

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

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Major Municipal Permit No. **UT0020109**
Biosolids Permit No. **UTL020109**
Storm Water Permit No. **UTR020109**

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

SPANISH FORK WASTEWATER TREATMENT PLANT

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

DRY CREEK,

to dispose of biosolids,

and to discharge storm water,

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

This permit shall become effective on July 1, 2016

This permit expires at midnight on June 30, 2021.

Signed this 1 day of June, 2016.

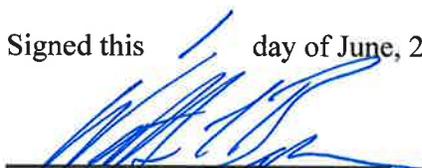

Walter L. Baker, P.E.
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

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

<u>Outfall Number</u>	<u>Location of Discharge Outfall</u>
001	Located at latitude 40°08'43" and longitude 111°35'54". The discharge is through a gravity flow concrete pipe leading from the chlorine contact basin to Dry Creek which flows to the Provo Bay area of Utah Lake.

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 chronic toxicity in Outfall 001 as defined in *Part VIII*, and determined by test procedures described in *Part I. C.4.a & b* of this permit.
2.
 - a. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	5	--	--	--	10
BOD ₅ , mg/L	25	35	--	--	--
BOD ₅ Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	4.0	--
Ammonia, mg/L					
Summer (Jul-Sep)	7 *j	--	--	--	18
Fall (Oct-Dec)	9 *j	--	--	--	18
Winter (Jan-Mar)	9 *j	--	--	--	18
Spring (Apr-Jun)	9 *j	--	--	--	18
TRC, mg/L	--	--	--	--	2.0
E-Coli, No./100mL	126	158	--	--	--
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9

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Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD ₅ , Influent *d	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
TSS, Influent *d	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
E. Coli	2 x Weekly	Grab	No./100mL
pH	2 x Weekly	Grab	SU
Ammonia	2 x Weekly	Grab	mg/L
DO	2 x Weekly	Grab	mg/L
WET – Biomonitoring *h			
Ceriodaphnia – Chronic	Quarterly	Composite	Pass/Fail
Fathead Minnows - Chronic	Variable Species	Composite	Pass/Fail
TRC, mg/L, *e,	Daily	Grab	mg/L
Oil & Grease *f	Monthly	Grab	mg/L
Total Ammonia, (as N) *k	2 x Weekly	Composite	mg/L
Orthophosphate, (as P) *k			
Effluent	Monthly	Composite	mg/L
Phosphorus, Total *k			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, (TKN as N) *k			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃ *k	Monthly	Composite	mg/L
Nitrite, NO ₂ *k	Monthly	Composite	mg/L
Metals, Influent *i	Quarterly	Composite	mg/L
Effluent	Quarterly	Composite	mg/L
Organic Toxics *i	Yearly	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 Analytical results less than 0.06 mg/l will not be considered out of compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:

- 1) analytical values less than 0.02 mg/L shall be considered zero; and
- 2) analytical values less than 0.06 mg/L and equal to or greater than 0.02 mg/L will be recorded as measured.

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- *f Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- *h Spanish Fork will monitor for Chronic WET with an $IC_{25} > 82\%$, but will not have a limit associated with it in the permit. Spanish Fork will also have the option to choose which species it wishes to test each quarter. The species is not tested in a quarter it is reported as NA.
- *i See table in *Part II.H.1* (Influent and Effluent Monitoring and Reporting Requirements) of the Permit for target minimum detection limits (MDL) requirements. The Organic Toxics report is due the same day as the Pretreatment Report (Part II,C, of the permit).
- *j The monthly average effluent limit for this parameter will become effective on December 31, 2023.
- *k These reflect monitoring changes required with the adoption of *UCA R317-1-3.3*, Technology-based Phosphorus Effluent Limits rule.

1. Compliance Schedules

a. Local Limits

- (1) January 1, 2017 Per the requirements of the Pretreatment Audit on October 16, 2012, Spanish Fork will have 6 months following the issuance of the UPDES permit to submit draft local limits. The draft local limits must include technical based local limits with the calculations and summary of how the local limits were derived.

b. Spanish Fork Optimization and Ammonia Compliance

- (1) By July 1, 2017: Spanish Fork shall submit a detailed optimization schedule and plan for facility upgrades necessary to comply with the Chronic Ammonia limit in *Part 1,C,2* of the permit.
- (2) Annually July 1, 2018 – July 1, 2022: Submit progress report to DWQ outlining the status of optimization and construction, including timeframes to obtain a construction permit and construction schedule. This report shall be due by July 1st of each year.
- (3) July 1, 2023: Spanish Fork shall complete optimization and construction of wastewater treatment upgrades necessary to comply with the Chronic Ammonia limits in *Part 1.C.2* of the permit.
- (4) December 31, 2023: Spanish Fork shall achieve compliance with the Chronic Ammonia limits in *Part 1,C,2* of the permit.

2. Chronic Whole Effluent Toxicity (WET) Testing.

- a. *Whole Effluent Testing – Chronic Toxicity.* Starting on July 1, 2016, the permittee shall conduct chronic short-term toxicity tests on a composite sample of the final effluent. The sample shall be collected at outfall 001.

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The monitoring frequency shall be quarterly. Samples shall be collected on a two-day progression starting on a Monday¹. If chronic toxicity is detected, the test shall be repeated in less than four weeks from the date the initial sample was taken. The need for any additional samples, and/or a Toxicity Reduction Evaluation (TRE), see Part I.C.4.b , shall be determined by the Director. If the second test shows no chronic toxicity, routine monitoring shall be resumed.

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, 4th Edition, (EPA- 821-R-02-013), October 2002 as per 40 CFR 136.3(a) TABLE 1A-LIST OF APPROVED BIOLOGICAL METHODS. Testing shall vary species with test species consisting of Ceriodaphnia dubia and Pimephales promelas (fathead minnow). A CO₂ atmosphere may be used (in conjunction with an unmodified test) in order to account for artificial pH drift.

Chronic toxicity occurs when the IC₂₅ , using a five dilution test plus the control, is less than or equal to an effluent concentration of 82%. If any of the acceptable control performance criteria are not met, the test shall be considered invalid. IC₂₅ is the inhibition 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.

