

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0024759**

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

**SUNNYSIDE COGENERATION ASSOCIATES**

is hereby authorized to discharge from its facility located at One Power Plant Road, Sunnyside, Utah, to receiving waters named

**ICELANDER CREEK AND GRASSY TRAIL CREEK**

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

This permit shall become effective on March 1, 2019

This permit expires at midnight on February 29, 2024

Signed this 4<sup>th</sup> day of February, 2019.



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Erica Brown Gaddis, PhD  
Director

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**I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS**

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

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
002	Water Supply Pipeline, Latitude 39° 35' 50", Longitude 110° 22' 42". Water from the deep water well is conveyed via the water supply pipeline discharged into Grassy Trail Creek.
003	Water Supply Pipeline, Latitude 39° 32' 58", Longitude 110° 23' 32". Outfall for pipe line just before entrance to clean water pond. Outfall is to Grassy Trail Creek.
007	Rail Cut Pond, Latitude 39° 32' 52", Longitude 110° 23' 48". Surface runoff discharged from sedimentation pond to Icelander Creek.
008	Old Coarse Refuse Pond, Latitude 39° 32' 20", Longitude 110° 23' 03". Surface runoff discharged from sedimentation pond to Iceland Creek.
009	Pasture Pond, Latitude 39° 32' 36", Longitude 110° 23' 29". Surface runoff discharged from sedimentation pond to Icelander Creek.
012	Coarse Refuse Toe Pond, Latitude 39° 32' 28", Longitude 110° 23' 58". Surface runoff discharged from sedimentation pond to Icelander Creek.
013	Facility sedimentation Pond, Latitude 39° 32' 46", Longitude 110° 23' 49". Sedimentation pond to contain runoff from the Cogeneration facility. Discharge to Icelander Creek.
014	Coal Pile Sedimentation Pond, Latitude 39° 32' 45", Longitude 110° 23' 36". Sedimentation Pond to contain runoff from the coal pile. Discharge to Icelander Creek.
016	Borrow Area Pond, Latitude 39° 32' 25", Longitude 110° 23' 45". Sedimentation pond containing runoff from soil borrow area. Discharge to Icelander Creek.



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Outfall 013	15	NA	NA	20	Monthly	Grab
Outfall 014	15	NA	NA	20	Monthly	Grab
Outfall 016	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 017	15	NA	NA	20	Monthly	Grab
Outfall 018	15	NA	NA	20	Monthly	Grab
TSS, mg/L	25	35	NA	70	Monthly	Grab
Outfall 002	25	35	NA	NA	Monthly	Grab
Outfall 003	25	35	NA	NA	Monthly	Grab
Outfall 013	25	35	NA	100	Monthly	Grab
Outfall 014 *c	25	35	NA	50	Monthly	Grab
Outfall 017	25	35	NA	100	Monthly	Grab
Outfall 018	25	35	NA	100	Monthly	Grab
TDS, mg/L *d	NA	NA	NA	1650	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
DO, mg/L	NA	NA	5.0	NA	Monthly	Grab
Total Iron, mg/L						
Outfall 002	NA	NA	NA	1.00	Monthly	Grab
Outfall 003	NA	NA	NA	1.00	Monthly	Grab
Outfall 007	NA	NA	NA	1.00	Monthly	Grab
Outfall 008	NA	NA	NA	1.00	Monthly	Grab
Outfall 009	NA	NA	NA	1.00	Monthly	Grab
Outfall 012	NA	NA	NA	1.00	Monthly	Grab
Outfall 016	NA	NA	NA	1.00	Monthly	Grab
Total Chromium, mg/L						
Outfall 017	0.03	NA	NA	0.03	Monthly	Grab
Outfall 018	0.03	NA	NA	0.03	Monthly	Grab
Total Zinc, mg/L						
Outfall 017	0.3	NA	NA	0.3	Monthly	Grab
Outfall 018	0.3	NA	NA	0.3	Monthly	Grab
Sanitary Waste *e	NA	NA	NA	None	Monthly	Visual
<sup>1</sup> MGD: million gallons per day <sup>2</sup> NA: not applicable						

\*a With the exception of Outfalls 002, 003, 013, 014, 017, and 018 monitoring for Oil & Grease shall be a visual test performed at least once per month. If any oil and/or grease sheens are observed visually, then a sample of the effluent shall be taken immediately and that sample shall not exceed 10 mg/L. In addition to the monthly sampling requirement for Oil & Grease at Outfalls 002, 003, 013, 014, 017 and 018, a sample for Oil & Grease shall also be immediately taken whenever sheen is observed on the effluent or there is another reason to believe oil and grease is present.

\*b The only discharge from outfalls 002 and 003 would be for essential maintenance from the deep water wells.

\*c Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10-year 24-hour precipitation event shall not be subject to a daily maximum of 50 mg/L.

\*d In addition to the concentration limitation, the total amount of total dissolved solids shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.

\*e There shall be no sanitary waste in the discharge.

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2. Samples collected in compliance with the monitoring requirements specified above shall be collected at all outfalls identified in Part I.C.1 prior to mixing with the receiving water.
3. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 007, 008, 009, 012 and 016 substitute the following limitation for the TSS limitations contained in *Part I.C.1*, provided the facility has been designed, constructed and operated to adequately treat up to the 10-year, 24 hour precipitation event:

Effluent Characteristics	Daily Minimum	Daily Maximum
Settleable solids (SS), milliliter/liter	NA	0.5

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.C.1*. (excepting TSS). Such analyses shall be conducted on either grab or composite samples.

Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 007, 008, 009, 012 and 016, comply with the following limitation instead of the otherwise applicable limitations contained in *Part I.D.1*:

Effluent Characteristics	Daily Minimum	Daily Maximum
pH, SU	6.5	9.0

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for settleable solids and for all permitted parameters specified under *Part I.C.1*. Such analyses shall be conducted on either grab or composite samples.

4. The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.C.3*.

**D. Reporting of Monitoring Results.**

1. Discharge Water Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)\* or by NetDMR, post-marked or entered into NetDMR no later than the 28<sup>th</sup> day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

**II. INDUSTRIAL PRETREATMENT PROGRAM**

- A. Discharges to a Publically Owned Treatment Works (POTW). Any process wastewater that the facility may discharge to the sanitary sewer, either as 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 Part 403, the State Pretreatment Requirements found in UAC R3 I 7 -8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.
  
