

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Major Municipal Permit No. **UT0025747**
Biosolids Permit No. **UTL-025747**

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

JORDANELLE SPECIAL SERVICE DISTRICT WATER RECLAMATION FACILITY

is hereby authorized to discharge from its wastewater treatment facility to the following outfalls and receiving waters:

<u>Outfall</u>	<u>Latitude</u>	<u>Longitude</u>	<u>To receiving waters</u>
001	40°34'24"	111°25'28"	Timpanogos Canal
002	40°34'04"	111°25'39"	Wasatch Canal
003	40°34'24"	111°25'40"	Provo River Return Canal
004	40°34'20"	111°25'42"	Provo River

to dispose of biosolids,

and to discharge storm water,

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

This permit shall become effective on April 1, 2019.

This permit expires at midnight on March 31, 2024.

Signed this 21st day of March 2019.


Erica Brown Gaddis, PhD
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

<u>Outfall Numbers</u>	<u>Location of Discharge Outfalls</u>
001	Located at latitude 40°34'24" and longitude 111° 25'28" and discharging to the Timpanagos Canal.
002	Located at latitude 40°34'04" and longitude 111° 25'39" and discharging to the Wasatch Canal.
003	Located at latitude 40°34'24" and longitude 111° 25'40" and discharging to the Provo River Return Canal.
004	Located at latitude 40°34'20" and longitude 111° 25'42" and discharging to the Provo 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 toxicity in Outfall 003 and/or Outfall 004 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.3.a* of this permit.
2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 001, 002, 003, and 004. Such discharges shall be limited and monitored by the permittee as specified below:

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Effluent Limitations (Outfalls 001, 002, 003, 004) a/						
Parameter	Yearly Maximum	90 Day Average	Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	NA	NA	1.0	NA	NA	NA
BOD5, mg/L	NA	NA	10	10	NA	NA
BOD5, Minimum % Removal	NA	NA	85	NA	NA	NA
TSS, mg/L	NA	NA	10	10	NA	NA
TSS, Minimum % Removal	NA	NA	85	NA	NA	NA
E. Coli, no./100mL	NA	NA	126	157	NA	NA
Dissolved Oxygen, mg/L	NA	NA	NA	NA	5.0	NA
TDS, mg/L	NA	NA	NA	NA	NA	1200
Total Phosphorous, mg/L (Interim) e/	NA	NA	NA	NA	NA	0.15
Total Phosphorous, mg/L (May-Oct), (Final)	NA	0.03	NA	NA	NA	0.08
Total Phosphorous, mg/L (Nov-April), (Final)	NA	0.06	NA	NA	NA	0.10
Total Phosphorous, lbs/year h/	91	NA	NA	NA	NA	NA
Oil & Grease, mg/L	NA	NA	NA	NA	NA	10.0
pH, Standard Units	NA	NA	NA	NA	6.5	9.0
WET, Acute Biomonitoring g/	NA	NA	NA	NA	NA	LC ₅₀ > 100% effluent

NA – Not Applicable

MGD – million gallons per day

mg/L – milligrams per liter

The permit self-monitoring and reporting requirements are as follows:

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD5, Influent d/	2 x Week	Composite	mg/L
BOD5, Effluent	2 x Week	Composite	mg/L
BOD5, Minimum % Removal	2 x Week	Calculation	%
TSS, Influent d/	2 x Week	Composite	mg/L
TSS, Effluent	2 x Week	Composite	mg/L
TSS, Minimum % Removal	2 x Week	Calculation	%
E. Coli f/	2 x Week	Grab	mg/L
Dissolved Oxygen	2 x Week	Grab	mg/L
TDS	2 x Week	Grab	mg/L
Total Phosphorus, Effluent h/	2 x Week	Grab	mg/L
Total Phosphorus, Influent	Monthly	Grab	mg/L
Orthophosphate (as P), Effluent only	Monthly	Grab	mg/L

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Total Kjeldahl Nitrogen (as N), Influent & Effluent	Monthly	Grab	mg/L
Nitrate (NO ₃), Effluent only	Monthly	Grab	mg/L
Nitrite (NO ₂), Effluent only	Monthly	Grab	mg/L
Ammonia	2 x Week	Grab	mg/L
Oil & Grease	Monthly If Sheen is Observed	Grab	mg/L
pH	2 x Week	Grab	SU
WET, Acute Biomonitoring g/	Quarterly	Composite	Pass/Fail
Metals, Influent	2 x Year	Composite	mg/L
Metals, Effluent	2 x Year	Composite	mg/L
Organic Toxics, Influent and Effluent	1 st , 3 rd & 5 th Year	Grab	mg/L

- a/ See Definitions, *Part VIII*, for definition of terms.
- b/ Flow measurements of influent/effluent volume shall be made in such a manner that JSSDWRF can affirmatively demonstrate that representative values are being obtained.
- c/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- d/ 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.
- e/ The interim limit is provided to allow a period of time to optimize the process upon start-up of the facility. The interim limit will expire 2 years after the start-up of the facility. Prior to start-up, JSSDWRF must submit documentation of anticipated initial discharge date, to DWQ.
- f/ In order to ensure multiple treatment barriers for the removal of pathogens for human health protection, JSSDWRF will be required to continually operate the Ultra Violet (UV) disinfection system at the manufacturers recommended intensity.
- g/ Discharges to either outfall 001 or outfall 002 are not required to monitor or report for WET. If any discharge occurs to either outfall 003 or outfall 004 for any duration during the reporting period JSSDWRF is required to sample, monitor, and report for WET.
- h/ For calculating the yearly Total Phosphorous load use the following equation: Total load for outfall 001*0.05 + total load for outfall 002*0.50 + total load for outfall 003 + total load for outfall 004. This flow proportioned data is based on average flow data from CUWCD, who operate the canals.

Should JSSDWRF not comply with permit conditions, including but not limited to the yearly maximum load for phosphorous, JSSDWRF will divert the effluent discharge to the Heber Valley SSD lagoons by pipeline in accordance with the agreement between JSSDWRF and Heber Valley SSD. This option would be considered an approved and the preferred option for any bypass or upset condition of the treatment facilities as stated in Part VI.G and Part VI.H of this permit.

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3. Acute Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Acute Toxicity.* Starting immediately the permittee shall quarterly, conduct acute static renewal toxicity tests on a composite sample of the final effluent at Outfalls 003 and/or 004. The samples shall be collected at the point of compliance before mixing with the receiving water.

The monitoring frequency for acute tests shall be quarterly unless a sample is found to be acutely toxic during a routine test. If that occurs, the monitoring frequency shall become weekly (See *Part I.C.3.b, Accelerated Testing*). Unless otherwise approved by the Director, samples shall be collected on a two day progression; i.e., if the first sample is on a Monday, during the next sampling period, the sampling shall begin on a Wednesday, etc.

The static-renewal acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012 as per 40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS. The permittee shall conduct the 48-hour static renewal toxicity test using *Ceriodaphnia dubia* (solution renewal every 24 hours) and the acute 96-hour static renewal toxicity test using *Pimephales promelas* (fathead minnow)(solution renewal every 24 hours). Based on the Test Acceptability Criteria included in Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control dated February 2018, the Director may require acceptable variations in the test, i.e. temperature, carbon dioxide atmosphere, or any other acceptable variations in the testing procedure, as documented in the Fact Sheet Statement of Basis. If possible dilution water should be taken from the receiving stream. A valid replacement test is required within the specified sampling period to remain in compliance.

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the results to be considered valid. If more than 10 percent control survival occurs, the test shall be repeated until satisfactory control mortality is achieved. The permittee shall meet all QA/QC requirements of the acute WET testing method listed in this Section of the permit.

If the permit contains a total residual chlorine limitation such that it may interfere with WET testing (>0.20 mg/L), the permittee may dechlorinate the sample in accordance with approved USEPA methods for WET testing the sample. If dechlorination is affecting the test, the permittee may collect the sample just before chlorination with Director approval.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the required reporting period (month, quarter or semi-annual) e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28. Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with Appendix C of “Utah Pollutant Discharge Elimination System Permitting and Enforcement Guidance Document for Whole Effluent Toxicity, Utah Division of Water Quality, and February 2018.”

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If the results for ten consecutive tests indicate no acute toxicity, the permittee may request a reduction in acute toxicity testing by a reduction in monitoring frequency, alternating species, or using only the most sensitive species. The Director may approve or deny the request. If the request is approved, the test procedures are to be the same as specified above for the test species. Under no circumstances shall monitoring for WET at major facilities be reduced less than quarterly. Minor facilities may be less than quarterly at the discretion of the Director.

- b. *Accelerated Testing.* When whole effluent toxicity is indicated during routine WET testing as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists unless the permittee notifies the Director and commences a PTI, TIE, or a TRE. Accelerated testing or the PTI, TIE, or TRE will begin within fourteen days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under Part I. Pattern of Toxicity. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.
- c. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five biomonitoring tests pursuant to the accelerated testing requirements using a full set of dilutions for acute (five plus the control) and five effluent dilutions for chronic (five plus the control), on the species found to be more sensitive, once every week for up to five consecutive weeks for acute and once every two weeks up to ten consecutive weeks for chronic.

If two (2) consecutive tests (not including the scheduled test which triggered the search for a pattern of toxicity) do not result in an exceedance of the acute or chronic toxicity criteria, no further accelerated testing will be required and no pattern of toxicity will be found to exist. The permittee will provide written verification to the Director within 5 days of determining no pattern of toxicity exists, and resume routine monitoring.

A pattern of toxicity may or may not be established based on the following:

WET tests should be run at least weekly (acute) or every two weeks (chronic) (note that only one test should be run at a time), for up to 5 tests, until either:

- 1) 2 consecutive tests fail, or 3 out of 5 tests fail, at which point a pattern of toxicity will have been identified, or
- 2) 2 consecutive tests pass, or 3 out of 5 tests pass, in which case no pattern of toxicity is identified.

- d. *Preliminary Toxicity Investigation.*

- (1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of

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treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.

