

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

AUTHORIZATION TO DISCHARGE UNDER THE  
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(UPDES)

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

**HIAWATHA COAL COMPANY**

is hereby authorized to discharge from its facility located in Township 16 South, Range 8 East in Emery County and in Township 15 South, Range 8 East in Carbon County, Utah, to receiving waters named

**CEDAR CREEK, A TRIBUTARY OF HUNTINGTON CREEK  
AND  
MILLER CREEK, A TRIBUTARY OF THE PRICE RIVER**

in accordance with discharge points, effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on February 01, 2016.

This permit expires at midnight, January 31, 2021.

Signed the *28* day of *January*, 2016

  
Walter L. Baker, P.E.  
Director

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## I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### A. Definitions.

1. The "30-day and monthly average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
2. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.
3. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
4. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
5. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
7. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
8. "Director" means Director of the Utah Division of Water Quality.
9. "EPA" means the United States Environmental Protection Agency.
10. "Act" means the "*Utah Water Quality Act*".
11. "Best Management Practices" ("*BMP's*") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. *BMP's* also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

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

B. Description of Discharge Point.

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

<u>Outfall Number</u>	<u>Location of Discharge Point(s)</u>
001	Mohrland Portal Discharge: T16S, R8E SLBM, Sec. 8, at approximately longitude 111° 03' 0" and latitude 39° 27' 50". The discharge is from mine water seepage.
002	Culinary Water Overflow: T15S, R8E SLBM, Sec. 34, at approximately longitude 111° 01' 0" and latitude 39° 28' 50". The discharge is overflow from the Hiawatha drinking water system. Hiawatha drinking water is from the Mohrland Portal discharge.
003	Hiawatha Sediment Pond D003: T15S, R8E SLBM, Sec 27, at approximately longitude 111° 0' 50" and latitude 39° 29' 0". The discharge is surface runoff from the Upper Rail Storage Yard Borrow area
004	Slurry Pond #1 Sediment Pond: T15S, R8E SLBM, Sec 26, at approximately 111° 0' 10" and latitude 39° 29' 20". The discharge is surface runoff from the disturbed area of the Ridge Borrow area.

- 005 Slurry Pond #4 Sediment Pond: T15S, R8E SLBM, Sec 27, at approximately 111° 0' 30" and latitude 39° 28' 45". The discharge is surface runoff from slurry pond #4
- 006 Hiawatha Sediment Pond D006: T15S, R8E SLBM, Sec 34, at approximately 111° 0' 15" and latitude 39° 28' 35". The discharge is surface runoff from slurry pond #5 cell 5A.
- 007 Hiawatha Sediment Pond D007: T15S, R8E SLBM, Sec 34, at approximately 111° 0' 10" and latitude 39° 28' 20". The discharge is surface runoff from slurry pond #5 main cell.
- 008 Middle Fork Sediment Pond: T15S, R8E SLBM, Sec 29, at approximately 111° 02' 40" and latitude 39° 29' 0". The discharge is surface runoff from the Middle Fork Mine Yard.
- 009 South Fork Mine Yard: T15S, R8E SLBM, Sec 19, at approximately 111° 02' 35" and latitude 39° 28' 50". The Discharge is surface runoff from the South Fork Mine Yard.
- 010 King 4 Mine Discharge: T15S, R7E SLBM, Sec 32, at approximately 111° 03' 45" and latitude 39° 32' 15". The Discharge is from sump locations within the mine.
- 011 South Fork Truck Loading Facility: T15S, R8E SLBM, Sec 33, at approximately 111° 02' 28" and latitude 39° 28' 47". The Discharge is surface runoff from the South Fork Loading facility.
- 012 Mohrland Pipeline Drain: T15S, R8E SLBM, Sec 10, at approximately 111° 0' 45" and latitude 39° 26' 30". The discharge is from a valve on the Mohrland Pipeline.
- 013 King 6 Water Tank Overflow: T15S, R8E SLBM, Sec 32, at approximately 111° 03' 07" and latitude 39° 29' 0". The discharge is from an overflow pipe from the King 6 water tank in South Fork Canyon.

C. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural

deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

D. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001 through Outfall 013. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Limitations a/				
Parameter	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum
TSS, mg/L	25	35	NA	70
Total Dissolved Solids, mg/L	NA	NA	NA	981
Total Dissolved Solids, tons/day c/	NA	NA	NA	1.0
Iron, mg/L	NA	NA	NA	1.0
Oil & Grease, mg/L	NA	NA	NA	10
pH, standard units	NA	NA	6.5	9.0
Flow, MGD	NA	NA	NA	1.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/				
Parameter	Frequency	Sample Type	Units	Reporting Frequency
Total Flow, b/	Quarterly	Instantaneous	MGD	Quarterly
TSS	Quarterly	Grab	mg/L	Quarterly
pH	Quarterly	Grab	mg/L	Quarterly
Oil and Grease	Quarterly	Grab	mg/L	Quarterly
TDS, c/	Quarterly	Grab	mg/L	Quarterly
TDS, c/	Annually	Calculated	tons/year	Yearly
Iron	Quarterly	Grab	mg/L	Quarterly

In addition, the permittee shall be required to sample and submit the analysis of the pollutants listed in *40 CFR Part 122 Appendix D Table II (Organic Toxic Pollutants)* (Metals and Cyanide) occurring from the first discharge of the facility yearly.

The results of the analyses of metals, cyanide and toxic organics shall be submitted along with the Discharge Monitoring Report (DMR) at the end of the earliest possible reporting period.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts upon any discharges and there shall be no discharge of any sanitary wastes at any time.

- a/ See Definitions, *Part I.A* of the permit, for definition of terms.
- b/ If the rate of discharge is controlled, such as from intermittent discharging outfalls, the rate and duration of discharge shall be reported. Flow measurements of effluent volumes from all outfalls shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- c/ The TDS concentration from each of the outfalls shall not exceed 981 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 1.0 tons per day as a sum from all discharge points. Upon determination by the Director that the permittee is not able to meet the 500 mg/L 30-day average or the 1.0 tons 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.

The salinity-offset project shall include TDS credits on a ton-for-ton basis for which the permittee is over the TDS loading limit. The tonnage reduction from the offset project must be calculated by a method similar to one used by the NRCS, 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 continue to 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. Discharges from outfalls 003 through 013 during storm events that are **less** than a 10-year 24-hour storm event shall be limited and monitored by the permittee as specified below utilizing testing methods and procedures in 40CFR 434.64.

Parameter	Effluent Limitations a/			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Settleable Solids, ml/L	NA	NA	NA	0.5
pH, SU	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Settleable Solids	Quarterly	Grab	ml/L
pH	Quarterly	Grab	SU

3. Discharges from outfalls 003 through 013 during storm events that are **greater** than a 10-year 24-hour storm event shall be limited and monitored by the permittee as specified below (see 40 CFR 434.64 for method and procedure for testing):

Parameter	Effluent Limitations a/			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
pH, SU	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
pH	Quarterly	Grab	SU

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: at outfalls 001 through 013 prior to the confluence with the receiving waters.

## II. STORMWATER DISCHARGE REQUIREMENTS

### A. Coverage of This Section.

The requirements listed under this section shall apply to storm water discharges from coal mining-related areas that are not subject to effluent limitations guidelines under *40 CFR Part 434*.

