

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. **UT0025763**  
Biosolids Permit No. **UTL025763**

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

**BLUE SKY RANCH AND RESORT**

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named  
**ALEXANDER CREEK,**

to dispose of biosolids,

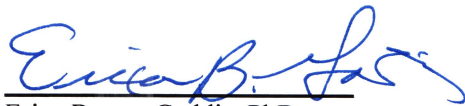
and to distribute effluent for reuse,

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

This permit shall become effective on December 1, 2019

This permit expires at midnight on November 30, 2024.

Signed this 26<sup>th</sup> day of November, 2019.



Erica Brown Gaddis, PhD  
Director



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

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

Outfall Number  
001

Location of Discharge Outfall  
Located at latitude 40°48'28" and  
longitude -111°26'52". The discharge is to  
Alexander Creek and hence to Silver 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 through the life of this permit, there shall be no acute toxicity in Outfall 001) as defined in *Part VIII*, and determined by test procedures described in *Part I. C.4(or 3 if no compliance schedule).a & b* of this permit.
2.
  - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations				
	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Load Limit
Total Flow, MGD	0.039	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min % Removal	85	--	--	--	--
E. coli, No./100mL	126	157	--	--	--
TDS, mg/L	--	--	--	1200	--
Total Ammonia, as N, mg/L	1.0	--	--	--	--
Total Phosphorus, (kg)					
Summer: April-Sept.	--	--	--	--	21
Annual Limit	--	--	--	--	42
Total Nitrogen, (kg)					
Summer: April-Sept.	--	--	--	--	208
Annual Limit	--	--	--	--	416
Dissolved Oxygen, mg/L	--	--	5.0	--	--
Oil & Grease, mg/L	--	--	--	10.0	--
pH, Standard Units	--	--	6.5	9.0	--

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/, c/	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent d/	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent d/	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Total Ammonia (as N)	Monthly	Grab	mg/L
Total Nitrogen	Monthly	Grab	mg/L
DO	Monthly	Grab	mg/L
WET, Acute Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease e/	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total, Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO <sub>3</sub>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub>	Monthly	Composite	mg/L
TDS	Monthly	Composite	mg/L
Metals	Yearly	Grab/Composite	mg/L
Annual Certification Phosphorous offset has been maintained e/	Yearly March 31	--	--

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

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

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

d/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

e/ Sample only if sheen is visible.

f/ Phosphorus Abatement Certification.

Within 30 days of the effective date of this permit, Blue Sky Ranch and Resort shall submit certification that the approved phosphorous abatement program has been implemented.

Blue Sky Ranch and Resort shall also certify *annually* that the phosphorous offset has been maintained. This certification shall be submitted in the calendar year by March 31<sup>st</sup> and will be required annually until the expiration date of this permit.

### 3. Acute/Chronic Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Acute Toxicity.* Starting immediately, the permittee shall (quarterly), conduct acute static renewal toxicity tests on a (grab/composite) sample of the final effluent at Outfall(s). The sample shall be collected at the point of compliance before mixing with the receiving water.

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

The static-renewal acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012 as per 40 CFR 136.3(a) TABLE IA-LIST OF APPROVED BIOLOGICAL METHODS. The permittee shall conduct the 48-hour static renewal toxicity test using *Ceriodaphnia dubia* (solution renewal every 24 hours) and the acute 96-hour static renewal toxicity test using *Pimephales promelas* (fathead minnow) (solution renewal every 24 hours). Based on the Test Acceptability Criteria included in Utah Pollutant Discharge Elimination System (UPDES) Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring) January, 2017, the Director may require acceptable variations in the test, i.e. temperature, carbon dioxide atmosphere, or any other acceptable variations in the testing procedure, as documented in the Fact Sheet Statement of Basis. If possible dilution water should be taken from the receiving stream. A valid replacement test is required within the specified sampling period to remain in compliance.

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

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

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

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



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

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

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

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

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

- d. *Preliminary Toxicity Investigation.*
- (1) When a pattern of toxicity is detected the permittee will notify the Director in writing within 5 days and begin an evaluation of the possible causes of the toxicity. The permittee will have 15 working days from demonstration of the pattern of toxicity to complete an optional Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to: additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if any spill may have occurred.
  - (2) If the PTI identifies a probable toxicant and/or a probable source of toxicity, the permittee shall submit, as part of its final results, written notification of that effect to the Director. Within thirty days of completing the PTI the permittee shall submit to the Director for approval a control program to control effluent toxicity and shall proceed to implement such plan in accordance with the Director's approval. The control program, as submitted to or revised by the

Director, will be incorporated into the permit. After final implementation, the permittee must demonstrate successful removal of toxicity by passing a two species WET test as outlined in this permit. With adequate justification, the Director may extend these deadlines.

- (3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (see Part \_\_\_\_ Toxicity Reduction Evaluation
  - (4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director, with supporting testing evidence.
- e. *Toxicity Reduction Evaluation (TRE)*. If a pattern of toxicity is detected the permittee shall initiate a TIE/TRE within 7 days unless the Director has accepted the decision to complete a PTI. With adequate justification, the Director may extend the 7-day deadline. The purpose of the TIE portion of a TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and the TRE will control or provide treatment for the toxicity.

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

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

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

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

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

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

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

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

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1) \* or by NetDMR, post-marked or entered into NetDMR no later than the 28<sup>th</sup> 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

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

**PART II**  
**DISCHARGE PERMIT NO. UT0025763**  
**PRETREATMENT**

**II. INDUSTRIAL PRETREATMENT PROGRAM REQUIREMENTS**

- A. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- B. Changes in Discharge of Toxic Substances. Notification shall be provided to the Director as soon as the permittee knows of, or has reason to believe:
1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - a. One hundred micrograms per liter (100 ug/L);
    - b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,
    - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.
  2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - a. Five hundred micrograms per liter (500 ug/L);
    - b. One milligram per liter (1 mg/L) for antimony;
    - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,
    - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.
- C. Industrial Pretreatment. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

### **III. BIOSOLIDS REQUIREMENTS**

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

1. Treatment

- a. Biosolids produced at the BSRR are stabilized by an activated sludge process with a retention time for approximately 14 days. The biosolids are dewatered by belt press loaded into a hopper trailer to be hauled elsewhere for disposal at the Summit County Three Mile Canyon landfill

2. Description of Biosolids Disposal Method

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

3. Changes in Treatment Systems and Disposal Practices.

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

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

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

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

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-025763**

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

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

<sup>†</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>‡</sup> APLR – Annual Pollutant Loading Rate

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-025763**

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

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

3. Vector Attraction Reduction Requirements.

- a. The permittee will meet vector attraction reduction through use of one of the methods listed in *40 CFR 503.33*. Facility is meeting the requirements through the following methods.
  - (1) BSRR dewateres the biosolids then transfers them to a landfill for disposal where BSRR will need to ensure that the solids are covered daily with soil or another approved material. If the solids are not covered daily, the solids cannot be disposed in the landfill.

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

4. Self-Monitoring Requirements.

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

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§ MPN – Most Probable Number  
\*\* CFU – Colony Forming Units

**PART III**  
**BIOSOLIDS PERMIT NO. UTL-025763**

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

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

C. Management Practices of Biosolids.

1. Biosolids Distribution Information

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

2. Biosolids Application Site Storage

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

3. Land Application Practices

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<sup>††</sup> BSRR produced on average approximately 20 Dry Metric Tons per year over the past 5 years. Accordingly, they will sample at least one (1) time per year.



