712

Receiving water: Unnamed dry wash Tributary to Kane Springs Creek (2B, 3C, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

Outfalls 001-003: Unnamed dry wash → West Coyote Wash → Hatch Wash → Kane Springs Creek.

The mean monthly design discharge is 0.5 MGD for the facility.

Receiving Water

The receiving water for Outfall 001 is an unnamed ephemeral wash which is tributary of West Coyote Gulch, tributary of Hatch Wash, tributary of Kane Springs Creek, tributary of the Colorado River. Per R317-2-13.1, Kane Canyon Creek and tributaries, from confluence with Colorado River to headwaters are classified 2B, 3C, 4.

- *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 3C -- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain..*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Utah Division of Water Quality
Wasteload Analysis
Energy Fuels Nuclear, Energy Queen Mine
UPDES No. UT-0025712

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Because the receiving water is an ephemeral wash at the point of discharge, the 7Q10 is assumed to be zero.

Ambient water quality was characterized using data from DWQ monitoring station #4956070, West Coyote Ck. near LaSal Junction for the period 2011-2013.

TMDL

DWQ's 2016 Integrated Report lists Kane Spring Wash from confluence with Colorado River to headwaters (Assessment Unit UT14030005-001_00) as impaired (TMDL required) for total dissolved solids (Class 4) and temperature (Class 3C).

Effluents limits for TDS and temperature equal to the water quality criteria will ensure that in-stream criteria will not be exceeded at the point of discharge as well as not causing or contributing to the existing impairment downstream in Kane Springs Wash.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone.

Since the receiving water low flow is considered zero, no mixing zone analysis was considered. Effluent limits revert to end of pipe standards.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total dissolved solids and temperature as a result of the downstream receiving water having been impaired for these pollutants.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

Table 1: WET Limits for IC₂₅

Outfall	Percent Effluent
Outfall 001	100%

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ 2012). The mass balance analysis is summarized in the Wasteload

Utah Division of Water Quality
Wasteload Analysis
Energy Fuels Nuclear, Energy Queen Mine
UPDES No. UT-0025712

Addendum.

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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 this wasteload.

A Level II Antidegradation Review (ADR) is NOT required for this facility as the UPDES permit is being renewed and there is no increase in load or concentration over that which was approved in the previous permit.

Documents:

WLA Document: *EnergyQueen_WLADoc_3-28-18.docx*

Wasteload Analysis and Addendum: *EnergyQueen_WLA_3-28-18.xls*

References:

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0*.

Lewis, B., J. Saunders, and M. Murphy. 2002. *Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits*. University of Colorado, Center for Limnology.

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility: Energy Queen Mine
UPDES No: UT-0025712
Design Flow 0.50 MGD

Receiving Water: Dry wash>W. Coyote Ck.> Hatch Wash>Kane Wash

Stream Classification: 2B, 3C, 4

Stream Flows [cfs]:

0.00	Summer (July-Sept)	20th Percentile
0.00	Fall (Oct-Dec)	20th Percentile
0.00	Winter (Jan-Mar)	20th Percentile
0.00	Spring (Apr-June)	20th Percentile
0.0	Average	

Stream TDS Values:

938.0	Summer (July-Sept)	Average
938.0	Fall (Oct-Dec)	Average
938.0	Winter (Jan-Mar)	Average
938.0	Spring (Apr-June)	Average

Effluent Limits:

Flow, MGD:	0.50 MGD	Design Flow
BOD, mg/l:	25.0 Summer	5.0 Indicator
Dissolved Oxygen, mg/l	4.0 Summer	5.0 30 Day Average
TNH3, Chronic, mg/l:	4.0 Summer	Varies Function of pH and Temperature
TDS, mg/l:	1200.3 Summer	1200.0

WQ Standard:

Modeling Parameters:

Acute River Width: 50.0%
Chronic River Width: 100.0%

Level 1 Antidegradation Level Completed: Level II Review NOT required.

