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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. **UT0024686**
Biosolids Permit No. **UTL024686**
Storm Water Permit No. **UTR000000**

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

ST. GEORGE CITY

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **VIRGIN RIVER**,

to dispose of biosolids,

to discharge storm water,

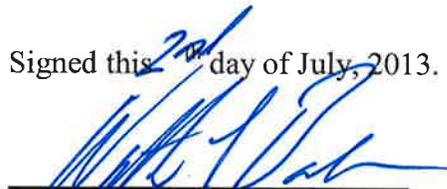
and to distribute effluent for reuse,

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

This permit shall become effective on August 1, 2013

This permit expires at midnight on July 31, 2018.

Signed this 2nd day of July, 2013.



Walter L. Baker, P.E.
Executive Secretary
Utah Water Quality Board

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PART I
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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*.

Outfall Numbers

001

Location of Surface Water Discharge Outfall

The 27 inch discharge pipe is located on the southeast side of the treatment plant, about 400 feet from the north bank of the Virgin River, approximately one and one half miles south west of where the Virgin River crosses under I-15 Interstate Highway, in Washington County, Utah at approximately latitude 37°02'16" and longitude 113°37'50".

Outfall Numbers

002

Location of Surface Water Discharge Outfall

The 48 inch discharge pipe is located adjacent to the 27 inch pipe and is located on the southeast side of the treatment plant, about 400 feet from the north bank of the Virgin River, approximately one and one half miles south west of where the Virgin River crosses under I-15 Interstate Highway, in Washington County, Utah at approximately latitude 37°02'16" and longitude 113°37'50".

Outfall Number

001R

Location of Effluent Reuse Discharge Outfall and Description of Area for Use

Located at latitude 37°02'19" and longitude 113°37'53". Type I reuse is used for irrigation of local parks and golf courses. The reuse compliance monitoring point is at the discharge compliance point for Outfalls 001 and 002.

- 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

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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 for Surface Water Discharge at Outfall 001.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in the Outfalls, as defined in *Part VIII*, and determined by test procedures described in *Part I.C.3.a. & b.* of this permit.
2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations <i>a/</i>			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow, MGD	17	NA	NA	NA
BOD ₅ , mg/L	17	24	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-Coli, No./100mL	126	157	NA	NA
Dissolved Oxygen, mg/L	NA	NA	5.5	NA
Ammonia, mg/L as N	3.2	NA	NA	16.7
WET, Chronic Biomonitoring	NA	NA	NA	Pass, IC ₂₅ > 41.2% effluent
Oil & Grease, mg/L	NA	NA	NA	10
Silver, mg/L	NA	NA	NA	0.14
pH, Standard Units	NA	NA	6.5	9.0
Total Dissolved Solids (TDS), mg/L <i>e/</i>	NA	NA	NA	2,360

NA – Not Applicable

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Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow <u>b/ c/</u>	Continuous	Recorder	MGD
BOD ₅ , Influent <u>d/</u> Effluent	5 X Weekly	Composite	mg/L
	5 X Weekly	Composite	mg/L
TSS, Influent <u>d/</u> Effluent	5 X Weekly	Composite	mg/L
	5 X Weekly	Composite	mg/L
E-Coli	5 X Weekly	Grab	No./100mL
Dissolved Oxygen	5 X Weekly	Grab	mg/L
Ammonia as N	4 X Weekly	Grab	mg/L
WET, Chronic Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease	Monthly	Grab	mg/L
Silver	Quarterly	Composite	mg/L
pH	5 X Weekly	Grab	SU
TDS <u>e/</u>	Weekly	Grab	mg/L
Metals, Influent Effluent	Quarterly	Composite	mg/L
	Quarterly	Composite	mg/L
Organic Toxics	Yearly	Grab	mg/L

- a/ See Definitions, *Part VIII*, for definition of terms.
- b/ Flow measurements of influent and/or effluent volume shall be made in such a manner that the permittee 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/ SGWRF is required to comply with the Colorado River Basin Salinity Forum (Forum) policies, as per UAC R317-2-4. On October 29, 1996 SGWRF submitted to DWQ a TDS demonstration which stated that it was not practicable to meet the 400 mg/L incremental increase requirement of the Forum and were subsequently given a variance. Although SGWRF must:
1. Continue monitoring and reporting both the influent and effluent TDS on a weekly basis.
 2. Continue to minimize the groundwater entering into your collection system as practicable through appropriate operation and maintenance procedures,
 3. Through written communication, encourage those systems discharging into your system to undertake to minimize the groundwater entering their systems and report to you on the same
 4. Through written communication, and any other suitable means, encourage appropriate dischargers to your system to minimize their TDS loadings through good housekeeping procedures.
 5. Submit, with your next renewal application, a report summarizing efforts taken to undertake item 2, 3 and 4 above stating the average TDS level each year, and discuss the reasons for any increase in the average TDS level.

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- c/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- d/ A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.
- e/ The weekly median E. coli concentration shall be non-detect.
- f/ The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, or other chemical disinfectants, UV radiation. Or other approved processes.

E. Management Practices for Land Application of Treated Effluent

1. The application of treated effluent to frozen, ice-covered, or snow covered land is prohibited.
2. No person shall apply treated effluent where the slope of the site exceeds 6 percent.
3. The use should not result in a surface water runoff.
4. The use must not result in the creation of an unhealthy or nuisance condition, as determined by the local health department.
5. Any irrigation with treated effluent must be at least 300 feet from a potable well.
6. For Type I reuse, any irrigation must be at least 50 feet from any potable water well.
7. Impoundments of treated effluent, if not sealed, must be at least 500 feet from any potable well.
8. Public access to effluent storage and irrigation or disposal sites shall be restricted by a stock-tight fence or other comparable means which shall be posted and controlled to exclude the public.

- F. Reporting of Wastewater Monitoring Results. Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on September 28, 2013. 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 to the Division of Water Quality at the following address:

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

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modified compliance schedule if judged necessary by the Executive Secretary, and/or a modified biomonitoring protocol.

Failure to conduct an adequate TRE, or failure to submit a plan or program as described above, or the submittal of a plan or program judged inadequate by the Executive Secretary, shall be considered a violation of this permit.

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

Parameter	Type I Reuse Limitations <u>a/</u> <u>b/f/</u>				
	Maximum Monthly Avg	Max Weekly Avg	Daily Min	Daily Avg	Daily Max
Turbidity, NTU	NA	NA	NA	2	5
BOD ₅ , mg/L	10	NA	NA	NA	NA
E-Coli, No./100mL	NA	ND <u>g/</u>	NA	NA	9
pH, Standard Units	NA	NA	6	NA	9

NA – Not Applicable

ND – Non Detect

Self-Monitoring and Reporting Requirements for Type I Reuse			
Parameter	Frequency	Sample Type	Units
Total Flow <u>c/</u>	Continuous	Recorder	MGD
BOD ₅	Once per week	Composite	mg/L
Turbidity	Continuous	Recorder	NTU
E-Coli.	Daily	Grab	No./100mL
TRC <u>d/</u>	Continuous	Recorder	mg/L
pH	Daily/Continuous	Grab/Recorder	SU

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

b/ An alternative disposal option or diversion to storage must be available in case quality requirements are not met. The alternative disposal option or diversion to storage must be automatically activated if turbidity exceeds the maximum instantaneous limit for more than 5 minutes, or chlorine residual drops below the instantaneous required value for more than 5 minutes, where chlorine disinfection is used.

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approve, or deny the request based on results and other available information. If approval is given, the modification will take place without a public notice.

The current Utah whole effluent toxicity (WET) policy is in the process of being updated and revised to assure its consistency with the Environmental Protection Agency's national and regional WET policy. When said revised WET policy has been finalized and officially adopted, this permit will be reopened and modified to incorporate satisfactory follow-up chronic toxicity language (chronic pattern of toxicity, PTI and/or TIE/TRE, etc.) without a public notice, as warranted and appropriate.

