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**FACT SHEET/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: Dan Weatherbie
Position: Manager

Facility Name: Blue Sky Ranch and Resort
Mailing Address: 175 East 400 South, Suite 402
Salt Lake City, Utah 84111

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Facility 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 conference center resort and will include lodging, restaurant, conference and fitness facilities located in Wanship, Utah. The resort will also include a whiskey distillery owned and operated by High West Distillery. Construction of the facilities was expected to be completed in 2008 but due to various reasons, was delayed until the fall of 2013.

The facilities will be constructed in 2013 and will accommodate 340 guests and 40 employees. A wastewater treatment plant will be constructed to treat all of the wastewater generated on site. The treatment plant is designed to treat 39,000 gallons per day and will include a Sequencing Batch Reactor (SBR) with tertiary filtration and UV disinfection. After disinfection, the water will be discharged via outfall 001 with latitude 40.48'28.83N and longitude 111.26'51.90" to Alexander Creek which flows to Silver Creek, then to the Weber River and ultimately to Echo Reservoir.

CHANGES FROM PREVIOUS PERMIT

As previously mentioned, BSRR was not constructed during the last UPDES permit cycle. Instead, it is anticipated that the facility will be constructed in Fall 2013. The facility has elected to change the treatment technology from what was originally proposed in the 2008 UPDES permit application from MBR to SBR. Also, the facility plan now includes a distillery and as a result, they have requested an increase in flow from 30,000 gallons per day to 39,000 gallons per day.

DISCHARGE

DESCRIPTION OF DISCHARGE

Because BSRR is a new facility there is no historical effluent monitoring data.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 40.48°28.83N and longitude 111.26°51.90". The discharge is to Alexander Creek and 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 secondary contact recreation such as boating, wading, or similar uses.
- Class 3A -Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 -Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), E. coli, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The phosphorus limitation is based on the wasteload allocation combined with the approved phosphorus abatement project to create a zero net phosphorus discharge to the watershed. As in the previous permit, the ammonia limitation is more stringent than the wasteload allocation states, however, it is a number that is more protective of water quality and the facility is confident that it can meet. The oil and grease effluent limit is based on best professional judgment (BPJ). The permit limitations are:

Parameter	Effluent Limitations			
	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.039	NA	NA	NA
BOD ₅ , mg/L	25	35	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E. coli, No./100mL	126	158	NA	NA
Total Phosphorus, mg/L	1.0	NA	NA	NA
Total Ammonia, as N, mg/L	1.0	NA	NA	NA
Dissolved Oxygen, mg/L	NA	NA	5.0	NA
Oil & Grease, mg/L	NA	NA	NA	10
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable.

SELF-MONITORING AND REPORTING REQUIREMENTS

The permit will require reports to be submitted monthly and quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Self-Monitoring and Reporting Requirements			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD ₅ , Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
TSS, Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
E.coli	Monthly	Grab	No./100mL
Total Phosphorus	Weekly	Grab	mg/L
Total Ammonia	Monthly	Grab	mg/L
Dissolved Oxygen	Monthly	Grab	mg/L
WET, Acute Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
Total Nitrogen	Monthly	Grab	SU
Certification that approved phosphorus abatement program has been implemented.	Within 30 days of the effective date of this permit.	NA	NA
Annual certification that phosphorus offset has been maintained.	By March 31st of the calendar year.	NA	NA

BIOSOLIDS

DESCRIPTION OF TREATMENT AND DISPOSAL

The solids from the Blue Sky Ranch and Resort (BSRR) may be dewatered with a bag system, or may be wasted to drying beds for pathogen reduction purposes, and used for agriculture purposes. If only Class B pathogen reduction standards are met, the biosolids may be used at low public contact sites (such farm fields and pasture land) and will need to be restricted from the public and guests of BSRR for at least one year. If Class A pathogen reduction standards are met, the Class A biosolids (compost) may be sold or given away to the public, or used on site for flower beds, lawns, gardens, or in the greenhouse for food crops. At this time it is believed that the BSRR will produce about 8-15 dry metric tons a year and they will dispose of it in the Summit County Three Mile Canyon Landfill.

BIOSOLIDS LIMITATIONS AND SELF-MONITORING REQUIREMENTS

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

Minimum Frequency of Monitoring Based Upon Dry Metric Tons (DMT)

Amount of Biosolids Produced Per Year	Monitoring Frequency
> 0 to < 290 DMT	Once Per Year

Accordingly, the BSRR shall monitor biosolids at least once a year.

Landfill Monitoring

Prior to disposal in a landfill all biosolids must pass a paint filter test (to determine if the biosolids exhibit free liquid). If the solids do not pass a paint filter test, the biosolids cannot be disposed of in the landfill.

Heavy Metals Monitoring

BSRR is required to sample for heavy metals prior to the time of disposal if the biosolids are land applied or sold or given away to the public.

Pathogen Monitoring for Class A Biosolids

If the biosolids have met a “process to further reduce pathogens” (PFRP), the biosolids must be also be sampled for either *salmonella* or *fecal* coliform. If the biosolids have not met a PFRP, the biosolids cannot be sold or given away to the public.

Pathogen Monitoring for Class B Biosolids

For biosolids to be considered Class B with regards to pathogens, the biosolids must be sampled for *fecal* coliform (or meet a process to significantly reduce pathogens).

Vector Attraction Reduction Monitoring

The biosolids must be monitored for time and temperature for vector attraction reduction or use another means of meeting a requirement for vector attraction reduction under *40 CFR 503.33* such as incorporation into the soil.

MONITORING DATA

Since the BSRR is a new facility, there is not any monitoring data.

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 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 II. D. 11. of the permit) to be handed out to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions on 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 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 meet the maximum heavy metals in Table 1 and the monthly average pollutant concentrations in Table 3 (see the Table 1 and Table 3 below). If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of *40 CFR 503.13* is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see Part II. D. 11. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites. If the biosolids are land applied according to the regulations of *40 CFR 503.13*, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

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

The maximum heavy metals listed in Table 1 and the heavy metals loading rates in Table 2; or

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

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

Tables 1, 2, and 3 of Heavy Metal Limitations

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

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

Pathogens

Class A Requirements

BSRR may achieve Class A biosolids with regards to pathogens by two methods of composting.

