

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. **UT0020338**
Biosolids Permit No. **UTL020338**

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

USBR FLAMING GORGE DAM WASTEWATER TREATMENT PLANT

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **Green River,**

to dispose of biosolids,

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

This permit shall become effective on April 1, 2018

This permit expires at midnight on March 31, 2023.

Signed this th30 day of March, 2018.


Erica Brown Gaddis, PhD
Director

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WASTEWATER

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	Located at latitude 40° 54' 30" and longitude 109° 25' 25". The discharge is through a pipe leading from the chlorine contact basin to the Green River.

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

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001 as defined in *Part VIII* of this permit.
2.
 - a. 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 ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.0064	-	-	-	-
BOD ₅ , mg/L	25	35	-	-	-
BOD ₅ Min. % Removal	85	-	-	-	-
TSS, mg/L	25	35	-	-	-
TSS Min. % Removal	85	-	-	-	-
Oil & Grease ² , mg/L	-	-	-	-	10.0
pH, Standard Units	-	-	-	6.5	9
<i>E. coli</i> , No./100mL	126	157	-	-	-
TDS ³ , mg/L	<400 Increase	-	-	-	-

¹ See Definitions, Part VIII, for definition of terms.

² Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

³ The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS.

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Self-Monitoring and Reporting Requirements ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{4 5}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁶	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent ⁵	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Oil & Grease ⁷	When Sheen Observed	Grab	mg/L
TDS ⁸ , mg/L			
Effluent	Monthly	Grab	mg/L
Source Water	Monthly	Grab	mg/L
Orthophosphate, (as P) ⁹			
Effluent	Monthly	Composite	mg/L
Phosphorus, Total ⁹			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) ⁹			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃ ⁹	Monthly	Composite	mg/L
Nitrite, NO ₂ ⁹	Monthly	Composite	mg/L

3. Compliance Schedule for a Particular Parameter

- a. There is no Compliance Schedule included in this renewal permit.

4. Acute/Chronic Whole Effluent Toxicity (WET) Testing.

As part of the nationwide effort to control toxics, biomonitoring requirements are being included in all major permits and in minor permits for facilities where effluent toxicity is an existing or potential concern. Authorization for requiring effluent biomonitoring is provided for in UAC R317-8-4.2 and R317-8-5.3. The Whole Effluent Toxicity (WET) Control Guidance Document, February 15, 1991, outlines guidance to be used by Utah Division of Water Quality staff and by permittee's for implementation of WET control through the UPDES discharge permit program.

Flaming Gorge is a minor point source along the Green River. Comparison of the laboratory analysis performed on their effluent to the waste load analysis on the Green River, Flaming Gorge's discharge is not likely to be toxic. As a result, biomonitoring of

4 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.

5 If the rate of discharge is controlled, the rate and duration of discharge shall be reported

6 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.

7 Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

8 The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS.

9 These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule

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the effluent will not be required. However, the permit will contain a WET reopener provision

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)¹⁰ or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on May 28, 2018. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

¹⁰ Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Definitions.

For this section the following definitions shall apply:

1. Indirect Discharge means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the Act.
2. 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).
3. Significant industrial user (SIU) is defined as an industrial user discharging to a 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.
4. User or Industrial User 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 (IWS)**, 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.

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 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.

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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. General Prohibitions. No User shall introduce or cause to be introduced into the POTW any pollutant or wastewater which causes Pass Through or Interference. These general prohibitions apply to all Users of the POTW whether or not they are subject to categorical Pretreatment Standards or any other National, State, or local Pretreatment Standards or Requirements.
2. Developed pursuant to *Section 307 of The Water Quality Act of 1987 as amended (WQA)* 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:
 - a. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams 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, nonbiodegradable 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.

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3. 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 *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:
 - 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

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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. BIOSOLIDS REQUIREMENTS

A. Biosolids Treatment and Disposal. The authorization to dispose of biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee. The treatment methods and disposal practices are designated below.

1. Treatment

- a. Transfer - Biosolids produced at the Flaming Gorge facility are pumped from the clarifiers and hauled to the town of Dutch John and disposed of in the Dutch John wastewater lagoons

2. Description of Biosolids Disposal Method

- a. Class A biosolids may be sold or given away to the public for lawn and garden use or land application.
- b. Class B biosolids may be land applied for agriculture use or at reclamation sites at agronomic rates.
- c. Biosolids may be disposed of in a landfill or transferred to another facility for treatment/disposal.

3. Changes in Treatment Systems and Disposal Practices.

- a. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 30 days in advance if the process/method is specified in *40 CFR 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.
- b. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 180 days in advance if the process/method is not specified in *40 CFR 503*. This includes, but is not limited to, the permanent addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change.

For any biosolids that are land filled, the requirements in *Section 2.12* of the latest version of the *EPA Region VIII Biosolids Management Handbook* must be followed

IV. STORM WATER REQUIREMENTS.

The *Utah Administrative Code (UAC) R-317-8-3.9* requires storm water permit provisions to include the development of a storm water pollution prevention plan for waste water treatment facilities if the facility meets one or both of the following criteria.