1. Site Coverage. Storm water discharges from the following portions of coal mines are covered under this portion of this permit: haul roads (nonpublic roads on which coal or coal refuse is conveyed), access roads (nonpublic roads providing light vehicular traffic within the facility property and to public roadways), railroad spurs, sidings, and internal haulage lines (rail lines used for hauling coal within the facility property and to offsite commercial railroad lines or loading areas), conveyor belts, chutes, and aerial tramway haulage areas (areas under and around coal or refuse conveyor areas, including transfer stations), equipment storage and maintenance yards, coal handling buildings and structures, and inactive coal mines and related areas (abandoned and other inactive mines, refuse disposal sites and other mining-related areas on private lands).
2. Non-Storm Water Discharges Authorized to Co-mingle and Discharge with Storm Water.
  - a. The following non-storm water discharges may be authorized by this permit provided the non-storm water component of the discharge is in compliance with this section (*Part II*) and: discharges from fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; drinking fountain water; irrigation drainage; lawn watering; routine external building washdown that does not use detergents or other compounds; pavement washwaters 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.
  - b. The following discharges are prohibited from discharging (unless authorized under *Part I*): point source discharges of pollutant seeps or underground drainage from inactive coal mines and refuse disposal areas that do not occur as storm water discharges in response to precipitation events are also excluded from coverage under this part. In addition, floordrains from maintenance buildings and other similar drains in mining and preparation plant areas are prohibited.

### B. Storm Water Pollution Prevention Plan Requirements.

Most of active coal mining-related areas are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the *Surface Mining Control and Reclamation Act (SMCRA)*. OSM has granted authority to the Utah Division of Oil Gas and Mining (DOG M) to implement *SMCRA* through State *SMCRA* regulations. All *SMCRA* requirements regarding control of erosion, siltation and other pollutants resulting

from storm water runoff, including road dust resulting from erosion, shall be primary requirements of the pollution prevention plan and shall be included in the contents of the plan directly, or by reference. Where determined to be appropriate for protection of water quality, additional sedimentation and erosion controls may be warranted.

1. Contents of Plan. The plan shall include at a minimum, the following items:
  - a. Pollution Prevention Team. The plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility 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. The plan shall provide a description of potential sources that may reasonably be expected to add significant amounts of pollutants to storm water discharges or that 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 that may potentially be significant pollutant sources. The plan shall include, at a minimum:
    - (1) Drainage.
      - (a) A site map, such as a drainage map required for *SMCRA* permit applications, that indicate drainage areas and storm water outfalls. These shall include but not be limited to the following:
        - 1) Drainage direction and discharge points from all applicable mining-related areas described in *Part II.A.1.* (Site Coverage) above, including culvert and sump discharges from roads and rail beds and also from equipment and maintenance areas subject to storm runoff of fuel, lubricants and other potentially harmful liquids.
        - 2) Location of each existing erosion and sedimentation control structure or other control measures for reducing pollutants in storm water runoff.
        - 3) Receiving streams or other surface water bodies.
        - 4) Locations exposed to precipitation that contain acidic spoil, refuse or unreclaimed disturbed areas.
        - 5) Locations where major spills or leaks of toxic or hazardous pollutants have occurred.

- 6) Locations where liquid storage tanks containing potential pollutants, such as caustics, hydraulic fluids and lubricants, are exposed to precipitation.
  - 7) Locations where fueling stations, vehicle and equipment maintenance areas are exposed to precipitation.
  - 8) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.
- (b) For each area of the facility that generates storm water discharges associated with the mining-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.
- (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 date of issuance 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 date of issuance 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 leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the date of issuance of this permit. Such list shall be updated as appropriate during the term of the permit.
  - (4) Sampling Data. A summary of any existing discharge sampling data describing pollutants in storm water discharges from the portions of the facility covered by this permit, including a summary of any sampling data collected during the term of this permit.

- (5) Risk Identification and Summary of Potential Pollutant Sources. A narrative description of the potential pollutant sources from the following activities: truck traffic on haul roads and resulting generation of sediment subject to runoff and dust generation; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil. Specific potential pollutants shall be identified, where known.
- c. Measures and Controls. The permit 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.
- (1) Good Housekeeping. Good housekeeping requires the maintenance of areas that may contribute pollutants to storm water discharges in a clean, orderly manner. These would be 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; watering of haul roads to minimize dust generation; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; or other equivalent measures.
- (2) Preventive Maintenance. A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices 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. Where applicable, such measures would include the following: removal and proper disposal of settled solids in catch basins to allow sufficient retention capacity; periodic replacement of siltation control measures subject to deterioration such as straw bales; inspections of storage tanks and pressure lines for fuels, lubricants, hydraulic fluid or slurry to prevent leaks due to deterioration or faulty connections; or other equivalent measures.
- (3) 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 for cleaning up spills

shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.

- (4) Inspections. In addition to or as part of the comprehensive site evaluation required under *Part II.B.1.d.* of this section, qualified facility personnel shall be identified to inspect designated areas of the facility at appropriate intervals specified in the plan. The following shall be included in the plan:
  - (a) Active Mining-Related Areas and Those Inactive Areas Under *SMCRA* Bond Authority. The plan shall require quarterly inspections by the facility personnel for areas of the facility covered by pollution prevention plan requirements. This inspection interval corresponds with the quarterly inspections for the entire facility required to be provided by *SMCRA* authority inspectors for all mining-related areas under *SMCRA* authority, including sediment and erosion control measures. Inspections by the facility representative may be done at the same time as the mandatory inspections performed by *SMCRA* inspectors. Records of inspections of the *SMCRA* authority facility representative shall be maintained.
  - (b) Inactive Mining-Related Areas Not Under *SMCRA* Bond. The plan shall require annual inspections by the facility representative except in situations referred to in *Part II.B.1.c(4)(c)* below.
  - (c) Inspection Records. The plan shall require that inspection records of the facility representative and those of the *SMCRA* authority inspector shall be maintained. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections.
- (5) 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 periodic dates for such training.
- (6) Recordkeeping 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.

(7) 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 such as drainage from underground portions of inactive mines or floor drains from maintenance or coal handling buildings. The certification shall include the identification of potential significant sources of non-storm water discharges at the site, a description of the results of any test and/or evaluation, a description of 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.* (Signatory Requirements) of this permit.
- (b) Exceptions. Except for flows from fire fighting activities, authorized sources of non-storm water listed in *Part II.A.2.* (Non-Storm Water Discharges Authorized to Commingle and Discharge with Storm Water) 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 or other evaluation for non-storm water discharges) must notify the *Director* by October 1, 2005. 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 to the storm discharge lines; and why adequate tests for such storm discharge lines were not feasible. Non-storm water discharges to waters of the State that are not authorized by a *UPDES* permit are unlawful, and must be terminated.
- (8) Sediment and Erosion Control. The plan shall identify areas that, 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 and reduce sediment concentrations in storm water discharges. As indicated in paragraph (4)(a) above, *SMCRA* requirements regarding sediment and erosion control measures are primary requirements of the pollution prevention plan for mining-related areas subject to *SMCRA* authority. The following sediment and erosion control measures or other equivalent measures, should be included in the plan where reasonable and appropriate for all areas subject to storm water runoff:

- (a) Stabilization Measures. Interim and permanent stabilization measures to minimize erosion and lessen amount of structural sediment control measures needed, including: mature vegetation preservation; temporary seeding; permanent seeding and planting; temporary mulching, matting, and netting; sod stabilization; vegetative buffer strips; temporary chemical mulch, soil binders, and soil palliatives; nonacidic roadsurfacing material; and protective trees.
  - (b) Structural Measures. Structural measures to lessen erosion and reduce sediment discharges, including: silt fences; earth dikes; straw dikes; gradient terraces; drainage swales; sediment traps; pipe slope drains; porous rock check dams; sedimentation ponds; riprap channel protection; capping of contaminated sources; and physical/chemical treatment of storm water.
  - (9) Management of Flow. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (other than those as sediment and erosion control measures listed above) used to manage storm water runoff in a manner that reduces pollutants in storm water runoff from the site. The plan shall provide that the measures, which the permittee determines to be reasonable and appropriate, shall be implemented and maintained. Appropriate measures may include: discharge diversions; drainage/storm water conveyances; runoff dispersion; sediment control and collection; vegetation/soil stabilization; capping of contaminated sources; treatment; or other equivalent measures.
- d. Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:
- (1) Areas contributing to a storm water discharge associated with coal mining-related areas shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. These areas include haul and access roads; railroad spurs, sidings, and internal haulage lines; conveyor belts, chutes and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas. 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, as indicated in paragraphs *c(8)* and *c(9)* above and where identified in the plan, shall be observed to ensure that they are operating correctly. A visual evaluation of any equipment needed to implement the plan, such as spill response equipment, shall be made.