1. Under *40 CFR 503.32(7), Class A, Alternative 7(ii)* BSRR may use two different methods of composting to meet the requirement for a process to further reduce pathogens (PFRP).
 - a. Composting using the windrow method, the temperature of the biosolids is maintained at 55° C (131°F) or higher for at least 15 days, with a minimum of 5 turnings of the windrows during the 15 days, and tested for either *fecal* coliform or *salmonella* prior to sale or giveaway.
 - b. Composting using the static aerated pile method, the temperature of the biosolids is maintained at 55° C (131°F) or higher for at least 3 days, and tested for either *fecal* coliform or *salmonella* prior to sale or giveaway.

Class B Requirements for Agriculture

BSRR may achieve Class B biosolids in one of three different ways with regards to pathogens:

1. Under *40 CFR 503.32 (b)(2) Appendix B*, BSRR may test the biosolids and must meet a microbiological limit of less than 2,000,000 most probable number (MPN) of fecal coliform per gram for the biosolids to be considered Class B biosolids with respect to pathogens.
2. Under *40 CFR 503.32 (b)(3), Appendix B.2*. BSRR must meet one of the processes to significantly reduce pathogens. BSRR intends to meet a process to significantly reduce pathogens by using the air drying method of pathogen reduction. The biosolids are applied to an impervious surface and dried at a depth of no more than 9 inches (23 cm) deep. The biosolids are allowed to dry for a minimum of 3 months. During 2 of the 3 months, the ambient average daily temperature is above 32° F (0° C)
3. Under *40 CFR 503.32 (b)(3)* BSRR must meet one of the processes to significantly reduce pathogens. BSRR intends to meet a process to significantly reduce pathogens (PSRP) by using the windrow method of composting. To achieve this, the temperature must be at least 40° C (104° F) or higher, and remain at least 40° C or higher for a minimum of five days. For four hours, during the five days, the temperature needs to be at or exceed 55° C (131 F °).

Vector Attraction Reduction

If the biosolids are land applied BSRR will be required to meet a method of vector attraction reduction under *40 CFR 503.33*. BSRR intends to meet one of the vector attraction reduction requirements below.

1. Aerobic treatment of the biosolids for at least 14 days at 40° C (104° F) with an average temperature of over 45° C (113° F) 503.33(b)(5).
2. Solids are equal to or greater than 90% total solids when primary solids are present 503.33(b)(8).

3. All Class B biosolids land applied shall be incorporated into the soil within 6 hours after land application 503.33(b)(10).

Record Keeping

The record keeping requirements from 40 CFR 503.17 are included under Part II.H. of the permit. The amount of time the records need to be retained is dependent upon the quality of the biosolids with regard to the metals concentrations. If the biosolids exceed Table 3 values for any parameter that are land applied to a site, that site thereafter is subject to the heavy metals loading rates in Table 2. Records for those sites are to be retained in perpetuity.

Reporting

BSRR will be required to report annually as required in 40 CFR 503.18. This report is to include the results of all monitoring performed in accordance with Part II.D. of the permit, information on management practices, land application sites, and certifications will be due no later than February 19 of each year. Each report is for the previous calendar year.

STORM WATER

The *Utah Administrative Code (UAC) R-317-8-3* 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*,

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

PRETREATMENT REQUIREMENTS

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

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 1st through September 30th). However, since the facility is new and has not previously had a load allocation, and because the TMDL has not yet been approved, the facility will be required to establish suitable pollutant offsets for the phosphorus it will release into the watershed as a backup. 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 part of its UPDES permit, BSRR will be required to complete and submit an initial certification that the load reduction has occurred and will certify annually that the offset has been maintained. Additionally, any future expansion beyond the current load allocation may require the facility to implement the offset program.

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.

ANTIDegradation REVIEWS

Antidegradation Reviews are intended to ensure that waters that have better quality than required by the standards are not degraded unless the degradation is necessary for important social or economic reasons.

An ADR Level I review was performed and the conclusion was that an ADR Level II review was required, because this facility is increasing its effluent flow in the renewal permit. BSRR has completed an Antidegradation Level II Review. Copies of both ADR documents are appended to this document.

The DWQ concurs with the findings of the Level I (compliance with water quality standards) and Level II Reviews.

PERMIT DURATION

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

Drafted by
Kim Shelley, Discharge
Mark Schmitz, Biosolids
Utah Division of Water Quality

PUBLIC NOTICE

Began: September 10, 2013
Ended: October 10, 2013
Public Noticed in the Salt Lake Tribune.

No comments were received during the public comment period. Therefore, the permit and FSSOB are the same as the draft documents that were public noticed.

October 11, 2013

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

Discharging Facility: Blue Sky Ranch
UPDES No: UT-0025763
Current Flow: 0.039 MGD Design Flow
Design Flow 0.039 MGD

Receiving Water: Alexander Creek => Silver Creek => Weber River
Stream Classification: 2B, 3A, 4
Stream Flows [cfs]:
1.2 Summer (July-Sept) 20th Percentile
1.2 Fall (Oct-Dec) 20th Percentile
1.2 Winter (Jan-Mar) 20th Percentile
1.2 Spring (Apr-June) 20th Percentile
2.5 Average
Stream TDS Values:
202.0 Summer (July-Sept) 80th Percentile
202.0 Fall (Oct-Dec) 80th Percentile
202.0 Winter (Jan-Mar) 80th Percentile
202.0 Spring (Apr-June) 80th Percentile

Effluent Limits:		WQ Standard:
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:	151.9 Summer	Varies Function of pH and Temperature
TDS, mg/l:	21049.8 Summer	1200.0

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

Antidegradation Level II Review is required.

