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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. **UT0020966**

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

KAMAS CITY CORPORATION WASTEWATER TREAMENT FACILITY

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named

UNNAMED IRRIGATION DITCH, WHICH FLOWS TO BEAVER CREEK, WHICH IS A TRIBUTARY OF THE WEBER RIVER,

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

This permit shall become effective on March 1, 2022.

This permit expires at midnight on February 28, 2027.

Signed this 14th day of February, 2022.

Erica Brown Gaddis, PhD
Director

DWQ-2021-030152

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

Outfall Number	Location of Discharge Outfall
001	Located at latitude 40º 39'06" and longitude 111º17'06". The effluent discharges to the west approximately one quarter mile through an underground 10" pipe to an un-named irrigation ditch, which is a tributary of Beaver Creek. From this location, Beaver Creek flows approximately 3 miles to the Weber River.

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

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001 as defined in *Part VIII*.

2.

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

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly	Daily Minimum	Daily Maximum
Total Flow	1.0	--	--	--	--
BOD_5, mg/L	25	30	--	--	--
BOD_5 Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L *j	--	--	--	5.5/8.0	--
Total Ammonia (as N), mg/L *h					
Summer (Jul-Sep)	3.2	--	--	--	6.5
Fall (Oct-Dec)	12.8	--	--	--	20.6
Winter (Jan-Mar)	5.4	--	--	--	12.5
Spring (Apr-Jun)	3.2	--	--	--	6.5
E. coli, No./100mL	126	157	--	--	--
Total Phosphorus, lbs *f					
Summer (Apr-Sep)	--	--	609	--	--
Annually	--	--	1,218	--	--
Total Nitrogen, lbs *g					
Summer (Apr-Sep)	--	--	6,096	--	--
Annually	--	--	12,192	--	--
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent *d	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent *d	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
E. coli	Monthly	Grab	No./100mL
pH	Weekly	Grab	SU
Total Ammonia (as N), *h	Monthly	Composite	mg/L
DO *j	Monthly	Grab	mg/L
Oil & Grease *e	When Sheen Observed/Monthly	Grab	mg/L
Orthophosphate (as P)			
Effluent	Monthly	Composite	mg/L
Total Phosphorus, *f			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Nitrogen, *g			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Phosphorus, *f	Summer (Ap-Sep)	Calculated	lbs
	Annually	Calculated	lbs

Total Nitrogen, *g	Summer (Ap-Sep) Annually	Calculated Calculated	lbs lbs
Total Kjeldahl Nitrogen TKN (as N) Influent Effluent	 Monthly Monthly	 Composite Composite	 mg/L mg/L
Nitrate, NO3	Monthly	Composite	mg/L
Nitrite, NO2	Monthly	Composite	mg/L
Metals, Influent *i Effluent	Semi-Annually Semi-Annually	Composite Composite	mg/L mg/L
Organic Toxics	1st, 3rd, and 5th Year	Grab	mg/L

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

*b Flow measurements of influent/effluent volume shall be made in such a manner that 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 Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

*f Total phosphorus is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a*. of the permit.

*g Total nitrogen is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a*. of the permit.

*h Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a.* of the permit. Final ammonia limits will go into effect on January 1, 2026.

*i RP Analysis was run on metal data from the previous permit cycle. No metals limits are required at this time.

*j Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.b.* of the permit. Final limit of 8.0 mg/L will become effective January 1, 2024. Interim limit will be 5.5 mg/L.

3. Compliance Schedules

a. Total Phosphorus, Total Nitrogen, and Ammonia

Comply by Date	**Action**
March 31, 2022	Kamas City shall submit for DWQ approval the Wastewater Master Plan describing in detail the community needs, alternatives considered, pretreatment requirements (if necessary), and plans for financing and implementing the recommended any necessary improvements to the Kamas wastewater treatment.
February 1, 2023	Kamas City shall submit detailed construction plans and specifications to DWQ to obtain a construction permit.
August 1, 2023	Kamas City shall commence construction of approved wastewater treatment upgrades as outlined in the DWQ Construction permit.

October 1, 2025	Kamas City shall complete construction of wastewater treatment upgrades and begin startup and optimization of upgraded wastewater treatment process.
January 1, 2026	Kamas City shall achieve compliance with all effluent limits prescribed in UPDES Permit No. UT0020907. At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. Ammonia limits can be found in Effluent Limitations Table.

b. Dissolved Oxygen

Date	Minimum DO Limit
Permit Issue – December 31, 2022	5.5 mg/L
January 1, 2024	8.0 mg/L

c. Any violation of a Compliance Schedule is a violation of the UPDES Permit and must be reported as any other violation. Information on Action items must be submitted in accordance with *Part V.D.*

D. Reporting of Monitoring Results.

1. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on March 28, 2022. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G*), and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Definitions. For this section the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.

2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

   a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

   b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

3. *Local Limit* is defined as a limit designed to prevent pass through or interference. And is developed in accordance with 40 CFR 403.5(c).

4. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

5. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

6. *Pretreatment Requirements* means any substantive or procedural requirement related to Pretreatment, other than a National Pretreatment Standard, imposed on an Industrial User.

7. *Pretreatment Standard* means any regulation containing pollutant discharge limits promulgated by the EPA in accordance with section 307 (b) and (c) of the Act, which applies to Industrial Users. This term includes prohibitive discharge limits established pursuant to §40 CFR 403.5.

8. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:

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

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

c. Is subject to Categorical Pretreatment Standards, or

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

9. *User or Industrial User (IU)* means a source of Indirect Discharge

B. Pretreatment Monitoring and Reporting Requirements.

1. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop an approved pretreatment program at this time. However, in order to determine if development of an approved pretreatment program is warranted, the permittee shall conduct an **industrial waste survey (IWS)**, as described in *Part II.C.1*, and submit it to the Division of Water Quality before March 31, 2022. Complete the IWS utilizing the documents found in Attachment 1 of the Fact Sheet for the UPDES Permit.

2. Monitoring will be required of the permittee for the pretreatment requirements at this time. If changes occur monitoring may be required for parameters not currently listed in the permit or current monitoring requirements may be required to be increased to determine the impact of an industrial user or to investigate sources of pollutant loading. This could include but is not limited to sampling of the influent and effluent of the wastewater treatment plant and within the collection system.

3. Influent and Effluent Monitoring and Reporting Requirements. The permittee shall sample and analyze both the influent and effluent, for the parameters listed in the Monitoring for Pretreatment Program Table.

