

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. UT0020095

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

**THE CITY OF DUCHESNE, UTAH**

is hereby authorized to discharge from its wastewater treatment facility located approximately one mile east of Duchesne City, with the outfall(s) located at latitude 40N 10' 10" and longitude 110E 21' 30" to receiving waters named the

**DUCHEСNE RIVER**

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on September 1, 2019

This permit expires at midnight on June 30, 2024.

Signed this 13<sup>th</sup> day of August, 2019.

  
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Jim Harris  
Acting Director



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## I. **DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS**

A. **Description of Discharge Point.** 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>
001	A gated discharge pipe from the last cell on the northeast side of the lagoon system, located at Latitude 40° N 10' 10" and Longitude 110° W 21' 30"

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

### C. **Specific Limitations and Self-Monitoring Requirements.**

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

Parameter	Effluent Limitations a/				
	Yearly Maximum	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow	NA	NA	NA	NA	0.42
BOD <sub>5</sub> , mg/L BOD <sub>5</sub> Min. % Removal	NA 85	25 NA	35 NA	NA NA	NA NA
TSS, mg/L TSS Min. % Removal	NA	25 85	35 NA	NA NA	NA NA
E-Coli, No./100mL	NA	126	157	NA	NA
TRC, mg/L	NA	NA	NA	NA	0.43
pH, Standard Units	NA	NA	NA	6.5	9.0
TDS, Effluent, tons/year, b/	366	NA	NA	NA	1
Dissolved Oxygen, mg/L	NA	≥ 5.0	NA	NA	NA
Total Phosphorus lbs/year	1,279	NA	NA	NA	NA

NA – Not Applicable

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow c/ d/	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent e/ Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
TSS, Influent e/ Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
E. coli	Monthly	Grab	No./100mL
TRC	Monthly	Grab	mg/L
pH	Monthly	Instantaneous	SU
TDS, Effluent	Monthly	Grab	mg/L
TDS, Effluent, tons/Day /b tons/year	Monthly/ Yearly	Grab Grab	Tons/day Tons/year
Dissolved Oxygen	Monthly	Instantaneous	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Total Kjeldahl Nitrogen, TKN (as N)			
Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Nitrate, NO <sub>3</sub>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub>	Monthly	Composite	mg/L
Nitrogen, Total	Monthly	Composite	mg/L, kg

- a/ See Definitions, Part VIII, for definition of terms.
- b/ The total TDS discharged shall be limited to an average of 2,000 lbs/day (one ton per day) or 366 tons per year as a sum total from all discharge points.
- c/ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- d/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- e/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

**D. Reporting of Wastewater Monitoring Results.** Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), post-marked or submitted through NetDMR no later than the 28<sup>th</sup> day of each month following the previously completed monthly reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including

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whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part IV.G)*, and submitted to the Director, Division of Water Quality and to EPA at the following addresses:

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

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**II. INDUSTRIAL PRETREATMENT PROGRAM**

**A. Definitions.**

For this section the following definitions shall apply:

1. Indirect Discharge means the introduction of pollutants into a POTW from any non-domestic source regulated under section 307 (b), (c) or (d) of the Act.
2. Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
  - a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
  - b. Therefore is a cause of a violation of any requirement of the POTW's permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.
3. Local Limit is defined as a limit designed to prevent pass through and/or interference. And is developed in accordance with 40 CFR 403.5(c).
4. Pass Through means a discharge which exits the POTW into water of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a violation of any requirement of the POTW's UPDES permit (including an increase in the magnitude or duration of a violation).
5. POTW or publicly owned treatment works means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.
6. Significant Industrial User (SIU) is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:
  - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
  - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
  - c. Is subject to Categorical Pretreatment Standards, or
  - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

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7. User or Industrial User (IU) means a source of Indirect Discharge.
- B. Pretreatment Reporting Requirements.  
Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop a State-approved industrial pretreatment program at this time. However, in order to determine if development of an industrial pretreatment program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.C.1*, and submit it to the Division of Water Quality within **sixty (60) calendar days** of the effective date of this permit.
- C. Industrial Waste Survey (IWS).
  1. As required by *Part II.B.1*. the industrial waste survey consists of:
    - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
    - b. Determination of the qualitative and quantitative characteristics of each discharge, and
    - c. Appropriate production data.
  2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
  3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
  4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act* (RCRA).
  5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.
- D. General and Specific Prohibitions
  1. Developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:

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- a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140°F (60°C);
  - b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
  - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
  - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;
  - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
  - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
  - g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,
  - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
    - i. Any pollutant that causes pass through or interference at the POTW.
2. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307 of the Water Quality Act of 1987 as amended (WQA)*. (*See 40 CFR, Subchapter N, Parts 400 through 500*, for specific information).

**E. Signification Industrial Users Discharging to the POTW.**

The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;

1. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301 or 306 of the WQA* if it were directly discharging those pollutants;
2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and
3. For the purposes of this section, adequate notice shall include information on:

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- a. The quality and quantity of effluent to be introduced into such treatment works; and,
  - b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.
4. Any SIU that must comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act* (RCRA).

**F. Change of Conditions.**

At such time as a specific pretreatment limitation becomes applicable to an industrial user of the permittee, the Director may, as appropriate, do the following:

1. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;
2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations* at 40 CFR 403;
3. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste; and/or,
4. Require the permittee to develop an approved pretreatment program.

**G. Legal Action.**

The Director retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level. If the permittee has failed to properly delineate maximum acceptable industrial contributor levels, the Director will look primarily to the permittee as the responsible party.

**H. Local Limits**

If local limits are developed per R317-8-8.5(4)(b) to protect the POTW from pass-through or interference, then the POTW must submit limits to DWQ for review and public notice, as required by R317-8-8.5(4)(c).

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

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.
- B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10 and 40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. 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

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**H. Twenty-four Hour Notice of Noncompliance Reporting.**

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
  - a. Any noncompliance which may endanger health or the environment;
  - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part IV.G, Bypass of Treatment Facilities.*);
  - c. Any upset which exceeds any effluent limitation in the permit (See *Part IV.H, Upset Conditions.*);
  - 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.

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5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*
- I. **Other Noncompliance Reporting.** Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part III.H.3*
- J. **Inspection and Entry** The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
  1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
  2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
  4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,
  5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law will be permitted to enter without delay for the purposes of performing their responsibilities.

#### **IV. COMPLIANCE RESPONSIBILITIES**

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

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G. Bypass of Treatment Facilities.

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

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- (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 III.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

**H. Upset Conditions.**

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

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- d. The permittee complied with any remedial measures required under *Part IV.D, Duty to Mitigate.*
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

**V. GENERAL REQUIREMENTS**

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

**PART V**  
**DISCHARGE PERMIT NO. UT0020095**

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

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

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

**PART V**  
**DISCHARGE PERMIT NO. UT0020095**

- I. Availability of Reports. Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.
- J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers. This permit may be automatically transferred to a new permittee if:
  - 1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
  - 2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
  - 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the

**PART V**  
**DISCHARGE PERMIT NO. UT0020095**

appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
  2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
  3. Revisions to the current CWA § 208 area wide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state or federal regulations.

Should the RCWRF change their disposal methods or the biosolids generation and handling processes of the plant, the RCWRF must notify the Director at least 180 days in advance. This includes, but is not limited to, the addition or removal of any biosolids treatment units (e.g., digesters, drying beds, etc.) and/or any other change that would require a major modification of the permit.