Date: 5/20/2013

Permit Writer: _____
WLA by: Neil M. Wilson _____
WQM Sec. Approval: _____
TMDL Sec. Approval: _____

Utah Division of Water Quality
Salt Lake City, Utah

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

20-May-13
4:00 PM

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

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: Antidegradation Level II Review is 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	3.69	ug/l	0.001 lbs/day
Chromium III	134.03 ug/l	0.044 lbs/day	2804.08	ug/l	0.912 lbs/day
ChromiumVI	11.00 ug/l	0.004 lbs/day	16.00	ug/l	0.005 lbs/day
Copper	14.79 ug/l	0.005 lbs/day	23.27	ug/l	0.008 lbs/day
Iron			1000.00	ug/l	0.325 lbs/day
Lead	6.32 ug/l	0.002 lbs/day	162.19	ug/l	0.053 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.001 lbs/day
Nickel	82.31 ug/l	0.027 lbs/day	740.35	ug/l	0.241 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	9.57	ug/l	0.003 lbs/day
Zinc	189.20 ug/l	0.062 lbs/day	189.20	ug/l	0.062 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

Metals Standards Based upon a Hardness of 171.46 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.000 lbs/day
Chlordane	0.004 ug/l	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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Salt Lake City, Utah**

IV. Numeric Stream Standards for Protection of Agriculture

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

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
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]

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	1200.00 ug/l	8.15 lbs/day	2700.0 ug/l	18.34 lbs/day
Acrolein	320.00 ug/l	2.17 lbs/day	780.0 ug/l	5.30 lbs/day
Acrylonitrile	0.06 ug/l	0.00 lbs/day	0.7 ug/l	0.00 lbs/day
Benzene	1.20 ug/l	0.01 lbs/day	71.0 ug/l	0.48 lbs/day
Benzidine	0.00012 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	0.25 ug/l	0.00 lbs/day	4.4 ug/l	0.03 lbs/day
Chlorobenzene	680.00 ug/l	4.62 lbs/day	21000.0 ug/l	142.66 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	0.38 ug/l	0.00 lbs/day	99.0 ug/l	0.67 lbs/day

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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	17000.0 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
			0.0	0.00 lbs/day
Pesticides				
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	0.01 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				
PCB's				
PCB 1242 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 124	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 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
Pesticide				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
Dioxin				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00

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Metals

Antimony	14.0 ug/l	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	mg/l
Summer (Irrig. Season)	1.2	15.6	8.5	0.03	0.10	7.11	0.00	202.0	
Fall	1.2	7.0	8.4	0.03	0.10	---	0.00	202.0	
Winter	1.2	1.9	8.3	0.03	0.10	---	0.00	202.0	
Spring	1.2	10.4	8.3	0.03	0.10	---	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	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*	
Dissolved Metals	Hg	Ni	Se	Ag	Zn	Boron			
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0			* 1/2 MDL

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Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.03900	na	0.00	0.00000
Fall	0.03900	na		
Winter	0.03900	na		
Spring	0.03900	na		

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 >	33.5% 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	151.9 mg/l as N	49.4 lbs/day
	1 Hour Avg. - Acute	316.4 mg/l as N	102.9 lbs/day
Fall	4 Day Avg. - Chronic	153.1 mg/l as N	49.8 lbs/day
	1 Hour Avg. - Acute	307.9 mg/l as N	100.1 lbs/day
Winter	4 Day Avg. - Chronic	150.6 mg/l as N	49.0 lbs/day
	1 Hour Avg. - Acute	304.9 mg/l as N	99.1 lbs/day
Spring	4 Day Avg. - Chronic	151.9 mg/l as N	49.4 lbs/day
	1 Hour Avg. - Acute	307.9 mg/l as N	100.1 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	0.228	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.207	mg/l	0.07	lbs/day
Fall	4 Day Avg. - Chronic	0.228	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.207	mg/l	0.07	lbs/day
Winter	4 Day Avg. - Chronic	0.228	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.207	mg/l	0.07	lbs/day
Spring	4 Day Avg. - Chronic	0.228	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.207	mg/l	0.00	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	4 Day Avg. - Chronic	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 171.46 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	6.85	ug/l	0.0 lbs/day	39.6	ug/l	0.0 lbs/day
Chromium III	2,783.93	ug/l	0.6 lbs/day	30,682.2	ug/l	10.0 lbs/day
Chromium VI	150.72	ug/l	0.0 lbs/day	135.6	ug/l	0.0 lbs/day
Copper	293.12	ug/l	0.1 lbs/day	246.7	ug/l	0.1 lbs/day
Iron	N/A		N/A	10,932.4	ug/l	3.6 lbs/day
Lead	116.22	ug/l	0.0 lbs/day	1,767.2	ug/l	0.6 lbs/day
Mercury	0.25	ug/l	0.0 lbs/day	26.3	ug/l	0.0 lbs/day
Nickel	1,703.68	ug/l	0.4 lbs/day	8,095.1	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	104.7	ug/l	0.0 lbs/day

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Zinc	3,950.78 ug/l	0.8 lbs/day	2,070.0	ug/l	0.7 lbs/day
Cyanide	108.63 ug/l	0.0 lbs/day	240.8	ug/l	0.1 lbs/day

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

Summer	37.5 Deg. C.	99.4 Deg. F
Fall	28.8 Deg. C.	83.9 Deg. F
Winter	23.8 Deg. C.	74.9 Deg. F
Spring	32.3 Deg. C.	90.1 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	7.55E-04 lbs/day
Chlordane	4.30E-03 ug/l	1.40E-03 lbs/day	1.2E+00	ug/l	6.04E-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	6.29E-04 lbs/day
Endosulfan	5.60E-02 ug/l	1.82E-02 lbs/day	1.1E-01	ug/l	5.53E-05 lbs/day
Endrin	2.30E-03 ug/l	7.48E-04 lbs/day	9.0E-02	ug/l	4.53E-05 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	5.03E-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	5.03E-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	5.03E-06 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	2.01E-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	3.67E-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:

	1 Hour Average	
	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:

	Maximum Concentration	
	Concentration	Load
Toxic Organics		
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
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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Cyanide	240.8	108.6	
Iron	10932.4		
Lead	1767.2	116.2	
Mercury	2.924	0.251	
Nickel	8095.1	1704	
Selenium	203.1	64.5	
Silver	104.7	N/A	
Thallium	35.5		
Zinc	2070.0	3950.8	Acute Controls
Boron	15667.21		

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

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

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

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an

Antidegradation Level II Review is required.

Discharge is to a 1C water and slight increase in discharge rate (from 0.030 to 0.039MGD)

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.

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XIII. Notice of UPDES Requirement

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

XIV. Special Considerations - TMDL

Blue Sky Ranch proposed wastewater treatment plant will discharge to discharge to Alexander Creek. Alexander Creek is a tributary to Silver Creek and then the Weber River, which flows to Echo reservoir. Echo Reservoir is 303(d) listed for total phosphorous (TP) and dissolved oxygen (DO). A draft Total Maximum Daily Load (TMDL) has been established for Echo Reservoir that restricts the release of phosphorus into the watershed. Because Blue Sky Ranch is a new facility, it does not have a load allocation in the TMDL. As a result, the facility will be required to establish suitable pollutant offsets for the phosphorus it will release into the watershed. A suitable phosphorus abatement project to offset the load contributed by Blue Sky Corporate Ranch needs to include: 1) an offset multiplier, to be determined by the Division, usually 3 to 4 times the mass discharged; 2) annual certification that a load reduction has occurred (UPDES permit condition); and 3) certify permanence of the required offset (UPDES permit condition); and 4) establish an implementation (compliance) schedule for the project.