Monitoring for Pretreatment Program Table				
Parameter	MRL a*	Sample Type	Frequency	Units
Total Arsenic	0.088	Composite	2 X Yearly	mg/L
Total Cadmium	0.0019			
Total Chromium	0.016			
Total Copper	0.025			
Total Lead	0.012			
Total Molybdenum	NA			
Total Nickel	0.15			
Total Selenium	0.0078			
Total Silver	0.015			
Total Zinc	0.27			
Cyanide (Free)	0.0092	Composite/Grab		
Total Mercury	0.000021			
TTOs, b*	NA		Yearly	

a* The minimum reporting limit (MRL) of the test method used for analysis must be below this limit, if a test method is not available the permittee must submit documentation to the Director regarding the method that will be used.

b* In addition, the permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D Table II (Organic Toxic Pollutants). The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present.

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

5. If local limits are developed or will be developed by the permittee it is recommended that the most sensitive method be used for analysis. This will determine if the parameter is present and provide removal efficiencies based on actual data rather than literature values. If a parameter load is greater than the allowable head works load, for any pollutant listed in Part II.B.3. or a pollutant of concern listed in the local limit development document or determined by the Director, the permittee must report this information to the Pretreatment Coordinator for the Division of Water Quality (DWQ). If the loading exceeds the allowable headworks load, increase sampling must occur based on the requirements given by the Pretreatment Coordinator for DWQ. If needed sampling may need to occur to find the source(s) of the increase. This may include sampling of the collection system. Notification regarding this information can be provided via email.

C. Industrial Wastes.

1. The "Industrial Waste Survey" or “IWS” as required by *Part II.B.1*. consists of;

   a. Identifying each industrial user (IU) and determining if the IU is a signification industrial user (SIU),

   b. Determination of the qualitative and quantitative characteristics of each discharge, and

   c. Appropriate production data.

2. The IWS must be maintained and updated with IU information as necessary, to ensure that all IUs are properly permitted or controlled at all times. Updates must be submitted to the Director sixty (60) days following a change to the IWS.

3. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource* Conservation and Recovery Act (RCRA).

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

D. General and Specific Prohibitions. The permittee must ensure that no IU violates any of the general or specific standards. If an IU is found violating a general or specific standard the permittee must notify the Director within 24 hours of the event. The general prohibitions and the specific prohibitions apply to each User introducing pollutants into a POTW whether or not the User is subject to other Pretreatment Standards or any national, State or local Pretreatment Requirements.

1. General prohibition Standards. A User may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference.

2. Specific Prohibited Standards. Developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any User (*40 CFR 403.5*):

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste-streams with a closed cup flashpoint of less than 140˚F (60˚C);

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

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

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

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

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

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

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

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

   j. Any prohibited standard which the permittee has adopted in an ordinance or rule to control IU discharge to the POTW.

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

E. Significant Industrial Users Discharging to the POTW. The permittee shall provide adequate notice to the Director and the Division of Water Quality Industrial Pretreatment Coordinator of;

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

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

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

   a. The quality and quantity of effluent to be introduced into such treatment works; and,

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

4. Any IU that must comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA).

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

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

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

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

   4. Require the permittee to develop an approved pretreatment program.

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

H. Local Limits. If local limits are developed per R317-8-8.5(4)(b) to protect the POTW from pass-through or interference, then the POTW must submit limits to DWQ for review and public notice, as required by R317-8-8.5(4)(c). Local limits should be developed in accordance with the latest revision of the EPA Local Limits Development Guidance and per R317-8-8.5.

III. BIOSOLIDS REQUIREMENTS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met.

IV. STORM WATER REQUIREMENTS.

A. Industrial Storm Water Permit. Based on the type of activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility is not already covered, the permittee has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

B. Construction Storm Water Permit. Any construction at the facility that disturbs an acre or more of land, including less than an acre if it is part of a common plan of development or sale, is required to obtain coverage under the UPDES Construction General Storm Water Permit (UTRC00000). Permit coverage must be obtained prior to land disturbance. If the site qualifies, a Low Erosivity Waiver (LEW) Certification may be submitted instead of permit coverage.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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

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

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

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

F. Records Contents. Records of monitoring information shall include:

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

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

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

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

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H*, *Upset Conditions*.);

   d. Violation of a daily discharge limitation for any of the pollutants listed in the permit; or,

   e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

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

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

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

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

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

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

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

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

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

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

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

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

VI. COMPLIANCE RESPONSIBILITIES

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

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

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

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

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

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

G. Bypass of Treatment Facilities.

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

2. Prohibition of Bypass.

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

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

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

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

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

3. Notice.

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

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

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

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

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

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

(6) Any additional information requested by the Director.

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

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

H. Upset Conditions.

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

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

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

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

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

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

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

VII. GENERAL REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph *2* above.

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

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

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

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

3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.

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

Q. Toxicity Limitation - Reopener Provision.

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

VIII. DEFINITIONS

A. Wastewater.

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

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

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

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC_{50}").

5. "Annual Loading Cap" is the highest allowable phosphorus loading discharged over a calendar year, calculated as the sum of all the monthly loading discharges measured during a calendar year divided by the number of monthly discharges measured during that year.

6. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

7. "Chronic toxicity" occurs when the IC_{25}< 60.8% effluent. The XX% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.

8. "IC_{25}" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

9. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous sample volume, with sample collection rate proportional to flow rate.

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

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

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

13. "Director," means Director of the Division of Water Quality.

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

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

16. "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.

17. "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.

FACT SHEET AND STATEMENT OF BASIS
KAMAS CITY CORPORATION
WASTEWATER TREAMENT FACILITY
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0020966
MINOR MUNICIPAL

FACILITY CONTACTS

Person Name:	Matt McCormick
Position:	Mayor
Phone Number:	(435) 783-4630
Person Name:	Matt Crittenden
Position:	Public Works Director
Phone Number:	(425) 731-0562
Person Name:	Darrell Thomas
Position:	Operator
Phone Number:	(435) 783-6208
Facility Name:	Kamas City Corporation Wastewater Treatment Facility
Mailing and Facility Address:	170 North Main Kamas, UT 84036
Telephone:	(435) 783-4630
Actual Address:	Simpson Road Kamas, UT 84036

DESCRIPTION OF FACILITY

The Kamas City Wastewater Treatment Facility (Kamas) was last upgraded in 1991. At present, the facility consists of an 18" inlet pipe, grinder and a screen, influent flow meter, followed by 5 waste stabilization ponds (first 3 are aerated), ultraviolet light disinfection, effluent flow meter and a 10 KW Koler generator. The facility has seven 20 HP Aero-O2 aerators manufactured by Aeratrion Industries International, Inc. The five cells cover 3.4, 6.7, 3.4, 3.2 and 2.1 acres respectively. Total surface area of the lagoon is approximately 18.8 acres. The total area of the facility is contained within a chain link fence and occupies an area of 900 feet by 1300 feet. The wastewater lagoon is located approximately one-quarter (0.25) mile northwest of Kamas, Utah, in Summit County.