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- a. The permittee shall operate and maintain the land application site operations in accordance with the following requirements:
- (1) The permittee shall provide to the Director and the EPA within 90 days of the effective date of this permit a land application plan.
  - (2) Application of biosolids shall be conducted in a manner that will not contaminate the groundwater or impair the use classification for that water underlying the sites.
  - (3) Application of biosolids shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Biosolids shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR 122.2).
  - (4) No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:
    - (a) there is 80 percent vegetative ground cover; or,
    - (b) approval has been obtained based upon a plan demonstrating adequate runoff containment measures.
  - (5) Application of biosolids is prohibited to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent.
  - (6) Agronomic Rate
    - (a) Application of biosolids shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the latest version of the *Region VIII Biosolids Management Handbook* (other methods may be approved by the Director). The treatment plant shall provide written notification to the applier of the biosolids of the concentration of total nitrogen (as N on a dry weight basis) in the biosolids. Written permission from the Director is required to exceed the agronomic rate.
    - (b) The permittee may request the limits of *Part III, C, 6* be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.
    - (c) Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are

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required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites

- (7) Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in *Part III.C.(6),(c)*. is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.
- (8) The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.
- (9) When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.
- (10) For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
  - (a) The name and address of the person who prepared the biosolids for sale or give away for application to the land.
  - (b) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.
  - (c) The annual whole biosolids application rate for the biosolids that do not cause the metals loading rates in Tables 1, 2, and 3 (*Part III.B.1.*) to be exceeded.
- (11) Biosolids subject to the cumulative pollutant loading rates in Table 2 (*Part III.B.1.*) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.
- (12) If the treatment plant applies the biosolids, it shall provide the owner or leaseholder of the land on which the biosolids are applied notice and necessary information to comply with the requirements in this permit.
- (13) The permittee shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges, which may cause or lead to the release of biosolids to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten

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signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

- D. Special Conditions on Biosolids Storage. Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two (2) years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.
- E. Representative Sampling. Biosolids samples used to measure compliance with *Part III* of this Permit shall be collected at locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

F. Reporting of Monitoring Results.

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

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

G. Additional Record Keeping Requirements Specific to Biosolids.

1. Unless otherwise required by the Director, **the permittee is not required to keep records** on compost products if the permittee prepared them from biosolids that meet the limits in Table 3 (*Part III.B.1*), the Class A pathogen requirements in *Part III.B.2* and the vector attraction reduction requirements in *Part III.B.3*. The Director may notify the permittee that additional record keeping is required if it is determined to be significant to protecting public health and the environment.
2. **The permittee is required** to keep the following information for at least 5 years:
- a. Concentration of each heavy metal in Table 3 (*Part III.B.1*).
  - b. A description of how the pathogen reduction requirements in *Part III.B.2* were met.
  - c. A description of how the vector attraction reduction requirements in *Part III.B.3* were met.
  - d. A description of how the management practices in *Part III.C* were met (if necessary).
  - e. The following certification statement:

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<sup>‡‡</sup> Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Annual Biosolids Reports should also be submitted through this system.

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"I certify under the penalty of law, that the heavy metals requirements in *Part III.B.1*, the pathogen requirements in *Part III.B.2*, the vector attraction requirements in *Part III.B.3*, the management practices in *Part III.C*. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements and the management practices have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit for the life of the permit. Data collected on site, copies of Biosolids Report forms, and a copy of this UPDES biosolids-only permit must be maintained on site during the duration of activity at the permitted location.

**PART IV**  
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**STORM WATER**

**IV. STORM WATER REQUIREMENTS.**

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

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

The Blue Sky Ranch and Resort does not meet one of the above criteria; therefore this permit does not include storm water provisions. The permit does however include a storm water re-opener provision.

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

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

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

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



**PART VI**  
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**VI. COMPLIANCE RESPONSIBILITIES**

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

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- a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
  - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
  - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering 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.

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

H. Upset Conditions.

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

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**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

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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;

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

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2. The TRE results indicate that the toxicant(s) represent pollutant(s) or pollutant parameter(s) that may be controlled with specific numerical limits, and the Director concludes that numerical controls are appropriate.
3. Following the implementation of numerical control(s) of toxicant(s), the Director agrees that a modified biomonitoring protocol is necessary to compensate for those toxicants that are controlled numerically.
4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.

Use the following paragraph if there is no WET testing is required at the facility:

This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

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

**VIII. DEFINITIONS**

A. Wastewater.

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



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

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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 mosquitos or other organisms capable of transporting infectious agents.
11. "Animals" for the purpose of this permit are domestic livestock.
12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.
13. "Agronomic Rate is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.
14. "Annual Pollutant Loading Rate" is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
15. "Application Site or Land Application Site" means all contiguous areas of a users' property intended for sludge application.
16. "Cumulative Pollutant Loading Rate" is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.
17. "Grit and Screenings" are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment

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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.

**FACT SHEET AND STATEMENT OF BASIS  
BLUE SKY RANCH AND RESORT  
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER  
UPDES PERMIT NUMBER: UT0025763  
UPDES BIOSOLIDS PERMIT NUMBER: UTL-025763  
MINOR INDUSTRIAL**

**FACILITY CONTACTS**

Person Name: Mike Gardner  
Position: General Manager  
Phone Number: (435) 252-0662

Person Name: Brandon Mason  
Position: Plant Manager  
Phone Number: 435-336-2648

Facility Name: Blue Sky Ranch and Resort  
Mailing and Facility Address: 2071 State Road 32  
Wanship, Utah 84017  
Telephone: (435) 336-2648  
Actual Address: 2071 State Road 32  
Wanship, Utah 84017

**DESCRIPTION OF FACILITY**

The Blue Sky Ranch and Resort (BSRR) is a 3,000 acre ranch owned and operated by Philips Edison and Company that will be used as a luxury conference center resort and will include lodging, restaurant, and outdoor recreation and fitness facilities located in Wanship, Utah. The property will also include a whiskey distillery operated under the name High West Distillery. Construction of the facilities was expected to be completed in 2008, then in the fall of 2013 but due to various reasons, was delayed until the summer 2019.

The facilities will accommodate 340 guests and 40 employees. A wastewater treatment plant was constructed to treat all of the wastewater generated from the resort as well as the batch process water from the distillery. The treatment plant is designed to treat 39,000 gallons per day and includes a Sequencing Batch Reactor (SBR) with tertiary filtration and UV disinfection. After disinfection, the water will be discharged via outfall 001 with latitude approximately 40°48'28" and longitude -111°26'52" to Alexander Creek which flows to Silver Creek, then to the Weber River and ultimately to Echo Reservoir.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

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

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

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

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

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

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

A variance from a TBPEL based on Section R317-1-3.3.C is granted, because the TMDL has allocated a total phosphorus load to this treatment works. All monitoring shall be conducted based on the requirements of the facility's UPDES permit.

## **DISCHARGE**

### **DESCRIPTION OF DISCHARGE**

Blue Sky Ranch and Resort has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis.

#### **Outfall**

#### **Description of Discharge Point**

001 Located approximately at latitude 40°48'28" and longitude 111°26'52". The discharge is to Alexander Creek then hence to Silver Creek.

### **RECEIVING WATERS AND STREAM CLASSIFICATION**

The final discharge is to Alexander Creek which is classified as 1C, 2B, 3A, and 4 (in that segment) according to *Utah Administrative Code (UAC) R317-2-6 and R317-2-13.4*:

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

### **BASIS FOR EFFLUENT LIMITATIONS**

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD<sub>5</sub>), E. coli, pH and percent removal for BOD<sub>5</sub> and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The limits for total phosphorous, total ammonia and total nitrogen are based on the Rockport

Reservoir and Echo Reservoir TMDL. The oil and grease effluent limit is based on best professional judgment (BPJ). The limits for total dissolved solids and dissolved oxygen are based on the wasteload analysis.