- (2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan, in accordance with *Part II.B.1.b.* of this section, and pollution prevention measures and controls identified in the plan, in accordance with *Part II.B.1.c* 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. For inactive mines, such revisions may be extended to a maximum of 12 weeks after the evaluation.
  - (3) 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 (2) 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.
  - (4) Where compliance evaluation schedules overlap with inspections required under *Part II.B.1.c(4)*, the compliance evaluation may be conducted in place of one such inspection. Where annual site compliance evaluations are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part shall be conducted at appropriate intervals specified in the plan, but, in no case less than once in 3 years.
2. Numeric Effluent Limitations. There are no additional numeric effluent limitations beyond those described in *Part I.C.* of this permit.
  3. Monitoring and Reporting Requirements.
    - a. Analytical Monitoring Requirements. During the period beginning January 1, 2016, lasting through December 31, 2016, and the period beginning January 1, 2017, lasting through December 31, 2017, the permittee (when there is coal mining activities) must monitor their storm water discharges associated with industrial activity at least quarterly (4 times per year) except as provided in paragraphs *3.a.(3)*, below (Sampling Waiver), *3.a.(4)*, below (Representative Discharge), and *3.a.(5)*, below (Alternative Certification). Coal mining facilities are required to monitor their storm water discharges for the pollutants of concern listed in Table II-1 below. Facilities must report in accordance with *3.b.* below (Reporting). In addition to the parameters listed in Table II-1 below, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall measurements or estimates (in inches) of the storm event that generated the sampled runoff; the

duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge sampled.

**Table II.1**  
**Monitoring Requirements for Coal Mining Facilities**

<b>Pollutants of Concern</b>	<b>Cut-Off Concentration</b>
Total Recoverable Aluminum	0.75 mg/L
Total Recoverable Iron	1.0 mg/L
Total Suspended Solids	100 mg/L

- (1) Monitoring Periods. Coal mining facilities shall monitor samples collected during the sampling periods of: January through March, April through June, July through September, and October through December for the years specified in paragraph *a*. (above).
- (2) Sample Type. A minimum of one grab sample shall be taken. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. If storm water discharges associated with industrial activity commingle with process or nonprocess water, then where practicable permittees must attempt to sample the storm water discharge before it mixes with the non-storm water discharge.
- (3) Sampling Waiver.
  - (a) Adverse Conditions. When a discharger is unable to collect samples within a specified sampling period due to adverse climatic conditions, the discharger shall collect a substitute sample from a separate qualifying event in the next monitoring period and submit the data along with the data for the routine sample in that period. Adverse weather conditions that may prohibit the collection of samples include weather conditions

that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

- (b) Low Concentration Waiver. When the average concentration for a pollutant calculated from all monitoring data collected from an outfall during the monitoring period January 1, 2016, lasting through December 31, 2016, is less than the corresponding value for that pollutant listed in Table II-1 under the column Monitoring Cut-Off Concentration, a facility may waive monitoring and reporting requirements in the monitoring period beginning January 1, 2017, lasting through December 31, 2017. The facility must submit to the *Director*, in lieu of the monitoring data, a certification that there has not been a significant change in industrial activity or the pollution prevention measures in area of the facility that drains to the outfall for which sampling was waived.
- (c) Inactive and Unstaffed Site. When a discharger is unable to conduct quarterly chemical storm water sampling at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirements as long as the facility remains inactive and unstaffed. The facility must submit to the *Director*, in lieu of monitoring data, a certification statement on the *Storm Water Discharge Monitoring Report (SWDMR)* stating that the site is inactive and unstaffed so that collecting a sample during a qualifying event is not possible.
- (4) Representative Discharge. Where the facility has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan. The permittee shall include the description of the location of the outfalls, explanation of why outfalls are expected to discharge substantially identical effluents, and estimate of the size of the drainage area and runoff coefficient with the storm water discharge monitoring report (SWDMR).
- (5) Alternative Certification. The permittee is not subject to the monitoring requirements of this section provided the permittee makes a certification for a

given outfall or on a pollutant-by-pollutant basis in lieu of monitoring reports required under paragraph *b.* below, under penalty of law, signed in accordance with *Part V.G.* (Signatory Requirements), that material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, industrial machinery or operations, or significant materials from past industrial activity that are located in areas of the facility within the drainage area of the outfall are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. Such certification must be retained in the storm water pollution prevention plan, and submitted to *DWQ* in accordance with *Part V.B.* of this permit. In the case of certifying that a pollutant is not present, the permittee must submit the certification along with the monitoring reports required under paragraph *b.* below. If the permittee cannot certify for an entire period, they must submit the date exposure was eliminated and any monitoring required up until that date. This certification option is not applicable to compliance monitoring requirements associated with effluent limitations.

- b. Reporting. Permittees shall submit monitoring results for each outfall associated with industrial activity [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the reporting period beginning January 1, 2016, lasting through December 31, 2016, on *Storm Water Discharge Monitoring Report (SWDMR)* form(s) postmarked no later than the 31st day of the following March, 2017. Monitoring results [or a certification in accordance with Sections (3), (4), or (5) above] obtained during the period beginning January 1, 2016, lasting through December 31, 2016, shall be submitted on *SWDMR* form(s) postmarked no later than the 31st day of the following March. For each outfall, one signed *SWDMR* form must be submitted to the *Director* per storm event sampled. Signed copies of *SWDMRs*, or said certifications, shall be submitted to the *Director* at the address listed in *Part III.D.1.* of the permit.
- c. Visual Examination of Storm Water Quality. Coal mining-related facilities shall perform and document a visual examination of a representative storm water discharge at the following frequencies: quarterly for active areas under *SMCRA* bond located in areas with average annual precipitation over 20 inches; semi-annually for inactive areas under *SMCRA* bond, and active areas under *SMCRA* bond located in areas with average annual precipitation of 20 inches or less; visual examinations are not required at inactive areas not under *SMCRA* bond.
  - (1) Visual Monitoring Periods. Examinations shall be conducted in each of the following periods for the purposes of visually inspecting storm water runoff or snow melt: Quarterly-January through March; April through June; July through September; and October through December. Semi-annually—January through June and July through December.
  - (2) Sample and Data Collection. Examinations shall be made of samples collected within the first 60 minutes (or as soon thereafter as practical, but not

to exceed two hours) 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-lighted 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 will carry out the collection and examination of discharges for the life of the permit.

- (3) 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.
- (4) Representative Discharge. If two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may collect a sample of effluent of one of such outfalls and report that the examination data also applies to the substantially identical outfalls provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explaining 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.
- (5) Adverse Conditions. If the permittee is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the permittee must document the reason for not performing the visual examination and retain this documentation onsite with the records of the visual examination. Adverse weather conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).
- (6) Inactive and Unstaffed Site. When the permittee is unable to conduct visual storm water examinations at an inactive and unstaffed site, the permittee may

exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

### III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling.

Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

B. Monitoring Procedures.

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

C. Penalties for Tampering.

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

D. Reporting of 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), post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on March 28, 2016. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part V.G)*, and submitted to the Director, Division of Water Quality at the following address:

original to: Department of Environmental Quality  
Division of Water Quality  
195 North 1950 West  
PO Box 144870  
Salt Lake City, Utah 84114-4870

E. 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.

F. Additional Monitoring by the Permittee.

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

G. 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.

H. Retention of Records.

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

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance which may seriously endanger health or environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24 hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 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.*); or,
  - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

- a. A description of the noncompliance and its cause;
  - b. The period of noncompliance, including exact dates and times;
  - c. The estimated time noncompliance is expected to continue if it has not been corrected;
  - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance;
  - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 538-6146.
  5. Reports shall be submitted to the addresses in *Part III.D, Reporting of Monitoring Results*.

J. Other Noncompliance Reporting.

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

K. Inspection and Entry.

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

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.