- (2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the Director, will be incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit. With adequate justification, the Director may extend these deadlines.
 - (3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (*See Part I.C.3.e, Toxicity Reduction Evaluation*).
 - (4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.
- e. *Toxicity Reduction Evaluation (TRE)*. If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

- (1) Phase I – Toxicity Characterization
- (2) Phase II – Toxicity Identification Procedures
- (3) Phase III – Toxicity Control Procedures
- (4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If toxicity spontaneously disappears during the TIE/TRE, the permittee shall submit written notification to that effect to the Director.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee shall submit the following:

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- (a) An alternative control program for compliance with the numerical requirements.
- (b) If necessary, as determined by the Director, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

This permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or modified WET testing requirements without public notice.

Failure to conduct an adequate TIE/TRE plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be considered a violation of this permit. After implementation of TIE/TRE plan, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit.

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)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Definitions.

For this section the following definitions shall apply:

1. Indirect Discharge means the introduction of pollutants into a POTW from any non-domestic source regulated under section 307 (b), (c) or (d) of the Act.
2. 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 publicly-owned treatment works (POTW) that satisfies any of the following:
 - a. Has a process wastewater flow of 25,000 gallons or more per average work day;
 - b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;
 - c. Is subject to Categorical Pretreatment Standards, or
 - d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.
4. User or Industrial User means a source of Indirect Discharge

B. Self-Monitoring and Reporting Requirements.

1. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop a State-approved industrial pretreatment program at this time. However, in order to determine if development of an industrial pretreatment program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.B.1*, and submit it to the Division of Water Quality within **sixty (60) calendar days** of the effective date of this permit and shall sample and analyze both the influent and effluent, for the following parameters.

Monitoring for Pretreatment Program				
Parameter	MDL a*	Sample Type	Frequency	Units
Total Arsenic	4.04	Composite	2 x Year	mg/L
Total Cadmium	0.0136			
Total Chromium	0.501			
Total Copper	0.473			
Total Cyanide	0.425			
Total Lead	0.210			
Total Mercury	0.00097	Composite/Grab	2 x Year	mg/L
Total Molybdenum	NA	Composite		
Total Nickel	3.75			
Total Selenium	0.351			
Total Silver	0.121			
Total Zinc	4.337			
TTOs, b*	NA	Grab	1 st , 3 rd & 5 th Year	

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- a* The minimum detection limit (MDL) of the test method used for analysis must be below this limit, if a test method is not available the permittee must submit documentation to the Director regarding the method that will be used.
- b* In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D Table II (Organic Toxic Pollutants). The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present.

C. Industrial Wastes.

1. The "Industrial Waste Survey" as required by *Part II.B.1.* consists of;
 - a. Identifying each industrial user (IU) and determining if the IU is a significant industrial user (SIU),
 - b. Determination of the qualitative and quantitative characteristics of each discharge, and
 - c. Appropriate production data.
2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.
3. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall notify the Director.
4. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*.
5. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above, and be forwarded no later than sixty (60) days following the introduction or change.

D. General and Specific Prohibitions.

The general prohibitions and the specific prohibitions apply to each User introducing pollutants into a POTW whether or not the User is subject to other Pretreatment Standards or any national, State or local Pretreatment Requirements.

1. General prohibition Standards A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference.
2. Specific Prohibited Standards (40 CFR 403.5) developed pursuant to *Section 307 of The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any User:
 - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140°F (60°C);

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- b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 - d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;
 - e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
 - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,
 - h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.
 - i. Any pollutant that causes pass through or interference at the POTW.
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 *Section 307 of the Water Quality Act of 1987 as amended (WQA)*. (See *40 CFR, Subchapter N, Parts 400 through 500*, for specific information).

E. Significant 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:

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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*; and/or,
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.
4. Require the permittee to develop an approved pretreatment program.

G. Legal Action.

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

H. Local Limits.

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

III. 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. Biosolids produced at the JSSDWRF are stabilized by an activated sludge process with a retention time for approximately 14 days. The biosolids are dewatered by belt press loaded into a hopper trailer to be hauled elsewhere for disposal.

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

B. Specific Limitations and Monitoring Requirements. All biosolids generated by this facility to be sold or given away to the public shall meet the requirements of *Part III.B.1, 2, 3 and 4* listed below.

1. Metals Limitations. All biosolids sold or given away in a bag or similar container for application to lawns and home gardens must meet the metals limitations as described below. If these metals limitations are not met, the biosolids must be landfilled.

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis

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Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits, (mg/kg)	CPLR [†] , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR [‡] , (mg/ha-yr)
Total Arsenic	75	41	41	41
Total Cadmium	85	39	39	39
Total Copper	4300	1500	1500	1500
Total Lead	840	300	300	300
Total Mercury	57	17	17	17
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	420
Total Selenium	100	100	100	100
Total Zinc	7500	2800	2800	2800

2. Pathogen Limitations. All biosolids sold or given away in a bag or a similar container for application to lawns and home gardens must meet the pathogen limitations for Class A. Land applied biosolids must meet the pathogen limitations for Class B as described below. If the pathogen limitations are not met, the biosolids must be landfilled.
- a. Class A biosolids shall meet one of the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to Further Reduce Pathogens as defined in *40 CFR Part 503.32(a) Sewage Sludge – Class A*.
 - b. Class B biosolids shall meet the pathogen measurement requirements in the following Pathogen Control Class table or shall meet the requirements for a Process to Significantly Reduce Pathogens as defined in *40 CFR Part 503.32(b) Sewage Sludge – Class B*. In addition, the permittee shall comply with all applicable site restrictions listed below (*40 CFR Part 503.32, (b), (5)*):
 - (1) Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application.
 - (2) Food crops with harvested parts below the land surface shall not be harvested for 20 months after application if the biosolids remains on the land surface for four months or more prior to incorporation into the soil.
 - (3) Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.
 - (4) Food crops, feed crops, and fiber crops shall not be harvested from the land for 30 days after application.
 - (5) Animals shall not be allowed to graze on the land for 30 days after application.

[†] CPLR -- Cumulative Pollutant Loading Rate
[‡] APLR – Annual Pollutant Loading Rate

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- (6) Turf grown on land where biosolids is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- (7) Public access to land with a high potential for public exposure shall be restricted for one year after application.
- (8) Public access to land with a low potential for public exposure shall be restricted for 30 days after application.
- (9) The sludge or the application of the sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application.

Pathogen Control Class	
Class A	Class B
B Salmonella species –less than three (3) MPN [§] per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids)	Fecal Coliforms –less than 2,000,000 colony forming units (CFU) per gram total solids
Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

3. Vector Attraction Reduction Requirements.

- a. The permittee will meet vector attraction reduction through use of one of the methods listed in 40 CFR 503.33. Facility is meeting the requirements through the following methods.

- (1) JSSDWRF dewater the biosolids then transfers them to a landfill for disposal where JSSDWRF will need to ensure that the solids are covered daily with soil or another approved material. If the solids are not covered daily, the solids cannot be disposed in the landfill.

If the permittee intends to use another one of the alternatives, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public comment.

4. Self-Monitoring Requirements.

- a. At a minimum, upon the effective date of this permit, all chemical pollutants, pathogens and applicable vector attraction reduction requirements shall be monitored according to 40 CFR 503.16(1)(a).

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)	
Amount of Biosolids Disposed Per Year**	Monitoring Frequency

[§] MPN –Most Probable Number

** The JSSDWRF has not been put into operation yet, and as such they have not produced any biosolids. When JSSDWRF does start up operating they will be required to sample once the first calendar year, and then estimate how much biosolids they will produce the next year and sample accordingly.

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Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

- b. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CRF 503* and/or other criteria specific to this permit. A metals analysis is to be performed using *Method SW 846* with *Method 3050* used for digestion. For the digestion procedure, an amount of biosolids equivalent to a dry weight of one gram shall be used. The methods are also described in the latest version of the *Region VIII Biosolids Management Handbook*.
- c. The Director may request additional monitoring for specific pollutants derived from biosolids if the data shows a potential for concern.
- d. After two (2) years of monitoring at the frequency specified, the permittee may request that the Director reduce the sampling frequency for the heavy metals. The frequency cannot be reduced to less than once per year for biosolids that are sold or given away to the public for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

C. Management Practices of Biosolids.

1. Biosolids Distribution Information

- a. For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
 - (1) The name and address of the person who prepared the biosolids for a sale or to be given away.
 - (2) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.

2. Biosolids Application Site Storage

- a. For biosolids or material derived from biosolids that are stored in piles for one year or longer, measures shall be taken to ensure that erosion (whether by wind or water) does not occur. However, best management practices should also be used for piles used for biosolids treatment. If a treatment pile is considered to have caused a problem, best management practices could be added as a requirement in the next permit renewal

3. Land Application Practices

- a. The permittee shall operate and maintain the land application site operations in accordance with the following requirements:
 - (1) The permittee shall provide to the Director and the EPA within 90 days of the effective date of this permit a land application plan.

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- (2) Application of biosolids shall be conducted in a manner that will not contaminate the groundwater or impair the use classification for that water underlying the sites.
- (3) Application of biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Biosolids shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR 122.2).
- (4) No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:
 - (a) there is 80 percent vegetative ground cover; or,
 - (b) approval has been obtained based upon a plan demonstrating adequate runoff containment measures.
- (5) Application of biosolids is prohibited to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent.
- (6) Agronomic Rate
 - (a) Application of biosolids shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the latest version of the *Region VIII Biosolids Management Handbook* (other methods may be approved by the Director). The treatment plant shall provide written notification to the applier of the biosolids of the concentration of total nitrogen (as N on a dry weight basis) in the biosolids. Written permission from the Director is required to exceed the agronomic rate.
 - (b) The permittee may request the limits of *Part III, C, 6* be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.
 - (c) Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites
- (7) Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described

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in *Part III.C.(6),(c)*. is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.

- (8) The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.
- (9) When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.
- (10) For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
 - (a) The name and address of the person who prepared the biosolids for sale or give away for application to the land.
 - (b) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.
 - (c) The annual whole biosolids application rate for the biosolids that do not cause the metals loading rates in Tables 1, 2, and 3 (*Part III.B.1.*) to be exceeded.
- (11) Biosolids subject to the cumulative pollutant loading rates in Table 2 (*Part III.B.1.*) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.
- (12) If the treatment plant applies the biosolids, it shall provide the owner or leaseholder of the land on which the biosolids are applied notice and necessary information to comply with the requirements in this permit.
- (13) The permittee shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges, which may cause or lead to the release of biosolids to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

D. Special Conditions on Biosolids Storage. Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two (2) years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of

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biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.

