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. **UT0023680**

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

Canyon Fuel Company, LLC - Soldier Canyon Mine

is hereby authorized to discharge from its facility located in Soldier Canyon (Carbon County), approximately 13 miles northeast of Wellington, Utah, with outfalls located as indicated in the permit, to receiving waters named

Soldier Creek, a tributary of the Price River within the Colorado River Drainage Basin,

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

This permit shall become effective on January 1, 2017

This permit expires at midnight on December 31, 2021

Signed this 21 day of December, 2016.

Walter L. Baker, P.E.
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Points. 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 violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Numbers	Location of Discharge Outfalls
001	Located at Latitude 39° 42' 02" north, Longitude 110° 36' 39" west. Mine water discharge to Soldier Creek.
002	Located at Latitude 39° 41' 52" north, Longitude 110° 36' 42" west. Spillway of surface sedimentation pond to Soldier Creek.
003	Located at Latitude 39° 42' 09" north, Longitude 110° 36' 38" west. Mine water discharge to Soldier Creek.

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

C. Specific Limitations and Self-Monitoring Requirements.

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

Parameter	Effluent Limitations			
	Average Monthly	Average Weekly	Minimum Daily	Maximum Daily
Flow, MGD	1.3			Report
pH, standard units			6.5	9.0
Total Suspended Solids (TSS), mg/L	25	35		70
Total Iron, mg/L				1.00
Oil & Grease, mg/L, a/				10
Total Dissolved Solids (TDS) mg/L b/	Report			2400
Total Dissolved Solids (TDS) tons/day b/				5
Sanitary Waste				None

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Flow	Monthly	Measured	MGD
Total Suspended Solids (TSS),	Monthly	Grab	mg/L
Total Iron	Monthly	Grab	mg/L
Oil & Grease, mg/L, a/	Monthly	Visual/Grab	mg/L
Total Dissolved Solids (TDS) b/	Monthly	Grab	mg/L
pH, standard units	Monthly	Grab	SU
Sanitary Waste	Monthly	Visual	

a/ There shall be no sheen, floating solids, or visible foam in other than trace amounts. If a sheen is observed, a sample of that effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

b/ The TDS concentration from each of the outfalls shall not exceed 2400 mg/L as a daily maximum limit. No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 5 ton per day as a sum from all discharge points, and the permittee is required to participate in and/or fund a salinity off-set project to include TDS offset credits as appropriate.

The salinity-offset project shall include TDS credits on a ton-for-ton basis for which the permittee is over the 5 ton per day loading limit. The tonnage reduction from the offset project must be calculated by a method similar to

one used by the Natural Resources Conservation Service, Colorado River Basin Salinity Control Forum, or other applicable agency.

If the permittee will be participating in the construction and implementation of a new salinity-offset project, then a project description and implementation schedule shall be submitted to the Director at least six (6) months prior to the implementation date of the project, which will then be reviewed for approval. The salinity offset project description and implementation schedule must be approved by the Director and shall be appended to this permit.

If the permittee will be funding any additional salinity-offset projects through third parties, the permittee shall provide satisfactory evidence to the Director that the required funds have been deposited to the third party within six (6) months of project approval by the Director. A monitoring and adjustment plan to track the TDS credits shall be submitted to the Director for each monthly monitoring period during the life of this permit. Any changes to the monitoring and adjustment plan must be approved by the Director and upon approval shall be appended to this permit.

2. Samples collected in compliance with the monitoring requirements specified above shall be collected at Outfalls 001, 002 and 003 prior to mixing with the receiving water.

3. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at outfall 002, substitute the following limitations for the limitations contained in *Part I.C.1.* All other limitations and monitoring not listed below remain the same.

Parameter	Alternative Effluent Limitations			
	Average Monthly	Average Weekly	Minimum Daily	Maximum Daily
Flow, MGD	Report			Report
pH, standard units			6.0	9.0
Settleable solids (SS), milliliter/liter				0.5
Total Suspended Solids (TSS), mg/L	Report	Report		Report
Total Iron, mg/L				Report
Total Dissolved Solids (TDS) mg/L b/	Report			Report

In order to substitute the above limitations, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.C.1.* Such analyses shall be conducted on either grab or composite samples. All manual pond dewatering must meet all limitations of *Part I.C.1.*

4. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at outfall 002,

substitute the following limitations for the limitations contained in *Part I.C.1.* All other limitations and monitoring not listed below remain the same.

Parameter	Alternative Effluent Limitations			
	Average Monthly	Average Weekly	Minimum Daily	Maximum Daily
Flow, MGD	Report			Report
pH, standard units			6.0	9.0
Settleable solids (SS), milliliter/liter				Report
Total Suspended Solids (TSS), mg/L	Report	Report		Report
Total Iron, mg/L				Report
Total Dissolved Solids (TDS) mg/L b/	Report			Report

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.C.1.* Such analyses shall be conducted on either grab or composite samples. All manual pond dewatering must meet all limitations of *Part I.C.1.*

5. The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.C.3* and *I.C.4.* The alternate limitations in *Part I.C.3* and *I.C.4* shall not apply to treatment systems that treat exclusively underground mine water (i.e. Outfalls 001 and 003). The alternate limitations apply to Outfall 002 only.

   For rainfall, to waive TSS and total iron limitations, the permittee must prove that the discharge occurred during the precipitation event, or within 48 hours after measurable precipitation has stopped. In addition, to waive settleable solids limitations, the permittee must prove that the discharge occurred during the precipitation event, or within 48 hours after precipitation greater than the 10-year, 24-hour event has stopped.

   For snowmelt, to waive TSS and total iron limitations, the permittee must prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow has stopped. In addition, to waive settleable solids limitations, the permittee must prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow volume greater than the 10-year, 24-hour event has stopped.

   The permittee must submit documentation that the treatment facilities were properly operated and maintained prior to and during the storm event with any request for relief from primary limitations. The division shall determine the adequacy of proof. As part of this determination, the division shall evaluate whether the permittee could have controlled the discharge in such a manner that primary limitations could have been met, whether proper sediment storage levels were maintained and the ponds had sufficient water and sediment capacity for the storm event, plus other relevant factors. All manual pond dewatering must meet all limitations of *Part I.C.1.*

All data/documentation required by the permittee which cannot be reported on applicable discharge monitoring report forms (DMRs) shall be reported in a letter as an attachment to the DMR. Submittal of documentation of containment, maintenance and precipitation records above does not exempt the permittee from the notification requirements of this permit.