#### IV. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply.

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

B. Penalties for Violations of Permit Conditions.

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

C. Need to Halt or Reduce Activity not a Defense.

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

D. Duty to Mitigate.

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

E. Proper Operation and Maintenance.

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

F. Removed Substances.

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

G. Bypass of Treatment Facilities.

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to 2. and 3. of this section.
2. Prohibition of Bypass.
  - a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
    - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
    - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
    - (3) The permittee submitted notices as required under section G.3.
  - b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in sections G.2a. (1), (2) and (3).
3. Notice.
  - a. Anticipated bypass. Except as provided above in section G.2. and below in section G. 3.b, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
    - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
    - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
    - (3) Description of specific measures to be taken to minimize environmental and public health impacts;

- (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
  - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and
  - (6) Any additional information requested by the Director.
- b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in section G.3.a.(1) through (6) to the extent practicable.
  - c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Director as required under Part III.I., Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2. of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
  - b. The permitted facility was at the time being properly operated;
  - c. The permittee submitted notice of the upset as required under Part III.I., Twenty-four Hour Notice of Noncompliance Reporting; and,
  - d. The permittee complied with any remedial measures required under Part IV.D, Duty to Mitigate.
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants.

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

J. Changes in Discharge of Toxic Substances.

Notification shall be provided to the Director as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - a. One hundred micrograms per liter (100 ug/L);
  - b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.5(7)* or (10); or,
  - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - a. Five hundred micrograms per liter (500 ug/L);
  - b. One milligram per liter (1 mg/L) for antimony;
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.5(9)*; or,
  - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.

K. Industrial Pretreatment.

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

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

## V. GENERAL REQUIREMENTS

### A. Planned Changes.

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

### B. Anticipated Noncompliance

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

### C. Permit Actions.

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

### D. Duty to Reapply.

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

### E. Duty to Provide Information.

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

### F. Other Information.

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

### G. Signatory Requirements.

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

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

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described above and submitted to the Director, and,
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under paragraph V.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph V.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

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

H. Penalties for Falsification of Reports.

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

I. Availability of Reports

Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office

of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential

J. Oil and Hazardous Substance Liability.

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

K. Property Rights.

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

L. Severability.

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

M. Transfers.

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

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

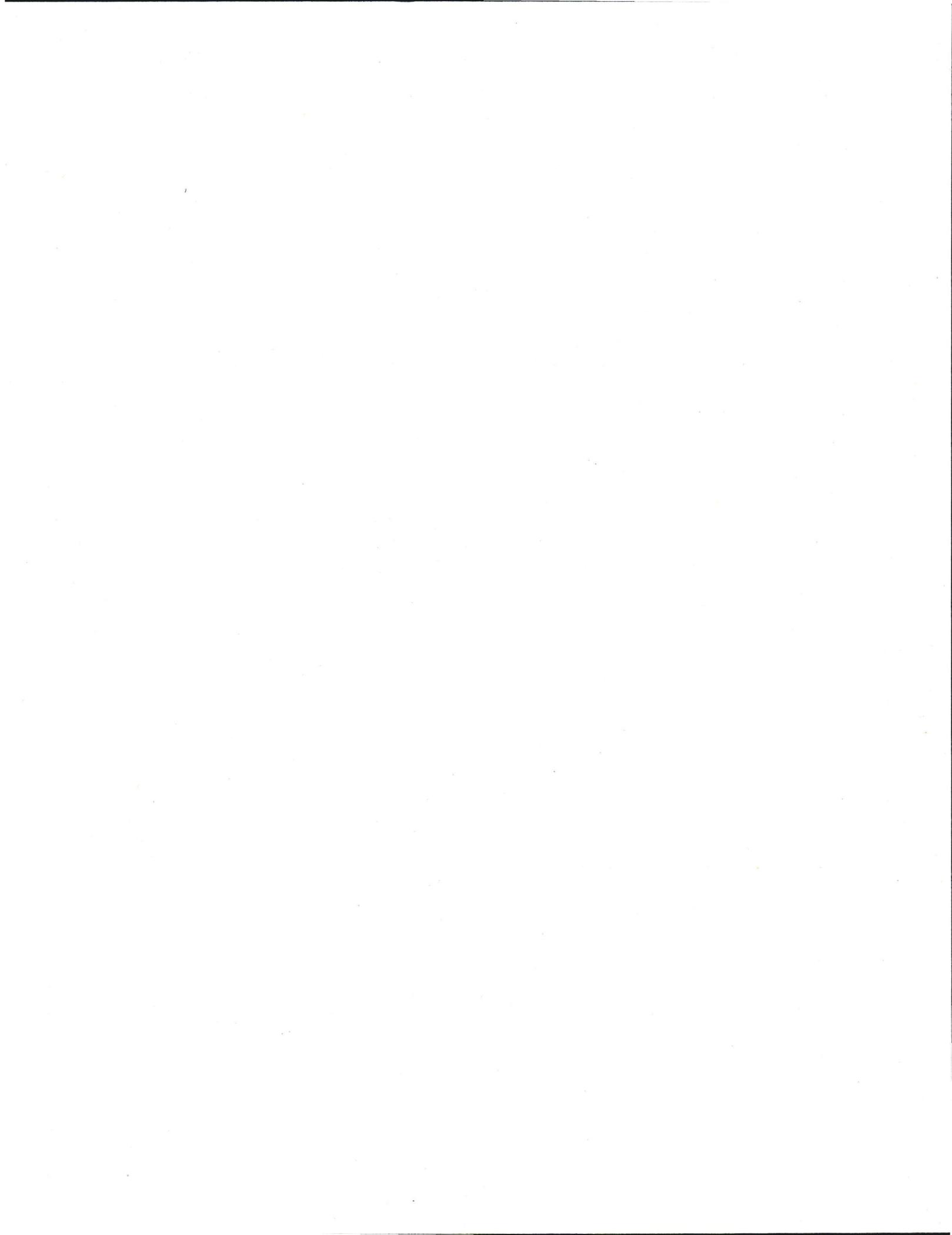
N. State Laws.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117*.

O. Water Quality-Reopener Provision.

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

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
  2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
  3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.
- P. Toxicity Limitation-Reopener Provision.  
This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.
- Q. Storm Water-Reopener Provision.  
At anytime during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-the-State".



**FACT SHEET STATEMENT OF BASIS  
HIAWATHA COAL COMPANY  
RENEWAL PERMIT: DISCHARGE AND STORMWATER  
UPDES PERMIT NUMBER: UT0023094  
MINOR INDUSTRIAL**

**FACILITY CONTACT**

Elliot Finley, President  
Hiawatha Coal Company  
P.O. Box 1240  
Huntington, UT 84528  
Phone: (801) 857-0399

**DESCRIPTION OF FACILITY**

This facility consists of an inactive underground coal mine. It is located in Hiawatha, Utah in Township 16 South, Range 8 East in Emery County and in Township 15 South, Range 8 East in Carbon County. It has a Standard Industrial Classification (SIC) code 1221. The facility has 13 outfalls. Discharge of mine water drainage occurs continuously from Outfall 001. A portion of that mine water from Outfall 001 is piped to Hiawatha for drinking water. The surplus drinking water that is not used is discharged from Outfall 002. The remaining discharge points, Outfalls 003 to 013, are at the overflows from sediment ponds that collect storm water. These outfalls are designed to contain and prevent a discharge of up to a 100 year storm event.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

This facility has exceeded their annual TDS effluent limitations for four out of the last five years, although these exceedances were due to a single quarterly concentration, and not typical for the site. The facility has been made aware of the salinity offset program if they are unable to meet the TDS permit limit. Further, TDS effluent concentrations decreased consistently during the previous permit cycle. The facility has not violated the TDS concentration in the previous 18 months. Therefore, the 1 ton/day effluent loading limit will remain in place as a requirement of and in addition to the Colorado River Basin Salinity-Offset Program. Participation in this program by purchasing salinity offset credits or another Director approved Salinity-Offset project shall be required if the annual TDS effluent exceeds the permit limitations. If Hiawatha chooses to participate in a new salinity-offset project, a project description, construction plans, 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. Additional information can be found on page 6 of this document.

