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. **UT0021440**
Biosolids Permit No. **UTL-021440**
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"*),

MAGNA WATER RECLAMATION FACILITY

Is hereby authorized to discharge from its wastewater treatment facility to receiving waters named **KERSEY CREEK**,

To dispose of biosolids and to discharge storm water, in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit became effective on June 01, 2014

This permit expires at midnight on April 30, 2019

Signed this 7 day of March, 2017.

Walter L. Baker, P.E.
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Point.

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

Outfall Number	Location of Discharge Outfall
001	Located at latitude 40° 43' 30" and longitude 112° 04' 26". The effluent discharge is to the east into Kersey Creek.

B. Narrative Standard.

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

C. Specific Limitations and Self-Monitoring Requirements.

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

Effluent Limitations a/				
Parameter	Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD5, mg/L	25	35	NA	NA
BOD5, Minimum % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS, Minimum % Removal	85	NA	NA	NA
E. Coli, no./100mL	126	158	NA	NA
TRC, mg/L	NA	NA	NA	1
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD5, Influent	2 x Week	Composite	mg/L
BOD5, Effluent	2 x Week	Composite	mg/L
BOD5, Minimum % Removal	2 x Week	Calculation	%
TSS, mg/L, Influent	2 x Week	Composite	mg/L
TSS, mg/L, Effluent	2 x Week	Composite	mg/L
TSS, Minimum % Removal	2 x Week	Calculation	%
E. Coli	2 x Week	Grab	no./100mL
Ammonia f/	Weekly	Grab	mg/L
TRC f/	Monthly	Grab	mg/L
Oil & Grease	Monthly	Grab	mg/L
pH	Daily	Grab	SU
WET, Acute Biomonitoring	Quarterly	Composite	Report
Metals	2 x Year	e/	mg/L
Organics	d/	Grab	mg/L

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

b/ Flow measurements of influent/effluent volume shall be made in such a

manner that MWRF 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/ Testing must be performed in the second and fourth year of the permit cycle. A list of the organics to be tested can be found in 40CFR122 appendix D table II. If results of metal analysis are detectable, more frequent sampling of the metals may be required.

e/ See Metals Monitoring table in part II.A.1 of this permit

f/ MWFR will begin a process optimization for the removal of ammonia and TRC in this permit period in accordance with the following schedule:

1) By May 1, 2015: Submit an initial optimization report summarizing operational changes that were made to remove ammonia and TRC from the treatment plant effluent, and summarize monitoring data from the ammonia and TRC sampling results.

2) By May 1, 2016: Submit a final optimization report summarizing operational changes that were made to remove ammonia and TRC from the treatment plant effluent, and summarize monitoring data from the ammonia and TRC sampling results. The plant will be operated for the maximum removal of ammonia and TRC until the permit is re-issued or reopened with ammonia and/or TRC effluent limits.

2. Acute Whole Effluent Toxicity (WET) Testing.

a. Whole Effluent Testing – Acute Toxicity. Starting on the effective date of this permit, the permittee shall conduct quarterly acute static replacement toxicity tests on a composite sample of the final effluent. The sample shall be collected at outfall 001.

The monitoring frequency for acute tests shall be quarterly unless a sample is found to be acutely toxic during a routine test. If that occurs, the monitoring frequency shall become weekly (See *Part I.C.2.b, Accelerated Testing*). Samples shall be collected on a two-day progression; i.e., if the first sample is on a Monday, the sampling shall begin on a Wednesday during the next sampling period, etc.

The acute static replacement toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA/821-R-02-012* as per *40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS*, and the *Region VIII EPA NPDES Acute Test Conditions - Static Renewal Whole Effluent Toxicity Test, August 1997.* In the case of conflicts, the Region VIII procedures will prevail. The permittee shall conduct the acute 48-hour static replacement toxicity test using Ceriodaphnia dubia and the acute 96-hour static replacement toxicity test using Pimephales promelas (fathead minnow). This will be done alternating quarterly between Ceriodaphnia dubia and Pimephales promelas (fathead minnow).

Acute toxicity occurs when 50 percent or more mortality is observed for either test species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the results to be considered valid. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control mortality is achieved. A variance to this requirement may be granted by the Director if a mortality of less than 10 percent was observed in higher effluent dilutions.

If the permit contains a total residual chlorine limitation greater than 0.2 mg/L, the permittee may request approval from the Director to either de-chlorinate the sample, or to collect the sample prior to chlorination.

Quarterly test results shall be reported along with the Discharge Monitoring Report Form (DMR) submitted for the end of the reporting calendar month. For example, biomonitoring results for the calendar quarter ending March 31 shall be reported with the standard DMR due April 28, with the remaining biomonitoring reports submitted with standard 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. Biomonitoring results shall be reported on a biomonitoring DMR form, shall be consistent with the latest revision of the *Region VIII NPDES Whole Effluent Toxics Control Program, August 1997, Appendix C: Acute and Chronic Reporting Guidance*, and shall include all chemical and physical data as specified.

If the results for 12 consecutive tests indicate no acute toxicity, the permittee may request a reduction in testing frequency and/or reduction to one species. The Director may approve, partially 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.

b. Accelerated Testing. When acute toxicity is indicated during routine biomonitoring as specified in this permit, the permittee shall notify the Director in writing within 5 days after becoming aware of the test result. The permittee shall perform an accelerated schedule of biomonitoring to establish whether a pattern of toxicity exists. Accelerated testing will begin within 7 days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under *Part I.C.2.c, Pattern of Toxicity*. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.

c. Pattern of Toxicity. A pattern of toxicity is defined by the results of a series of up to 5 biomonitoring tests pursuant to the accelerated testing requirements using 100 percent effluent on the single species found to be more sensitive, once every week for up to five consecutive weeks.

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

A pattern of toxicity is established if one of the following occurs:

(1) If 2 consecutive test results (not including the scheduled quarterly test that triggered the search for a pattern of toxicity) indicate acute toxicity, this constitutes an established pattern of toxicity.

(2) If consecutive tests continue to yield differing results each time, the permittee will be required to conduct up to a maximum of 5 acute tests (not including the scheduled quarterly test which triggered the search for a pattern of toxicity). If 3 out of 5 test results indicate acute toxicity, this will constitute an established pattern of toxicity.

d. Preliminary Toxicity Investigation.

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

inspection of material storage and transfer areas to determine if a spill may have occurred, and similar procedures.

(2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within 30 days of completing the PTI, the permittee shall submit for approval a control program to control effluent toxicity and shall proceed to implement such plan within 7 days following approval. The control program, as submitted to or revised by the Director, may be incorporated into the permit.

(3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (See *Part I.C.2.e, Toxicity Reduction Evaluation*).

(4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director as part of the reporting requirements of d.(1) of this section.

e. Toxicity Reduction Evaluation (TRE).

If toxicity is detected during the life of this permit, and it is determined by the Director 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 the 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 eliminated immediately, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If

the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If 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 that compensates for the pollutant(s) being controlled numerically.

If acceptable to the Director, this permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or 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 Director, shall be considered a violation of this permit.

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

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Self-Monitoring and Reporting Requirements.

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

Metals Monitoring for Pretreatment Program			
Parameter	Sample Type	Frequency	Units
Total Arsenic	Composite	Twice a year	mg/L
Total Cadmium			
Total Chromium			
Total Copper			
Total Lead			
Total Cyanide	Grab		
Total Mercury	Composite/Grab		
Total Molybdenum	Composite		
Total Nickel			
Total Selenium			
Total Silver			
Total Zinc			

The results of these analyses shall be submitted along with the Discharge Monitoring Report (DMR) at the end of that reporting period. The metals must be sampled using method 200.8 if non detection is found with method 200.7. If non detection is found using method 245.1 or 245.2 for mercury then 1631 must be used.