E. Representative Sampling. Biosolids samples used to measure compliance with *Part III* of this Permit shall be collected at locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

F. Reporting of Monitoring Results.

1. Biosolids. The permittee shall provide the results of all monitoring performed in accordance with *Part III.B*, and information on management practices, biosolids treatment, site restrictions and certifications shall be provided no later than February 19 of each year. Each report is for the previous calendar year. If no biosolids were sold or given away during the reporting period, "no biosolids were sold or given away" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the *Signatory Requirements* (see *Part VII.G*), and submitted to the Utah Division of Water Quality by NetDMR^{††} or at the following address:

Original to: Biosolids Coordinator
 Utah Division of Water Quality
 PO Box 144870
 Salt Lake City Utah, 84114-4870

G. Additional Record Keeping Requirements Specific to Biosolids.

1. Unless otherwise required by the Director, **the permittee is not required to keep records** on compost products if the permittee prepared them from biosolids that meet the limits in Table 3 (*Part III.B.1*), the Class A pathogen requirements in *Part III.B.2* and the vector attraction reduction requirements in *Part III.B.3*. The Director may notify the permittee that additional record keeping is required if it is determined to be significant to protecting public health and the environment.

2. **The permittee is required** to keep the following information for at least 5 years:

- a. Concentration of each heavy metal in Table 3 (*Part III.B.1*).
- b. A description of how the pathogen reduction requirements in *Part III.B.2* were met.
- c. A description of how the vector attraction reduction requirements in *Part III.B.3* were met.
- d. A description of how the management practices in *Part III.C* were met (if necessary).
- e. The following certification statement:

"I certify under the penalty of law, that the heavy metals requirements in *Part III.B.1*, the pathogen requirements in *Part III.B.2*, the vector attraction requirements in *Part III.B.3*, the management practices in *Part III.C*. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to

^{††} Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Annual Biosolids Reports should also be submitted through this system.

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determine that the pathogen requirements, the vector attraction reduction requirements and the management practices have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

3. 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 the life of the permit. Data collected on site, copies of Biosolids Report forms, and a copy of this UPDES biosolids-only permit must be maintained on site during the duration of activity at the permitted location.

IV. STORM WATER REQUIREMENTS.

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

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

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

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

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

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

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

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

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

- (c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph *i.* (above) shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part VII.G* (Signatory Requirements) of this permit.

- (11) *Deadlines for Plan Preparation and Compliance.* The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part IV.C.1.c.(10)*, Comprehensive Site Evaluation.

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

D. Monitoring and Reporting Requirements.

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

 - b. *Visual Storm Water Discharge Examination Reports.* Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include

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

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

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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

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

VI. COMPLIANCE RESPONSIBILITIES

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

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

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

H. Upset Conditions.

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

VII. GENERAL REQUIREMENTS

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

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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 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, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;

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1. Toxicity is detected, as per *Part I.C.4.a* and *b* of this permit, during the duration of this permit.
 2. The TRE results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the Director agrees with the conclusion.
 3. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits, and the Director concludes that numerical controls are appropriate.
 4. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.
 5. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.
- 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 < 1.2% effluent. The 1.2% 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;
 - b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

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

B. Biosolids.

- 1. "Biosolids," means any material or material derived from sewage solids that have been biologically treated.
- 2. "Dry Weight-Basis," means 100 percent solids (i.e. zero percent moisture).
- 3. "Land Application" is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so that the biosolids can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the biosolids).
- 4. "Pathogen," means an organism that is capable of producing an infection or disease in a susceptible host.

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5. "Pollutant" for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.
6. "Runoff" is rainwater, leachate, or other liquid that drains over any part of a land surface and runs off the land surface.
7. "Similar Container" is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.
8. "Total Solids" are the materials in the biosolids that remain as a residue if the biosolids are dried at 103° or 105° Celsius.
9. "Treatment Works" are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste or liquid manure.
10. "Vector Attraction" is the characteristic of biosolids that attracts rodents, flies, mosquitos or other organisms capable of transporting infectious agents.
11. "Animals" for the purpose of this permit are domestic livestock.
12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.
13. "Agronomic Rate" is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.
14. "Annual Pollutant Loading Rate" is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
15. "Application Site or Land Application Site" means all contiguous areas of a users' property intended for sludge application.
16. "Cumulative Pollutant Loading Rate" is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.
17. "Grit and Screenings" are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to 40 CFR 258.

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18. "High Potential for Public Contact Site" is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
19. "Low Potential for Public Contact Site" is the land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.
20. "Monthly Average" is the arithmetic mean of all measurements taken during the month.
21. "Volatile Solids" is the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

C. Storm Water.

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.
3. "Co-located industrial activity" means when a facility has industrial activities being conducted onsite that are described under more than one of the coverage sections of *Appendix II* in the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity. Facilities with co-located industrial activities shall comply with all applicable monitoring and pollution prevention plan requirements of each section in which a co-located industrial activity is described.
4. "Commercial Treatment and Disposal Facilities" means facilities that receive, on a commercial basis, any produced hazardous waste (not their own) and treat or dispose of those wastes as a service to the generators. Such facilities treating and/or disposing exclusively residential hazardous wastes are not included in this definition.
5. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.
6. "Land application unit" means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.
7. "Municipal separate storm sewer system" (large and/or medium) means all municipal separate storm sewers that are either:
 - a. Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (at the issuance date of this permit, Salt Lake City is the only city in Utah that falls in this category);
or

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- b. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (at the issuance date of this permit Salt Lake County is the only county that falls in this category); or
 - c. Owned or operated by a municipality other than those described in paragraph *a.* or *b.* (above) and that are designated by the *Director* as part of the large or medium municipal separate storm sewer system.
8. "NOI" means "notice of intent", it is an application form that is used to obtain coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
9. "NOT" means "notice of termination", it is a form used to terminate coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
10. "Point source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
11. "Section 313 water priority chemical" means a chemical or chemical categories that:
- a. Are listed at *40 CFR 372.65* pursuant to *Section 313* of the *Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III of the Superfund Amendments and Reauthorization Act (SARA)* of 1986);
 - b. Are present at or above threshold levels at a facility subject to *EPCRA Section 313* reporting requirements; and
 - c. Meet at least one of the following criteria:
 - (1) Are listed in *Appendix D* of *40 CFR Part 122* on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);
 - (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or
 - (3) Are pollutants for which EPA has published acute or chronic water quality criteria. See *Appendix III* of this permit. This appendix was revised based on final rulemaking EPA published in the *Federal Register* November 30, 1994.
12. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *CERCLA*; any chemical the facility is required to

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report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

13. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311 of the Clean Water Act* (see *40 CFR 110.10* and *CFR 117.21*) or *Section 102 of CERCLA* (see *40 CFR 302.4*).
14. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.
15. "SWDMR" means "storm water discharge monitoring report", a report of the results of storm water monitoring required by the permit. The Division of Water Quality provides the storm water discharge monitoring report form.
16. "Storm water associated with industrial activity" (*UAC R317-8-3.8(6)(c) & (d)*) means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the *UPDES* program. For the categories of industries identified in paragraphs (a) through (j) of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined in *40 CFR Part 401*); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph (k) of this definition, the term includes only storm water discharges from all areas (except access roads and rail lines) listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (a) to (k) of this definition) include those facilities designated under *UAC R317-8-3.8(1)(a)5*. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:
 - a. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under *40 CFR Subchapter N* (except facilities with toxic pollutant effluent standards that are exempted under category (k) of this definition);

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- b. Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;
- c. Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under *40 CFR 434.11(l)* because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations that have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but that have an identifiable owner/operator;
- d. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;
- e. Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under *Subtitle D* of RCRA;
- f. Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;
- g. Steam electric power generating facilities, including coal handling sites;
- h. Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45 and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified under paragraphs (a) to (g) or (l) to (k) of this subsection are associated with industrial activity;
- i. Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under *40 CFR Part 403*. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and that are not physically located in the confines of the facility, or areas that are in compliance with *40 CFR Part 503*;

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- j. Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area that are not part of a larger common plan of development or sale;
 - k. Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and that are not otherwise included within categories (a) to (j))
17. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

FACT SHEET AND STATEMENT OF BASIS
JORDANELLE SPECIAL SERVICE DISTRICT WATER RECLAMATION FACILITY
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0025747
UPDES BIOSOLIDS PERMIT NUMBER: UTL-025747
MAJOR MUNICIPAL

FACILITY CONTACTS

Name:	Ron Phillips
Position:	General Manager
Name:	Max Covey
Position:	Assistant General Manager
Name:	Wade Webster
Position:	Treatment Manager
Facility Name:	Jordanelle SSD WRF
Facility Mailing Address:	PO Box 519 Heber City, UT 84032
Telephone:	(435) 940-0475
Actual Address:	5400 North Old Hwy 40 Heber City, UT 84032

DESCRIPTION OF FACILITY

Jordanelle Special Service District Water Reclamation Facility (JSSDWRF) is a domestic waste water treatment plant that has a design flow rate of 1.0 million gallons per day (MGD). The idled facility was built in 2008 to serve the future developments in the area of Jordanelle Reservoir north of Heber City in Wasatch County, Utah. Once operational, the facility's treatment flow will be as follows; raw influent through fine screens, and then through a series of anaerobic and aerobic tanks (which is a biological aid in the removal of phosphorous), then through a membrane bio-reactor (which will include the addition of alum for further phosphorous removal), then through an ultra violet (UV) disinfection system. The solids handling consists of an aerated solids handling basin and a belt press for dewatering.

BACKGROUND INFORMATION

JSSDWRF is located near the Provo River, which is a drinking water source and classified as a blue ribbon fishery. The discharge of JSSDWRF is located in the Provo River Watershed, which has an approved TMDL for a Phosphorous based beneficial use impairment. The total phosphorous calculation in the permit is flow proportioned based on Central Utah Water Conservancy District (CUWCD) flow data of water from the Timpanogos and Wasatch canals that return to the Provo River. The flow proportioned data from CUWCD will be reevaluated every permit cycle.