- b. *Toxicity Reduction Evaluation (TRE)*. If toxicity is detected during the life of this permit and it is determined by the Executive Secretary that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. The purpose of the TRE will be to establish the cause of toxicity, locate the source(s) of the toxicity, and 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 Executive Secretary. 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 Executive Secretary, this permit may be reopened and modified.

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

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

If acceptable to the Executive Secretary, this permit may be reopened and modified to incorporate any additional numerical limitations, a

Samples taken in compliance with the monitoring requirements specified above shall be taken at the outfall prior to mixing with the receiving water.

3. Chronic Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing* – Starting immediately, the permittee shall conduct quarterly short-term toxicity tests on a composite sample of the final effluent. The sample shall be collected at Outfall 001 and 002.

The monitoring frequency shall be quarterly. Samples shall be collected on a two-day progression; i.e., if the first sample is on a Monday, during the next sampling period, sampling shall be on a Wednesday. If chronic toxicity is detected, the test shall be repeated in less than four weeks from the date the initial sample was taken. The need for any additional samples, and/or a Toxicity Reduction Evaluation (TRE), see *Part I.C.3.b.*, shall be determined by the Executive Secretary. If the second test shows no chronic toxicity, routine monitoring shall be resumed.

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, 4th Edition, (EPA 821/R-02-13), October 2002* as per 40 CFR 136.3(a) *TABLE 1A-LIST OF APPROVED BIOLOGICAL METHODS*. Test species shall consist of Ceriodaphnia dubia and Pimephales promelas (fathead minnow). WET testing will be done alternating quarterly between the species.

Chronic toxicity occurs when the survival, growth, or reproduction for either test species, when exposed to a dilution of 41.2 percent effluent or lower, is significantly less (at 95% confidence level) than that of the control specimens. Dilutions of 41.2 percent only will be required, plus the control. If any of the acceptable control performance criteria are not met, the test shall be considered invalid.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting calendar quarter (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). All test results shall be reported along with the DMR submitted for that reporting period. The format for the report shall be consistent with the Region 8 website: <http://www.epa.gov/region8/water/wet/documents.html> under the Whole Effluent Toxicity Reporting forms.

If the results for a minimum of ten consecutive tests indicate no chronic toxicity, the permittee may request a reduction in testing frequency and/or reduction to one species. The Executive Secretary may approve, partially

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- G. Monthly Reporting of Reuse Monitoring Results. Monitoring results obtained during the previous month shall be summarized for each month and reported on a Monthly Operational Report, post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on September 28, 2013. If no reuse occurs during the reporting period, "no reuse" shall be reported for those applicable effluent parameters. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted to the Division of Water Quality at the following address:

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

- H. Annual Reporting of Reuse Monitoring Results. Monitoring results obtained during the previous year shall be summarized and included in the Municipal Wastewater Planning Program (MWPP) submitted annually by April 15th. If no reuse occurs during the reporting period, "no reuse" shall be reported for those applicable effluent parameters. Legible copies of these, and all other reports required herein, shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted to the Division of Water Quality at the following address:

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Pretreatment Program Delegation. The permittee has been delegated primary responsibility for enforcing against discharges prohibited by *40 CFR 403.5* and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of *The Clean Water Act (CWA)*, as amended by *The Water Quality Act (WQA)*, of 1987.

The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, and procedures described in the permittee's approved Pretreatment Program submission. Such program commits the permittee to do the following:

1. Carry out inspection, surveillance, and monitoring procedures, which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the pretreatment standards. At a minimum, all significant industrial users shall be inspected and sampled by the permittee at least once per year;
2. Control through permit, order, or similar means, the contribution to the POTW by each industrial user to ensure compliance with applicable pretreatment standards and requirements;
3. Require development, as necessary, of compliance schedules by each industrial user for the installation of control technologies to meet applicable pretreatment standards;
4. Maintain and update industrial user information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times;
5. Enforce all applicable pretreatment standards and requirements and obtain appropriate remedies for noncompliance by any industrial user;
6. Annually publish a list of industrial users that were determined to be in significant noncompliance during the previous year. The notice must be published before March 28 of the following year;
7. Maintain an adequate revenue structure and staffing level for continued implementation of the Pretreatment Program.
8. 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 insure that the plan contains at least the minimum elements required in *40 CFR 403.8(f)(2)(v)*;

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9. 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)*; and
 10. Develop, implement, and maintain an enforcement response plan as required by *40 CFR 403.8(f)(5)* which shall, at a minimum,
 - a. Describe how the POTW will investigate instances of noncompliance;
 - b. Describe the types of escalating enforcement responses the POTW will take in response to all anticipated type of industrial user violations; and
 - c. Describe the time periods within which such responses will be taken and identify the POTW staff position(s) responsible for pursuing these actions.
 11. Establish and enforce specific local limits as necessary to implement the provisions of the *40 CFR Parts 403.5(a)* and *(b)*, and as required by *40 CFR Part 403.5(c)*.
- B. **Program Updates.** The permittee is required to modify its pretreatment program, as necessary, to reflect changes in the regulations of *40 CFR 403*. Such modifications shall be completed within the time frame set forth by the applicable regulations. Modification of the approved pretreatment program must be done in accordance with the requirements of *40 CFR 403.18*. Modifications of the approved program which result in less stringent industrial user requirements shall not be effective until after approval has been granted by the Executive Secretary.
- C. **Annual Report.** The permittee shall provide the Division of Water Quality and EPA with an annual report briefly describing the permittee's pretreatment program activities over the previous calendar year. Reports shall be submitted no later than March 28 of each year. These annual reports shall, at a minimum, include:
1. An updated listing of the permittee's industrial users.
 2. A descriptive summary of the compliance activities including numbers of any major enforcement actions, i.e., administrative orders, penalties, civil actions, etc.
 3. An assessment of the compliance status of the permittee's industrial users and the effectiveness of the permittee's Pretreatment Program in meeting its needs and objectives.
 4. A summary of all sampling data taken of the influent and effluent for those pollutants listed in *Part II.H*.
 5. A description of all substantive changes made to the permittee's pretreatment program referenced in *Section B* of this section. Substantive changes include, but are not limited to, any change in any ordinance, major modification in the

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program's administrative structure or operating agreement(s), a significant reduction in monitoring, or a change in the method of funding the program.

6. Other information as may be determined necessary by the Executive Secretary.

- D. General and Specific Prohibitions. Pretreatment standards (*40 CFR 403.5*) specifically prohibit the introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:
1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140oF (60oC);
 2. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;
 4. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;
 5. 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);
 6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 7. 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;
 8. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or
 9. Any pollutant that causes pass through or interference at the POTW.
 10. Any specific pollutant which exceeds any local limitation established by the POTW in accordance with the requirement of *40 CFR 403.5(c)* and *40 CFR 403.5(d)*.
- E. Categorical Standards. In addition to the general and specific limitations expressed in *Part A and D* of this section, applicable National Categorical Pretreatment Standards must be met by all industrial users of the POTW. These standards are published in the federal regulations at *40 CFR 405* et. seq.
- F. Enforcement Notice. *UCA 19-5-104* provides that the State may issue a notice to the POTW stating that a determination has been made that appropriate enforcement

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action must be taken against an industrial user for noncompliance with any pretreatment requirements within 30 days. The issuance of such notice shall not be construed to limit the authority of the Executive Secretary.

G. Formal Action. The Executive Secretary retains the right to take legal action against any industrial user and/or POTW for those cases where a permit violation has occurred because of the failure of an industrial user to meet an applicable pretreatment standard.

H. Self-Monitoring and Reporting Requirements.

1. Influent and Effluent Monitoring and Reporting Requirements. The permittee shall sample and analyze both the influent and effluent quarterly, for the following parameters.

Metals Monitoring for Pretreatment Program				
Parameter	Sample Type	Test Limit a/	Frequency	Units
Total Arsenic	Composite	0.24	Quarterly	mg/L
Total Cadmium		0.022		
Total Chromium		0.90		
Total Copper		0.10		
Total Lead		0.074		
Total Mercury	Composite/Grab	0.000029		
Total Molybdenum	Composite	NA		
Total Nickel		0.57		
Total Selenium		0.0089		
Total Silver		0.14		
Total Zinc		0.93		
Total Cyanide	Grab	0.012		

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.