B. Industrial Wastes.

1. The "Industrial Waste Survey" as required by *Part II.A.1.* consists of; identifying each significant industrial user (SIU), determination of the qualitative and quantitative characteristics of each discharge, and appropriate production data. A (SIU) is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:

   a. has a process wastewater flow of 25,000 gallons or more per average work day;

b. has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

c. is subject to Categorical Pretreatment Standards, or

d. has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

2. The permittee must notify the Director of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1, above, and be forwarded no later than sixty (60) days following the introduction or change.

3. Pretreatment Standards (*40 CFR 403.5*) developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:

   a. 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 140°F (60°C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);

   f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;

   h. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or,

i. Any pollutant that causes pass through or interference at the POTW.

4. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307* of *the Water Quality Act of 1987 as amended (WQA). (See 40 CFR, Subchapter N, Parts 400* through *500*, for specific information).

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

   a. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301* or *306* of the *WQA* if it were directly discharging those pollutants;

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and

   c. For the purposes of this section, adequate notice shall include information on:

      (1) The quality and quantity of effluent to be introduced into such treatment works; and,

      (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

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

   a. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;

   b. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations* at *40 CFR 403*; and/or,

c. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste.

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

III. BIOSOLIDS REQUIREMENTS

A. Description of 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 Magna Water Reclamation Facility (MWRF). The method and sites for disposal are specifically designated below.

1. Treatment. Biosolids produced at the MWRF are stabilized in an oxidation ditch, with a mean cell residence time of at least 50 days, and dewatered with screw presses.

2. Description of Biosolids Disposal Method

   a. The solids are hauled to ET Technologies and used for landfill reclamation after further treatment.

   b. The solids are hauled to R^3 and used for agricultural production after further treatment.

   c. The biosolids are land applied at Kennecott Copper and used for land reclamation.

   d. The biosolids are land applied and used agriculture production at agronomic rates.

   e. The biosolids are disposed in a sanitary landfill.

3. Changes in Treatment Systems and Disposal Practices.

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

4. For any biosolids that are land filled, the requirements of *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.

B. Specific Limitations and Self-Monitoring Requirements.

All biosolids generated by this facility to be used for land application shall meet the requirements of *Part III.B.1, 2, 3,* and *4* listed below.

1. Metals Limitations.

   a. The maximum metals concentrations listed in Table 1 and the cumulative metal loadings in Table 2; or

   b. The maximum metals concentrations in Table 1 and the monthly average metal concentrations in Table 3;

   If the metal concentrations in the biosolids no longer meet the limitations in Table 3, the limitations in Table 1, 2 and/or Table 4 must be used. The MWRF shall determine cumulative metal loadings and/or annual metal loadings for each land application site.

Metal	Table 1	Table 2	Table 3	Table 4
All metals concentrations shall be measured and reported on a dry weight basis	Daily Maximum mg/Kg a/	Cumulative Loading Kg/Ha	Monthly Average mg/Kg a/	Annual Loading Kg/Ha/365 Day Period
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	36	5.0
Total Zinc	7500	2800	2800	140

a/ See Part VIII.B. for definition of terms.

2. Pathogen Limitations.

If the biosolids are land applied, the biosolids shall meet Class B requirements (including the site restrictions) as described below. If the biosolids do not meet Class B pathogen requirements, the biosolids cannot be land applied.

Class B Pathogen Requirements b/

Fecal Coliform shall be less than 2,000,000 most probable number (MPN) per gram of total solids c/	or	Biosolids are dried in beds at a depth of no more than 9 inches for a minimum of 3 months. During 2 of those 3 months the average daily temperature is above 32° F (0° C).

c/ Based on a minimum of seven (7) samples of biosolids per quarter, or 28 samples prior to land application (or as approved by the Director in the sampling and analysis plan).

3. Vector Attraction Reduction Requirements b/

If the biosolids are land applied, a method of vector attraction reduction must be met. The MWRF will meet vector attraction reduction by one of two ways:

a. The moisture content of the biosolids shall be reduced by at least 90% before land application (Option 8, 503.33(b)(8)).

b. The biosolids must be incorporated into the soil within six hours of land application.

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

4. Site Restrictions

If the biosolids are Class B with respect to pathogens, the MWRF shall comply with all applicable site restrictions listed below:

a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application.

b. Food crops with harvested parts below the land surface shall not be harvested for 20 months after application if the biosolids remains on the land surface for four months or more prior to incorporation into the soil.

c. Food crops with harvested parts below the land surface shall not be harvested for 38 months after application if the biosolids remains on the land surface for less than four months prior to incorporation into the soil.

d. Other food crops and feed crops shall not be harvested from the land for 30 days after application.

e. Animals shall not be allowed to graze on the land for 30 days after application.

f. Turf grown on land where biosolids is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.

g. Public access to land with a high potential for public exposure shall be restricted for one year after application.

h. Public access to land with a low potential for public exposure shall be restricted for 30 days after application.

C. Management Practices for Application of Biosolids to Land

The MWRF shall operate and maintain the land application site operations in accordance with the following requirements:

1. The MWRF shall provide a land application plan to the Director and the EPA within 90 days of the effective date of this permit.

2. Application of biosolids shall be conducted in a manner that will not contaminate the groundwater or impair the use classification for that water underlying the sites.
3. Application of biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Biosolids shall not be applied to land 10 meters or less from waters of the United States (as defined in *40 CFR 122.2*).

4. Application of biosolids shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the MWRF is required to follow the methods for calculating agronomic rates outlined in the latest version of the *Region VIII Biosolids Management Handbook* (other methods may be approved by the Director). The treatment plant shall provide written notification to the applier of the biosolids of the concentration of total nitrogen (as N on a dry weight basis) in the biosolids. Written permission from the Director is required to exceed the agronomic rate.

5. Application of biosolids is prohibited to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent.

6. No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:

   a. there is 80 percent vegetative ground cover; or,

   b. approval has been obtained based upon a plan demonstrating adequate runoff containment measures.

7. Biosolids shall not be applied to sites where the available phosphorous content of the soil exceeds the following:

   a. 100 ppm as determined by the sodium bicarbonate extraction method

   b. 50 ppm as determined by the AB-DPTA extraction method

   c. 170 ppm by the Bray P1 extraction method

   Available phosphorus levels shall be determined based upon the Bray P1 extraction when the soil pH is 6.5 or less.

   The MWRF may request these limits be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.

8. Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in Part III.B.5.b is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be

outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.

9. The specified cover crop shall be planted during the next available planting season. If this does not occur, the MWRF shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.

10. When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.

11. Biosolids subject to the cumulative metal loading rates in Table 2 (Part III.B.1.) shall not be applied to agricultural land if any of the cumulative metal loading rates in Table 2 have been reached.

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

13. The MWRF shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges that may cause or lead to the release of biosolids to the environment or a threat to human health. The MWRF must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The MWRF shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

D. Self-Monitoring Requirements

1. 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* (if the MWRF disposes of less than 290 DMT a year, the MWRF shall monitor at least once a year, if the MWRF disposes of more than 290 DMT a year, the MWRF shall monitor at least every ninety days or four times at the time of disposal).

2. Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to biosolids that are sold or given away in bags or similar containers or sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area are to be collected.

These samples are to be collected down to either 5 feet or to the confining layer, whichever is shallower. Each one foot increment is to be composited with the other samples from the site and one analysis for nitrate is to be done for each increment. Samples are required to be taken once every five years for non-irrigated sites or annually for irrigated sites.