- Q. Toxicity Limitation - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.;
- R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting

**PART V**  
**DISCHARGE PERMIT NO. UT0020095**

requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

**VI. DEFINITIONS**

**A. Wastewater.**

1. The “7-day (and weekly) average”, other than for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for e-coli bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. “Act,” means the *Utah Water Quality Act*.
4. “Bypass,” means the diversion of waste streams from any portion of a treatment facility.
5. “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;

**PART VI**  
**DISCHARGE PERMIT NO. UT0020095**

- 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.
6. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
  7. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.
  8. "EPA," means the United States Environmental Protection Agency.
  9. "Director," means Director of the Utah Water Quality Board.
  10. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
  11. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
  12. "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.
  13. "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 / STATEMENT OF BASIS  
DUCHESS CITY WASTEWATER TREATMENT LAGOONS  
UPDES PERMIT NUMBER: UT0020095  
RENEWAL PERMIT  
MINOR MUNICIPAL**

## FACILITY CONTACT

Rodney Rowley  
Mayor, Duchesne City  
PO Box 974  
165 South Center Street  
Duchesne, Utah 84021  
Telephone (435) 738-2464

## **DESCRIPTION OF FACILITY**

The Duchesne Wastewater Treatment Facility was last expanded and upgraded in 1988. The facility currently consists of four cell discharging lagoon system with an area totaling approximately 300 ft. by 600 ft., and is designed for organic loadings of 410 lbs/day for Five Day Biochemical Oxygen Demand ( $BOD_5$ ) and 410 lbs/day for Total Suspended Solids (TSS). Average design flow is 0.42 Million Gallons per Day (MGD) with a population equivalent of 2400 people. The facility currently serves the City of Duchesne with a current population of about 1700, and is located approximately one mile east of Duchesne at North Latitude  $40^{\circ} 10' 10''$  and West Longitude  $110^{\circ} 21' 30''$ .

The City has recently undergone a project to remove solids from the lagoons and to increase the stability of the lagoon cells from erosion by the Duchesne River.

## **DESCRIPTION OF DISCHARGE**

The facility was designed as a total containment lagoon and has been run as such since October 1988 as a result of expansion and upgrades to the system. However, the facility occasionally discharges and DMRs submitted by the permittee indicate these intermittent discharges result in occasional violations of permit limits. The violations were mainly for BOD<sub>5</sub> and TSS percent removal. These violations are a result of chronically low strength influent, which is an indication of inflow and infiltration problems with the collection system.

## **RECEIVING WATERS AND STREAM CLASSIFICATION**

Final discharge is to the Duchesne River classified as 1C, 2B, 3A and 4 according to *Utah Administrative Code (UAC) R317-2-12*:

- |          |  |
|----------|--|
| Class 1C | -protected for domestic purposes with prior treatment by treatment processes as required by the Utah Department of Health. |
| Class 2B | -protected for secondary contact recreation such as boating, wading or similar uses.                                       |

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

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

### **BASIS FOR EFFLUENT LIMITATIONS**

Limitations on total suspended solids (TSS), biochemical oxygen demand ( $BOD_5$ ), *E. Coli*, pH and percent removal for TSS and  $BOD_5$  are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. Total residual chlorine (TRC) and Dissolved Oxygen (DO) are water quality limited and are based on a Wasteload Analysis. These limitations should be sufficiently protective of water quality in order to meet State water quality standards in the receiving waters.

Discharges from the Duchesne City Wastewater facility eventually reach the Colorado River, which places it within the purview of the Colorado River Basin Salinity Control Forum (CRBSCF). Total dissolved solids (TDS) are limited in loading by the CRBSCF and in February 1977 they produced the “Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program” (Policy). This Policy is still in effect and under Part II (Municipal Discharges) it states that the effluent shall not exceed the culinary intake (CI) water supply by more than 400 mg/L (TDS). However, the Policy also states that the requirements for establishing incremental increases may be waived in those cases where the incremental salt load reaching the main stem of the Colorado River is less than one ton per day or 366 tons per year.” The Duchesne City Lagoons are an intermittent discharger, discharging less than 366 tons per year total.

The Wasteload Analysis indicates that seasonal ammonia limits in the range of 35.4-85.5 mg/L should be applied (see ADDENDUM), however, since these limits are substantially higher than what should reasonably be expected in the discharge, there will be no effluent limitations or monitoring requirements for this parameter.

### **REASONABLE POTENTIAL ANALYSIS**

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

A qualitative RP check was performed on metals to determine if there was enough data to perform a reasonable potential analysis on the outfall. Because of their process, treating domestic sewage with no industrial or categorical users, Duchesne City was not required to sample metals during the previous permit cycle, and as a result there is no metals data to analyze for RP.

### **TBPEL RULE**

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. No TBPEL will be instituted for discharging treatment lagoons. Instead, each discharging lagoon will be evaluated to determine the current annual average total phosphorus load measured in pounds per year based on monthly average flow rates and concentrations. Absent field data to determine these loads, and in case of intermittent discharging lagoons, the phosphorus load cap will be estimated by the Director. A cap of 125% of the current annual total phosphorus load will be established and referred to as phosphorus loading cap. Once the lagoon's phosphorus loading cap has been reached, the owner of the facility will have five years to construct treatment processes or implement treatment alternatives to prevent the total phosphorus loading cap from being exceeded. The load cap became effective July 1, 2018.

The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2015:

R317-1-3.3, E, 1, a. Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, E, 1, b. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

In R317-1-3.3, E, 3 the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

The reported monthly loading is calculated as shown here;

$$\text{Monthly Mass Loading, } \frac{\text{lbs}}{\text{Month}} = (\text{Ave Flow}) * (\text{Ave Concentration}) * \left( 8.34 \frac{\text{lbs}}{\text{gal}} \right) * \left( \frac{\text{Days Discharged}}{\text{Month}} \right)$$

The annual total phosphorus loading

$$\text{Annual Mass Loading, lbs} = \text{Sum} \left( \text{Monthly Mass Loading, } \frac{\text{lbs}}{\text{Month}} \right)$$

Parameter	Effluent Limitations a/				
	Yearly Maximum	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow	NA	NA	NA	NA	0.42
BOD <sub>5</sub> , mg/L	NA	25	35	NA	NA
BOD <sub>5</sub> Min. % Removal		85	NA	NA	NA
TSS, mg/L	NA	25	35	NA	NA
TSS Min. % Removal		85	NA	NA	NA
E-Coli, No./100mL	NA	126	157	NA	NA
TRC, mg/L	NA	NA	NA	NA	0.43
pH, Standard Units	NA	NA	NA	6.5	9.0
TDS, Effluent, tons/year, b/	366	NA	NA	NA	1
Dissolved Oxygen, mg/L	NA	≥ 5.0	NA	NA	NA
Total Phosphorus lbs/year	1,279	NA	NA	NA	NA

NA – Not Applicable

### **SIGNIFICANT CHANGES**

An annual total phosphorus loading cap (loading cap) was added to the permit to conform to *UAC R317-3.3*. The facility is permitted to discharge 1,279 lbs. of total phosphorus per year. *UAC R317-1-3.3.B.1* requires that DWQ conduct an evaluation of discharging lagoons to determine current annual average total phosphorus loads to receiving waters. Based on the evaluation a phosphorus loading cap will be established of 125% of the current discharged load. This facility did not discharge during the evaluation period thus no phosphorus loading cap could be set. A phosphorus loading cap will be set when an evaluation of current annual loads can be conducted based off facility discharge.