The design capacity of the facility is 1.0 MGD and was originally designed for a population equivalent of 1,000. The current population of Kamas is approximately 2,500. The treatment facility was originally designed for an influent organic loading of 420 lbs/day of Biochemical Oxygen Demand (BOD) and 375 lbs/day of Total suspended solids (TSS). Since the facility was built, it has added additional aerators to their system. With this addition, the facility can now treat 1,750 lbs of BOD per day with a population equivalent of approximately 4,000.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

BOD and TSS effluent limitations are lower than they were in the previous permit. Utah Administrative Code (UAC) R317-1-3.2.G. allows for 45 mg/L for a monthly average and 65 mg/L for a weekly average when certain conditions are being met. These conditions are no longer being met, so the BOD and TSS limitations will be based on Utah Secondary Treatment Standards, UAC R317-1-3.2, and the Wasteload Analysis (WLA).

Compliance Schedules

Total Phosphorus, Total Nitrogen, and Ammonia:

Included in the previous permit was a Compliance Schedule for total phosphorus, total nitrogen, and ammonia. Due to unexpected delays outside of Kamas' control, Kamas was not able to meet the terms of the Compliance Schedule in the previous permit. They have requested a modification of this schedule to account for these unexpected delays, which resulted in the revised Compliance Schedule Below.

Comply by Date	Action
March 31, 2022	Kamas City shall submit for approval by the Division of Water Quality (DWQ) the Wastewater Master Plan describing in detail the community needs, alternatives considered, a summary of industrial users within the service area for the pretreatment requirements, and plans for financing and implementing the recommended and necessary improvements to the Kamas wastewater treatment.
February 1, 2023	Kamas City shall submit detailed construction plans and specifications to DWQ to obtain a construction permit.
August 1, 2023	Kamas City shall commence construction of approved wastewater treatment upgrades as outlined in the DWQ Construction permit.
October 1, 2025	Kamas City shall complete construction of wastewater treatment upgrades and begin startup and optimization of upgraded wastewater treatment process.
January 1, 2026	Kamas City shall achieve compliance with all effluent limits prescribed in UPDES Permit No. UT0020907. At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. Ammonia limits can be found in Effluent Limitations Table.

Dissolved Oxygen:

According to 'TABLE 2.14.2' in UAC 317-2-14 the minimum Dissolved Oxygen (DO) for Class 3A streams where early life stages (ELS) are present is 8.0 mg/L. ELS have been determined to be present in the receiving stream, therefor the daily minimum DO parameter for DO is 8.0 mg/L. To allow for needed upgrades, a Compliance Schedule for DO will be included in this permit. The interim limit for DO will be the value for the previous permit.

Date	Minimum DO Limit
Permit Issue – December 31, 2022	5.5 mg/L
January 1, 2024	8.0 mg/L

DISCHARGE

DESCRIPTION OF DISCHARGE

Kamas has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis.

Outfall	Description of Discharge Point
001	Located at latitude 40º 39'06" and longitude 111º17'06". The effluent discharges to the west approximately one quarter mile through an underground 10" pipe to an un-named irrigation ditch, which is a tributary of Beaver Creek. From this location, Beaver Creek flows approximately 3 miles to the Weber River.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to Beaver Creek and to the Weber River, both classified as Class 1C, 2B, 3A and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water

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

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

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

TOTAL MAXIUM DAILY LOAD (TMDL) REQUIREMENTS

Due to impairments to Rockport Reservoir's cold-water fishery beneficial use and its associated TMDL, Kamas City will need to meet limits for total phosphorus (TP) and total nitrogen (TN) as allocated in the 2014 Rockport Reservoir and Echo Reservoir TMDL (adopted into rule by the Water Quality Board 3/26/2014 and approved by EPA 9/16/2014). The TMDL outlines both annual and summer load limits, defining summer as April 1 through September 30 (183 days). At the end of the compliance period the TP load limits will be 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. TN limits will be 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. This equates to 3.3 lbs/day TP and 33 lbs/day TN.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biological 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 oil and grease limits are based on best professional judgment (BPJ). All remaining limits have been set according to the WLA for this discharge, which is attached. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. Except for parameters included in

the Compliance Schedule. the permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

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

A quantitative RP analysis was performed on cyanide, arsenic, chromium, copper, lead, nickel, silver, zinc, molybdenum, selenium, and mercury to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: cyanide. However, due to the number of data points available, a valid statistical analysis could not be performed – see Attachment 4 at the end of this Fact Sheet for more details. As a result, there will be no additional limits or monitoring requirements as a result of RP this permit cycle.

The permit limitations are:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly	Daily Minimum	Daily Maximum
Total Flow	1.0	--	--	--	--
BOD_5, mg/L	25	30	--	--	--
BOD_5 Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L*j	--	--	--	5.5/8.0	--
Total Ammonia (as N), mg/L *h					
Summer (Jul-Sep)	3.2	--	--	--	6.5
Fall (Oct-Dec)	12.8	--	--	--	20.6
Winter (Jan-Mar)	5.4	--	--	--	12.5
Spring (Apr-Jun)	3.2	--	--	--	6.5
E. coli, No./100mL	126	157	--	--	--
Total Phosphorus, lbs *f					
Summer (Ap-Sep)	--	--	609	--	--
Annually	--	--	1,218	--	--
Total Nitrogen, lbs *g					
Summer (Ap-Sep)	--	--	6,096	--	--
Annually	--	--	12,192	--	--
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are different than the previous permit. Total nitrogen and total phosphorus are required to be reported in pounds (lbs) in frequency listed below to allow for comparison to TMDL limits. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective

January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent *d	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS, Influent *d	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
E. coli	Monthly	Grab	No./100mL
pH	Weekly	Grab	SU
Total Ammonia (as N), *h	Monthly	Composite	mg/L
DO *j	Monthly	Grab	mg/L
Oil & Grease *e	When Sheen Observed/Monthly	Grab	mg/L
Orthophosphate (as P)			
Effluent	Monthly	Composite	mg/L
Total Phosphorus, *f			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Nitrogen, *g			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Phosphorus, *f	Summer (Ap-Sep)	Calculated	lbs
	Annually	Calculated	lbs
Total Nitrogen, *g	Summer (Ap-Sep)	Calculated	lbs
	Annually	Calculated	lbs
Total Kjeldahl Nitrogen TKN (as N)			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO3	Monthly	Composite	mg/L
Nitrite, NO2	Monthly	Composite	mg/L
Metals, Influent *i	Semi-Annually	Composite	mg/L
Effluent	Semi-Annually	Composite	mg/L
Organic Toxics	1st, 3rd, and 5th Year	Grab	mg/L

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

*b Flow measurements of influent/effluent volume shall be made in such a manner that 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 Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

*f Total phosphorus is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 277 kg (609 lbs) during the summer and 554 kg (1,218 lbs) annually. Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a*. of the permit.