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

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

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

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

¹ Composite sample volumes are collected and sent off to the lab on Monday, Wednesday and Friday

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

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

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

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

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

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

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

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

B. 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 NetDMR², 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 August 28, 2016. 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

² Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

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Part VII.G), and submitted by NetDMR, or to the Division of Water Quality at the following address:

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

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II. INDUSTRIAL PRETREATMENT PROGRAM

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

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

1. Carry out inspection, surveillance, and monitoring procedures, which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the pretreatment standards. At a minimum, all significant industrial users shall be inspected and sampled by the permittee at least once per year;
2. Control through permit, order, or similar means, the contribution to the POTW by each industrial user to ensure compliance with applicable pretreatment standards and requirements;
3. Require development, as necessary, of compliance schedules by each industrial user for the installation of control technologies to meet applicable pretreatment standards;
4. Maintain and update industrial user information as necessary, to ensure that all IUs are properly permitted and/or controlled at all times;
5. Enforce all applicable pretreatment standards and requirements and obtain appropriate remedies for noncompliance by any industrial user;
6. Annually publish a list of industrial users that were determined to be in significant noncompliance during the previous year. The notice must be published before March 28 of the following year;
7. Maintain an adequate revenue structure and staffing level for continued implementation of the Pretreatment Program.
8. Evaluate all significant industrial users at least once every two years to determine if they need to develop a slug prevention plan. If a slug prevention plan is required, the permittee shall insure that the plan contains at least the minimum elements required in *40 CFR 403.8(f)(2)(v)*;
9. Notify all significant industrial users of their obligation to comply with applicable requirements under *Subtitles C and D* of the *Resource Conservation and Recovery Act (RCRA)*; and
10. Develop, implement, and maintain an enforcement response plan as required by *40 CFR 403.8(f)(5)* which shall, at a minimum,
 - a. Describe how the POTW will investigate instances of noncompliance;
 - b. Describe the types of escalating enforcement responses the POTW will take in response to all anticipated type of industrial user violations; and

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- c. Describe the time periods within which such responses will be taken and identify the POTW staff position(s) responsible for pursuing these actions.
11. Establish and enforce specific local limits as necessary to implement the provisions of the *40 CFR Parts 403.5(a) and (b)*, and as required by *40 CFR Part 403.5(c)*.
- B. Program Updates. The permittee is required to modify its pretreatment program, as necessary, to reflect changes in the regulations of *40 CFR 403*. Such modifications shall be completed within the time frame set forth by the applicable regulations. Modification of the approved pretreatment program must be done in accordance with the requirements of *40 CFR 403.18*. Modifications of the approved program which result in less stringent industrial user requirements shall not be effective until after approval has been granted by the Director.
- C. Annual Report. The permittee shall provide the Division of Water Quality and EPA with an annual report briefly describing the permittee's pretreatment program activities over the previous calendar year. Reports shall be submitted no later than March 28 of each year. These annual reports shall, at a minimum, include:
1. An updated listing of the permittee's industrial users.
 2. A descriptive summary of the compliance activities including numbers of any major enforcement actions, i.e., administrative orders, penalties, civil actions, etc.
 3. An assessment of the compliance status of the permittee's industrial users and the effectiveness of the permittee's Pretreatment Program in meeting its needs and objectives.
 4. A summary of all sampling data taken of the influent and effluent for those pollutants listed in *Part II.H*.
 5. A description of all substantive changes made to the permittee's pretreatment program referenced in *Section B* of this section. Substantive changes include, but are not limited to, any change in any ordinance, major modification in the program's administrative structure or operating agreement(s), a significant reduction in monitoring, or a change in the method of funding the program.
 6. Other information as may be determined necessary by the Director.
- D. General and Specific Prohibitions. Pretreatment standards (*40 CFR 403.5*) specifically prohibit the introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:
1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140°F (60°C);
 2. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;
 3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

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4. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;
 5. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104°F (40°C);
 6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 7. Pollutants, which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;
 8. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or
 9. Any pollutant that causes pass through or interference at the POTW.
 10. Any specific pollutant which exceeds any local limitation established by the POTW in accordance with the requirement of *40 CFR 403.5(c)* and *40 CFR 403.5(d)*.
- E. Categorical Standards. In addition to the general and specific limitations expressed in *Part A and D* of this section, applicable National Categorical Pretreatment Standards must be met by all industrial users of the POTW. These standards are published in the federal regulations at *40 CFR 405 et. seq.*
- F. Enforcement Notice. *UCA 19-5-104* provides that the State may issue a notice to the POTW stating that a determination has been made that appropriate enforcement action must be taken against an industrial user for noncompliance with any pretreatment requirements within 30 days. The issuance of such notice shall not be construed to limit the authority of the Director.
- G. Formal Action. The Director retains the right to take legal action against any industrial user and/or POTW for those cases where a permit violation has occurred because of the failure of an industrial user to meet an applicable pretreatment standard.
- H. Self-Monitoring and Reporting Requirements.
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1. Influent and Effluent Monitoring and Reporting Requirements. The permittee shall sample and analyze both the influent and effluent quarterly, for the following parameters.

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Monitoring for Pretreatment Program				
Parameter	MDL a*	Sample Type	Frequency	Units
Total Arsenic	0.175	Composite	Quarterly	mg/L
Total Cadmium	0.0008			
Total Chromium	0.273			
Total Copper	0.031			
Total Cyanide	0.025			
Total Lead	0.018			
Total Mercury	0.000014	Composite/Grab	Quarterly	mg/L
Total Molybdenum	NA	Composite		
Total Nickel	0.171			
Total Selenium	0.0054			
Total Silver	0.033			
Total Zinc	0.39			
TTOs, b*	NA	Composite/Grab	Annually	

- a* The minimum detection limit (MDL) of the test method used for analysis must be below this limit, if a test method is not available the permittee must submit documentation to the Director regarding the method that will be used.
- 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) yearly. The pesticides fraction of Appendix D, Table II is suspended unless pesticides are expected to be present.

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

- In accordance with the requirements of 40 CFR Part 403.5(c), the permittee shall determine if there is a need to develop or revise its local limits in order to implement the general and specific prohibitions of 40 CFR Part 403.5 (a) and Part 403.5 (b). A technical evaluation of the need to develop or revise local limits shall be submitted to the Division within **12 months** of the effective date of this permit. This evaluation should be conducted in accordance with the latest revision of the *Utah Model industrial Pretreatment Program, Section 4, Local Limits*. If a technical evaluation, which may be based on the *Utah Model Industrial Pretreatment Program, Section 4, Local Limits*, reveals that development or revision of local limits is necessary, the permittee shall submit the proposed local limits revision to the Division of Water Quality for approval, and after approval implement the new local limits, within **12 months** of the Division's determination that a revision is necessary.