There is a signed memorandum of agreement between Jordanelle Special Service District, CUWCD, and the Department of Interior (DOI) which allows JSSDWRF to discharge to the DOI owned canals that are operated by CUWCD. This agreement prohibits a discharge to the Provo River, but does allow for a direct discharge option in the event of the termination of the agreement.

There is also a memorandum signed by the Heber Valley Special Service District (HVSSD) board members, which allows JSSDWRF to divert the discharge in emergency situations or times when the effluent quality does not meet discharge standards to HVSSD.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There are no changes being proposed to the permit effluent limitations at this time. Permit monitoring requirement changes include the omission of chronic biomonitoring (acute biomonitoring remains unchanged), which is discussed further in the Biomonitoring section of this document, as well as the addition of nutrient monitoring parameters for both the influent and effluent flows as described below.

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 unless a waiver has been granted by the Division of water Quality (DWQ). On April 20, 2018, DWQ issued JSSDWRF a waiver to the TBPEL rule based upon the existing Total Maximum Daily Load (TMDL), which already includes a phosphorous load allocation for the treatment works facility.

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 (an 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

JSSDWRF has not discharged to date as the facility is not currently receiving influent wastewater however, this will likely change in the near future once the facility is brought online. JSSDWRF has four permitted outfalls for discharging as follows:

<u>Outfall Numbers</u>	<u>Location of Discharge Outfalls</u>
001	Located at latitude 40°34'24" and longitude 111° 25'28" and discharging to the Timpanagos Canal.
002	Located at latitude 40°34'04" and longitude 111° 25'39" and discharging to the Wasatch Canal.
003	Located at latitude 40°34'24" and longitude 111° 25'40" and discharging to the Provo River Return Canal.
004	Located at latitude 40°34'20" and longitude 111° 25'42" and discharging to the Provo River.

RECEIVING WATERS AND STREAM CLASSIFICATION

Upon future effluent discharges, the ultimate receiving water is the Provo River. The Provo River has been classified as Class 1C, 2B, 3A, and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

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

BASIS FOR EFFLUENT LIMITATIONS

Limitations for E. Coli, pH, total dissolved solids (TDS), and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. Permit limitations on total suspended solids (TSS) and biochemical oxygen demand (BOD₅) that are more restrictive than secondary standards are incorporated based on best professional judgment (BPJ) by the permitting authority to be more protective because the Provo River is designated as a blue ribbon fishery and a drinking water source. The total phosphorous limitation is based on a Total Maximum Daily Load (TMDL) study that has been approved by EPA and is based upon best available treatment technology. The oil and grease is based on BPJ by the permitting authority and is consistent with similar facilities statewide. The Dissolved oxygen limit and WET limit are based on the Waste Load Analysis (WLA).

The WLA, which is included as an attachment addendum, incorporates Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During the UPDES permit development, a WLA and ADR were

performed. An ADR Level I review was performed and the conclusion was that an ADR level II review was required, because the receiving water or downstream water is a 1C drinking water source. The ADR level II review was completed as required during the previous permit renewal process and remains current since JSSDWRF is without any changes in treatment operations or design flows.

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. A formal RP analysis for this permit renewal was not conducted because there has been a lack of discharge data from JSSDWRF, which currently remains inactive. Once JSSDWRF begins operating and discharging regularly, a qualitative RP analysis can then be performed on subsequent permit renewals as appropriate.

The permit limitations are as follows:

Effluent Limitations (Outfalls 001, 002, 003, 004) a/						
Parameter	Yearly Maximum	90 Day Average	Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	NA	NA	1.0	NA	NA	NA
BOD5, mg/L	NA	NA	10	10	NA	NA
BOD5, Minimum % Removal	NA	NA	85	NA	NA	NA
TSS, mg/L	NA	NA	10	10	NA	NA
TSS, Minimum % Removal	NA	NA	85	NA	NA	NA
E. Coli, no./100mL	NA	NA	126	157	NA	NA
Dissolved Oxygen, mg/L	NA	NA	NA	NA	5.0	NA
TDS, mg/L	NA	NA	NA	NA	NA	1200
Total Phosphorous, mg/L (Interim) e/	NA	NA	NA	NA	NA	0.15
Total Phosphorous, mg/L (May-Oct), (Final)	NA	0.03	NA	NA	NA	0.08
Total Phosphorous, mg/L (Nov-April), (Final)	NA	0.06	NA	NA	NA	0.10
Total Phosphorous, lbs/year h/	91	NA	NA	NA	NA	NA
Oil & Grease, mg/L	NA	NA	NA	NA	NA	10.0
pH, Standard Units	NA	NA	NA	NA	6.5	9.0
WET, Acute Biomonitoring g/	NA	NA	NA	NA	NA	LC ₅₀ > 100% effluent

NA – Not Applicable

MGD – million gallons per day

mg/L – milligrams per liter

SELF-MONITORING AND REPORTING REQUIREMENTS

The permit will require self-monitoring reports to be submitted monthly and quarterly, as applicable, 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. The permit requirements are as follows:

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD5, Influent d/	2 x Week	Composite	mg/L
BOD5, Effluent	2 x Week	Composite	mg/L
BOD5, Minimum % Removal	2 x Week	Calculation	%
TSS, Influent d/	2 x Week	Composite	mg/L
TSS, Effluent	2 x Week	Composite	mg/L
TSS, Minimum % Removal	2 x Week	Calculation	%
E. Coli f/	2 x Week	Grab	mg/L
Dissolved Oxygen	2 x Week	Grab	mg/L
TDS	2 x Week	Grab	mg/L
Total Phosphorus, Effluent h/	2 x Week	Grab	mg/L
Total Phosphorus, Influent	Monthly	Grab	mg/L
Orthophosphate (as P), Effluent only	Monthly	Grab	mg/L
Total Kjeldahl Nitrogen (as N), Influent & Effluent	Monthly	Grab	mg/L
Nitrate (NO3), Effluent only	Monthly	Grab	mg/L
Nitrite (NO2), Effluent only	Monthly	Grab	mg/L
Ammonia	2 x Week	Grab	mg/L
Oil & Grease	Monthly If Sheen is Observed	Grab	mg/L
pH	2 x Week	Grab	SU
WET, Acute Biomonitoring g/	Quarterly	Composite	Pass/Fail
Metals, Influent	2 x Year	Composite	mg/L
Metals, Effluent	2 x Year	Composite	mg/L
Organic Toxics, Influent and Effluent	1 st , 3 rd & 5 th Year	Grab	mg/L

a/ See Definitions, *Part VIII*, for definition of terms.

b/ Flow measurements of influent/effluent volume shall be made in such a manner that JSSDWRF can affirmatively demonstrate that representative values are being obtained.

c/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

d/ 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.

- e/ The interim limit is provided to allow a period of time to optimize the process upon start-up of the facility. The interim limit will expire 2 years after the start-up of the facility. Prior to start-up, JSSDWRF must submit documentation of anticipated initial discharge date, to DWQ.
- f/ In order to ensure multiple treatment barriers for the removal of pathogens for human health protection, JSSDWRF will be required to continually operate the Ultra Violet (UV) disinfection system at the manufacturers recommended intensity.
- g/ Discharges to either outfall 001 or outfall 002 are not required to monitor or report for WET. If any discharge occurs to either outfall 003 or outfall 004 for any duration during the reporting period JSSDWRF is required to sample, monitor, and report for WET.
- h/ For calculating the yearly Total Phosphorous load use the following equation: Total load for outfall 001*0.05 + total load for outfall 002*0.50 + total load for outfall 003 + total load for outfall 004. This flow proportioned data is based on average flow data from CUWCD, who operate the canals.

Should JSSDWRF not comply with permit conditions, including but not limited to the yearly maximum load for phosphorous, JSSDWRF will divert the effluent discharge to the Heber Valley SSD lagoons by pipeline in accordance with the agreement between JSSDWRF and Heber Valley SSD. This option would be considered an approved and the preferred option for any bypass or upset condition of the treatment facilities as stated in Part VI.G and Part VI.H of this permit.

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.

DESCRIPTION OF TREATMENT AND DISPOSAL

JSSDWRF screens the influent to remove the larger pieces of debris and the solids are stabilized by activated sludge treatment with a mean cell residence time of approximately 14 days in a new, state of the art membrane bioreactor plant. After stabilization, the biosolids are de-watered by belt press and loaded into a hopper trailer to be hauled elsewhere for disposal. Since this is a new water reclamation facility, the biosolids will probably be disposed in a landfill; or may be hauled to a composting site at another location for further treatment, or may be hauled to a soil regeneration facility such as ET Technologies for final landfill cover at the Salt Lake County Landfill.

If the biosolids are hauled to another facility to meet land application requirements for sale or giveaway to the public, that facility must have a valid UPDES biosolids permit and will be responsible for meeting all requirements of *40 CFR 503*.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1)*, the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

The JSSDWRF has not been put into operation yet, and as such they have not produced any biosolids. When JSSDWRF does start up operating they will be required to sample once the first calendar year, and then estimate how much biosolids they will produce the next year and sample accordingly.

Landfill Monitoring

Under 40 CFR 258, the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (40 CFR 258.28(c)(1)).

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

The intent of the heavy metals regulations of Table 3, 40 CFR 503.13 is to ensure the heavy metals do not build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see Part III. C. of the permit) to made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements With Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 1 and the monthly average pollutant concentrations in Table 3 (see Table 1 and Table 3 below). If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of 40 CFR 503.13 is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see Part III. C. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of 40 CFR 503.13, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

The maximum heavy metals listed in 40 CFR Part 503.13(b) Table 1 and the heavy metals loading rates in 40 CFR Part 503.13(b) Table 2; or

The maximum heavy metals in 40 CFR Part 503.13(b) Table 1 and the monthly heavy metals concentrations in 40 CFR Part 503.13(b) Table 3.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits, (mg/kg)	CPLR ¹ , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR ² , (mg/ha-yr)
Total Arsenic	75	41	41	41
Total Cadmium	85	39	39	39
Total Copper	4300	1500	1500	1500
Total Lead	840	300	300	300
Total Mercury	57	17	17	17
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	420
Total Selenium	100	100	100	100
Total Zinc	7500	2800	2800	2800

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit .If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

Pathogen Control Class	
Class A	Class B
B Salmonella species –less than three (3) MPN ³ per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids)	Fecal Coliforms –less than 2,000,000 colony forming units (CFU) per gram total solids
Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

¹ CPLR -- Cumulative Pollutant Loading Rate

² APLR – Annual Pollutant Loading Rate

³ MPN –Most Probable Number

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids.