The renewal permit contains a daily max effluent flow limit of 1.0 MGD. The previous permit did not contain an effluent flow limit.

## TOTAL MAXIMUM DAILY LOAD CONSIDERATIONS

Due to high concentrations of total dissolved solids (TDS) several portions and/or tributaries of the Price River are non-supporting or partially supportive of their beneficial use classifications. As a result, a total daily maximum load (TMDL) was developed by the Division of Water Quality for the West Colorado Watershed and approved by EPA in 2004. This TMDL allocates a daily maximum effluent concentration of 981 mg/L TDS for Hiawatha Coal.

## DESCRIPTION OF DISCHARGE

The discharge consists of intercepted ground water and storm water, when there is a storm large enough to fill the sediment ponds. Ground water is not treated prior to discharge. Storm water is treated via settling ponds prior to being discharged.

Three years of self-monitoring data are included as an addendum to this permit.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Mohrland Portal Discharge: T16S, R8E SLBM, Sec. 8, at approximately longitude 111° 03' 0" and latitude 39° 27' 50". The discharge is from mine water seepage. a/
002	Culinary Water Overflow: T15S, R8E SLBM, Sec. 34, at approximately longitude 111° 01' 0" and latitude 39° 28' 50". The discharge is overflow from the Hiawatha drinking water system. Hiawatha drinking water is from the Mohrland Portal discharge. a/
003	Hiawatha Sediment Pond D003: T15S, R8E SLBM, Sec 27, at approximately longitude 111° 0' 50" and latitude 39° 29' 0". The discharge is surface runoff from the Upper Rail Storage Yard Borrow area.
004	Slurry Pond #1 Sediment Pond: T15S, R8E SLBM, Sec 26, at approximately 111° 0' 10" and latitude 39° 29' 20". The discharge is surface runoff from the disturbed area of the Ridge Borrow area.
005	Slurry Pond #4 Sediment Pond: T15S, R8E SLBM, Sec 27, at approximately 111° 0' 30" and latitude

39° 28' 45". The discharge is surface runoff from slurry pond #4.

- 006 Hiawatha Sediment Pond D006: T15S, R8E SLBM, Sec 34, at approximately 111° 0' 15" and latitude 39° 28' 35". The discharge is surface runoff from slurry pond #5 cell 5A.
- 007 Hiawatha Sediment Pond D007: T15S, R8E SLBM, Sec 34, at approximately 111° 0' 10" and latitude 39° 28' 20". The discharge is surface runoff from slurry pond #5 main cell.
- 008 Middle Fork Sediment Pond: T15S, R8E SLBM, Sec 29, at approximately 111° 02' 40" and latitude 39° 29' 0". The discharge is surface runoff from the Middle Fork Mine Yard.
- 009 South Fork Mine Yard: T15S, R8E SLBM, Sec 19, at approximately 111° 02' 35" and latitude 39° 28' 50". The Discharge is surface runoff from the South Fork Mine Yard.
- 010 King 4 Mine Discharge: T15S, R7E SLBM, Sec 32, at approximately 111° 03' 45" and latitude 39° 32' 15". The Discharge is from sump locations within the mine.
- 011 South Fork Truck Loading Facility: T15S, R8E SLBM, Sec 33, at approximately 111° 02' 28" and latitude 39° 28' 47". The Discharge is surface runoff from the South Fork Loading facility.
- 012 Mohrland Pipeline Drain: T15S, R8E SLBM, Sec 10, at approximately 111° 0' 45" and latitude 39° 26' 30". The discharge is from a valve on the Mohrland Pipeline.
- 013 King 6 Water Tank Overflow: T15S, R8E SLBM, Sec 32, at approximately 111° 03' 07" and latitude 39° 29' 0". The discharge is from an overflow pipe from the King 6 water tank in South Fork Canyon.

a/ See Figure 1 in this FSSOB, for a simple schematic to illustrate the relationship of outfalls 001 and 002.

## **RECEIVING WATERS AND STREAM CLASSIFICATION**

Outfall 001 discharges to Cedar Creek which flows to Huntington Creek. Outfall 002 discharges to Miller Creek, then to the Price River. Outfalls 003 through 013 discharge to Miller Creek but did not discharge during the last permit cycle. The receiving waters as designated by *Utah Administrative Code (UAC) R317-2-13* are as follows:

Cedar Creek:	Class 2B, 3C and 4
Huntington Creek:	Class 2B, 3C and 4
Miller Creek:	Class 2B, 3C and 4
Price River:	Class 2B, 3C and 4

Class 2B -Protected for secondary contact recreation (boating, wading and 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**

The settleable solids limitation is based on applicable technology based standards in the Coal Mining Point Source Category, 40 CFR 434. The oil and grease and no visible sheen limitations are based on best professional judgment. The iron limit is based on Utah Water Quality Standards for a 3C water body. The total suspended solids (TSS) monthly and weekly average limits are based on secondary standards. The daily max effluent of 70 mg/L is based on the effluent guidelines in 40 CFR 434. The pH limits are based on current Utah Secondary Treatment Standards. The TDS concentration limitation is based on the West Colorado Watershed TMDL.

Discharges from the facility could potentially reach the Colorado River, which places it under the requirements of the Colorado River Basin Salinity Control Forum (CRBSCF). TDS loading is limited by the CRBSCF pursuant to the February 1977 "Policy for Implementation of Colorado River Salinity Standards through the NPDES Permit Program" (Policy). In accordance with the CRBSCF, the effluent will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year. The permit limitations are as follows:

Effluent Limitations a/ for Outfalls 001 through 013				
Parameter	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum
TSS, mg/L	25	35	NA	70
pH, SU	NA	NA	6.5	9.0
Oil and Grease, mg/L	NA	NA	NA	10
TDS, mg/L, c/	NA	NA	NA	981
TDS, tons/day, c/	NA	NA	NA	1.0
Iron, mg/L	NA	NA	NA	1.0
Flow, MGD	NA	NA	NA	1.0

NA – Not Applicable

a/ See Definitions, *Part I.A* of the permit, for definition of terms.

In addition to the TDS effluent concentration limitation, TDS effluent loading is limited to one-ton/day. If the 1 ton/day effluent loading limitation cannot be met, then the permittee is limited to 366-tons/year total TDS effluent loading from the facility without participating in a salinity offset project or purchasing salinity offset credits as described below. It is the responsibility of the permittee to maintain annual TDS loading information and submit to the Director the annual TDS loading information.

For outfalls 003 through 013, any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitations instead of the total suspended solids limitations contained above.

Effluent Limitations a/ for Outfalls 003 through 013		
Effluent Characteristics	Daily Maximum	Daily Minimum
Settleable Solids, ml/L	0.5	NA

### **SELF-MONITORING AND REPORTING REQUIREMENTS**

The following effluent self-monitoring and reporting requirements are the same as in the previous permit. Reports shall be made on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monitoring quarter.

Self-Monitoring and Reporting Requirements a/ for Outfalls 001 Through 013				
Parameter	Frequency	Sample Type	Units	Reporting Frequency
Total Flow, b/	Quarterly	Instantaneous	MGD	Quarterly
TSS	Quarterly	Grab	mg/L	Quarterly
pH	Quarterly	Grab	mg/L	Quarterly
Oil and Grease	Quarterly	Grab	mg/L	Quarterly
TDS, c/	Quarterly	Grab	mg/L	Quarterly
TDS, c/	Annually	Calculated	tons/year	Yearly
Iron	Quarterly	Grab	mg/L	Quarterly

Permit Footnote Conditions:

There shall be no visible sheen or floating solids or visible foam in other than trace amounts upon any discharges and there shall be no discharge of any sanitary wastes at any time.