### Reasonable Potential Analysis

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

Based on the RP analysis, no parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard.

The permit limitations are:

Parameter	Effluent Limitations				
	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Load Limit
Total Flow, MGD	0.039	--	--	--	--
BOD <sub>5</sub> , mg/L	25	35	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min % Removal	85	--	--	--	--
E. coli, No./100mL	126	157	--	--	--
TDS, mg/L	--	--	--	1200	--
Total Ammonia, as N, mg/L	1.0	--	--	--	--
Total Phosphorus, (kg)					
Summer: April-Sept.	--	--	--	--	21
Annual Limit	--	--	--	--	42
Total Nitrogen, (kg)					
Summer: April-Sept.	--	--	--	--	208
Annual Limit	--	--	--	--	416
Dissolved Oxygen, mg/L	--	--	5.0	--	--
Oil & Grease, mg/L	--	--	--	10.0	--
pH, Standard Units	--	--	6.5	9.0	--

### SELF-MONITORING AND REPORTING REQUIREMENTS

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

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow b/, c/	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent d/ Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
TSS, Influent d/ Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Total Ammonia (as N)	Monthly	Grab	mg/L
Total Nitrogen	Monthly	Grab	mg/L
DO	Monthly	Grab	mg/L
WET, Acute Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease e/	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total, Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Total Kjeldahl Nitrogen, TKN (as N) Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Nitrate, NO <sub>3</sub>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub>	Monthly	Composite	mg/L
TDS	Monthly	Composite	mg/L
Metals	Yearly	Grab/Composite	mg/L
Annual Certification Phosphorous offset has been maintained e/	Yearly March 31	--	--

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

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

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

d/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

e/ Sample only if sheen is visible.

f/ Phosphorus Abatement Certification.

Within 30 days of the effective date of this permit, BSRR shall submit certification that the approved phosphorous abatement program has been implemented.

Blue Sky Ranch and Resort shall also certify *annually* that the phosphorous offset has been maintained. This certification shall be submitted in the calendar year by March 31<sup>st</sup> and will be required annually until the expiration date of this permit.

## **BIOSOLIDS**

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

## DESCRIPTION OF TREATMENT AND DISPOSAL

The solids wasted from the Blue Sky Ranch and Resort (BSRR) treatment system are dewatered by in a small belt press and loaded into a dumpster. The solids are then transferred to the Summit County Three Mile Canyon Landfill for disposal. The volume of the dumpster is two cubic yards (2yd<sup>3</sup>) and they transferred seven (7) loads at the landfill.

## SELF-MONITORING REQUIREMENTS

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

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

Accordingly, the volume of the dumpster BSRR dewater solids into is two cubic yards (2 yd<sup>3</sup>) and they transferred seven (7) loads at the landfill, or a maximum of 28 yd<sup>3</sup>. This volume is consistent with a biosolids mass between 0 and 290 Dry Metric Tons (DMT) indicating they shall monitor biosolids at least once a year.

### Landfill Monitoring

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

## BIOSOLIDS LIMITATIONS

### Heavy Metals

#### Class A Biosolids for Home Lawn and Garden Use

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

#### Class A Requirements With Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum



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

#### Class B Requirements for Agriculture and Reclamation Sites

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

#### Class B Requirements With Regards to Heavy Metals

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

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

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

Tables 1, 2, and 3 of Heavy Metal Limitations

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

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

#### Pathogens

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

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

#### Class A Requirements for Home Lawn and Garden Use

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

The BSRR does not intend to give away biosolids for land application on home lawns or gardens, and will therefore not be required to meet PFRP. If the permittee changes their intentions in the future, they will

<sup>1</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>2</sup> APLR – Annual Pollutant Loading Rate

<sup>3</sup> MPN – Most Probable Number

<sup>4</sup> CFU – Colony Forming Units

need to meet a specific PFRP, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

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

#### Pathogens Class B

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

#### Vector Attraction Reduction (VAR)

If the biosolids are land applied BSRR will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. The BSRR does not intend to land apply the biosolids and will therefore not be required to meet VAR

If the permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice. If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

#### Landfill Monitoring

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

#### Record Keeping

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

#### Reporting

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

### **MONITORING DATA**

#### Metals Monitoring Data

The BSRR was required to sample for metals at least once a year, and has done so. All biosolids produced and disposed of met *Table 3* of *40 CFR 503.13*, therefore the BSRR biosolids qualify as EQ with regards to metals. The monitoring data is below.

BSRR Metals Monitoring Data:

Blue Sky Ranch and Resort Metals Monitoring Data			
Parameter	Table 3, mg/kg (Exceptional Quality)	Average, mg/kg	Maximum, mg/kg
Arsenic	41.0	4.52	4.95
Cadmium	39.0	0.59	0.90
Copper	1,500.0	498	662
Lead	300.0	6.22	9.45
Mercury	17.0	0.10	0.1
Molybdenum	75.0	5.10	6.8
Nickel	400.0	16.7	20.9
Selenium	36.0	5.86	9.5
Zinc	2,800.0	244.5	359

#### Pathogen Monitoring Data

The BSRR has sampled for required to monitor the composted biosolids for pathogens at least one time per year. The monitoring data is below.

#### BSRR Fecal Coliform Monitoring Data:

Fecal Coliforms–MPN per Gram Total Solids	
Geometric Mean	Maximum
7684	8200

## **STORM WATER**

### **STORMWATER REQUIREMENTS**

Waste water treatment facilities are required to comply with storm water permit requirements if they meet one or both of the following criteria:

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

The Blue Sky Ranch and Resort does not meet one of the above criteria; therefore this permit does not include storm water provisions.

### **PRETREATMENT REQUIREMENTS**

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they

discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

### **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 will be a new minor industrial discharger utilizing SBR technology, with no previous discharge to evaluate, the permit will require whole effluent toxicity (WET) biomonitoring testing. Based upon these facts and Best Professional Judgment of the permitting authority, the permittee will be required to conduct composite quarterly acute WET testing with alternating species and no acute WET limit requirements.

A review of the receiving stream's current water quality status indicate no further impairment of the stream other than phosphorous and dissolved oxygen, which are already included as monitoring requirements with the appropriate limitations as previously described. Therefore, there will be no numerical toxicity limitation and no chronic testing required at this time. The permit will however contain a toxicity limitation re-opener provision. This provision allows for modification of the permit to include WET limitations and/or increased WET monitoring, should additional information indicate the presence of toxicity in the discharge. The permit will contain the standard requirements for accelerated testing upon failure of a WET test as well as provisions for a Preliminary Toxicity Investigation and/or a Toxicity Reduction Evaluation as appropriate.