D. Additional Requirements if Seals are Removed and Mine Becomes Active If the mine becomes active and the seals are removed the permittee is required comply with the following requirements:

1. As soon as feasible following seal removal and prior to conducting significant dewatering activities the permittee shall collect at least 2 samples for the metals listed below. Samples may be collected from flooded areas of the mine or mine water discharge (Outfall 001 or 003). Results of this sampling shall be provided to the Division of Water Quality **ninety (90) calendar days** prior to planned dewatering activities. These samples will be collected to evaluate what metals will be present in discharge. RP will be conducted on the results for potential to exceed the water quality allocations based on the wasteload analysis. If reasonable potential is found for any of these metals the permit effluent limitations table will be modified.

Metals Monitoring			
Parameter	Sample Type	Frequency	Units
Total Arsenic	Grab	Minimum of two samples prior to dewatering activities, weekly for 10 weeks during dewatering, and monthly there after	mg/L
Total Cadmium			
Total Chromium			
Total Copper			
Total Lead			
Total Mercury			
Total Molybdenum			
Total Nickel			
Total Selenium			
Total Silver			
Total Zinc			
Total Cyanide			

2. Starting after the first week of discharge following seal removal, those metals identified in the RP process shall be monitored ***weekly*** for 10 weeks beginning after the first week of discharge. After which, these pollutants shall be analyzed **monthly**. The permittee is required to obtain the lowest detection limit possible using standard methods and certified laboratories. Depending on the results of the initial expedited analysis, the Division may reassess permit limits and monitoring frequencies for these metals.

3. If the seals are removed and the mine is reactivated, the permittee shall complete one chronic Whole Effluent Toxicity (WET) test on the initial discharge from Outfall 001 or 003 (mine water). The results shall be reported with the Discharge Monitoring Report (DMR) or NetDMR submittal for the month in which the test

was completed. The complete WET laboratory report shall be submitted with the DMR.

4. An intercepted groundwater study must be completed within one year of activation and the seals being removed. This study will determine if the five tons of TDS per day is appropriate or if the quantity needs to be changed. If the five ton per day quantity needs to be changed, this permit will be reopened and modified following proper administrative procedures.

E. Reporting of Wastewater Monitoring Results. Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1) or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. 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

II. STORM WATER 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 the industrial facility.

a. Site Coverage. This section covers discharges of storm water associated with industrial activity to waters of the State from the confines of the facility listed on the cover page. Specific monitoring requirements have been included and are based on the requirements of the UPDES Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity, Permit No. UTR000000.

B. Prohibition of Non-Storm Water Discharges. The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from fire fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

C. Storm Water Pollution Prevention Plan Requirements. The permittee must have (on site) or develop and implement a storm water pollution prevention plan as a condition of this permit.

1. Contents of the Plan. The plan shall include, at a minimum, the following items:

a. *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who 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 Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:

(1) *Drainage*. A site map indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:

(a) Drainage direction and discharge points from all wastewater associated activities including but not limited to grit screen cleaning, bio-solids drying beds and transport, chemical/material loading, unloading and storage areas, vehicle maintenance areas, salt or sand storage areas.

(b) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.

(c) Location of bio-solids drying beds where exposed to precipitation or where the transportation of bio-solids may be spilled onto internal roadways or tracked off site.

(d) Location where grit screen cleaning or other routinely performed industrial activities are located and are exposed to precipitation.

(e) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.

(f) Locations where any major spills or leaks of toxic or hazardous materials have occurred.

(g) Location of any sand or salt piles.

(h) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.

(i) Location of receiving streams or other surface water bodies.

(j) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.

(2) *Inventory of Exposed Materials*. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. 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 effective date of 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 effective date of 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.

(3) *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 effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

(4) *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.

(5) *Summary of Potential Pollutant Sources and Risk Assessment*. A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.

(6) *Measures and Controls*. The permittee shall develop a description of storm water management controls appropriate for the facility, and implement 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:

(7) *Good Housekeeping*. All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion;

sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.

(8) *Preventive Maintenance*. A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing 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.

(9) *Spill Prevention and Response Procedures*. Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

(10) *Inspections*. In addition to the comprehensive site evaluation required under *Part II.D.*, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. 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.

(11) *Employee Training*. Employee training programs shall 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 identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping

practices; proper procedures for using fertilizers, herbicides and pesticides.

(12) *Record keeping and Internal Reporting Procedures*. A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

(13) *Non-storm Water Discharges*.

(a) *Certification*. The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water 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.

(b) *Exceptions*. Except for flows from fire fighting activities, sources of non-storm water listed in *Part II.B.* (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.

(c) *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 the effective date of 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, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.

(14) *Sediment and Erosion Control*. The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

(15) *Management of Runoff.* The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which 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. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity *Part II.C.1.b* (Description of Potential Pollutant Sources) of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent 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, wet detention/retention devices and discharging storm water through the waste water facility for treatment.

D. Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

(a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected 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.

(b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part II.C.1.b* (Description of Potential Pollutant Sources) of this section and pollution prevention measures and controls identified in the plan in accordance with *Part II.C.1.b.(6)* (Measures and Controls) of this section shall be revised as appropriate within 2 weeks of such evaluation 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.

(c) 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 *i.*

(above) 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.

(2) *Deadlines for Plan Preparation and Compliance*. The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part II.D.*, Comprehensive Site Evaluation.

(3) *Keeping Plans Current*. The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

E. Monitoring and Reporting Requirements.

1. Quarterly Visual Examination of Storm Water Quality. Facilities shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.

   a. *Sample and Data Collection*. Examinations shall be made of 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 the permittee 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 observation 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 collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather conditions, which 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.

F. *EPCRA Section 313* Requirements.

1. In areas where *Section 313* water priority chemicals are stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures shall be provided. At a minimum, one of the following preventive systems or its equivalent shall be used:

a. Curbing, culverting, gutters, sewers, or other forms of drainage control to prevent or minimize the potential for storm water run-on to come into contact with significant sources of pollutants; or

b. Roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind.

2. No tank or container shall be used for the storage of a *Section 313* water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.

   Liquid storage areas for *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* chemicals. Appropriate measures to minimize discharges of *Section 313* chemicals may include secondary containment provided for at least the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures.

3. Material storage areas for *Section 313* water priority chemicals other than liquids that are subject to runoff, leaching, or wind shall incorporate drainage or other control features that will minimize the discharge of *Section 313* water priority chemicals by reducing storm water contact with *Section 313* water priority chemicals.

4. Truck and rail car loading and unloading areas for liquid *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of *Section 313* chemicals may include: the placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans) where spillage may occur (such as hose connections, hose reels and filler nozzles) for use when making and breaking hose connections; a strong spill contingency and integrity testing plan; and/or other equivalent measures.