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)* yearly. The pesticides fraction of *Appendix D, Table II* is suspended unless pesticides are expected to be present.

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

2. In accordance with the requirements of *40 CFR Part 403.5(c)*, the permittee shall determine if there is a need to develop or revise its local limits in order to implement the general and specific prohibitions of *40 CFR Part 403.5 (a)* and *Part 403.5 (b)*. A technical evaluation of the need to develop or revise local limits shall be submitted to the Division within **12 months** of the effective date of

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this permit. This evaluation should be conducted in accordance with the latest revision of the *Utah Model industrial Pretreatment Program, Section 4, Local Limits*. If a technical evaluation, which may be based on the *Utah Model Industrial Pretreatment Program, Section 4, Local Limits*, reveals that development or revision of local limits is necessary, the permittee shall submit the proposed local limits revision to the Division of Water Quality for approval, and after approval implement the new local limits, within **12 months** of the Division's determination that a revision is necessary.

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 specifically designated below.

1. Treatment. The solids are stabilized with activated sludge basins, with a solids retention time of 14 – 18 day in the basins. After stabilization, the solids are dewatered with belt presses to about 15 percent solids.
2. Beneficial use Method. The biosolids are composted to meet Class A standards through the windrow method of composting, or the static aerated pile method of composting.
3. Description of Disposal Methods. The biosolids may be landfilled (must meet the requirements of 40 CFR 258, Utah Administrative Code R315-301-5 and Section 2.12 of the latest version of the EPA Region VIII Biosolids Management Handbook must be followed).
4. Changes in Treatment Systems and Beneficial Use or Disposal Practices. 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. This includes, but is not limited to, the addition or removal of any biosolids treatment units (i.e., digesters, drying beds, belt presses, etc.) and/or any other change, which would require a major modification of the permit.

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. Heavy Metals Limitations. If the biosolids are to be considered Class A biosolids with respect to heavy metals, the biosolids shall meet the maximum heavy metals in Table 1 and the monthly average pollutant concentrations in Table 3. If the biosolids do not meet these requirements, the biosolids cannot be considered Class A biosolids and must meet the record keeping requirements for Class B biosolids.

Heavy Metals	Table 1	Table 2	Table 3
All heavy metals concentrations shall be measured and reported	Daily Maximum mg/Kg <u>a/b/c/</u>	Cumulative Loading Rate Kg/Ha <u>a/</u>	Monthly Average Concentration mg/Kg <u>a/c/ d/</u>
Total Arsenic	75	41	41

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Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A
Total Nickel	420	420	420
Total Selenium	100	100	100
Total Zinc	7500	2800	2800

- a/ See Part III, for definition of terms.
- b/ The limitations represent the maximum allowable levels of heavy metals in any biosolids intended for land application.
- c/ Any violation of these limitations shall be reported in accordance with the requirements of Part III.G.1. of this permit.
- d/ These limitations represent the maximum allowable levels of heavy metals based on an average of all samples taken during a 30-day period.

2. Pathogen Limitations.

Class A - If the biosolids are to be sold or given away, the biosolids shall meet at the Class A requirements as described below. If the biosolids do not meet the Class A pathogen requirements, the biosolids cannot be land applied.

The Process to Further Reduce Pathogens Will Be Met By:	OR	The Process to Further Reduce Pathogens Will Be Met By:	AND	Salmonella or Fecal Coliform Limits
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Using the static aerated pile method, the temperature of the biosolids is maintained at 55° C (131°F) or higher for at least three days) a/	Using the windrow method of composting, the temperature needs to be maintained at 55° C (131° F) or higher for fifteen days, with a minimum of five turnings during those fifteen days a/	The salmonella must be less than 3 most probable number per 4 grams of total solids or less than 1,000 most probable number of fecal coliform per gram of total solids a/
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3. Vector Attraction Reduction Requirements, a/.

If the biosolids are to be land applied to home lawns and gardens the biosolids must meet method of vector attraction reduction. If the biosolids do not meet a method of vector attraction reduction, the biosolids cannot be land applied.

The permittee needs to meet a method of vector attraction reduction (VAR) if the biosolids are to be land applied. The VAR may be accomplished through composting:

Composting - using the windrow method of composting or the static aerated pile method of composting, the temperature of the biosolids is maintained at 40° C (104° F) or higher for at least 14 days. a/

a/ There are additional pathogen reduction and vector attraction reduction alternatives available in *40 CFR 503.32* and *40 CFR 503.33*. If the permittee intends to use one of these alternatives the Executive Secretary and the EPA must be informed at least 30 days prior to its use. This change may be made without additional public notice

4. Self-Monitoring Requirements.

a. At a minimum, upon the effective date of this permit, all metals, pathogens and applicable vector attraction reduction requirements shall be monitored according to *40 CFR 503.16*.

Minimum Frequency of Monitoring	
Dry Metric Tons (DMT) of Biosolids Disposed Per Year	Monitoring Frequency
> 0 to < 290, DMT	Once per year
> 290 to < 1,500, DMT	Four times per year

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> 1,500 to < 15,000, DMT	Six times per year
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Accordingly, the permittee shall monitor at least four times per year.

- C. Special Conditions on Biosolids Storage Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from the Executive Secretary. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.
- D. 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.
- E. 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 and the EPA at the following addresses:

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

Copy to: Biosolids Coordinator, 8P-W-P
U. S. Environmental Protection Agency
Region VIII
1595 Wynkoop Street
Denver, Colorado 80202-1129

- F. Additional Record Keeping Requirements Specific to Biosolids.

1. If so notified by the Executive Secretary the permittee may be required to add additional record keeping if information provided indicates that this is necessary to protect 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.

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- 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. A description of how the management practices in *Part III.D.* were met (if necessary).
- f. 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 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 fire fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.
- C. Storm Water Pollution Prevention Plan Requirements. The permittee must have (on site) or develop and implement a storm water pollution prevention plan as a condition of this permit.
1. Contents of the Plan. The plan shall include, at a minimum, the following items:
 - a. *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
 - b. *Description of Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:

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- (1) *Drainage.* A site map indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or 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.

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- (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 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.
- (4) *Sampling Data.* A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- (5) *Summary of Potential Pollutant Sources and Risk Assessment.* A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.
- (6) *Measures and Controls.* The permittee shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
 - (7) *Good Housekeeping.* All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion;

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sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.

- (8) *Preventive Maintenance.* A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
- (9) *Spill Prevention and Response Procedures.* Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.
- (10) *Inspections.* In addition to the comprehensive site evaluation required under paragraph (*Part IV.C.1.b.(16)*) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.
- (11) *Employee Training.* Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping

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practices; proper procedures for using fertilizers, herbicides and pesticides.

- (12) *Record keeping and Internal Reporting Procedures.* A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- (13) *Non-storm Water Discharges.*
- (a) *Certification.* The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part VII.G* of this permit.
- (b) *Exceptions.* Except for flows from fire fighting activities, sources of non-storm water listed in *Part IV.B. (Prohibition of Non-storm Water Discharges)* of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
- (c) *Failure to Certify.* Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Executive Secretary* within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.
- (14) *Sediment and Erosion Control.* The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

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

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

- (17) *Deadlines for Plan Preparation and Compliance.* The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part IV.C.1.b.(16)*, Comprehensive Site Evaluation.
- (18) *Keeping Plans Current.* The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

D. Monitoring and Reporting Requirements.

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

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- b. *Visual Storm Water Discharge Examination Reports.* Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

- 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.

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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

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Executive Secretary 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) 231-1769, or 24-hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any noncompliance which may endanger health or the environment;
 - b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part 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.

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4. The Executive Secretary 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 Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;
 4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,
 5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Executive Secretary, 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.