- a/ See Definitions, *Part I.A* of the permit, for definition of terms.
- b/ If the rate of discharge is controlled, such as from intermittent discharging outfalls, the rate and duration of discharge shall be reported. Flow measurements of effluent volumes from all outfalls shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- c/ The TDS concentration from each of the outfalls shall not exceed 981 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 1.0 tons per day as a sum from all discharge points. Upon determination by the Director that the permittee is not able to meet the 500 mg/L 30-day average or the 1.0 tons 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.

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

### **STORM WATER REQUIREMENTS**

The renewal permit will contain provisions for storm water discharges as in the previous permit. The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges.

### **PRETREATMENT REQUIREMENTS**

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

### **BIOMONITORING REQUIREMENTS**

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 (WET) Control (biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317-2-7.2*.

The permittee is a minor industrial discharger that will be contributing a relatively small volume of effluent, when compared to the flows of existing receiving waters, in which toxicity is not an existing concern and not likely to be present as long as the effluent limitations are met. Also, the mine water discharge has been a source of drinking water for many years. Based on these considerations, and that the facility is not classified as a major or a significant minor facility, there is no reasonable potential for toxicity in the Hiawatha Coal's discharge (*per State of Utah Permitting and Enforcement Guidance Document for WET Control*). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a

toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

**PERMIT DURATION**

It is recommended that this permit be effective for five (5) years. Drafted by:

Doug Wong-Draft and Nate Nichols-Final, Discharge

Mike Herkimer, Biomonitoring

Matt Garn, Colorado River Salinity

Mike George, Storm Water

Dave Wham, Watershed Protection

Utah Division of Water Quality

**PUBLIC NOTICE**

Began: 12/15/2015

End: 01/15/2016

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

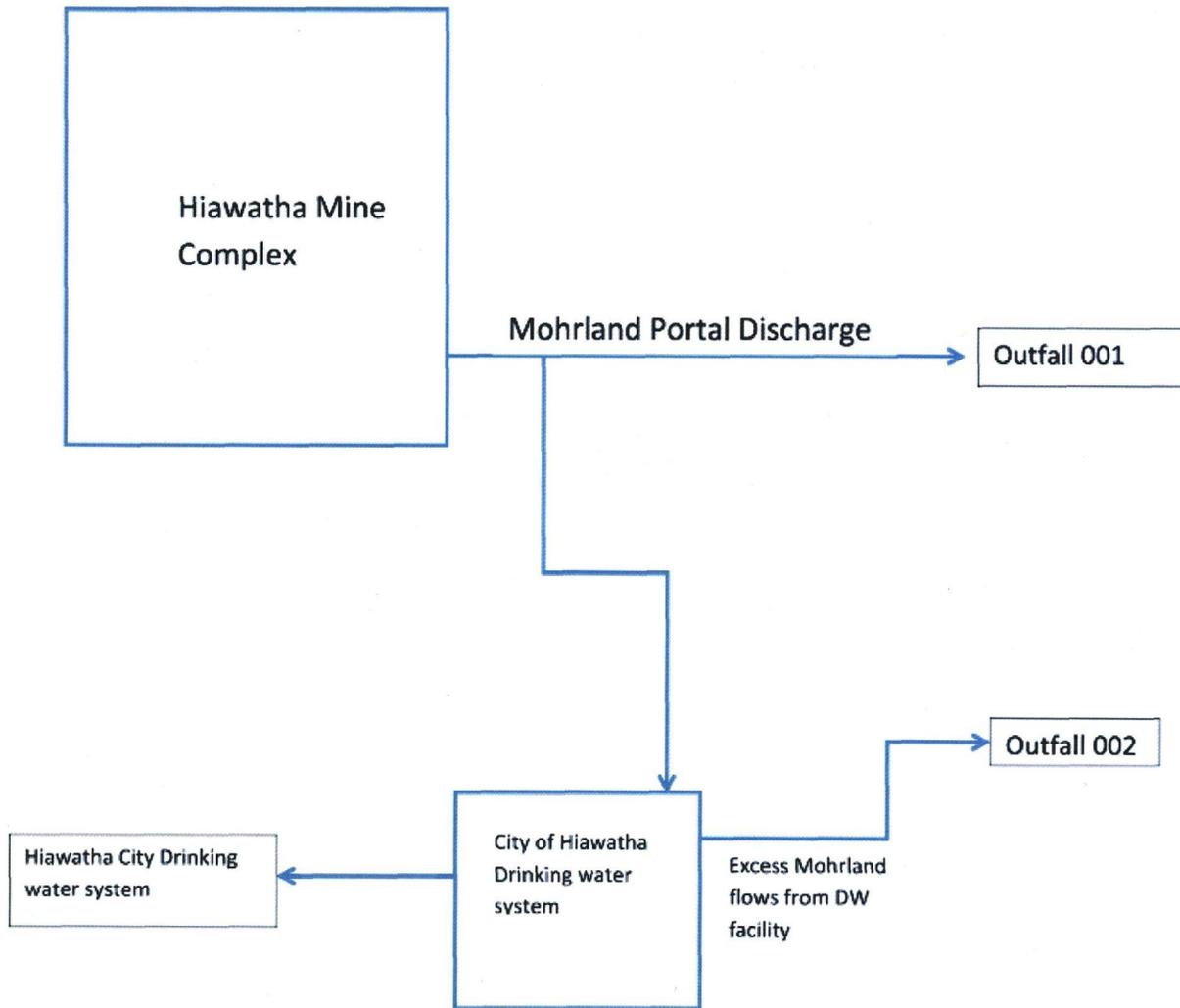
Public Noticed of the draft permit was published in The Sun Advocate

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 period. Only minor changes for clarification were made from the public notice draft.

Figure 1.

### Hiawatha Utah, UPDES outfalls 001 and 002





Utah Division of Water Quality  
Salt Lake City, Utah

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

15-Oct-14
4:00 PM

**Facilities:** Hiawatha Coal Company  
**Discharging to:** 0.0

**UPDES No:** UT-UT0023094

**I. Introduction**

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

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

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

**II. Receiving Water and Stream Classification**

Antidegradation Review: 2B, 3C, 4  
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	981.0 mg/l

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Salt Lake City, Utah**

**Acute and Chronic Heavy Metals (Dissolved)**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.725 lbs/day	750.00	ug/l	6.254 lbs/day
Arsenic	190.00 ug/l	1.584 lbs/day	340.00	ug/l	2.835 lbs/day
Cadmium	0.61 ug/l	0.005 lbs/day	6.52	ug/l	0.054 lbs/day
Chromium III	211.92 ug/l	1.767 lbs/day	4433.71	ug/l	36.970 lbs/day
Chromium VI	11.00 ug/l	0.092 lbs/day	16.00	ug/l	0.133 lbs/day
Copper	23.85 ug/l	0.199 lbs/day	39.41	ug/l	0.329 lbs/day
Iron			1000.00	ug/l	8.338 lbs/day
Lead	12.88 ug/l	0.107 lbs/day	330.60	ug/l	2.757 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.020 lbs/day
Nickel	132.13 ug/l	1.102 lbs/day	1188.44	ug/l	9.910 lbs/day
Selenium	4.60 ug/l	0.038 lbs/day	20.00	ug/l	0.167 lbs/day
Silver	N/A ug/l	N/A lbs/day	25.04	ug/l	0.209 lbs/day
Zinc	303.93 ug/l	2.534 lbs/day	303.93	ug/l	2.534 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		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.013 lbs/day
Chlordane	0.004 ug/l	0.036 lbs/day	1.200	ug/l	0.010 lbs/day
DDT, DDE	0.001 ug/l	0.008 lbs/day	0.550	ug/l	0.005 lbs/day
Dieldrin	0.002 ug/l	0.016 lbs/day	1.250	ug/l	0.010 lbs/day
Endosulfan	0.056 ug/l	0.467 lbs/day	0.110	ug/l	0.001 lbs/day
Endrin	0.002 ug/l	0.019 lbs/day	0.090	ug/l	0.001 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.032 lbs/day	0.260	ug/l	0.002 lbs/day
Lindane	0.080 ug/l	0.667 lbs/day	1.000	ug/l	0.008 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	0.117 lbs/day	2.000	ug/l	0.017 lbs/day
Pentachlorophenol	13.00 ug/l	108.468 lbs/day	20.000	ug/l	0.167 lbs/day
Toxephene	0.0002 ug/l	0.002 lbs/day	0.7300	ug/l	0.006 lbs/day