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801-538-6052
File Name: BlueSkyRanch_WLA_7-14-08.xls

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APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day 2.000	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 1.633	REAER. Coeff. (Ka)20 (Ka)/day 77.122	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 69.447	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.285
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 NO2+NO3 LOSS (K5)T 1/day 3.265	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 LOSS (K6)T 1/day 0.000	TRC Decay K(CI)20 1/day 32.000	TRC K(CI)(T) 1/day 24.734
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 0.757						
K1 CBOD {theta} 1.0	K2 Reaer. {theta} 1.0	K3 NH3 {theta} 1.1	K4 Open {theta} 1.0	K5 NH3 Loss {theta} 1.0	K6 NO2+3 {theta} 1.0	K(CI) TRC {theta} 1.1	S Benthic {theta} 1.1

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Level I Antidegradation Review for: Blue Sky Ranch

Antidegradation Level II Review is required.

Discharge is to a 1C water and slight increase in discharge rate (from 0.030 to 0.039MGD)

Antidegradation Review Form

Part A: Applicant Information

Facility Name: Blue Sky Ranch Wastewater Reclamation Facility

Facility Owner: Blue Sky Ranch and Resort

Facility Location: 2071 SR32, Wanship UT, 84017

Form Prepared By: Bowen Collins & Associates

Outfall Number: 001

Receiving Water: Alexander Creek

What Are the Designated Uses of the Receiving Water (R317-2-6)?

Domestic Water Supply: 1C
Recreation: 2B - Secondary Contact
Aquatic Life: 3A - Cold Water Aquatic Life
Agricultural Water Supply: 4
Great Salt Lake: None

Category of Receiving Water (R317-2-3.2, -3.3, and -3.4): Category 1

UPDES Permit Number (if applicable): UT0025763

Effluent Flow Reviewed:

Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

What is the application for? (check all that apply)

- A UPDES permit for a new facility, project, or outfall.
- A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.
- A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.
- A UPDES permit renewal with no changes in facility operations.

Part B. Is a Level II ADR required?

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The receiving water or downstream water is a Class 1C drinking water source.

- Yes** A Level II ADR is required (Proceed to Part C of the Form)
- No** (Proceed to Part B2 of the Form)

B2. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

- Yes** (Proceed to Part B3 of the Form)
- No** No Level II ADR is required and there is no need to proceed further with review questions.

B3. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review? For a few pollutants such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Section 3.3.3 of Implementation Guidance)

- Yes** (Proceed to Part B4 of the Form)
- No** No Level II ADR is required and there is no need to proceed further with review questions.

B4. Are water quality impacts of the proposed project temporary and limited (Section 3.3.4 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

- Yes** Identify the reasons used to justify this determination in Part B4.1 and proceed to Part G. No Level II ADR is required.
- No** A Level II ADR is required (Proceed to Part C)

B4.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.4 of Implementation Guidance):

- Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

- a) The length of time during which water quality will be lowered:
- b) The percent change in ambient concentrations of pollutants:
- c) Pollutants affected:
- d) Likelihood for long-term water quality benefits:
- e) Potential for any residual long-term influences on existing uses:
- f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts:

Additional justification, as needed:

Level II ADR

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name: Blue Sky Ranch and Resort Antidegradation Application Support Information.

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located? *The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.*

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern. *Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.*

Parameters of Concern:

Rank	Pollutant	Ambient Concentration	Effluent Concentration
1			
2			
3			
4			
5			

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification

Part E. Alternative Analysis Requirements of a Level II

Antidegradation Review. *Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. More information is available in Section 5.5 and 5.6 of the Implementation Guidance.*

E1. The UPDES permit is being renewed without any changes to flow or concentrations. Alternative treatment and discharge options including changes to operations and maintenance were considered and compared to the current processes. No economically feasible treatment or discharge alternatives were identified that were not previously considered for any previous antidegradation review(s).

Yes (Proceed to Part F)

No or Does Not Apply (Proceed to E2)

E2. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options (see 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Facility Plan, if available.

Report Name: See attached supporting information.

E3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

E4. Were any of the following alternatives feasible and affordable?

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	Yes	In nessary phosphorus trading could occur. This would occur by reduction in grazing cattle within the watershed.
Water Recycling/Reuse	No	Cost prohibitive
Land Application	No	Cost prohibitive
Connection to Other Facilities	No	Cost prohibitive, the nearest WWTP is SBWRD which is over 8 miles away, which require significant piping and pumping costs.
Upgrade to Existing Facility	No	
Total Containment	No	
Improved O&M of Existing Systems	No	
Seasonal or Controlled Discharge	No	
New Construction	Yes	
No Discharge	No	

E5. From the applicant's perspective, what is the preferred treatment option?

The best treatemetn option includes an activated sludge wastewater treatment plant. An SBR treatment process meets the requirements for existing effluent requirements.

E6. Is the preferred option also the least polluting feasible alternative?

Yes

No

If no, what were less degrading feasible alternative(s)?

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

Part F. Optional Information

F1. Does the applicant want to conduct optional public review(s) in addition to the mandatory public review? Level II ADRs are public noticed for a thirty day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

No

Yes

F2. Does the project include an optional mitigation plan to compensate for the proposed water quality degradation?

No

Yes

Report Name:

Part G. Certification of Antidegradation Review

G1. Applicant Certification

The form should be signed by the same responsible person who signed the accompanying permit application or certification.

Based on my inquiry of the person(s) who manage the system or those persons directly responsible for gathering the information, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name: DANIEL L. WEATHERS

Signature: [Handwritten Signature]

Date: APRIL 29, 2013

G2. DWO Approval

To the best of my knowledge, the ADR was conducted in accordance with the rules and regulations outlined in UAC R-317-2-3.

Water Quality Management Section

Print Name: _____

Signature: _____

Date: _____

PART A – See Attached Antidegradation Review Form

PART B – See Attached Antidegradation Review Form

PART C

Is the degradation from this project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located?

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated.