III. BIOSOLIDS REQUIREMENTS

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

1. Treatment.

a. Biosolids produced at the permittee are stabilized in the anaerobic digesters for at least 15 days at a temperature of at least 35° C (95° F). The biosolids are removed from the drying beds and formed into small windrows 3-4 feet high, and 5-6 feet wide, stored on a concrete pad and turned several times during the summer and will be tested for pathogens to meet Class A Standards.

2. Description of Biosolids Disposal Method.

a. Class A biosolids may be sold or given away to the public for lawn and garden use or land application.

b. Class B biosolids may be land applied for agriculture use or at reclamation sites at agronomic rates.

c. Biosolids may be disposed of in a landfill or transferred to another facility for further treatment.

3. Changes in Treatment Systems and Disposal Practices.

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

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

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

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

1. Metals Limitations. All biosolids sold or given away in a bag or similar container for application to lawns and home gardens must meet the metals limitations as described below. If these metals limitations are not met, the biosolids must be landfilled. Any violation of these limitations shall be reported in accordance with the requirements of *Part III.F.1.* of the permit.

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

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

3 CPLR -- Cumulative Pollutant Loading Rate
4 APLR – Annual Pollutant Loading Rate

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

c.

Pathogen Control Class	
Class A	Class B
B Salmonella species –less than three (3) MPN ⁵ per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids)	Fecal Coliforms –less than 2,000,000 colony forming units (CFU) per gram total solids
Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

3. Vector Attraction Reduction Requirements.

- a. The permittee will meet vector attraction reduction through use of one of the methods listed in *40 CFR 503.33*. Spanish Fork is meeting the requirements through the following methods.
 - (1) Under *40 CFR 503.33(b)(1)*, the solids need to be treated through anaerobic digestion for at least 15 days at a temperature of a least 35° C (95° F) with a 38% reduction of volatile solids”
 - (2) Spanish Fork transfers solids to another facility (Southern Utah Solid Waste District) where they are stabilized through composting to Class A, and distributed to the public and cities.

The permittee is meeting vector attraction reduction through a 38% reduction of the volatile solids through anaerobic digestion

⁵ MPN –Most Probable Number

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

4. Self-Monitoring Requirements.

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

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500 ⁶	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

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

C. Management Practices of Biosolids.

1. Biosolids Distribution Information

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

2. Biosolids Application Site Storage

⁶ Spanish Fork produced 290 Dry Metric Tons in 2014. Accordingly, they will sample at least 4 times per year.

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

3. Land Application Practices

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

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- (c) Deep soil monitoring for nitrate-nitrogen is required for all land application sites (does not apply to sites where biosolids are applied less than once every five years). A minimum of six samples for each 320 (or less) acre area is to be collected. These samples are to be collected down to either a 5 foot depth, or the confining layer, whichever is shallower (sample at 1 foot, 2 foot, 3 foot, 4 foot and 5 foot intervals). Each of these one-foot interval samples shall be analyzed for nitrate-nitrogen. In addition to the one-foot interval samples, a composite sample of the 5 foot intervals shall be taken, and analyzed for nitrate-nitrogen as well. Samples are required to be taken once every five years for non-irrigated sites that receive more than 18 inches of precipitation annually or for irrigated sites
- (7) Biosolids shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in *Part III.C.(6),(c)*. is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the Director and the EPA within 90 days of the effective date of this permit. The plan is subject to approval by the Director.
- (8) The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring may be increased under the discretion of the Director.
- (9) When weather and or soil conditions prevent adherence to the biosolids application procedure, biosolids shall not be applied on the site.
- (10) For biosolids that are sold or given away, an information sheet shall be provided to the person who receives the biosolids. The label or information sheet shall contain:
- (a) The name and address of the person who prepared the biosolids for sale or give away for application to the land.
 - (b) A statement that prohibits the application of the biosolids to the land except in accordance with the instructions on the label or information sheet.
 - (c) The annual whole biosolids application rate for the biosolids that do not cause the metals loading rates in Tables 1, 2, and 3 (*Part III.B.1.*) to be exceeded.
- (11) Biosolids subject to the cumulative pollutant loading rates in Table 2 (*Part III.B.1.*) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.
- (12) If the treatment plant applies the biosolids, it shall provide the owner or leaseholder of the land on which the biosolids are applied notice and necessary information to comply with the requirements in this permit.

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

D. Special Conditions on Biosolids Storage. Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two (2) years. Written permission to store biosolids for more than two years must be obtained from the Director. Storage of biosolids for more than two years will be allowed only if it is determined that significant treatment is occurring.

E. Representative Sampling. Biosolids samples used to measure compliance with Part III of this Permit shall be collected at locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

F. Reporting of Monitoring Results.

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

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

G. Additional Record Keeping Requirements Specific to Biosolids.

1. Unless otherwise required by the Director, **the permittee is not required to keep records** on compost products if the permittee prepared them from biosolids that meet the limits in Table 3 (*Part III.B.1*), the Class A pathogen requirements in *Part III.B.2* and the vector attraction reduction requirements in *Part III.B.3*. The Director may notify the permittee that additional record keeping is required if it is determined to be significant to protecting public health and the environment.

2. **The permittee is required** to keep the following information for at least 5 years:

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

b. A description of how the pathogen reduction requirements in *Part III.B.2* were met.

c. A description of how the vector attraction reduction requirements in *Part III.B.3* were met.