JSSDWRF does not intend to give away biosolids for land application on home lawns or gardens, and will therefore not be required to meet PFRP. If the JSSDWRF changes their intentions in the future, they will need to meet a specific PFRP, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). JSSDWRF does not intend to land apply the biosolids and will therefore not be required to meet PSRP. If the JSSDWRF intends to land apply in the future, they will need to meet a specific PSRP, the Director must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

Vector Attraction Reduction (VAR)

If the biosolids are land applied JSSDWRF will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. JSSDWRF does not intend to land apply the biosolids and will therefore not be required to meet VAR. If the JSSDWRF intends to land apply in the future, they need to meet one of the listed alternatives in *40 CFR 503.33*, the Director must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G.* of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

Reporting

JSSDWRF must report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

MONITORING DATA

The JSSDWRF has not been put into operation yet, and as such they have not produced any biosolids to monitor or report on yet.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include:

1. The development of a pollution prevention team,
2. Development of drainage maps and materials stockpiles,
3. An inventory of exposed materials,
4. Spill reporting and response procedures,
5. A preventative maintenance program,
6. Employee training,
7. Certification that storm water discharges are not mixed with non-storm water discharges,
8. Compliance site evaluations and potential pollutant source identification, and
9. Visual examinations of storm water discharges.

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. As part of this evaluation, the permit requires 2 x year influent and effluent monitoring for metals and organic toxics listed in *R317-8-7.5* in the 1st, 3rd and 5th year of the permit, and sludge monitoring for potential pollutants listed in *40 CFR 503*.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern (biomonitoring) is regulated in accordance with the UPDES Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control dated February 2018. 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.

Since JSSDWRF is a major municipal discharger, the permit will require whole effluent toxicity (WET) biomonitoring testing from outfalls discharging to the Provo River (Outfalls 003 & 004). Upon discharges from outfalls 003 and/or 004, Acute WET testing will be required quarterly using both the *Ceriodaphnia dubia* and the *Pimephales promelas* (fathead minnows) species. Previously JSSDWRF was required to perform both Acute and Chronic WET testing using both testing species. This change to Acute WET testing only is based upon the recently revised UPDES Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control dated February 2018, which only requires Acute testing in this case due to the high dilution effect of the receiving waters. The permit will also contain the standard requirements for accelerated testing upon failure of a WET test, a Preliminary Toxicity Investigation (PTI) and Toxicity Reduction Evaluation (TRE) as necessary, and a toxicity limitation re-opener provision as appropriate.

PERMIT DURATION

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

Drafted November 19, 2018 by

Jeff Studenka, Discharge
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Lisa Stevens, Storm Water
Sandy Wingert, Watershed/TMDL
Dave Wham, Wasteload Analysis

Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE INFORMATION (Updated February 13, 2019)

Began: December 18, 2018

Ended: January 18, 2019

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

The Public Noticed of the draft permit was published in The Wasatch Wave.

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. Comments were received and responded to separately. None of the comments received resulted in any changes to the permit. Staff recommends re-issuance of the permit as drafted.

ADDENDUM TO FSSOB

Attachment 1: Wasteload Analysis

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ATTACHMENT 1

Wasteload Analysis

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

Date: October 4, 2018

Prepared by: Dave Wham 
Standards and Technical Services

Facility: Jordanelle Special Service District, Jordanelle Water Reclamation Facility
UPDES No. UT0025747

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

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

Discharge

1.0 MGD design flow rate.

Discharge 001 Timpanogos Canal
Discharge 002 Wasatch Canal
Discharge 003 Provo River Return Canal
Discharge 004 Provo River

Receiving Water

The ultimate receiving water for the JSSD's discharge is the Provo River.

Per UAC R317-2-13.5(b), the designated beneficial uses of Provo River is 1C, 2A, 3A, 4.

- *Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.*
- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*

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Wasteload Analysis
Jordanelle Special Service District, Jordanelle Water Reclamation Facility
UPDES No. UT0025747

- *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.*

Ambient water quality for the receiving water for discharge was characterized using data from DWQ Monitoring Station #4997330, PROVO R BL JORDANELLE RES. ON OLD US40 XING, from the period 2006-2016.

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). In the case of the Provo River, streamflow is controlled by Jordanelle Dam. The federal Central Utah Project Completion Act (CUPCA), section 303(c)(2), requires minimum flows in Provo River of 125 cfs from Jordanelle Dam to Deer Creek Reservoir. As a result, 125 cfs was considered the critical low flow for this analysis.

TMDL

According to the Utah's 2016 303(d) Water Quality Assessment, the assessment unit for this segment of the Provo River (Provo River from Deer Creek Reservoir to Jordanelle Reservoir; UT16020203-004_00) was listed as impaired for E. coli (Class 1C and 2B uses). For this receiving water, secondary standards for E. coli are more stringent the water quality based criteria and would be protective of the designated uses.

Deer Creek Reservoir (UT-L-16020203-001_00), located just downstream of the treatment facility, is listed on Utah's 2016 303(d) Water Quality Assessment as impaired for temperature and dissolved oxygen (3A use). A TMDL study addressing the dissolved oxygen impairment through the control of phosphorous loading to the watershed was completed September 9, 2002. The approved TMDL set the following wasteload-related endpoints:

- In-stream phosphorus concentration of 0.030 mg/l total phosphorous (TP), and
- In-stream phosphorus concentration 0.020 mg/l dissolved total phosphorous (DTP).

Mixing Zone

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

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were phosphorous, E. coli and temperature as a result of the impairment status of the receiving waters.

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Wasteload Analysis
Jordanelle Special Service District, Jordanelle Water Reclamation Facility
UPDES No. UT0025747

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

IC25 WET limits for Outfalls 001 should be based on 1.2% effluent.

Wasteload Allocation Methods

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

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

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is required for this facility as it discharges to a Class 1C Drinking Water Source. The proposed permit is a simple renewal of an existing UPDES permit. No increase in flow or concentration of pollutants over those authorized in the the existing permit is being requested.

Documents:

WLA Document: *JSSD_WWTP_WLADoc_10-4-18.docx*
Wasteload Analysis and Addendums: *JSSD_WWTP_WLA_10-4-18.xlsm*

References:

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

Utah Division of Water Quality. 1992. *Deer Creek Reservoir TMDL Study*

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility: JSSD WWTP
UPDES No: UT-0025747
Design Flow 1.00 MGD

Receiving Water: Provo River
Stream Classification: 1C, 2B, 3A, 4
Stream Flows [cfs]:
125.00 Summer (July-Sept) Minimum Flow
125.00 Fall (Oct-Dec) Minimum Flow
125.00 Winter (Jan-Mar) Minimum Flow
125.00 Spring (Apr-June) Minimum Flow

Stream TDS Values:
104.0 Summer (July-Sept) Average
117.0 Fall (Oct-Dec) Average
157.0 Winter (Jan-Mar) Average
124.0 Spring (Apr-June) Average

Effluent Limits:		WQ Standard:	
Flow, MGD:	1.00 MGD	Design Flow	
BOD, mg/l:	25.0 Summer	5.0 Indicator	
Dissolved Oxygen, mg/l	5.0 Summer	6.5 30 Day Average	
TNH3, Chronic, mg/l:	270.4 Summer	Varies Function of pH and Temperature	
TDS, mg/l:	89758.5 Summer	1200.0	

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

Level 1 Antidegradation Level Completed: Level II Review required; 1C Drinking water source.

Date: 1/30/2018

Utah Division of Water Quality
Salt Lake City, Utah

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

30-Jan-18
4:00 PM

Facilities: JSSD WWTP
Discharging to: Provo River

UPDES No: UT-0025747

THIS IS A DRAFT DOCUMENT

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

Provo River:	1C, 2B, 3A, 4
Antidegradation Review:	Level 1 Antidegradation Level Completed: Level II Review required; 1C Drinking water source.

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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Salt Lake City, Utah**

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.727 lbs/day	750.00	ug/l	6.266 lbs/day
Arsenic	190.00 ug/l	1.587 lbs/day	340.00	ug/l	2.841 lbs/day
Cadmium	0.25 ug/l	0.002 lbs/day	1.92	ug/l	0.016 lbs/day
Chromium III	79.14 ug/l	0.661 lbs/day	1655.82	ug/l	13.834 lbs/day
ChromiumVI	11.00 ug/l	0.092 lbs/day	16.00	ug/l	0.134 lbs/day
Copper	8.54 ug/l	0.071 lbs/day	12.69	ug/l	0.106 lbs/day
Iron			1000.00	ug/l	8.355 lbs/day
Lead	2.79 ug/l	0.023 lbs/day	71.52	ug/l	0.598 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.020 lbs/day
Nickel	47.77 ug/l	0.399 lbs/day	429.66	ug/l	3.590 lbs/day
Selenium	4.60 ug/l	0.038 lbs/day	20.00	ug/l	0.167 lbs/day
Silver	N/A ug/l	N/A lbs/day	3.16	ug/l	0.026 lbs/day
Zinc	109.71 ug/l	0.917 lbs/day	109.71	ug/l	0.917 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 90.12 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.013 lbs/day
Chlordane	0.004 ug/l	2.933 lbs/day	1.200	ug/l	0.010 lbs/day
DDT, DDE	0.001 ug/l	0.682 lbs/day	0.550	ug/l	0.005 lbs/day
Dieldrin	0.002 ug/l	1.296 lbs/day	1.250	ug/l	0.010 lbs/day
Endosulfan	0.056 ug/l	38.197 lbs/day	0.110	ug/l	0.001 lbs/day
Endrin	0.002 ug/l	1.569 lbs/day	0.090	ug/l	0.001 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	2.592 lbs/day	0.260	ug/l	0.002 lbs/day
Lindane	0.080 ug/l	54.567 lbs/day	1.000	ug/l	0.008 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	9.549 lbs/day	2.000	ug/l	0.017 lbs/day
Pentachlorophenol	13.00 ug/l	8867.148 lbs/day	20.000	ug/l	0.167 lbs/day
Toxephene	0.0002 ug/l	0.136 lbs/day	0.7300	ug/l	0.006 lbs/day