3. Soil monitoring for phosphorus (reported as P) is required for all land application sites (does not apply to biosolids that are sold or given away in bags or similar containers or sites where biosolids are applied less than once every five years). Six samples of one foot depth each are to be collected for each 320 acre area and composited. Samples are required to be taken once every five years for non-irrigated sites or annually for irrigated sites.

4. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CFR Part 503* and/or other criteria specified in this permit. Pollutant analysis is to be performed using *Method SW 846* with *Method 3050* used for digestion. For the digestion procedure, an amount of biosolids equivalent to one gram dry weight shall be used. The methods are also described in the latest version of the *Region VIII Biosolids Management Handbook*. Monitoring for soil nitrate and phosphorus is to be performed using the methods in *Methods of Soil Analysis, Part 2. Chemical and Microbiological Properties*. Page, A. L., Ed., American Society of Agronomy and Soil Science Society of America, Madison, WI, 1982.

5. If metal concentrations in the biosolids no longer meet the limitations in Table 3, the limitations in Table 2 and/or Table 4 must be used. The MWRF shall determine cumulative metal loadings and/or annual metal loadings for each land application site.

6. The Director may request additional monitoring for specific pollutants derived from biosolids if the data shows a potential for concern.

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

F. 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.

G. Monitoring Procedures.
Monitoring must be conducted according to test procedures approved under *40 CFR Part 503* unless other test procedures have been specified in this permit. See Part III.B for any applicable biosolids monitoring procedures.

H. 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.

I. Reporting of Monitoring Results.
The MWRF shall provide the results of all monitoring performed in accordance with Part I.C., and information on management practices, land application sites, 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 disposed during the reporting period, "no biosolids were disposed" 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 IV), 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
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
999 18th Street, Suite 500
Denver, Colorado 80202-2466

J. Additional Monitoring by the MWRF.
If the MWRF monitors any pollutant more frequently than required by this permit, using test procedures approved under *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 on the Biosolids Report form. Such increased frequency shall also be indicated.

K. Record Keeping

1. If the MWRF prepared material derived from biosolids that meet the limits in Table 3 (Part III.B.1.), the Class A pathogen requirements in Part III.B.2. and the vector attraction reduction in Part I.C.4., the MWRF is not required to keep records on that material unless otherwise required by the Director. If so notified by the Director the MWRF may be required to add additional record keeping if information provided indicates that this is necessary to protect public health and the environment.

2. If any metal from Table 3 increases to the point where the biosolids no longer meet the limits in Table 3, additional record keeping from *40 CFR 503.17* is required.

3. The MWRF is required to keep the following information for at least 5 years:

   a. Concentration of each metal in Table 3 (Part III.B.1.).

   b. A description of how the pathogen reduction requirements in Part I.C.2. were met.

   c. A description of how the site restrictions in Part III.B.3 were met.

   d. A description of how the vector attraction reduction requirements in Part III.B.4. were met.

   e. A description of how the management practices in Part III.C. were met (if necessary).

   f. The following certification statement:

      "I certify under the penalty of law, that the heavy metal requirements in Part III.B.1., the pathogen reduction requirements of III.B.2., one of the vector attraction reduction alternatives in Part III.B.3., the site restrictions in Part III.B. 4 and the management practices in Part III.C., have been met. 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, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

4. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The initials or name(s) of the individual(s) who performed the sampling or measurements;

   c. The date(s) analyses were performed;

   d. The time(s) analyses were initiated;

   e. The initials or name(s) of individual(s) who performed the analyses;

   f. References and written procedures, when available, for the analytical techniques or methods used; and,

   g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

5. The MWRF 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.

L. Twenty-four Hour Notice of Noncompliance Reporting.

1. The MWRF shall report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the MWRF first became aware of the circumstances. The report shall be made to the Division of Water Quality at (801) 538-6146 or (801) 536-4123 (24-hour answering machine).

2. The following occurrences of noncompliance shall be reported by telephone to the Division of Water Quality at (801) 538-6146 by the first workday (8:00 a.m. - 4:30 p.m. Mountain Time).

   a. Violation of any of the Table 1 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that has been land applied.

3. A written submission shall also be provided within five days of the time that the MWRF 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; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, by phone, at (801) 538-6146.

5. Reports shall be submitted to the addresses in Part III.I., Reporting of Monitoring Results.

M. 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 III.I. are submitted. The reports shall contain the information listed in Part III.L.3.

N. Inspection and Entry.

The MWRF shall allow the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the MWRF's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this 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; and,

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.

5. The MWRF shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law will be permitted to enter without delay for the purposes of performing their responsibilities.

IV. STORM WATER REQUIREMENTS.

A. Coverage of This Section.

The requirements listed under this section shall apply to storm water discharges. Storm water discharges from the following portions of the facility may be eligible for coverage under this permit: biosolids drying beds, haul or access roads on which transportation of biosolids may occur, grit screen cleaning areas, chemical loading, unloading and storage areas, salt or sand storage areas, vehicle or equipment storage and maintenance areas, or any other wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility that may have a reasonable expectation to contribute to pollutants in a storm water discharge.

B. Prohibition of Non-Storm Water Discharges.

Except for discharges identified in *Part I.*, and discharges described below in this paragraph, non-storm water discharges are prohibited. The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from fire-fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

C. Storm Water Pollution Prevention Plan Requirements.

The permittee must have (on site) or develop and implement a storm water pollution prevention plan as a condition of this permit.

1. Contents of the Plan. The plan shall include, at a minimum, the following items:

   a. Pollution *Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

b. Description *of Potential Pollutant Sources*. Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:

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

(e) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or

hazardous wastes and where these may be exposed to precipitation.

(f) Locations where any major spills or leaks of toxic or hazardous materials have occurred.

(g) Location of any sand or salt piles.

(h) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.

(i) Location of receiving streams or other surface water bodies.

(j) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.

(2) *Inventory of Exposed Materials.* An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

(3) *Spills and Leaks.* A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

(4) *Sampling Data.* A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.

(5) *Summary of Potential Pollutant Sources and Risk Assessment.* A narrative description of the potential pollutant sources from the

following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.

(6) *Measures and Controls.* The permittee shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:

(7) *Good Housekeeping.* All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.

(8) *Preventive Maintenance.* A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

(9) *Spill Prevention and Response Procedures.* Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the

plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

(10) *Inspections.* In addition to the comprehensive site evaluation required under paragraph *(Part IV.C.1.b.(16))* of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.

(11) *Employee Training.* Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.

(12) *Record keeping and Internal Reporting Procedures.* A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

(13) *Non-storm Water* Discharges.

(a) *Certification.* The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water

at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part VII.G* of this permit.

(b) *Exceptions.* Except for flows from fire fighting activities, sources of non-storm water listed in *Part IV.B.* (Prohibition of Non-storm Water Discharges) of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

(c) *Failure to Certify.* Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Director* within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.

(14) *Sediment and Erosion Control.* The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

(15) *Management of Runoff.* The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity *Part IV.C.1.b (Description of Potential Pollutant Sources)*

of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.

(16) *Comprehensive Site Compliance Evaluation.* Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

(a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

(b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part IV.C.1.b (Description of Potential Pollutant Sources)* of this section and pollution prevention measures and controls identified in the plan in accordance with *Part IV.C.1.b.(6) (Measures and Controls)* of this section shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

(c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph *i.* (above) shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any

incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part VII.G* (Signatory Requirements) of this permit.