- d. A description of how the management practices in *Part III.C* were met (if necessary).
- e. The following certification statement:

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

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

IV. STORM WATER REQUIREMENTS.

- A. Coverage of This Section. The requirements listed under this section shall apply to storm water discharges. Storm water discharges from the following portions of the facility may be eligible for coverage under this permit: biosolids drying beds, haul or access roads on which transportation of biosolids may occur, grit screen cleaning areas, chemical loading, unloading and storage areas, salt or sand storage areas, vehicle or equipment storage and maintenance areas, or any other wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including lands dedicated to the disposal of sewage sludge that are located within the confines of the facility that may have a reasonable expectation to contribute to pollutants in a storm water discharge.
- B. Prohibition of Non-Storm Water Discharges. Except for discharges identified in *Part I.*, and discharges described below in this paragraph, non-storm water discharges are prohibited. The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from firefighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.
- C. Storm Water Pollution Prevention Plan Requirements. The permittee must have (on site) or develop and implement a storm water pollution prevention plan as a condition of this permit.
1. Contents of the Plan. The plan shall include, at a minimum, the following items:
- a. *Pollution Prevention Team.* Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
- b. *Description of Potential Pollutant Sources.* Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:
- (1) *Drainage.* A site map indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of

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significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:

- (a) Drainage direction and discharge points from all wastewater associated activities including but not limited to grit screen cleaning, bio-solids drying beds and transport, chemical/material loading, unloading and storage areas, vehicle maintenance areas, salt or sand storage areas.
 - (b) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.
 - (c) Location of bio-solids drying beds where exposed to precipitation or where the transportation of bio-solids may be spilled onto internal roadways or tracked off site.
 - (d) Location where grit screen cleaning or other routinely performed industrial activities are located and are exposed to precipitation.
 - (e) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.
 - (f) Locations where any major spills or leaks of toxic or hazardous materials have occurred.
 - (g) Location of any sand or salt piles.
 - (h) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.
 - (i) Location of receiving streams or other surface water bodies.
 - (j) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.
- (2) *Inventory of Exposed Materials.* An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit and the present; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- (3) *Spills and Leaks.* A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

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- (4) *Sampling Data.* A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- (5) *Summary of Potential Pollutant Sources and Risk Assessment.* A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes; and onsite waste disposal practices. Specific potential pollutants shall be identified where known.
- (6) *Measures and Controls.* The permittee shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
 - (7) *Good Housekeeping.* All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Where applicable, such measures or other equivalent measures would include the following: sweepers and covered storage to minimize dust generation and storm runoff; conservation of vegetation where possible to minimize erosion; sweeping of haul roads, bio-solids access points, and exits to reduce or eliminate off site tracking; sweeping of sand or salt storage areas to minimize entrainment in storm water runoff; collection, removal, and proper disposal of waste oils and other fluids resulting from vehicle and equipment maintenance; other equivalent measures to address identified potential sources of pollution.
 - (8) *Preventive Maintenance.* A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
 - (9) *Spill Prevention and Response Procedures.* Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.
- (10) *Inspections.* In addition to the comprehensive site evaluation required under paragraph (*Part IV.C.1.b.(16)*) of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: access

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roads/rail lines, equipment storage and maintenance areas (both indoor and outdoor areas); fueling; material handling areas, residual treatment, storage, and disposal areas; and wastewater treatment areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.

- (11) *Employee Training.* Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.
- (12) *Record keeping and Internal Reporting Procedures.* A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- (13) *Non-storm Water Discharges.*
 - (a) *Certification.* The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part VII.G* of this permit.
 - (b) *Exceptions.* Except for flows from firefighting activities, sources of non-storm water listed in *Part IV.B.* (Prohibition of Non-storm Water Discharges) of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
 - (c) *Failure to Certify.* Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Director* within 180 days after the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not

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feasible. Non-storm water discharges to waters of the State, which are not, authorized by a *UPDES* permit are unlawful, and must be terminated.

- (14) *Sediment and Erosion Control*. The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- (15) *Management of Runoff*. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.
- (16) *Comprehensive Site Compliance Evaluation*. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:
- (a) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
- (b) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part IV.C.1.b* (Description of Potential Pollutant Sources) of this section and pollution prevention measures and controls identified in the plan in accordance with *Part IV.C.1.b.(6)* (Measures and Controls) of this section shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.
- (c) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph *i.* (above) shall be made and retained

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

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

D. Monitoring and Reporting Requirements.

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

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

- d. *Adverse Conditions.* When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather conditions, which may prohibit the collection of samples, include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).
- e. *Inactive and Unstaffed Site.* When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

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V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

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

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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 maximum daily discharge limitation for any of the pollutants listed in the permit; or,
 - e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected;
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
 - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 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;

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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.
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- F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.
- G. Bypass of Treatment Facilities.
1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.
 2. Prohibition of Bypass.

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

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

H. Upset Conditions.

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

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,

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- 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.

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- 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, whole effluent toxicity (WET) limitations, a compliance date, a compliance schedule, a change in the whole effluent toxicity

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(biomonitoring) protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur;

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

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. "Bypass," means the diversion of waste streams from any portion of a treatment facility.
5. "Chronic toxicity" occurs when the survival, growth, or reproduction for either test species exposed to a specific percent effluent dilution is significantly less (at the 95 percent confidence level) than the survival, growth, or reproduction of the control specimens.
6. "IC₂₅" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.
7. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:
 - a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

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

B. Biosolids.

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

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

4. "Pathogen," means an organism that is capable of producing an infection or disease in a susceptible host.
5. "Pollutant" for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food-chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.
6. "Runoff" is rainwater, leachate, or other liquid that drains over any part of a land surface and runs off the land surface.
7. "Similar Container" is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.
8. "Total Solids" are the materials in the biosolids that remain as a residue if the biosolids are dried at 103° or 105° Celsius.
9. "Treatment Works" are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste or liquid manure.
10. "Vector Attraction" is the characteristic of biosolids that attracts rodents, flies mosquito's or other organisms capable of transporting infectious agents.
11. "Animals" for the purpose of this permit are domestic livestock.
12. "Annual Whole Sludge Application Rate" is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.
13. "Agronomic Rate" is the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.
14. "Annual Pollutant Loading Rate" is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
15. "Application Site or Land Application Site" means all contiguous areas of a users' property intended for sludge application.

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16. "Cumulative Pollutant Loading Rate" is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.
17. "Grit and Screenings" are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to *40 CFR 258*.
18. "High Potential for Public Contact Site" is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
19. "Low Potential for Public Contact Site" is the land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.
20. "Monthly Average" is the arithmetic mean of all measurements taken during the month.
21. "Volatile Solids" is the amount of the total solids in sewage sludge lost when the sludge is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

C. Storm Water.

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.
3. "Co-located industrial activity" means when a facility has industrial activities being conducted onsite that are described under more than one of the coverage sections of *Appendix II* in the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity. Facilities with co-located industrial activities shall comply with all applicable monitoring and pollution prevention plan requirements of each section in which a co-located industrial activity is described.
4. "Commercial Treatment and Disposal Facilities" means facilities that receive, on a commercial basis, any produced hazardous waste (not their own) and treat or dispose of those wastes as a service to the generators. Such facilities treating and/or disposing exclusively residential hazardous wastes are not included in this definition.
5. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