### **TOTAL MAXIMUM DAILY LOAD REQUIREMENTS**

BSRR discharges into the Alexander Creek and ultimately to Echo Reservoir. Echo Reservoir is 303(d) listed for total phosphorus and dissolved oxygen. A Total Maximum Daily Load (TMDL) has been drafted for Echo Reservoir that restricts the release of phosphorus into the watershed. In the draft TMDL, BSRR has been given an allocation of 15 kg/season total phosphorus and 148 kg/season total nitrogen (season is April 1<sup>st</sup> through September 30<sup>th</sup>). The approved phosphorus abatement project to offset the load generated by BSRR is to remove cattle from the watershed that formerly grazed on the land where the BSRR will be constructed. The removal of cattle from the watershed will reduce the amount of total phosphorus being discharged to the lake by a factor of 10 which is more than double what the Division of Water Quality requires. As indicated by an inspection dated January 18, 2018 by DWQ Surface Water and Watershed Coordinator, that in order to honor the agreement to reduce loads from cattle the landowner needs to fence the animals out of the stream channel, although a hardened stream crossing may be appropriate for the horses. Off-stream watering should be available for the cattle and horses. A management plan would be helpful for local landowners to help keep manure out of the stream, and funds are available through the Nonpoint Source/§319 grant program for off-stream watering systems. As part of its UPDES permit, BSRR will be required to complete and submit an annual certification that the offset has been maintained.

A TMDL is in place on Silver Creek for Cadmium and Zinc. However, it will not impact this facility due to the nature of the discharge quality.

## **PERMIT DURATION**

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

Drafted by  
Kelsey Christiansen, Discharge  
Jennifer Robinson, Pretreatment  
Lisa Stevens, Storm Water  
Dan Griffon, Reasonable Potential Analysis  
Dave Wham, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

## **PUBLIC NOTICE**

Began: October 19, 2019  
Ended: November 18, 2019

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

The Public Notice of the draft permit was published in The Deseret News and Salt Lake Tribune.

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

## **ADDENDUM TO FSSOB**

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

## **Responsiveness Summary**

There were no public comments received during the public notice period.

DWQ-2019-005404

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## **ATTACHMENT 2**

### *Wasteload Analysis*



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

**Date:** November 1, 2018  
**Prepared by:** Dave Wham   
Standards and Technical Services  
**Facility:** Blue Sky Ranch WWTP  
UPDES No. UT-0025763  
**Receiving water:** Alexander Creek (1C, 2B, 3A, 4)

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

Discharge

Outfall 001: Alexander Creek => Silver Creek

The mean monthly design discharge is 0.039 MGD (0.06 cfs) for the facility.

Receiving Water

The receiving water for Outfall 001 Alexander Creek, a tributary of Silver Creek in the Weber River drainage.

Per UAC R317-2-13.4(a), the designated beneficial uses for Weber River and tributaries, from Stoddard diversion to headwaters (includes Silver Creek) is 1C, 2B, 3A and 4.

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

Utah Division of Water Quality  
Wasteload Analysis  
Blue Sky Ranch WWTP  
UPDES No. UT-0025763

- *Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

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 data, the 7Q10 flow was estimated by calculating the 20<sup>th</sup> percentile of available data. Alexander Creek flows were determined from DWQ monitoring station #4926700, Alexander Ck @ Highway Xing, for the period 2001-2002. The receiving water was characterized by samples collected from the same site and time period. This station is located downstream of the current discharge, however the data period predates construction of the WWTP.

The calculated annual low value is 0.31 cfs.

#### TMDL

According to DWQ's 303(d) Assessment, Silver Creek and tributaries from confluence with Weber River to headwaters (Assessment Unit UT16020101-020\_00), is listed as impaired for:

Class 1C use - cadmium, nitrate, pH, and arsenic;

Class 2B use - pH;

Class 3A use - pH, dissolved oxygen, O/E bioassessment, cadmium, and zinc;

Class 4 use, cadmium, pH, and total dissolved solids.

As a result, effluent limits for these constituents should not exceed water quality standards at end of pipe (no mixing/available assimilative capacity) even though WLA calculations may allow higher limits.

Echo Reservoir (Assessment Unit ID UT-L-16020101-001\_00), located downstream from the discharge is listed as impaired for the 3A use class for temperature, dissolved oxygen, and total phosphorus.

The Rockport Reservoir and Echo Reservoir Total Maximum Daily Load study was approved March 26, 2014. The TMDL limited Blue Sky Resort WWTP's total phosphorous load to 42 kg annually and 21 kg during the summer (April 1st - September 30th) and total nitrogen to 208 kg annually and 115 kg during the summer.

#### Mixing Zone

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

### Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total nitrogen, total phosphorous, TDS, pH, cadmium, nitrate, arsenic, dissolved oxygen, zinc, and TDS based on review of the past permit and the impairment status of the receiving water. Addition parameters of concern may become apparent as a result of reasonable potential analysis, technology based standards, or other factors as determined by the UPDES Permit Writer.

### WET Limits

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

**Table 1: WET Limits for IC<sub>25</sub>**

Outfall	Percent Effluent
Outfall 001	4.8%

### Wasteload Allocation Methods

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

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

Models and supporting documentation are available for review upon request.

### Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this facility. The proposed permit is a simple renewal, with no increase in flow or concentration over that which was approved in the existing permit.

**Utah Division of Water Quality**  
**Wasteload Analysis**  
**Blue Sky Ranch WWTP**  
**UPDES No. UT-0025763**

Documents:

WLA Document: *BlueSky\_WLADoc\_11-1-18.docx*

Wasteload Analysis and Addendum: *BlueSky\_WLA\_11-1-18.xls*

References:

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

Utah Division of Water Quality. 2014. Rockport Reservoir and Echo Reservoir Total Maximum Daily Load Study. March 26, 2014.

Lewis, B., J. Saunders, and M. Murphy. 2002. *Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits*. University of Colorado, Center for Limnology.

Utah Division of Water Quality  
Salt Lake City, Utah

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

**Discharging Facility:** Blue Sky Ranch  
UPDES No: UT-0025763  
Design Flow 0.04 MGD

**Receiving Water:** Alexander Creek=>Silver Creek

Stream Classification: 1C, 2B, 3A, 4

Stream Flows [cfs]:	1.20	Summer (July-Sept)	20th Percentile
	1.20	Fall (Oct-Dec)	20th Percentile
	1.20	Winter (Jan-Mar)	20th Percentile
	1.20	Spring (Apr-June)	20th Percentile
	2.5	Average	

Stream TDS Values:	202.0	Summer (July-Sept)	Average
	202.0	Fall (Oct-Dec)	Average
	202.0	Winter (Jan-Mar)	Average
	202.0	Spring (Apr-June)	Average

**Effluent Limits:**

Flow, MGD:	0.04	MGD	Design Flow
BOD, mg/l:	25.0	Summer	5.0 Indicator
Dissolved Oxygen, mg/l	5.0	Summer	6.5 30 Day Average
TNH3, Chronic, mg/l:	23.1	Summer	Varies Function of pH and Temperature
TDS, mg/l:	21049.8	Summer	1200.0

**WQ Standard:**

**Modeling Parameters:**

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

**Level 1 Antidegradation Level Completed: Level II Review not required.**

Date: 10/15/2018

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

**WASTELOAD ANALYSIS [WLA]**

**Addendum: Statement of Basis**

**15-Oct-18**

**4:00 PM**

**Facilities:** Blue Sky Ranch  
**Discharging to:** Alexander Creek=>Silver Creek

**UPDES No: UT-0025763**

**I. Introduction**

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

**II. Receiving Water and Stream Classification**

Alexander Creek=>Silver Creek:	1C, 2B, 3A, 4
Antidegradation Review:	Level I review completed. Level II review not required.