The Blue Sky Ranch and Resort will be a conference center resort that includes overnight lodging, restaurant, conference and reception rooms, spa and other facilities. The project will be a travel destination which will result in economic benefits to the Wasatch and the surrounding areas. A majority of the jobs created by this development will be in the service industry (i.e. restaurant, lodging, etc). It is estimated that up to 100 full and part-time jobs will be created by this development at full build-out.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

Implementation of the proposed project will result in a majority of the property being preserved as open space. Only a minimal portion of the 3,000 acres will be developed thus maintaining the natural environment of the area.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

None.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

The Blue Sky Ranch and Resort has been reviewed and approved by the Wasatch County Planning Commission. During the approval process the County held open public hearings to receive and address any public comments on the project. The county issued a Low Impact Conditional Use Permit.

It should also be noted that the State of Utah Department of Environmental Quality (UDEQ) is currently preparing a TMDL for the Echo Reservoir Drainage Basin. Blue Sky Ranch & Resort

has been working with UDEQ to include allocations for the new WRF. The current TMDL evaluation has included allocations for the proposed flows of 39,000 gpd.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving waters.

The BSRR WRF will be located near Alexander Creek. The WRF will include several below ground concrete basins. These basins will include overflow protection. The WRF will also include a small building (approximately 25'x25') to enclose electrical equipment, disinfection equipment, dewatering equipment, and other miscellaneous equipment. A small concrete structure will be constructed adjacent to Alexander Creek to allow the treated water to be discharged in to the creek.

PART D

Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern.

This modification to the existing UPDES is only requesting an increase to the flow. Therefore, this application requests that the remaining effluent parameters and requirements remain as identified in the existing permits. Included in Appendix A is a copy of the current UPDES permit along with Waste Load Analysis that was completed in 2008.

PART E

E2.1. Provide a description of the treatment process including construction costs and continued operation and maintenance expenses.

See Appendix B for a summary of the treatment process evaluation.

E2.2. Provide the mass and concentration of discharge constituents.

It is requested that the concentration of the discharge constituents be as identified in the current UPDES permit. The mass of the identified constituents will slightly increase based upon the requested flows. UDEQ is currently completing a TMDL Study including the increased flow based upon the requested flow.

E2.3. Provide a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants.

The proposed WRF will meet and exceed all UDEQ requirements including redundancy on all critical process equipment. The proposed treatment process includes two treatment trains allows for continued operation will maintaining equipment. It is not estimated that any operational or maintenance practices will lead to temporary increases in discharge pollutants.

E.3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and secondary or categorical effluent limits.

The proposed treatment process includes a Sequencing Batch Reactor (SBR) which is based upon the activated sludge principals for wastewater treatment. The SBR treatment process is based upon a fill and draw activated sludge system for wastewater treatment. The process utilizes a single reactor (tank) for the fill and draw process with complete mixing during the batch reaction step with subsequent steps of aeration and clarification. All SBR systems have five steps in common (1) fill, (2) react (aeration), (3) settle (sedimentation/clarification), (4) draw (decant), and (5) idle. The advantage of SBR's is that each of these 5 steps can occur in the same tank. For continuous influent flow applications, at least two SBR tanks must be provided so that one tank receives flow while the other completes its treatment cycle. Additional process modifications can be made to enhance nutrient removal. Also, several manufacturers provide a modified version that allows continuous flow into a single batch reactor. Each of these variations are slight modifications to the original SBR process.

In addition to the biological treatment process, the proposed system will include tertiary filtration and UV disinfection. These complete treatment process will ensure that the effluent requirements are met and exceeded.

E.4 – See Attached Antidegradation Review Form

E.5. – See Attached Antidegradation Review Form

E.6. – See Attached Antidegradation Review Form

PART F – See Attached Antidegradation Review Form

PART G – See Attached Antidegradation Review Form

ANTIDEGRADATION REVIEW FORM UTAH DIVISION OF WATER QUALITY

Instructions

The objective of antidegradation rules and policies is to protect existing high quality waters and set forth a process for determining where and how much degradation is allowable for socially and/or economically important reasons. In accordance with Utah Administrative Code (UAC R317-2-3), an antidegradation review (ADR) is a permit requirement for any project that will increase the level of pollutants in waters of the state. The rule outlines requirements for both Level I and Level II ADRs, as well as public comment procedures. This review form is intended to assist the applicant and Division of Water Quality (DWQ) staff in complying with the rule but is not a substitute for the complete rule in R317-2-3.5. Additional details can be found in the *Utah Antidegradation Implementation Guidance* and relevant sections of the guidance are cited in this review form.

ADRs should be among the first steps of an application for a UPDES permit because the review helps establish treatment expectations. The level of effort and amount of information required for the ADR depends on the nature of the project and the characteristics of the receiving water. To avoid unnecessary delays in permit issuance, the Division of Water Quality (DWQ) recommends that the process be initiated at least one year prior to the date a final approved permit is required.

DWQ will determine if the project will impair beneficial uses (Level I ADR) using information provided by the applicant and whether a Level II ADR is required. The applicant is responsible for conducting the Level II ADR. For the permit to be approved, the Level II ADR must document that all feasible measures have been undertaken to minimize pollution for socially, environmentally or economically beneficial projects resulting in an increase in pollution to waters of the state.

For permits requiring a Level II ADR, this antidegradation form must be completed and approved by DWQ before any UPDES permit can be issued. Typically, the ADR form is completed in an iterative manner in consultation with DWQ. The applicant should first complete the statement of social, environmental and economic importance (SEEI) in Part C and determine the parameters of concern (POC) in Part D. Once the POCs are agreed upon by DWQ, the alternatives analysis and selection of preferred alternative in Part E can be conducted based on minimizing degradation resulting from discharge of the POCs. Once the applicant and DWQ agree upon the preferred alternative, the review is considered complete, and the form must be signed, dated, and submitted to DWQ.

For additional clarification on the antidegradation review process and procedures, please contact Nicholas von Stackelberg (801-536-4374) or Jeff Ostermiller (801-536-4370).

REVISED: 6/14/2012

FILE COPY

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. **UTL-025763**

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 ALEXANDAR CREEK,

to dispose of biosolids,

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

This permit shall become effective on November 1, 2013

This permit expires at midnight on October 31, 2018.

Signed this 22 day of October, 2013



Walter L. Baker, P.E.
Director

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PART I
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DISCHARGE

I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge.