5. Processing equipment and materials handling equipment shall be operated so as to minimize discharges of *Section 313* water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with *Section 313* water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying or releases from pressure relief vents from causing a discharge of *Section 313* water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying *Section 313* water priority chemicals without secondary containment.

6. Drainage from areas covered by *Parts II.F. 1*, *2*, *3*, or *4* should be restrained by valves or other positive means to prevent the discharge of a spill or other excessive leakage of *Section 313* water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

Flapper-type drain valves shall not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open-and-closed design.

If facility drainage is not engineered as above, the final discharge of all in-facility storm sewers shall be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill of *Section 313* water priority chemicals, return the spilled material to the facility.

Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.

7. Other areas of the facility (those not addressed in *Parts II.F. 1*, *2*, *3*, or *4*, from which runoff that may contain *Section 313* water priority chemicals or spills of *Section 313* water priority chemicals could cause a discharge shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.

8. All areas of the facility shall be inspected at specific intervals identified in the plan for leaks or conditions that could lead to discharges of *Section 313* water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, facility piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas shall be examined for any conditions or failures that could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or non-containment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered that may result in significant releases of *Section 313* water priority chemicals to waters of the State, action to stop the leak or otherwise prevent the significant release of *Section 313* water priority chemicals to waters of the State shall be immediately taken or the unit or process shut down until such action can be taken. When a leak or non-containment of a *Section 313* water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with Federal, State, and local requirements and as described in the plan.

9. Facilities shall have the necessary security systems to prevent accidental or intentional entry that could cause a discharge. Security systems described in the plan shall address fencing, lighting, vehicular traffic control, and securing of equipment and buildings.

10. Facility employees and contractor personnel that work in areas where *Section 313* water priority chemicals are used or stored shall be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year. Training shall address: pollution control laws and regulations, the storm water pollution

prevention plan and the particular features of the facility and its operation that are designed to minimize discharges of *Section 313* water priority chemicals. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of *Section 313* water priority chemicals can be isolated and contained before a discharge of a *Section 313* water priority chemical can occur. Contractor or temporary personnel shall be informed of facility operation and design features in order to prevent discharges or spills from occurring.

III. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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

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

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

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

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

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

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

H. Twenty-four Hour Notice of Noncompliance Reporting.

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

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

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

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

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

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

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

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

   a. A description of the noncompliance and its cause;

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

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

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

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

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

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

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

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

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

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

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

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

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

IV. COMPLIANCE RESPONSIBILITIES

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

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

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

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

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

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

G. Bypass of Treatment Facilities.

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

2. Prohibition of Bypass.

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

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

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

      (3) The permittee submitted notices as required under *Part IV.G.3*.

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

3. Notice.

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

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

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

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

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

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

(6) Any additional information requested by the Director.

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

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

H. Upset Conditions.

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

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

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

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

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

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

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

V. GENERAL REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

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

3. Changes to authorization. If an authorization under *Part 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 *Part V.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and

adopted by DWQ which calls for different effluent limitations than contained in this permit.

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

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

2. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits, and the Director agrees that numerical controls are the most appropriate course of action.

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

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

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

VI. DEFINITIONS

A. Wastewater.

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

2. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in 10 years. This information is available in *Weather Bureau Technical Paper No. 40*, May 1961 and *National Oceanographic and Atmospheric Administration Atlas 2,* 1973 for the 11 Western States, and may be obtained from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

3. "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.

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

5. "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.

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

7. "Chronic toxicity" occurs when the survival, growth, or reproduction for either test species exposed to a specific percent effluent dilution is significantly less (at the 95 percent confidence level) than the survival, growth, or reproduction of the control specimens. A five dilution test will be used.

8. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.

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

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

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

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

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

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

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

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

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

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

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

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

17. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a UPDES permit (other than the UPDES permit for discharges from the municipal separate storm sewer) and discharges from fire fighting activities, fire hydrant flushing, potable water sources including waterline flushing, uncontaminated ground water (including dewatering ground water infiltration), foundation or footing drains where flows are not contaminated with process materials such as solvents,

springs, riparian habitats, wetlands, irrigation water, exterior building wash down where there are no chemical or abrasive additives, pavement wash water where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used, and air conditioning condensate.

18. "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.

19. "Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.

20. "*Section 313* water priority chemical" means a chemical or chemical categories which:

    a. Are listed at *40 Code of Federal Regulations (CFR) 372.65* pursuant to *Section 313* of *Title III* of the *Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III* of the *Superfund Amendments and Reauthorization Act* of 1986);

    b. Are present at or above threshold levels at a facility subject to *EPCRA, Section 313* reporting requirements, and

    c. Meet at least one of the following criteria:

        (1) Are listed in *Appendix D* of *40 CFR 122* on *Table II* (organic priority pollutants), *Table III* (certain metals, cyanides, and phenols) or *Table IV* (certain toxic pollutants and hazardous substances);

        (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or

        (3) Are pollutants for which EPA has published acute or chronic toxicity criteria

21. "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.

22. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such

as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

23. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.

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

25. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

FACT SHEET STATEMENT OF BASIS
CANYON FUEL COMPANY, SOLDIER CANYON MINE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0023680
MINOR INDUSTRIAL RENEWAL

FACILITY CONTACTS

Facility Contact:	Bill King	Responsible Official:	David G. Spillman
Position:	Mining Engineer	Position:	Technical Services Manager
Phone:	(435) 636-2898	Phone:	(435) 636-2872

DESCRIPTION OF FACILITY

Facility Name:	Canyon Fuel Company, Soldier Canyon Mine
Mailing Address:	Soldier/Dugout Canyon Mines P.O. Box 1029 Wellington, Utah 84542
Physical Location:	The Soldier Canyon Mine facility is located in Carbon County, Utah, Section 18, Township 13 South, Range 12 East, 13 miles northeast of the City of Wellington.
Coordinates:	Approximately, Latitude: 39° 42' 02", Longitude: 110° 36' 39"
Standard Industrial Classification (SIC):	*1222 - Bituminous Coal Underground Mining (NAICS 212112)*

The Canyon Fuel Company, LLC Soldier Canyon Mine (SCM) facility consists of an underground coal mine operation, which at the present time is inactive. Canyon Fuel Company considers the SCM facility as temporally idled and sealed. No in-mine treatment units (sumps w/pump stations) are currently active. The surface facilities are used on a limited basis in support of the Dugout Canyon Mine. The only potential for discharge is from Outfall 002 at the surface sedimentation pond, which could discharge if there was enough runoff. During the previous permit cycle there was a discharge resulting from large storm events from Outfall 002 on September 10, 11, 17, and 25, 2013. Otherwise there was no discharge from any Outfall over the last permit period. It is not known when the mine will be re-activated, but SCM officials desire continuation of the UPDES permit, so that if the mine is re-activated in the next five years it can discharge without delay. Also, any discharge at Outfall 002 from excessive precipitation would be covered whether the mine was active or not.