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**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	0.04 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			981.0 mg/l	4.09 tons/day

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

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

**Chlorophenoxy Herbicides**

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

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

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	22.53 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	6.51 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.01 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	0.59 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	0.04 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	175.22 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	0.83 lbs/day

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Salt Lake City, Utah**

1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.07 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	0.35 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l	0.09 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	35.88 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	0.05 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	3.92 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	3.34 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	141.84 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	21.69 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	21.69 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	0.03 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	6.59 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.33 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	14.18 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	19.19 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.08 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	241.97 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	3.09 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	ug/l	lbs/day	170000.0 ug/l	1418.43 lbs/day
Bis(2-chloroethoxy) methane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	13.35 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	3.00 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.18 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.28 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	0.42 lbs/day
Hexachlorocyclopentadiene	ug/l	lbs/day	17000.0 ug/l	141.84 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	5.01 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	15.85 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	116.81 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	6.38 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.07 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.13 lbs/day
N-Nitrosodi-n-propylamine	ug/l	lbs/day	1.4 ug/l	0.01 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	0.07 lbs/day

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Phenol	ug/l	lbs/day	4.6E+06 ug/l	3.84E+04 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	0.05 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	43.39 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	100.12 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	1001.25 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	2.42E+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	91.78 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.07 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	1668.74 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	0.68 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	4.38 lbs/day
				lbs/day
				lbs/day
<b>Pesticides</b>				
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	0.02 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.02 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.02 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	0.01 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	0.01 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
<b>PCB's</b>				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 124	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
<b>Pesticide</b>				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
<b>Dioxin</b>				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		

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**Metals**

Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	35.88 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	1835.62 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	38.38 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.05 lbs/day
Zinc				

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

**VII. Mathematical Modeling of Stream Quality**

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

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

- (1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).
- (2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.
- (3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8
- (4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

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

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

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

**VIII. Modeling Information**

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

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

**Other Conditions**

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

**Model Inputs**

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

**Current Upstream Information**

	Stream							
	Critical Low							
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l
Summer (Irrig. Season)	0.0	18.0	8.1	0.03	1.00	11.39	0.00	1200.0
Fall	0.0	10.0	8.0	0.03	1.00	---	0.00	1200.0
Winter	0.0	6.0	8.0	0.03	1.00	---	0.00	1200.0
Spring	0.0	12.0	8.0	0.03	1.00	---	0.00	1200.0
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0		* 1/2 MDL

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**Projected Discharge Information**

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	1.00000	NA	981.00	4.08995
Fall	1.00000	NA		
Winter	1.00000	NA		
Spring	1.00000	NA		

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	1.000 MGD	1.547 cfs
Fall	1.000 MGD	1.547 cfs
Winter	1.000 MGD	1.547 cfs
Spring	1.000 MGD	1.547 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1 MGD. If the discharger is allowed to have a flow greater than 1 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

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

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	208.5 lbs/day
Fall	25.0 mg/l as BOD5	208.5 lbs/day
Winter	25.0 mg/l as BOD5	208.5 lbs/day
Spring	25.0 mg/l as BOD5	208.5 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	5.00
Fall	5.00
Winter	5.00
Spring	5.00

**Effluent Limitation for Total Ammonia based upon Water Quality Standards**

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	2.4 mg/l as N	19.8 lbs/day
	1 Hour Avg. - Acute	6.8 mg/l as N	56.4 lbs/day
Fall	4 Day Avg. - Chronic	2.6 mg/l as N	21.7 lbs/day
	1 Hour Avg. - Acute	7.7 mg/l as N	63.9 lbs/day
Winter	4 Day Avg. - Chronic	7.7 mg/l as N	63.9 lbs/day
	1 Hour Avg. - Acute	61.7 mg/l as N	514.2 lbs/day
Spring	4 Day Avg. - Chronic	2.6 mg/l as N	0.0 lbs/day
	1 Hour Avg. - Acute	7.7 mg/l as N	0.0 lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.0%.

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**Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards**

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	0.011 mg/l	0.09 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l	0.16 lbs/day
Fall	4 Day Avg. - Chronic	0.011 mg/l	0.09 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l	0.16 lbs/day
Winter	4 Day Avg. - Chronic	0.011 mg/l	0.09 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l	0.16 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	980.9 mg/l	4.09 tons/day
Fall	Maximum, Acute	980.9 mg/l	4.09 tons/day
Winter	Maximum, Acute	980.9 mg/l	4.09 tons/day
Spring	4 Day Avg. - Chronic	980.9 mg/l	4.09 tons/day

Colorado Salinity Forum Limits      Determined by Permitting Section  
Concentration limit is based on limits developed in the West Colorado Watershed TMDL,  
approved by EPA in 2004.

**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		1 Hour Average		Load
	Concentration	Load	Concentration	Load	
Aluminum	N/A	N/A	750.5	ug/l	6.3 lbs/day
Arsenic	190.12 ug/l	1.0 lbs/day	340.2	ug/l	2.8 lbs/day
Cadmium	0.61 ug/l	0.0 lbs/day	6.5	ug/l	0.1 lbs/day
Chromium III	212.05 ug/l	1.1 lbs/day	4,436.6	ug/l	37.0 lbs/day
Chromium VI	11.00 ug/l	0.1 lbs/day	16.0	ug/l	0.1 lbs/day
Copper	23.87 ug/l	0.1 lbs/day	39.4	ug/l	0.3 lbs/day
Iron	N/A	N/A	1,000.6	ug/l	8.3 lbs/day
Lead	12.89 ug/l	0.1 lbs/day	330.8	ug/l	2.8 lbs/day
Mercury	0.01 ug/l	0.0 lbs/day	2.4	ug/l	0.0 lbs/day
Nickel	132.22 ug/l	0.7 lbs/day	1,189.2	ug/l	9.9 lbs/day
Selenium	4.60 ug/l	0.0 lbs/day	20.0	ug/l	0.2 lbs/day

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Silver	N/A	ug/l	N/A	lbs/day	25.1	ug/l	0.2	lbs/day
Zinc	304.13	ug/l	1.6	lbs/day	304.1	ug/l	2.5	lbs/day
Cyanide	5.20	ug/l	0.0	lbs/day	22.0	ug/l	0.2	lbs/day

**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	10.0	Deg. C.	50.0	Deg. F
Spring	16.0	Deg. C.	60.8	Deg. F

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

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

	4 Day Average		1 Hour Average					
	Concentration	Load	Concentration	Load				
Aldrin			1.5E+00	ug/l	1.93E-02	lbs/day		
Chlordane	4.30E-03	ug/l	3.59E-02	lbs/day	1.2E+00	ug/l	1.55E-02	lbs/day
DDT, DDE	1.00E-03	ug/l	8.34E-03	lbs/day	5.5E-01	ug/l	7.09E-03	lbs/day
Dieldrin	1.90E-03	ug/l	1.58E-02	lbs/day	1.3E+00	ug/l	1.61E-02	lbs/day
Endosulfan	5.60E-02	ug/l	4.67E-01	lbs/day	1.1E-01	ug/l	1.42E-03	lbs/day
Endrin	2.30E-03	ug/l	1.92E-02	lbs/day	9.0E-02	ug/l	1.16E-03	lbs/day
Guthion	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	1.29E-04	lbs/day
Heptachlor	3.80E-03	ug/l	3.17E-02	lbs/day	2.6E-01	ug/l	3.35E-03	lbs/day
Lindane	8.00E-02	ug/l	6.67E-01	lbs/day	1.0E+00	ug/l	1.29E-02	lbs/day
Methoxychlor	0.00E+00	ug/l	0.00E+00	lbs/day	3.0E-02	ug/l	3.87E-04	lbs/day
Mirex	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	1.29E-04	lbs/day
Parathion	0.00E+00	ug/l	0.00E+00	lbs/day	4.0E-02	ug/l	5.16E-04	lbs/day
PCB's	1.40E-02	ug/l	1.17E-01	lbs/day	2.0E+00	ug/l	2.58E-02	lbs/day
Pentachlorophenol	1.30E+01	ug/l	1.08E+02	lbs/day	2.0E+01	ug/l	2.58E-01	lbs/day
Toxephene	2.00E-04	ug/l	1.67E-03	lbs/day	7.3E-01	ug/l	9.42E-03	lbs/day