*g Total nitrogen is limited by the 2014 Rockport Reservoir and Echo Reservoir TMDL to 2,771 kg (6,096 lbs) during summer and 5,542 kg (12,192 lbs) annually. Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a*. of the permit.

*h Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.a.* of the permit. Final ammonia limits will go into effect on January 1, 2026.

*i RP Analysis was run on metal data from the previous permit cycle. No metals limits are required at this time.

*j Final effluent limitations will become effective in accordance with compliance schedule as found in *Part 1.C.3.b.* of the permit. Final limit of 8.0 mg/L will become effective January 1, 2024. Interim limit will be 5.5 mg/L.

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site. Based on the design flow of the facility of 1.0 MGD, the permittee is required to maintain separate permit coverage, or an appropriate exclusion, under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility has not already done so, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP, or exclusion documentation.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at http://stormwater.utah.gov

PRETREATMENT REQUIREMENTS

An Approved Pretreatment Program is not required to be developed by Kamas. This is due to the flow through the plant being less than five (5) MGD. Although there are concerns regarding industrial users due to violations and the possibility that White Knight Fluid Handling, is discharging process wastewater to the Publicly Owned Treatment Works (POTW). White Knight Fluid Handling is an Industrial User that manufactures medical devices.
E-coli violations have occurred that might be due to impacts of the UV system during the springs months. This could be due to turnover that occurs in the wastewater ponds. Additional review of the issues at the treatment system and within the service area must occur to determine if an Industrial User is impacting the POTW.

An industrial waste survey (IWS) is required to be submitted by Kamas to DWQ. The IWS assists with determining if pretreatment assistance is needed. Submission **of** the IWS must occur before March 31, 2022. If an Industrial User begins to discharge or an existing Industrial User changes the process or discharge practices, Kamas must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

If local limits are developed Kamas is required to submit the local limit development information to the Division of Water Quality (DWQ). Local limits must be approved by DWQ before Kamas implements the local limits.

If developed, local limits must be reviewed annually to evaluate the need to revise or develop technically based local limits for pollutants of concern. The evaluation may indicate that the local limits are sufficiently protective, need to be revised, or should be developed. Local limits are implemented to ensure compliance by Industrial Users, with the general and specific prohibitions in 40 CFR Part 403.5(a) and Part 403.5(b).

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

Kamas is a minor municipal facility, which discharges one (1) MGD, and has no industries contributing to the wastewater system. The dilution ratio of the irrigation ditch to discharge is approximately 2 to 1. Based on these considerations, there is no reasonable potential for toxicity in Kamas' discharge (per State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision. This provision allows for modification of the permit, should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

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

Drafted and Reviewed by

Danielle Lenz, Discharge Permit Writer
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Christine Osborne, TMDL/Watershed
Danielle Lenz, Reasonable Potential Analysis
Chris Shope, Wasteload Analysis

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

PUBLIC NOTICE

Began: January 7, 2022
Ended: February 7, 2022

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

The Public Notice of the draft permit was published on the DWQ webpage.

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

ADDENDUM TO FSSOB

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

RESPONSIVENESS SUMMARY

No comments were received during the public comment period.

DWQ-2021-030150

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ATTACHMENT 1

Industrial Waste Survey

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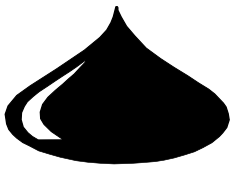
Industrial Pretreatment Wastewater Survey



Do you periodically experience any of the following treatment works problems:

foam, floaties or unusual colors
plugged collection lines caused by grease, sand, flour, etc.
discharging excessive suspended solids, even in the winter
smells unusually bad
waste treatment facility doesn't seem to be treating the waste right

Perhaps the solution to a problem like one of these may lie in investigating the types and amounts of wastewater entering the sewer system from industrial users.

An industrial user (IU) is defined as a non-domestic user discharging to the waste treatment facility which meets any of the following criteria:

1. **has a lot of process wastewater (5% of the flow at the waste treatment facility or more than 25,000 gallons per work day.)**

   Examples: Food processor, dairy, slaughterhouse, industrial laundry.

2. **is subject to Federal Categorical Pretreatment Standards**;

   Examples: metal plating, cleaning or coating of metals, blueing of metals, aluminum extruding, circuit board manufacturing, tanning animal skins, pesticide formulating or packaging, and pharmaceutical manufacturing or packaging,

3. **is a concern to the POTW.**

   Examples: septage hauler, restaurant and food service, car wash, hospital, photo lab, carpet cleaner, commercial laundry.

All users of the water treatment facility are **prohibited** from making the following types of discharges:

1. A discharge which creates a fire or explosion hazard in the collection system.

2. A discharge which creates toxic gases, vapor or fumes in the collection system.

3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.

4. An acidic discharge (low pH) which causes corrosive damage to the collection system.

5. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment facility.

6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

When the solution to a sewer system problem may be found by investigating the types and amounts of wastewater entering the sewer system discharged from IUs, it's appropriate to conduct an Industrial Waste Survey.

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

Make a list of all the commercial and industrial sewer connections.

Sources for the list:

business license, building permits, water and wastewater billing, Chamber of Commerce, newspaper, telephone book, yellow pages.

Split the list into two groups:

domestic wastewater only--no further information needed
everyone else (IUs)

Step 2: Preliminary Inspection

Go visit each IU identified on the "everybody else" list.

Fill out the **Preliminary Inspection Form** during the site visit.

Step 3: Informing the State

Please fax or send a copy of the Preliminary inspection form (both sides) to:

Jennifer Robinson

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

Phone: (801) 536-4383
Fax: (801) 536-4301
E-mail: jenrobinson@utah.gov

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ____ /

Name of Business **Person Contacted** _____
Address _____ **Phone Number** _____

_____

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

_____

Production process is: [ ] Batch [ ] Continuous [ ] Both

Is production subject to seasonal variation? [ ] yes [ ] no
If yes, briefly describe seasonal production cycle.

_____

This facility generates the following types of wastes (check all that apply):

1. [ ] Domestic wastes (Restrooms, employee showers, etc.)
2. [ ] Cooling water, non-contact
3. [ ] Boiler/Tower blowdown
4. [ ] Cooling water, contact
5. [ ] Process
6. [ ] Equipment/Facility washdown
7. [ ] Air Pollution Control Unit
8. [ ] Storm water runoff to sewer
9. [ ] Other describe

Wastes are discharged to (check all that apply):

[ ] Sanitary sewer **[ ] Storm sewer**
[ ] Surface water **[ ] Ground water**
[ ] Waste haulers **[ ] Evaporation**
[ ] Other (describe)
Name of waste hauler(s), if used

_____

Is a grease trap installed? Yes No
Is it operational? Yes No

Does the business discharge a lot of process wastewater?