(17) *Deadlines for Plan Preparation and Compliance.* The permittee shall prepare and implement a plan in compliance with the provisions of this section within 270 days of the effective date of this permit. If the permittee already has a plan, it shall be revised according to *Part IV.C.1.b.(16), (Comprehensive Site Evaluation).*

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

D. Monitoring and Reporting Requirements.

1. Quarterly Visual Examination of Storm Water Quality. Facilities shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.

   a. *Sample and* Data *Collection.* Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event.

Where practicable, the same individual should carry out the collection and examination of discharges for entire permit term.

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

c. *Representative Discharge.* When the permittee has two or more outfalls that, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may collect a sample of effluent of one of such outfalls and report that the observation data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.

d. *Adverse Conditions.* When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather conditions, which may prohibit the collection of samples, include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

e. *Inactive and Unstaffed Site.* When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling.

Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures.

Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.

C. Penalties for Tampering.

The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Compliance Schedules.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

E. Additional Monitoring by the Permittee.

If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* and *40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. Records Contents.

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

G. Retention of Records.

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 538-6146, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part 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.

d. The estimated time noncompliance is expected to continue if it has not been corrected;

e. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,

f. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 538-6146.

5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*

I. Other Noncompliance Reporting.

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*

J. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids

before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply.

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.

The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part VI.G, Bypass of Treatment Facilities* and *Part VI.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

E. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances.

Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant

from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

      (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

      (3) The permittee submitted notices as required under *section VI.G.3*.

   b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

   a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

      (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

(6) Any additional information requested by the Director.

b. *Emergency Bypass.* Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

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

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required under *Part V.H, Twenty-four Hour Notice of Noncompliance Reporting*; and,

d. The permittee complied with any remedial measures required under *Part VI.D, Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

VII. GENERAL REQUIREMENTS

A. Planned Changes.

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance.

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

C. Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information.

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. Other Information.

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements.
All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Director, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

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

H. Penalties for Falsification of Reports.

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

I. Availability of Reports.

Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability.

Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights.

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability.

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers.

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If

this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph *2* above.

N. State or Federal Laws.
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

O. Water Quality - Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Biosolids – Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.

Q. Toxicity Limitation - Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other

conditions related to the control of toxicants if one or more of the following events occur;

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 compliance with the toxic limits will require an implementation schedule past the date for compliance and the Director agrees with the conclusion.

3. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits, and the Director agrees that numerical controls are the most appropriate course of action.

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

5. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.

R. Storm Water-Reopener Provision.

At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for e-coli bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act*.

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration.

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 25 percent effluent (or lower) is significantly less (at the 95 percent confidence level) than the survival, growth, or reproduction of the control specimens.

7. "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.

8. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

9. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

10. "EPA," means the United States Environmental Protection Agency.

11. "Director," means Director of the Utah Water Quality Board.

12. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

13. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

14. "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.

15. "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.

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 mosquitoes 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, or 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.

19. "Low Potential for Public Contact Site" is the land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.

20. "Monthly Average" is the arithmetic mean of all measurements taken during the month.

21. "Volatile Solids" is the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

C. Storm Water.

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

2. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.

3. "Co-located industrial activity" means when a facility has industrial activities being conducted onsite that are described under more than one of the coverage sections of *Appendix II* in the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity. Facilities with co-located industrial activities shall comply with all applicable monitoring and pollution prevention plan requirements of each section in which a co-located industrial activity is described.

4. "Commercial Treatment and Disposal Facilities" means facilities that receive, on a commercial basis, any produced hazardous waste (not their own) and treat or dispose of those wastes as a service to the generators. Such facilities treating and/or disposing exclusively residential hazardous wastes are not included in this definition.

5. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal and that is not a land application unit, surface impoundment, injection well, or waste pile.

6. "Land application unit" means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

7. "Municipal separate storm sewer system" (large and/or medium) means all municipal separate storm sewers that are either:

    a. Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (at the issuance date of this permit, Salt Lake City is the only city in Utah that falls in this category); or

b. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (at the issuance date of this permit Salt Lake County is the only county that falls in this category); or

c. Owned or operated by a municipality other than those described in paragraph *a.* or *b.* (above) and that are designated by the *Director* as part of the large or medium municipal separate storm sewer system.

8. "NOI" means notice of intent; it is an application form that is used to obtain coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.

9. "NOT" means "notice of termination", it is a form used to terminate coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.

10. "Point source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

11. "Section 313 water priority chemical" means a chemical or chemical categories that:

    a. Are listed at *40 CFR 372.65* pursuant to *Section 313* of the *Emergency Planning and Community Right-to-Know Act* (*EPCRA*) (also known as *Title III of the Superfund Amendments and Reauthorization Act* (*SARA*) of 1986);

    b. Are present at or above threshold levels at a facility subject to *EPCRA Section 313* reporting requirements; and

    c. Meet at least one of the following criteria:

        (1) Are listed in *Appendix D* of *40 CFR Part 122* on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);

(2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or

(3) Are pollutants for which EPA has published acute or chronic water quality criteria. See *Appendix III* of this permit. This appendix was revised based on final rulemaking EPA published in the *Federal Register* November 30, 1994.

12. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *CERCLA*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

13. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311 of the Clean Water Act* (see *40 CFR 110.10* and *CFR 117.21*) or *Section 102* of *CERCLA* (see *40 CFR 302.4*).

14. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.

15. "SWDMR" means "storm water discharge monitoring report", a report of the results of storm water monitoring required by the permit. The Division of Water Quality provides the storm water discharge monitoring report form.

16. "Storm water associated with industrial activity" (*UAC R317-8-3.8(6)(c) & (d)*) means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the *UPDES* program. For the categories of industries identified in paragraphs *(a)* through *(j)* of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined in *40 CFR Part 401*); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and

significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph *(k)* of this definition, the term includes only storm water discharges from all areas (except access roads and rail lines) listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs *(a)* to *(k)* of this definition) include those facilities designated under *UAC R317-8-3.8(1)(a)5.* The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

a. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under *40 CFR Subchapter N* (except facilities with toxic pollutant effluent standards that are exempted under category (k) of this definition);

b. Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;

c. Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under *40 CFR 434.11(l)* because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations that have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but that have an identifiable owner/operator;

d. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;

e. Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under *Subtitle D* of *RCRA*;

f. Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

g. Steam electric power generating facilities, including coal handling sites;

h. Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45 and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or that are otherwise identified under paragraphs (a) to (g) or (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.

DWQ-2014-003682

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FACT SHEET STATEMENT OF BASIS
MAGNA WATER AND SEWER DISTRICT
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0021440
MAJOR MUNICIPAL

FACILITY CONTACTS

Person Name: Steve Williams
Position: Wastewater Operations Manager

Facility Name: Magna Water and Sewer District
Mailing Address: 7650 West 2100 South
Magna, Utah 84044
Telephone: (801) 250-2795

DESCRIPTION OF FACILITY

The Magna Water Reclamation Facility (MWRF) is located northeast of the City of Magna. The outfall is located at latitude 40° 43' 30" and longitude 112° 04' 26". The facility serves the City of Magna. The daily average design flow is 3.3 MGD. The facility consists of (2) fine screens, followed by (2) grit traps, Fischer/Porter influent flow meters (3) influent lift pumps, (2) oxidation ditches, (2) secondary clarifiers, a chlorine contact chamber with (2) sections, effluent 12 inch Parshall flume, and a Fischer/Porter effluent flow meter. A 3.75 MGD BIOBROx system which removes perchlorate from an EDR concentrate stream from the treatment of a contaminated drinking water well. The solids handling consists of a screw press.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The wasteload analysis (WLA) for the previous permit stated that the discharge would not cause a violation of water quality standards in downstream receiving waters, and a wasteload allocation was not required. As a result, the permit limits of the previous permit were based on the Utah Secondary Treatment Standards. After analyzing the effluent and the receiving water it was determined that a wasteload allocation would be needed to protect downstream receiving waters.