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IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	3.13 lbs/day
Cadmium			10.0 ug/l	0.04 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	5.01 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			50.0 ug/l	34.104 lbs/day
Barium			1000.0 ug/l	682.088 lbs/day
Cadmium			10.0 ug/l	6.821 lbs/day
Chromium			50.0 ug/l	34.104 lbs/day
Lead			50.0 ug/l	34.104 lbs/day
Mercury			2.0 ug/l	1.364 lbs/day
Selenium			10.0 ug/l	6.821 lbs/day
Silver			50.0 ug/l	34.104 lbs/day
Fluoride (3)			1.4 ug/l	0.955 lbs/day
to			2.4 ug/l	1.637 lbs/day
Nitrates as N			10.0 ug/l	6.821 lbs/day
Chlorophenoxy Herbicides				
2,4-D			100.0 ug/l	68.209 lbs/day
2,4,5-TP			10.0 ug/l	6.821 lbs/day
Endrin			0.2 ug/l	0.136 lbs/day
cyclohexane (Lindane)			4.0 ug/l	2.728 lbs/day
Methoxychlor			100.0 ug/l	68.209 lbs/day
Toxaphene			5.0 ug/l	3.410 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	1200.00 ug/l	818.51 lbs/day	2700.0 ug/l	1841.64 lbs/day
Acrolein	320.00 ug/l	218.27 lbs/day	780.0 ug/l	532.03 lbs/day
Acrylonitrile	0.06 ug/l	0.04 lbs/day	0.7 ug/l	0.45 lbs/day
Benzene	1.20 ug/l	0.82 lbs/day	71.0 ug/l	48.43 lbs/day
Benzidine	0.00012 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	0.25 ug/l	0.17 lbs/day	4.4 ug/l	3.00 lbs/day
Chlorobenzene	680.00 ug/l	463.82 lbs/day	21000.0 ug/l	14323.85 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	0.38 ug/l	0.26 lbs/day	99.0 ug/l	67.53 lbs/day

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Salt Lake City, Utah**

1,1,1-Trichloroethane				
Hexachloroethane	1.90 ug/l	1.30 lbs/day	8.9 ug/l	6.07 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	0.61 ug/l	0.42 lbs/day	42.0 ug/l	28.65 lbs/day
1,1,2,2-Tetrachloroethane	0.17 ug/l	0.12 lbs/day	11.0 ug/l	7.50 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	0.03 ug/l	0.02 lbs/day	1.4 ug/l	0.95 lbs/day
2-Chloroethyl vinyl ether	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	1700.00 ug/l	1159.55 lbs/day	4300.0 ug/l	2932.98 lbs/day
2,4,6-Trichlorophenol	2.10 ug/l	1.43 lbs/day	6.5 ug/l	4.43 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	5.70 ug/l	3.89 lbs/day	470.0 ug/l	320.58 lbs/day
2-Chlorophenol	120.00 ug/l	81.85 lbs/day	400.0 ug/l	272.84 lbs/day
1,2-Dichlorobenzene	2700.00 ug/l	1841.64 lbs/day	17000.0 ug/l	11595.50 lbs/day
1,3-Dichlorobenzene	400.00 ug/l	272.84 lbs/day	2600.0 ug/l	1773.43 lbs/day
1,4-Dichlorobenzene	400.00 ug/l	272.84 lbs/day	2600.0 ug/l	1773.43 lbs/day
3,3'-Dichlorobenzidine	0.04 ug/l	0.03 lbs/day	0.1 ug/l	0.05 lbs/day
1,1-Dichloroethylene	0.06 ug/l	0.04 lbs/day	3.2 ug/l	2.18 lbs/day
1,2-trans-Dichloroethylene	700.00 ug/l	477.46 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	93.00 ug/l	63.43 lbs/day	790.0 ug/l	538.85 lbs/day
1,2-Dichloropropane	0.52 ug/l	0.35 lbs/day	39.0 ug/l	26.60 lbs/day
1,3-Dichloropropylene	10.00 ug/l	6.82 lbs/day	1700.0 ug/l	1159.55 lbs/day
2,4-Dimethylphenol	540.00 ug/l	368.33 lbs/day	2300.0 ug/l	1568.80 lbs/day
2,4-Dinitrotoluene	0.11 ug/l	0.08 lbs/day	9.1 ug/l	6.21 lbs/day
2,6-Dinitrotoluene	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	0.04 ug/l	0.03 lbs/day	0.5 ug/l	0.37 lbs/day
Ethylbenzene	3100.00 ug/l	2114.47 lbs/day	29000.0 ug/l	19780.56 lbs/day
Fluoranthene	300.00 ug/l	204.63 lbs/day	370.0 ug/l	252.37 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	1400.00 ug/l	954.92 lbs/day	170000.0 ug/l	115955.02 lbs/day
Bis(2-chloroethoxy) met	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	4.70 ug/l	3.21 lbs/day	1600.0 ug/l	1091.34 lbs/day
Methyl chloride (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	4.30 ug/l	2.93 lbs/day	360.0 ug/l	245.55 lbs/day
Dichlorobromomethane	0.27 ug/l	0.18 lbs/day	22.0 ug/l	15.01 lbs/day
Chlorodibromomethane	0.41 ug/l	0.28 lbs/day	34.0 ug/l	23.19 lbs/day
Hexachlorobutadiene(c)	0.44 ug/l	0.30 lbs/day	50.0 ug/l	34.10 lbs/day
Hexachlorocyclopentadi	240.00 ug/l	163.70 lbs/day	17000.0 ug/l	11595.50 lbs/day
Isophorone	8.40 ug/l	5.73 lbs/day	600.0 ug/l	409.25 lbs/day
Naphthalene				
Nitrobenzene	17.00 ug/l	11.60 lbs/day	1900.0 ug/l	1295.97 lbs/day
2-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	70.00 ug/l	47.75 lbs/day	14000.0 ug/l	9549.24 lbs/day
4,6-Dinitro-o-cresol	13.00 ug/l	8.87 lbs/day	765.0 ug/l	521.80 lbs/day
N-Nitrosodimethylamine	0.00069 ug/l	0.00 lbs/day	8.1 ug/l	5.52 lbs/day
N-Nitrosodiphenylamine	5.00 ug/l	3.41 lbs/day	16.0 ug/l	10.91 lbs/day
N-Nitrosodi-n-propylami	0.01 ug/l	0.00 lbs/day	1.4 ug/l	0.95 lbs/day
Pentachlorophenol	0.28 ug/l	0.19 lbs/day	8.2 ug/l	5.59 lbs/day

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Phenol	2.10E+04 ug/l	1.43E+04 lbs/day	4.6E+06 ug/l	3.14E+06 lbs/day
Bis(2-ethylhexyl)phthala	1.80 ug/l	1.23 lbs/day	5.9 ug/l	4.02 lbs/day
Butyl benzyl phthalate	3000.00 ug/l	2046.26 lbs/day	5200.0 ug/l	3546.86 lbs/day
Di-n-butyl phthalate	2700.00 ug/l	1841.64 lbs/day	12000.0 ug/l	8185.06 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	23000.00 ug/l	15688.03 lbs/day	120000.0 ug/l	81850.60 lbs/day
Dimethyl phthlate	3.13E+05 ug/l	2.13E+05 lbs/day	2.9E+06 ug/l	1.98E+06 lbs/day
Benzo(a)anthracene (P/	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Benzo(a)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Benzo(b)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Benzo(k)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Chrysene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	9600.00 ug/l	6548.05 lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Indeno(1,2,3-cd)pyrene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.02 lbs/day
Pyrene (PAH)	960.00 ug/l	654.80 lbs/day	11000.0 ug/l	7502.97 lbs/day
Tetrachloroethylene	0.80 ug/l	0.55 lbs/day	8.9 ug/l	6.07 lbs/day
Toluene	6800.00 ug/l	4638.20 lbs/day	200000 ug/l	136417.67 lbs/day
Trichloroethylene	2.70 ug/l	1.84 lbs/day	81.0 ug/l	55.25 lbs/day
Vinyl chloride	2.00 ug/l	1.36 lbs/day	525.0 ug/l	358.10 lbs/day
			0.0	0.00 lbs/day
			0.0	0.00 lbs/day
Pesticides				
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	0.63 lbs/day	2.0 ug/l	1.36 lbs/day
beta-Endosulfan	0.9300 ug/l	0.63 lbs/day	2.0 ug/l	1.36 lbs/day
Endosulfan sulfate	0.9300 ug/l	0.63 lbs/day	2.0 ug/l	1.36 lbs/day
Endrin	0.7600 ug/l	0.52 lbs/day	0.8 ug/l	0.55 lbs/day
Endrin aldehyde	0.7600 ug/l	0.52 lbs/day	0.8 ug/l	0.55 lbs/day
Heptachlor	0.0002 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10-	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00

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Metals

Antimony	14.0 ug/l	9.55 lbs/day		
Arsenic	50.0 ug/l	34.10 lbs/day	4300.00 ug/l	2932.98 lbs/day
Asbestos	7.00E+06 ug/l	4.77E+06 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	886.71 lbs/day	2.2E+05 ug/l	150059.43 lbs/day
Lead	700.0 ug/l	477.46 lbs/day		
Mercury			0.15 ug/l	0.10 lbs/day
Nickel			4600.00 ug/l	3137.61 lbs/day
Selenium	0.1 ug/l	0.10 lbs/day		
Silver	610.0 ug/l	416.07 lbs/day		
Thallium			6.30 ug/l	4.30 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	mg/l
Summer (Irrig. Season)	125.00	11.0	7.8	0.01	0.10	8.02	0.00	104.0	
Fall	125.00	8.1	7.9	0.01	0.10	---	0.00	117.0	
Winter	125.00	3.6	7.9	0.01	0.10	---	0.00	157.0	
Spring	125.00	6.7	7.8	0.01	0.10	---	0.00	124.0	
Dissolved Metals	Al ug/l	As ug/l	Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l	
All Seasons	23.95	0.61	0.09	0.795*	3.975*	1.28	23.8	0.22	
Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l			
All Seasons	0.0001	1.96	0.31	0.25	5.08	22.7			* ~80% MDL