- B. Hazardous Waste Requirements. In accordance with 40 CFR Part 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR Part 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

**III. BIOSOLIDS REQUIREMENTS**

- A. The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

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**IV. STORM WATER REQUIREMENTS.**

- A. Coverage of This Section. The requirements listed under this section shall apply to storm water discharges. Storm water discharges from the following portions of the facility may be eligible for coverage under this permit: biosolids drying beds, haul or access roads on which transportation of biosolids may occur, grit screen cleaning areas, chemical loading, unloading and storage areas, salt or sand storage areas, vehicle or equipment storage and maintenance areas, or any other wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility that may have a reasonable expectation to contribute to pollutants in a storm water discharge.
- B. Prohibition of Non-Storm Water Discharges. Except for discharges identified in *Part I.*, and discharges described below in this paragraph, non-storm water discharges are prohibited. The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from fire fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.
- C. Storm Water Pollution Prevention Plan Requirements. The permittee must have (on site) or develop and implement a storm water pollution prevention plan as a condition of this permit.
1. Contents of the Plan. The plan shall include, at a minimum, the following items:
- a. *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
- b. *Description of Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:
- (1) *Drainage.* A site map indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or

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discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:

- (a) Drainage direction and discharge points from all wastewater associated activities including but not limited to grit screen cleaning, bio-solids drying beds and transport, chemical/material loading, unloading and storage areas, vehicle maintenance areas, salt or sand storage areas.
  - (b) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.
  - (c) Location of bio-solids drying beds where exposed to precipitation or where the transportation of bio-solids may be spilled onto internal roadways or tracked off site.
  - (d) Location where grit screen cleaning or other routinely performed industrial activities are located and are exposed to precipitation.
  - (e) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.
  - (f) Locations where any major spills or leaks of toxic or hazardous materials have occurred.
  - (g) Location of any sand or salt piles.
  - (h) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.
  - (i) Location of receiving streams or other surface water bodies.
  - (j) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.
- (2) *Inventory of Exposed Materials.* An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- (3) *Spills and Leaks.* A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of

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3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

- (4) *Sampling Data.* A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- (5) *Summary of Potential Pollutant Sources and Risk Assessment.* A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.
- (6) *Measures and Controls.* The permittee shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
  - (7) *Good Housekeeping.* All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.
- (8) *Preventive Maintenance.* A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
- (9) *Spill Prevention and Response Procedures.* Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

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- (10) *Inspections.* In addition to the comprehensive site evaluation required under paragraph (*Part IV.C.1.b.(16)*) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.
- (11) *Employee Training.* Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.
- (12) *Record keeping and Internal Reporting Procedures.* A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- (13) *Non-storm Water Discharges.*
- (a) *Certification.* The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part VII.G* of this permit.
- (b) *Exceptions.* Except for flows from fire fighting activities, sources of non-storm water listed in *Part IV.B. (Prohibition of Non-storm Water Discharges)* of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
- (c) *Failure to Certify.* Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Director* within 180 days after the effective date of this permit. If the failure to

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certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.

- (14) *Sediment and Erosion Control*. The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- (15) *Management of Runoff*. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.
- (16) *Comprehensive Site Compliance Evaluation*. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:
- (a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
- (b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this section and pollution prevention measures and controls identified in the plan in accordance with *Part IV.C.1.b.(6)* (Measures and Controls) of this section shall be revised as appropriate within 2 weeks of such evaluation and shall provide for

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implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

- (c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph *i.* (above) shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part VII.G* (Signatory Requirements) of this permit.
- (17) *Deadlines for Plan Preparation and Compliance.* The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part IV.C.1.b.(16)*, Comprehensive Site Evaluation.
- (18) *Keeping Plans Current.* The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

**D. Monitoring and Reporting Requirements.**

- 1. Quarterly Visual Examination of Storm Water Quality. Facilities shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.
  - a. *Sample and Data Collection.* Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where practicable, the same individual should carry out the collection and examination of discharges for entire permit term.
  - b. *Visual Storm Water Discharge Examination Reports.* Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include

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the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

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

**V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS**

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.
- F. Records Contents. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
  2. The individual(s) who performed the sampling or measurements;
  3. The date(s) and time(s) analyses were performed;
  4. The individual(s) who performed the analyses;
  5. The analytical techniques or methods used; and,
  6. The results of such analyses.
- G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location
- H. Twenty-four Hour Notice of Noncompliance Reporting.
1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

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2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
  - a. Any noncompliance which may endanger health or the environment;
  - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.*);
  - c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions.*);
  - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit; or,
  - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
  - a. A description of the noncompliance and its cause;
  - b. The period of noncompliance, including exact dates and times;
  - c. The estimated time noncompliance is expected to continue if it has not been corrected;
  - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
  - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*
- I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*
- J. Inspection and Entry The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
  1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
  2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

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3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

**VI. COMPLIANCE RESPONSIBILITIES**

- A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under UCA 19-5-115(2) a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at Part VI.G, *Bypass of Treatment Facilities* and Part VI.H, *Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.
- C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.
- E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.
- G. Bypass of Treatment Facilities.
1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.
  2. Prohibition of Bypass.
    - a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

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- (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
  - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
  - (3) The permittee submitted notices as required under *section VI.G.3*.
- b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.
3. Notice.
- a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
    - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
    - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
    - (3) Description of specific measures to be taken to minimize environmental and public health impacts;
    - (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
    - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,
    - (6) Any additional information requested by the Director.
  - b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.
  - c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural

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Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

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

**VII. GENERAL REQUIREMENTS**

- A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.
- B. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.
- E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.
  - 1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
  - 2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
    - a. The authorization is made in writing by a person described above and submitted to the Director, and,
    - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position

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having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- H. Penalties for Falsification of Reports. The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.
- I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.
- J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers. This permit may be automatically transferred to a new permittee if:
  1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

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2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
  3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
  2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
  3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.
- Q. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC<sub>50</sub>").
5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
6. "Chronic toxicity" occurs when the IC<sub>25</sub> < XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
7. "IC<sub>25</sub>" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
8. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
  - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
  - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

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- c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
  - d. Continuous sample volume, with sample collection rate proportional to flow rate.
9. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
  10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
  11. "EPA," means the United States Environmental Protection Agency.
  12. "Director," means Director of the Division of Water Quality.
  13. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
  14. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
  15. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
  16. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

**FACT SHEET AND STATEMENT OF BASIS  
SUNYSIDE COGENERATION ASSOCIATES  
RENEWAL PERMIT: DISCHARGE  
UPDES PERMIT NUMBER: UT0024759  
MINOR INDUSTRIAL**

**FACILITY CONTACTS**

Person Name: Rusty Netz  
Position: Environmental Engineer  
Phone Number: (435) 888-4476

Person Name: Gerald Hascall  
Position: Plant Manager  
Phone Number: (435) 888-4476

Facility Name: Sunnyside Cogeneration Associates  
Location: One Power Plant Road  
Sunnyside, UT 84539

**DESCRIPTION OF FACILITY**

Sunnyside Cogeneration Associates (SCA) is a steam electric power generating facility, with approximately 51 net MW in generating capacity. SCA has a Standard Industrial Classification (SIC) code 4911, for electric power generation. The facility is located just south of State Highway 123 near the town of Sunnyside in Carbon County, Utah. SCA burns waste coal from coal refuse piles and utilizes nearby water supply sources for cooling water.

Cooling water is primarily obtained from ground water, but could also be obtained from Grassy Trail Creek if it flowed consistently. Water is pumped and stored in two large reservoirs near the plant; one 20 million gallons in size and the other 40 million gallons in size. Cooling water from the reservoirs is treated with acid for pH control before use in the cooling system. The cooling water is recycled a number of times, which requires the addition of a phosphate based anti-scaling chemical, an oxygen scavenger, acid for pH control, and sodium hypochlorite (at 5mg/L) to prevent biological growth.