1. waste water treatment facilities with a design flow of 1.0 MGD or greater, and/or,
2. waste water treatment facilities with an approved pretreatment program as described in *40CFR Part 403*,

The Flaming Gorge facility does not meet one of the above criteria; therefore this permit does not include storm water provisions. The permit does however include a storm water re-opener provision.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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

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

VI. COMPLIANCE RESPONSIBILITIES

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

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

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

H. Upset Conditions.

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

VII. GENERAL REQUIREMENTS

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

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

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

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1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
 2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
 3. Revisions to the current CWA § 208 area-wide treatment management plans or promulgations/revisions to total maximum daily loads (TMDLs) (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.
- P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.
- Q. 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.

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

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.
2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC₅₀").
5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
6. "Chronic toxicity" occurs when the IC₂₅ < XX% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.
7. "IC₂₅" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
8. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
 - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

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

DWQ-2017-012404

FACT SHEET AND STATEMENT OF BASIS
USBR FLAMING GORGE DAM WASTEWATER TREATMENT PLANT RENEWAL PERMIT:
DISCHARGE & BIOSOLIDS
UPDES PERMIT NUMBER: UT0020338
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020338
MINOR MUNICIPAL

FACILITY CONTACTS

Person Name:	C. Steven Hulet
Position:	Manager Flaming Gorge Field Division
Person Name:	Keith Babcock
Position:	Plant Superintendent
Facility Name:	USBR – Flaming Gorge Dam Wastewater Treatment Plant
Mailing Address:	5995 Flaming Gorge Visitor Center Dutch John, Utah 84023
Telephone:	(435) 885-3231
Actual Address:	5995 Flaming Gorge Visitor Center

DESCRIPTION OF FACILITY

The USBR Flaming Gorge Dam Wastewater Treatment Plant (Flaming Gorge) is located at the Dam site in Daggett County. The facility serves the Flaming Gorge Dam Visitors Center and the United States Bureau of Reclamation personnel employed at the Dam. The Flaming Gorge expanded its capacity in 1968 from 3000 gallons per day to 6400 gallons per day. The flow varies from extremely low flows during the winter months to high flows during the summer months.

The treatment plant is located within the Dam and the discharge flows into the Green River via a 6” pipe. The raw wastewater is fed into a holding tank, which then pumps the wastewater as needed to the treatment plant. The treatment process consists of a screening basket, followed by an aerator, a settling tank, an airlift skimmer, and finally the chlorination chamber. The sludge from the facility is taken to the Dutch John Municipal Wastewater Treatment Plant where it is dried, stored and then hauled to a landfill operated by the United States Forest Service. The facility is located at latitude 40°54’30” and longitude 109°25’25”, with an outfall STORET Number of 493850.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There have been no changes in the treatment facility or flows from the plant.

1. WLA Model

A new model is used by Water Quality to develop a waste load allocation (WLA) for dischargers to Waters of the State.

2. RP

During the permit cycle, Water Quality has worked to improve our reasonable potential analysis (RP) for parameters to have limits included by using an EPA provided model. The results of the RP Analysis are included in Attachment 2 of the FSSOB

3. TBPEL Rule

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule as it relates to "non-lagoon" wastewater treatment plants establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for non-lagoon wastewater treatment plants:

The TBPEL requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will produce effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. This TBPEL shall be achieved by January 1, 2020.

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, D, 1 Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, D, 2. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (as N);

In R317-1-3.3, D, 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.

DISCHARGE

DESCRIPTION OF DISCHARGE

The Flaming Gorge discharges directly into the Green River. The facility has submitted discharge monitoring reports (DMRs) from which effluent data was taken from discharge concentrations used in the wasteload allocation. The last three years of self-monitoring data is attached. There were violations of their discharge limits for Total Suspended Solids and BOD; however the violations were not chronic in nature and did not require enforcement action.

Outfall

001

Description of Discharge Point

Located at latitude 40° 54' 30" and longitude 109° 25' 25". The discharge is through a pipe leading from the chlorine contact basin to the Green River.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows directly into the Green River, immediately down stream from Flaming Gorge Dam. The Green River (from Utah-Colorado state line to Flaming Gorge Dam) is classified 2B, 3A and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

- 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.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), *E. coli*, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease is based on best professional judgment (BPJ). Attached is a Wasteload Analysis for this discharge into the Green River. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal.

Total dissolved solids (TDS) limitations are based upon Utah Water Quality Standards for concentration values and the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable as authorized in UAC R317-2-4. CRBSCF has established a policy for the reasonable increase of salinity for municipal discharges to any portion of the Colorado River stream system that has an impact on the lower main stem. The CRBSCF Policy entitled “NPDES Permit Program Policy for Implementation of Colorado River Salinity Standards” (Policy), with the most current version dated October 2017, states that the incremental increase in salinity shall be 400 mg/L or less, which is considered to be a reasonable incremental increase above the flow weighted average salinity of the intake water supply.

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 frame work for what routine monitoring or effluent limitations are required

Flaming Gorge has not monitored for metals in the past. As a result there is no data to evaluate in a RP. Flaming Gorge also has had minimal discharge during the life cycle of the permit and has limited to no industrial contributions to their waste stream. Therefore it was determined that no RP was required, and that no metals monitoring is being added to the permit.