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

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

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Salt Lake City, Utah**

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

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.028 lbs/day	750.00	ug/l	0.244 lbs/day
Arsenic	190.00 ug/l	0.062 lbs/day	340.00	ug/l	0.111 lbs/day
Cadmium	0.40 ug/l	0.000 lbs/day	3.61	ug/l	0.001 lbs/day
Chromium III	131.57 ug/l	0.043 lbs/day	2752.61	ug/l	0.897 lbs/day
Chromium VI	11.00 ug/l	0.004 lbs/day	16.00	ug/l	0.005 lbs/day
Copper	14.51 ug/l	0.005 lbs/day	22.78	ug/l	0.007 lbs/day
Iron			1000.00	ug/l	0.326 lbs/day
Lead	6.14 ug/l	0.002 lbs/day	157.59	ug/l	0.051 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.001 lbs/day
Nickel	80.75 ug/l	0.026 lbs/day	726.32	ug/l	0.237 lbs/day
Selenium	4.60 ug/l	0.001 lbs/day	20.00	ug/l	0.007 lbs/day
Silver	N/A ug/l	N/A lbs/day	9.20	ug/l	0.003 lbs/day
Zinc	185.61 ug/l	0.060 lbs/day	185.61	ug/l	0.060 lbs/day

\* Allowed below discharge

\*\*Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO<sub>3</sub>

Metals Standards Based upon a Hardness of 167.63 mg/l as CaCO<sub>3</sub>

**Organics [Pesticides]**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.000 lbs/day
Chlordane	0.004 ug/l	0.029 lbs/day	1.200	ug/l	0.000 lbs/day
DDT, DDE	0.001 ug/l	0.007 lbs/day	0.550	ug/l	0.000 lbs/day
Dieldrin	0.002 ug/l	0.013 lbs/day	1.250	ug/l	0.000 lbs/day
Endosulfan	0.056 ug/l	0.380 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.016 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.026 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080 ug/l	0.543 lbs/day	1.000	ug/l	0.000 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.095 lbs/day	2.000	ug/l	0.001 lbs/day
Pentachlorophenol	13.00 ug/l	88.312 lbs/day	20.000	ug/l	0.007 lbs/day
Toxephene	0.0002 ug/l	0.001 lbs/day	0.7300	ug/l	0.000 lbs/day



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

<b>4 Day Average (Chronic) Standard</b>		<b>1 Hour Average (Acute) Standard</b>	
	<b>Concentration</b>	<b>Concentration</b>	<b>Load*</b>
Arsenic		100.0 ug/l	lbs/day
Boron		750.0 ug/l	0.12 lbs/day
Cadmium		10.0 ug/l	0.00 lbs/day
Chromium		100.0 ug/l	lbs/day
Copper		200.0 ug/l	lbs/day
Lead		100.0 ug/l	lbs/day
Selenium		50.0 ug/l	lbs/day
TDS, Summer		1200.0 mg/l	0.20 tons/day

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

<b>4 Day Average (Chronic) Standard</b>		<b>1 Hour Average (Acute) Standard</b>	
<b>Metals</b>	<b>Concentration</b>	<b>Concentration</b>	<b>Load*</b>
Arsenic		50.0 ug/l	0.340 lbs/day
Barium		1000.0 ug/l	6.793 lbs/day
Cadmium		10.0 ug/l	0.068 lbs/day
Chromium		50.0 ug/l	0.340 lbs/day
Lead		50.0 ug/l	0.340 lbs/day
Mercury		2.0 ug/l	0.014 lbs/day
Selenium		10.0 ug/l	0.068 lbs/day
Silver		50.0 ug/l	0.340 lbs/day
Fluoride (3)		1.4 ug/l	0.010 lbs/day
to		2.4 ug/l	0.016 lbs/day
Nitrates as N		10.0 ug/l	0.068 lbs/day

**Chlorophenoxy Herbicides**

2,4-D	100.0 ug/l	0.679 lbs/day
2,4,5-TP	10.0 ug/l	0.068 lbs/day
Endrin	0.2 ug/l	0.001 lbs/day
ocyclohexane (Lindane)	4.0 ug/l	0.027 lbs/day
Methoxychlor	100.0 ug/l	0.679 lbs/day
Toxaphene	5.0 ug/l	0.034 lbs/day

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

<b>Maximum Conc., ug/l - Acute Standards</b>			
<b>Class 1C</b>		<b>Class 3A, 3B</b>	
<b>Toxic Organics</b>	<b>[2 Liters/Day for 70 Kg Person over 70 Yr.]</b>	<b>[6.5 g for 70 Kg Person over 70 Yr.]</b>	
Acenaphthene	1200.00 ug/l	8.15 lbs/day	2700.0 ug/l
Acrolein	320.00 ug/l	2.17 lbs/day	780.0 ug/l
Acrylonitrile	0.06 ug/l	0.00 lbs/day	0.7 ug/l
Benzene	1.20 ug/l	0.01 lbs/day	71.0 ug/l
Benzidine	0.00012 ug/l	0.00 lbs/day	0.0 ug/l
Carbon tetrachloride	0.25 ug/l	0.00 lbs/day	4.4 ug/l
Chlorobenzene	680.00 ug/l	4.62 lbs/day	21000.0 ug/l
1,2,4-Trichlorobenzene			142.66 lbs/day
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l
1,2-Dichloroethane	0.38 ug/l	0.00 lbs/day	99.0 ug/l

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1,1,1-Trichloroethane				
Hexachloroethane	1.90 ug/l	0.01 lbs/day	8.9 ug/l	0.06 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	0.61 ug/l	0.00 lbs/day	42.0 ug/l	0.29 lbs/day
1,1,2,2-Tetrachloroethane	0.17 ug/l	0.00 lbs/day	11.0 ug/l	0.07 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	0.03 ug/l	0.00 lbs/day	1.4 ug/l	0.01 lbs/day
2-Chloroethyl vinyl ether	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	1700.00 ug/l	11.55 lbs/day	4300.0 ug/l	29.21 lbs/day
2,4,6-Trichlorophenol	2.10 ug/l	0.01 lbs/day	6.5 ug/l	0.04 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	5.70 ug/l	0.04 lbs/day	470.0 ug/l	3.19 lbs/day
2-Chlorophenol	120.00 ug/l	0.82 lbs/day	400.0 ug/l	2.72 lbs/day
1,2-Dichlorobenzene	2700.00 ug/l	18.34 lbs/day	17000.0 ug/l	115.48 lbs/day
1,3-Dichlorobenzene	400.00 ug/l	2.72 lbs/day	2600.0 ug/l	17.66 lbs/day
1,4-Dichlorobenzene	400.00 ug/l	2.72 lbs/day	2600.0 ug/l	17.66 lbs/day
3,3'-Dichlorobenzidine	0.04 ug/l	0.00 lbs/day	0.1 ug/l	0.00 lbs/day
1,1-Dichloroethylene	0.06 ug/l	0.00 lbs/day	3.2 ug/l	0.02 lbs/day
1,2-trans-Dichloroethylene	700.00 ug/l	4.76 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	93.00 ug/l	0.63 lbs/day	790.0 ug/l	5.37 lbs/day
1,2-Dichloropropane	0.52 ug/l	0.00 lbs/day	39.0 ug/l	0.26 lbs/day
1,3-Dichloropropylene	10.00 ug/l	0.07 lbs/day	1700.0 ug/l	11.55 lbs/day
2,4-Dimethylphenol	540.00 ug/l	3.67 lbs/day	2300.0 ug/l	15.62 lbs/day
2,4-Dinitrotoluene	0.11 ug/l	0.00 lbs/day	9.1 ug/l	0.06 lbs/day
2,6-Dinitrotoluene	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	0.04 ug/l	0.00 lbs/day	0.5 ug/l	0.00 lbs/day
Ethylbenzene	3100.00 ug/l	21.06 lbs/day	29000.0 ug/l	197.00 lbs/day
Fluoranthene	300.00 ug/l	2.04 lbs/day	370.0 ug/l	2.51 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	1400.00 ug/l	9.51 lbs/day	170000.0 ug/l	1154.84 lbs/day
Bis(2-chloroethoxy) methane	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM)	4.70 ug/l	0.03 lbs/day	1600.0 ug/l	10.87 lbs/day
Methyl chloride (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	4.30 ug/l	0.03 lbs/day	360.0 ug/l	2.45 lbs/day
Dichlorobromomethane	0.27 ug/l	0.00 lbs/day	22.0 ug/l	0.15 lbs/day
Chlorodibromomethane	0.41 ug/l	0.00 lbs/day	34.0 ug/l	0.23 lbs/day
Hexachlorobutadiene(c)	0.44 ug/l	0.00 lbs/day	50.0 ug/l	0.34 lbs/day
Hexachlorocyclopentadiene	240.00 ug/l	1.63 lbs/day	17000.0 ug/l	115.48 lbs/day
Isophorone	8.40 ug/l	0.06 lbs/day	600.0 ug/l	4.08 lbs/day
Naphthalene				
Nitrobenzene	17.00 ug/l	0.12 lbs/day	1900.0 ug/l	12.91 lbs/day
2-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	70.00 ug/l	0.48 lbs/day	14000.0 ug/l	95.10 lbs/day
4,6-Dinitro-o-cresol	13.00 ug/l	0.09 lbs/day	765.0 ug/l	5.20 lbs/day
N-Nitrosodimethylamine	0.00069 ug/l	0.00 lbs/day	8.1 ug/l	0.06 lbs/day
N-Nitrosodiphenylamine	5.00 ug/l	0.03 lbs/day	16.0 ug/l	0.11 lbs/day
N-Nitrosodi-n-propylamine	0.01 ug/l	0.00 lbs/day	1.4 ug/l	0.01 lbs/day
Pentachlorophenol	0.28 ug/l	0.00 lbs/day	8.2 ug/l	0.06 lbs/day