Cooling tower blow down is continually recirculated to a water clarifier for solids removal. These solids are pumped at a rate of 30 gpm to the water thickener. From the water thickener the solids are pumped to the ash silo and used for ash conditioning. All of the ash, such as the fly ash and bottom ash are transported to the ash silo. Material is trucked from the ash silo to the ash landfill site.

Boiler blow down water is discharged at a rate of 30 gpm into a holding tank and eventually loaded into a water truck and used for dust suppression on the ash landfill sites. SCA is considered as a zero discharge facility because there are no direct discharges of cooling tower or boiler blow down water to any sedimentation ponds.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

SCA's site operating conditions have not changed since the permit renewal.

**DISCHARGE****DESCRIPTION OF DISCHARGE**

SCA has a total of eleven discharge points in its present permit. In its permit application SCA asked that an additional discharge point called 018 be added to the permit. Outfall 018 is associated with SCA's #2 Ash Landfill. Discharges coming from the #2 Ash Landfill will report to the SCA #2 Sedimentation Pond and any discharges from the SCA #2 Sedimentation pond will end up in the pond associated with Outfall 018. There was one discharge over the last permit cycle due to a storm greater than a 100 year storm event. There have only been four discharges from this facility in the last 20 years.

<u>Outfall</u>	<u>Description of Discharge Point</u>
002	Water Supply Pipeline, Latitude 39° 35' 50", Longitude 110° 22' 42". Water from the deep water well is conveyed via the water supply pipeline discharged into Grassy Trail Creek.
003	Water Supply Pipeline, Latitude 39° 32' 58", Longitude 110° 23' 32". Outfall for pipe line just before entrance to clean water pond. Outfall is to Grassy Trail Creek.
007	Rail Cut Pond, Latitude 39° 32' 52", Longitude 110° 23' 48". Surface runoff discharged from sedimentation pond to Icelander Creek.
008	Old Coarse Refuse Pond, Latitude 39° 32' 20", Longitude 110° 23' 03". Surface runoff discharged from sedimentation pond to Icelander Creek.
009	Pasture Pond, Latitude 39° 32' 36", Longitude 110° 23' 29". Surface runoff discharged from sedimentation pond to Icelander Creek.
012	Coarse Refuse Toe Pond, Latitude 39° 32' 28", Longitude 110° 23' 58". Surface runoff discharged from sedimentation pond to Icelander Creek.
013	Facility sedimentation Pond, Latitude 39° 32' 46", Longitude 110° 23' 49". Sedimentation pond to contain runoff from the Cogeneration facility. Discharge to Icelander Creek.
014	Coal Pile Sedimentation Pond, Latitude 39° 32' 45", Longitude 110° 23' 36". Sedimentation Pond to contain runoff from the coal pile. Discharge to Icelander Creek.
016	Borrow Area Pond, Latitude 39° 32' 25", Longitude 110° 23' 45". Sedimentation pond containing runoff from soil borrow area. Discharge to Icelander Creek.

- 017            The #1 Ash Landfill Sedimentation Pond, Latitude 39° 32' 50" N, Longitude 110° 23' 45" W. Sedimentation pond to contain runoff from the Phase II landfill area. Discharge is to Iceland Creek.
- 018            The #2 Ash Landfill Sedimentation Pond, Latitude 39°32' 18.3" N, Longitude 110°23'10" W. Sedimentation pond to contain runoff from the #2 Ash Landfill. Discharge is to Iceland Creek.

### **RECEIVING WATERS AND STREAM CLASSIFICATION**

Grassy Trail Creek and Iceland Creek are classified as 2B, 3C and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

- 2B -    Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
- 3C -    Protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- 4 -    Protected for agricultural uses including irrigation of crops and stock watering.

### **BASIS FOR EFFLUENT LIMITATIONS**

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In most cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits have been developed, Best Professional Judgment (BPJ) may be used where applicable.

Based on *UAC R317-1-3.2*, Utah Secondary Treatment Standards, pH shall be limited to a minimum of 6.5 standard units and a maximum of 9.0 standard units at all discharge points and total suspended solids (TSS) shall be limited to 25 mg/L as a thirty-day average and to 35 mg/L as a seven-day average at all discharge points.

Based on Best Professional Judgment (BPJ) and limits and monitoring from the previous permit an oil and grease limitation of 10 mg/L will be included in the permit for outfalls 002, 003, 007, 008, 009, 012, and 016.

Dissolved oxygen (DO) shall meet a concentration of 5.0 mg/L as a thirty-day minimum average for all discharges. This is based on the waste load analysis (WLA).

Based on *40 CFR 434, Subpart D (Alkaline Mine Drainage)*, TSS shall have a daily maximum of 70 mg/L at discharge points 007, 008, 009, 012 and 016. The limitation on total iron (T-Fe) in the previous permit was 1.0 mg/L. Based on water quality standards and BPJ, this limitation will be retained in the

renewal permit at Outfalls 002, 003, 007, 008, 009, 012 and 016. Also based on BPJ, oil and grease shall be limited visually at Outfalls 007, 008, 009 and 016. If an oil sheen or grease sheen is observed, then a sample must be taken and the concentration of oil and grease shall not exceed 10 mg/L.

Based on *40 CFR 434, Subpart D.*, special provisions are applicable to the coal mining discharge points (Outfalls 007, 008, 009, 012 and 016). Any discharge or increase in the volume of a discharge 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 limitation instead of the otherwise applicable limitations for TSS:

<u>Parameter</u>	<u>Effluent Limitations</u>
Settleable Solids	0.5 ml/L

Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10 year 24 hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitations instead of the otherwise applicable limitations:

<u>Parameter</u>	<u>Effluent Limitations</u>
pH	6.5 to 9.0 S.U.

The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event.

Based on *40 CFR 423.15 (New Source Performance Standards for Steam Electric Power Generating Point Source Category)* there shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used in transformer fluid at any of the discharge points directly associated with the steam electric power generation facility (Outfalls 013, 014, 017, and 018), or from any other areas associated with SCA.

For discharge points 013, 014, 017 and 018 the following additional limitations (along with those indicated above as applicable to all discharge points) may also apply:

Based on *40 CFR 423.15(j)(2)*, neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Director that the units in a particular location cannot operate at or below this level of chlorination. Outfalls 013 and 014 are from storm water run-off sedimentation ponds, which do not have a source of chlorine and have never discharged to date. Since no chlorine is directly discharged to any of the outfall locations, the only possibility of discharging trace amounts of chlorine is from the ash landfills (Outfalls 017 and 018). Cooling tower blow down is first mixed with a water clarifier, for solids removal, and the water is reused in the cooling tower. The solids are transported to the ash landfills. It is highly unlikely that any chlorine will leach from the ash landfill during a runoff event, fill the sedimentation pond and be discharged via Outfalls 017 or 018. Therefore based upon BPJ, the chlorine limitations in *40 CFR 423.15* have not been included for Outfalls 013, 014, 017 or 018.