Date: 3/28/2018

**Utah Division of Water Quality
Salt Lake City, Utah**

**WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis**

28-Mar-18
4:00 PM

Facilities: Energy Queen Mine
Discharging to: Dry wash>W. Coyote Ck.> Hatch Wash>Kane Wash

UPDES No: UT-0025712

THIS IS A DRAFT DOCUMENT

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Dry wash>W. Coyote Ck.> Hatch Wash 2B, 3C, 4

Antidegradation Review: Level I review completed. Level II review NOT required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.00 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

**Utah Division of Water Quality
Salt Lake City, Utah**

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.363 lbs/day	750.00	ug/l	3.133 lbs/day
Arsenic	190.00 ug/l	0.794 lbs/day	340.00	ug/l	1.420 lbs/day
Cadmium	0.76 ug/l	0.003 lbs/day	8.73	ug/l	0.036 lbs/day
Chromium III	268.22 ug/l	1.120 lbs/day	5611.67	ug/l	23.441 lbs/day
Chromium VI	11.00 ug/l	0.046 lbs/day	16.00	ug/l	0.067 lbs/day
Copper	30.50 ug/l	0.127 lbs/day	51.68	ug/l	0.216 lbs/day
Iron			1000.00	ug/l	4.177 lbs/day
Lead	18.58 ug/l	0.078 lbs/day	476.82	ug/l	1.992 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.010 lbs/day
Nickel	168.54 ug/l	0.704 lbs/day	1515.91	ug/l	6.332 lbs/day
Selenium	4.60 ug/l	0.019 lbs/day	20.00	ug/l	0.084 lbs/day
Silver	N/A ug/l	N/A lbs/day	41.07	ug/l	0.172 lbs/day
Zinc	387.83 ug/l	1.620 lbs/day	387.83	ug/l	1.620 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO₃

Metals Standards Based upon a Hardness of 400 mg/l as CaCO₃

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.006 lbs/day
Chlordane	0.004 ug/l	0.018 lbs/day	1.200	ug/l	0.005 lbs/day
DDT, DDE	0.001 ug/l	0.004 lbs/day	0.550	ug/l	0.002 lbs/day
Dieldrin	0.002 ug/l	0.008 lbs/day	1.250	ug/l	0.005 lbs/day
Endosulfan	0.056 ug/l	0.234 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.010 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.016 lbs/day	0.260	ug/l	0.001 lbs/day
Lindane	0.080 ug/l	0.334 lbs/day	1.000	ug/l	0.004 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.058 lbs/day	2.000	ug/l	0.008 lbs/day
Pentachlorophenol	13.00 ug/l	54.269 lbs/day	20.000	ug/l	0.084 lbs/day
Toxephene	0.0002 ug/l	0.001 lbs/day	0.7300	ug/l	0.003 lbs/day

**Utah Division of Water Quality
Salt Lake City, Utah**

IV. Numeric Stream Standards for Protection of Agriculture

4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Concentration	Load*
Arsenic		100.0 ug/l	lbs/day
Boron		750.0 ug/l	lbs/day
Cadmium		10.0 ug/l	0.02 lbs/day
Chromium		100.0 ug/l	lbs/day
Copper		200.0 ug/l	lbs/day
Lead		100.0 ug/l	lbs/day
Selenium		50.0 ug/l	lbs/day
TDS, Summer		1200.0 mg/l	2.51 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	Concentration	Concentration	Load*
Arsenic		ug/l	lbs/day
Barium		ug/l	lbs/day
Cadmium		ug/l	lbs/day
Chromium		ug/l	lbs/day
Lead		ug/l	lbs/day
Mercury		ug/l	lbs/day
Selenium		ug/l	lbs/day
Silver		ug/l	lbs/day
Fluoride (3)		ug/l	lbs/day
to		ug/l	lbs/day
Nitrates as N		ug/l	lbs/day

Chlorophenoxy Herbicides

2,4-D	ug/l	lbs/day
2,4,5-TP	ug/l	lbs/day
Endrin	ug/l	lbs/day
ocyclohexane (Lindane)	ug/l	lbs/day
Methoxychlor	ug/l	lbs/day
Toxaphene	ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	11.27 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	3.26 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.00 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	0.30 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.02 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	87.67 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	0.41 lbs/day