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Projected Discharge Information

Season	Flow, MGD	Temp.
Summer	1.00000	8.0
Fall	1.00000	8.0
Winter	1.00000	8.0
Spring	1.00000	8.0

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

IX. Effluent Limitations

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

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

Effluent Limitation for Flow based upon Water Quality Standards

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

Season	Daily Average	
Summer	1.000 MGD	1.547 cfs
Fall	1.000 MGD	1.547 cfs
Winter	1.000 MGD	1.547 cfs
Spring	1.000 MGD	1.547 cfs

Flow Requirement or Loading Requirement

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

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

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

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	1.2% Effluent	[Chronic]

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

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

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

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

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

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	2.70E+02 mg/l as N	2,254.7 lbs/day
	1 Hour Avg. - Acute	242.3 mg/l as N	2,020.1 lbs/day
Fall	4 Day Avg. - Chronic	232.2 mg/l as N	1,936.3 lbs/day
	1 Hour Avg. - Acute	269.1 mg/l as N	2,243.5 lbs/day
Winter	4 Day Avg. - Chronic	219.7 mg/l as N	1,832.1 lbs/day
	1 Hour Avg. - Acute	312.0 mg/l as N	2,601.9 lbs/day
Spring	4 Day Avg. - Chronic	232.2 mg/l as N	1,936.3 lbs/day
	1 Hour Avg. - Acute	269.1 mg/l as N	2,243.5 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	0.817	mg/l	6.82	lbs/day
	1 Hour Avg. - Acute	0.745	mg/l	6.21	lbs/day
Fall	4 Day Avg. - Chronic	0.817	mg/l	6.82	lbs/day
	1 Hour Avg. - Acute	0.745	mg/l	6.21	lbs/day
Winter	4 Day Avg. - Chronic	0.817	mg/l	6.82	lbs/day
	1 Hour Avg. - Acute	0.745	mg/l	6.21	lbs/day
Spring	4 Day Avg. - Chronic	0.817	mg/l	6.82	lbs/day
	1 Hour Avg. - Acute	0.745	mg/l	6.21	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	89758.5	mg/l	374.22	tons/day
Fall	Maximum, Acute	88708.1	mg/l	369.84	tons/day
Winter	Maximum, Acute	85476.0	mg/l	356.36	tons/day
Spring	4 Day Avg. - Chronic	88142.5	mg/l	367.48	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 90.12 mg/l):

	4 Day Average		1 Hour Average		Load
	Concentration	Load	Concentration	Load	
Aluminum*	N/A	N/A	30,083.0	ug/l	251.3 lbs/day
Arsenic*	15,493.01 ug/l	83.5 lbs/day	14,051.6	ug/l	117.4 lbs/day
Cadmium	13.63 ug/l	0.1 lbs/day	76.0	ug/l	0.6 lbs/day
Chromium III	6,409.76 ug/l	34.5 lbs/day	68,520.1	ug/l	572.5 lbs/day
Chromium VI*	578.63 ug/l	3.1 lbs/day	501.8	ug/l	4.2 lbs/day
Copper	594.80 ug/l	3.2 lbs/day	473.8	ug/l	4.0 lbs/day
Iron*	N/A	N/A	62,561.4	ug/l	522.7 lbs/day
Lead	210.21 ug/l	1.1 lbs/day	2,952.1	ug/l	24.7 lbs/day
Mercury*	0.98 ug/l	0.0 lbs/day	99.4	ug/l	0.8 lbs/day
Nickel	3,749.24 ug/l	20.2 lbs/day	17,708.9	ug/l	147.9 lbs/day
Selenium*	351.24 ug/l	1.9 lbs/day	815.5	ug/l	6.8 lbs/day
Silver	N/A ug/l	N/A lbs/day	120.9	ug/l	1.0 lbs/day

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Zinc	8,563.93 ug/l	46.2 lbs/day	4,336.8	ug/l	36.2 lbs/day
Cyanide*	425.37 ug/l	2.3 lbs/day	910.8	ug/l	7.6 lbs/day

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

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

Summer	174.6 Deg. C.	346.2 Deg. F
Fall	171.7 Deg. C.	341.1 Deg. F
Winter	167.2 Deg. C.	333.0 Deg. F
Spring	170.3 Deg. C.	338.5 Deg. F

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

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

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aldrin			1.5E+00	ug/l	1.94E-02 lbs/day
Chlordane	4.30E-03 ug/l	3.59E-02 lbs/day	1.2E+00	ug/l	1.55E-02 lbs/day
DDT, DDE	1.00E-03 ug/l	8.34E-03 lbs/day	5.5E-01	ug/l	7.11E-03 lbs/day
Dieldrin	1.90E-03 ug/l	1.58E-02 lbs/day	1.3E+00	ug/l	1.62E-02 lbs/day
Endosulfan	5.60E-02 ug/l	4.67E-01 lbs/day	1.1E-01	ug/l	1.42E-03 lbs/day
Endrin	2.30E-03 ug/l	1.92E-02 lbs/day	9.0E-02	ug/l	1.16E-03 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.29E-04 lbs/day
Heptachlor	3.80E-03 ug/l	3.17E-02 lbs/day	2.6E-01	ug/l	3.36E-03 lbs/day
Lindane	8.00E-02 ug/l	6.67E-01 lbs/day	1.0E+00	ug/l	1.29E-02 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	3.88E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.29E-04 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	5.17E-04 lbs/day
PCB's	1.40E-02 ug/l	1.17E-01 lbs/day	2.0E+00	ug/l	2.58E-02 lbs/day
Pentachlorophenol	1.30E+01 ug/l	1.08E+02 lbs/day	2.0E+01	ug/l	2.58E-01 lbs/day
Toxephene	2.00E-04 ug/l	1.67E-03 lbs/day	7.3E-01	ug/l	9.43E-03 lbs/day

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

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

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	41.8 lbs/day
Nitrates as N	4.0 mg/l	33.4 lbs/day
Total Phosphorus as P	0.05 mg/l	0.4 lbs/day
Total Suspended Solids	90.0 mg/l	751.9 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	9.82E+04 ug/l	8.19E+02 lbs/day
Acrolein	2.62E+04 ug/l	2.18E+02 lbs/day
Acrylonitrile	4.83E+00 ug/l	4.02E-02 lbs/day
Benzene	9.82E+01 ug/l	8.19E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	2.05E+01 ug/l	1.71E-01 lbs/day
Chlorobenzene	5.56E+04 ug/l	4.64E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	6.14E-02 ug/l	5.12E-04 lbs/day
1,2-Dichloroethane	3.11E+01 ug/l	2.59E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	1.55E+02 ug/l	1.30E+00 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.99E+01 ug/l	4.16E-01 lbs/day
1,1,2,2-Tetrachloroethane	1.39E+01 ug/l	1.16E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	2.54E+00 ug/l	2.11E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	1.39E+05 ug/l	1.16E+03 lbs/day
2,4,6-Trichlorophenol	1.72E+02 ug/l	1.43E+00 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.66E+02 ug/l	3.89E+00 lbs/day
2-Chlorophenol	9.82E+03 ug/l	8.19E+01 lbs/day
1,2-Dichlorobenzene	2.21E+05 ug/l	1.84E+03 lbs/day
1,3-Dichlorobenzene	3.27E+04 ug/l	2.73E+02 lbs/day

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1,4-Dichlorobenzene	3.27E+04 ug/l	2.73E+02 lbs/day
3,3'-Dichlorobenzidine	3.27E+00 ug/l	2.73E-02 lbs/day
1,1-Dichloroethylene	4.66E+00 ug/l	3.89E-02 lbs/day
1,2-trans-Dichloroethylene 1		
2,4-Dichlorophenol	7.61E+03 ug/l	6.34E+01 lbs/day
1,2-Dichloropropane	4.25E+01 ug/l	3.55E-01 lbs/day
1,3-Dichloropropylene	8.18E+02 ug/l	6.82E+00 lbs/day
2,4-Dimethylphenol	4.42E+04 ug/l	3.68E+02 lbs/day
2,4-Dinitrotoluene	9.00E+00 ug/l	7.50E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	3.27E+00 ug/l	2.73E-02 lbs/day
Ethylbenzene	2.54E+05 ug/l	2.11E+03 lbs/day
Fluoranthene	2.45E+04 ug/l	2.05E+02 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.15E+05 ug/l	9.55E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	3.84E+02 ug/l	3.21E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.52E+02 ug/l	2.93E+00 lbs/day
Dichlorobromomethane(HM)	2.21E+01 ug/l	1.84E-01 lbs/day
Chlorodibromomethane (HM)	3.35E+01 ug/l	2.80E-01 lbs/day
Hexachlorocyclopentadiene	1.96E+04 ug/l	1.64E+02 lbs/day
Isophorone	6.87E+02 ug/l	5.73E+00 lbs/day
Naphthalene		
Nitrobenzene	1.39E+03 ug/l	1.16E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	5.73E+03 ug/l	4.77E+01 lbs/day
4,6-Dinitro-o-cresol	1.06E+03 ug/l	8.87E+00 lbs/day
N-Nitrosodimethylamine	5.64E-02 ug/l	4.71E-04 lbs/day
N-Nitrosodiphenylamine	4.09E+02 ug/l	3.41E+00 lbs/day
N-Nitrosodi-n-propylamine	4.09E-01 ug/l	3.41E-03 lbs/day
Pentachlorophenol	2.29E+01 ug/l	1.91E-01 lbs/day
Phenol	1.72E+06 ug/l	1.43E+04 lbs/day
Bis(2-ethylhexyl)phthalate	1.47E+02 ug/l	1.23E+00 lbs/day
Butyl benzyl phthalate	2.45E+05 ug/l	2.05E+03 lbs/day
Di-n-butyl phthalate	2.21E+05 ug/l	1.84E+03 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.88E+06 ug/l	1.57E+04 lbs/day
Dimethyl phthlate	2.56E+07 ug/l	2.13E+05 lbs/day
Benzo(a)anthracene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Benzo(a)pyrene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Benzo(b)fluoranthene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Benzo(k)fluoranthene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Chrysene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	2.29E-01 ug/l	1.91E-03 lbs/day