At Outfalls 017 and 018, based upon *40 CFR 423.15(j)(1)*, there shall be no detectable amounts of the 126 priority pollutants in the effluent. Also, based on *40 CFR 423.15(j)(3)*, instead of monitoring for these

pollutants directly, SCA may use engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in *40 CFR 136*.

Based on *40 CFR 423.15(j) (1)* total chromium and total zinc effluent limits need to be included in the permit at Outfalls 017 and 018 because the discharge from these ponds is runoff from the ash landfills, which are recipients of clarified cooling tower blow down water (latent with solids). Since the State has no water quality standard for total chromium and the previous permit had an effluent limit of 0.03 mg/L which is more stringent than the categorical limit contained in *40 CFR 423.15(j)(1)*, the effluent limit from the previous permit will be retained in this permit. Therefore, total chromium will be limited to 0.03 mg/L. The State does have a zinc water quality standard, which is lower than the limit contained in *40 CFR 423.1(j)(1)*, but higher than the limit contained in the previous permit. Therefore the effluent limit contained in the previous permit will be continued in this permit. Therefore, the limit in this renewal permit for total zinc will be 0.3 mg/L for Outfalls 017 and 018.

Based on *40 CFR 423.15*, discharge points 013, 014, 017, and 018 shall be limited to an oil and grease concentration of 15.0 mg/L as an average of daily values for 30 consecutive days. The maximum value for any one day shall not exceed 20 mg/L.

TSS shall be limited to a daily maximum of 100 mg/L at outfalls 013, 017 and 018 based on *40 CFR 423.15(c)*. TSS shall be limited to a daily maximum of 50 mg/L at outfall 014 based on *40 CFR 423.15(k)*. Based on *40 CFR 423.15(l)*, any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 Year, 24 hour rainfall event shall not be subject to the limitations in *40 CFR 423.15(k)*.

Carried over from the previous permit and based on BPJ, a special provision in this renewal permit is applicable to all the discharge points associated with the steam electric power generating facility (outfalls 013, 014, 017 and 018). Any untreated overflow from facilities designed, constructed, and operated to treat the runoff which results from a 10-year 24-hour runoff event may comply with the following limitation instead of the otherwise applicable limitations:

<u>Parameter</u>	<u>Effluent limitation</u>
pH	6.5 to 9.0 S.U.

Total dissolved solids (TDS) mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (CRBSCF), as authorized in *UAC R317-2-4*. Based on the CRBSCF policies, the TDS shall be limited to one-ton per day as a sum of all discharge points. SCA should be able to continue meeting the TDS mass loading limitation.

The TDS effluent limit of 1650 mg/L is the same as in the previous permit and will be retained in this renewal permit.

Based on information submitted by Rusty Netz, Environmental Engineer with SCA the sum of the potential flow from all the discharge points is 1.76 million gallons per day (MGD) and the largest possible flow from any one outfall is 0.45 MGD (Outfall 016). The wasteload allocation indicated a design flow of 1.76 MGD and this will be included in the permit as a 30 day average flow.

**Reasonable Potential Analysis**

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was not conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance) because the facility rarely discharges there is inadequate data for use in a RP. SCA "has limited to no industrial contributions" to their waste stream. Therefore it was determined that a full RP was not required, and that no metals monitoring is being added to the permit.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, <sup>1</sup> MGD						
Outfall 002	*b	<sup>2</sup> NA	NA	Report	Monthly	Measured
Outfall 003	*b 0.12	NA	NA	Report	Monthly	Measured
Outfall 007	0.13	NA	NA	Report	Monthly	Measured
Outfall 008	0.14	NA	NA	Report	Monthly	Measured
Outfall 009	0.29	NA	NA	Report	Monthly	Measured
Outfall 012	0.21	NA	NA	Report	Monthly	Measured
Outfall 013	0.09	NA	NA	Report	Monthly	Measured
Outfall 014	0.45	NA	NA	Report	Monthly	Measured
Outfall 016	0.15	NA	NA	Report	Monthly	Measured
Outfall 017	0.17	NA	NA	Report	Monthly	Measured
Outfall 018		NA	NA	Report	Monthly	Measured
Oil & Grease, mg/L *a						
Outfall 002	NA	NA	NA	10	Monthly	Grab
Outfall 003	NA	NA	NA	10	Monthly	Grab
Outfall 007	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 008	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 009	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 012	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 013	15	NA	NA	20	Monthly	Grab
Outfall 014	15	NA	NA	20	Monthly	Grab
Outfall 016	NA	NA	NA	10	Monthly	Visual/Grab
Outfall 017	15	NA	NA	20	Monthly	Grab
Outfall 018	15	NA	NA	20	Monthly	Grab
TSS, mg/L	25	35	NA	70	Monthly	Grab
Outfall 002	25	35	NA	NA	Monthly	Grab
Outfall 003	25	35	NA	NA	Monthly	Grab
Outfall 013	25	35	NA	100	Monthly	Grab
Outfall 014 *c	25	35	NA	50	Monthly	Grab
Outfall 017	25	35	NA	100	Monthly	Grab
Outfall 018	25	35	NA	100	Monthly	Grab
TDS, mg/L *d	NA	NA	NA	1650	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
DO, mg/L	NA	NA	5.0	NA	Monthly	Grab
Total Iron, mg/L						
Outfall 002	NA	NA	NA	1.00	Monthly	Grab
Outfall 003	NA	NA	NA	1.00	Monthly	Grab
Outfall 007	NA	NA	NA	1.00	Monthly	Grab

Outfall 008	NA	NA	NA	1.00	Monthly	Grab
Outfall 009	NA	NA	NA	1.00	Monthly	Grab
Outfall 012	NA	NA	NA	1.00	Monthly	Grab
Outfall 016	NA	NA	NA	1.00	Monthly	Grab
Total Chromium, mg/L						
Outfall 017	0.03	NA	NA	0.03	Monthly	Grab
Outfall 018	0.03	NA	NA	0.03	Monthly	Grab
Total Zinc, mg/L						
Outfall 017	0.3	NA	NA	0.3	Monthly	Grab
Outfall 018	0.3	NA	NA	0.3	Monthly	Grab
Sanitary Waste *e	NA	NA	NA	None	Monthly	Visual
<sup>1</sup> MGD: million gallons per day <sup>2</sup> NA: not applicable						

\*a With the exception of Outfalls 002, 003, 013, 014, 017, and 018 monitoring for Oil & Grease shall be a visual test performed at least once per month. If any oil and/or grease sheens are observed visually, then a sample of the effluent shall be taken immediately and that sample shall not exceed 10 mg/L. In addition to the monthly sampling requirement for Oil & Grease at Outfalls 002, 003, 013, 014, 017 and 018, a sample for Oil & Grease shall also be immediately taken whenever sheen is observed on the effluent or there is another reason to believe oil and grease is present.

\*b The only discharge from outfalls 002 and 003 would be for essential maintenance from the deep water wells.

\*c Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10-year 24-hour precipitation event shall not be subject to a daily maximum of 50 mg/L.