DESCRIPTION OF DISCHARGE

Outfall	Description
001	Discharge of mine water at Latitude 39° 42' 02" N Longitude 110° 36' 39" W
002	Discharge from a surface sedimentation pond at Latitude 39° 41' 52" N Longitude 110° 36' 46" W
003	Discharge of mine water at Latitude 39° 42' 09" N Longitude 110° 36' 38" W

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharges flow into Soldier Creek, a tributary of the Price River which is in the Colorado River drainage. The receiving waters are designated according to *Utah Administrative Code (UAC) R317-2-13* as indicated below:

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

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). A waste load analysis was completed for the discharge to Soldier Creek. However the background flow in Soldier Creek is zero and thus the effluent limits will be set equal to the water quality standards. In cases where multiple limits have been developed, those that are more stringent apply. In cases where no underlying standards have been developed, Best Professional Judgment (BPJ) may be used where applicable to set effluent limits.

1) SCM's discharge meets the EPA definition of "alkaline mine drainage." As such, it is subject to the technology based effluent limitations in *40 CFR Part 434.45*. Technology based limits used in the permit are listed below.

    a. Total suspended solids (TSS) daily maximum limit.

    b. For discharges composed of surface water or mine water commingled with surface water (Outfall 002 only), *40 CFR Part 434.63* allows alternate effluent limits to be applied when discharges result from specific runoff events, detailed in the Effluent Limitations for Precipitation Events Section and in the permit. SCM has the

burden of proof that the described runoff event occurred and to provide documentation required by *Part I.C.5.* of the permit.

2) TSS 30-day and 7-day averages are based on Utah Secondary Treatment Standards.

3) Daily minimum and daily maximum limitations on pH are derived from Utah Secondary Treatment Standards and Water Quality Standards.

4) Total dissolved solids (TDS) are limited according to Water Quality Standards and policies established by the Colorado River Basin Salinity Control Forum. TDS are limited by both mass loading and concentration requirements as described below:

   a. Since discharges from SCM may eventually reach the Colorado River (if the mine became active), TDS mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (Forum), as authorized in *UAC R317-2-4* to further control salinity in the Utah portion of the Colorado River Basin. On February 28, 1977 the Forum produced the *"Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program"* (Policy), with the most current subsequent triennial revision dated October 2014. Based on Forum Policy, provisions can be made for salinity-offset projects to account for any TDS loading in excess of the permit requirement.

      On October 20, 1982 the Forum produced the *"Policy for Implementation of Colorado River Salinity Standards through the NPDES Permit Program for Intercepted Ground Water"*. The permit issued to the SCM facility in 1991 increased the TDS loading limit from 1-ton/day to 5-tons/day, as a sum from all outfalls. This increase in TDS loading was based on mining activities resulting in increased mine water flows that were determined to be from intercepted ground water based on the Forum intercepted ground water policy. This permit will retain the 5-tons/day effluent TDS loading limit. However, if the mine is reactivated and the portals unplugged a new intercepted groundwater study must be completed within the first year of the mine being reactivated and the portals opened. This new study will determine if the five tons of TDS per day is appropriate or the quantity needs to be changed.

   b. The permit limit for TDS concentration is based on a total maximum daily load (TMDL) (*Price River, San Rafael River and Muddy Creek TMDLs for Dissolved Solids – West Colorado Watershed Management Unit, Utah April 2004*) which established a TDS standard of 3000 mg/L for the Price River and associated tributaries in the area where Soldier Creek enters the Price River. Since SCM has been idle and sealed for the last two permit cycles no samples of the water in the mine could be taken and the quality of the water is unknown. Dugout Canyon Mine, owned by the same Company and in the next canyon to the east of Soldier Canyon, has, under normal operating conditions, averaged 1195 mg/L TDS from all of their discharge points (inclusive of mine water and sedimentation ponds).

Dugout has a TDS limit of 2400 mg/L as a daily maximum. Since the quality of the water in SCM is unknown, based on BPJ a TDS limit of 2400 mg/L as a daily maximum concentration will be included in the renewal permit. This is the same as the previous permit cycle.

5) Limitation on total iron is based upon the State Water Quality Standards. Total iron will be limited to 1.00 mg/L total iron. This limit will apply to all discharge points.

6) Oil and Grease are limited to 10 mg/L by BPJ, as this is consistent with other industrial facilities statewide.

7) The effluent flow limitation is based off the maximum historic discharge rate during March 1991 from Discharge 001 at 200 gpm and Discharge 003 at 720 gpm for a combined flow of 1.3 mgd. This is an increase from the previous permit cycle which had set the limit at 0.5 mgd without document justification.

EFFLUENT LIMITATIONS FOR PRECIPITATION EVENTS

In conformance with 40 CFR 434.63, the Division has incorporated the alternative effluent limits for discharge of mine drainage caused by precipitation events larger than regulatory design standards. The permittee has the burden of proof when requesting application of these alternative limitations. Relief shall be granted only when necessary and shall not be granted when the permittee has control over the discharge. The permittee should endeavor to meet the primary limitations whenever possible. Relief is not available for mine drainage from underground workings of underground mines that are not commingled with discharges eligible for alternate limitations (i.e., surface runoff). This is the case for Outfalls 001 and 003. Thus, the alternate limitations may only be applied to Outfall 002.

For rainfall, to apply the alternative limitations in *Part I.C.3.*, it is necessary to prove that the discharge occurred during the precipitation event, or within 48 hours after measurable precipitation has stopped. In addition, to apply the alternative limitations in *Part I.C.4.*, it is necessary to prove that the discharge occurred during the precipitation event, or within 48 hours after precipitation greater than the 10-year, 24-hour event has stopped.

For snowmelt, to apply the alternative limitations in *Part I.C.3.*, it is necessary to prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow has stopped. In addition, to apply the alternative limitations in *Part I.C.4.*, it is necessary to prove that the discharge occurred during pond inflow from the snow melt event, or within 48 hours after pond inflow volume greater than the 10-year, 24-hour event has stopped.