- **More than 5% of the flow to the waste treatment facility?** **Yes** **No**
- **More than 25,000 gallons per work day?** **Yes** **No**

Does the business do any of the following:

[ ] Adhesives
[ ] Aluminum Forming
[ ] Battery Manufacturing
[ ] Copper Forming
[ ] Electric & Electronic Components
[ ] Explosives Manufacturing
[ ] Foundries
[ ] Inorganic Chemicals Mfg. or Packaging
[ ] Industrial Porcelain Ceramic Manufacturing
[ ] Iron & Steel
[ ] Metal Finishing, Coating or Cleaning
[ ] Mining
[ ] Nonferrous Metals Manufacturing
[ ] Organic Chemicals Manufacturing or Packaging
[ ] Paint & Ink Manufacturing
[ ] Pesticides Formulating or Packaging
[ ] Petroleum Refining
[ ] Pharmaceuticals Manufacturing or Packaging
[ ] Plastics Manufacturing
[ ] Rubber Manufacturing
[ ] Soaps & Detergents Manufacturing
[ ] Steam Electric Generation
[ ] Tanning Animal Skins
[ ] Textile Mills

[ ] Car Wash
[ ] Carpet Cleaner
[ ] Dairy
[ ] Food Processor
[ ] Hospital
[ ] Laundries
[ ] Photo Lab
[ ] Restaurant & Food Service
[ ] Septage Hauler
[ ] Slaughter House

Are any process changes or expansions planned during the next three years? Yes No
If yes, attach a separate sheet to this form describing the nature of planned changes or expansions.

_____
Inspector

_____
Waste Treatment Facility

Please send a copy of the preliminary inspection form (both sides) to:

Jennifer Robinson
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

Phone: **(801) 536-4383**
Fax: **(801) 536-4301**
E-Mail: **jenrobinson@utah.gov**

	Industrial User	Jurisdiction	SIC Codes	Categorical Standard Number	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	Facility Description
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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ATTACHMENT 2

Effluent Monitoring Data

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Effluent Monitoring Data.

	Flow	pH		O & G	*E. coli*	BOD5		TSS	
Month	Max	Min	Max	Max	Chronic	Week Ave	Mon. Ave	Week Ave	Mon. Ave
Sep-18	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oct-18	0.09	7.16	7.56	0	2	5	5	11	5.5
Nov-18	0.06	7.21	8.01	0	0	0	0	15	15
Dec-18	0.1	7.71	8.14	0	0	8	7	4	4
Jan-19	0.1	6.18	8.02	0	91	14	12.5	14	105
Feb-19	0.11	7.66	8.06	0	2400	16	16	15	14
Mar-19	0.1	7.7	7.91	0	1410	19	18	16	14
Apr-19	0.18	7.63	8.22	0	119	19	17	32	28
May-19	0.43	8.12	8.29	0	0	20	19	60	45
Jun-19	0.61	8	8.34	0	3	7	6	38	21
Jul-19	0.24	7.99	8.37	0	1	16	11	24	22.5
Aug-19	0.23	8.35	8.4	0	4	9	8	28	21
Sep-19	0.09	8.52	8.59	0	2	8	8	43	41.5
Oct-19	0.12	8	8.3	0	3	5	5	8	8
Nov-19	0.1	8.11	8.11	0	0	0	0	4	4
Dec-19	0.09	6.9	7.68	0	0	12	12	0	0
Jan-20	0.07	7.31	7.81	0	8	9	9	0	0
Feb-20	0.15	7.71	8.62	0	2400	12	10	13	7
Mar-20	0.17	7.23	7.74	0	1300	18	16	17	14
Apr-20	0.17	7.48	8.14	0	2	40	20	72	36
May-20	0.36	7.19	8.79	0	0	11	8	20	20
Jun-20	0.36	6.99	7.84	0	2	9	19	8	16
Jul-20	0.17	7.31	7.83	0	37	24	12	23	11
Aug-20	0.14	7.25	7.85	0	46	0	0	5	3
Sep-20	0.07	8.67	8.98	0	0	6	6	4	4
Oct-20	0.03	7.51	8.28	0	2	0	0	6	6
Nov-20	0.12	6.87	8.15	0	0	0	0	0	0
Dec-20	0.15	7.21	8.81	0	0	10	10	11	10
Jan-21	0.15	7.68	7.93	0	20	11	10	9	9
Feb-21	0.17	7.54	8.18	0	158	19	16	20	17
Mar-21	0.18	7.22	7.85	0	1050	16	16	20	19
Apr-21	0.16	7.06	8.14	0	0	34	28	40.5	40
May-21	0.2	7.16	7.5	10	0	39	33	50	44.5
Jun-21	0.2	7.33	8.6	0	0	18	9	14	7
Jul-21	0.11	7.49	7.86	0	0	0	0	0	0
Aug-21	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep-21	0.25	7.35	7.68	0	161	0	0	0	0

ATTACHMENT 3

Wasteload Analysis

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

Date: **November 11, 2021**

Prepared by: **Christopher L. Shope**
Standards and Technical Services

Facility: **Kamas City Wastewater Treatment Facility**
Kamas, Utah
UPDES Permit No. UT-0020966

Receiving water: **Beaver Creek**

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

Discharge

Outfall 001 - The design flow for the treatment lagoons is 1.00 MGD. The annual average flow is 0.26 MGD. The maximum daily flow is 0.38 MGD.

Receiving Water
The receiving water for Outfall 001 is an un-named irrigation ditch flowing into Beaver Creek.

Per UAC R317-2-13.1(b), the designated beneficial use of the assessment unit in the immediate downstream area is: *Weber River and tributaries, from Stoddard diversion to headwaters, except as listed below: 1C,2B,3A,4.*

- *Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water*

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

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

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

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow averaged over seven consecutive days with a ten year return frequency (7Q10). The DWQ 4928530-Beaver Creek Above Weber-Provo Canal stream gauge located approximately 0.5 miles upgradient was used to evaluate ambient or background flow conditions. Because there was not a long-term daily flow record to calculate the 7Q10 critical flow, the 20th percentile flow conditions are used to estimate the seasonal critical flow (Table 1). The average annual critical low flow condition is 2.02 ft3/s.

Table 1: Seasonal Critical Flow at DWQ 4928530-Beaver Creek Above Weber-Provo Canal.

Season	Critical flow (ft3/s)
Summer	1.20
Fall	1.30
Winter	2.00
Spring	10.0
Annual Overall	**2.02**

Ambient, upstream, background receiving water quality was characterized using data from DWQ 4928530-Beaver Creek Above Weber-Provo Canal. The average seasonal value was calculated for each constituent with available monitoring and sampling data in the upstream receiving water. Effluent discharge parameter concentrations were determined from the ECHO databased between 2001 and 2021. Additional parameter concentrations were determined from DWQ 4928500-Kamas Lagoons.