The permittee is expected to be able to comply with these limitations. The permit limitations are:

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	0.0064	-	-	-	-
BOD ₅ , mg/L	25	35	-	-	-
BOD ₅ Min. % Removal	85	--	-	-	-
TSS, mg/L	25	35	-	-	-
TSS Min. % Removal	85	--	-	-	-
Oil & Grease ² , mg/L	-	-	-	-	10.0
pH, Standard Units	-	-	-	6.5	9
<i>E. coli</i> , No./100mL	126	157	-	-	-
TDS ³ , mg/L	<400 Increase	-	-	-	-

¹ See Definitions, Part VIII, for definition of terms.

² Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

³ The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS.

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 ¹			
Parameter	Frequency	Sample Type	Units
Total Flow ^{4 5}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁶ Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
TSS, Influent ⁵ Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
Oil & Grease ²	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
TDS ⁷ , mg/L, Effluent Source Water	Yearly	Grab	mg/L
	Yearly	Grab	mg/L
Orthophosphate, (as P) ⁸ Effluent	Monthly	Composite	mg/L
Total Phosphorus ⁸ , Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) ⁸ Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
Nitrate, NO ₃ ⁸	Monthly	Composite	mg/L
Nitrite, NO ₂ ⁸	Monthly	Composite	mg/L

BIOSOLIDS

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

The only solids (sewage sludge) produced from the FGWTP is from the clarifiers. The solids are pumped twice a year from the clarifiers to a truck and hauled to the town of Dutch John and disposed of in their

⁴ 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.

⁵ If the rate of discharge is controlled, the rate and duration of discharge shall be reported

⁶ 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.

⁷ The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS.

⁸ These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule

lagoons. Because there is no regular solids production the requirements of 40 CFR 503 (standards for the use or disposal of sewage sludge) do not apply unless the solids are removed from the Dutch John lagoon system and disposed, therefore there are no monitoring requirements.

STORM WATER

Wastewater treatment facilities, which includes treatment lagoons, are required to comply with storm water permit requirements if they meet one or both of the following criteria,

1. The facility has an approved pretreatment program as described in 40 CFR Part 403.
2. The facility has a design flow of 1.0 MGD or greater.

Flaming Gorge 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. Furthermore, this treatment facility is within the dam structure and not exposed to storm waters at all.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

Although the permittee does not have to develop a State-approved pretreatment program, any wastewater discharges to the sanitary sewer are subject to Federal, State and local 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 required that the permittee submit for review any local limits that are developed to the Division of Water Quality for review. If local limits are developed it is required 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.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the State of Utah Permitting and Enforcement Guidance Document for

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

The potential for toxicity is not deemed sufficient to require biomonitoring or whole effluent toxicity (WET) limits because there are no present or anticipated industrial dischargers on the system nor are there any anticipated for the duration of this permit. The waste discharge is anticipated to be household waste only. Therefore, biomonitoring is not required in this permit; however the permit will contain a WET reopener provision.

PERMIT DURATION

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

Drafted by
Daniel Griffin, Discharge, Biosolids
Jennifer Robinson, Pretreatment
Michael George, Storm Water
Nate Nichols, Reasonable Potential Analysis
Dave Wham, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: February 20, 2018

Ended: March 22, 2018

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 Vernal Express.

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

No comments were received regarding this permit. 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.

Effluent Monitoring Data.

Month	Flow	BOD		E. coli		pH		TSS	
		Acute	Chronic	Acute	Chronic	Max	Min	Acute	Chronic
Oct-14	0.002400	11	11	0	0	7.4	6.6	6	6
Nov-14	0.001300	7	7	0	0	7.5	6.7	4	4
Dec-14	0.000950	19	19	0	0	7.3	6.9	4	4
Jan-15	0.000300	5	5	0	0	7.4	6.9	4	4
Feb-15	0.000850	5	5	0	0	7.2	6.6	4	4
Mar-15	0	0	0	0	0	0	0	0	0
Apr-15	0	0	0	0	0	0	0	0	0
May-15	0.001920	0	0	0	0	7.6	7.2	0	0
Jun-15	0.001344	23	23	0	0	7.6	6.9	6	6
Jul-15	0.002112	5	5	0	0	8.0	6.5	4	4
Aug-15	0.001450	5	5	0	0	7.3	6.5	4	4
Sep-15	0.001500	16	16	0	0	7.0	6.5	4	4
Oct-15	0.000700	5	5	0	0	6.5	6.5	4	4
Nov-15	0.001000	5	5	0	0	7.9	6.9	8	8
Dec-15	0.000500	5	5	0	0	8.4	6.7	5	5
Jan-16	0.000350	11	11	0	0	8.4	7.2	15	15
Feb-16	0.000550	20	20	0	0	7.8	6.7	5	5
Mar-16	0.000550	5	5	0	0	7.2	6.7	5	5
Apr-16	0.000800	5	5	0	0	8.2	6.6	5	5
May-16	0.001400	8	8	0	0	7.5	6.6	5	5
Jun-16	0.001650	15	15	0	0	7.2	6.5	4	4
Jul-16	0.001650	12	12	0	0	6.9	6.5	4	4
Aug-16	0.001100	11	11	0	0	7.0	6.5	5	5
Sep-16	0.001750	17	17	0	0	6.9	6.7	4	4
Oct-16	0.001700	16	16	0	0	7.0	6.6	5	5
Nov-16	0.001100	18	18	0	0	6.9	6.5	15	15
Dec-16	0.000600	10	10	0	0	7.1	6.6	53	53
Jan-17	0.001000	17	17	1	1	7.1	6.6	17	17
Feb-17	0.000300	17	17	0	0	7.1	6.6	54	54
Mar-17	0.000450	17	17	0	0	6.9	6.5	24	24
Apr-17	0.000550	20	20	0	0	7.4	6.5	68	68
May-17	0.001500	28	28	10	10	7.5	6.5	18	18
Jun-17	0.001200	5	5	8	8	8.0	6.6	26	26
Jul-17	0.001350	5	5	0	0	8.7	8.1	5.2	5.2
Aug-17	0.002500	20.8	20.8	0	0	8.8	8.2	10.8	10.8
Sep-17	0.001600	11.8	11.8	7	7	8.7	8.4	9.6	9.6