Documentation that the treatment facilities were properly operated and maintained prior to and during the storm event must be submitted with any request for relief from primary limitations. The Division shall determine the adequacy of proof. As part of this determination, the Division shall evaluate whether the permittee could have controlled the discharge in such a manner that primary limitations could have been met, whether proper sediment storage levels were maintained and the

ponds had sufficient water and sediment capacity for the storm event plus other relevant factors. All manual pond dewatering must meet all limitations of *Part I.C.1.*

WASTE LOAD ANALYSIS, ANTIDEGRADATION REVIEW AND REASONABLE POTENTIAL ANALYSIS

Effluent limitations may be derived using a Waste Load Analysis (WLA). The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Anti-degradation 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 this UPDES renewal permit 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. 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. The discharge was evaluated and determined not to cause a violation of State Water Quality Standards in downstream receiving waters.

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal would be conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

At this time no metals samples are available for quantitative RP analysis because the mine did not discharge during the previous permit term. Therefore, this permit requires that the permittee obtain at least two metals monitoring results following seal removal and submit them to the Division prior to conducting significant dewatering activities. Quantitative RP analysis will be conducted on this monitoring data.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

The effluent limitations and monitoring requirements for Outfalls 001, 002 and 003 shall be completed as outlined below. Sampling frequency will be decreased from twice a month to monthly for flow, TSS, total iron, TDS and pH. Sampling frequency will be reassessed as part of the RP analysis process if the mine becomes active and the seals are removed. Monthly sampling is based on the mine being a minor industrial permit with a flow limitation of 1.3 mgd. Reports shall be made via NetDMR or on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monitoring period (month, quarter, year, etc.).

Parameter	Effluent Limitations			
	Average Monthly	Average Weekly	Minimum Daily	Maximum Daily
Flow, MGD	1.3			Report
pH, standard units			6.5	9.0
Total Suspended Solids (TSS), mg/L	25	35		70
Total Iron, mg/L				1.00
Oil & Grease, mg/L, a/				10
Total Dissolved Solids (TDS) mg/L b/	Report			2400
Total Dissolved Solids (TDS) tons/day b/				5
Sanitary Waste				None

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Flow	Monthly	Measured	MGD
Total Suspended Solids (TSS),	Monthly	Grab	mg/L
Total Iron	Monthly	Grab	mg/L
Oil & Grease, mg/L, a/	Monthly	Visual/Grab	mg/L
Total Dissolved Solids (TDS) b/	Monthly	Grab	mg/L
pH, standard units	Monthly	Grab	SU
Sanitary Waste	Monthly	Visual	

a/ There shall be no sheen, floating solids, or visible foam in other than trace amounts. If a sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

b/ The TDS concentration from each of the outfalls shall not exceed 2400 mg/L as a daily maximum limit. No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more

than 5 ton per day as a sum from all discharge points. If the permittee cannot meet the 500 mg/L 30-day average or the 5 ton per day loading limit, the permittee is required to participate in and/or fund a salinity offset project to include the TDS offset credits as appropriate *(See permit provisions for further details)*.

SPECIAL CONDITIONS IF THE SEALS ARE REMOVED AND MINE BECOMES ACTIVE

Current conditions at the mine are in a state of temporary cessation; as such this permit is being reviewed without the availability of assessing typical water quality discharge effluent quality. If the mine becomes active and the seals are removed during this permit cycle, the permittee will be required to conduct analyses to establish what the typical effluent quality will be.

As soon as feasible following seal removal and prior to conducting significant dewatering activities the permittee shall collect at least 2 samples for the metals listed below. Samples may be collected from flooded areas of the mine or mine water discharge (Outfall 001 or 003). Results of this sampling shall be provided to the Division of Water Quality **ninety (90) calendar days** prior to planned dewatering activities. These samples will be collected to evaluate metals present in the discharge. RP will be conducted on the results to determine the potential to exceed the water quality allocations based on the wasteload analysis. If reasonable potential is found for any of these metals the permit effluent limitations table will be modified.

Metals Monitoring			
Parameter	Sample Type	Frequency	Units
Total Arsenic	Grab	Minimum of two samples prior to dewatering activities, weekly for 10 weeks during dewatering, and monthly there after	mg/L
Total Cadmium			
Total Chromium			
Total Copper			
Total Lead			
Total Mercury			
Total Molybdenum			
Total Nickel			
Total Selenium			
Total Silver			
Total Zinc			
Total Cyanide			

Starting after the first week of discharge following seal removal, those metals identified in the RP process shall be monitored ***weekly*** for 10 weeks beginning after the first week of discharge. After which, these pollutants shall be analyzed **monthly**. The permittee is required to obtain the lowest detection limit possible using standard methods and certified laboratories. Depending on the results of the initial expedited analysis, the Division may reassess permit limits and monitoring frequencies for these metals.

If the seals are removed and the mine is reactivated, the permittee shall complete one chronic Whole Effluent Toxicity (WET) test on the initial discharge from Outfall 001 or 003 (mine water). The results shall be reported with the Discharge Monitoring Report (DMR) or netDMR submittal for the month in which the test was completed. The complete WET laboratory report shall be submitted with the DMR.

An intercepted groundwater study must be completed within one year of activation of the mine and the seals being removed. This study will determine if the five tons of TDS per day is appropriate or if the quantity needs to be changed. If the five ton per day quantity needs to be changed, this permit will be reopened and modified following proper administrative procedures.

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. 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. Required elements of this plan are:

1) Development of a pollution prevention team,
2) Development of drainage maps and material stockpiles,
3) An inventory of exposed material,
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.

This plan is required to be maintained on-site to reflect current site conditions and made available for review upon request and/or inspections.

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

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in *UAC R317-8, Utah Pollutant Discharge Elimination System* and *UAC R317-2, Water Quality Standards*.

SCM is a minor industrial facility, which historically discharges only intercepted groundwater that has neither been considered to be toxic, nor to be a potential concern. As indicated previously, the mine facility has been inactive for several years, but when active, the facility's discharge was significantly less than one (1) MGD with no observable ill-effects on the receiving waters. Based on these considerations, the SCM facility does not have reasonable potential to discharge toxics, nor is it a "significant minor" according to the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control*. As such, there will be no numerical whole effluent toxicity (WET) limitations or WET monitoring requirements in this permit. However, if the mine seals are removed and the mine becomes active again the mine will be require to conduct one sampling event for WET to confirm that these historic conditions have not changed. Last, the permit will contain a toxicity limitation re-opener provision. This provision allows for modification of the permit to include WET limitations and/or WET monitoring, should additional information indicate the presence of toxicity in the discharge.