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Salt Lake City, Utah**

1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.04 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	0.18 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l	0.05 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.01 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	17.95 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	0.03 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	1.96 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	1.67 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	70.97 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	10.85 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	10.85 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1 ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2 ug/l	0.01 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	3.30 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.16 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	7.10 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	9.60 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.04 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5 ug/l	0.00 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l	121.06 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	1.54 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	ug/l	lbs/day	170000.0 ug/l	709.67 lbs/day
Bis(2-chloroethoxy) methane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	6.68 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0 ug/l	1.50 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.09 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.14 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	0.21 lbs/day
Hexachlorocyclopentadiene	ug/l	lbs/day	17000.0 ug/l	70.97 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	2.50 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	7.93 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l	58.44 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	3.19 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.03 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.07 lbs/day
N-Nitrosodi-n-propylamine	ug/l	lbs/day	1.4 ug/l	0.01 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	0.03 lbs/day

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Phenol	ug/l	lbs/day	4.6E+06 ug/l	1.92E+04 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	0.02 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	21.71 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	50.09 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	500.95 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	1.21E+04 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0 ug/l	45.92 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.04 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	834.91 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	0.34 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	2.19 lbs/day
				lbs/day
Pesticides				lbs/day
Aldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.01 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.01 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.01 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	0.00 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	0.00 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 122	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 123	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 126	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 101	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		

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Metals

Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	17.95 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	918.40 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	19.20 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.03 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

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(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al.
Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

Stream		Critical Low						
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l
Summer (Irrig. Season)	0.00	20.0	8.4	0.10	5.00	10.32	0.00	938.0
Fall	0.00	16.0	8.4	0.10	5.00	---	0.00	938.0
Winter	0.00	8.0	8.4	0.10	5.00	---	0.00	938.0
Spring	0.00	12.0	8.4	0.10	5.00	---	0.00	938.0
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	2.385*	1.40	0.0795*	0.795*	3.975*	1.50	1.25*	0.795*
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.159*	0.795*	4.30	0.15*	0.0795*	56.6		
* ~80% MDL								

* ~80% MDL

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Projected Discharge Information

Season	Flow, MGD	Temp.
Summer	0.50000	20.0
Fall	0.50000	16.0
Winter	0.50000	8.0
Spring	0.50000	12.0

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

IX. 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 coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.500 MGD	0.774 cfs
Fall	0.500 MGD	0.774 cfs
Winter	0.500 MGD	0.774 cfs
Spring	0.500 MGD	0.774 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.5 MGD. If the discharger is allowed to have a flow greater than 0.5 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	99.9% Effluent	[Chronic]

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Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	104.2 lbs/day
Fall	25.0 mg/l as BOD5	104.2 lbs/day
Winter	25.0 mg/l as BOD5	104.2 lbs/day
Spring	25.0 mg/l as BOD5	104.2 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration
Summer	4.00
Fall	4.00
Winter	4.00
Spring	4.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration	Load	
Summer	4 Day Avg. - Chronic	4.03E+00 mg/l as N	16.8	lbs/day
	1 Hour Avg. - Acute	21.3 mg/l as N	88.7	lbs/day
Fall	4 Day Avg. - Chronic	4.9 mg/l as N	20.4	lbs/day
	1 Hour Avg. - Acute	20.9 mg/l as N	87.2	lbs/day
Winter	4 Day Avg. - Chronic	4.8 mg/l as N	19.9	lbs/day
	1 Hour Avg. - Acute	17.7 mg/l as N	73.8	lbs/day
Spring	4 Day Avg. - Chronic	4.9 mg/l as N	20.4	lbs/day
	1 Hour Avg. - Acute	20.9 mg/l as N	87.2	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

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Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.011	mg/l	0.05	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.08	lbs/day
Fall	4 Day Avg. - Chronic	0.011	mg/l	0.05	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.08	lbs/day
Winter	4 Day Avg. - Chronic	0.011	mg/l	0.05	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.08	lbs/day
Spring	4 Day Avg. - Chronic	0.011	mg/l	0.05	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.08	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	1200.3	mg/l	2.50	tons/day
Fall	Maximum, Acute	1200.3	mg/l	2.50	tons/day
Winter	Maximum, Acute	1200.3	mg/l	2.50	tons/day
Spring	4 Day Avg. - Chronic	1200.3	mg/l	2.50	tons/day