A preliminary wasteload analysis was completed, which showed that ammonia and total residual chlorine (TRC) would now have to have an allocation, and limits would need to be added to the permit. Insufficient observed data was available to properly calibrate the QUAL2Kw model. DWQ will be collecting data, that will be used to calibrate the model so the WLA can be finalized, which is expected to take approximately 12 months.

The permit for MWFR will be renewed using the permit limits from the previous permit and will be effective for a period of 3 years. This will allow time for the WLA to be completed, and time for MWRF to collect data to verify that the limits set forth by the WLA can be met. MWFR will begin a process optimization for the removal of ammonia and TRC in this permit period.

Sampling for ammonia will be included as monitoring only during the duration of this permit.

DISCHARGE

DESCRIPTION OF DISCHARGE

Outfall	Description of Discharge Point
001	Located at latitude 40° 43' 30" and longitude 112° 04' 26". The effluent discharge is to the east into Kersey Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge from MWRF flows into Kersey Creek. Kersey Creek is classified as 2B, 3D according to *Utah Administrative Code (UAC) R317-2-12.7:*

Class 2B	Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
Class 3D	Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD_5), E. Coli., pH and percent removal for BOD_5 and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The oil and grease and total residual chlorine (TRC) is based on best professional judgment (BPJ). The permit limitations are:

Effluent Limitations a/				
Parameter	Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD5, mg/L	25	35	NA	NA
BOD5, Minimum % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Minimum % Removal	85	NA	NA	NA
E. Coli, m/100mL	126	158	NA	NA
TRC, mg/L	NA	NA	NA	1
Oil & Grease, mg/L	NA	NA	NA	10.0
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit with the exception that ammonia has been added to the monitoring requirements. The reporting requirements will be submitted on Discharge Monitoring Report Form (EPA No. 3320-1) or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period.

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Total Flow b/ c/	Continuous	Recorder	MGD
BOD5, Influent	2 x Week	Composite	mg/L
BOD5, Effluent	2 x Week	Composite	mg/L
BOD5, Minimum % Removal	2 x Week	Calculation	%
TSS, mg/L Influent	2 x Week	Composite	mg/L
TSS, mg/L Effluent	2 x Week	Composite	mg/L
TSS, Minimum % Removal	2 x Week	Calculation	%
E. Coli	2 x Week	Grab	no./100mL
Ammonia f/	Weekly	Grab	mg/L
TRC f/	Monthly	Grab	mg/L
Oil & Grease	Monthly (If sheen is observed)	Grab	mg/L
pH	Daily	Grab	SU
WET, Acute Biomonitoring	Quarterly	Composite	Report
Metals	2 x Year	e/	mg/L
Organics	d/	Grab	mg/L

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

b/ Flow measurements of influent/effluent volume shall be made in such a manner that MWRF 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/ Testing must be performed in the second and fourth year of the permit cycle. A list of the organics to be tested can be found in 40CFR122 Appendix D Table II. If results of metal analysis are detectable, more frequent sampling of the metals may be required.

e/ See Metals Monitoring table in Part II.A.1 of this permit

f/ MWFR will begin a process optimization for the removal of ammonia and TRC in this permit period in accordance with the following schedule:

1) By May 1, 2015: Submit an initial optimization report summarizing operational changes that were made to remove ammonia and TRC from the

treatment plant effluent, and summarize monitoring data from the ammonia and TRC sampling results.

2) By May 1, 2016: Submit a final optimization report summarizing operational changes that were made to remove ammonia and TRC from the treatment plant effluent, and summarize monitoring data from the ammonia and TRC sampling results. The plant will be operated for the maximum removal of ammonia and TRC until the permit is re-issued or reopened with ammonia and/or TRC effluent limits.

WASTE LOAD ANALYSIS AND ANTIDEGRADATION REVIEW

Effluent limitations may also be derived using a Waste Load Analysis (WLA). The WLA incorporated Secondary Treatment Standards, Water Quality Standards, Antidegradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During the UPDES renewal development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was not required. The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

BIOSOLIDS

DESCRIPTION OF BIOSOLIDS TREATMENT AND DISPOSAL

The solids at the MWRF are stabilized in an oxidation ditch. The mean cell residence time of the solids is about fifty days. In 2012, the MWRF disposed of 604 dry metric tons (DMT) of biosolids.

After dewatering, the solids are transported on a conveyor belt and loaded into a trailer that will be picked up and hauled to ET technologies. ET Technologies operates under a processing facility permit issued from the Salt Lake Valley Health Department. All biosolids hauled to ET Technologies are weighed and the drivers are given a manifest. The biosolids must pass a toxicity characteristic leaching procedure (TCLP), are screened for radiation and "sniffed" for volatile organic compounds. ET Technologies is a soil regeneration site and mixes the solids with soil, contaminated soil from petroleum spills, saw dust, sump waste, fly ash, and other waste. It is buried for approximately one year for pathogen reduction, dug up and used for final cover at the adjacent Salt Lake Valley Solid Waste Management Facility for land reclamation purposes with very good results.

Since the solids produced at the MWRF fail to meet Class A or Class B standards for land

application with respect to pathogens, all solids will need to be further treated, and monitored by the processing facility to meet the land application requirements of *40 CFR 503* before any of the solids are land applied.

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	
Amount of Biosolids Disposed Per Year	Monitoring Frequency
> 0 to < 290	Once Per Year
> 290 to < 1,500	Four Times Per Year
> 1,500 to < 15,000	Six Times Per Year

Accordingly, the MWRF shall monitor at least four times per year (or when the solids are disposed). However, in accordance to 40 CFR 503.16 MWRF requested a reduction in frequency to once per year since the biosolids produced are sent to a soil regeneration site that is also permitted.

Landfill Monitoring
Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill.

Metals Monitoring
If the biosolids are to be land applied, the MWRF will need to sample prior to the time of land application.

Pathogen Monitoring for Class B Biosolids
If the Class B biosolids are to be land applied, the MWRF will need to meet a process to significantly reduce pathogens (PSRP) or be sampled for *fecal* coliform prior to land application.

Vector Attraction Reduction Monitoring
If the biosolids are to be land applied, the MWRF will need to meet a method of vector attraction reduction (VAR) prior to land application.

MONITORING DATA

Pathogen Monitoring Data 2012
The MWRF recently sampled for fecal coliform from one of their two screw presses. The fecal coliform was greater than 24,000,000 most probable number per gram (MPN/g). To meet Class B standards through sampling the fecal coliform would need to be less that 2,000,000 MPN/g on a consistent basis. This sample shows that the MWRF will probably not meet the requirements of *40 CFR 503.32 (a),* for Class B biosolids without further treatment.

Metals Monitoring Data
The MWRF was required to sample the biosolids disposed in 2012 for heavy metals. The

monitoring shows that the biosolids meet the requirements of *Table 3, 40 CFR 503.13*, which is considered exceptional quality (EQ) biosolids with regards to heavy metals. The results of the biosolids monitoring are shown below.