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

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

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow c/ d/	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent e/ Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
TSS, Influent e/ Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
E. coli	Monthly	Grab	No./100mL
TRC	Monthly	Grab	mg/L
pH	Monthly	Instantaneous	SU
TDS, Effluent	Monthly	Grab	mg/L
TDS, Effluent, tons/Day /b tons/year	Monthly/ Yearly	Grab Grab	Tons/day Tons/year
Dissolved Oxygen	Monthly	Instantaneous	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Total Kjeldahl Nitrogen, TKN (as N)			
Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Nitrate, NO <sub>3</sub>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub>	Monthly	Composite	mg/L
Nitrogen, Total	Monthly	Composite	mg/L, kg

- a/ See Definitions, *Part VIII*, for definition of terms.
- b/ The total TDS discharged shall be limited to an average of 2,000 lbs/day (one ton per day) or 366 tons per year as a sum total from all discharge points.
- c/ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- d/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- e/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

### **STORM WATER REQUIREMENTS**

A treatment works facility treating domestic sewage or any other sewage sludge, a wastewater treatment device or system used in the storage, treatment, recycling and reclamation of municipal sewage, and lands dedicated to the disposal of sewage sludge that are located within the confines of the facility is required to submit a Notice of Intent (NOI) specifically for the Utah Pollutant Discharge Elimination System Multi Sector General Permit for Industrial Activities by January 1, 2017, if the treatment facility meets one of the following two criteria; 1) any facility that holds an approved pretreatment program as described in 40CFR Part 403, or, 2) has a design flow of 1.0 MGD or greater. Duchesne City does not meet the above mentioned criteria required for

permit coverage, thus the facility does not need a UPDES Multi Sector General Permit for Industrial Activities at this time.

### **PRETREATMENT REQUIREMENTS**

The permittee has not been designated for a pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than one (1) MGD, the permittee has not notified the DWQ of any instances of pass through or interference from industrial users, and based on research of the area there are no known categorical industries discharging to the wastewater treatment plant.

Although the permittee does not have a State-approved pretreatment program, any wastewater discharges to the sanitary sewer by industrial users are subject to Federal, State and local pretreatment regulations. Pursuant to *Section 307* of the *Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is required that the permittee submit any local limits that are developed to the Division of Water Quality for review and if needed public notice.

### **BIOMONITORING REQUIREMENTS**

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring)*. 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*.

Based on said Utah guidelines, the Duchesne Wastewater Treatment Facility is not a major municipal discharger and has not been required to develop an industrial pretreatment program. To the best of our knowledge this facility has no significant industrial or categorical industrial users, and a reasonable potential for toxicity does not exist. In the event of any unforeseen toxicity occurring at the facility the permit does contain a toxicity limitation-reopener provision.

## **BIOSOLIDS MANAGEMENT REQUIREMENTS**

As required by the 1987 amendments to the Federal *Clean Water Act*, EPA has established toxic contaminant criteria and other requirements for sewage sludge use and disposal by works treating domestic sewage. These regulations are found in *Title 40* of the *Code of Federal Regulations, Part 503*. The biosolids (sludge) management program was delegated to the State of Utah on June 14, 1996. The 503 regulations are implemented by the issuance of permits, as needed and appropriate.

Because the permitted facility is a lagoon, there is no regular biosolids production. Therefore, the requirements of 503 do not apply unless or until sludge is removed from the bottom of the lagoon and used or disposed of in some way. When planning biosolids removal, the permittee should contact the DWQ for guidance.

## **PERMIT DURATION**

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

Drafted by  
Lonnie Shull, UPDES, Biomonitoring  
Daniel Griffin, Discharge, Biosolids  
Lucy Parham, TMDL  
Jennifer Robinson, Pretreatment  
Dave Wham, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

## PUBLIC NOTICE

Began: May 14, 2019  
Ended: June 13, 2019

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

The Public Notice of the draft permit was published in the Vernal Express and also on the Division of Water Quality's website from May 14, 2019 – June 13, 2019. No comments were received during the public comment period.

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.

Duchesne City Lagoons FSSOB  
**UT0020095**  
Page 8

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 (NEWSPAPER OF RECORD FOR AREA).

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

**ADDENDUM TO FSSOB**

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

**Responsiveness Summary**

(Explain any comments received and response sent. Actual letters can be referenced, but not required to be included).

DWQ-2019-002889

## **ATTACHMENT 1**

*Industrial Waste Survey*

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# Industrial Pretreatment Wastewater Survey



Do you periodically experience any of the following treatment works problems:

- foam, floaties or unusual colors
- plugged collection lines caused by grease, sand, flour, etc.
- discharging excessive suspended solids, even in the winter
- smells unusually bad
- waste treatment facility doesn't seem to be treating the waste right

Perhaps the solution to a problem like one of these may lie in investigating the types and amounts of wastewater entering the sewer system from industrial users.

An industrial user (IU) is defined as a non-domestic user discharging to the waste treatment facility which meets any of the following criteria:

- 1. has a lot of process wastewater (5% of the flow at the waste treatment facility or more than 25,000 gallons per work day.)**

Examples: Food processor, dairy, slaughterhouse, industrial laundry.

- 2. is subject to Federal Categorical Pretreatment Standards;**

Examples: metal plating, cleaning or coating of metals, bluing of metals, aluminum extruding, circuit board manufacturing, tanning animal skins, pesticide formulating or packaging, and pharmaceutical manufacturing or packaging.

- 3. is a concern to the POTW.**

Examples: septage hauler, restaurant and food service, car wash, hospital, photo lab, carpet cleaner, commercial laundry.

All users of the water treatment facility are **prohibited** from making the following types of discharges:

1. A discharge which creates a fire or explosion hazard in the collection system.
2. A discharge which creates toxic gases, vapor or fumes in the collection system.
3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.
4. An acidic discharge (low pH) which causes corrosive damage to the collection system.
5. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment facility.
6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

When the solution to a sewer system problem may be found by investigating the types and amounts of wastewater entering the sewer system discharged from IUs, it's appropriate to conduct an Industrial Waste Survey.

## An Industrial Waste Survey consists of:

### Step 1: Identify Industrial Users

Make a list of all the commercial and industrial sewer connections.

Sources for the list:

business license, building permits, water and wastewater billing, Chamber of Commerce, newspaper, telephone book, yellow pages.

Split the list into two groups:

domestic wastewater only--no further information needed  
everyone else (IUs)

### Step 2: Preliminary Inspection

Go visit each IU identified on the "everybody else" list.

Fill out the **Preliminary Inspection Form** during the site visit.

### Step 3: Informing the State

Please fax or send a copy of the Preliminary inspection form (both sides) to:

**Jennifer Robinson**

Division of Water Quality  
288 North 1460 West  
PO Box 144870  
Salt Lake City, UT 84114-4870

Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-mail: [jenrobinson@utah.gov](mailto:jenrobinson@utah.gov)

## **PRELIMINARY INSPECTION FORM**

**INSPECTION DATE** \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**Name of Business**

**Address** \_\_\_\_\_

**Person Contacted** \_\_\_\_\_

**Phone Number** \_\_\_\_\_

**Description of Business** \_\_\_\_\_

**Principal product or service:** \_\_\_\_\_

**Raw Materials used:** \_\_\_\_\_

**Production process is:**  **Batch**     **Continuous**     **Both**

**Is production subject to seasonal variation?**  **yes**     **no**  
**If yes, briefly describe seasonal production cycle.**

---

**This facility generates the following types of wastes (check all that apply):**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> <b>Domestic wastes</b>              | <b>(Restrooms, employee showers, etc.)</b>                    |
| 2. <input type="checkbox"/> <b>Cooling water, non-contact</b>   | 3. <input type="checkbox"/> <b>Boiler/Tower blowdown</b>      |
| 4. <input type="checkbox"/> <b>Cooling water, contact</b>       | 5. <input type="checkbox"/> <b>Process</b>                    |
| 6. <input type="checkbox"/> <b>Equipment/Facility wash-down</b> | 7. <input type="checkbox"/> <b>Air Pollution Control Unit</b> |
| 8. <input type="checkbox"/> <b>Storm water runoff to sewer</b>  | 9. <input type="checkbox"/> <b>Other describe</b>             |