\*d In addition to the concentration limitation, the total amount of total dissolved solids shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.

\*e There shall be no sanitary waste in the discharge.

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

The self-monitoring requirements have not been changed from the previous permit. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for metals must be attached to the DMRs.

#### **BIOSOLIDS**

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

## **STORM WATER**

### **STORMWATER REQUIREMENTS**

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. All sections of the MSGP that pertain to discharges from the SCA facility have been included and sections which are redundant or do not pertain have been deleted. The permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for all areas within the confines of the facility. The SCA facility has developed a SWPPP and was concluded to be sufficient for the facility during inspection.

### **PRETREATMENT REQUIREMENTS**

Any process wastewater that the facility may discharge to the sanitary sewer, either as 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 section 403, the State 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.

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).

### **BIOMONITORING REQUIREMENTS**

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

The Permit and Enforcement Guidance Document for Whole Effluent Toxicity DWQ, February 2018, states that Whole Effluent Toxicity testing is required in UPDES permit where there is reasonable potential to discharge toxics. SCA is categorized as a minor industrial facility. There is no discharge of process water as it is all recirculated. All discharges are from stormwater activities. For these reasons and based upon BPJ, a reasonable potential for toxicity does not exist and therefore, biomonitoring is not included as part of the effluent monitoring program. However, the permit will contain a WET reopener provision.

### **PERMIT DURATION**

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

Drafted by  
Kelsey Christiansen  
Jennifer Robinson, Pretreatment  
Michael George, Storm Water  
Dave Wham, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

**PUBLIC NOTICE**

Began: December 26, 2018  
Ended: January 25, 2019

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

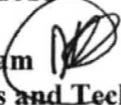
The Public Noticed of the draft permit was published in The Sun Advocate and on the Division of Water Quality web site.

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.

DWQ-2019-001172

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

**Date:** April 27, 2018  
**Prepared by:** Dave Wham   
Standards and Technical Services  
**Facility:** Sunnyside Cogeneration Associates (SCA)  
UPDES No. UT0024759  
**Receiving water:** Grassy Trail Creek and Icelander Creek

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

Discharge

**Table 1. UPDES Discharge Points**

UPDES Discharge	Description	Receiving Water	Maximum Design Flow (MGD)
002	Water Supply Pipeline	Grassy Trail Creek	0.0
003	Water Supply Pipeline	Grassy Trail Creek	0.0
007	Rail Cut Pond	Icelander Creek	0.12
008	Surface runoff discharged from sedimentation pond	Icelander Creek	0.13
009	Old Coarse Refuse Sedimentation Pond	Icelander Creek	0.14
012	Coarse Refuse Toe Sedimentation Pond	Icelander Creek	0.29
013	Cogeneration Facility Sedimentation Pond	Icelander Creek	0.21
014	Coal Pile Sedimentation Pond	Icelander Creek	0.09
016	Borrow Area Sedimentation Pond	Icelander Creek	0.45
017	Phase II Landfill Sedimentation Pond	Icelander Creek	0.15
018	#2 Ash Landfill Sedimentation Pond	Icelander Creek	0.17
Total			<b>1.76</b>

Receiving Water

Icelander and Grassy Trail Creeks are tributary to the Price River. As per UAC R317-2-13.1(b), Price River and tributaries, from confluence with Green River to Carbon Canal Diversion at Price City Golf Course are classified 2B, 3C, 4.

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 4- Protected for agricultural uses including irrigation of crops and stock watering.*

*Critical Low Flow Condition* -Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Because both Icelander and Grassy Trail Creeks are intermittent drainages in this vicinity, the 7Q10 is assumed to be zero and effluent limits revert to end of pipe water quality standards.

Very limited receiving water quality data is available as Icelander Creek is intermittent. Discharge data is also very limited. Facility only discharges rarely in response to very large storm events. Only discharge in the last permit cycle was in response to a greater than 100 year return interval storm. Receiving water data was compiled from DOGM Mine Water Quality Database using the discharge points and a single station on Icelander Creek located below the facility.

*Site Specific Standard for TDS* - As per R317-2-14, Table 2.14.1 (Footnote 4), the Price River and tributaries from confluence with Green River to the confluence with Soldier Creek, has a site specific standard for total dissolved solids of 3,000 mg/l. This value was the basis for the TDS limit contained in the wasteload analysis.

#### TMDL

Grassy Trail Creek and tributaries from Price River confluence to Grassy Trail Creek Reservoir (DEQ Assessment Unit ID UT14060007-012\_00) is not listed as impaired according to the Utah's 2016 303(d) assessment.

#### Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. In this case, because the 7Q10 was assumed to be zero, no mixing zone was considered.

#### Parameters of Concern

No potential parameters of concern were noted besides those contained in the previous UPDES permit for the facility.

### WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET

limits. The LC<sub>50</sub> (lethal concentration, 50%) percent effluent for acute toxicity and the IC<sub>25</sub> (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC<sub>50</sub> is typically 100% effluent and does not need to be determined by the WLA.

IC25 WET limits for Outfall 001 100% effluent.

### Wasteload Allocation Methods

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

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al. 2002). The analysis is summarized in the Wasteload Addendum.

Models and supporting documentation are available for review upon request.

### Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this facility. The proposed permit is a simple renewal of an existing UPDES permit. No increase in flow or concentration of pollutants over those authorized in the the existing permit is being requested.

### Documents:

WLA Document: *SunnysideCogen\_WLADoc\_4-27-18.docx*  
Wasteload Analysis and Addendums: *SunnysideCogen\_WLA\_4-27-18.xls*

### References:

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

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

**Discharging Facility: Sunnyside Cogeneration**

UPDES No: UT-UT0024759  
Current Flow: 1.00 MGD  
Design Flow 1.76 MGD

**Receiving Water: Icelander and Grassy Trail Creeks => Price River**

Stream Classification: 2B, 3C, 4  
Stream Flows [cfs]:  
0.0 Summer (July-Sept) Ephemeral wash  
0.0 Fall (Oct-Dec) Ephemeral wash  
0.0 Winter (Jan-Mar) Ephemeral wash  
0.0 Spring (Apr-June) Ephemeral wash  
0.0 Average  
Stream TDS Values:  
1528.0 Summer (July-Sept) Water Quality Data  
1528.0 Fall (Oct-Dec) Water Quality Data  
1528.0 Winter (Jan-Mar) Water Quality Data  
1528.0 Spring (Apr-June) Water Quality Data

**Effluent Limits:**

Flow, MGD:	1.76 MGD	Design Flow
BOD, mg/l:	25.0 Summer	5.0 Indicator
Dissolved Oxygen, mg/l	5.0 Summer	5.0 30 Day Average
TNH3, Chronic, mg/l:	1.6 Summer	Varies Function of pH and Temperature
TDS, mg/l:	3000.5 Summer	3000.0 Site Specific

**WQ Standard:**

**Modeling Parameters:**

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

Antidegradation Level II Review is not required.