MWRF Metals Monitoring Data, 2012		
Parameter	Table 3, (EQ) mg/kg	Magna Values, mg/kg
Arsenic	41.0	19.8
Cadmium	39.0	0.68
Copper	1,500.0	481.0
Lead	300.0	11.7
Mercury	17.0	0.91
Molybdenum	75.0	8.55
Nickel	400.0	11.4
Selenium	100.0	12.6
Zinc	2,800.0	567.0

BIOSOLIDS LIMITATIONS

Pathogens (Class B)
For biosolids to be considered Class B with respect to pathogens, the total solids will need to meet a microbiological limit of less than 2,000,000 most probable number per gram of total solids *(40 CFR 503.32(b)(2))*, or be treated by a PSRP (*40 CFR 503.32(b)(3)*. If the biosolids do not meet Class B pathogen standards, or a PSRP, the MWRF will need to find another method of disposal.

Heavy Metals
Prior to land application, all biosolids need to meet the heavy metals limits of *40 CFR 503.13.* For the biosolids to be considered Class A biosolids (EQ) in regards to heavy metals, the biosolids will need to meet *Table 3 of 40 CFR 503.13.* If the biosolids do not meet Table 3, EQ standards for metals, *Tables 1, 2,* or *4* of *40 CFR 503.13* will need to be met before the biosolids are land applied. However, all biosolids produced from the MWRF have met EQ standards with respect to heavy metals during the life of the last permit, and it is expected that the MWRF will continue to meet EQ standards for the life of this permit. If the biosolids fail to meet any of the heavy metals standards of *40 CFR 503.13*, the biosolids cannot be land applied, and the biosolids will need to be disposed of in a landfill.

Vector Attraction Reduction
The biosolids will need to meet one of the vector attraction reduction requirements below under *40 CFR 503.33.*

1. The total solids content of the biosolids will need to be at least 90%, before the biosolids are land applied *(Option 8, 503.33(b)(8)).*

2. Biosolids that meet Class B pathogen standards that are land applied, will need to be incorporated into the soil within 6 hours after the biosolids are

applied to the land *(Option 10, 503.33(b)(10)*.

RECORD KEEPING
The record keeping requirements from *40 CFR 503.17* are included under Part III.K. 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 *Table 3 of 40 CFR 503.13,* and are land applied, the records need to be retained for a minimum of five years.

REPORTING
The MWRF is required to report annually as required in *40 CFR 503.18.* This report is to include the results of all monitoring performed in accordance with Part III.B. of the permit, information on management practices, land application sites, and certifications and will be 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.

MWRF is currently covered under the UPDES Multi Sector General Permit for Industrial Activities.

PRETREATMENT REQUIREMENTS

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

MWRF has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

The permit requires 2 x year influent and effluent monitoring for metals, organic toxics listed in R317-8-7.5 will be monitored in the 2nd and 4th year of the permit, and sludge monitoring for potential pollutants listed in 40 CFR 503. MWRF is required to submit an industrial waste survey within 60 days of permit issuance, see Part II.B.1 of the permit for details.

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, the renewal permit will require whole effluent toxicity (WET) testing. Acute toxicity testing will be conducted using one species, alternating each quarter between Ceriodaphnia dubia and Pimephales promelas (fathead minnows). The renewal permit will contain the standard requirements for accelerated testing upon failure of a WET test, a Preliminary Toxicity Investigation (PTI) and Toxicity Reduction Evaluation (TRE) as necessary, and a toxicity limitation re-opener provision.

PERMIT DURATION

It is recommended that this permit be effective for a duration of three (3) years.

Drafted by
Matthew Garn
Utah Division of Water Quality
February 25, 2014

PUBLIC NOTICE

Began: March 22, 2014
Ended: April 23, 2014
Public Noticed in the Deseret News and Tribune

There were no comments received during the public notice period.
April 24, 2014

DWQ-2014-003681

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

Date: **September 4, 2013**

Prepared by: **Nicholas von Stackelberg, P.E.**
Water Quality Management Section

Facility: **Magna Water Reclamation Facility**
UPDES No. UT0021440

Receiving water: **Kersey Creek (2B, 3D)**

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

Discharge
Outfall 001: Kersey Creek

The maximum design flow for the discharge is 4.0 MGD average monthly and 8.0 maximum daily, as provided by the treatment plant.

Receiving Water
The receiving water for Outfall 001 is Kersey Creek, which is tributary to C-7 Ditch, Lee Creek and finally Gilbert Bay of the Great Salt Lake. The receiving channel is variously referred to as Kersey Creek Canal (USGS) and Kersey Creek (Salt Lake County). In order to maintain consistency with the local water quality planning authority (Salt Lake County), the receiving channel will be referred to as Kersey Creek.

Per UAC R317-2-13.5.a, the designated beneficial uses for Kersey Creek from the confluence of C-7 Ditch to headwaters are 2B and 3D.

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*

- *Class 3D - Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Kersey Creek, the 20th percentile of flow measurements from water quality monitoring above the facility outfall was calculated to estimate seasonal critical flow in the receiving water (Table 1).

Table 1: Seasonal critical low flow

Season	Flow (cfs)
Summer	0.00
Fall	0.01
Winter	0.50
Spring	0.02

Due to the lack of flow measurements, low background flow, and limited seasonal variability, an annual background flow of 0.2 cfs was used.

Mixing Zone

The discharge is considered instantaneously fully mixed since the discharge is more than twice the background receiving water flow. Therefore, no mixing zone is allowed.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total suspended solids (TSS), dissolved oxygen (DO), BOD_5, total phosphorus (TP), total nitrogen (TN), total ammonia nitrogen (TAN), E. coli, pH, and total residual chlorine (TRC) as determined in consultation with the UPDES Permit Writer.

TMDL

The receiving waters are not listed as impaired for any parameters according to the 2010 303(d) list.

Water Quality Modeling

A QUAL2Kw model of the receiving water was populated based on physiographic information from Google Earth and site data collected by DWQ staff. The model extends from immediately upstream of the plant discharge to the confluence of Kersey Creek with C-7 Ditch.

Insufficient observed data was available for model calibration. The rate parameters used in the model were the same as those used for the Box Elder Creek/Brigham City WWTP QUAL2Kw, which was calibrated under contract by Utah State University. Kersey Creek was considered to have similar stream characteristics to Box Elder Creek.

Receiving water quality data was obtained from STORET 4991650 Kersey Creek above Magna WWTP. The average seasonal value was calculated for each constituent with available data in the receiving water.

The QUAL2Kw model was used for determining WQBELs related to eutrophication and low dissolved oxygen, including ammonia. Effluent concentrations were adjusted so that water quality standards were not exceeded in the receiving water. QUAL2Kw rates, input and output are summarized in Appendix A.

A simple mixing analysis was conducted for conservative constituents such as dissolved metals. The WQBELs determined using the simple mixing analysis are summarized in Appendix B.

Where WQBELs exceeded secondary standards or categorical limits, the concentration in the model was set at the secondary standard or categorical limit.

Models and supporting documentation are available for review upon request.

WET Limits

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

Table 2: WET Limits for IC_{25}

Season	Percent Effluent
Summer	96%
Fall	96%
Winter	96%
Spring	96%

Effluent Limits

The effect of the effluent on the DO in the receiving water was evaluated using the QUAL2Kw model. A DO sag downstream in Kersey Creek resulting from the plant discharge was predicted by the model due to low reaeration rate in the low gradient stream, decay of CBOD in the effluent, nitrification of ammonia, and benthic algal growth and decomposition resulting from nutrients in the effluent. The existence of the DO sag was confirmed through the deployment of continuous sondes in Kersey Creek during the summer of 2013. Limits for DO and $CBOD_5$ in the discharge were determined in order to meet DO criteria in the receiving water (Table 3).