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

The required monitoring for flow, TSS, Total Iron, TDS, and pH is reduced from twice a month to monthly. Metals monitoring and toxicity monitoring requirements were added if the seals are removed and the mine becomes active again. Last, the documentation requirements for application of the 40 CFR 434.63 alternative limitations were clarified.

PERMIT DURATION

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

Drafted by	
Discharge:	Ken Hoffman kenhoffman@utah.gov 801-536-4313
Stormwater	Mike George
WET	Mike Herkimer
Colorado Salinity	Matt Garn
TMDL	Amy Dickey
WLA	Dave Wham

PUBLIC NOTICE

Began: October 10, 2016
Ended: November 10, 2016

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

The Public Noticed of the draft permit was published in the Sun-Advocate.

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. No comments were received during the public notice comment period.

DWQ-2016-011523

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

Date: **March 23, 2016**

Prepared by: **Dave Wham**
Standards and Technical Services

Facility: **Canyon Fuel Company, LLC, Soldier Canyon Mine**
UPDES No. UT0023680

Receiving water: **Soldier Creek => Price River (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

This facility is an underground Coal Mine.

Outfall 001: Mine Water Discharge
Outfall 002: Sedimentation Pond
Outfall 003: Mine Water Discharge

The maximum daily flow is .5 MGD as estimated by the permittee.

Receiving Water

The receiving water Outfall 001, 002 and 003 is Soldier Creek, an intermittent stream that is tributary to the Price River.

Per UAC R317-2-13.1(b), the designated beneficial uses Price River and tributaries, from confluence with Green River to Carbon Canal Diversion at Price City Golf Course is 2B, 3C, and 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.*

As per R317-2, Table 2.14.1, footnote (4), the segment of the Price River which receives flows from Soldier Creek (Price River and tributaries from confluence with Green River to confluence with Soldier Creek) has a site specific standard for TDS of 3,000 mg/l.

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 discharge is to an Intermittent stream, the critical low flow condition (7Q10) of the receiving water would be zero. As a result, effluent limits revert to the water quality standards. Water Quality Standards are presented in the WLA Addendum.

TMDL

According to the Utah's 2014 303(d) Water Quality Assessment, the assessment unit containing Soldier Creek (Price River and tributaries (except Desert Seep Wash, Miller Creek, and Grassy Trail Creek) from Woodside to Soldier Creek confluence) was not listed as impaired.

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.

No mixing zone was considered as the annual critical flow for Outfalls 001, 002 and 003 was determined to be 0.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total dissolved solids (TDS) and iron as determined in consultation with the UPDES Permit Writer.

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 LC_{50} (lethal concentration, 50%) percent effluent for acute toxicity and the IC_{25} (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 LC_{50} is typically 100% effluent and does not need to be determined by the WLA.

IC25 WET limits for Outfalls 001,002, and 003 should be based on 100% effluent.

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 Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al. 2002). The analysis is summarized in the Wasteload 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 required for this facility because the permit requests an increase in flow and concentration of pollutants over the existing permit.

Documents:

WLA Document: *SoldierCanyon _WLADoc_3-23-16.docx*
Wasteload Analysis and Addendum: *SoldierCanyon _WLA_3-23-16.xlsm*

References:

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

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Soldier Canyon Mine**		
UPDES No:	UT-0023680		
Current Flow:	0.50	MGD	Design Flow
Design Flow	0.50	MGD	

Receiving Water:	**Soldier Creek => Price River**		
Stream Classification:	2B, 3C, 4		
Stream Flows [cfs]:	0.0	Summer (July-Sept)	20th Percentile
	0.0	Fall (Oct-Dec)	20th Percentile
	0.0	Winter (Jan-Mar)	20th Percentile
	0.0	Spring (Apr-June)	20th Percentile
	0.0	Average	
Stream TDS Values:	464.0	Summer (July-Sept)	Average
	464.0	Fall (Oct-Dec)	Average
	464.0	Winter (Jan-Mar)	Average
	464.0	Spring (Apr-June)	Average

Effluent Limits:				**WQ Standard:**
Flow, MGD:	0.50	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	5.5	Summer	5.0	30 Day Average
TNH3, Chronic, mg/l:	2.6	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	3000.0	Summer	3000.0	Site Specific

Modeling Parameters:

Acute River Width:	50.0%	
Chronic River Width:	100.0%	Plume Model Used

Level 1 Antidegradation Level Completed: Level II Review is not required.

Date: 3/22/2016

Permit Writer:		
WLA by:	Dan M. Udall	3/23/16
WQM Sec. Approval:		
TMDL Sec. Approval:		

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

22-Mar-16
4:00 PM

Facilities: **Soldier Canyon Mine** **UPDES No: UT-0023680**
Discharging to: **Soldier Creek => Price River**

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 interms 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

Soldier Creek => Price River:	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	3000.0 mg/l Background

Utah Division of Water Quality
Salt Lake City, Utah

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard 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	0.61 ug/l	0.003 lbs/day	6.52 ug/l	0.027 lbs/day
Chromium III	211.92 ug/l	0.885 lbs/day	4433.71 ug/l	18.521 lbs/day
ChromiumVI	11.00 ug/l	0.046 lbs/day	16.00 ug/l	0.067 lbs/day
Copper	23.85 ug/l	0.100 lbs/day	39.41 ug/l	0.165 lbs/day
Iron			1000.00 ug/l	4.177 lbs/day
Lead	12.88 ug/l	0.054 lbs/day	330.60 ug/l	1.381 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40 ug/l	0.010 lbs/day
Nickel	132.13 ug/l	0.552 lbs/day	1188.44 ug/l	4.964 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	25.04 ug/l	0.105 lbs/day
Zinc	303.93 ug/l	1.270 lbs/day	303.93 ug/l	1.270 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 300 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard 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	0.233 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	54.200 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

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Salt Lake City, Utah

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	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			3000.0 mg/l	6.27 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	Load*	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]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	11.26 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	3.25 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	87.55 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

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-Tetrachloroethai	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	17.93 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	70.88 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	10.84 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	10.84 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-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	3.29 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	7.09 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	9.59 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	120.91 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) e	ug/l	lbs/day	170000.0	ug/l	708.77 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	6.67 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
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	70.88 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	7.92 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	58.37 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-propylami	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

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	21.68 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	50.03 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	500.31 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	45.86 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.04 lbs/day
Toluene	ug/l	lbs/day	200000	ug/l	833.84 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 12/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1254 (Arochlor 12!	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1221 (Arochlor 12:	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1232 (Arochlor 12:	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1248 (Arochlor 12/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1260 (Arochlor 12(	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10'	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			

Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	17.93 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	917.23 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	19.18 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.