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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 Executive Secretary 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

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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 Executive Secretary may take enforcement action against a permittee for bypass, unless:
 - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
 - (3) The permittee submitted notices as required under *section VI.G.3.*
 - b. The executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary 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 Executive Secretary:
 - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

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- (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Executive Secretary 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 Executive Secretary.
- b. *Emergency Bypass.* Where ninety days advance notice is not possible, the permittee must notify the Executive Secretary, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Executive Secretary 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 Executive Secretary as required under *Part IV.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Executive Secretary'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,

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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.

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VII. GENERAL REQUIREMENTS

- A. Planned Changes. The permittee shall give notice to the Executive Secretary 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 Executive Secretary of any planned changes at least 30 days prior to their implementation.
- B. Anticipated Noncompliance. The permittee shall give advance notice to the Executive Secretary 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 Executive Secretary, within a reasonable time, any information which the Executive Secretary 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 Executive Secretary, 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 Executive Secretary, it shall promptly submit such facts or information.
- G. Signatory Requirements. All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

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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 Executive Secretary 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 Executive Secretary, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
3. Changes to authorization. If an authorization under *paragraph 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 Executive Secretary 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

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\$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 Executive Secretary. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.
- J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers. This permit may be automatically transferred to a new permittee if:
 - 1. The current permittee notifies the Executive Secretary 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 Executive Secretary 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

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regulations, such as but not limited to the Department of Transportation regulations.

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

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Secretary agrees that numerical controls are the most appropriate course of action.

3. Following the implementation of numerical control(s) of toxicant(s), the Executive Secretary agrees that a modified biomonitoring protocol is necessary to compensate for those toxicant that are controlled numerically.
 4. 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".

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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.
5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
6. "Chronic toxicity" occurs when the survival, growth, or reproduction for either test species exposed to a dilution of 41.2 percent effluent (or lower) is significantly less (at the 95 percent confidence level) than the survival, growth, or reproduction of the control specimens.
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.

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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;
 - 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. "Executive Secretary," means Executive Secretary of the Utah Water Quality Board.
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.

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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.
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.

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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 mosquito's 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.
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.

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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.

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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
 - 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 *Executive Secretary* 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

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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 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.

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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

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otherwise identified under paragraphs (a) to (g) or (I) 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*;
- 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.

D. Reuse.

- 1. "Type I reuse" means the use of treated domestic wastewater effluent where human exposure is likely.

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**STATEMENT OF BASIS
CITY OF ST. GEORGE
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0024686
UPDES BIOSOLIDS PERMIT NUMBER: UTL-024686
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000000
MAJOR MUNICIPAL**

FACILITY CONTACTS

Person Name:	Ben Ford	Person Name:	Daniel Morrison
Position:	General Manager	Position:	Pretreatment Coordinator
Phone Number:	(435) 627-4268	Phone Number:	(435) 627-4273
Person Name:	Eric Richins	Person Name:	Leslie Wentland
Position:	Plant Superintendent	Position:	Laboratory Director
Phone Number:	(435) 627-4272	Phone Number:	(435) 627-4269
Person Name:	Eric Richins		
Position:	Biosolids Coordinator		
Phone Number:	(435) 627-4272		
Facility Name:	City of St. George		
Mailing and Facility Address:	3780 South 1550 West St. George, Utah 84790		
Telephone:	(435) 627-4266		

DESCRIPTION OF FACILITY

St. George Regional water reclamation facility (SGWRF) began discharging in 1990 with a 5 MGD design capacity, was upgraded in 1994 to an 8.5 MGD capacity, and the latest upgrade was completed in 1999 bringing the plant design capacity to an average daily flow of 17 MGD. This treatment plant is serving St. George and the surrounding areas of Ivins, Santa Clara and Washington City.

The treatment facilities consist of four 54 inch influent screw pumps, two submersible pumps, two mechanical bar screens, two air lift grit chambers, one bio selector, four oxidation ditches, six clarifiers, two low pressure ultraviolet disinfection systems, one medium pressure ultraviolet disinfection system, and two cascade aeration systems. Sludge is currently wasted from the clarifiers into two gravity thickeners. The sludge is then transferred to the post autothermal thermophilic aerobic digestion (ATAD) holding tank and then pumped into the solids building feeding two centrifuges for de-watering purposes. The sludge is transported to the County Landfill for composting, which produces a Class A sludge.

17
The treatment plant has two discharge points, a 27 inch pipe and a 48 inch pipe located adjacent to each other. Both discharge points discharge on the southeast side of the treatment plant, the north bank of the Virgin River, approximately one and one half miles (1.5 miles) southwest of where the Virgin River crosses under the I-15 Interstate Highway, in Washington County, Utah, at approximate latitude 37° 02' 16" and longitude 113° 37' 50", with outfall STORET Number 495006.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Reuse requirements have been added to the St George permit. Previously, the reuse monitoring and reporting requirements for the SGWRF were outlined in the Construction Permit with Operating Conditions issued on April 6, 2005. The SGWRF delivers Type I reuse for irrigation of public parks and golf courses in the area.

The limits for ammonia and silver have changed due to a new waste load analysis. The limit for ammonia is more stringent than the previous permit. The limit for silver is less stringent than the previous permit.

DISCHARGE

DESCRIPTION OF DISCHARGE

The City of St. George has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. There were no significant violations reported on the DMRs in the last five years.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	The 27 inch discharge pipe is located on the southeast side of the treatment plant, about 400 feet from the north bank of the Virgin River, approximately one and one half (1.5) miles southwest of where the Virgin River crosses under the I-15 Interstate Highway, in Washington County, Utah at approximate latitude 37°02'16" and longitude 113°37'50".
002	The 48 inch pipe lies adjacent to the 27 inch pipe and is located on the southeast side of the treatment plant, about 400 feet from the north bank of the Virgin River, approximately one and one half (1.5) miles southwest of where the Virgin River crosses under the I-15 Interstate Highway, in Washington County, Utah at approximate latitude 37°02'16" and longitude 113°37'50".

<u>Outfall</u>	<u>Description of Reuse Discharge Point</u>
001R	Located at latitude 37°02'19" and longitude 113°37'53". Type I effluent is used to irrigate public parks and golf courses in the area. The reuse compliance monitoring point is at the discharge compliance point for Outfalls 001 and 002.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows directly into the Virgin River which is Class 2B, 3B, and 4, according to *Utah Administrative Code (UAC) R317-2-13*:

Class 2B -Protected for secondary contact recreation such as boating, wading, or similar uses.

Class 3B -Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.

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

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), E-coli, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The oil and grease is based on best professional judgment (BPJ).

BOD₅, WET, ammonia, dissolved oxygen (DO) and silver (Ag) limits are water quality limited and based on the WLA which is appended.

The receiving stream, the Virgin River, has a total maximum daily limit (TMDL) for total dissolved solids. Based on a new site specific TDS criteria set for this segment, the new TDS load for SGWRF will be 61,065 tons/year. That was calculated using the current plant design capacity of 17 MGD and the new TDS criteria of 2,360 mg/L.

SGWRF is required to comply with the Colorado River Basin Salinity Forum (Forum) policies, as per *UAC R317-2-4*, to further control TDS loading within the Colorado River Basin of Utah. In accordance with Forum policy, on October 29, 1996 SGWRF submitted to DWQ a TDS demonstration which stated that it was not practicable to meet the 400 mg/L incremental increase requirement of the Forum policy and were subsequently given a variance. Although SGWRF must continue to implement the following TDS practices as stated in the permit:

1. Continue monitoring and reporting both the influent and effluent TDS on a weekly basis.
2. Continue to minimize the groundwater entering into your collection system as practicable through appropriate operation and maintenance procedures,
3. Through written communication, encourage those systems discharging into your system to undertake to minimize the groundwater entering their systems and report to you on the same
4. Through written communication, and any other suitable means, encourage appropriate dischargers to your system to minimize their TDS loadings through good housekeeping procedures.
5. Submit, with your next renewal application, a report summarizing efforts taken to undertake item 2, 3 and 4 above stating the average TDS level each year, and discuss the reasons for any increase in the average TDS level.

Type I reuse limitations for Outfall 001R are based upon *UAC R317-3-11*.