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6. "Land application unit" means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.
7. "Municipal separate storm sewer system" (large and/or medium) means all municipal separate storm sewers that are either:
 - a. Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (at the issuance date of this permit, Salt Lake City is the only city in Utah that falls in this category); or
 - b. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (at the issuance date of this permit Salt Lake County is the only county that falls in this category); or
 - c. Owned or operated by a municipality other than those described in paragraph *a.* or *b.* (above) and that are designated by the *Director* as part of the large or medium municipal separate storm sewer system.
8. "NOI" means "notice of intent", it is an application form that is used to obtain coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
9. "NOT" means "notice of termination", it is a form used to terminate coverage under the General Multi-Sector Permit for Storm Water Discharges Associated with Industrial Activity.
10. "Point source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.
11. "Section 313 water priority chemical" means a chemical or chemical categories that:
 - a. Are listed at *40 CFR 372.65* pursuant to *Section 313* of the *Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III of the Superfund Amendments and Reauthorization Act (SARA)* of 1986);
 - b. Are present at or above threshold levels at a facility subject to *EPCRA Section 313* reporting requirements; and
 - c. Meet at least one of the following criteria:
 - (1) Are listed in *Appendix D* of *40 CFR Part 122* on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances);

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- (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or
 - (3) Are pollutants for which EPA has published acute or chronic water quality criteria. See *Appendix III* of this permit. This appendix was revised based on final rulemaking EPA published in the *Federal Register* November 30, 1994.
12. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *CERCLA*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.
13. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311 of the Clean Water Act* (see *40 CFR 110.10* and *CFR 117.21*) or *Section 102 of CERCLA* (see *40 CFR 302.4*).
14. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.
15. "SWDMR" means "storm water discharge monitoring report", a report of the results of storm water monitoring required by the permit. The Division of Water Quality provides the storm water discharge monitoring report form.
16. "Storm water associated with industrial activity" (*UAC R317-8-3.8(6)(c) & (d)*) means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the *UPDES* program. For the categories of industries identified in paragraphs *(a)* through *(j)* of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined in *40 CFR Part 401*); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the categories of industries identified in paragraph *(k)* of this definition, the term includes only storm water discharges from all areas (except access roads and rail lines) listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. For the purposes of this paragraph, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such

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as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (a) to (k) of this definition) include those facilities designated under *UAC R317-8-3.8(1)(a)5*. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of this subsection:

- a. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under *40 CFR Subchapter N* (except facilities with toxic pollutant effluent standards that are exempted under category (k) of this definition);
- b. Facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285), 29, 311, 32 (except 323), 33, 3441, 373;
- c. Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under *40 CFR 434.11(l)* because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations that have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; inactive mining operations are mining sites that are not being actively mined, but that have an identifiable owner/operator;
- d. Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of RCRA;
- e. Landfills, land application sites, and open dumps that have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under *Subtitle D* of RCRA;
- f. Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;
- g. Steam electric power generating facilities, including coal handling sites;
- h. Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-25), 43, 44, 45 and 5171 that have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment

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cleaning operations, airport deicing operations, or that are otherwise identified under paragraphs (a) to (g) or (l) to (k) of this subsection are associated with industrial activity;

- i. Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under *40 CFR Part 403*. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and that are not physically located in the confines of the facility, or areas that are in compliance with *40 CFR Part 503*;
 - j. Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area that are not part of a larger common plan of development or sale;
 - k. Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and that are not otherwise included within categories (a) to (j))
17. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

**FACT SHEET AND STATEMENT OF BASIS
SPANISH FORK WASTEWATER TREATMENT PLANT
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0020109
UPDES BIOSOLIDS PERMIT NUMBER: UTL0020109
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR020109
MAJOR MUNICIPAL**

FACILITY CONTACTS

Person Name:	Dennis R. Sorensen
Position:	POTW Manager
Person Name:	Ben Wimm
Position:	Assistant POTW Manager
Person Name:	Chris Thompson
Position:	Public Works Director
Facility Name:	Spanish Fork Wastewater Treatment Plant
Mailing Address:	40 South Main Street Spanish Fork, Utah 84660
Telephone:	(801) 798-5000
Actual Address:	2160 North 150 East

DESCRIPTION OF FACILITY

The Spanish Fork Wastewater Treatment Plant (Spanish Fork) is located at 2160 North 150 East, Spanish Fork, Utah and serves the City of Spanish Fork with the outfall located at latitude 40°08'43" and longitude 11°35'54". The State of Utah Database Storet number is 499602. The design flow of the facility is 5.0 MGD average daily flow with a peak flow of 10 MGD.

The influent enters the plant through a rectangular channel and is monitored by a Flowdar flow meter. The headwork's building separates the influent flow into two 4' channels equipped with two step screens. Both screens have two pressure washers, compactors and an automatic bag system.

Following the headwork's building are two aerated grit chambers with a volume totaling 3200 ft³. The detention time in the grit chambers at a flow of 5 MGD equals 3.45 minutes. Approximately 10 ft³/day is removed from the grit chambers. Aeration is provided by two 20 HP, 200 cfm positive displacement air blowers. Following the grit chambers, the flow enters three primary clarifiers. Two of the primary clarifier dimensions are 60 ft with a 7 ft sidewall depth and the other clarifier is 75 ft with a 12 ft sidewall. At the above mentioned flow, the detention time in the primary clarifiers equals 2.6 hours. The effluent from the primary clarifiers then enters the Intermediate Pumping Station that has two 60" screw pumps each equipped with a pumping capacity of 7000 gpm.

The flow enters a wet well for the trickling filter pumps where there the flow is split between aerotors and a plastic media trickling filter. The plastic media filter is 80 ft in diameter with a total media volume of 80,000 ft³. The aerotors are in 4 basins each approximately 266,000 gallons, combining to 1,066,000 gallons total. The effluent leaving the trickling filter and aerotors then enters the final clarifiers.

The two final clarifiers have a diameter of 90 ft with a sidewall depth of 14 ft. The detention time in the two clarifiers is 6.4 hours at the above mentioned flow rate. The flow then enters the Chlorine Contact Basin where chlorine is injected by a Chlor-A-Vac. The chlorine introduced to the system is controlled by Capital Control Rotometers and Stranco ORP equipment with a capacity of 200 pounds per day (ppd) of

chlorine. The Chlorine Contact Basin has a detention time of 60 minutes at 5 MGD and 30 minutes at peak flows of 10 MGD. The Chemical Control Building stores one ton containers of chlorine along with the control equipment. The effluent flows approximately 300 ft east and 3300 ft north to the discharge point.