Total Maximum Daily Load (TMDL)

According to the Utah's 2021 303(d) Water Quality Assessment Report "Combined 2018/2020 Integrated Report Version 1.0", the receiving water for the discharge, Beaver Creek and tributaries from confluence with Weber River to Kamas (Beaver Creek-1: UT16020101-029_00) had insufficient data. However, the reach upstream of the discharge, Beaver Creek and tributaries from Kamas to headwaters (Beaver Creek-2: UT16020101-030_00) was not supporting for aluminum.

Rockport Reservoir is listed as impaired due to violations of the cold-water fishery (3A) maximum temperature, pH, and dissolved oxygen (DO) standards. Rockport Reservoir was first listed 303(d) list in 2008. A TMDL was completed for Rockport Reservoir on September 16th, 2014 (UDWQ 2014). The TMDL identified the following load allocations applied to Kamas Lagoons for total nitrogen and total phosphorous:

Table 2: TMDL Total Nitrogen and Phosphorous Load Allocations

Load	Total Nitrogen (kg)	Total Phosphorous (kg)
Annual	5,542	554
Summer Season (Apr. 1st – Sept. 30th)	2,771	277

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions is 2500 ft, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. Individual mixing zones may be further limited or disallowed in consideration of the following factors in the area affected by the discharge: Zone of passage for migrating fish or other species (including access to tributaries).

The EPA Region 8 stream mixing zone analysis (STREAMIX1, 1994), was used to determine the plume width and mixed flow rate for both acute and chronic conditions. A rectangular channel with a width of 5 feet, channel slope of 0.0139 feet/feet, and roughness coefficient of 0.049 was assumed for channel geometry. Mannings equation was used to solve for the average flow depth (1.0 feet) and velocity for the critical flow.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were suspended solids (TSS), biochemical oxygen demand (BOD), dissolved oxygen (DO), pH, ammonia, E. coli, and aluminum, as determined in consultation with the UPDES Permit Writer and the Watershed Protection Specialist.

WET Limits

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

Table 3: WET Limits for IC_{25}

Outfall	Percent Effluent
Outfall 001	60.8%

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ, 2021). The mass balance analysis is summarized in the Wasteload Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. However, temperature, pH, and ammonia concentration of the effluent were not provided. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al., 2002). The analysis is summarized in the Wasteload Addendum.

Table 4: Water Quality Based Effluent Limits Summary

Effluent Constituent	Acute			Chronic		
	Standard	Limit	Averaging Period	Standard	Limit	Averaging Period
Flow (MGD)		1.00	1 day		1.00	30 days
Ammonia (mg/L)						
Summer (Jul-Sep)	2.9	6.5		1.1	3.2	
Fall (Oct-Dec)	1.3	20.6	1 hour	1.2	12.8	30 days
Winter (Jan-Mar)	3.0	12.5		1.7	5.4	
Spring (Apr-Jun)	2.5	6.5		1.7	3.2	
BOD_5 (mg/L)	N/A	30.0	7 days	N/A	30.0	30 days

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

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

A Level II Antidegradation Review (ADR) is not required for this facility because the facility has previously been permitted for discharge and no new construction activities are planned.

Documents:

WLA Document*: Kamas_City_WLA_2021.docx*
Wasteload Analysis and Addendums: *Kamas_City_WLA_2021.xlsm*

References:

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

Utah Division of Water Quality. 2014, *TMDL for Selenium in the Colorado River Watershed*

Utah Division of Water Quality. 2021. *Combined 2018/2020 Integrated Report Version 1.0*

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0*.

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA] = not included in the WLA
Addendum: Statement of Basis

11-Nov-21
4:00 PM

Facilities: **Kamas City Wastewater Treatment Facility** **UPDES No: UT-0020966**
Discharging to: **Unnamed Ditch -> Beaver Creek**

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 interms 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

Unnamed Ditch -> Beaver Creek:	1C,2B,3A,4
Antidegradation Review:	Level I review completed. Level II review is not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	6.5 mg/l (30 Day Average) 9.5 mg/l (7Day Average) 8.0 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration		Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aluminum	87.00	ug/l**	0.871 lbs/day	750.00	ug/l	7.512 lbs/day
Arsenic	150.00	ug/l	1.502 lbs/day	340.00	ug/l	3.405 lbs/day
Cadmium	1.27	ug/l	0.013 lbs/day	3.41	ug/l	0.034 lbs/day
Chromium III	140.49	ug/l	1.407 lbs/day	2939.42	ug/l	29.439 lbs/day
ChromiumVI	11.00	ug/l	0.110 lbs/day	16.00	ug/l	0.160 lbs/day
Copper	15.53	ug/l	0.156 lbs/day	24.56	ug/l	0.246 lbs/day
Iron				1000.00	ug/l	10.015 lbs/day
Lead	6.80	ug/l	0.068 lbs/day	174.52	ug/l	1.748 lbs/day
Mercury	0.0120	ug/l	0.000 lbs/day	2.40	ug/l	0.024 lbs/day
Nickel	86.42	ug/l	0.866 lbs/day	777.30	ug/l	7.785 lbs/day
Selenium	4.60	ug/l	0.046 lbs/day	20.00	ug/l	0.200 lbs/day
Silver	N/A	ug/l	N/A lbs/day	10.56	ug/l	0.106 lbs/day
Zinc	198.66	ug/l	1.990 lbs/day	198.66	ug/l	1.990 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 181.62 mg/l as CaCO3

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	**Load***	**Concentration**	**Load***
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	3.76 lbs/day
Cadmium			10.0 ug/l	0.05 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	6.01 tons/day

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

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			50.0 ug/l	0.740 lbs/day
Barium			1000.0 ug/l	14.806 lbs/day
Cadmium			10.0 ug/l	0.148 lbs/day
Chromium			50.0 ug/l	0.740 lbs/day
Lead			50.0 ug/l	0.740 lbs/day
Mercury			2.0 ug/l	0.030 lbs/day
Selenium			10.0 ug/l	0.148 lbs/day
Silver			50.0 ug/l	0.740 lbs/day
Fluoride (3)			1.4 ug/l	0.021 lbs/day
to			2.4 ug/l	0.036 lbs/day
Nitrates as N			10.0 ug/l	0.148 lbs/day

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

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Metals				
Antimony	14.0 ug/l	0.21 lbs/day		
Arsenic	50.0 ug/l	0.74 lbs/day	4300.00 ug/l	63.67 lbs/day
Asbestos	7.00E+06 ug/l	1.04E+05 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	19.25 lbs/day	2.2E+05 ug/l	3257.39 lbs/day
Lead	700.0 ug/l	10.36 lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	68.11 lbs/day
Selenium	0.1 ug/l	0.00 lbs/day		
Silver	610.0 ug/l	9.03 lbs/day		
Thallium			6.30 ug/l	0.09 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.