**Wastes are discharged to (check all that apply):**

- |  |  |
|--|--|
| <input type="checkbox"/> <b>Sanitary sewer</b>   | <input type="checkbox"/> <b>Storm sewer</b>  |
| <input type="checkbox"/> <b>Surface water</b>    | <input type="checkbox"/> <b>Ground water</b> |
| <input type="checkbox"/> <b>Waste haulers</b>    | <input type="checkbox"/> <b>Evaporation</b>  |
| <input type="checkbox"/> <b>Other (describe)</b> |  |

**Name of waste hauler(s), if used**

---

**Is a grease trap installed? Yes    No**

**Is it operational? Yes    No**

**Does the business discharge a lot of process wastewater?**

- |  |                  |
|--|------------------|
| • <b>More than 5% of the flow to the waste treatment facility?</b> | <b>Yes    No</b> |
| • <b>More than 25,000 gallons per work day?</b>                    | <b>Yes    No</b> |

**Does the business do any of the following:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li><input type="checkbox"/> Adhesives</li><li><input type="checkbox"/> Aluminum Forming</li><li><input type="checkbox"/> Battery Manufacturing</li><li><input type="checkbox"/> Copper Forming</li><li><input type="checkbox"/> Electric &amp; Electronic Components</li><li><input type="checkbox"/> Explosives Manufacturing</li><li><input type="checkbox"/> Foundries</li><li><input type="checkbox"/> Inorganic Chemicals Mfg. or Packaging</li><li><input type="checkbox"/> Industrial Porcelain Ceramic Manufacturing</li><li><input type="checkbox"/> Iron &amp; Steel</li><li><input type="checkbox"/> Metal Finishing, Coating or Cleaning</li><li><input type="checkbox"/> Mining</li><li><input type="checkbox"/> Nonferrous Metals Manufacturing</li><li><input type="checkbox"/> Organic Chemicals Manufacturing or Packaging</li><li><input type="checkbox"/> Paint &amp; Ink Manufacturing</li><li><input type="checkbox"/> Pesticides Formulating or Packaging</li><li><input type="checkbox"/> Petroleum Refining</li><li><input type="checkbox"/> Pharmaceuticals Manufacturing or Packaging</li><li><input type="checkbox"/> Plastics Manufacturing</li><li><input type="checkbox"/> Rubber Manufacturing</li><li><input type="checkbox"/> Soaps &amp; Detergents Manufacturing</li><li><input type="checkbox"/> Steam Electric Generation</li><li><input type="checkbox"/> Tanning Animal Skins</li><li><input type="checkbox"/> Textile Mills</li></ul> | <ul style="list-style-type: none"><li><input type="checkbox"/> Car Wash</li><li><input type="checkbox"/> Carpet Cleaner</li><li><input type="checkbox"/> Dairy</li><li><input type="checkbox"/> Food Processor</li><li><input type="checkbox"/> Hospital</li><li><input type="checkbox"/> Laundries</li><li><input type="checkbox"/> Photo Lab</li><li><input type="checkbox"/> Restaurant &amp; Food Service</li><li><input type="checkbox"/> Septage Hauler</li><li><input type="checkbox"/> Slaughter House</li></ul> |
|--|--|

**Are any process changes or expansions planned during the next three years? Yes   No**  
**If yes, attach a separate sheet to this form describing the nature of planned changes or expansions.**

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Inspector

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Waste Treatment Facility

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Please send a copy of the preliminary inspection form (both sides) to:

Jennifer Robinson  
Division of Water Quality  
PO Box 144870  
Salt Lake City, Utah 84114-4870

Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-Mail: [jenrobinson@utah.gov](mailto:jenrobinson@utah.gov)

	Industrial User	Jurisdiction	SIC Codes	Categorical Standard Number	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	Facility Description
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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## **ATTACHMENT 2**

*Effluent Monitoring Data*

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# **Effluent Monitoring Data.**





## **ATTACHMENT 3**

*Wasteload Analysis*

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**Utah Division of Water Quality**

**Statement of Basis**

**ADDENDUM**

**Wasteload Analysis and Antidegradation Level I Review**

**Date:** February 25, 2019

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

**Facility:** Duchesne Lagoons, UPDES Permit No. UT0020095

**Receiving water:** Duchesne River (1C, 2B, 3A, 4)

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

Discharge

001 Lagoon effluent 0.42 MGD

Receiving Water

Per UAC R317-2-13XX, the designated beneficial uses of the Duchesne River and tributaries, from Myton Water Treatment Plant intake to headwaters are 1C, 2B, 3A, 4.

- *Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water*
- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

**Flow**

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for

**Utah Division of Water Quality  
Wasteload Analysis  
Duchesne Lagoons  
UPDES Permit No. UT0020095**

seven consecutive days with a ten year return frequency (7Q10). The 7Q10 was calculated using daily flow values obtained from Central Utah Water Conservancy District for flows from *Starvation Dam to the Strawberry River*, and from the *Knight Diversion bypass flow to the Duchesne River* for the period 1998-2018 (The Strawberry River flows into the Duchesne River just upstream of Duchesne Lagoons). The annual combined (both gauges) minimum 7 day mean flow was obtained for each year of record.

The calculated annual critical low flow condition (7Q10) for Discharge 001 is 30.0 cfs. Coincidentally, both the Strawberry and Duchesne Rivers had individual 7Q10 values of 15 cfs.

Receiving water quality was characterized using data from DWQ Monitoring Stations #4934510, STRAWBERRY R AB CNFL / DUCHESNE and #4934500, DUCHESNE R AB CNFL / STRAWBERRY R for the period 2006-2016. Because the 7Q10 flows from both waterbodies was the same, upstream water quality values were averaged (as opposed to flow weighted) between the two stations for each parameter.

**TMDL**

According to the Utah's 2016 303(d) Water Quality Assessment Report, the receiving water for the discharge; the Duchesne River from Myton to the confluence with the Strawberry River (AU UT14060003-006) is listed as fully supporting its beneficial uses. However, several impairments are present in downstream stream segments as outlined in Table 1.

**Table 1. Jordan River Segments and Impairments Downstream of Discharge.**

<b>Segment (moving downstream)</b>	<b>Assessment Unit</b>	<b>Impairment Cause</b>
Duchesne River and tributaries from confluence with Uinta River to Myton	UT14060003-02	TDS, E. coli, boron
Duchesne River and tributaries from Green River confluence to Uinta River confluence	UT14060003-01	TDS, E. coli

DWQ completed a TMDL for total dissolved solids in the Duchesne River Watershed in 2007 (UDWQ, 2007). The TMDL did not allocate a TDS WLA for Duchesne's lagoons, stating that the analysis of point source data revealed the impact of point source on TDS contributions to the Duchesne River was insignificant due to the small flow of the lagoons and the very intermittent nature of the discharge.

A TMDL has not been completed for the other impaired constituents, boron and E. coli. Although the WLA may show higher allowed effluent limits for these impaired constituents in Table 1 should be evaluated in the effluent against the end of pipe Water Quality Standards in Table 2 to determine whether or not they have reasonable potential to cause or contribute to the existing impairments.

**Table 2. End of pipe Criteria**

Constituent	Criteria
Boron	750 ug/l
E. coli	Secondary standards

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. The mixing zone model showed complete mixing within 2,500 feet for chronic conditions. Acute limits were calculated using 50% of the seasonal critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge were TDS, E. coli, and boron as determined by the impairment status of the receiving water and review of the previous permit.

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 002 should be based on 2.1 % 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 Addendums.

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.