Spanish Fork has four anaerobic digesters. The two fixed lid primary digesters are 50 ft in diameter with a total volume of 102,100 ft³ and two 40 ft diameter floating lid secondary digesters with a combined total volume of 25,130 ft³. The detention time of the primary digester is 60 days. One of the secondary digesters is heated to help digestion and water removal. The remaining digesters primary responsibility is settling. The sludge from the two primary clarifiers is pumped to the primary digester by two positive displacement pumps at regular intervals. The pumping rate is controlled by adjusting the time that the pumps are to pump each hour. Spanish Fork contains two boilers that produce 60,000,000 BTU/hr and two heat exchangers with a sludge rate and hot water rate of 250 gpm. The total detention time is approximately 75 days for all four digesters combined.

Spanish Fork has six drying beds with a capacity of 26 lbs dry solids/ ft² / year. During the winter months a two meter belt press is used to de-water the bio-solids. The bio-solids are removed from the drying beds and are either sent to a land fill or used for agriculture land application. Approximately 200 metric tons of dry bio-solids are produced each year by the facility.

The Utah Water Quality Board revised the bacteriological criteria in the Standards of Quality for Waters of the State effective June 1, 2005. Based, in part, on a long-standing recommendation from the Environmental Protection Agency, numeric criteria for E. coli bacteria were added to the standards. The new E. coli criteria is 126 (no.)/100 mL (30-day geometric mean) and 158 (no.)/100 mL (7-day geometric mean), which is considered equivalent to 200 (no.)/100 mL and 250 (no.)/100 mL fecal coliforms (*UAC R317-1-3.2*), respectively.

In January 2004, the Water Quality Board adopted new standards that significantly affect ammonia limits. Other parameters affected are dissolved oxygen (DO), ammonia and total residual chlorine (TRC). Metals testing frequency was increased to quarterly during a permit modification in 2005 as part of a Settlement Agreement.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There were no changes to the Spanish Fork facility process or operations during the previous permit cycle. However, use of a new model, new rule implementation, etc. resulted in changes in the permit from the last permit cycle. These are outlined below.

A new model is used by Water Quality to develop a waste load allocation (WLA) for dischargers to Waters of the State. In preparing for using this model for Spanish Fork, Water Quality determined that the receiving stream should have a synoptic study completed on it to improve the understanding of the waterway and improve the WLA. This study was conducted during the summer of 2012. The study contributed to a larger data set for use in running the model. The study was also used to calibrate the model to more closely reflect the ammonia decay conditions in Dry Creek and Provo Bay. After the completion of the study, the WLA was completed.

Upon review of the WLA the facility noted a few items that they believed needed further evaluation. They completed and submitted their own study to Water Quality. The report is titled "Waste-Load Parameters for Wastewater Discharge Permit" (DWQ-2014-012161) and is included as an attachment to the FSSOB. As a result of the findings in the report, Water Quality modified the WLA as below:

1. Added the irrigation canal return flow as a tributary in the QUAL2Kw model. The flow is estimated to be 1.55 cfs and the quality will be based on the sampling event conducted by DWQ in July 2013.

2. Applied a TRC decay rate of 21.34 and 29.86 /d at 20 deg C.
3. Included travel time from the plant to the outfall in calculating TRC decay.

The WLA was re-calculated with no mixing zone granted for Provo Bay and the flow being in compliance at the Provo bay – Dry Creek boundary. The WLA is included as an attachment to the FSSOB. (DWQ-2013-045153)

The recalculated limits did not change the acute ammonia limit, but did result in a lower chronic limit for ammonia. DWQ also started including flow limits in all UPDES permits. These changes are included in the table below.

Parameter	Previous Limit		New Limit	
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Ammonia, mg/l				
Summer (Jul-Sept)	NA	18	7	18
Fall (Oct-Dec)	NA	18	9	18
Winter (Jan-Mar)	NA	18	9	18
Spring (Apr-Jun)	NA	18	9	18
	Monthly Ave	Daily Min	Monthly Ave	Daily Min
Flow, MGD	NA	NA	5.0	10

A review of Whole Effluent Toxicity (WET) results showed that Spanish Fork has not had a failure in the last fifteen (15) years, and they have requested a reduction and elimination of WET testing. The Elimination or reduction in frequency and/or species is allowed in a permit if a pattern of passing can be shown. Water Quality has been working to add or include Chronic WET in permits. To balance these two concepts a compromise has been struck. The Acute WET will be eliminated completely. Spanish Fork will start monitoring for Chronic WET on a Quarterly basis. The permit will only require Spanish Fork to monitor WET and report the results on a quarterly basis; no limit will be associated with the monitoring. Spanish Fork will also have the option to choose which species they will test each quarter.

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

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

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

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

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

Recent rule and anticipated future standards changes have lead Spanish Fork to look into a total upgrade of the facility's treatment process in order to meet future requirements. An upgrade to the facility will be

costly and take some time, but would result in a facility that is able to treat the effluent to meet the anticipated stringent future effluent limits. Currently, they are unsure how well the facility can remain in compliance with the proposed ammonia limits in their permit. Therefore, time is needed to study the optimization potential of the existing facility until a facility upgrade can be developed and completed.

Based on past performance, the Spanish Fork facility anticipates not being able to consistently meet the monthly average effluent limit for Ammonia in the Winter Months (Jan - Mar) of 7 mg/L indicated in the WLA. Previous WLAs and permits have not included a monthly average effluent limit for Ammonia. Compliance with this effluent limit will likely require upgrades, improvements and optimization of the facility. To allow the facility time to complete the planning and optimization process, the facility will not be required to comply with the chronic ammonia limit indicated in the WLA until December 31, 2023. At which time, more information will be available that will better predict what is needed for the facility and how long it will take to complete work needed to come into compliance..

To complete the optimization and upgrades process, a compliance schedule is included in the renewal permit. This will require that the facility submit an annual report on the optimization efforts detailing the overall progress and any upsets/setbacks that occurred and the steps taken to return to compliance with the effluent limits. It will also contain a summary of the upgrade planning actions and progress from the previous year and an updated schedule/time line for future activity. This will assist in the Division being up to date on the progress and activity.

The Compliance Schedule for ammonia is included below;

Spanish Fork Optimization and Ammonia Limit Compliance.