The permit limitations are:

Parameter	Outfalls 001, 002: Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Flow, MGD	17	NA	NA	NA
BOD ₅ , mg/L	17	24	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-coli, No./100 ml	126	157	NA	NA
DO, mg/l	NA	NA	5.5	NA
Ammonia, mg/L as N	3.2	NA	NA	16.7
WET, Chronic Biomonitoring	NA	NA	NA	Pass
Oil & Grease, mg/L	NA	NA	NA	10
Silver, mg/L	NA	NA	NA	0.14
Total Dissolved Solids, mg/l	NA	NA	NA	2,360
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable.

Parameter	Outfall 001R: Type I Reuse Limitations				
	Maximum Monthly Avg	Max Weekly Avg	Daily Min	Daily Avg	Daily Max
Turbidity, NTU	NA	NA	NA	2	5
BOD ₅ , mg/L	10	NA	NA	NA	NA
E-Coli, No./100mL	NA	ND a/	NA	NA	9
pH, Standard Units	NA	NA	6	NA	9

a/ The weekly median E. coli concentration shall be non-detect.

NA – Not Applicable

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit will require reports to be submitted monthly and quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the quarterly DMRs.

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD ₅ , Influent Effluent	5 X Weekly	Composite	mg/L
	5 X Weekly	Composite	mg/L
TSS, Influent Effluent	5 X Weekly	Composite	mg/L
	5 X Weekly	Composite	mg/L
E-coli	5 X Weekly	Grab	mg/L
DO	5 X Weekly	Grab	mg/L
Ammonia (as N)	4 X Weekly	Grab	mg/L
WET, Chronic Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease	Monthly	Grab	mg/L
Silver	Quarterly	Composite	mg/L
TDS	Weekly	Grab	mg/L
pH	5 X Weekly	Grab	SU
Metals, Influent Effluent	Quarterly	Composite	mg/L
	Quarterly	Composite	mg/L
Organic Toxics	Annually	Grab	mg/L

Outfall 001R: Self-Monitoring and Reporting Requirements for Type I Reuse			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD ₅	Once per week	Composite	mg/L
Turbidity	Continuous	Recorder	NTU
E-Coli.	Daily	Grab	No./100mL
TRC	Continuous	Recorder	mg/L
pH	Daily/Continuous	Grab/Recorder	SU

BIOSOLIDS (SEWAGE SLUDGE)

DESCRIPTION OF TREATMENT AND DISPOSAL

The St. George Water Reclamation Facility (SGWRF) is required to submit an annual biosolids report to the Utah Division of Water Quality (DWQ), on or before February 19, for the previous year. The SGWRF submitted their 2010 annual biosolids report on February 16, 2011. The last inspection conducted by the DWQ of the SGWRF biosolids program was May 5, 2010. The SGWRF was in compliance of every aspect of their program at that time. The SGWRF stabilizes the solids (sewage sludge) with an oxidation ditch which has mean cell resident time of about 45 days. After the solids are stabilized, the solids are dewatered with centrifuges to about twenty three percent solids. The solids are hauled to the Washington County Landfill (WCL) where some of the solids are mixed with green waste for composting. The mixture is then formed into windrows and the "process to further reduce pathogens" (PFRP) is begun. Once the compost has met the EPA and State requirements of 40 CFR 503 for Class A biosolids (compost), the compost is then cured for about three to four

months for odor reduction. The compost is then sold or given away to the public. If the compost pad does not have space to compost all of the solids, the solids are buried in the landfill. In 2010, the SGWRF produced 3,031 dry metric tons of solids (DMT), and of that, 1,404 DMT were mixed with green waste, composted, and sold at the WCL, along with 612 DMT of compost left over from 2009. The other 1,129 DMT were disposed in the WCL. The SGWRF had 498 DMT of compost stored from 2010, to be sold in 2011.

Future Disposal Methods

The SGWRF intends to continue composting biosolids to meet Class A requirements for sale or giveaway, or dispose of the biosolids at the WCL for the life of this permit. If the SGWRF needs, or wants to change their disposal methods, the SGWRF will need to notify the Utah Division of Water Quality, at least 180 days in advance of any changes.

SUBSTANTIVE CHANGES

There are not any substantive permit changes in this permit.

BIOSOLIDS LIMITATIONS AND 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 Based Upon Dry Metric Tons (DMT)	
Amount of Biosolids Sold or given Away Per Year	Monitoring Frequency
> 0 to < 290 DMT	Once Per Year
> 290 to < 1,500 DMT	Four Times Per Year
> 1,500 to < 15,000 DMT	Six Times Per Year

Since the SGWRF sold or gave away more than 1,500 DMT in 2010, the biosolids shall be monitored at least four times per year.

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. D. I.* of the permit) to be handed out 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 the *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. D. 11.* 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 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 *Table 1* and the heavy metals loading rates in *Table 2*; or

The maximum heavy metals in Table 1 and the monthly heavy metals concentrations in *Table 3*.

If the biosolids do not meet these requirements they cannot be land applied.

40 CFR, 503.13, Tables 1, 2, and 3 of Heavy Metal Limitations

Heavy Metals	Table 1	Table 2	Table 3
All heavy metals concentrations shall be measured and reported	Daily Maximum mg/Kg <u>a/b/c/</u>	Cumulative Loading Rate Kg/Ha <u>a/</u>	Monthly Average Concentration mg/Kg <u>a/b/c/d/</u>
Total Arsenic	75	41	41
Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A
Total Nickel	420	420	420
Total Selenium	100	100	100
Total Zinc	7500	2800	2800

- a/ See Part VIII. of the permit for definition of terms.
- b/ The limitations represent the maximum allowable levels of heavy metals in any biosolids intended for land application.
- c/ Any violation of these limitations shall be reported in accordance with the requirements of Part III.G., 1,2, 3, and 4 of the permit.
- d/ These limitations represent the maximum allowable levels of heavy metals based on an average of all samples taken during a 30-day period.

Pathogen Limitations

Class A Requirements for Land Application

If biosolids are sold or given away to the public for home lawn and garden use 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. The SGWRF will use a method of composting to accomplish the PFRP

(Using the windrow method of composting, the temperature needs to be maintained at 55°C (131°F) or higher for fifteen days, with a minimum of five turnings during those fifteen days, or composting using the static aerated pile method, the temperature of the biosolids is maintained at 55°C (131°F) or higher for at least 3 days (40 CFR 503.32(a)(8)(ii)).

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 for to the public, and the SGWRF will need find another method of beneficial use or disposal.

Vector Attraction Reduction Requirements

The SGWRF needs to meet a method of vector attraction reduction (VAR) if the biosolids are to be land applied. The SGWRF may be accomplish the VAR two different ways:

Composting - using the static aerated pile method, or the windrow method of composting, the temperature of the biosolids is maintained at 40° C (104° F) or higher for at least 14 days under (40 CFR) 503.33(b) (5).

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)).

METALS MONITORING DATA

The SGWRF was required to sample for metals at least four times in 2010. They sampled six times. All biosolids land applied in 2010 met Table 3 of 40 CFR 503.13, therefore the SGWRF biosolids qualify as EQ with regards to metals. The monitoring data is below.

Metals Monitoring Data 2010 (Compost)

Heavy Metals	SGWRF 2010, Yearly Average, (6 samples) mg/Kg	SGWRF 2010, Yearly Maximum, (6 samples) mg/Kg	40 CFR 503.13, Table 3, (Exceptional Quality) mg/Kg
Arsenic	9.9	11.8	41.0
Cadmium	0.6	0.7	39.0
Copper	185	238	1,500.0
Lead	16.7	52.7	300.0
Mercury	0.68	0.89	17.0
Molybdenum	4.9	5.48	75.0
Nickel	8.9	9.68	420.0
Selenium	7.0	9.68	100.0
Zinc	331.0	376.0	2,800.0

PATHOGEN MONITORING DATA

The SGWRF was required to monitor the finished compost for fecal coliform or salmonella at least four times in 2010 (each monitoring episode consist of seven samples, and all must below 1,000 MPN of fecal coliform.) They chose to sample for fecal coliform, and sampled six times. The monitoring data is below.