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Phenol	2.10E+04 ug/l	1.43E+02 lbs/day	4.6E+06 ug/l	3.12E+04 lbs/day
Bis(2-ethylhexyl)phthala	1.80 ug/l	0.01 lbs/day	5.9 ug/l	0.04 lbs/day
Butyl benzyl phthalate	3000.00 ug/l	20.38 lbs/day	5200.0 ug/l	35.32 lbs/day
Di-n-butyl phthalate	2700.00 ug/l	18.34 lbs/day	12000.0 ug/l	81.52 lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	23000.00 ug/l	156.24 lbs/day	120000.0 ug/l	815.18 lbs/day
Dimethyl phthlate	3.13E+05 ug/l	2.13E+03 lbs/day	2.9E+06 ug/l	1.97E+04 lbs/day
Benzo(a)anthracene (P/	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chrysene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	9600.00 ug/l	65.21 lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Pyrene (PAH)	960.00 ug/l	6.52 lbs/day	11000.0 ug/l	74.73 lbs/day
Tetrachloroethylene	0.80 ug/l	0.01 lbs/day	8.9 ug/l	0.06 lbs/day
Toluene	6800.00 ug/l	46.19 lbs/day	200000 ug/l	1358.64 lbs/day
Trichloroethylene	2.70 ug/l	0.02 lbs/day	81.0 ug/l	0.55 lbs/day
Vinyl chloride	2.00 ug/l	0.01 lbs/day	525.0 ug/l	3.57 lbs/day
			0.0	0.00 lbs/day
<b>Pesticides</b>			0.0	0.00 lbs/day
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	0.01 lbs/day	2.0 ug/l	0.01 lbs/day
beta-Endosulfan	0.9300 ug/l	0.01 lbs/day	2.0 ug/l	0.01 lbs/day
Endosulfan sulfate	0.9300 ug/l	0.01 lbs/day	2.0 ug/l	0.01 lbs/day
Endrin	0.7600 ug/l	0.01 lbs/day	0.8 ug/l	0.01 lbs/day
Endrin aldehyde	0.7600 ug/l	0.01 lbs/day	0.8 ug/l	0.01 lbs/day
Heptachlor	0.0002 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
<b>PCB's</b>				
PCB 1242 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 122	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 123	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 126	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 101	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
<b>Pesticide</b>				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
<b>Dioxin</b>				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00

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**Metals**

Antimony	14.0 ug/l	0.10 lbs/day		
Arsenic	50.0 ug/l	0.34 lbs/day	4300.00 ug/l	29.21 lbs/day
Asbestos	7.00E+06 ug/l	4.76E+04 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	8.83 lbs/day	2.2E+05 ug/l	1494.50 lbs/day
Lead	700.0 ug/l	4.76 lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	31.25 lbs/day
Selenium	0.1 ug/l	0.00 lbs/day		
Silver	610.0 ug/l	4.14 lbs/day		
Thallium			6.30 ug/l	0.04 lbs/day
Zinc				

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

## **VII. Mathematical Modeling of Stream Quality**

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

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

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

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

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

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

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

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

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

### VIII. Modeling Information

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

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

### Other Conditions

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

### Model Inputs

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

#### Current Upstream Information

Stream		Critical Low						
	Flow	Temp.	pH	T-NH3	BOD5	DO	TRC	TDS
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l
Summer (Irrig. Season)	1.20	15.6	8.5	0.10	1.00	7.11	0.00	202.0
Fall	1.20	7.0	8.4	0.10	1.00	---	0.00	202.0
Winter	1.20	1.9	8.3	0.10	1.00	---	0.00	202.0
Spring	1.20	10.4	8.3	0.10	1.00	---	0.00	202.0
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	2.385*	0.795*	0.0795*	0.795*	3.975*	0.8*	1.25*	0.795*
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron		
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.0000	0.795*	1.59*	0.15*	0.0795*	1.59*	* ~80% MDL	

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**Projected Discharge Information**

Season	Flow, MGD	Temp.
Summer	0.03900	12.0
Fall	0.03900	12.0
Winter	0.03900	12.0
Spring	0.03900	12.0

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

**IX. Effluent Limitations**

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

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

**Effluent Limitation for Flow based upon Water Quality Standards**

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

Season	Daily Average	
Summer	0.039 MGD	0.060 cfs
Fall	0.039 MGD	0.060 cfs
Winter	0.039 MGD	0.060 cfs
Spring	0.039 MGD	0.060 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.039 MGD. If the discharger is allowed to have a flow greater than 0.039 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

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

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

WET Requirements	LC50 >	100.0% Effluent	[Acute]
	IC25 >	4.8% Effluent	[Chronic]

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

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

Season	Concentration	
Summer	25.0 mg/l as BOD5	8.1 lbs/day
Fall	25.0 mg/l as BOD5	8.1 lbs/day
Winter	25.0 mg/l as BOD5	8.1 lbs/day
Spring	25.0 mg/l as BOD5	8.1 lbs/day

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

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

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

**Effluent Limitation for Total Ammonia based upon Water Quality Standards**

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

Season		Concentration	Load	
Summer	4 Day Avg. - Chronic	23.06 mg/l as N	7.5	lbs/day
	1 Hour Avg. - Acute	21.3 mg/l as N	6.9	lbs/day
Fall	4 Day Avg. - Chronic	30.2 mg/l as N	9.8	lbs/day
	1 Hour Avg. - Acute	25.5 mg/l as N	8.3	lbs/day
Winter	4 Day Avg. - Chronic	31.1 mg/l as N	10.1	lbs/day
	1 Hour Avg. - Acute	25.8 mg/l as N	8.4	lbs/day
Spring	4 Day Avg. - Chronic	27.2 mg/l as N	8.8	lbs/day
	1 Hour Avg. - Acute	23.1 mg/l as N	7.5	lbs/day