TBPEL Monitoring Results

Month	Effluent					Influent	
	Ammonia	NO ₃ + NO ₂ -	Ortho P	TKN	Total P	Total P	TKN
Jul-15	1.4	30.7	5.2	1	5.6	16	72
Aug-15	0.5	51	5.9	1	6.9	18	93
Sep-15	2	62	6.6	1	7	4.6	50
Oct-15	0.2	69	8.6	1	8.8	9.7	63
Nov-15	0.3	63	3.6	1	4.2	6.1	41
Dec-15	0.2	54	6.9	1	7.2	8.9	34
Jan-16	0.2	48	5.4	1	6.7	7.6	22
Feb-16	0.2	54	6.5	1	6.7	13	62
Mar-16	0.2	61.6	7.9	1	8.4	12	109
Apr-16	0.2	76	7.6	5	8	7.9	53
May-16	0.2	81.1	7.3	1	7.7	8.9	71
Jun-16	0.2	74.7	8	1	8	8	75
Jul-16	3.2	64.6	9.5	1	10	17	112
Aug-16	0.5	66.3	11	1	12	13	372
Sep-16	0.2	75.5	11	1	11	11	110
Oct-16	0.2	81.3	6.3	1	8	10	102
Nov-16	0.2	61.4	9	1	11	11	72.3
Dec-16	0.2	71.9	12	1	13	5.1	27.1
Jan-17	0.7	49.9	6.5	1	7.1	12	89.1
Feb-17	0.9	56	8.4	1.2	9.6	12	106
Mar-17	1.3	65.7	11	1	12	11	47
Apr-17	2.9	67.9	11	1	13	8	51.4
May-17	0.2	79	6.4	1	7	12	88.4
Jun-17	0.2	61.3	5.2	1	5.4	11	104
Jul-17	18.6	12.4	4.43	25.4	4.63	8.3	24.1
Aug-17	66.2	1.88	8.07	72	8.45	9.87	84.9
Sep-17	61	2.68	6.6	67.2	8.54	12.5	84.1

ATTACHMENT 2

Wasteload Analysis

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Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility: Flaming Gorge WWTP

UPDES No: UT-0020338
Current Flow: 0.0064 MGD 0.0099 cfs
Design Flow 0.0064 MGD 0.0099 cfs

Receiving Water: Green River

Stream Classification: 2B, 3A, 4
Stream Flows [cfs]:
800.0 Summer (July-Sept) 7Q10
800.0 Fall (Oct-Dec) 7Q10
800.0 Winter (Jan-Mar) 7Q10
800.0 Spring (Apr-June) 7Q10
0.0 Average
Stream TDS Values:
428.0 Summer (July-Sept) 80th Percentile
456.0 Fall (Oct-Dec) 80th Percentile
448.0 Winter (Jan-Mar) 80th Percentile
420.0 Spring (Apr-June) 80th Percentile

Effluent Limits:

Flow, MGD:	0.01 MGD	Design Flow
BOD, mg/l:	25.0 Summer	5.0 Indicator
Dissolved Oxygen, mg/l	4.5 Summer	6.5 30 Day Average
TNH3, Chronic, mg/l:	102477.8 Summer	Varies Function of pH and Temperature
TDS, mg/l:	62379997.7 Summer	1200.0

WQ Standard:

Modeling Parameters:

Acute River Width: 50.0%
Chronic River Width: 76.8% Plume Model Used

Antidegradation Level II Review is NOT Required

Date: 11/29/2017

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

29-Nov-17

4:00 PM

Facilities: Flaming Gorge WWTP
Discharging to: Green River

UPDES No: UT-0020338

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

Green River: 2B, 3A, 4
Antidegradation Review: Antidegradation Level II Review is NOT Required

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	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**	0.005 lbs/day	750.00	ug/l	0.040 lbs/day
Arsenic	190.00 ug/l	0.010 lbs/day	340.00	ug/l	0.018 lbs/day
Cadmium	0.53 ug/l	0.000 lbs/day	5.33	ug/l	0.000 lbs/day
Chromium III	180.13 ug/l	0.010 lbs/day	3768.61	ug/l	0.201 lbs/day
ChromiumVI	11.00 ug/l	0.001 lbs/day	16.00	ug/l	0.001 lbs/day
Copper	20.13 ug/l	0.001 lbs/day	32.69	ug/l	0.002 lbs/day
Iron			1000.00	ug/l	0.053 lbs/day
Lead	10.01 ug/l	0.001 lbs/day	256.80	ug/l	0.014 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.000 lbs/day
Nickel	111.71 ug/l	0.006 lbs/day	1004.76	ug/l	0.054 lbs/day
Selenium	4.60 ug/l	0.000 lbs/day	20.00	ug/l	0.001 lbs/day
Silver	N/A ug/l	N/A lbs/day	17.80	ug/l	0.001 lbs/day
Zinc	256.89 ug/l	0.014 lbs/day	256.89	ug/l	0.014 lbs/day