SGWRF Fecal Monitoring Data 2010 (Compost)

Geomean of 245 samples (episodes)	Yearly Maximum
30.44	333.0

REPORTING AND RECORD KEEPING REQUIREMENTS

Record keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.F.* 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 Class A metals limitations of *Table 3 of 40 CFR 503.13*, and are sold or given away and land applied the records must be retained for a minimum of five years. If the biosolids do not meet Class A standards with regards to heavy metals, and meet Class B standards and are land applied, the records must be maintained perpetually. If the biosolids are disposed in a landfill the records must also retained for a minimum of five years.

Reporting

The SGWRF 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.C.* 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.

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 for 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.

The City of St. George is currently covered under the UPDES Multi Sector General Permit for Industrial Activities.

PRETREATMENT REQUIREMENTS

The pretreatment requirements remain the same as in the current permit with the permittee administering an approved pretreatment program. Any substantial changes to the program must be submitted for approval to the Division of Water Quality. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

The permittee will be required to perform an annual evaluation of the need to revise or develop technically based local limits to implement the general and specific prohibitions of *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised. As part of this evaluation, the permit requires quarterly influent and effluent monitoring for metals and yearly organic toxics listed in *R317-8-7.5* 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 is regulated in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring)*. Authority to require effluent biomonitoring is provided in *Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3* and *Water Quality Standards, UAC R317-2-5* and *R317-2-7.2*.

Since the permittee is a major municipal discharger, with a significant pretreatment program the renewal permit will require whole effluent acute and chronic limits with chronic toxicity testing. It is anticipated that the chronic testing will not only indicate chronic toxicity, but also screen for acute toxicity. The permit will contain toxicity reopener language. (Description of monitoring frequency, species being monitored and Numerical Toxicity Limit if necessary)

The permit will contain the standard requirements for additional testing if chronic toxicity is detected and a TRE (Toxicity Reduction Evaluation) as necessary.

PERMIT DURATION

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

PUBLIC NOTICE INFORMATION

The permit was public noticed from May 25, 2013 to June 27, 2013. No comments were received.

Drafted by
Jennifer Robinson, Discharge
Mark Schmitz, Biosolids
Matthew Garn, Pretreatment
Kim Shelly, Reuse
Michael George, Storm Water
Utah Division of Water Quality

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

Discharging Facility: St. George WWTP
UPDES No: UT-0024686
Current Flow: 17.00 MGD Design Flow
Design Flow 17.00 MGD

Receiving Water: Virgin River
Stream Classification: 2B, 3B, 4
Stream Flows [cfs]:
37.6 Summer (July-Sept) 20th Percentile
81.0 Fall (Oct-Dec) 20th Percentile
117.0 Winter (Jan-Mar) 20th Percentile
77.0 Spring (Apr-June) 20th Percentile
431.0 Average
Stream TDS Values:
1675.0 Summer (July-Sept) 80th Percentile
1743.0 Fall (Oct-Dec) 80th Percentile
1374.0 Winter (Jan-Mar) 80th Percentile
1100.0 Spring (Apr-June) 80th Percentile

Effluent Limits:		WQ Standard:
Flow, MGD:	17.00 MGD Design Flow	
BOD, mg/l:	17.0 Summer	5.0 Indicator
Dissolved Oxygen, mg/l	5.5 Summer	5.5 30 Day Average
TNH3, Chronic, mg/l:	3.2 Summer	Varies Function of pH and Temperature
TDS, mg/l:	3338.3 Summer	2360.0 Site Specific

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

Level 1 Antidegradation Level Completed: Level II Review not required

Date: 2/10/2012

Permit Writer:



WLA by:



2-10-12

WQM Sec. Approval:

TMDL Sec. Approval:

Utah Division of Water Quality
Salt Lake City, Utah

FILE COPY

10-Feb-12
4:00 PM

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

Facilities: St. George WWTP
Discharging to: Virgin River

UPDES No: UT-0024686

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

Virgin River:	2B, 3B, 4
Antidegradation Review:	#REF!

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards	
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)	
Chronic Dissolved Oxygen (DO)	5.50 mg/l (30 Day Average) 4.00 mg/l (7Day Average) 3.00 mg/l (1 Day Average)	
Maximum Total Dissolved Solids	2360.0 mg/l	3ackground

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Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	12.332 lbs/day	750.00	ug/l	106.314 lbs/day
Arsenic	190.00 ug/l	26.933 lbs/day	340.00	ug/l	48.196 lbs/day
Cadmium	1.02 ug/l	0.144 lbs/day	13.12	ug/l	1.860 lbs/day
Chromium III	372.37 ug/l	52.784 lbs/day	7790.71	ug/l	1,104.345 lbs/day
Chromium VI	11.00 ug/l	1.559 lbs/day	16.00	ug/l	2.268 lbs/day
Copper	42.95 ug/l	6.088 lbs/day	75.38	ug/l	10.686 lbs/day
Iron			1000.00	ug/l	141.752 lbs/day
Lead	30.94 ug/l	4.386 lbs/day	794.00	ug/l	112.551 lbs/day
Mercury	0.0120 ug/l	0.002 lbs/day	2.40	ug/l	0.340 lbs/day
Nickel	236.53 ug/l	33.528 lbs/day	2127.44	ug/l	301.568 lbs/day
Selenium	4.60 ug/l	0.652 lbs/day	20.00	ug/l	2.835 lbs/day
Silver	N/A ug/l	N/A lbs/day	81.80	ug/l	11.596 lbs/day
Zinc	544.56 ug/l	77.193 lbs/day	544.56	ug/l	77.193 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 597.08 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	0.213 lbs/day
Chlordane	0.004 ug/l	1.480 lbs/day	1.200	ug/l	0.170 lbs/day
DDT, DDE	0.001 ug/l	0.344 lbs/day	0.550	ug/l	0.078 lbs/day
Dieldrin	0.002 ug/l	0.654 lbs/day	1.250	ug/l	0.177 lbs/day
Endosulfan	0.056 ug/l	19.275 lbs/day	0.110	ug/l	0.016 lbs/day
Endrin	0.002 ug/l	0.792 lbs/day	0.090	ug/l	0.013 lbs/day
Guthion			0.010	ug/l	0.001 lbs/day
Heptachlor	0.004 ug/l	1.308 lbs/day	0.260	ug/l	0.037 lbs/day
Lindane	0.080 ug/l	27.536 lbs/day	1.000	ug/l	0.142 lbs/day
Methoxychlor			0.030	ug/l	0.004 lbs/day
Mirex			0.010	ug/l	0.001 lbs/day
Parathion			0.040	ug/l	0.006 lbs/day
PCB's	0.014 ug/l	4.819 lbs/day	2.000	ug/l	0.284 lbs/day
Pentachlorophenol	13.00 ug/l	4474.600 lbs/day	20.000	ug/l	2.835 lbs/day
Toxephene	0.0002 ug/l	0.069 lbs/day	0.7300	ug/l	0.103 lbs/day

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IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.71 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			2360.0 mg/l	167.27 tons/day

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

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

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

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	929.34 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	268.48 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.23 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	24.44 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	1.51 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	7228.20 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	34.08 lbs/day