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

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

	<b>1 Hour Average</b>	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	41.7 lbs/day
Nitrates as N	4.0 mg/l	33.4 lbs/day
Total Phosphorus as P	0.05 mg/l	0.4 lbs/day
Total Suspended Solids	90.0 mg/l	750.4 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:

	<b>Maximum Concentration</b>	
	Concentration	Load
<b>Toxic Organics</b>		
Acenaphthene	2.70E+03 ug/l	2.25E+01 lbs/day
Acrolein	7.81E+02 ug/l	6.51E+00 lbs/day
Acrylonitrile	6.60E-01 ug/l	5.51E-03 lbs/day
Benzene	7.10E+01 ug/l	5.92E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.40E+00 ug/l	3.67E-02 lbs/day
Chlorobenzene	2.10E+04 ug/l	1.75E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.70E-04 ug/l	6.42E-06 lbs/day
1,2-Dichloroethane	9.91E+01 ug/l	8.26E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.91E+00 ug/l	7.43E-02 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.20E+01 ug/l	3.50E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.10E+01 ug/l	9.18E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.40E+00 ug/l	1.17E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.30E+03 ug/l	3.59E+01 lbs/day
2,4,6-Trichlorophenol	6.50E+00 ug/l	5.42E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.70E+02 ug/l	3.92E+00 lbs/day
2-Chlorophenol	4.00E+02 ug/l	3.34E+00 lbs/day
1,2-Dichlorobenzene	1.70E+04 ug/l	1.42E+02 lbs/day
1,3-Dichlorobenzene	2.60E+03 ug/l	2.17E+01 lbs/day

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1,4-Dichlorobenzene	2.60E+03 ug/l	2.17E+01 lbs/day
3,3'-Dichlorobenzidine	7.70E-02 ug/l	6.42E-04 lbs/day
1,1-Dichloroethylene	3.20E+00 ug/l	2.67E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	7.91E+02 ug/l	6.59E+00 lbs/day
1,2-Dichloropropane	3.90E+01 ug/l	3.25E-01 lbs/day
1,3-Dichloropropylene	1.70E+03 ug/l	1.42E+01 lbs/day
2,4-Dimethylphenol	2.30E+03 ug/l	1.92E+01 lbs/day
2,4-Dinitrotoluene	9.11E+00 ug/l	7.59E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.40E-01 ug/l	4.51E-03 lbs/day
Ethylbenzene	2.90E+04 ug/l	2.42E+02 lbs/day
Fluoranthene	3.70E+02 ug/l	3.09E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.70E+05 ug/l	1.42E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.60E+03 ug/l	1.33E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.60E+02 ug/l	3.00E+00 lbs/day
Dichlorobromomethane(HM)	2.20E+01 ug/l	1.84E-01 lbs/day
Chlorodibromomethane (HM)	3.40E+01 ug/l	2.84E-01 lbs/day
Hexachlorocyclopentadiene	1.70E+04 ug/l	1.42E+02 lbs/day
Isophorone	6.00E+02 ug/l	5.01E+00 lbs/day
Naphthalene		
Nitrobenzene	1.90E+03 ug/l	1.59E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.40E+04 ug/l	1.17E+02 lbs/day
4,6-Dinitro-o-cresol	7.65E+02 ug/l	6.38E+00 lbs/day
N-Nitrosodimethylamine	8.11E+00 ug/l	6.76E-02 lbs/day
N-Nitrosodiphenylamine	1.60E+01 ug/l	1.33E-01 lbs/day
N-Nitrosodi-n-propylamine	1.40E+00 ug/l	1.17E-02 lbs/day
Pentachlorophenol	8.21E+00 ug/l	6.84E-02 lbs/day
Phenol	4.60E+06 ug/l	3.84E+04 lbs/day
Bis(2-ethylhexyl)phthalate	5.90E+00 ug/l	4.92E-02 lbs/day
Butyl benzyl phthalate	5.20E+03 ug/l	4.34E+01 lbs/day
Di-n-butyl phthalate	1.20E+04 ug/l	1.00E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.20E+05 ug/l	1.00E+03 lbs/day
Dimethyl phthlate	2.90E+06 ug/l	2.42E+04 lbs/day
Benzo(a)anthracene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Benzo(a)pyrene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Benzo(b)fluoranthene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Benzo(k)fluoranthene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Chrysene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.10E-02 ug/l	2.59E-04 lbs/day

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Pyrene (PAH)	1.10E+04 ug/l	9.18E+01 lbs/day
Tetrachloroethylene	8.91E+00 ug/l	7.43E-02 lbs/day
Toluene	2.00E+05 ug/l	1.67E+03 lbs/day
Trichloroethylene	8.11E+01 ug/l	6.76E-01 lbs/day
Vinyl chloride	5.25E+02 ug/l	4.38E+00 lbs/day

**Pesticides**

Aldrin	1.40E-04 ug/l	1.17E-06 lbs/day
Dieldrin	1.40E-04 ug/l	1.17E-06 lbs/day
Chlordane	5.90E-04 ug/l	4.92E-06 lbs/day
4,4'-DDT	5.90E-04 ug/l	4.92E-06 lbs/day
4,4'-DDE	5.90E-04 ug/l	4.92E-06 lbs/day
4,4'-DDD	8.41E-04 ug/l	7.01E-06 lbs/day
alpha-Endosulfan	2.00E+00 ug/l	1.67E-02 lbs/day
beta-Endosulfan	2.00E+00 ug/l	1.67E-02 lbs/day
Endosulfan sulfate	2.00E+00 ug/l	1.67E-02 lbs/day
Endrin	8.11E-01 ug/l	6.76E-03 lbs/day
Endrin aldehyde	8.11E-01 ug/l	6.76E-03 lbs/day
Heptachlor	2.10E-04 ug/l	1.75E-06 lbs/day
Heptachlor epoxide		

**PCB's**

PCB 1242 (Arochlor 1242)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1254 (Arochlor 1254)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1221 (Arochlor 1221)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1232 (Arochlor 1232)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1248 (Arochlor 1248)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1260 (Arochlor 1260)	4.50E-05 ug/l	3.75E-07 lbs/day
PCB-1016 (Arochlor 1016)	4.50E-05 ug/l	3.75E-07 lbs/day

**Pesticide**

Toxaphene	7.50E-04 ug/l	6.26E-06 lbs/day
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**Metals**

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



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Cyanide	22.0	5.2
Iron	1000.6	
Lead	100.1	12.9
Mercury	0.150	0.012
Nickel	1189.2	132
Selenium	20.0	4.6
Silver	25.1	N/A
Thallium	6.3	
Zinc	304.1	304.1
Boron	750.48	

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.

#### **XI. Colorado River Salinity Forum Considerations**

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

#### **XII. Summary Comments**

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

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**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.

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**APPENDIX - Coefficients and Other Model Information**

CBOD Coeff. (Kd)20 1/day 2.000	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 0.805	REAER. Coeff. (Ka)20 (Ka)/day 1637.103	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 1023.130	NBOD Coeff. (Kn)20 1/day 0.600	NBOD Coeff. (Kn)T 1/day 0.131
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 1.610	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(Cl)20 1/day 32.000	TRC K(Cl)(T) 1/day 10.083
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 0.287						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(Cl) TRC {theta} 1.1	S Benthic {theta} 1.1

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**Antidegradation Review**