(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 cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	1.2	14.2	8.3	0.03	1.00	7.24	0.00	150.4
Fall	1.3	5.4	8.2	0.04	1.63	---	0.00	187.2
Winter	2.0	4.0	8.2	0.04	1.50	---	0.00	187.2
Spring	10.0	8.9	7.9	0.04	0.69	---	0.00	187.2

	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	34.84	1.20	0.42	1.99	2.65*	2.78	0.1	0.72

	Hg	Ni	Se	Ag	Zn	Boron
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	0.0000	2.50	0.53	0.51	11.37	10.0

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	1.00000	17.2	355.17	1.48075
Fall	1.00000	5.7		
Winter	1.00000	3.6		
Spring	1.00000	13.7		

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

IX. Effluent Limitations

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

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

Effluent Limitation for Flow based upon Water Quality Standards

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

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

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1 MGD. If the discharger is allowed to have a flow greater than 1 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation 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 segements if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	60.8% Effluent	[Chronic]

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	30.0 mg/l as BOD5	250.1 lbs/day
Fall	30.0 mg/l as BOD5	250.1 lbs/day
Winter	30.0 mg/l as BOD5	250.1 lbs/day
Spring	30.0 mg/l as BOD5	250.1 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	5.50
Fall	5.50
Winter	5.50
Spring	5.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

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

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	3.2	mg/l as N	26.3	lbs/day
	1 Hour Avg. - Acute	6.5	mg/l as N	54.4	lbs/day
Fall	4 Day Avg. - Chronic	12.8	mg/l as N	106.3	lbs/day
	1 Hour Avg. - Acute	20.6	mg/l as N	171.5	lbs/day
Winter	4 Day Avg. - Chronic	5.4	mg/l as N	44.7	lbs/day
	1 Hour Avg. - Acute	12.5	mg/l as N	104.5	lbs/day
Spring	4 Day Avg. - Chronic	3.2	mg/l as N	27.1	lbs/day
	1 Hour Avg. - Acute	6.5	mg/l as N	53.9	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

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	0.017	mg/l	0.15	lbs/day
	1 Hour Avg. - Acute	0.031	mg/l	0.26	lbs/day
Fall	4 Day Avg. - Chronic	0.018	mg/l	0.15	lbs/day
	1 Hour Avg. - Acute	0.032	mg/l	0.26	lbs/day
Winter	4 Day Avg. - Chronic	0.022	mg/l	0.18	lbs/day
	1 Hour Avg. - Acute	0.038	mg/l	0.32	lbs/day
Spring	4 Day Avg. - Chronic	0.065	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.116	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	2014.1	mg/l	8.40	tons/day
Fall	Maximum, Acute	1985.6	mg/l	8.28	tons/day
Winter	Maximum, Acute	1977.6	mg/l	8.24	tons/day
Spring	4 Day Avg. - Chronic	2051.7	mg/l	8.55	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 181.62 mg/l):

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aluminum	N/A		N/A		1,027.4	ug/l	10.3	lbs/day
Arsenic	265.42	ug/l	1.4	lbs/day	471.4	ug/l	4.7	lbs/day
Cadmium	1.94	ug/l	0.0	lbs/day	4.6	ug/l	0.0	lbs/day
Chromium III	247.93	ug/l	1.3	lbs/day	4,078.7	ug/l	40.8	lbs/day
Chromium VI	16.45	ug/l	0.1	lbs/day	20.7	ug/l	0.2	lbs/day
Copper	25.43	ug/l	0.1	lbs/day	33.0	ug/l	0.3	lbs/day
Iron	N/A		N/A		1,387.8	ug/l	13.9	lbs/day
Lead	11.52	ug/l	0.1	lbs/day	241.9	ug/l	2.4	lbs/day
Mercury	0.02	ug/l	0.0	lbs/day	3.3	ug/l	0.0	lbs/day
Nickel	151.52	ug/l	0.8	lbs/day	1,077.8	ug/l	10.8	lbs/day
Selenium	7.76	ug/l	0.0	lbs/day	27.6	ug/l	0.3	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	14.5	ug/l	0.1	lbs/day
Zinc	343.94	ug/l	1.9	lbs/day	271.3	ug/l	2.7	lbs/day
Cyanide (free)	9.23	ug/l	0.0	lbs/day	30.5	ug/l	0.3	lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	17.5	Deg. C.	63.5	Deg. F
Fall	8.8	Deg. C.	47.8	Deg. F
Winter	8.1	Deg. C.	46.6	Deg. F
Spring	21.7	Deg. C.	71.1	Deg. F

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	50.1	lbs/day
Nitrates as N	4.0	mg/l	40.1	lbs/day
Total Phosphorus as P	0.05	mg/l	0.5	lbs/day
Total Suspended Solids	90.0	mg/l	901.4	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	
Metals				
Antimony	24.86	ug/l	0.21	lbs/day
Arsenic	87.85	ug/l	0.73	lbs/day
Asbestos	1.24E+07	ug/l	1.04E+05	lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				

Copper	2308.40	ug/l	19.25 lbs/day
Cyanide	1242.99	ug/l	10.36 lbs/day
Lead	0.00		0.00
Mercury	0.25	ug/l	0.00 lbs/day
Nickel	1083.17	ug/l	9.03 lbs/day
Selenium	0.00		0.00
Silver	0.00		0.00
Thallium	3.02	ug/l	0.03 lbs/day
Zinc			

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

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		1027.4				1027.4	N/A
Antimony			24.9	7635.5		24.9	
Arsenic	177.6	471.4	87.9		0.0	87.9	265.4
Asbestos			1.24E+07			1.24E+07	
Barium					1775.7	1775.7	
Beryllium						0.0	
Cadmium	17.4	4.6			0.0	4.6	1.9
Chromium (III)		4078.7			0.0	4078.7	247.9
Chromium (VI)	176.0	20.7			0.0	20.66	16.45
Copper	353.0	33.0	2308.4			33.0	25.4
Cyanide		30.5	390652.9			30.5	9.2
Iron		1387.8				1387.8	
Lead	177.0	241.9			0.0	177.0	11.5
Mercury		3.33	0.2	0.27	0.0	0.25	0.021
Nickel		1077.8	1083.2	8168.2		1077.8	151.5
Selenium	88.4	27.6			0.0	27.6	7.8
Silver		14.5			0.0	14.5	
Thallium			3.0	11.2		3.0	
Zinc		271.3				271.3	343.9
Boron	1331.8					1331.8	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	1027.4	N/A	
Antimony	24.86		
Arsenic	87.9	265.4	Acute Controls
Asbestos	1.24E+07		
Barium			
Beryllium			
Cadmium	4.6	1.9	
Chromium (III)	4078.7	248	
Chromium (VI)	20.7	16.4	
Copper	33.0	25.4	
Cyanide	30.5	9.2	
Iron	1387.8		
Lead	177.0	11.5	
Mercury	0.249	0.021	
Nickel	1077.8	152	
Selenium	27.6	7.8	
Silver	14.5	N/A	
Thallium	3.0		

Zinc	271.3	343.9	Acute Controls
Boron	1331.76		

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 not required.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.
This doesn't apply to facilities that do not discharge to the Colorado River Basin.