Algal growth was predicted due to the addition of nitrogen and phosphorus from the treatment plant. Ammonia nitrogen also exerts an oxygen demand during transformation to nitrate (nitrification). Therefore, effluent limits were determined for ammonia due to plant uptake and oxygen demand. The ammonia limits required for meeting the DO criteria are similar to those required to meet toxicity requirements.

QUAL2Kw rates, input and output for DO and nutrient related constituents are summarized in Appendix A.

A simple mixing analysis was conducted for constituents not related to DO and nutrients such as dissolved metals and TRC. Since the summer critical flow in Kersey Creek is so small compared to the plant discharge, no dilution was assumed and water quality standards need to be met end-of-pipe. The simple mixing analysis WQBELs are summarized in Appendix B.

Models and supporting documentation are available for review upon request.

Table 3: Water Quality Based Effluent Limits Summary

Effluent Constituent	Acute			Chronic		
	Standard	Limit	Averaging Period	Standard	Limit	Averaging Period
Flow (MGD)		8.0	1 day		4.0	30 days
Ammonia (mg/L)	Varies		1 hour	Varies		30 days
Summer		12			2.5	
Fall		12			4.0	
Winter		8			5.0	
Spring		8			4.0	
Min. Dissolved Oxygen (mg/L)[2]	3.0	5.0	Instantaneous	5.0	6.5	30 days
$CBOD_5$ (mg/L)	NA		7 days	NA		30 days
Summer		10			5	
Fall		20			15	
Winter		35			25	
Spring		20			15	
Total Residual Chlorine (mg/L)	0.019	0.019	1 hour	0.011	0.011	4 days

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this discharge, as neither pollutant concentration nor load is being increased under this permit renewal.

WLA Document: *magna_potw_wla_2013_revised.docx*
QUAL2Kw Wasteload Model: *magna_potw_wla_2013.xlsm*

WASTELOAD ANALYSIS [WLA] Date: 9/4/2013
Appendix A: QUAL2Kw Analysis for Eutrophication

Discharging Facility:	Magna WWTP		
UPDES No:	UT-0021440		
Permit Flow [MGD]:	4.00	Maximum Monthly Flow	
	8.00	Maximum Daily Flow	
Receiving Water:	Kersey Creek		
Stream Classification:	2B, 3D		
Stream Flows [cfs]:	0.20	Summer (July-Sept)	Critical Low Flow
	0.20	Fall (Oct-Dec)	
	0.20	Winter (Jan-Mar)	
	0.20	Spring (Apr-June)	
Acute River Width:	50.0%		
Chronic River Width:	100.0%		

Modeling Information

A QUAL2Kw model was used to determine these effluent limits.

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.

Headwater/Upstream Inputs	Summer	Fall	Winter	Spring
Flow (cfs)	0.2	0.2	0.2	0.2
Temperature (deg C)	19.7	11.0	4.5	15.9
Specific Conductance (µmhos)	2,487	2,287	3,080	3,070
Inorganic Suspended Solids (mg/L)	37.8	37.8	37.8	37.8
Dissolved Oxygen (mg/L)	8.0	10.7	12.6	9.9
$CBOD_5$ (mg/L)	2.3	7.3	6.1	4.1
Organic Nitrogen (mg/L)	0.500	0.500	0.500	0.500
NH4-Nitrogen (mg/L)	0.102	0.095	0.089	0.416
NO3-Nitrogen (mg/L)	4.400	4.400	4.400	4.400
Organic Phosphorus (mg/L)	0.000	0.000	0.000	0.000
Inorganic Ortho-Phosphorus (mg/L)	0.085	0.069	0.128	0.140
Phytoplankton (µg/L)	0.0	0.0	0.0	0.0
Detritus [POM] (mg/L)	4.2	4.2	4.2	4.2
Alkalinity (mg/L)	160	160	160	160
pH	7.9	8.2	8.2	8.5

Discharge Inputs - Chronic	Summer	Fall	Winter	Spring
Flow (cfs)	4.0	4.0	4.0	4.0
Temperature (deg C)	22.2	17.3	12.5	17.1
Specific Conductance (µmhos)	2,481	2,339	2,644	2,750
Inorganic Suspended Solids (mg/L)	2.4	2.1	3.2	2.2
Dissolved Oxygen (mg/L)	6.5	6.5	6.5	6.5
$CBOD_5$ (mg/L)	5.0	15.0	25.0	15.0
Organic Nitrogen (mg/L)	5.0	5.0	5.0	5.0
NH4-Nitrogen (mg/L)	2.5	4.0	5.0	4.0
NO3-Nitrogen (mg/L)	12.3	14.4	12.3	13.0
Organic Phosphorus (mg/L)	0.0	0.0	0.0	0.0
Inorganic Ortho-Phosphorus (mg/L)	5.0	5.0	5.0	5.0
Phytoplankton (µg/L)	0.0	0.0	0.0	0.0
Detritus [POM] (mg/L)	0.0	0.0	0.0	0.0
Alkalinity (mg/L)	400	400	400	400
pH	7.6	7.6	7.6	7.6

Discharge Inputs - Acute	Summer	Fall	Winter	Spring
Flow (cfs)	8.0	8.0	8.0	8.0
Temperature (deg C)	22.2	17.3	12.5	17.1
Specific Conductance (μmhos)	2,481	2,339	2,644	2,750
Inorganic Suspended Solids (mg/L)	2.4	2.1	3.2	2.2
Dissolved Oxygen (mg/L)	5.0	5.0	5.0	5.0
$CBOD_5$ (mg/L)	10.0	20.0	20.0	20.0
Organic Nitrogen (mg/L)	10.0	10.0	10.0	10.0
NH4-Nitrogen (mg/L)	12.0	12.0	8.0	8.0
NO3-Nitrogen (mg/L)	12.3	16.3	12.4	23.3
Organic Phosphorus (mg/L)	0.0	0.0	0.0	0.0
Inorganic Ortho-Phosphorus (mg/L)	10.0	10.0	10.0	10.0
Phytoplankton (μg/L)	0.0	0.0	0.0	0.0
Detritus [POM] (mg/L)	0.0	0.0	0.0	0.0
Alkalinity (mg/L)	400	400	400	400
pH	7.8	7.8	8.0	8.0

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

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 reflect the environmental conditions expected at low stream flows.

Effluent Limitations based upon Water Quality Standards for DO and Ammonia Toxicity

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

Chronic	Standard	Summer	Fall	Winter	Spring
Flow (MGD)	N/A	4.0	4.0	4.0	4.0
NH4-Nitrogen (mg/L)	Varies	2.5	4.0	5.0	4.0
$CBOD_5$ (mg/L)	N/A	5.0	15.0	25.0	15.0
Dissolved Oxygen [30-day Ave] (mg/L)	5.0	6.5	6.5	6.5	6.5

Acute	Standard	Summer	Fall	Winter	Spring
Flow (cfs)	N/A	8.0	8.0	8.0	8.0
NH4-Nitrogen (mg/L)	Varies	12.0	12.0	8.0	8.0
$CBOD_5$ (mg/L)	N/A	10.0	20.0	20.0	20.0
Dissolved Oxygen [Minimum] (mg/L)	3.0	5.0	5.0	5.0	5.0

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.