(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 cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.0	20.0	8.1	0.01	0.50	10.30	0.00	464.0
Fall	0.0	12.0	8.1	0.01	0.50	---	0.00	464.0
Winter	0.0	5.0	8.1	0.01	0.50	---	0.00	464.0
Spring	0.0	12.0	8.1	0.01	0.50	---	0.00	464.0

Dissolved Metals All Seasons	Al ug/l 1.59*	As ug/l 0.53*	Cd ug/l 0.053*	CrIII ug/l 0.53*	CrVI ug/l 2.65*	Copper ug/l 0.53*	Fe ug/l 0.83*	Pb ug/l 0.53*
Dissolved Metals All Seasons	Hg ug/l 0.0000	Ni ug/l 0.53*	Se ug/l 1.06*	Ag ug/l 0.1*	Zn ug/l 0.053*	Boron ug/l 10.0		

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.50000	15.0	500.00	1.04229
Fall	0.50000	15.0		
Winter	0.50000	15.0		
Spring	0.50000	15.0		

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 occuring, the permit writers must include the discharge flow limititation 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 segements if the values below are met.

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

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	5.50
Fall	5.50
Winter	5.50
Spring	5.50

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	2.6 mg/l as N	10.9	lbs/day
	1 Hour Avg. - Acute	8.6 mg/l as N	36.0	lbs/day
Fall	4 Day Avg. - Chronic	2.6 mg/l as N	10.9	lbs/day
	1 Hour Avg. - Acute	8.6 mg/l as N	36.0	lbs/day
Winter	4 Day Avg. - Chronic	2.6 mg/l as N	10.9	lbs/day
	1 Hour Avg. - Acute	9.3 mg/l as N	38.8	lbs/day
Spring	4 Day Avg. - Chronic	2.6 mg/l as N	10.9	lbs/day
	1 Hour Avg. - Acute	8.6 mg/l as N	36.0	lbs/day

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

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	0.00	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	3000.0	mg/l	6.25	tons/day
Fall	Maximum, Acute	3000.0	mg/l	6.25	tons/day
Winter	Maximum, Acute	3000.0	mg/l	6.25	tons/day
Spring	4 Day Avg. - Chronic	3000.0	mg/l	6.25	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 300 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum*	N/A		N/A	750.0	ug/l	3.1 lbs/day
Arsenic*	190.00	ug/l	0.5 lbs/day	340.0	ug/l	1.4 lbs/day
Cadmium	0.61	ug/l	0.0 lbs/day	6.5	ug/l	0.0 lbs/day
Chromium III	211.92	ug/l	0.6 lbs/day	4,433.8	ug/l	18.5 lbs/day
Chromium VI*	11.00	ug/l	0.0 lbs/day	16.0	ug/l	0.1 lbs/day
Copper	23.85	ug/l	0.1 lbs/day	39.4	ug/l	0.2 lbs/day
Iron*	N/A		N/A	1,000.0	ug/l	4.2 lbs/day
Lead	12.88	ug/l	0.0 lbs/day	330.6	ug/l	1.4 lbs/day
Mercury*	0.01	ug/l	0.0 lbs/day	2.4	ug/l	0.0 lbs/day
Nickel	132.13	ug/l	0.4 lbs/day	1,188.5	ug/l	5.0 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	25.0	ug/l	0.1 lbs/day

Zinc	303.94 ug/l	0.8 lbs/day	303.9	ug/l	1.3 lbs/day
Cyanide*	5.20 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	22.0 Deg. C.	71.6 Deg. F
Fall	14.0 Deg. C.	57.2 Deg. F
Winter	7.0 Deg. C.	44.6 Deg. F
Spring	14.0 Deg. C.	57.2 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 Concentration	Load	1 Hour Average 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

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	7.80E+02 ug/l	3.25E+00 lbs/day
Acrylonitrile	6.60E-01 ug/l	2.75E-03 lbs/day
Benzene	7.10E+01 ug/l	2.96E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.40E+00 ug/l	1.83E-02 lbs/day
Chlorobenzene	2.10E+04 ug/l	8.76E+01 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.70E-04 ug/l	3.21E-06 lbs/day
1,2-Dichloroethane	9.90E+01 ug/l	4.13E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.90E+00 ug/l	3.71E-02 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.20E+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	4.30E+03 ug/l	1.79E+01 lbs/day
2,4,6-Trichlorophenol	6.50E+00 ug/l	2.71E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.70E+02 ug/l	1.96E+00 lbs/day
2-Chlorophenol	4.00E+02 ug/l	1.67E+00 lbs/day
1,2-Dichlorobenzene	1.70E+04 ug/l	7.09E+01 lbs/day
1,3-Dichlorobenzene	2.60E+03 ug/l	1.08E+01 lbs/day

1,4-Dichlorobenzene	2.60E+03 ug/l	1.08E+01 lbs/day
3,3'-Dichlorobenzidine	7.70E-02 ug/l	3.21E-04 lbs/day
1,1-Dichloroethylene	3.20E+00 ug/l	1.33E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	7.90E+02 ug/l	3.29E+00 lbs/day
1,2-Dichloropropane	3.90E+01 ug/l	1.63E-01 lbs/day
1,3-Dichloropropylene	1.70E+03 ug/l	7.09E+00 lbs/day
2,4-Dimethylphenol	2.30E+03 ug/l	9.59E+00 lbs/day
2,4-Dinitrotoluene	9.10E+00 ug/l	3.79E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.40E-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	7.09E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.60E+03 ug/l	6.67E+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	9.17E-02 lbs/day
Chlorodibromomethane (HM)	3.40E+01 ug/l	1.42E-01 lbs/day
Hexachlorocyclopentadiene	1.70E+04 ug/l	7.09E+01 lbs/day
Isophorone	6.00E+02 ug/l	2.50E+00 lbs/day
Naphthalene		
Nitrobenzene	1.90E+03 ug/l	7.92E+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	7.65E+02 ug/l	3.19E+00 lbs/day
N-Nitrosodimethylamine	8.10E+00 ug/l	3.38E-02 lbs/day
N-Nitrosodiphenylamine	1.60E+01 ug/l	6.67E-02 lbs/day
N-Nitrosodi-n-propylamine	1.40E+00 ug/l	5.84E-03 lbs/day
Pentachlorophenol	8.20E+00 ug/l	3.42E-02 lbs/day
Phenol	4.60E+06 ug/l	1.92E+04 lbs/day
Bis(2-ethylhexyl)phthalate	5.90E+00 ug/l	2.46E-02 lbs/day
Butyl benzyl phthalate	5.20E+03 ug/l	2.17E+01 lbs/day
Di-n-butyl phthalate	1.20E+04 ug/l	5.00E+01 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.20E+05 ug/l	5.00E+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