* Allowed below discharge

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

Metals Standards Based upon a Hardness of 246 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.000 lbs/day
Chlordane	0.004 ug/l	13.232 lbs/day	1.200	ug/l	0.000 lbs/day
DDT, DDE	0.001 ug/l	3.077 lbs/day	0.550	ug/l	0.000 lbs/day
Dieldrin	0.002 ug/l	5.847 lbs/day	1.250	ug/l	0.000 lbs/day
Endosulfan	0.056 ug/l	172.326 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	7.078 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	11.694 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080 ug/l	246.180 lbs/day	1.000	ug/l	0.000 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	43.082 lbs/day	2.000	ug/l	0.000 lbs/day
Pentachlorophenol	13.00 ug/l	40004.259 lbs/day	20.000	ug/l	0.001 lbs/day
Toxephene	0.0002 ug/l	0.615 lbs/day	0.7300	ug/l	0.000 lbs/day

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IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.00 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	0.03 tons/day

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

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Metals				
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
cyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

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

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	8308.58 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	2400.26 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	2.03 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	218.48 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	13.54 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	64622.26 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	304.65 lbs/day

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1,1,1-Trichloroethane					
Hexachloroethane	ug/l	lbs/day	8.9 ug/l		27.39 lbs/day
1,1-Dichloroethane					
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l		129.24 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l		33.85 lbs/day
Chloroethane			0.0 ug/l		0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l		4.31 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l		13232.18 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l		20.00 lbs/day
p-Chloro-m-cresol			0.0 ug/l		0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l		1446.31 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l		1230.90 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l		52313.26 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l		8000.85 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l		8000.85 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1 ug/l		0.24 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2 ug/l		9.85 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l		2431.03 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l		120.01 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l		5231.33 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l		7077.68 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l		28.00 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5 ug/l		1.66 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l		89240.27 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l		1138.58 lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopropyl) ether	ug/l	lbs/day	170000.0 ug/l		523132.62 lbs/day
Bis(2-chloroethoxy) methane	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l		4923.60 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0 ug/l		1107.81 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l		67.70 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l		104.63 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l		153.86 lbs/day
Hexachlorocyclopentadiene	ug/l	lbs/day	17000.0 ug/l		52313.26 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l		1846.35 lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l		5846.78 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l		0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l		43081.51 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l		2354.10 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l		24.93 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l		49.24 lbs/day
N-Nitrosodi-n-propylamine	ug/l	lbs/day	1.4 ug/l		4.31 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l		25.23 lbs/day

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Phenol	ug/l	lbs/day	4.6E+06 ug/l	1.42E+07 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	18.16 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	16001.70 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	36927.01 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	369270.08 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	8.92E+06 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0 ug/l	0.10 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0 ug/l	33849.76 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	27.39 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	615450.14 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	249.26 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	1615.56 lbs/day
				lbs/day
				lbs/day
Pesticides				
Aldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0 ug/l	6.15 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	6.15 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	6.15 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	2.49 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	2.49 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		

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Metals

	ug/l	lbs/day		
Antimony				
Arsenic	ug/l	lbs/day	4300.00 ug/l	13232.18 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	676995.16 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.46 lbs/day
Nickel			4600.00 ug/l	14155.35 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	19.39 lbs/day
Zinc				

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

VII. Mathematical Modeling of Stream Quality

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

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

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

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

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

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

VIII. Modeling Information

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

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

Other Conditions

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

Model Inputs

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

Current Upstream Information

	Stream									
	Critical Low									
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS		
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l		
Summer (Irrig. Season)	800.0	13.4	8.4	0.03	0.10	7.62	0.00	428.0		
Fall	800.0	8.4	7.9	0.03	0.10	---	0.00	456.0		
Winter	800.0	3.9	8.2	0.03	0.10	---	0.00	456.0		
Spring	800.0	8.5	8.3	0.03	0.10	---	0.00	456.0		
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*		
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron				
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l				
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0		* 1/2 MDL		

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Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.00640	16.3	732.00	0.01953
Fall	0.00640	16.3		
Winter	0.00640	16.3		
Spring	0.00640	16.3		

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

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

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

Season	Daily Average	
Summer	0.006 MGD	0.010 cfs
Fall	0.006 MGD	0.010 cfs
Winter	0.006 MGD	0.010 cfs
Spring	0.006 MGD	0.010 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.0064 MGD. If the discharger is allowed to have a flow greater than 0.0064 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

WET Requirements	LC50 >	0.0% Effluent	[Acute]
	IC25 >	0.0% Effluent	[Chronic]

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	1.3 lbs/day
Fall	25.0 mg/l as BOD5	1.3 lbs/day
Winter	25.0 mg/l as BOD5	1.3 lbs/day
Spring	25.0 mg/l as BOD5	1.3 lbs/day