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°28.83N and longitude 111.26°51.90"W

B. Narrative Standard.

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

C. Specific Limitations and Self-Monitoring Requirements.

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

Parameter	Effluent Limitations			
	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	0.039	NA	NA	NA
BOD ₅ , mg/L	25	35	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E. coli, No./100mL	126	158	NA	NA
Total Phosphorus, mg/L	1.0	NA	NA	NA
Total Ammonia, as N, mg/L	1.0	NA	NA	NA
Dissolved Oxygen, mg/L	NA	NA	5.0	NA
Oil & Grease, mg/L	NA	NA	NA	10
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

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Self-Monitoring and Reporting Requirements <i>a/</i>			
Parameter	Frequency	Sample Type	Units
Total Flow <i>b/ c/</i>	Continuous	Recorder	MGD
BOD ₅ , Influent Effluent <i>d/</i>	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
TSS, Influent Effluent <i>d/</i>	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
E. coli	Monthly	Grab	mg/L
Total Phosphorus <i>e/</i>	Weekly	Grab	mg/L
Total Ammonia as Nitrogen	Monthly	Grab	mg/L
Dissolved Oxygen	Monthly	Grab	mg/L
WET, Acute Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease <i>f/</i>	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
Total Nitrogen	Monthly	Grab	SU
Certification that approved phosphorus abatement program has been implemented.	Within 30 days of the effective date of this permit.	NA	NA
Annual certification that phosphorus offset has been maintained.	By March 31st of the calendar year.	NA	NA

- 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/* The permittee may request a reduction to monthly monitoring after 12 consecutive months of monitoring this parameter have been completed with no violations of the effluent limit. The Director may approve, partially approve, or deny the request based on results and other available information. If approval is given, the modification will take place without a public notice.
- f/* Sample only if sheen is visible.

2. 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 31st 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 on the effective date of this permit, the permittee shall conduct quarterly acute static replacement

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toxicity tests on a composite sample of the final effluent. The sample shall be collected at outfall 001.

The monitoring frequency for acute tests shall be quarterly unless a sample is found to be acutely toxic during a routine test. If that occurs, the monitoring frequency shall become weekly (See *Part I.C.4.b., Accelerated Testing*). 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 replacement static 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, 5th Edition, (EPA 821/R/02/012), October 2002*, as per 40 CFR 136.3(a) TABLE 1A-LIST OF APPROVED BIOLOGICAL METHODS. The permittee shall conduct and alternate the 48-hour static replacement toxicity test using Ceriodaphnia dubia and the acute 96-hour static replacement toxicity test using Pimephales promelas (fathead minnow).

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 mortality occurs, the test shall be repeated until satisfactory control mortality is achieved.

If the permit contains a total residual chlorine limitation greater than 0.20 mg/L, the permittee may request from the Director approval to de-chlorinate the sample, or collect the sample prior to chlorination.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting calendar quarter e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28). All test results shall be reported along with the DMR submitted for that reporting period. The format for the report shall be consistent with the latest revision of the *Region VIII Guidance for Acute Whole Effluent Reporting* and shall include all chemical and physical data as specified.

If the results for a minimum of ten consecutive tests indicate no acute toxicity, the permittee may request a reduction in testing frequency and/or reduction to one species. The Director may approve, partially approve, or deny the request based on results and other available information. If approval is given, the modification will take place without a public notice.

The current Utah whole effluent toxicity (WET) policy is in the process of being updated and revised to assure its consistency with the Environmental Protection Agency's national and regional WET policy. When said revised WET policy has been finalized and officially adopted, this permit will be reopened and modified to incorporate satisfactory

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follow-up WET language (pattern of toxicity, PTI and/or TIE/TRE, etc.) without a public notice, as warranted and appropriate.

- b. *Accelerated Testing.* When acute toxicity is indicated during routine biomonitoring as specified in this permit, the permittee shall notify the Director in writing within five (5) days after becoming aware of the test result. The permittee shall perform an accelerated schedule of biomonitoring to establish whether a pattern of toxicity exists. Accelerated testing will begin within seven (7) days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under *Part I.C.4.c. Pattern of Toxicity*. If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.
- c. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five (5) biomonitoring tests pursuant to the accelerated testing requirements using 100 percent effluent on the single species found to be more sensitive, once every week for up to five (5) consecutive weeks.

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

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

- (1) If two (2) consecutive test results (not including the scheduled quarterly or monthly test, which triggered the search for a pattern of toxicity) indicate acute toxicity, this constitutes an established pattern of toxicity.
 - (2) If consecutive tests continue to yield differing results each time, the permittee will be required to conduct up to a maximum of five (5) acute tests (not including the scheduled quarterly or monthly test which triggered the search for a pattern of toxicity). If three out of five test results indicate acute toxicity, this will constitute an established pattern of toxicity.
- d. *Preliminary Toxicity Investigation.*
- (1) When a pattern of toxicity is detected the permittee will notify the Director in writing within five (5) days and begin an evaluation of the possible causes of the toxicity. The permittee will have fifteen (15) working days from demonstration of the pattern to complete a Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to, additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes

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

- (2) If the PTI identifies a probable toxicant and/or a probable source of toxicity the permittee shall submit, as part of its final results written notification of that effect to the Director. Within thirty (30) days of completing the PTI the permittee shall submit for approval a control program to control effluent toxicity and shall proceed to implement such a plan within seven (7) days following approval. The control program, as submitted to or revised by the Director, may be incorporated into the permit.
 - (3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (See *Part I.C.4.e., Toxicity Reduction Evaluation*).
 - (4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director as part of the reporting requirements of *Part I.C.4.a.*
- e. *Toxicity Reduction Evaluation (TRE)*. If toxicity is detected during the life of this permit and it is determined by the Director that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. The purpose of the TRE will be to establish the cause of toxicity, locate the source(s) of the toxicity, and control or provide treatment for the toxicity.

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

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

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

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

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

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

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

D. Reporting of Wastewater Monitoring Results.

Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on December 28, 2013. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part V.G)*, and submitted to the Division of Water Quality at the following address:

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

II. 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 Blue Skies Ranch and Resort (BSRR). At this time it is believed that the BSRR will produce about 8-15 dry metric tons a year and they will dispose of it in the Summit County Three Mile Canyon landfill. Treatment options, methods and disposal practices are specifically designated below.