Date: 4/27/2018

Utah Division of Water Quality  
Salt Lake City, Utah

**WASTELOAD ANALYSIS [WLA]**

**Addendum: Statement of Basis**

27-Apr-18
4:00 PM

**Facilities:** Sunnyside Cogeneration  
**Discharging to:** Icelander and Grassy Trail Creeks => Price River

**UPDES No:** UT-UT0024759

**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**

Icelander and Grassy Trail Creeks : 2B, 3C, 4  
Antidegradation Review: Antidegradation Level II Review is not required.

**III. Numeric Stream Standards for Protection of Aquatic Wildlife**

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards	
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)	
Chronic Dissolved Oxygen (DO)	5.00 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average)	
Maximum Total Dissolved Solids	3000.0 mg/l	3ackground

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

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

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	1.277 lbs/day	750.00	ug/l	11.007 lbs/day
Arsenic	190.00 ug/l	2.788 lbs/day	340.00	ug/l	4.990 lbs/day
Cadmium	0.86 ug/l	0.013 lbs/day	10.40	ug/l	0.153 lbs/day
Chromium III	308.74 ug/l	4.531 lbs/day	6459.46	ug/l	94.796 lbs/day
Chromium VI	11.00 ug/l	0.161 lbs/day	16.00	ug/l	0.235 lbs/day
Copper	35.32 ug/l	0.518 lbs/day	60.77	ug/l	0.892 lbs/day
Iron			1000.00	ug/l	14.675 lbs/day
Lead	23.12 ug/l	0.339 lbs/day	593.37	ug/l	8.708 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.035 lbs/day
Nickel	194.90 ug/l	2.860 lbs/day	1753.05	ug/l	25.727 lbs/day
Selenium	4.60 ug/l	0.068 lbs/day	20.00	ug/l	0.294 lbs/day
Silver	N/A ug/l	N/A lbs/day	55.19	ug/l	0.810 lbs/day
Zinc	448.60 ug/l	6.583 lbs/day	448.60	ug/l	6.583 lbs/day

\* Allowed below discharge

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

Metals Standards Based upon a Hardness of 474.97 mg/l as CaCO<sub>3</sub>

**Organics [Pesticides]**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.022 lbs/day
Chlordane	0.004 ug/l	0.063 lbs/day	1.200	ug/l	0.018 lbs/day
DDT, DDE	0.001 ug/l	0.015 lbs/day	0.550	ug/l	0.008 lbs/day
Dieldrin	0.002 ug/l	0.028 lbs/day	1.250	ug/l	0.018 lbs/day
Endosulfan	0.056 ug/l	0.822 lbs/day	0.110	ug/l	0.002 lbs/day
Endrin	0.002 ug/l	0.034 lbs/day	0.090	ug/l	0.001 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.056 lbs/day	0.260	ug/l	0.004 lbs/day
Lindane	0.080 ug/l	1.174 lbs/day	1.000	ug/l	0.015 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	0.001 lbs/day
PCB's	0.014 ug/l	0.206 lbs/day	2.000	ug/l	0.029 lbs/day
Pentachlorophenol	13.00 ug/l	190.851 lbs/day	20.000	ug/l	0.294 lbs/day
Toxephene	0.0002 ug/l	0.003 lbs/day	0.7300	ug/l	0.011 lbs/day

**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	0.07 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day

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Lead	100.0 ug/l	lbs/day
Selenium	50.0 ug/l	lbs/day
TDS, Summer	3000.0 mg/l	22.01 tons/day

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

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

**Chlorophenoxy Herbicides**

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

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

**Maximum Conc., ug/l - Acute Standards**

Toxic Organics	Class 1C		Class 3A, 3B	
	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	39.64 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	11.45 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.01 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	1.04 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	0.06 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	308.30 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	1.45 lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.13 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	0.62 lbs/day
1,1,2,2-Tetrachloroetha	ug/l	lbs/day	11.0 ug/l	0.16 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.02 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day

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2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	63.13 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	0.10 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	6.90 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	5.87 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	249.57 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	38.17 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	38.17 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	0.05 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	11.60 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	0.57 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	24.96 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	33.77 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	0.13 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	0.01 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l	425.74 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	5.43 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0 ug/l	2495.74 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	23.49 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	5.29 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	0.32 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	0.50 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	0.73 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0 ug/l	249.57 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	8.81 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	27.89 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	205.53 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	11.23 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	0.12 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	0.23 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4 ug/l	0.02 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	0.12 lbs/day
Phenol	ug/l	lbs/day	4.6E+06 ug/l	6.75E+04 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	0.09 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	76.34 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	176.17 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	1761.70 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	4.26E+04 lbs/day
Benzo(a)anthracene (P)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day

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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	161.49 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	0.13 lbs/day
Toluene	ug/l	lbs/day	200000.0 ug/l	2936.17 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	1.19 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	7.71 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	0.03 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.03 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.03 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 1242)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 1254)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 1221)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 1232)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 1248)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 1260)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 1016)	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		
<b>Metals</b>				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	63.13 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				

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Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	3229.79 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	67.53 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.09 lbs/day
Zinc				

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

### **VII. Mathematical Modeling of Stream Quality**

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

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

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

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

- (1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.
- (2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

### **VIII. Modeling Information**

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

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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		Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
	Low Flow cfs	Critical							
Summer (Irrig. Season)	0.0		20.0	8.4	0.10	0.50	10.31	0.00	1528.0
Fall	0.0		12.0	8.4	0.10	0.50	---	0.00	1528.0
Winter	0.0		4.0	8.4	0.10	0.50	---	0.00	1528.0
Spring	0.0		12.0	8.4	0.10	0.50	---	0.00	1528.0
Dissolved Metals	Al ug/l	As ug/l		Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l
All Seasons	1.59*	0.53*		0.053*	0.53*	2.65*	0.53*	0.83*	0.53*
Dissolved Metals	Hg ug/l	Ni ug/l		Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l		
All Seasons	0.0000	0.53*		1.06*	0.1*	0.053*	10.0		* 1/2 MDL

**Projected Discharge Information**

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	1.76000	17.0	1174.00	8.61450
Fall	1.76000	12.0		
Winter	1.76000	8.0		
Spring	1.76000	13.0		

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

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**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	1.760 MGD	2.723 cfs
Fall	1.760 MGD	2.723 cfs
Winter	1.760 MGD	2.723 cfs
Spring	1.760 MGD	2.723 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1.76 MGD. If the discharger is allowed to have a flow greater than 1.76 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 >	100.0% Effluent	[Chronic]

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	366.9 lbs/day
Fall	25.0 mg/l as BOD5	366.9 lbs/day
Winter	25.0 mg/l as BOD5	366.9 lbs/day
Spring	25.0 mg/l as BOD5	366.9 lbs/day

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

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

<b>Season</b>	<b>Concentration</b>
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:

<b>Season</b>	<b>Concentration</b>	<b>Load</b>
Summer	4 Day Avg. - Chronic	1.6 mg/l as N      22.9 lbs/day
	1 Hour Avg. - Acute	5.7 mg/l as N      83.5 lbs/day
Fall	4 Day Avg. - Chronic	1.7 mg/l as N      24.8 lbs/day
	1 Hour Avg. - Acute	5.6 mg/l as N      82.4 lbs/day
Winter	4 Day Avg. - Chronic	1.6 mg/l as N      23.8 lbs/day
	1 Hour Avg. - Acute	5.6 mg/l as N      81.7 lbs/day
Spring	4 Day Avg. - Chronic	1.7 mg/l as N      24.8 lbs/day
	1 Hour Avg. - Acute	5.6 mg/l as N      82.4 lbs/day

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

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

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

<b>Season</b>	<b>Concentration</b>	<b>Load</b>
Summer	4 Day Avg. - Chronic	0.011 mg/l      0.16 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l      0.28 lbs/day
Fall	4 Day Avg. - Chronic	0.011 mg/l      0.16 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l      0.28 lbs/day
Winter	4 Day Avg. - Chronic	0.011 mg/l      0.16 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l      0.28 lbs/day
Spring	4 Day Avg. - Chronic	0.011 mg/l      0.16 lbs/day
	1 Hour Avg. - Acute	0.019 mg/l      0.28 lbs/day

**Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards**

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Season		Concentration	Load
Summer	Maximum, Acute	3000.5 mg/l	22.02 tons/day
Fall	Maximum, Acute	3000.5 mg/l	22.02 tons/day
Winter	Maximum, Acute	3000.5 mg/l	22.02 tons/day
Spring	4 Day Avg. - Chronic	3000.5 mg/l	22.02 tons/day

Colorado Salinity Form Limits      Determined by Permitting Section

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

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 474.97 mg/l):

	4 Day Average		1 Hour Average		Load
	Concentration	Load	Concentration	Load	
Aluminum	N/A	N/A	750.3	ug/l	11.0 lbs/day
Arsenic	190.07 ug/l	1.8 lbs/day	340.1	ug/l	5.0 lbs/day
Cadmium	0.86 ug/l	0.0 lbs/day	10.4	ug/l	0.2 lbs/day
Chromium III	308.85 ug/l	2.9 lbs/day	6,461.8	ug/l	94.8 lbs/day
Chromium VI	11.00 ug/l	0.1 lbs/day	16.0	ug/l	0.2 lbs/day
Copper	35.33 ug/l	0.3 lbs/day	60.8	ug/l	0.9 lbs/day
Iron	N/A	N/A	1,000.4	ug/l	14.7 lbs/day
Lead	23.13 ug/l	0.2 lbs/day	593.6	ug/l	8.7 lbs/day
Mercury	0.01 ug/l	0.0 lbs/day	2.4	ug/l	0.0 lbs/day
Nickel	194.98 ug/l	1.8 lbs/day	1,753.7	ug/l	25.7 lbs/day
Selenium	4.60 ug/l	0.0 lbs/day	20.0	ug/l	0.3 lbs/day
Silver	N/A ug/l	N/A lbs/day	55.2	ug/l	0.8 lbs/day
Zinc	448.76 ug/l	4.3 lbs/day	448.8	ug/l	6.6 lbs/day
Cyanide	5.20 ug/l	0.0 lbs/day	22.0	ug/l	0.3 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	6.0 Deg. C.	42.8 Deg. F
Spring	14.0 Deg. C.	57.2 Deg. F

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

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

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	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aldrin			1.5E+00	ug/l 3.41E-02 lbs/day
Chlordane	4.30E-03 ug/l	6.31E-02 lbs/day	1.2E+00	ug/l 2.72E-02 lbs/day
DDT, DDE	1.00E-03 ug/l	1.47E-02 lbs/day	5.5E-01	ug/l 1.25E-02 lbs/day
Dieldrin	1.90E-03 ug/l	2.79E-02 lbs/day	1.3E+00	ug/l 2.84E-02 lbs/day
Endosulfan	5.60E-02 ug/l	8.22E-01 lbs/day	1.1E-01	ug/l 2.50E-03 lbs/day
Endrin	2.30E-03 ug/l	3.38E-02 lbs/day	9.0E-02	ug/l 2.04E-03 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l 2.27E-04 lbs/day
Heptachlor	3.80E-03 ug/l	5.58E-02 lbs/day	2.6E-01	ug/l 5.90E-03 lbs/day
Lindane	8.00E-02 ug/l	1.17E+00 lbs/day	1.0E+00	ug/l 2.27E-02 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l 6.81E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l 2.27E-04 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l 9.08E-04 lbs/day
PCB's	1.40E-02 ug/l	2.05E-01 lbs/day	2.0E+00	ug/l 4.54E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	1.91E+02 lbs/day	2.0E+01	ug/l 4.54E-01 lbs/day
Toxephene	2.00E-04 ug/l	2.94E-03 lbs/day	7.3E-01	ug/l 1.66E-02 lbs/day

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

In-stream criteria of downstream segments for Pollution Indicators would be met by achieving the following effluent targets

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	73.4 lbs/day
Nitrates as N	4.0 mg/l	58.7 lbs/day
Total Phosphorus as P	0.05 mg/l	0.7 lbs/day
Total Suspended Solids	90.0 mg/l	1320.8 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:

Toxic Organics	Maximum Concentration	
	Concentration	Load
Acenaphthene	2.70E+03 ug/l	3.96E+01 lbs/day
Acrolein	7.80E+02 ug/l	1.15E+01 lbs/day
Acrylonitrile	6.60E-01 ug/l	9.69E-03 lbs/day
Benzene	7.10E+01 ug/l	1.04E+00 lbs/day
Benzidine	ug/l	lbs/day

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Carbon tetrachloride	4.40E+00 ug/l	6.46E-02 lbs/day
Chlorobenzene	2.10E+04 ug/l	3.08E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.70E-04 ug/l	1.13E-05 lbs/day
1,2-Dichloroethane	9.90E+01 ug/l	1.45E+00 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.90E+00 ug/l	1.31E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.20E+01 ug/l	6.17E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.10E+01 ug/l	1.61E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.40E+00 ug/l	2.06E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.30E+03 ug/l	6.31E+01 lbs/day
2,4,6-Trichlorophenol	6.50E+00 ug/l	9.54E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.70E+02 ug/l	6.90E+00 lbs/day
2-Chlorophenol	4.00E+02 ug/l	5.87E+00 lbs/day
1,2-Dichlorobenzene	1.70E+04 ug/l	2.50E+02 lbs/day
1,3-Dichlorobenzene	2.60E+03 ug/l	3.82E+01 lbs/day
1,4-Dichlorobenzene	2.60E+03 ug/l	3.82E+01 lbs/day
3,3'-Dichlorobenzidine	7.70E-02 ug/l	1.13E-03 lbs/day
1,1-Dichloroethylene	3.20E+00 ug/l	4.70E-02 lbs/day
1,2-trans-Dichloroethylene 1		
2,4-Dichlorophenol	7.90E+02 ug/l	1.16E+01 lbs/day
1,2-Dichloropropane	3.90E+01 ug/l	5.73E-01 lbs/day
1,3-Dichloropropylene	1.70E+03 ug/l	2.50E+01 lbs/day
2,4-Dimethylphenol	2.30E+03 ug/l	3.38E+01 lbs/day
2,4-Dinitrotoluene	9.10E+00 ug/l	1.34E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.40E-01 ug/l	7.93E-03 lbs/day
Ethylbenzene	2.90E+04 ug/l	4.26E+02 lbs/day
Fluoranthene	3.70E+02 ug/l	5.43E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.70E+05 ug/l	2.50E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.60E+03 ug/l	2.35E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.60E+02 ug/l	5.29E+00 lbs/day
Dichlorobromomethane(HM)	2.20E+01 ug/l	3.23E-01 lbs/day
Chlorodibromomethane (HM)	3.40E+01 ug/l	4.99E-01 lbs/day
Hexachlorocyclopentadiene	1.70E+04 ug/l	2.50E+02 lbs/day
Isophorone	6.00E+02 ug/l	8.81E+00 lbs/day
Naphthalene		
Nitrobenzene	1.90E+03 ug/l	2.79E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.40E+04 ug/l	2.06E+02 lbs/day
4,6-Dinitro-o-cresol	7.65E+02 ug/l	1.12E+01 lbs/day