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

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

Season	Concentration
Summer	4.50
Fall	4.50
Winter	4.50
Spring	4.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	102477.8 mg/l as N	5,468.8 lbs/day
	1 Hour Avg. - Acute	72337.1 mg/l as N	3,860.3 lbs/day
Fall	4 Day Avg. - Chronic	224733.2 mg/l as N	11,993.0 lbs/day
	1 Hour Avg. - Acute	128599.2 mg/l as N	6,862.7 lbs/day
Winter	4 Day Avg. - Chronic	143148.9 mg/l as N	7,639.2 lbs/day
	1 Hour Avg. - Acute	106722.8 mg/l as N	5,695.3 lbs/day
Spring	4 Day Avg. - Chronic	224727.6 mg/l as N	11,992.7 lbs/day
	1 Hour Avg. - Acute	128599.2 mg/l as N	6,862.7 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:

	Season	Concentration	Load
Summer	4 Day Avg. - Chronic	628.536 mg/l	33.54 lbs/day
	1 Hour Avg. - Acute	763.594 mg/l	40.75 lbs/day
Fall	4 Day Avg. - Chronic	628.536 mg/l	33.54 lbs/day
	1 Hour Avg. - Acute	763.594 mg/l	40.75 lbs/day
Winter	4 Day Avg. - Chronic	628.536 mg/l	33.54 lbs/day
	1 Hour Avg. - Acute	763.594 mg/l	40.75 lbs/day
Spring	4 Day Avg. - Chronic	628.536 mg/l	33.54 lbs/day
	1 Hour Avg. - Acute	763.594 mg/l	40.75 lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

	Season	Concentration	Load
Summer	Maximum, Acute	6.24E+07 mg/l	1,664.46 tons/day
Fall	Maximum, Acute	6.01E+07 mg/l	1,604.10 tons/day
Winter	Maximum, Acute	6.08E+07 mg/l	1,621.34 tons/day
Spring	4 Day Avg. - Chronic	6.30E+07 mg/l	1,681.71 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 246 mg/l):

	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aluminum	N/A	N/A	3.02E+07 ug/l	1611.9 lbs/day
Arsenic	##### ug/l	404.9 lbs/day	1.37E+07 ug/l	731.3 lbs/day
Cadmium	27,777.36 ug/l	1.0 lbs/day	211,993.4 ug/l	11.3 lbs/day
Chromium III	##### ug/l	383.8 lbs/day	1.52E+08 ug/l	8123.6 lbs/day
Chromium VI	435,827.38 ug/l	15.0 lbs/day	485,835.3 ug/l	25.9 lbs/day
Copper	##### ug/l	41.4 lbs/day	##### ug/l	68.8 lbs/day
Iron	N/A	N/A	4.04E+07 ug/l	2153.4 lbs/day
Lead	571,503.40 ug/l	19.7 lbs/day	1.03E+07 ug/l	552.0 lbs/day
Mercury	744.09 ug/l	0.0 lbs/day	96,964.0 ug/l	5.2 lbs/day
Nickel	##### ug/l	237.4 lbs/day	4.06E+07 ug/l	2164.6 lbs/day
Selenium	186,738.74 ug/l	6.4 lbs/day	743,798.3 ug/l	39.7 lbs/day
Silver	N/A ug/l	N/A lbs/day	719,129.4 ug/l	38.4 lbs/day

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Zinc	##### ug/l	549.6 lbs/day	1.04E+07	ug/l	553.7 lbs/day
Cyanide	322,602.38 ug/l	11.1 lbs/day	888,839.1	ug/l	47.4 lbs/day

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

Summer	100.0 Deg. C.	212.0 Deg. F
Fall	100.0 Deg. C.	212.0 Deg. F
Winter	100.0 Deg. C.	212.0 Deg. F
Spring	100.0 Deg. C.	212.0 Deg. F

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

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

	4 Day Average Concentration	Load	1 Hour Average Concentration		Load
Aldrin			1.5E+00	ug/l	1.24E-04 lbs/day
Chlordane	4.30E-03 ug/l	2.29E-04 lbs/day	1.2E+00	ug/l	9.91E-05 lbs/day
DDT, DDE	1.00E-03 ug/l	5.34E-05 lbs/day	5.5E-01	ug/l	4.54E-05 lbs/day
Dieldrin	1.90E-03 ug/l	1.01E-04 lbs/day	1.3E+00	ug/l	1.03E-04 lbs/day
Endosulfan	5.60E-02 ug/l	2.99E-03 lbs/day	1.1E-01	ug/l	9.08E-06 lbs/day
Endrin	2.30E-03 ug/l	1.23E-04 lbs/day	9.0E-02	ug/l	7.43E-06 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	8.26E-07 lbs/day
Heptachlor	3.80E-03 ug/l	2.03E-04 lbs/day	2.6E-01	ug/l	2.15E-05 lbs/day
Lindane	8.00E-02 ug/l	4.27E-03 lbs/day	1.0E+00	ug/l	8.26E-05 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	2.48E-06 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	8.26E-07 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	3.30E-06 lbs/day
PCB's	1.40E-02 ug/l	7.47E-04 lbs/day	2.0E+00	ug/l	1.65E-04 lbs/day
Pentachlorophenol	1.30E+01 ug/l	6.94E-01 lbs/day	2.0E+01	ug/l	1.65E-03 lbs/day
Toxephene	2.00E-04 ug/l	1.07E-05 lbs/day	7.3E-01	ug/l	6.03E-05 lbs/day