1. Aerobic Treatment. (Class A Biosolids, Compost). The solids are stabilized with the filtration method, and de-watered with a bagging system, then composted to meet Class A standards.
2. Aerobic Treatment. (Class B Biosolids, Compost). The solids are stabilized with the activated sludge method, and de-watered with a bagging system, then composted to meet Class B standards.
3. Air Drying. Under *40 CFR 503.32 (b)(3)* BSRR must meet one of the processes to significantly reduce pathogens. BSRR intends to meet a process to significantly reduce pathogens by using the windrow method of composting. To achieve this, the temperature must be above 40° C (104° F) or higher, and remain at 40° C or higher for a minimum of five days. For four hours, during the five days, the temperature needs to exceed 55° C (131° F).
4. Description of Biosolids Disposal Method.
 - a. *Class A biosolids (compost)* may be sold or given away to the public for home lawn and garden use.
 - b. *Class B Biosolids (compost)* may be land applied for agriculture use.
 - c. *Class B biosolids* may be land applied for agriculture use.
 - d. *Biosolids* that do not meet at least Class B requirements are land filled.
5. Changes in Treatment Systems and Disposal Practices. Should the permittee change their disposal methods or the biosolids generation and handling processes of the plant, the permittee must notify the Director at least 180 days in advance. This includes, but is not limited to, the addition or removal of any biosolids treatment units (i.e., stabilization, drying methods, land application practices, etc.) and/or any other change, which would require a major modification of the permit.

For any biosolids that are land filled, the requirements of *Utah Administrative Code BSRR15-301-5* and *Section 2.12* of the latest version of the *EPA Region VIII Biosolids Management Handbook* must be followed.

B. Specific Limitations and Monitoring Requirements.

All biosolids generated by this facility that are to be sold or given away to the public, or biosolids that are to be land applied shall meet the requirements of *Part II.B.1, 2, 3 and 4* listed below.

1. Metals Limitations:

Class A

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

Table 3, Exceptional Quality Biosolids Limitations, mg/Kg	
Total Arsenic	41.0
Total Cadmium	39.0
Total Copper	1500.0
Total Lead	300.0
Total Mercury	17.0
Total Molybdenum	NA
Total Nickel	420.0
Total Selenium	100.0
Total Zinc	2800.0

Metals Limitations:

Class B

The maximum heavy metals listed in Table 1 and the heavy metals loading rates in Table 2; or

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

If these metals limitations are not met, the biosolids cannot be land applied and must be land filled.

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

2. Pathogen Limitations:

Class A

If the biosolids are to be sold or given away in a bag or a similar container for application to home lawns and gardens, the biosolids shall meet the requirements below. If the biosolids do not meet these requirements, the biosolids cannot be sold or given away.

Class A Pathogen Requirements a/

Fecal Coliform or <i>Salmonella</i> Limits	AND	The process to further reduce pathogens will be met by: Composting using the windrow method, the temperature of the biosolids is maintained at, at least 55° C (131°F) or higher for at least 15 days or longer, with a minimum of 5 turnings of the windrows during the 15 days. <u>a/</u> OR Composting using the static aerated pile method, the temperature of the biosolids is maintained at, at least 55° C (131°F) or higher for at least 3 days or longer. <u>a/</u>
<i>Salmonella</i> shall be <3 MPN/4g of total solids OR Fecal Coliform shall be < 1000 MPN/g of total solids <u>b/</u>		

Pathogen Limitations:

Class B

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

Class B Pathogen Requirements a/

Fecal Coliform shall be less than 2,000,000 most probable number per gram of total solids. <u>b/</u>	OR	The process to significantly reduce pathogens will be accomplished through anaerobic digesters that have a minimum retention time of at least 15 days and a temperature of a least 95°F (35°C) OR Using the windrow method of composting, the temperature of the windrows is maintained at 40° C (104°F) or higher for 15 days or longer, with a minimum of 5 turnings of the windrows during the 15 days <u>a/</u> , <u>c/</u> .
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3. Vector Attraction Reduction Requirements a/

If the biosolids are to be land applied, the biosolids shall meet one of the vector attraction reduction requirements described below. If the biosolids do not meet at least one of these requirements, the biosolids cannot be land applied.		
Aerobic treatment of the biosolids for at least 14 days at over 40°C (104°F) with an average temperature of at least 45°C (113°F). <u>c/</u> OR	All Class B biosolids land applied shall be incorporated into the soil within 6 hours after land application. <u>c/</u> OR	Solids are equal to or greater than 90% total solids when primary solids are present prior to land application. <u>c/</u>

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

b/ Based on a minimum of seven (7) samples of biosolids collected over a two week period (or as approved by the Director in your sampling and analysis plan).

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

4. Self-Monitoring Requirements

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

Minimum Frequency of Monitoring in Dry Metric Tons (DMT)	
Amount of Biosolids Disposed Per Year	Monitoring Frequency
> 0 to < 290 DMT	Once per year

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- b. Deep *soil* monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites.
- c. Soil *monitoring* for phosphorus (reported as P) is required for all land application sites (does not apply to biosolids compost that is sold or given away, or sites where biosolids are applied less than once every five years). Six samples of a one-foot depth each are to be collected for each 320-acre area and composited. Samples are required to be taken once every five years for non-irrigated sites or annually for irrigated sites.
- d. *Sample* collection, preservation and analysis shall be performed in a manner consistent with the requirements of *40 CFR Part 503* and/or other criteria specified in this permit. 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 one-gram dry weight shall be used. The methods are also described in the latest version of the *Region VIII Biosolids Management Handbook*. Monitoring for soil nitrate and phosphorus is to be performed using the methods in *Methods of Soil Analysis, Part 2. Chemical and Microbiological Properties*. Page, A. L., Ed., American Society of Agronomy and Soil Science Society of America, Madison, WI, 1982.
- e. The *Director* may request additional monitoring for specific pollutants derived from biosolids if the data shows a potential for concern.
- f. After *two* 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 land-applied biosolids for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

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

C. Site Restrictions

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

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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. Other food crops and feed crops shall not be harvested from the land for 30 days after application.
4. Animals shall not be allowed to graze on the land for 30 days after application.
5. 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.
6. Public access to land with a high potential for public exposure shall be restricted for one year after application.