Colorado Salinity Forum Limits

Determined by Permitting Section

**Effluent Limitations for Total Recoverable Metals based upon
Water Quality Standards**

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 400 mg/l):

	4 Day Average		Load	1 Hour Average		Load
	Concentration			Concentration		
Aluminum*	N/A		N/A	751.0	ug/l	3.1 lbs/day
Arsenic*	190.24	ug/l	0.5 lbs/day	340.4	ug/l	1.4 lbs/day
Cadmium	0.76	ug/l	0.0 lbs/day	8.7	ug/l	0.0 lbs/day
Chromium III	268.57	ug/l	0.7 lbs/day	5,618.9	ug/l	23.5 lbs/day
Chromium VI*	11.01	ug/l	0.0 lbs/day	16.0	ug/l	0.1 lbs/day
Copper	30.54	ug/l	0.1 lbs/day	51.7	ug/l	0.2 lbs/day
Iron*	N/A		N/A	774.5	ug/l	3.2 lbs/day
Lead	18.60	ug/l	0.1 lbs/day	477.4	ug/l	2.0 lbs/day
Mercury*	0.01	ug/l	0.0 lbs/day	2.4	ug/l	0.0 lbs/day
Nickel	168.76	ug/l	0.5 lbs/day	1,517.9	ug/l	6.3 lbs/day
Selenium*	4.60	ug/l	0.0 lbs/day	20.0	ug/l	0.1 lbs/day
Silver	N/A	ug/l	N/A lbs/day	41.1	ug/l	0.2 lbs/day

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Zinc	388.33 ug/l	1.0 lbs/day	388.3	ug/l	1.6 lbs/day
Cyanide*	5.21 ug/l	0.0 lbs/day	22.0	ug/l	0.1 lbs/day

*Limits for these metals are based on the dissolved standard.

**Effluent Limitations for Heat/Temperature based upon
Water Quality Standards**

Summer	24.0 Deg. C.	75.2 Deg. F
Fall	20.0 Deg. C.	68.0 Deg. F
Winter	12.0 Deg. C.	53.6 Deg. F
Spring	16.0 Deg. C.	60.8 Deg. F

**Effluent Limitations for Organics [Pesticides]
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Organics [Pesticides]
will be met with an effluent limit as follows:

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration	Load	
Aldrin			1.5E+00	ug/l	9.69E-03 lbs/day
Chlordane	4.30E-03 ug/l	1.79E-02 lbs/day	1.2E+00	ug/l	7.75E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	4.17E-03 lbs/day	5.5E-01	ug/l	3.55E-03 lbs/day
Dieldrin	1.90E-03 ug/l	7.92E-03 lbs/day	1.3E+00	ug/l	8.08E-03 lbs/day
Endosulfan	5.60E-02 ug/l	2.33E-01 lbs/day	1.1E-01	ug/l	7.11E-04 lbs/day
Endrin	2.30E-03 ug/l	9.59E-03 lbs/day	9.0E-02	ug/l	5.82E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	6.46E-05 lbs/day
Heptachlor	3.80E-03 ug/l	1.58E-02 lbs/day	2.6E-01	ug/l	1.68E-03 lbs/day
Lindane	8.00E-02 ug/l	3.34E-01 lbs/day	1.0E+00	ug/l	6.46E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	1.94E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	6.46E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	2.58E-04 lbs/day
PCB's	1.40E-02 ug/l	5.84E-02 lbs/day	2.0E+00	ug/l	1.29E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	5.42E+01 lbs/day	2.0E+01	ug/l	1.29E-01 lbs/day
Toxephene	2.00E-04 ug/l	8.34E-04 lbs/day	7.3E-01	ug/l	4.72E-03 lbs/day

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**Effluent Targets for Pollution Indicators
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	20.9 lbs/day
Nitrates as N	4.0 mg/l	16.7 lbs/day
Total Phosphorus as P	0.05 mg/l	0.2 lbs/day
Total Suspended Solids	90.0 mg/l	376.0 lbs/day

Note: Pollution indicator targets are for information purposes only.

**Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)**

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration	
	Concentration	Load
Toxic Organics		
Acenaphthene	2.70E+03 ug/l	1.13E+01 lbs/day
Acrolein	7.81E+02 ug/l	3.26E+00 lbs/day
Acrylonitrile	6.61E-01 ug/l	2.76E-03 lbs/day
Benzene	7.11E+01 ug/l	2.96E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.41E+00 ug/l	1.84E-02 lbs/day
Chlorobenzene	2.10E+04 ug/l	8.77E+01 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.71E-04 ug/l	3.21E-06 lbs/day
1,2-Dichloroethane	9.91E+01 ug/l	4.13E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.91E+00 ug/l	3.72E-02 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.21E+01 ug/l	1.75E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.10E+01 ug/l	4.59E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.40E+00 ug/l	5.84E-03 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.31E+03 ug/l	1.80E+01 lbs/day
2,4,6-Trichlorophenol	6.51E+00 ug/l	2.71E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.71E+02 ug/l	1.96E+00 lbs/day
2-Chlorophenol	4.01E+02 ug/l	1.67E+00 lbs/day
1,2-Dichlorobenzene	1.70E+04 ug/l	7.10E+01 lbs/day
1,3-Dichlorobenzene	2.60E+03 ug/l	1.09E+01 lbs/day

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1,4-Dichlorobenzene	2.60E+03 ug/l	1.09E+01 lbs/day
3,3'-Dichlorobenzidine	7.71E-02 ug/l	3.21E-04 lbs/day
1,1-Dichloroethylene	3.20E+00 ug/l	1.34E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	7.91E+02 ug/l	3.30E+00 lbs/day
1,2-Dichloropropane	3.91E+01 ug/l	1.63E-01 lbs/day
1,3-Dichloropropylene	1.70E+03 ug/l	7.10E+00 lbs/day
2,4-Dimethylphenol	2.30E+03 ug/l	9.60E+00 lbs/day
2,4-Dinitrotoluene	9.11E+00 ug/l	3.80E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.41E-01 ug/l	2.25E-03 lbs/day
Ethylbenzene	2.90E+04 ug/l	1.21E+02 lbs/day
Fluoranthene	3.70E+02 ug/l	1.54E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.70E+05 ug/l	7.10E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.60E+03 ug/l	6.68E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.60E+02 ug/l	1.50E+00 lbs/day
Dichlorobromomethane(HM)	2.20E+01 ug/l	9.18E-02 lbs/day
Chlorodibromomethane (HM)	3.40E+01 ug/l	1.42E-01 lbs/day
Hexachlorocyclopentadiene	1.70E+04 ug/l	7.10E+01 lbs/day
Isophorone	6.01E+02 ug/l	2.50E+00 lbs/day
Naphthalene		
Nitrobenzene	1.90E+03 ug/l	7.93E+00 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.40E+04 ug/l	5.84E+01 lbs/day
4,6-Dinitro-o-cresol	7.66E+02 ug/l	3.19E+00 lbs/day
N-Nitrosodimethylamine	8.11E+00 ug/l	3.38E-02 lbs/day
N-Nitrosodiphenylamine	1.60E+01 ug/l	6.68E-02 lbs/day
N-Nitrosodi-n-propylamine	1.40E+00 ug/l	5.84E-03 lbs/day
Pentachlorophenol	8.21E+00 ug/l	3.42E-02 lbs/day
Phenol	4.61E+06 ug/l	1.92E+04 lbs/day
Bis(2-ethylhexyl)phthalate	5.91E+00 ug/l	2.46E-02 lbs/day
Butyl benzyl phthalate	5.21E+03 ug/l	2.17E+01 lbs/day
Di-n-butyl phthalate	1.20E+04 ug/l	5.01E+01 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.20E+05 ug/l	5.01E+02 lbs/day
Dimethyl phthlate	2.90E+06 ug/l	1.21E+04 lbs/day
Benzo(a)anthracene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Benzo(a)pyrene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Benzo(b)fluoranthene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Benzo(k)fluoranthene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Chrysene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.10E-02 ug/l	1.29E-04 lbs/day