- (1) By July 1, 2017: Spanish Fork shall submit a detailed optimization schedule and plan for facility upgrades necessary to comply with the Chronic Ammonia limit in *Part 1,C,2* of the permit.
- (2) Annually July 1, 2018 – July 1, 2022: Submit progress report to DWQ outlining the status of optimization and construction, including timeframes to obtain a construction permit and construction schedule. This report shall be due by July 1st of each year.
- (3) By July 1, 2023: Spanish Fork shall complete optimization and construction of wastewater treatment upgrades necessary to comply with the Chronic Ammonia limits in *Part 1,C,2* of the permit.
- (4) By December 31, 2023: Spanish Fork shall achieve compliance with the Chronic Ammonia limits in *Part 1,C,2* of the permit.

By the time the permit renewal application is due in 2021, a decision of what process and facility changes will be necessary for the facility to comply with the ammonia effluent limits, and what other changes might need to be incorporated into the facility should be identified. This will allow more defined and comprehensive compliance schedule can be added into what is already planned out for the renewal permit. This time frame allowed in the compliance schedule will allow the facility to organize the needed resources to facilitate any plant upgrades required.

DISCHARGE

DESCRIPTION OF DISCHARGE

The Spanish Fork has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. A summary of the last 3 years of data is attached and there were no significant violations.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 40°08'43" and longitude 111°35'54". The discharge is through a gravity flow concrete pipe leading from the chlorine contact basin to Dry Creek which flows to the Provo Bay area of Utah Lake.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into Dry Creek, which then flows into Utah Lake (Provo Bay). Dry Creek is classified as 2B, 3E, 4, and Utah Lake is classified as 2B, 3B, 3D, 4 according to *Utah Administrative Code (UAC) R317-2-13*.

Dry Creek

Class 2B	-Protected for secondary contact recreation such as boating, wading, or similar uses.
Class 3E	-Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.
Class 4	-Protected for agricultural uses including irrigation of crops and stock watering.

Utah Lake

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

EPA Region VIII completed the Triennial Review (Review) on January 6, 2004. The Review reassessed the stream classification on Dry Creek and determined the class to be 3E replacing the original classification of 2B, 3C and 4. Class 3E is defined as severely habitat-limited waters.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD₅), E-Coli coliform, pH and percent removal for BOD₅ and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The dissolved oxygen (DO), ammonia, and total residual chlorine (TRC) are based on the attached wasteload analysis. The oil and grease is based on best professional judgment (BPJ). The permit limitations are:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	5	-	-	10
BOD ₅ , mg/L	25	35	-	-
BOD ₅ Min. % Removal	85	-	-	-
TSS, mg/L	25	35	-	-
TSS Min. % Removal	85	-	-	-
Dissolved Oxygen, mg/l	-	-	4.0	-
Ammonia, mg/l				
July – September	7 *j	-	-	18
October – December	9 *j	-	-	18
January – March	9 *j	-	-	18
April – June	9 *j	-	-	18
E. Coli, no./100mL	126	158	-	-
TRC, mg/L	-	-	-	2.0
Oil & Grease, mg/L	-	-	-	10
pH, Standard Units	-	-	6.5	9.0

SELF-MONITORING AND REPORTING REQUIREMENTS

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

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous/	Recorder	MGD
BOD ₅ , Influent *d	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
TSS, Influent *d	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
E. Coli	2 x Weekly	Grab	No./100mL
pH	2 x Weekly	Grab	SU
Ammonia	2 x Weekly	Grab	mg/L
DO	2 x Weekly	Grab	mg/L
WET – Biomonitoring *h Ceriodaphnia - Chronic Fathead Minnows - Chronic	Quarterly Variable Species	Composite Composite	Pass/Fail Pass/Fail
TRC, mg/L, *e,	Daily	Grab	mg/L
Oil & Grease *f	Monthly	Grab	mg/L
Total Ammonia, (as N) *k	Monthly	Composite	mg/L
Orthophosphate, (as P) *k Effluent	Monthly	Composite	mg/L
Phosphorus, Total *k Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, (TKN as N) *k Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO ₃ *k	Monthly	Composite	mg/L
Nitrite, NO ₂ *k	Monthly	Composite	mg/L
Metals, Influent *i Effluent	Quarterly Quarterly	Composite Composite	mg/L mg/L
Organic Toxics *i	Yearly	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 Analytical results less than 0.06 mg/l will not be considered out of compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:

- 1) analytical values less than 0.02 mg/L shall be considered zero; and
 - 2) analytical values less than 0.06 mg/L and equal to or greater than 0.02 mg/L will be recorded as measured.
- *f Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- *h Spanish Fork will monitor for Chronic WET with an $IC_{25} > 82\%$, but will not have a limit associated with it in the permit. Spanish Fork will also have the option to choose which species it wishes to test each quarter. If the species is not tested in a quarter it is reported as NA.
- *i See table in *Part II.H.1* (Influent and Effluent Monitoring and Reporting Requirements) of the Permit for target minimum detection limits (MDL) requirements. The Organic Toxics report is due the same day as the Pretreatment Report (Part II.C, of the permit).
- *j The monthly average effluent limit for this parameter will not become effective until December 31, 2023.
- *k These reflect monitoring changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

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 a renewal permit. An initial check for metals showed that the full model needed to be run on Cyanide, Cadmium, Copper, Selenium, and Mercury for this facility.

The results of the RP Model indicate that Cadmium, Copper, Selenium, and Mercury do not present a reasonable potential for inclusion of limits in this renewal permit. The data does indicate that there are issues with consistent and/or sensitive enough reporting limits for the metals. Spanish Fork will need to work to comply with the sampling requirements in the permit under PART II.H.

Cyanide does require further RP investigation by DWQ. The results for the Cyanide analysis were frequently reported as non-detect and those detection levels varied over the five year period evaluated. Improving the consistency of the analytical detection level for Cyanide could reduce the RP for Cyanide and eliminate the need for a permit limit.

To address the issues above, Water Quality requests that the facility has the samples analyzed in a way to ensure that the laboratory is attaining the lowest method detection level as consistently as possible. Currently the values for some parameters listed in Part II.H of the permit are below current MDL's, and there is no evidence that the levels are impairing downstream water quality. In these cases, the parameters will not be added to the permit as limits, but will remain as parameters requiring monitoring.