D. Management Practices for Application of Biosolids to Land

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. Biosolids shall not be applied to sites where the available phosphorous content of the soil exceeds the following a:
 - a. 100 ppm as determined by the sodium bicarbonate extraction method

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- b. 50 ppm as determined by the AB-DPTA extraction method
 - c. 170 ppm by the Bray P1 extraction method
- a/ These phosphorous limits do not apply to the application sites if the BSRR has bermed the sites to prevent runoff from entering surface waters of the State. The berm shall be constructed to hold a 24 hour, 100 year storm event. The available phosphorous limits apply to all other sites the BSRR may apply biosolids to unless the BSRR provides a separate justification for each site for a change or elimination of the limits. The BSRR is still required to monitor each site for phosphorous as stated in Part II. B. 4. c. of this permit.
7. 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.
- The permittee may request the limits of Part II, D., 6 and 7 be modified if different limits would be justified based on local conditions. The limits are required to be developed in cooperation with the local agricultural extension office or university.
8. Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in *Part II.B.4.b* is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil-monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.
9. The specified cover crop shall be planted during the next available planting season. If this does not occur, the 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.
10. When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.
11. 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.

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- 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 annual metals loading rates in Table 4 (Part II.B.1.) to be exceeded.
12. Biosolids subject to the cumulative pollutant loading rates in Table 2 (Part II.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 has been reached.
13. 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.
14. 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.
15. The permittee shall inspect the application of the biosolids to active sites to prevent malfunctions and deterioration, operator errors and discharges, which may cause or lead to the release of biosolids to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.
- E. Special Conditions on Biosolids Storage
Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.
- F. Representative Sampling.
Biosolids samples used to measure compliance with Part I 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.
- G. Reporting of Monitoring Results.
Biosolids. The permittee shall provide the results of all monitoring performed in accordance with *Part II.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

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and certified in accordance with the *Signatory Requirements (see Part VII.G)*, and submitted to the Utah Division of Water Quality and the EPA at the following addresses:

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

Copy to: Regional Biosolids Program
Wastewater Unit (8P-W-WW)
U.S. EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

H. Additional Record Keeping Requirements Specific to Biosolids.

1. **The permittee is required** to keep the following information for at least 5 years:
 - a. *Concentration* of each heavy metal in Table 3 (*Part II.B.1*).
 - b. *A description* of how the pathogen reduction requirements in *Part II.B.2* were met.
 - c. *A description* of how the vector attraction reduction requirements in *Part II.B.3* were met.
 - d. *A description* of how the management practices in *Part II.C* were met (if necessary).
 - e. *The following* certification statement:

"I certify under the penalty of law, that the heavy metals requirements in *Part II.B.1*, the pathogen requirements in *Part II.B.2*, the vector attraction requirements in *Part II.B.3*, the management practices in *Part II.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."
2. 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.

III. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling

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

B. Monitoring Procedures

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

C. Penalties for Tampering

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

D. Compliance Schedules.

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

E. Additional Monitoring by the Permittee.

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

F. Records Contents.

Records of monitoring information shall include:

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

G. Retention of Records

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

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 538-6146, or 24-hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
 - a. Any *noncompliance* which may endanger health or the environment;
 - b. Any *unanticipated* bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.*);
 - c. Any *upset* which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions.*);
 - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. *Violation* of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A *description* of the noncompliance and its cause;
 - b. The *period* of noncompliance, including exact dates and times;
 - c. 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) 538-6146.
5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results.*

I. Other Noncompliance Reporting

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

J. Inspection and Entry

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

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

IV. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply.

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

B. Penalties for Violations of Permit Conditions.

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

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

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

D. Duty to Mitigate.

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

E. Proper Operation and Maintenance.

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

F. Removed Substances.

Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.
2. Prohibition of Bypass.
 - a. Bypass is *prohibited*, and the Director may take enforcement action against a permittee for bypass, unless:
 - b. Bypass was *unavoidable* to prevent loss of human life, personal injury, or severe property damage;
 - (1) 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
 - c. The permittee *submitted* notices as required under *section V.G.3.*
 - (1) 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 V.G.2.a (1), (2) and (3).*
3. Notice.
 - a. *Anticipated bypass.* Except as provided above in *section V.G.2* and below in *section V.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;

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- (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 V.G.3.a.(1) through (6)* to the extent practicable.
- c. *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H, Twenty Four Hour Reporting*. The permittee shall also immediately notify the Director of the Department of Natural 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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I. 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).

V. 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.
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.

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2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2*. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

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

- H. Penalties for Falsification of Reports.
The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.
- I. Availability of Reports.
Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

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- J. Oil and Hazardous Substance Liability.
Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.
- K. Property Rights.
The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- L. Severability.
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- M. Transfers.
This permit may be automatically transferred to a new permittee if:
1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
 2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- N. State or Federal Laws.
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.
- O. Water Quality - Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

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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 or federal regulations.
- Q. Toxicity Limitation - Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity (biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;
1. Toxicity is detected, as per *Part I.C.4.a* of this permit, during the duration of this permit.
 2. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits, and the Director agrees that numerical controls are the most appropriate course of action.
 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 toxicant(s) that are controlled numerically.
 4. The TRE reveals other unique conditions or characteristics, which in the opinion of the permit issuing authority justify the incorporation of unanticipated special conditions in the permit.
- R. Storm Water-Reopener Provision.
At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

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VI. 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, 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. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
3. "Act," means the *Utah Water Quality Act*.
4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration.
5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
6. "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:
7. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;
 - a. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

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

B. Biosolids.

- 1. "Biosolids," means any material or material derived from sewage solids that have been biologically treated.
- 2. "Dry Weight-Basis," means 100 percent solids (i.e. zero percent moisture).
- 3. "Land Application" is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so that the biosolids can either

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condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the biosolids).

4. "Pathogen," means an organism that is capable of producing an infection or disease in a susceptible host.
5. "Pollutant" for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.
6. "Runoff" is rainwater, leachate, or other liquid that drains over any part of a land surface and runs off the land surface.
7. "Similar Container" is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.
8. "Total Solids" are the materials in the biosolids that remain as a residue if the biosolids are dried at 103° or 105° Celsius.
9. "Treatment Works" are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste or liquid manure.
10. "Vector Attraction" is the characteristic of biosolids that attracts rodents, flies mosquito's or other organisms capable of transporting infectious agents.
11. "Animals" for the purpose of this permit are domestic livestock.
12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.
13. "Agronomic Rate is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

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14. “Annual Pollutant Loading Rate” is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
15. “Application Site or Land Application Site” means all contiguous areas of a users’ property intended for sludge application.
16. “Cumulative Pollutant Loading Rate” is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.
17. “Grit and Screenings” are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to *40 CFR 258*.
18. “High Potential for Public Contact Site” is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
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.