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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: *Duchesne\_Lagoons\_WLADoc\_2-25-19.docx*  
Wasteload Analysis and Addendums: *Duchesne\_Lagoons\_WLA\_2-25-19.xlsm*

**References:**

Utah Division of Water Quality. 2012. *Utah Wasteload Analysis Procedures Version 1.0*.  
Utah Division of Water Quality. 2007, *TMDLs for Total Dissolved Solids in the Duchesne River Watershed*

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

**WASTELOAD ANALYSIS [WLA]**

**Addendum: Statement of Basis**

25-Feb-19

<b>Facilities:</b>	Duchesne Lagoons	<b>UPDES No:</b> UT-0020095
<b>Discharging to:</b>	Duchesne River	
<b>Design Flow:</b>	0.42 MGD	

**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**

Duchesne River:	1C, 2B, 3A, 4
Antidegradation Review:	Level I review completed. Level II review not required.

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

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	6.50 mg/l (30 Day Average) 5.00 mg/l (7Day Average) 4.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

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

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration	Load*	
Aluminum	87.00 ug/l**	0.305 lbs/day	750.00	ug/l	2.632 lbs/day
Arsenic	190.00 ug/l	0.667 lbs/day	340.00	ug/l	1.193 lbs/day
Cadmium	1.41 ug/l	0.005 lbs/day	3.49	ug/l	0.012 lbs/day
Chromium III	149.08 ug/l	0.523 lbs/day	3119.12	ug/l	10.945 lbs/day
Chromium VI	11.00 ug/l	0.039 lbs/day	16.00	ug/l	0.056 lbs/day
Copper	16.53 ug/l	0.058 lbs/day	26.30	ug/l	0.092 lbs/day
Iron			1000.00	ug/l	3.509 lbs/day
Lead	7.46 ug/l	0.026 lbs/day	191.38	ug/l	0.672 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.008 lbs/day
Nickel	91.88 ug/l	0.322 lbs/day	826.43	ug/l	2.900 lbs/day
Selenium	4.60 ug/l	0.016 lbs/day	20.00	ug/l	0.070 lbs/day
Silver	N/A ug/l	N/A lbs/day	11.96	ug/l	0.042 lbs/day
Zinc	211.24 ug/l	0.741 lbs/day	211.24	ug/l	0.741 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<sub>3</sub>

Metals Standards Based upon a Hardness of 195.27 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	0.005 lbs/day
Chlordane	0.004 ug/l	0.710 lbs/day	1.200	ug/l	0.004 lbs/day
DDT, DDE	0.001 ug/l	0.165 lbs/day	0.550	ug/l	0.002 lbs/day
Dieldrin	0.002 ug/l	0.314 lbs/day	1.250	ug/l	0.004 lbs/day
Endosulfan	0.056 ug/l	9.251 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.380 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.628 lbs/day	0.260	ug/l	0.001 lbs/day
Lindane	0.080 ug/l	13.216 lbs/day	1.000	ug/l	0.004 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	2.313 lbs/day	2.000	ug/l	0.007 lbs/day
Pentachlorophenol	13.00 ug/l	2147.627 lbs/day	20.000	ug/l	0.070 lbs/day
Toxephene	0.0002 ug/l	0.033 lbs/day	0.7300	ug/l	0.003 lbs/day

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**IV. Numeric Stream Standards for Protection of Agriculture**

<b>4 Day Average (Chronic) Standard</b>		<b>1 Hour Average (Acute) Standard</b>		
	<b>Concentration</b>	<b>Load*</b>	<b>Concentration</b>	<b>Load*</b>
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	1.32 lbs/day
Cadmium			10.0 ug/l	0.02 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	2.11 tons/day

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

<b>4 Day Average (Chronic) Standard</b>		<b>1 Hour Average (Acute) Standard</b>		
<b>Metals</b>	<b>Concentration</b>	<b>Load*</b>	<b>Concentration</b>	<b>Load*</b>
Arsenic			50.0 ug/l	8.260 lbs/day
Barium			1000.0 ug/l	165.202 lbs/day
Cadmium			10.0 ug/l	1.652 lbs/day
Chromium			50.0 ug/l	8.260 lbs/day
Lead			50.0 ug/l	8.260 lbs/day
Mercury			2.0 ug/l	0.330 lbs/day
Selenium			10.0 ug/l	1.652 lbs/day
Silver			50.0 ug/l	8.260 lbs/day
Fluoride (3) to			1.4 ug/l	0.231 lbs/day
Nitrates as N			2.4 ug/l	0.396 lbs/day
			10.0 ug/l	1.652 lbs/day

**Chlorophenoxy Herbicides**

2,4-D		100.0 ug/l	16.520 lbs/day
2,4,5-TP		10.0 ug/l	1.652 lbs/day
Endrin		0.2 ug/l	0.033 lbs/day
oocyclohexane (Lindane)		4.0 ug/l	0.661 lbs/day
Methoxychlor		100.0 ug/l	16.520 lbs/day
Toxaphene		5.0 ug/l	0.826 lbs/day

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

	<b>Maximum Conc., ug/l - Acute Standards</b>		
	<b>Class 1C</b>	<b>Class 3A, 3B</b>	
<b>Toxic Organics</b>	[2 Liters/Day for 70 Kg Person over 70 Yr.]	[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	1200.00 ug/l	198.24 lbs/day	2700.0 ug/l
Acrolein	320.00 ug/l	52.86 lbs/day	780.0 ug/l
Acrylonitrile	0.06 ug/l	0.01 lbs/day	0.7 ug/l
Benzene	1.20 ug/l	0.20 lbs/day	71.0 ug/l
Benzidine	0.000012 ug/l	0.00 lbs/day	0.0 ug/l
Carbon tetrachloride	0.25 ug/l	0.04 lbs/day	4.4 ug/l
Chlorobenzene	680.00 ug/l	112.34 lbs/day	21000.0 ug/l
1,2,4-Trichlorobenzene			3469.24 lbs/day
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l
1,2-Dichloroethane	0.38 ug/l	0.06 lbs/day	99.0 ug/l
			16.36 lbs/day