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

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

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

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.210	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.198	mg/l	0.06	lbs/day
Fall	4 Day Avg. - Chronic	0.210	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.198	mg/l	0.06	lbs/day
Winter	4 Day Avg. - Chronic	0.210	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.198	mg/l	0.06	lbs/day
Spring	4 Day Avg. - Chronic	0.210	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.198	mg/l	0.06	lbs/day

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

Season		Concentration		Load	
Summer	Maximum, Acute	21049.8	mg/l	3.42	tons/day
Fall	Maximum, Acute	21049.8	mg/l	3.42	tons/day
Winter	Maximum, Acute	21049.8	mg/l	3.42	tons/day
Spring	Maximum, Acute	21049.8	mg/l	3.42	tons/day

Colorado Salinity Forum Limits

Determined by Permitting Section

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

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 167.63 mg/l):

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration		Load
Aluminum*	N/A	N/A	8,184.9	ug/l	2.7 lbs/day
Arsenic*	3,953.21 ug/l	0.8 lbs/day	3,713.3	ug/l	1.2 lbs/day
Cadmium	6.71 ug/l	0.0 lbs/day	38.7	ug/l	0.0 lbs/day
Chromium III	2,732.54 ug/l	0.6 lbs/day	30,118.8	ug/l	9.8 lbs/day
Chromium VI*	150.72 ug/l	0.0 lbs/day	135.6	ug/l	0.0 lbs/day
Copper	287.20 ug/l	0.1 lbs/day	241.4	ug/l	0.1 lbs/day
Iron*	N/A	N/A	659.6	ug/l	0.2 lbs/day
Lead	112.47 ug/l	0.0 lbs/day	1,716.9	ug/l	0.6 lbs/day
Mercury*	0.25 ug/l	0.0 lbs/day	26.3	ug/l	0.0 lbs/day
Nickel	1,671.08 ug/l	0.4 lbs/day	7,941.5	ug/l	2.6 lbs/day
Selenium*	64.47 ug/l	0.0 lbs/day	203.1	ug/l	0.1 lbs/day
Silver	N/A ug/l	N/A lbs/day	100.7	ug/l	0.0 lbs/day



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Zinc	3,875.75 ug/l	0.8 lbs/day	2,030.7	ug/l	0.7 lbs/day
Cyanide*	108.63 ug/l	0.0 lbs/day	240.8	ug/l	0.1 lbs/day

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

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

Summer	57.4 Deg. C.	135.2 Deg. F
Fall	48.7 Deg. C.	119.7 Deg. F
Winter	43.7 Deg. C.	110.7 Deg. F
Spring	52.2 Deg. C.	125.9 Deg. F

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

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

	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aldrin			1.5E+00 ug/l	7.56E-04 lbs/day
Chlordane	4.30E-03 ug/l	1.40E-03 lbs/day	1.2E+00 ug/l	6.05E-04 lbs/day
DDT, DDE	1.00E-03 ug/l	3.25E-04 lbs/day	5.5E-01 ug/l	2.77E-04 lbs/day
Dieldrin	1.90E-03 ug/l	6.18E-04 lbs/day	1.3E+00 ug/l	6.30E-04 lbs/day
Endosulfan	5.60E-02 ug/l	1.82E-02 lbs/day	1.1E-01 ug/l	5.54E-05 lbs/day
Endrin	2.30E-03 ug/l	7.48E-04 lbs/day	9.0E-02 ug/l	4.54E-05 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	5.04E-06 lbs/day
Heptachlor	3.80E-03 ug/l	1.24E-03 lbs/day	2.6E-01 ug/l	1.31E-04 lbs/day
Lindane	8.00E-02 ug/l	2.60E-02 lbs/day	1.0E+00 ug/l	5.04E-04 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02 ug/l	1.51E-05 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	5.04E-06 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02 ug/l	2.02E-05 lbs/day
PCB's	1.40E-02 ug/l	4.55E-03 lbs/day	2.0E+00 ug/l	1.01E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	4.23E+00 lbs/day	2.0E+01 ug/l	1.01E-02 lbs/day
Toxephene	2.00E-04 ug/l	6.50E-05 lbs/day	7.3E-01 ug/l	3.68E-04 lbs/day

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

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

	<b>1 Hour Average</b>	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	1.6 lbs/day
Nitrates as N	4.0 mg/l	1.3 lbs/day
Total Phosphorus as P	0.05 mg/l	0.0 lbs/day
Total Suspended Solids	90.0 mg/l	29.3 lbs/day

Note: Pollution indicator targets are for information purposes only.

**Effluent Limitations for Protection of Human Health [Toxics Rule]  
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)**

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	<b>Maximum Concentration</b>	
	Concentration	Load
<b>Toxic Organics</b>		
Acenaphthene	2.51E+04 ug/l	8.15E+00 lbs/day
Acrolein	6.68E+03 ug/l	2.17E+00 lbs/day
Acrylonitrile	1.23E+00 ug/l	4.01E-04 lbs/day
Benzene	2.51E+01 ug/l	8.15E-03 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	5.22E+00 ug/l	1.70E-03 lbs/day
Chlorobenzene	1.42E+04 ug/l	4.62E+00 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	1.57E-02 ug/l	5.09E-06 lbs/day
1,2-Dichloroethane	7.94E+00 ug/l	2.58E-03 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	3.97E+01 ug/l	1.29E-02 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	1.27E+01 ug/l	4.14E-03 lbs/day
1,1,2,2-Tetrachloroethane	3.55E+00 ug/l	1.15E-03 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	6.48E-01 ug/l	2.11E-04 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	3.55E+04 ug/l	1.15E+01 lbs/day
2,4,6-Trichlorophenol	4.39E+01 ug/l	1.43E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	1.19E+02 ug/l	3.87E-02 lbs/day
2-Chlorophenol	2.51E+03 ug/l	8.15E-01 lbs/day
1,2-Dichlorobenzene	5.64E+04 ug/l	1.83E+01 lbs/day
1,3-Dichlorobenzene	8.36E+03 ug/l	2.72E+00 lbs/day