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

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

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	0.3 lbs/day
Nitrates as N	4.0 mg/l	0.2 lbs/day
Total Phosphorus as P	0.05 mg/l	0.0 lbs/day
Total Suspended Solids	90.0 mg/l	4.8 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:

	Maximum Concentration	
	Concentration	Load
Toxic Organics		
Acenaphthene	2.18E+08 ug/l	1.16E+04 lbs/day
Acrolein	6.30E+07 ug/l	3.36E+03 lbs/day
Acrylonitrile	5.33E+04 ug/l	2.85E+00 lbs/day
Benzene	5.74E+06 ug/l	3.06E+02 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	3.56E+05 ug/l	1.90E+01 lbs/day
Chlorobenzene	1.70E+09 ug/l	9.06E+04 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	6.22E+01 ug/l	3.32E-03 lbs/day
1,2-Dichloroethane	8.00E+06 ug/l	4.27E+02 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	7.19E+05 ug/l	3.84E+01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	3.39E+06 ug/l	1.81E+02 lbs/day
1,1,2,2-Tetrachloroethane	8.89E+05 ug/l	4.74E+01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.13E+05 ug/l	6.04E+00 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	3.47E+08 ug/l	1.85E+04 lbs/day
2,4,6-Trichlorophenol	5.25E+05 ug/l	2.80E+01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	3.80E+07 ug/l	2.03E+03 lbs/day
2-Chlorophenol	3.23E+07 ug/l	1.72E+03 lbs/day
1,2-Dichlorobenzene	1.37E+09 ug/l	7.33E+04 lbs/day
1,3-Dichlorobenzene	2.10E+08 ug/l	1.12E+04 lbs/day

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1,4-Dichlorobenzene	2.10E+08 ug/l	1.12E+04 lbs/day
3,3'-Dichlorobenzidine	6.22E+03 ug/l	3.32E-01 lbs/day
1,1-Dichloroethylene	2.59E+05 ug/l	1.38E+01 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	6.38E+07 ug/l	3.41E+03 lbs/day
1,2-Dichloropropane	3.15E+06 ug/l	1.68E+02 lbs/day
1,3-Dichloropropylene	1.37E+08 ug/l	7.33E+03 lbs/day
2,4-Dimethylphenol	1.86E+08 ug/l	9.92E+03 lbs/day
2,4-Dinitrotoluene	7.35E+05 ug/l	3.92E+01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	4.36E+04 ug/l	2.33E+00 lbs/day
Ethylbenzene	2.34E+09 ug/l	1.25E+05 lbs/day
Fluoranthene	2.99E+07 ug/l	1.60E+03 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.37E+10 ug/l	7.33E+05 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.29E+08 ug/l	6.90E+03 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	2.91E+07 ug/l	1.55E+03 lbs/day
Dichlorobromomethane(HM)	1.78E+06 ug/l	9.49E+01 lbs/day
Chlorodibromomethane (HM)	2.75E+06 ug/l	1.47E+02 lbs/day
Hexachlorocyclopentadiene	1.37E+09 ug/l	7.33E+04 lbs/day
Isophorone	4.85E+07 ug/l	2.59E+03 lbs/day
Naphthalene		
Nitrobenzene	1.54E+08 ug/l	8.19E+03 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.13E+09 ug/l	6.04E+04 lbs/day
4,6-Dinitro-o-cresol	6.18E+07 ug/l	3.30E+03 lbs/day
N-Nitrosodimethylamine	6.55E+05 ug/l	3.49E+01 lbs/day
N-Nitrosodiphenylamine	1.29E+06 ug/l	6.90E+01 lbs/day
N-Nitrosodi-n-propylamine	1.13E+05 ug/l	6.04E+00 lbs/day
Pentachlorophenol	6.63E+05 ug/l	3.54E+01 lbs/day
Phenol	3.72E+11 ug/l	1.98E+07 lbs/day
Bis(2-ethylhexyl)phthalate	4.77E+05 ug/l	2.54E+01 lbs/day
Butyl benzyl phthalate	4.20E+08 ug/l	2.24E+04 lbs/day
Di-n-butyl phthalate	9.70E+08 ug/l	5.17E+04 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	9.70E+09 ug/l	5.17E+05 lbs/day
Dimethyl phthlate	2.34E+11 ug/l	1.25E+07 lbs/day
Benzo(a)anthracene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Benzo(a)pyrene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Benzo(b)fluoranthene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Benzo(k)fluoranthene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Chrysene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	2.50E+03 ug/l	1.34E-01 lbs/day

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Pyrene (PAH)	8.89E+08 ug/l	4.74E+04 lbs/day
Tetrachloroethylene	7.19E+05 ug/l	3.84E+01 lbs/day
Toluene	1.62E+10 ug/l	8.62E+05 lbs/day
Trichloroethylene	6.55E+06 ug/l	3.49E+02 lbs/day
Vinyl chloride	4.24E+07 ug/l	2.26E+03 lbs/day