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.

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.

Utah Division of Water Quality
801-538-6052
File Name: Kamas_City_WLA_2021.xlsm

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day

2.000	0.000	1.534	158.034	0.000	137.827	0.250	0.160
Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	3.069	0.000	0.000	32.000	22.865
BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day						
1.000	0.695						
K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Antidegredation Review

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II antidegradation Review is not required.

ATTACHMENT 4

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

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

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is needed. A copy of the initial screening is included in the "Effluent Metals and RP Screening Results" table in this attachment. The initial screening check for metals showed that the full model needed to be run on cyanide, arsenic, chromium, copper, lead, nickel, silver, zinc, molybdenum, selenium, and mercury.

On pg. 5 of the RP Guide Number of Data Points is discussed. It states, "Generally, a minimum data set of 10 valid data points within the last five years is recommended to perform a valid statistical analysis," but we only have six data points for each metal. Technical Support Document for Water Quality Based Toxics Control EPA/505/2-90-001 (USEPA 1991) recommends using a default coefficient of variation (CV) of .6 for data sets less than 10 values, which has been done in the following models.

The RP model was run on arsenic, chromium, copper, lead, nickel, silver, molybdenum, selenium, mercury, and zinc using the most recent data back through 2018. This resulted in 6 data points for each constitute. The results of the models are that there is not acute or chronic RP at 95% confidence or 99% confidence (Outcome C from Reasonable Potential Guide).

The RP model was run on cyanide using the most recent data back through 2018. This resulted in 6 data points for each constitute. The result of the model is that there is acute RP at 95% confidence or 99% confidence. However, due to the number of data points, the model produced uncertain results. Data points indicate low concern for exceeding limits presented in the WLA. During next permit cycle added data will allow model to run at efficiency. At this time, there will be no limit or addition monitoring (Outcome C from Reasonable Potential Guide).

A Summary of the RP Model inputs and outputs are included in the tables below.

Outfall 001 RP Input/Output Summary Tables

RP Procedure Output	Outfall Number: 001 Data Units: mg/L
Parameter	Cyanide
Distribution	Default
Reporting Limit	0.0010
Significant Figures	2
Maximum Reported Effluent Conc.	0.009

[1] See Reasonable Potential Analysis Guidance for definitions of terms

Coefficient of Variation (CV)	0.60	
Acute Criterion	0.0305	
Chronic Criterion	0.0092	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0340	0.0670
RP Multiplier	3.8	7.4
RP for Acute?	YES	YES
RP for Chronic?	YES	YES
RP for Human Health?	NO	NO
Outcome	C*	

* Due to the number of data points, the model produced uncertain results. Data points indicate low concern for exceeding limits presented in the WLA. During next permit cycle added data will allow model to run at efficiency. At this time, there will be no limit or addition monitoring.

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Arsenic	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0011	
Coefficient of Variation (CV)	0.60	
Acute Criterion	0.0879	
Chronic Criterion	0.2654	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0024	0.0042
RP Multiplier	2.1	3.8
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L
Parameter	Chromium
Distribution	Default
Reporting Limit	0.0010
Significant Figures	2
Maximum Reported Effluent Conc.	0.0009
Coefficient of Variation (CV)	0.60
Acute Criterion	0.0164

Chronic Criterion	0.0207	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0027	0.0051
RP Multiplier	3.0	5.6
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Copper	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0044	
Coefficient of Variation (CV)	0.6	
Acute Criterion	0.033	
Chronic Criterion	0.0254	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0094	0.0170
RP Multiplier	2.1	3.8
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Lead	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.001	
Coefficient of Variation (CV)	0.60	
Acute Criterion	0.177	
Chronic Criterion	0.0115	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0038	0.0074
RP Multiplier	3.8	7.4
RP for Acute?	NO	NO

RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Nickel	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0042	
Coefficient of Variation (CV)	0.60	
Acute Criterion	10.778	
Chronic Criterion	0.152	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0090	0.0160
RP Multiplier	2.1	3.8
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Mercury	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0	
Coefficient of Variation (CV)	NA	
Acute Criterion	0.0002	
Chronic Criterion	2.1e-5	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0000	0.0000
RP Multiplier	NA	NA
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L

Parameter	Molybdenum	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0009	
Coefficient of Variation (CV)	0.60	
Acute Criterion	NA	
Chronic Criterion	NA	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0019	0.0034
RP Multiplier	2.1	3.8
RP for Acute?	NA	NA
RP for Chronic?	NA	NA
RP for Human Health?	NA	NA
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Selenium	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0006	
Coefficient of Variation (CV)	0.28	
Acute Criterion	0.0276	
Chronic Criterion	0.0078	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0023	0.0044
RP Multiplier	3.8	7.4
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L
Parameter	Silver
Distribution	Default
Reporting Limit	0.0010
Significant Figures	2
Maximum Reported Effluent Conc.	0.0
Coefficient of Variation (CV)	NA

Acute Criterion	0.0145	
Chronic Criterion	NA	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0000	0.0000
RP Multiplier	NA	NA
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Zinc	
Distribution	Default	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.03	
Coefficient of Variation (CV)	0.60	
Acute Criterion	0.2713	
Chronic Criterion	0.3439	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0660	0.1100
RP Multiplier	2.2	6.1
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

Metals Monitoring and RP Check

Effluent Data											
Metal	Cyanide	Arsenic	Chromium	Copper	Lead	Nickel	Silver	Zinc	Molybdenum	Selenium	Mercury
ARP Val	0.0305	0.0879	0.0164	0.033	0.177	10.778	0.0145	0.2713	NA	0.0276	0.0002
CRP Val	0.0092	0.2654	0.0207	0.0254	0.0115	0.152	NA	0.3439	NA	0.0078	2.1e-5
Metals, mg/L	0.009	0.0009	0	0.0015	0	0.0042	0	0	0.0005	0.0006	0
	0	0.0008	0.0007	0.0031	0.0007	0.0029	0	0.02	0.0006	0.0005	0
	0	0.0009	0	0.002	0	0.0013	0	0	0.0005	0	0
	0	0.0007	0.0009	0.0044	0.001	0.0015	0	0.02	0.0007	0	0
	0	0.0011	0	0.0025	0	0.0015	0	0.03	0.0009	0	0
	0.0005	0.0008	0.0005	0.0016	0	0.0013	0	0.01	0.0006	0	0
Max	0.009	0.0011	0.0009	0.0044	0.001	0.0042	0	0.03	0.0009	0.0006	0
A RP?	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
C RP?	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

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