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Pyrene (PAH)	1.10E+04 ug/l	4.59E+01 lbs/day
Tetrachloroethylene	8.91E+00 ug/l	3.72E-02 lbs/day
Toluene	2.00E+05 ug/l	8.35E+02 lbs/day
Trichloroethylene	8.11E+01 ug/l	3.38E-01 lbs/day
Vinyl chloride	5.26E+02 ug/l	2.19E+00 lbs/day

Pesticides

Aldrin	1.40E-04 ug/l	5.84E-07 lbs/day
Dieldrin	1.40E-04 ug/l	5.84E-07 lbs/day
Chlordane	5.91E-04 ug/l	2.46E-06 lbs/day
4,4'-DDT	5.91E-04 ug/l	2.46E-06 lbs/day
4,4'-DDE	5.91E-04 ug/l	2.46E-06 lbs/day
4,4'-DDD	8.41E-04 ug/l	3.51E-06 lbs/day
alpha-Endosulfan	2.00E+00 ug/l	8.35E-03 lbs/day
beta-Endosulfan	2.00E+00 ug/l	8.35E-03 lbs/day
Endosulfan sulfate	2.00E+00 ug/l	8.35E-03 lbs/day
Endrin	8.11E-01 ug/l	3.38E-03 lbs/day
Endrin aldehyde	8.11E-01 ug/l	3.38E-03 lbs/day
Heptachlor	2.10E-04 ug/l	8.77E-07 lbs/day
Heptachlor epoxide		

PCB's

PCB 1242 (Arochlor 1242)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1254 (Arochlor 1254)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1221 (Arochlor 1221)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1232 (Arochlor 1232)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1248 (Arochlor 1248)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1260 (Arochlor 1260)	4.51E-05 ug/l	1.88E-07 lbs/day
PCB-1016 (Arochlor 1016)	4.51E-05 ug/l	1.88E-07 lbs/day

Pesticide

Toxaphene	7.51E-04 ug/l	3.13E-06 lbs/day
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Metals

Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		

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Dioxin
Dioxin (2,3,7,8-TCDD) 1.40E-08 ug/l 5.84E-11 lbs/day

**Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule**

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		751.0				751.0	N/A
Antimony				4305.6		4305.6	
Arsenic	100.1	340.4			0.0	100.1	190.2
Barium						0.0	
Beryllium						0.0	
Cadmium	10.0	8.7			0.0	8.7	0.8
Chromium (III)		5618.9			0.0	5618.9	268.6
Chromium (VI)	0.0	16.0			0.0	0.00	11.01
Copper	0.0	51.7				0.0	30.5
Cyanide		22.0	220284.4			22.0	5.2
Iron		774.5				774.5	
Lead	0.0	477.4			0.0	0.0	18.6
Mercury		2.40		0.15	0.0	0.15	0.012
Nickel		1517.9		4605.9		1517.9	168.8
Selenium	0.0	20.0			0.0	0.0	4.6
Silver		41.1			0.0	41.1	
Thallium				6.3		6.3	
Zinc		388.3				388.3	388.3
Boron	750.9					750.9	
Sulfate	2002.6					2002.6	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	751.0	N/A	
Antimony	4305.56		
Arsenic	100.1	190.2	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	8.7	0.8	
Chromium (III)	5618.9	269	
Chromium (VI)	0.0	11.0	Acute Controls
Copper	0.0	30.5	Acute Controls

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Cyanide	22.0	5.2	
Iron	774.5		
Lead	0.0	18.6	Acute Controls
Mercury	0.150	0.012	
Nickel	1517.9	169	
Selenium	0.0	4.6	Acute Controls
Silver	41.1	N/A	
Thallium	6.3		
Zinc	388.3	388.3	
Boron	750.90		
Sulfate	2002.6		N/A at this Waterbody

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is required because the receiving water for the discharge is a Class 1C Drinking Water Source.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important downstream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.