Pesticides

Aldrin	1.13E+01 ug/l	6.04E-04 lbs/day
Dieldrin	1.13E+01 ug/l	6.04E-04 lbs/day
Chlordane	4.77E+01 ug/l	2.54E-03 lbs/day
4,4'-DDT	4.77E+01 ug/l	2.54E-03 lbs/day
4,4'-DDE	4.77E+01 ug/l	2.54E-03 lbs/day
4,4'-DDD	6.79E+01 ug/l	3.62E-03 lbs/day
alpha-Endosulfan	1.62E+05 ug/l	8.62E+00 lbs/day
beta-Endosulfan	1.62E+05 ug/l	8.62E+00 lbs/day
Endosulfan sulfate	1.62E+05 ug/l	8.62E+00 lbs/day
Endrin	6.55E+04 ug/l	3.49E+00 lbs/day
Endrin aldehyde	6.55E+04 ug/l	3.49E+00 lbs/day
Heptachlor	1.70E+01 ug/l	9.06E-04 lbs/day
Heptachlor epoxide		

PCB's

PCB 1242 (Arochlor 1242)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1254 (Arochlor 1254)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1221 (Arochlor 1221)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1232 (Arochlor 1232)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1248 (Arochlor 1248)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1260 (Arochlor 1260)	3.64E+00 ug/l	1.94E-04 lbs/day
PCB-1016 (Arochlor 1016)	3.64E+00 ug/l	1.94E-04 lbs/day

Pesticide

Toxaphene	6.06E+01 ug/l	3.23E-03 lbs/day
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Metals

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

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Dioxin
Dioxin (2,3,7,8-TCDD) 1.13E-03 ug/l 6.04E-08 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		#####				#####	N/A
Antimony				#####		#####	
Arsenic	8080255.1	#####			0.0	8080255.1	11738074.5
Barium						0.0	
Beryllium						0.0	
Cadmium	801601.8	211993.4			0.0	211993.4	27777.4
Chromium (III)		#####			0.0	#####	11125570.4
Chromium (VI)	8016017.9	485835.3			0.0	485835.33	435827.38
Copper	16096273.0	1288683.4				1288683.4	1199638.4
Cyanide		888839.1	#####			888839.1	322602.4
Iron		#####				#####	
Lead	8016017.9	#####			0.0	8016017.9	571503.4
Mercury		96964.02		12120.38	0.0	12120.38	744.095
Nickel		#####		#####		#####	6881052.7
Selenium	3911653.1	743798.3			0.0	743798.3	186738.7
Silver		719129.4			0.0	719129.4	
Thallium				509056.1		509056.1	
Zinc		#####				#####	15932490.8
Boron	60601913.5					#####	

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	3.02E+07	N/A	
Antimony	3.47E+08		
Arsenic	8080255.1	1.17E+07	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	211993.4	27777.4	
Chromium (III)	1.52E+08	11125570	
Chromium (VI)	485835.3	435827.4	
Copper	1288683.4	1199638.4	

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XIII. Notice of UPDES Requirement

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

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File Name: FlamingGorge_WLA_2-27-13

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APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day 0.520	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 0.384	REAER. Coeff. (Ka)20 (Ka)/day 2.638	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 2.256	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.241
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 2.954	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(Cl)20 1/day 32.000	TRC K(Cl)(T) 1/day 21.784
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 0.660						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(Cl) TRC {theta} 1.1	S Benthic {theta} 1.1

ATTACHMENT 3

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis⁹. They are;

- Outcome A: A new effluent limitation will be placed in the permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
- Outcome D: No limitation or routine monitoring requirements are in the permit.

As a result of the ratio of in stream low flow and maximum discharge flow (80,000:1) the WLA indicated limits are relatively high. The nature of the wastewater being treated (no categorical flows, domestic sanitary waste) has been an indicator of a low likely hood of metals being present in the effluent. As a result Flaming Gorge has not been required to monitor for metals in the past. Due to the relatively high values indicated in the WLA it was deemed that a full RPO was not required.

Possible WLA Indicated Metals Limits						
	ug/l		mg/l		g/l	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	30,200,000		30,200		30	
Antimony	347,000,000		347,000		347	
Arsenic	8,080,255	11,700,000	8,080	11,700	8.08	11.7
Cadmium	211,993	27,777	212	28	0.21	0.03
Chromium (III)	152,000,000	11,125,570	152,000	11,126	152	11
Chromium (VI)	485,835	435,827	486	436	0.49	0.44
Copper	1,288,683	1,199,638	1,289	1,200	1.29	1.20
Cyanide	888,839	322,602	889	323	0.89	0.32
Iron	8,016,018		8,016		8.02	
Lead	40,400,000	744	40,400	0.74	40.4	0.0007
Mercury	12,120	571,503	12	572	0.01	0.57
Nickel	40,600,000	6,881,053	40,600	6,881	40.6	6.88
Selenium	743,798	186,739	744	187	0.74	0.19
Silver	719,129		719		0.72	
Zinc	10,400,000	15,900,000	10,400	15,900	10.4	15.9

⁹ See Reasonable Potential Analysis Guidance for definitions of terms

Possible WLA Indicated Limits				
	Concentration, mg/l		Load, lds/day	
Season	Chronic	Acute	Chronic	Acute
Ammonia				
Summer	102,478	72,337	5,469	3,860
Fall	224,733	128,599	11,993	6,863
Winter	143,149	7,639	7,639	5,695
Spring	224,728	128,599	1,193	6,863
TRC				
All	629	764	34	41

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