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Pyrene (PAH)	7.85E+04 ug/l	6.55E+02 lbs/day
Tetrachloroethylene	6.54E+01 ug/l	5.46E-01 lbs/day
Toluene	5.56E+05 ug/l	4.64E+03 lbs/day
Trichloroethylene	2.21E+02 ug/l	1.84E+00 lbs/day
Vinyl chloride	1.64E+02 ug/l	1.36E+00 lbs/day

Pesticides

Aldrin	1.06E-02 ug/l	8.87E-05 lbs/day
Dieldrin	1.15E-02 ug/l	9.55E-05 lbs/day
Chlordane	4.66E-02 ug/l	3.89E-04 lbs/day
4,4'-DDT	4.83E-02 ug/l	4.02E-04 lbs/day
4,4'-DDE	4.83E-02 ug/l	4.02E-04 lbs/day
4,4'-DDD	6.79E-02 ug/l	5.66E-04 lbs/day
alpha-Endosulfan	7.61E+01 ug/l	6.34E-01 lbs/day
beta-Endosulfan	7.61E+01 ug/l	6.34E-01 lbs/day
Endosulfan sulfate	7.61E+01 ug/l	6.34E-01 lbs/day
Endrin	6.22E+01 ug/l	5.18E-01 lbs/day
Endrin aldehyde	6.22E+01 ug/l	5.18E-01 lbs/day
Heptachlor	1.72E-02 ug/l	1.43E-04 lbs/day
Heptachlor epoxide		

PCB's

PCB 1242 (Arochlor 1242)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1254 (Arochlor 1254)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1221 (Arochlor 1221)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1232 (Arochlor 1232)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1248 (Arochlor 1248)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1260 (Arochlor 1260)	3.60E-03 ug/l	3.00E-05 lbs/day
PCB-1016 (Arochlor 1016)	3.60E-03 ug/l	3.00E-05 lbs/day

Pesticide

Toxaphene	5.97E-02 ug/l	4.98E-04 lbs/day
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Metals

Antimony	1145.22 ug/l	9.55 lbs/day
Arsenic	4040.79 ug/l	33.69 lbs/day
Asbestos	5.73E+08 ug/l	4.77E+06 lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	106342.02 ug/l	886.71 lbs/day
Cyanide	57261.09 ug/l	477.46 lbs/day
Lead	0.00	0.00
Mercury	11.45 ug/l	0.10 lbs/day
Nickel	49898.95 ug/l	416.07 lbs/day
Selenium	0.00	0.00
Silver	0.00	0.00
Thallium	139.06 ug/l	1.16 lbs/day
Zinc		

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Cyanide	910.8	425.4	
Iron	62561.4		
Lead	2952.1	210.2	
Mercury	11.447	0.977	
Nickel	17708.9	3749	
Selenium	815.5	351.2	
Silver	120.9	N/A	
Thallium	139.1		
Zinc	4336.8	8563.9	Acute Controls
Boron	59521.01		
Sulfate	163603.1		N/A at this Waterbody

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

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

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is required because the receiving water for the discharge is a Class 1C Drinking Water Source.

XI. Colorado River Salinity Forum Considerations

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

XII. Summary Comments

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

RESPONSE TO COMMENTS SUMMARY
JORDANELLE SPECIAL SERVICE DISTRICT WATER RECLAMATION FACILITY
(JSSDWRF)
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
RENEWAL PERMIT NO. UT0025747

Comment: *The use of water from these canals (Timpanogos and Wasatch Canals) by irrigators within or near the Town's (Town of Daniel) boundaries has the high potential of the effluent leaching into the aquifer used by the Town as it culinary water source.*

Response: The scope of the UPDES permitting program is constrained to consideration of the present or proposed discharge of treated wastewater to surface waters of the State and compliance with UPDES effluent limits. The regulated discharge from JSSDWRF is to surface water and therefore, must abide by surface water quality standards. Once the JSSDWRF effluent is discharged to receiving waters, and does not cause a violation of water quality standards, the comingled water is considered to become part of the receiving water. Water that is removed from the Timpanogos or Wasatch canals is considered irrigation water, and not wastewater. Therefore, the comment does not fall under the purview of the UPDES program.

Irrigation water is permitted by rule under the Division of Water Quality (DWQ) ground water protection rules (Utah Admin. Code R317-6-6 (2)(A)(2 and 4) and as such, the use is not required to be permitted by a groundwater discharge permit.

With that said, DWQ has further reviewed the Town of Daniel's comments and concerns regarding treated wastewater effluent from the JSSDWRF and the potential for contaminants from the irrigation canal water to impact the aquifer which is a culinary water source for the Town. The DWQ does not believe that discharges from the JSSDWRF to the Wasatch and Timpanogos Canals presents a risk to groundwater or the Town of Daniel's drinking water supply for a range of reasons, including:

- The DWQ regards the JSSDWRF to be state-of-the-art and one of the most advanced treatment facilities in the State. Because the permit allows the facility to discharge to the Provo River which is a drinking water source and classified as a blue ribbon fishery, the facility treatment standards and effluent limitations are more restrictive than most facilities permitted under the UPDES program.
- Based on DWQ's discussions with the canals' owners (Central Utah Water Conservancy District), the treated effluent will typically be highly diluted (more than 90%) by existing canal flows.

- Based upon DWQ's review, neither the Wasatch nor the Timpanogos Canals or their terminal basins enter the Town of Daniel. The closest terminal basin (Timpanogos Canal) is located approximately 0.6 miles northeast of the Town boundary.
- The Timpanogos Canal supplies irrigation water to the Town of Daniel's Lower, Middle, and (potentially) Upper Irrigation Ponds. DWQ has reviewed the Utah Division of Drinking Water's Ground Water Protection Zones in that area: Daniel Well #1; Thacker (East); and Fisher (West) Springs. All the aforementioned ponds, as well as Daniel Creek and the vast majority of the Town, are located cross- or downgradient from these drinking water source protections zones. These protection zones extend south-southeast from the well and springs into the mountains southeast of Daniel. Therefore, potential influence from the ponds or irrigation water usage is highly unlikely.
- The Daniel Well #1 (culinary water supply) is installed primarily in quartzite bedrock to a depth of 810 feet. The well is constructed to collect water between 225 feet and 810 feet below ground surface (with a typical depth to water of approximately 55 feet). This environment and well construction provide substantial protection to the source (aquifer) water from surface activities, such as irrigation.

For more information regarding this comment and response, please contact DWQ's Ground Water Protection Section and/or the Division of Drinking Water.

No changes were made to the UPDES permit in response to this comment.

Comment: *The Town is not satisfied with, nor protected by, an approach that permits PPCPs (pharmaceuticals and personal care products) to be discharged into its water supply simply because PPCPs are not yet listed as a regulated contaminant, even though they are currently known to be present in wastewater and known to be harmful to one extent or another. Accordingly, the Town respectfully requests that the Permit only be re-issued after deletion of the Timpanogos Canal or the Wasatch Canal as approved receiving waters.*

Response: JSSDWRF's application is for the renewal of a UPDES surface water discharge permit. Under the UPDES permitting program, the Director cannot withhold a permit that meets the legal requirements. PPCPs are not regulated pollutants under either the Clean Water Act or Utah's Water Quality Act. JSSDWRF's UPDES permit issued by the DWQ Director limits discharges to such quality that beneficial uses of the receiving waters will be protected.

The UPDES permit program authorizes the issuance of permits to control the discharge of pollutants from point sources into surface waters of the State. Utah has been authorized by EPA under Section 402 of the Clean Water Act to issue

UPDES permits for point source discharges. The regulated discharge from JSSDWRF is to surface water and therefore, must abide by surface water quality standards. In this case, the UPDES permit has been issued to JSSDWRF by the DWQ Director who is required to issue the permit if all rule requirements are satisfied, and the same applies to the permit re-issuance at hand. Because the permit request meets legal requirements, there is no basis on which the Director can delete certain outfalls or receiving waters over others.

Separate from the UPDES program, the DWQ, JSSDWRF and Jordan Valley Water Conservancy District have been actively collecting PPCP samples at ten sites along the Provo River, Timpanogos Canal, and Wasatch Canal. This sampling effort is in coordination with the Provo River Watershed Council. This data will be considered the background condition. Once the JSSDWRF is operational, DWQ and our partner agencies will continue to collect PPCP samples and routinely evaluate the data for trends.

No changes were made to the UPDES permit in response to this comment.

Comment: *One final comment..., there is a Congressionally-mandated obligation under CUPCA on the part the federal government to provide replacement water to Daniel Irrigation Company from Jordanelle Reservoir to replace water historically received from the Strawberry River basin. This replacement water is to be delivered from water stored in Jordanelle Reservoir that is of the same quality as it historically received. This replacement water is delivered through the Timpanogos and/or Wasatch Canal(s). The water quality will not be as good as it historically was if effluent is discharged from JSSDWRF into this replacement water.*

Response: This permit does not modify or change any conditions set forth in any agreements executed outside of DWQ's jurisdiction, such as the Central Utah Project Completion Act (CUPCA) between the Central Utah Water Conservancy District (CUWCD) and the Town of Daniel. Any potential conflict of the CUPCA would need to be resolved between the parties involved.

As to water quality, JSSDWRF's UPDES permit is issued by the DWQ Director to discharge effluent of such quality that beneficial uses of the receiving waters will be protected. The agreement between JSSDWRF, CUWCD, and the DOI states that the same UPDES permit effluent limits will apply to the Timpanogos and Wasatch Canals as apply to the Provo River. The effluent limits typically required to protect the beneficial uses in the canals are not as stringent as those required to protect the uses in the Provo River. Consequently, by this agreement, the actual limits in JSSDRF's current UPDES permit for the canals are more protective than what would otherwise be required.

No changes were made to the UPDES permit in response to this comment.

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