Pyrene (PAH)	1.10E+04 ug/l	4.59E+01 lbs/day
Tetrachloroethylene	8.90E+00 ug/l	3.71E-02 lbs/day
Toluene	2.00E+05 ug/l	8.34E+02 lbs/day
Trichloroethylene	8.10E+01 ug/l	3.38E-01 lbs/day
Vinyl chloride	5.25E+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	5.90E-04 ug/l	2.46E-06 lbs/day
4,4'-DDT	5.90E-04 ug/l	2.46E-06 lbs/day
4,4'-DDE	5.90E-04 ug/l	2.46E-06 lbs/day
4,4'-DDD	8.40E-04 ug/l	3.50E-06 lbs/day
alpha-Endosulfan	2.00E+00 ug/l	8.34E-03 lbs/day
beta-Endosulfan	2.00E+00 ug/l	8.34E-03 lbs/day
Endosulfan sulfate	2.00E+00 ug/l	8.34E-03 lbs/day
Endrin	8.10E-01 ug/l	3.38E-03 lbs/day
Endrin aldehyde	8.10E-01 ug/l	3.38E-03 lbs/day
Heptachlor	2.10E-04 ug/l	8.76E-07 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1254 (Arochlor 1254)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1221 (Arochlor 1221)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1232 (Arochlor 1232)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1248 (Arochlor 1248)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1260 (Arochlor 1260)	4.50E-05 ug/l	1.88E-07 lbs/day
PCB-1016 (Arochlor 1016)	4.50E-05 ug/l	1.88E-07 lbs/day
Pesticide		
Toxaphene	7.50E-04 ug/l	3.13E-06 lbs/day
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		

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		750.0				750.0	N/A
Antimony				4300.1		4300.1	
Arsenic	100.0	340.0			0.0	100.0	190.0
Barium						0.0	
Beryllium						0.0	
Cadmium	10.0	6.5			0.0	6.5	0.6
Chromium (III)		4433.8			0.0	4433.8	211.9
Chromium (VI)	100.0	16.0			0.0	16.00	11.00
Copper	200.0	39.4				39.4	23.9
Cyanide		22.0	220002.8			22.0	5.2
Iron		1000.0				1000.0	
Lead	100.0	330.6			0.0	100.0	12.9
Mercury		2.40		0.15	0.0	0.15	0.012
Nickel		1188.5		4600.1		1188.5	132.1
Selenium	50.0	20.0			0.0	20.0	4.6
Silver		25.0			0.0	25.0	
Thallium				6.3		6.3	
Zinc		303.9				303.9	303.9
Boron	750.0					750.0	

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	750.0	N/A	
Antimony	4300.06		
Arsenic	100.0	190.0	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	6.5	0.6	
Chromium (III)	4433.8	212	
Chromium (VI)	16.0	11.0	
Copper	39.4	23.9	

Cyanide	22.0	5.2
Iron	1000.0	
Lead	100.0	12.9
Mercury	0.150	0.012
Nickel	1188.5	132
Selenium	20.0	4.6
Silver	25.0	N/A
Thallium	6.3	
Zinc	303.9	303.9
Boron	750.01	

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.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

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 not required. Basic renewal, no increase in effluent flow or concentration.

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 down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

XIV. TMDL Requirements

Soldier Creek Mine discharges to Soldier Creek which is a tributary of the Price River. This segment of the Price River is 303(d) listed total dissolved solids (TDS). A TMDL was completed for this portion of the Price River on August 4, 2004. No load allocation was indicated for Soldier Creek Mine. This segment of the Price River has a site has a site specific standard of 3000 mg/l.

*Calculation based on limited flow and concentration data

1/day	1/day	1/day	1/day	1/day	1/day	1/day	1/day
0.000	0.000	4.000	1.596	0.000	0.000	32.000	9.979

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	0.284

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Antidegredation Review

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that the proposed discharge will not require a Level II Antidegradation Review. The Proposed permit is a simple renewal. No increase in effluent flow or concentration.

Antidegradation Review Form

Part A: Applicant Information

Facility Name: Soldier Canyon Mine

Facility Owner: Canyon Fuel Company, LLC

Facility Location: 13 Miles NorthEast of Wellington

Form Prepared By: David G. Spillman

Outfall Number: 001, 002 & 003

Receiving Water: Soldier Creek

What Are the Designated Uses of the Receiving Water (R317-2-6)?
Domestic Water Supply: None
Recreation: 2B - Secondary Contact
Aquatic Life: 3C - Nongame Fish
Agricultural Water Supply: 4
Great Salt Lake: None

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

UPDES Permit Number (if applicable): UT0023680

Effluent Flow Reviewed:
Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

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

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

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

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

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

Part B. Is a Level II ADR required?

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

B1. The receiving water or downstream water is a Class 1C drinking water source.

☐ **Yes** A Level II ADR is required (Proceed to Part C of the Form)

☒ **No** (Proceed to Part B2 of the Form)

B2. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

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

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

B3. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review? For a few pollutants such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Section 3.3.3 of Implementation Guidance)

☐ **Yes** (Proceed to Part B4 of the Form)

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

B4. Are water quality impacts of the proposed project temporary and limited (Section 3.3.4 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

☐ **Yes** Identify the reasons used to justify this determination in Part B4.1 and proceed to Part G. No Level II ADR is required.

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

B4.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.4 of Implementation Guidance):

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

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

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

Additional justification, as needed: ☐

Level II ADR

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

Optional Report Name:

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located? *The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.*

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

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

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

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

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

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern. *Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.*

Parameters of Concern:

Rank	Pollutant	Ambient Concentration	Effluent Concentration
1			
2			
3			
4			
5			

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification

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

Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. More information is available in Section 5.5 and 5.6 of the Implementation Guidance.

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

☐ **Yes** (Proceed to Part F)

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

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

Report Name: ☐

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

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

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

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

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

☐ **Yes**

☐ **No**

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

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

Part F. Optional Information

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

☐ **No**

☐ **Yes**

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

☐ **No**

☐ **Yes**

Report Name: ☐

Part G. Certification of Antidegradation Review

G1. Applicant Certification

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

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

Print Name: David Spillman

Signature: David Spillman

Date: 2/2/16

G2. DWQ Approval

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

Water Quality Management Section

Print Name: _____

Signature: _____

Date: _____