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1,1,1-Trichloroethane				
Hexachloroethane	1.90 ug/l	0.31 lbs/day	8.9 ug/l	1.47 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	0.61 ug/l	0.10 lbs/day	42.0 ug/l	6.94 lbs/day
1,1,2,2-Tetrachloroethane	0.17 ug/l	0.03 lbs/day	11.0 ug/l	1.82 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	0.03 ug/l	0.01 lbs/day	1.4 ug/l	0.23 lbs/day
2-Chloroethyl vinyl ether	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	1700.00 ug/l	280.84 lbs/day	4300.0 ug/l	710.37 lbs/day
2,4,6-Trichlorophenol	2.10 ug/l	0.35 lbs/day	6.5 ug/l	1.07 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	5.70 ug/l	0.94 lbs/day	470.0 ug/l	77.64 lbs/day
2-Chlorophenol	120.00 ug/l	19.82 lbs/day	400.0 ug/l	66.08 lbs/day
1,2-Dichlorobenzene	2700.00 ug/l	446.05 lbs/day	17000.0 ug/l	2808.44 lbs/day
1,3-Dichlorobenzene	400.00 ug/l	66.08 lbs/day	2600.0 ug/l	429.53 lbs/day
1,4-Dichlorobenzene	400.00 ug/l	66.08 lbs/day	2600.0 ug/l	429.53 lbs/day
3,3'-Dichlorobenzidine	0.04 ug/l	0.01 lbs/day	0.1 ug/l	0.01 lbs/day
1,1-Dichloroethylene	0.06 ug/l	0.01 lbs/day	3.2 ug/l	0.53 lbs/day
1,2-trans-Dichloroethylene	700.00 ug/l	115.64 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	93.00 ug/l	15.36 lbs/day	790.0 ug/l	130.51 lbs/day
1,2-Dichloropropane	0.52 ug/l	0.09 lbs/day	39.0 ug/l	6.44 lbs/day
1,3-Dichloropropylene	10.00 ug/l	1.65 lbs/day	1700.0 ug/l	280.84 lbs/day
2,4-Dimethylphenol	540.00 ug/l	89.21 lbs/day	2300.0 ug/l	379.96 lbs/day
2,4-Dinitrotoluene	0.11 ug/l	0.02 lbs/day	9.1 ug/l	1.50 lbs/day
2,6-Dinitrotoluene	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	0.04 ug/l	0.01 lbs/day	0.5 ug/l	0.09 lbs/day
Ethylbenzene	3100.00 ug/l	512.13 lbs/day	29000.0 ug/l	4790.86 lbs/day
Fluoranthene	300.00 ug/l	49.56 lbs/day	370.0 ug/l	61.12 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	1400.00 ug/l	231.28 lbs/day	170000.0 ug/l	28084.36 lbs/day
Bis(2-chloroethoxy) met	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	4.70 ug/l	0.78 lbs/day	1600.0 ug/l	264.32 lbs/day
Methyl chloride (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	4.30 ug/l	0.71 lbs/day	360.0 ug/l	59.47 lbs/day
Dichlorobromomethane	0.27 ug/l	0.04 lbs/day	22.0 ug/l	3.63 lbs/day
Chlorodibromomethane	0.41 ug/l	0.07 lbs/day	34.0 ug/l	5.62 lbs/day
Hexachlorobutadiene(c)	0.44 ug/l	0.07 lbs/day	50.0 ug/l	8.26 lbs/day
Hexachlorocyclopentadi	240.00 ug/l	39.65 lbs/day	17000.0 ug/l	2808.44 lbs/day
Isophorone	8.40 ug/l	1.39 lbs/day	600.0 ug/l	99.12 lbs/day
Naphthalene				
Nitrobenzene	17.00 ug/l	2.81 lbs/day	1900.0 ug/l	313.88 lbs/day
2-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	70.00 ug/l	11.56 lbs/day	14000.0 ug/l	2312.83 lbs/day
4,6-Dinitro-o-cresol	13.00 ug/l	2.15 lbs/day	765.0 ug/l	126.38 lbs/day
N-Nitrosodimethylamine	0.00069 ug/l	0.00 lbs/day	8.1 ug/l	1.34 lbs/day
N-Nitrosodiphenylamine	5.00 ug/l	0.83 lbs/day	16.0 ug/l	2.64 lbs/day
N-Nitrosodi-n-propylami	0.01 ug/l	0.00 lbs/day	1.4 ug/l	0.23 lbs/day
Pentachlorophenol	0.28 ug/l	0.05 lbs/day	8.2 ug/l	1.35 lbs/day

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Phenol	2.10E+04 ug/l	3.47E+03 lbs/day	4.6E+06 ug/l	7.60E+05 lbs/day
Bis(2-ethylhexyl)phthalate	1.80 ug/l	0.30 lbs/day	5.9 ug/l	0.97 lbs/day
Butyl benzyl phthalate	3000.00 ug/l	495.61 lbs/day	5200.0 ug/l	859.05 lbs/day
Di-n-butyl phthalate	2700.00 ug/l	446.05 lbs/day	12000.0 ug/l	1982.43 lbs/day
Di-n-octyl phthalate				
Diethyl phthalate	23000.00 ug/l	3799.65 lbs/day	120000.0 ug/l	19824.25 lbs/day
Dimethyl phthalate	3.13E+05 ug/l	5.17E+04 lbs/day	2.9E+06 ug/l	4.79E+05 lbs/day
Benzo(a)anthracene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(a)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(b)fluoranthene (F)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(k)fluoranthene (F)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Chrysene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	9600.00 ug/l	1585.94 lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Indeno(1,2,3-cd)pyrene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.01 lbs/day
Pyrene (PAH)	960.00 ug/l	158.59 lbs/day	11000.0 ug/l	1817.22 lbs/day
Tetrachloroethylene	0.80 ug/l	0.13 lbs/day	8.9 ug/l	1.47 lbs/day
Toluene	6800.00 ug/l	1123.37 lbs/day	200000 ug/l	33040.42 lbs/day
Trichloroethylene	2.70 ug/l	0.45 lbs/day	81.0 ug/l	13.38 lbs/day
Vinyl chloride	2.00 ug/l	0.33 lbs/day	525.0 ug/l	86.73 lbs/day
			0.0	0.00 lbs/day
<b>Pesticides</b>			0.0	0.00 lbs/day
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	0.15 lbs/day	2.0 ug/l	0.33 lbs/day
beta-Endosulfan	0.9300 ug/l	0.15 lbs/day	2.0 ug/l	0.33 lbs/day
Endosulfan sulfate	0.9300 ug/l	0.15 lbs/day	2.0 ug/l	0.33 lbs/day
Endrin	0.7600 ug/l	0.13 lbs/day	0.8 ug/l	0.13 lbs/day
Endrin aldehyde	0.7600 ug/l	0.13 lbs/day	0.8 ug/l	0.13 lbs/day
Heptachlor	0.0002 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
<b>PCB's</b>				
PCB 1242 (Arochlor 1242)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 1254)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 1221)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 1232)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 1248)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 1260)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 1016)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
<b>Pesticide</b>				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
<b>Dioxin</b>				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00

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**Metals**

Antimony	14.0 ug/l	2.31 lbs/day		
Arsenic	50.0 ug/l	8.26 lbs/day	4300.00 ug/l	710.37 lbs/day
Asbestos	7.00E+06 ug/l	1.16E+06 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	214.76 lbs/day	2.2E+05 ug/l	36344.46 lbs/day
Lead	700.0 ug/l	115.64 lbs/day		
Mercury			0.15 ug/l	0.02 lbs/day
Nickel			4600.00 ug/l	759.93 lbs/day
Selenium	0.1 ug/l	0.02 lbs/day		
Silver	610.0 ug/l	100.77 lbs/day		
Thallium			6.30 ug/l	1.04 lbs/day
Zinc				

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

## VII. Mathematical Modeling of Stream Quality

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

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

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

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

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

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

### **VIII. Modeling Information**

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

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

### **Other Conditions**

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

### **Model Inputs**

The following is upstream and discharge information that was utilized as inputs for the analysis.

#### **Current Upstream Information**

	Stream		pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
	Critical	Low						
Summer (Irrig. Season)	30.00	17.4	8.5	0.10	1.00	7.02	0.00	377.0
Fall	30.00	11.9	8.4	0.10	1.00	---	0.00	359.0
Winter	30.00	2.5	8.2	0.10	1.00	---	0.00	333.0
Spring	30.00	11.9	8.5	0.10	1.00	---	0.00	266.0
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	49.50	2.70	0.05	2.41	3.975*	1.58	63.5	0.17
Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l		
All Seasons	0.0000	2.50	0.50	0.25	9.18	245.2		* ~80% MDL

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**Projected Discharge Information**

<b>Season</b>	<b>Flow, MGD</b>	<b>Temp.</b>
Summer	0.42000	18.0
Fall	0.42000	12.0
Winter	0.42000	4.0
Spring	0.42000	12.0

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

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:

<b>Season</b>	<b>Daily Average</b>	
Summer	0.420 MGD	0.650 cfs
Fall	0.420 MGD	0.650 cfs
Winter	0.420 MGD	0.650 cfs
Spring	0.420 MGD	0.650 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.42 MGD. If the discharger is allowed to have a flow greater than 0.42 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.