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1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	3.06 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	14.46 lbs/day
1,1,2,2-Tetrachloroethane	ug/l	lbs/day	11.0 ug/l	3.79 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.48 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0 ug/l	1480.06 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5 ug/l	2.24 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0 ug/l	161.77 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0 ug/l	137.68 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0 ug/l	5851.40 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	894.92 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0 ug/l	894.92 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1 ug/l	0.03 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2 ug/l	1.10 lbs/day
1,2-trans-Dichloroethylene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0 ug/l	271.92 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0 ug/l	13.42 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0 ug/l	585.14 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0 ug/l	791.66 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1 ug/l	3.13 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5 ug/l	0.19 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0 ug/l	9981.80 lbs/day
Fluoranthene	ug/l	lbs/day	370.0 ug/l	127.35 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	ug/l	lbs/day	170000.0 ug/l	58514.00 lbs/day
Bis(2-chloroethoxy) methane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	ug/l	lbs/day	1600.0 ug/l	550.72 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0 ug/l	123.91 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0 ug/l	7.57 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0 ug/l	11.70 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0 ug/l	17.21 lbs/day
Hexachlorocyclopentadiene	ug/l	lbs/day	17000.0 ug/l	5851.40 lbs/day
Isophorone	ug/l	lbs/day	600.0 ug/l	206.52 lbs/day
Naphthalene				
Nitrobenzene	ug/l	lbs/day	1900.0 ug/l	653.98 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l	4818.80 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0 ug/l	263.31 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1 ug/l	2.79 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0 ug/l	5.51 lbs/day
N-Nitrosodipropylamine	ug/l	lbs/day	1.4 ug/l	0.48 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2 ug/l	2.82 lbs/day

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Phenol	ug/l	lbs/day	4.6E+06 ug/l	1.58E+06 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9 ug/l	2.03 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0 ug/l	1789.84 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0 ug/l	4130.40 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	ug/l	lbs/day	120000.0 ug/l	41304.00 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06 ug/l	9.98E+05 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0 ug/l	0.01 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0 ug/l	3786.20 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9 ug/l	3.06 lbs/day
Toluene	ug/l	lbs/day	200000 ug/l	68840.00 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0 ug/l	27.88 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0 ug/l	180.71 lbs/day
				lbs/day
Pesticides				lbs/day
Aldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.69 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0 ug/l	0.69 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0 ug/l	0.69 lbs/day
Endrin	ug/l	lbs/day	0.8 ug/l	0.28 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8 ug/l	0.28 lbs/day
Heptachlor	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 124	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 101	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Pesticide				
Toxaphene	ug/l		0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day		

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Metals

Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	1480.06 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	75724.00 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.05 lbs/day
Nickel			4600.00 ug/l	1583.32 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	2.17 lbs/day
Zinc				

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

VII. Mathematical Modeling of Stream Quality

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

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

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

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

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

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

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

VIII. Modeling Information

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

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

Other Conditions

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

Model Inputs

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

Current Upstream Information

	Stream							
	Critical Low							
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l
Summer (Irrig. Season)	37.6	25.5	8.1	0.05	0.10	6.70	0.00	1675.0
Fall	81.0	12.0	8.0	0.04	0.10	---	0.00	1743.0
Winter	117.0	7.4	8.1	0.18	0.10	---	0.00	1743.0
Spring	77.0	18.1	8.1	0.04	0.10	---	0.00	1743.0
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0		* 1/2 MDL

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Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	17.00000	26.8	0.00	0.00000
Fall	17.00000	21.4		
Winter	17.00000	17.2		
Spring	17.00000	21.4		

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	17.000 MGD	26.299 cfs
Fall	17.000 MGD	26.299 cfs
Winter	17.000 MGD	26.299 cfs
Spring	17.000 MGD	26.299 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 17 MGD. If the discharger is allowed to have a flow greater than 17 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	41.2% 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	17.0 mg/l as BOD5	2409.8 lbs/day
Fall	17.0 mg/l as BOD5	2409.8 lbs/day
Winter	17.0 mg/l as BOD5	2409.8 lbs/day
Spring	17.0 mg/l as BOD5	2409.8 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	5.50
Fall	5.50
Winter	5.50
Spring	5.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

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

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	3.2 mg/l as N	446.6 lbs/day
	1 Hour Avg. - Acute	16.7 mg/l as N	2,362.4 lbs/day
Fall	4 Day Avg. - Chronic	7.8 mg/l as N	1,111.5 lbs/day
	1 Hour Avg. - Acute	22.9 mg/l as N	3,244.7 lbs/day
Winter	4 Day Avg. - Chronic	10.2 mg/l as N	1,439.9 lbs/day
	1 Hour Avg. - Acute	34.2 mg/l as N	4,849.3 lbs/day
Spring	4 Day Avg. - Chronic	8.2 mg/l as N	0.0 lbs/day
	1 Hour Avg. - Acute	23.6 mg/l as N	0.0 lbs/day

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

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Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

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

	Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.027	mg/l	3.77	lbs/day	
	1 Hour Avg. - Acute	0.046	mg/l	6.52	lbs/day	
Fall	4 Day Avg. - Chronic	0.045	mg/l	6.32	lbs/day	
	1 Hour Avg. - Acute	0.077	mg/l	10.95	lbs/day	
Winter	4 Day Avg. - Chronic	0.059	mg/l	8.43	lbs/day	
	1 Hour Avg. - Acute	0.103	mg/l	14.61	lbs/day	
Spring	4 Day Avg. - Chronic	0.043	mg/l	0.00	lbs/day	
	1 Hour Avg. - Acute	0.074	mg/l	0.00	lbs/day	

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

	Season		Concentration		Load	
Summer	Maximum, Acute	3338.3	mg/l	236.61	tons/day	
Fall	Maximum, Acute	3241.2	mg/l	229.72	tons/day	
Winter	Maximum, Acute	3768.2	mg/l	267.07	tons/day	
Spring	4 Day Avg. - Chronic	4159.5	mg/l	294.81	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 597.08 mg/l):

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration	Load	
Aluminum	N/A	N/A	1,283.9	ug/l	182.0 lbs/day
Arsenic	460.22 ug/l	42.2 lbs/day	582.2	ug/l	82.5 lbs/day
Cadmium	2.36 ug/l	0.2 lbs/day	22.4	ug/l	3.2 lbs/day
Chromium III	903.05 ug/l	82.7 lbs/day	13,353.4	ug/l	1892.9 lbs/day
Chromium VI	21.03 ug/l	1.9 lbs/day	24.6	ug/l	3.5 lbs/day
Copper	103.15 ug/l	9.5 lbs/day	128.6	ug/l	18.2 lbs/day
Iron	N/A	N/A	1,713.2	ug/l	242.8 lbs/day
Lead	74.00 ug/l	6.8 lbs/day	1,360.4	ug/l	192.8 lbs/day
Mercury	0.03 ug/l	0.0 lbs/day	4.1	ug/l	0.6 lbs/day
Nickel	573.20 ug/l	52.5 lbs/day	3,646.1	ug/l	516.8 lbs/day
Selenium	8.90 ug/l	0.8 lbs/day	33.1	ug/l	4.7 lbs/day
Silver	N/A ug/l	N/A lbs/day	140.2	ug/l	19.9 lbs/day

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Zinc	1,322.19 ug/l	121.2 lbs/day	933.4	ug/l	132.3 lbs/day
Cyanide	12.63 ug/l	1.2 lbs/day	37.7	ug/l	5.3 lbs/day