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N-Nitrosodimethylamine	8.10E+00 ug/l	1.19E-01 lbs/day
N-Nitrosodiphenylamine	1.60E+01 ug/l	2.35E-01 lbs/day
N-Nitrosodi-n-propylamine	1.40E+00 ug/l	2.06E-02 lbs/day
Pentachlorophenol	8.20E+00 ug/l	1.20E-01 lbs/day
Phenol	4.60E+06 ug/l	6.75E+04 lbs/day
Bis(2-ethylhexyl)phthalate	5.90E+00 ug/l	8.66E-02 lbs/day
Butyl benzyl phthalate	5.20E+03 ug/l	7.63E+01 lbs/day
Di-n-butyl phthalate	1.20E+04 ug/l	1.76E+02 lbs/day
Di-n-octyl phthalate		
Diethyl phthalate	1.20E+05 ug/l	1.76E+03 lbs/day
Dimethyl phthalate	2.90E+06 ug/l	4.26E+04 lbs/day
Benzo(a)anthracene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Benzo(a)pyrene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Benzo(b)fluoranthene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Benzo(k)fluoranthene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Chrysene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.10E-02 ug/l	4.55E-04 lbs/day
Pyrene (PAH)	1.10E+04 ug/l	1.61E+02 lbs/day
Tetrachloroethylene	8.90E+00 ug/l	1.31E-01 lbs/day
Toluene	2.00E+05 ug/l	2.94E+03 lbs/day
Trichloroethylene	8.10E+01 ug/l	1.19E+00 lbs/day
Vinyl chloride	5.25E+02 ug/l	7.71E+00 lbs/day

**Pesticides**

Aldrin	1.40E-04 ug/l	2.06E-06 lbs/day
Dieldrin	1.40E-04 ug/l	2.06E-06 lbs/day
Chlordane	5.90E-04 ug/l	8.66E-06 lbs/day
4,4'-DDT	5.90E-04 ug/l	8.66E-06 lbs/day
4,4'-DDE	5.90E-04 ug/l	8.66E-06 lbs/day
4,4'-DDD	8.40E-04 ug/l	1.23E-05 lbs/day
alpha-Endosulfan	2.00E+00 ug/l	2.94E-02 lbs/day
beta-Endosulfan	2.00E+00 ug/l	2.94E-02 lbs/day
Endosulfan sulfate	2.00E+00 ug/l	2.94E-02 lbs/day
Endrin	8.10E-01 ug/l	1.19E-02 lbs/day
Endrin aldehyde	8.10E-01 ug/l	1.19E-02 lbs/day
Heptachlor	2.10E-04 ug/l	3.08E-06 lbs/day
Heptachlor epoxide		

**PCB's**

PCB 1242 (Arochlor 1242)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1254 (Arochlor 1254)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1221 (Arochlor 1221)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1232 (Arochlor 1232)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1248 (Arochlor 1248)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1260 (Arochlor 1260)	4.50E-05 ug/l	6.61E-07 lbs/day
PCB-1016 (Arochlor 1016)	4.50E-05 ug/l	6.61E-07 lbs/day

**Pesticide**

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Toxaphene	7.50E-04 ug/l	1.10E-05 lbs/day
<b>Metals</b>		
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		
<b>Dioxin</b>		
Dioxin (2,3,7,8-TCDD)	1.40E-08 ug/l	2.06E-10 lbs/day

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

	<b>Class 4 Acute Agricultural ug/l</b>	<b>Class 3 Acute Aquatic Wildlife ug/l</b>	<b>Acute Toxics Drinking Water Source ug/l</b>	<b>Acute Toxics Wildlife ug/l</b>	<b>1C Acute Health Criteria ug/l</b>	<b>Acute Most Stringent ug/l</b>	<b>Class 3 Chronic Aquatic Wildlife ug/l</b>
Aluminum		750.3				750.3	N/A
Antimony				4301.6		4301.6	
Arsenic	100.0	340.1			0.0	100.0	190.1
Barium						0.0	
Beryllium						0.0	
Cadmium	10.0	10.4			0.0	10.0	0.9
Chromium (III)		6461.8			0.0	6461.8	308.9
Chromium (VI)	100.0	16.0			0.0	16.00	11.00
Copper	200.1	60.8				60.8	35.3
Cyanide		22.0	220080.8			22.0	5.2
Iron		1000.4				1000.4	
Lead	100.0	593.6			0.0	100.0	23.1
Mercury		2.40		0.15	0.0	0.15	0.012
Nickel		1753.7		4601.7		1753.7	195.0
Selenium	50.0	20.0			0.0	20.0	4.6
Silver		55.2			0.0	55.2	

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Thallium		6.3	6.3	
Zinc	448.8		448.8	448.8
Boron	750.3		750.3	

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

	<b>WLA Acute ug/l</b>	<b>WLA Chronic ug/l</b>	
Aluminum	750.3	N/A	
Antimony	4301.58		
Arsenic	100.0	190.1	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	10.0	0.9	
Chromium (III)	6461.8	309	
Chromium (VI)	16.0	11.0	
Copper	60.8	35.3	
Cyanide	22.0	5.2	
Iron	1000.4		
Lead	100.0	23.1	
Mercury	0.150	0.012	
Nickel	1753.7	195	
Selenium	20.0	4.6	
Silver	55.2	N/A	
Thallium	6.3		
Zinc	448.8	448.8	
Boron	750.28		

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

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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.

**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.

David Wham  
Utah Division of Water Quality  
801-538-6052  
File Name: Sunnyside\_Cogen\_WLA\_4-27-18.xls

**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 0.806	REAER. Coeff. (Ka)20 (Ka)/day 3060.102	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 1913.360	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.087
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 1.611	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(CI)20 1/day 32.000	TRC K(CI)T 1/day 10.095

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BENTHIC	BENTHIC
DEMAND	DEMAND
(SOD)20	(SOD)T
gm/m2/day	gm/m2/day
1.000	0.287

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