<b>WET Requirements</b>	<b>LC50 &gt;</b>	<b>100.0% Effluent</b>	<b>[Acute]</b>
	<b>IC25 &gt;</b>	<b>2.1% Effluent</b>	<b>[Chronic]</b>

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	87.6 lbs/day
Fall	25.0 mg/l as BOD5	87.6 lbs/day
Winter	25.0 mg/l as BOD5	87.6 lbs/day
Spring	25.0 mg/l as BOD5	87.6 lbs/day

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

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

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

Season	Concentration		Load	
	4 Day Avg. - Chronic	39.62 mg/l as N	138.7	lbs/day
Summer	1 Hour Avg. - Acute	35.4 mg/l as N	124.0	lbs/day
	4 Day Avg. - Chronic	50.2 mg/l as N	175.6	lbs/day
Fall	1 Hour Avg. - Acute	36.2 mg/l as N	126.8	lbs/day
	4 Day Avg. - Chronic	87.5 mg/l as N	306.5	lbs/day
Winter	1 Hour Avg. - Acute	68.1 mg/l as N	238.4	lbs/day
	4 Day Avg. - Chronic	55.0 mg/l as N	192.5	lbs/day
Spring	1 Hour Avg. - Acute	40.0 mg/l as N	140.1	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 50.%.

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

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

<b>Season</b>		<b>Concentration</b>		<b>Load</b>	
Summer	4 Day Avg. - Chronic	0.472	mg/l	1.65	lbs/day
	1 Hour Avg. - Acute	0.434	mg/l	1.52	lbs/day
Fall	4 Day Avg. - Chronic	0.472	mg/l	1.65	lbs/day
	1 Hour Avg. - Acute	0.434	mg/l	1.52	lbs/day
Winter	4 Day Avg. - Chronic	0.472	mg/l	1.65	lbs/day
	1 Hour Avg. - Acute	0.434	mg/l	1.52	lbs/day
Spring	4 Day Avg. - Chronic	0.472	mg/l	1.65	lbs/day
	1 Hour Avg. - Acute	0.434	mg/l	1.52	lbs/day

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

<b>Season</b>		<b>Concentration</b>		<b>Load</b>	
Summer	Maximum, Acute	39199.8	mg/l	68.64	tons/day
Fall	Maximum, Acute	40030.9	mg/l	70.10	tons/day
Winter	Maximum, Acute	41231.4	mg/l	72.20	tons/day
Spring	Maximum, Acute	44324.9	mg/l	77.62	tons/day
Colorado Salinity Forum Limits		Determined by Permitting Section			

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

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 195.27 mg/l):

	<b>4 Day Average</b>		<b>1 Hour Average</b>		<b>Load</b>
	<b>Concentration</b>	<b>Load</b>	<b>Concentration</b>	<b>Load</b>	
Aluminum*	N/A	N/A	16,921.9	ug/l	59.4 lbs/day
Arsenic*	8,838.07 ug/l	20.0 lbs/day	8,127.0	ug/l	28.5 lbs/day
Cadmium	64.06 ug/l	0.1 lbs/day	82.9	ug/l	0.3 lbs/day
Chromium III	6,921.36 ug/l	15.7 lbs/day	75,072.1	ug/l	263.4 lbs/day
Chromium VI*	335.36 ug/l	0.8 lbs/day	293.6	ug/l	1.0 lbs/day
Copper	706.63 ug/l	1.6 lbs/day	597.0	ug/l	2.1 lbs/day
Iron*	N/A	N/A	22,620.2	ug/l	79.4 lbs/day
Lead	344.10 ug/l	0.8 lbs/day	4,605.8	ug/l	16.2 lbs/day
Mercury*	0.57 ug/l	0.0 lbs/day	57.8	ug/l	0.2 lbs/day
Nickel	4,218.91 ug/l	9.6 lbs/day	19,847.8	ug/l	69.6 lbs/day
Selenium*	193.91 ug/l	0.4 lbs/day	470.2	ug/l	1.6 lbs/day
Silver	N/A ug/l	N/A lbs/day	282.4	ug/l	1.0 lbs/day

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Zinc	9,540.61 ug/l	21.6 lbs/day	4,875.9	ug/l	17.1 lbs/day
Cyanide*	245.30 ug/l	0.6 lbs/day	529.9	ug/l	1.9 lbs/day

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

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

Summer	111.8 Deg. C.	233.2 Deg. F
Fall	106.2 Deg. C.	223.2 Deg. F
Winter	96.9 Deg. C.	206.4 Deg. F
Spring	106.2 Deg. C.	223.2 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:

	<b>4 Day Average</b>		<b>1 Hour Average</b>		<b>Load</b>
	<b>Concentration</b>	<b>Load</b>	<b>Concentration</b>	<b>Load</b>	
Aldrin			1.5E+00	ug/l	8.14E-03 lbs/day
Chlordane	4.30E-03 ug/l	1.51E-02 lbs/day	1.2E+00	ug/l	6.51E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	3.50E-03 lbs/day	5.5E-01	ug/l	2.99E-03 lbs/day
Dieldrin	1.90E-03 ug/l	6.65E-03 lbs/day	1.3E+00	ug/l	6.79E-03 lbs/day
Endosulfan	5.60E-02 ug/l	1.96E-01 lbs/day	1.1E-01	ug/l	5.97E-04 lbs/day
Endrin	2.30E-03 ug/l	8.05E-03 lbs/day	9.0E-02	ug/l	4.89E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	5.43E-05 lbs/day
Heptachlor	3.80E-03 ug/l	1.33E-02 lbs/day	2.6E-01	ug/l	1.41E-03 lbs/day
Lindane	8.00E-02 ug/l	2.80E-01 lbs/day	1.0E+00	ug/l	5.43E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	1.63E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	5.43E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	2.17E-04 lbs/day
PCB's	1.40E-02 ug/l	4.90E-02 lbs/day	2.0E+00	ug/l	1.09E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	4.55E+01 lbs/day	2.0E+01	ug/l	1.09E-01 lbs/day
Toxephene	2.00E-04 ug/l	7.00E-04 lbs/day	7.3E-01	ug/l	3.96E-03 lbs/day

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

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

	<b>1 Hour Average</b>	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	17.5 lbs/day
Nitrates as N	4.0 mg/l	14.0 lbs/day
Total Phosphorus as P	0.05 mg/l	0.2 lbs/day
Total Suspended Solids	90.0 mg/l	315.8 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:

<b>Toxic Organics</b>	<b>Maximum Concentration</b>	
	Concentration	Load
Acenaphthene	5.66E+04 ug/l	1.98E+02 lbs/day
Acrolein	1.51E+04 ug/l	5.29E+01 lbs/day
Acrylonitrile	2.78E+00 ug/l	9.75E-03 lbs/day
Benzene	5.66E+01 ug/l	1.98E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	1.18E+01 ug/l	4.13E-02 lbs/day
Chlorobenzene	3.21E+04 ug/l	1.12E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	3.54E-02 ug/l	1.24E-04 lbs/day
1,2-Dichloroethane	1.79E+01 ug/l	6.28E-02 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.96E+01 ug/l	3.14E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	2.88E+01 ug/l	1.01E-01 lbs/day
1,1,2,2-Tetrachloroethane	8.02E+00 ug/l	2.81E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.46E+00 ug/l	5.12E-03 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	8.02E+04 ug/l	2.81E+02 lbs/day
2,4,6-Trichlorophenol	9.91E+01 ug/l	3.47E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	2.69E+02 ug/l	9.42E-01 lbs/day
2-Chlorophenol	5.66E+03 ug/l	1.98E+01 lbs/day
1,2-Dichlorobenzene	1.27E+05 ug/l	4.46E+02 lbs/day
1,3-Dichlorobenzene	1.89E+04 ug/l	6.61E+01 lbs/day