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1,4-Dichlorobenzene	8.36E+03 ug/l	2.72E+00 lbs/day
3,3'-Dichlorobenzidine	8.36E-01 ug/l	2.72E-04 lbs/day
1,1-Dichloroethylene	1.19E+00 ug/l	3.87E-04 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	1.94E+03 ug/l	6.32E-01 lbs/day
1,2-Dichloropropane	1.09E+01 ug/l	3.53E-03 lbs/day
1,3-Dichloropropylene	2.09E+02 ug/l	6.79E-02 lbs/day
2,4-Dimethylphenol	1.13E+04 ug/l	3.67E+00 lbs/day
2,4-Dinitrotoluene	2.30E+00 ug/l	7.47E-04 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	8.36E-01 ug/l	2.72E-04 lbs/day
Ethylbenzene	6.48E+04 ug/l	2.11E+01 lbs/day
Fluoranthene	6.27E+03 ug/l	2.04E+00 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	2.92E+04 ug/l	9.51E+00 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	9.82E+01 ug/l	3.19E-02 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	8.98E+01 ug/l	2.92E-02 lbs/day
Dichlorobromomethane(HM)	5.64E+00 ug/l	1.83E-03 lbs/day
Chlorodibromomethane (HM)	8.56E+00 ug/l	2.79E-03 lbs/day
Hexachlorocyclopentadiene	5.01E+03 ug/l	1.63E+00 lbs/day
Isophorone	1.75E+02 ug/l	5.71E-02 lbs/day
Naphthalene		
Nitrobenzene	3.55E+02 ug/l	1.15E-01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.46E+03 ug/l	4.76E-01 lbs/day
4,6-Dinitro-o-cresol	2.72E+02 ug/l	8.83E-02 lbs/day
N-Nitrosodimethylamine	1.44E-02 ug/l	4.69E-06 lbs/day
N-Nitrosodiphenylamine	1.04E+02 ug/l	3.40E-02 lbs/day
N-Nitrosodi-n-propylamine	1.04E-01 ug/l	3.40E-05 lbs/day
Pentachlorophenol	5.85E+00 ug/l	1.90E-03 lbs/day
Phenol	4.39E+05 ug/l	1.43E+02 lbs/day
Bis(2-ethylhexyl)phthalate	3.76E+01 ug/l	1.22E-02 lbs/day
Butyl benzyl phthalate	6.27E+04 ug/l	2.04E+01 lbs/day
Di-n-butyl phthalate	5.64E+04 ug/l	1.83E+01 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	4.80E+05 ug/l	1.56E+02 lbs/day
Dimethyl phthlate	6.54E+06 ug/l	2.13E+03 lbs/day
Benzo(a)anthracene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Benzo(a)pyrene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Benzo(b)fluoranthene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Benzo(k)fluoranthene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Chrysene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	5.85E-02 ug/l	1.90E-05 lbs/day

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Pyrene (PAH)	2.01E+04 ug/l	6.52E+00 lbs/day
Tetrachloroethylene	1.67E+01 ug/l	5.43E-03 lbs/day
Toluene	1.42E+05 ug/l	4.62E+01 lbs/day
Trichloroethylene	5.64E+01 ug/l	1.83E-02 lbs/day
Vinyl chloride	4.18E+01 ug/l	1.36E-02 lbs/day

**Pesticides**

Aldrin	2.72E-03 ug/l	8.83E-07 lbs/day
Dieldrin	2.92E-03 ug/l	9.51E-07 lbs/day
Chlordane	1.19E-02 ug/l	3.87E-06 lbs/day
4,4'-DDT	1.23E-02 ug/l	4.01E-06 lbs/day
4,4'-DDE	1.23E-02 ug/l	4.01E-06 lbs/day
4,4'-DDD	1.73E-02 ug/l	5.64E-06 lbs/day
alpha-Endosulfan	1.94E+01 ug/l	6.32E-03 lbs/day
beta-Endosulfan	1.94E+01 ug/l	6.32E-03 lbs/day
Endosulfan sulfate	1.94E+01 ug/l	6.32E-03 lbs/day
Endrin	1.59E+01 ug/l	5.16E-03 lbs/day
Endrin aldehyde	1.59E+01 ug/l	5.16E-03 lbs/day
Heptachlor	4.39E-03 ug/l	1.43E-06 lbs/day
Heptachlor epoxide		

**PCB's**

PCB 1242 (Arochlor 1242)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1254 (Arochlor 1254)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1221 (Arochlor 1221)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1232 (Arochlor 1232)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1248 (Arochlor 1248)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1260 (Arochlor 1260)	9.19E-04 ug/l	2.99E-07 lbs/day
PCB-1016 (Arochlor 1016)	9.19E-04 ug/l	2.99E-07 lbs/day

**Pesticide**

Toxaphene	1.52E-02 ug/l	4.96E-06 lbs/day
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**Metals**

Antimony	292.45 ug/l	0.10 lbs/day
Arsenic	1028.67 ug/l	0.33 lbs/day
Asbestos	1.46E+08 ug/l	4.76E+04 lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	27156.50 ug/l	8.83 lbs/day
Cyanide	14622.73 ug/l	4.76 lbs/day
Lead	0.00	0.00
Mercury	2.92 ug/l	0.00 lbs/day
Nickel	12742.66 ug/l	4.14 lbs/day
Selenium	0.00	0.00
Silver	0.00	0.00
Thallium	35.51 ug/l	0.01 lbs/day
Zinc		

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**Dioxin**

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

2.72E-07 ug/l

8.83E-11 lbs/day

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

	<b>Class 4 Acute Agricultural ug/l</b>	<b>Class 3 Acute Aquatic Wildlife ug/l</b>	<b>Acute Toxics Drinking Water Source ug/l</b>	<b>Acute Toxics Wildlife ug/l</b>	<b>1C Acute Health Criteria ug/l</b>	<b>Acute Most Stringent ug/l</b>	<b>Class 3 Chronic Aquatic Wildlife ug/l</b>
Aluminum		8184.9				8184.9	N/A
Antimony			292.5	89825.3		292.5	
Arsenic	2089.0	3713.3	1028.7			1028.7	3953.2
Barium					20889.6	20889.6	
Beryllium						0.0	
Cadmium	207.3	38.7				38.7	6.7
Chromium (III)		30118.8				30118.8	2732.5
Chromium (VI)	2073.1	135.6				135.59	150.72
Copper	4162.1	241.4	27156.5			241.4	287.2
Cyanide		240.8	4595714.8			240.8	108.6
Iron		659.6				659.6	
Lead	2073.1	1716.9				1716.9	112.5
Mercury		26.27	2.9	3.13		2.92	0.250
Nickel		7941.5	12742.7	96092.2		7941.5	1671.1
Selenium	1012.9	203.1				203.1	64.5
Silver		100.7				100.7	
Thallium			35.5	131.6		35.5	
Zinc		2030.7				2030.7	3875.8
Boron	15667.2					15667.2	
Sulfate	41779.2					41779.2	

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

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

	<b>WLA Acute ug/l</b>	<b>WLA Chronic ug/l</b>	
Aluminum	8184.9	N/A	
Antimony	292.45		
Arsenic	1028.7	3953.2	Acute Controls
Asbestos	1.46E+08		
Barium			
Beryllium			
Cadmium	38.7	6.7	
Chromium (III)	30118.8	2733	
Chromium (VI)	135.6	150.7	Acute Controls
Copper	241.4	287.2	Acute Controls

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Cyanide	240.8	108.6	
Iron	659.6		
Lead	1716.9	112.5	
Mercury	2.924	0.250	
Nickel	7941.5	1671	
Selenium	203.1	64.5	
Silver	100.7	N/A	
Thallium	35.5		
Zinc	2030.7	3875.8	Acute Controls
Boron	15667.21		
Sulfate	41779.2		N/A at this Waterbody

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

## **X. Antidegradation Considerations**

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

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

## **XI. Colorado River Salinity Forum Considerations**

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

## **XII. Summary Comments**

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

## **ATTACHMENT 3**

### *Reasonable Potential Analysis*

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## **REASONABLE POTENTIAL ANALYSIS**

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis<sup>5</sup>. They are;

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

Initial screening for effluent values that were submitted through the discharge monitoring reports showed that a closer look at the parameters was not required at this time. The facility currently is not required to monitor for heavy metals in the effluent due to the volume of the discharge and nature of the contributing sources for the wastewater, and the effluent limits associated with the permit are related to either current Utah Secondary Treatment Standards, UAC r. 317-1-3.2, or an approved phosphorus abatement project to create a zero net phosphorus discharge to the watershed. For this reason there will be no changes to the monitoring conditions or effluent limits as a result of the RP.

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<sup>5</sup> See Reasonable Potential Analysis Guidance for definitions of terms