Coefficients and Other Model Information

Parameter	*Value*	*Units*
Stoichiometry:		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
Inorganic suspended solids:		
Settling velocity	0.001	m/d
Oxygen:		
Reaeration model	Internal	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
Slow CBOD:		
Hydrolysis rate	0	/d
Temp correction	1.047	
Oxidation rate	0.242802	/d
Temp correction	1.047	
Fast CBOD:		
Oxidation rate	10	/d
Temp correction	1.047	
Organic N:		
Hydrolysis	0.2625675	/d
Temp correction	1.07	
Settling velocity	0.087906	m/d
Ammonium:		
Nitrification	2.817054	/d
Temp correction	1.07	
Nitrate:		
Denitrification	1.756367	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.24334	m/d
Temp correction	1.07	
Organic P:		
Hydrolysis	0.227735	/d
Temp correction	1.07	
Settling velocity	0.103774	m/d
Inorganic P:		
Settling velocity	0.06798	m/d
Sed P oxygen attenuation half sat constant	0.99342	mgO2/L

Phytoplankton:		
Max Growth rate	2.57133	/d
Temp correction	1.07	
Respiration rate	0.1432355	/d
Temp correction	1.07	
Death rate	0.45734	/d
Temp correction	1	
Nitrogen half sat constant	15	ugN/L
Phosphorus half sat constant	2	ugP/L
Inorganic carbon half sat constant	1.30E-05	moles/L
Phytoplankton use HCO3- as substrate	Yes	
Light model	Smith	
Light constant	57.6	langleys/d
Ammonia preference	15	ugN/L
Settling velocity	0.0645665	m/d
Bottom Plants:		
Growth model	Zero-order	
Max Growth rate	8.663865	gD/m2/d or /d
Temp correction	1.07	
First-order model carrying capacity	100	gD/m2
Basal respiration rate	0.1046738	/d
Photo-respiration rate parameter	0.39	unitless
Temp correction	1.07	
Excretion rate	0.05015	/d
Temp correction	1.07	
Death rate	0.1437	/d
Temp correction	1.07	
External nitrogen half sat constant	127.576	ugN/L
External phosphorus half sat constant	89.161	ugP/L
Inorganic carbon half sat constant	1.10E-04	moles/L
Bottom algae use HCO3- as substrate	Yes	
Light model	Half saturation	
Light constant	71.6656	langleys/d
Ammonia preference	15.2922	ugN/L
Subsistence quota for nitrogen	0.9375732	mgN/gD
Subsistence quota for phosphorus	0.058037	mgP/gD
Maximum uptake rate for nitrogen	640.4095	mgN/gD/d
Maximum uptake rate for phosphorus	190.7675	mgP/gD/d
Internal nitrogen half sat ratio	1.8677685	
Internal phosphorus half sat ratio	4.4374015	
Nitrogen uptake water column fraction	1	
Phosphorus uptake water column fraction	1	
Detritus (POM):		
Dissolution rate	3.773984	/d
Temp correction	1.07	
Settling velocity	0.097025	m/d
pH:		
Partial pressure of carbon dioxide	370	ppm

Atmospheric Inputs:	Summer	Fall	Winter	Spring
Min. Air Temperature, F	61.7	29.9	24.8	46.3
Max. Air Temperature, F	90.3	50.0	43.4	72.1
Dew Point, Temp., F	58.6	35.0	30.3	48.5
Wind, ft./sec. @ 21 ft.	9.8	7.5	7.6	9.2
Cloud Cover, %	10%	10%	10%	10%

Other Inputs:	
Bottom Algae Coverage	10%
Bottom SOD Coverage	100%
Prescribed SOD, $gO_2/m^2/day$	0

WASTELOAD ANALYSIS [WLA] Date: 9/4/2013

Appendix B: Simple Mixing Analysis for Conservative Constituents

Discharging Facility:	Magna WWTP		
UPDES No:	UT-0021440		
Permit Flow [MGD]:	4.0	Maximum Monthly Flow	
	8.0	Maximum Daily Flow	
Receiving Water:	Kersey Creek		
Stream Classification:	2B, 3D		
Stream Flows [cfs]:	0.2	Summer (July-Sept)	Critical Low Flow
	0.2	Fall (Oct-Dec)	
	0.2	Winter (Jan-Mar)	
	0.2	Spring (Apr-June)	
Acute River Width:	100%		
Chronic River Width:	100%		

Modeling Information

A simple mixing analysis was used to determine these effluent limits.

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.

Headwater/Upstream Information

	7Q10 Flow cfs
Summer	0.2
Fall	0.2
Winter	0.2
Spring	0.2

Discharge Information

	Flow MGD
Maximum Daily	8.0
Maximum Monthly	4.0

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

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 reflect the environmental conditions expected at low stream flows.

Effluent Limitations for Protection of Recreation (Class 2B Waters)

Parameter	Maximum Concentration
Physical	
pH Minimum	6.5
pH Maximum	9.0
Bacteriological	
E. coli (30 Day Geometric Mean)	206 (#/100 mL)
E. coli (Maximum)	668 (#/100 mL)

Effluent Limitations for Protection of Aquatic Wildlife (Class 3D Waters)

Parameter	Maximum Concentration			
Physical				
Inorganics	**Chronic Standard (4 Day Average)**		**Acute Standard (1 Hour Average)**	
	Standard	**Limit**	**Standard**	**Limit**
Total Residual Chlorine (TRC)	0.011	0.011 mg/L	0.019	0.019 mg/L
Phenol			0.010	0.010 mg/L
Hydrogen Sulfide (Undissociated)			0.002	0.002 mg/L

Dissolved Metals

	Chronic Standard (4 Day Average)		**Acute Standard (1 Hour Average)**	
Parameter	**Standard**	**Limit**	**Standard**	**Limit**
Aluminum	87.0	87.0 µg/L	750.0	750.0 µg/L
Arsenic	150.0	150.0 µg/L	340.0	340.0 µg/L
Cadmium	0.4	0.4 µg/L	3.9	3.9 µg/L
Chromium VI	11.0	11.0 µg/L	16.0	16.0 µg/L
Chromium III	130.8	130.8 µg/L	1005.2	1005.2 µg/L
Copper	16.2	16.2 µg/L	25.8	25.8 µg/L
Cyanide	22.0	22.0 µg/L	5.2	5.2 µg/L
Iron			1000.0	1000.0 µg/L
Lead	5.3	5.3 µg/L	136.1	136.1 µg/L
Mercury	0.012	0.012 µg/L	2.4	2.4 µg/L
Nickel	93.5	93.5 µg/L	841.7	841.7 µg/L
Selenium	4.6	4.6 µg/L	18.4	18.4 µg/L
Silver			10.6	10.6 µg/L
Tributylin	0.072	0.072 µg/L	0.46	0.46 µg/L
Zinc	212.5	212.5 µg/L	210.8	210.8 µg/L

Based upon a Hardness of 200 mg/l as CaCO3

Organics [Pesticides]

Parameter	Chronic Standard (4 Day Average) Concentration	Acute Standard (1 Hour Average) Concentration
Aldrin		1.500 µg/L
Chlordane	0.0043 µg/L	1.200 µg/L
DDT, DDE	0.001 µg/L	0.550 µg/L
Diazinon	0.17 µg/L	0.17 µg/L
Dieldrin	0.0056 µg/L	0.240 µg/L
Endosulfan, a & b	0.056 µg/L	0.110 µg/L
Endrin	0.036 µg/L	0.086 µg/L
Heptachlor & H. epoxide	0.0038 µg/L	0.260 µg/L
Lindane	0.08 µg/L	1.000 µg/L
Methoxychlor		0.030 µg/L
Mirex		0.001 µg/L
Nonylphenol	6.6 µg/L	28.0 µg/L
Parathion	0.0130 µg/L	0.066 µg/L
PCB's	0.014 µg/L	
Pentachlorophenol	15.00 µg/L	19.000 µg/L
Toxephene	0.0002 µg/L	0.730 µg/L

Radiological

Parameter	Maximum Concentration
Gross Alpha	15 pCi/L