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1,4-Dichlorobenzene	1.89E+04 ug/l	6.61E+01 lbs/day
3,3'-Dichlorobenzidine	1.89E+00 ug/l	6.61E-03 lbs/day
1,1-Dichloroethylene	2.69E+00 ug/l	9.42E-03 lbs/day
1,2-trans-Dichloroethylene		
2,4-Dichlorophenol	4.39E+03 ug/l	1.54E+01 lbs/day
1,2-Dichloropropane	2.45E+01 ug/l	8.59E-02 lbs/day
1,3-Dichloropropylene	4.72E+02 ug/l	1.65E+00 lbs/day
2,4-Dimethylphenol	2.55E+04 ug/l	8.92E+01 lbs/day
2,4-Dinitrotoluene	5.19E+00 ug/l	1.82E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.89E+00 ug/l	6.61E-03 lbs/day
Ethylbenzene	1.46E+05 ug/l	5.12E+02 lbs/day
Fluoranthene	1.42E+04 ug/l	4.96E+01 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	6.60E+04 ug/l	2.31E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	2.22E+02 ug/l	7.76E-01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	2.03E+02 ug/l	7.10E-01 lbs/day
Dichlorobromomethane(HM)	1.27E+01 ug/l	4.46E-02 lbs/day
Chlorodibromomethane (HM)	1.93E+01 ug/l	6.77E-02 lbs/day
Hexachlorocyclopentadiene	1.13E+04 ug/l	3.96E+01 lbs/day
Isophorone	3.96E+02 ug/l	1.39E+00 lbs/day
Naphthalene		
Nitrobenzene	8.02E+02 ug/l	2.81E+00 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	3.30E+03 ug/l	1.16E+01 lbs/day
4,6-Dinitro-o-cresol	6.13E+02 ug/l	2.15E+00 lbs/day
N-Nitrosodimethylamine	3.25E-02 ug/l	1.14E-04 lbs/day
N-Nitrosodiphenylamine	2.36E+02 ug/l	8.26E-01 lbs/day
N-Nitrosodi-n-propylamine	2.36E-01 ug/l	8.26E-04 lbs/day
Pentachlorophenol	1.32E+01 ug/l	4.63E-02 lbs/day
Phenol	9.91E+05 ug/l	3.47E+03 lbs/day
Bis(2-ethylhexyl)phthalate	8.49E+01 ug/l	2.97E-01 lbs/day
Butyl benzyl phthalate	1.42E+05 ug/l	4.96E+02 lbs/day
Di-n-butyl phthalate	1.27E+05 ug/l	4.46E+02 lbs/day
Di-n-octyl phthalate		
Diethyl phthalate	1.08E+06 ug/l	3.80E+03 lbs/day
Dimethyl phthalate	1.48E+07 ug/l	5.17E+04 lbs/day
Benzo(a)anthracene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Benzo(a)pyrene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Benzo(b)fluoranthene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Benzo(k)fluoranthene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Chrysene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	1.32E-01 ug/l	4.63E-04 lbs/day

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Pyrene (PAH)	4.53E+04 ug/l	1.59E+02 lbs/day
Tetrachloroethylene	3.77E+01 ug/l	1.32E-01 lbs/day
Toluene	3.21E+05 ug/l	1.12E+03 lbs/day
Trichloroethylene	1.27E+02 ug/l	4.46E-01 lbs/day
Vinyl chloride	9.43E+01 ug/l	3.30E-01 lbs/day
<b>Pesticides</b>		
Aldrin	6.13E-03 ug/l	2.15E-05 lbs/day
Dieldrin	6.60E-03 ug/l	2.31E-05 lbs/day
Chlordane	2.69E-02 ug/l	9.42E-05 lbs/day
4,4'-DDT	2.78E-02 ug/l	9.75E-05 lbs/day
4,4'-DDE	2.78E-02 ug/l	9.75E-05 lbs/day
4,4'-DDD	3.92E-02 ug/l	1.37E-04 lbs/day
alpha-Endosulfan	4.39E+01 ug/l	1.54E-01 lbs/day
beta-Endosulfan	4.39E+01 ug/l	1.54E-01 lbs/day
Endosulfan sulfate	4.39E+01 ug/l	1.54E-01 lbs/day
Endrin	3.59E+01 ug/l	1.26E-01 lbs/day
Endrin aldehyde	3.59E+01 ug/l	1.26E-01 lbs/day
Heptachlor	9.91E-03 ug/l	3.47E-05 lbs/day
Heptachlor epoxide		
<b>PCB's</b>		
PCB 1242 (Arochlor 1242)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1254 (Arochlor 1254)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1221 (Arochlor 1221)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1232 (Arochlor 1232)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1248 (Arochlor 1248)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1260 (Arochlor 1260)	2.08E-03 ug/l	7.27E-06 lbs/day
PCB-1016 (Arochlor 1016)	2.08E-03 ug/l	7.27E-06 lbs/day
<b>Pesticide</b>		
Toxaphene	3.44E-02 ug/l	1.21E-04 lbs/day
<b>Metals</b>		
Antimony	660.41 ug/l	2.31 lbs/day
Arsenic	2233.95 ug/l	7.82 lbs/day
Asbestos	3.30E+08 ug/l	1.16E+06 lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	61324.01 ug/l	214.76 lbs/day
Cyanide	33020.62 ug/l	115.64 lbs/day
Lead	0.00	0.00
Mercury	6.60 ug/l	0.02 lbs/day
Nickel	28775.11 ug/l	100.77 lbs/day
Selenium	0.00	0.00
Silver	0.00	0.00
Thallium	80.19 ug/l	0.28 lbs/day
Zinc		

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**Dioxin**

Dioxin (2,3,7,8-TCDD)

6.13E-07 ug/l

2.15E-09 lbs/day

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

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		16921.9				16921.9	N/A
Antimony			660.4	202841.0		660.4	
Arsenic	4717.2	8127.0	2234.0			2234.0	8838.1
Barium					47172.3	47172.3	
Beryllium						0.0	
Cadmium	469.4	82.9				82.9	64.1
Chromium (III)		75072.1				75072.1	6921.4
Chromium (VI)	4606.0	293.6				293.61	335.36
Copper	9361.5	597.0	61324.0			597.0	706.6
Cyanide		529.9	10377909.3			529.9	245.3
Iron		22620.2				22620.2	
Lead	4709.5	4605.8				4605.8	344.1
Mercury		57.81	6.6	7.08		6.60	0.566
Nickel		19847.8	28775.1	216992.6		19847.8	4218.9
Selenium	2335.5	470.2				470.2	193.9
Silver		282.4				282.4	
Thallium			80.2	297.2		80.2	
Zinc		4875.9				4875.9	9540.6
Boron	24060.1					24060.1	
Sulfate	94344.6					94344.6	

**Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]**

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	16921.9	N/A	
Antimony	660.41		
Arsenic	2234.0	8838.1	Acute Controls
Asbestos	3.30E+08		
Barium			
Beryllium			
Cadmium	82.9	64.1	
Chromium (III)	75072.1	6921	
Chromium (VI)	293.6	335.4	Acute Controls
Copper	597.0	706.6	Acute Controls

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Cyanide	529.9	245.3	
Iron	22620.2		
Lead	4605.8	344.1	
Mercury	6.604	0.566	
Nickel	19847.8	4219	
Selenium	470.2	193.9	
Silver	282.4	N/A	
Thallium	80.2		
Zinc	4875.9	9540.6	Acute Controls
Boron	24060.09		
Sulfate	94344.6		N/A at this Waterbody

Other Effluent Limitations are based upon R317-1.

E. coli                    126.0 organisms per 100 ml

#### **X. Antidegradation Considerations**

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

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required. The proposed permit is a simple renewal, with no increase in flow or concentration over that which was approved in the existing permit.

#### **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.