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

Summer	35.2 Deg. C.	95.3 Deg. F
Fall	28.4 Deg. C.	83.1 Deg. F
Winter	29.2 Deg. C.	84.6 Deg. F
Spring	33.8 Deg. C.	92.9 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	3.29E-01 lbs/day
Chlordane	4.30E-03 ug/l	6.10E-01 lbs/day	1.2E+00 ug/l	2.63E-01 lbs/day
DDT, DDE	1.00E-03 ug/l	1.42E-01 lbs/day	5.5E-01 ug/l	1.21E-01 lbs/day
Dieldrin	1.90E-03 ug/l	2.69E-01 lbs/day	1.3E+00 ug/l	2.74E-01 lbs/day
Endosulfan	5.60E-02 ug/l	7.94E+00 lbs/day	1.1E-01 ug/l	2.41E-02 lbs/day
Endrin	2.30E-03 ug/l	3.26E-01 lbs/day	9.0E-02 ug/l	1.97E-02 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	2.19E-03 lbs/day
Heptachlor	3.80E-03 ug/l	5.39E-01 lbs/day	2.6E-01 ug/l	5.70E-02 lbs/day
Lindane	8.00E-02 ug/l	1.13E+01 lbs/day	1.0E+00 ug/l	2.19E-01 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02 ug/l	6.58E-03 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	2.19E-03 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02 ug/l	8.77E-03 lbs/day
PCB's	1.40E-02 ug/l	1.98E+00 lbs/day	2.0E+00 ug/l	4.39E-01 lbs/day
Pentachlorophenol	1.30E+01 ug/l	1.84E+03 lbs/day	2.0E+01 ug/l	4.39E+00 lbs/day
Toxephene	2.00E-04 ug/l	2.84E-02 lbs/day	7.3E-01 ug/l	1.60E-01 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	708.8 lbs/day
Nitrates as N	4.0 mg/l	567.0 lbs/day
Total Phosphorus as P	0.05 mg/l	7.1 lbs/day
Total Suspended Solids	90.0 mg/l	12757.6 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	6.56E+03 ug/l	9.29E+02 lbs/day
Acrolein	1.89E+03 ug/l	2.68E+02 lbs/day
Acrylonitrile	1.60E+00 ug/l	2.27E-01 lbs/day
Benzene	1.72E+02 ug/l	2.44E+01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	1.07E+01 ug/l	1.51E+00 lbs/day
Chlorobenzene	5.10E+04 ug/l	7.23E+03 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	1.87E-03 ug/l	2.65E-04 lbs/day
1,2-Dichloroethane	2.40E+02 ug/l	3.41E+01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	2.16E+01 ug/l	3.06E+00 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	1.02E+02 ug/l	1.45E+01 lbs/day
1,1,2,2-Tetrachloroethane	2.67E+01 ug/l	3.79E+00 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	3.40E+00 ug/l	4.82E-01 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	1.04E+04 ug/l	1.48E+03 lbs/day
2,4,6-Trichlorophenol	1.58E+01 ug/l	2.24E+00 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	1.14E+03 ug/l	1.62E+02 lbs/day
2-Chlorophenol	9.71E+02 ug/l	1.38E+02 lbs/day
1,2-Dichlorobenzene	4.13E+04 ug/l	5.85E+03 lbs/day
1,3-Dichlorobenzene	6.31E+03 ug/l	8.95E+02 lbs/day

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1,4-Dichlorobenzene	6.31E+03 ug/l	8.95E+02 lbs/day
3,3'-Dichlorobenzidine	1.87E-01 ug/l	2.65E-02 lbs/day
1,1-Dichloroethylene	7.77E+00 ug/l	1.10E+00 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	1.92E+03 ug/l	2.72E+02 lbs/day
1,2-Dichloropropane	9.47E+01 ug/l	1.34E+01 lbs/day
1,3-Dichloropropylene	4.13E+03 ug/l	5.85E+02 lbs/day
2,4-Dimethylphenol	5.58E+03 ug/l	7.92E+02 lbs/day
2,4-Dinitrotoluene	2.21E+01 ug/l	3.13E+00 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.31E+00 ug/l	1.86E-01 lbs/day
Ethylbenzene	7.04E+04 ug/l	9.98E+03 lbs/day
Fluoranthene	8.98E+02 ug/l	1.27E+02 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	4.13E+05 ug/l	5.85E+04 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	3.89E+03 ug/l	5.51E+02 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	8.74E+02 ug/l	1.24E+02 lbs/day
Dichlorobromomethane(HM)	5.34E+01 ug/l	7.57E+00 lbs/day
Chlorodibromomethane (HM)	8.26E+01 ug/l	1.17E+01 lbs/day
Hexachlorocyclopentadiene	4.13E+04 ug/l	5.85E+03 lbs/day
Isophorone	1.46E+03 ug/l	2.07E+02 lbs/day
Naphthalene		
Nitrobenzene	4.61E+03 ug/l	6.54E+02 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	3.40E+04 ug/l	4.82E+03 lbs/day
4,6-Dinitro-o-cresol	1.86E+03 ug/l	2.63E+02 lbs/day
N-Nitrosodimethylamine	1.97E+01 ug/l	2.79E+00 lbs/day
N-Nitrosodiphenylamine	3.89E+01 ug/l	5.51E+00 lbs/day
N-Nitrosodi-n-propylamine	3.40E+00 ug/l	4.82E-01 lbs/day
Pentachlorophenol	1.99E+01 ug/l	2.82E+00 lbs/day
Phenol	1.12E+07 ug/l	1.58E+06 lbs/day
Bis(2-ethylhexyl)phthalate	1.43E+01 ug/l	2.03E+00 lbs/day
Butyl benzyl phthalate	1.26E+04 ug/l	1.79E+03 lbs/day
Di-n-butyl phthalate	2.91E+04 ug/l	4.13E+03 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	2.91E+05 ug/l	4.13E+04 lbs/day
Dimethyl phthlate	7.04E+06 ug/l	9.98E+05 lbs/day
Benzo(a)anthracene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Benzo(a)pyrene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Benzo(b)fluoranthene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Benzo(k)fluoranthene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Chrysene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	7.53E-02 ug/l	1.07E-02 lbs/day

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Pyrene (PAH)	2.67E+04 ug/l	3.79E+03 lbs/day
Tetrachloroethylene	2.16E+01 ug/l	3.06E+00 lbs/day
Toluene	4.86E+05 ug/l	6.88E+04 lbs/day
Trichloroethylene	1.97E+02 ug/l	2.79E+01 lbs/day
Vinyl chloride	1.27E+03 ug/l	1.81E+02 lbs/day

Pesticides

Aldrin	3.40E-04 ug/l	4.82E-05 lbs/day
Dieldrin	3.40E-04 ug/l	4.82E-05 lbs/day
Chlordane	1.43E-03 ug/l	2.03E-04 lbs/day
4,4'-DDT	1.43E-03 ug/l	2.03E-04 lbs/day
4,4'-DDE	1.43E-03 ug/l	2.03E-04 lbs/day
4,4'-DDD	2.04E-03 ug/l	2.89E-04 lbs/day
alpha-Endosulfan	4.86E+00 ug/l	6.88E-01 lbs/day
beta-Endosulfan	4.86E+00 ug/l	6.88E-01 lbs/day
Endosulfan sulfate	4.86E+00 ug/l	6.88E-01 lbs/day
Endrin	1.97E+00 ug/l	2.79E-01 lbs/day
Endrin aldehyde	1.97E+00 ug/l	2.79E-01 lbs/day
Heptachlor	5.10E-04 ug/l	7.23E-05 lbs/day
Heptachlor epoxide		

PCB's

PCB 1242 (Arochlor 1242)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1254 (Arochlor 1254)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1221 (Arochlor 1221)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1232 (Arochlor 1232)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1248 (Arochlor 1248)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1260 (Arochlor 1260)	1.09E-04 ug/l	1.55E-05 lbs/day
PCB-1016 (Arochlor 1016)	1.09E-04 ug/l	1.55E-05 lbs/day

Pesticide

Toxaphene	1.82E-03 ug/l	2.58E-04 lbs/day
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Metals

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

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Cyanide	37.7	12.6	
Iron	1713.2		
Lead	241.7	74.0	
Mercury	0.364	0.029	
Nickel	3646.1	573	
Selenium	33.1	8.9	
Silver	140.2	N/A	
Thallium	15.3		
Zinc	933.4	1322.2	Acute Controls
Boron	1821.14		

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

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

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Level II Antidegradation Review is not required

XI. Colorado River Salinity Forum Considerations

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

XII. Summary Comments

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

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XIII. Notice of UPDES Requirement

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

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APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day 2.000	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 2.569	REAER. Coeff. (Ka)20 (Ka)/day 12.905	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 14.686	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.608
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 5.138	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(Cl)20 1/day 32.000	TRC K(Cl)(T) 1/day 43.961
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 1.409						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(Cl) TRC {theta} 1.1	S Benthic {theta} 1.1

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Level I Antidegradation Review for: St. George WWTP
StGeorge_WLA_2-10-12.xls

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR found that the proposed activity meets the requirements of R317-2-3.5(b)(1) (water quality will not be lowered by the proposed activity) and, therefore does not require a Level II review. The proposed activity is a basic permit renewal. No increase in effluent concentration or load is requested over that allowed under the current UPDES Permit.

Review by: 

3/6/2013