BIOMONITORING REQUIREMENTS

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

The receiving water low flow dilution is less than 20 to one and this facility has passed acute toxicity testing over the last ten years. Since we know acute toxicity is not present, based on past acute testing

results, and the dilution is less than twenty to one chronic toxicity testing will be required and acute testing will be dropped from the renewal permit. Chronic toxicity will be required quarterly with alternation of species¹. The standard chronic toxicity language will be incorporated into the permit, along with appropriate reopener language.

The WLA did indicate possible seasonal IC₂₅ % WET Limits. These are indicated in the table below. No limit is being included in the permit but the Chronic WET IC₂₅ monitoring value is the worst case scenario (IC₂₅ > 82 %), and is more conservative than seasonal limits would be. In the event of a chronic test failure in any season other than summer, the seasonal values from this WLA will be used for evaluating the results of the test.

Seasonal Chronic WET Limits as Taken From Table 2 in The WLA	
Season	Chronic WET IC ₂₅ % Eff.
Summer	>82
Fall	>40
Winter	>43
Spring	>43

TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

Spanish Fork discharges wastewater into Utah Lake, which has been identified as impaired for total dissolved solids (TDS) and total phosphorus (TP) based on the 1998, 303(d) assessment process as defined in the Clean Water Act. As required under federal regulation a total maximum daily load (TMDL) will be developed for all impaired waters. The TMDL will focus on developing limitations for those parameters of concern (POC) that were identified during the 305(b) and 303(d) assessment process. POC's are parameters that are in violation of water quality standards or that contribute to impairment of a beneficial use (a major component of the water quality standards).

Currently, a TMDL evaluation is underway for the Utah Lake. If the results of the TMDL process establish effluent limits for any of the POC's, then it is required by 40 CFR Part 130 to include the effluent limits in the UPDES permit. Therefore, it is strongly recommended that the facility staff participate in the TMDL development process. The staff at the Division of Water Quality will be responsible for scheduling and notifying appropriate facility personnel regarding TMDL meetings. Please contact your UPDES permit writer for information on scheduled TMDL meetings.

PRETREATMENT REQUIREMENTS

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

The permittee will be required to perform an annual evaluation of the need to revise or develop technically based local limits to implement the general and specific prohibitions of 40 CFR, Part 403.5(a) and Part 403.5(b). This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised. As part of this evaluation, the permit requires quarterly influent and effluent monitoring for metals and yearly organic toxics listed in R317-8-7.5 and sludge monitoring for potential pollutants listed in 40 CFR 503.

¹ Composite sample volumes are collected and sent off to the lab on Monday, Wednesday and Friday

Per the requirements of the Pretreatment Audit on October 16, 2012, Spanish Fork will have 6 months following the issuance of the UPDES permit to submit draft local limits. The draft local limits must include technical based local limits with the calculations of how the local limits were derived and the summary of how the local limits were developed.

BIOSOLIDS

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

SUBSTANTIAL BIOSOLIDS TREATMENT CHANGES

Spanish Fork has completed the addition of new 50 foot digesters with mixers. This will improve the biosolids quality.

DESCRIPTION OF TREATMENT AND DISPOSAL

Biosolids at Spanish Fork are stabilized in three anaerobic digesters to meet Class B standards and dewatered with a belt press, up to twenty percent solids. Spanish Fork has beneficially used all of their biosolids during the last five years for crop production, or pasture land for grazing and plans to do the same for the life of this permit. The only thing that may change is where the biosolids are land applied for crop production and grazing.

The Permittee submitted their 2014 annual biosolids report on February 10, 2015. The report states the Permittee produced 719 dry metric tons (DMT) of solids. Of which 290 DMT were land applied for crop production and pasture grazing. The remaining 429 DMT was transferred to Southern Utah Solid Waste District (Permit #ULT-025585, Bayview Landfill) for composting by that facility.

The solids are stabilized through anaerobic digesters that have a minimum retention time of 15 days at 95° F (35° C) or 60 days at 68° F (20°C). This process stabilizes the solids through a minimum 38% reduction in volatile solids. After stabilization, the solids are dewatered by belt presses to about 15 percent solids.

The last inspection conducted at the facility was September 30, 2015. The inspection showed that Spanish Fork was in compliance with all aspects of the biosolids management program.

SELF-MONITORING REQUIREMENTS

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

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

In 2014, Spanish fork disposed of 719 DMT of biosolids, therefore they need to sample at least four times a year.

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*). No biosolids were landfilled in 2014, They were transferred for composting at a landfill facility who then distributed the biosolids to cities and public. Therefore a paint filter test was not required.

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

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

Class A Requirements With Regards to Heavy Metals

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

Class B Requirements for Agriculture and Reclamation Sites

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

Class B Requirements With Regards to Heavy Metals

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

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

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

Tables 1, 2, and 3 of Heavy Metal Limitations

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

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

Pathogens

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

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

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids. Spanish Fork transfers the biosolids to the Southern Utah Solid Waste District (Permit #ULT-025585) for further processing to Class A through composting prior to distribution to the public.

² CPLR -- Cumulative Pollutant Loading Rate

³ APLR – Annual Pollutant Loading Rate

⁴ MPN –Most Probable Number

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

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). The PSRP for Spanish Fork will be accomplished through Anaerobic Digesters:

1. Under *40 CFR 503.32 (b)(3)Appendix (B)(3)*, The PSRP may be accomplished through anaerobic digesters that have a minimum retention time of 15 days at 95° F (35° C) or 60 days at 68° F (20°C).

Vector Attraction Reduction (VAR)

If the biosolids are land applied Spanish Fork will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. Spanish Fork intends to meet the vector attraction reduction requirements through one of the methods listed below.

1. Under *40 CFR 503.33(b)(1)*, the solids need to be treated through anaerobic digestion for at least 15 days at a temperature of a least 35° C (95° F) with a 38% reduction of volatile solids.
2. Spanish Fork transfers solids to another facility (Southern Utah Solid Waste District) where they are stabilized through composting to Class A, and distributed to the public and cities.

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Landfill Monitoring

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

Record Keeping

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

Reporting

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

MONITORING DATA

METALS MONITORING DATA

Spanish Fork was required to sample for metals at least four times in 2014. Spanish Fork sampled the Class B biosolids four times. All biosolids land applied in 2014 met *Table 3 of 40 CFR 503.13*, therefore Spanish Fork biosolids qualify as EQ with regards to metals. The monitoring data is below.

Spanish Fork Metals Monitoring Data 2014

PERMITTEE Metals Monitoring Data, 2014 (Land Application)			
Parameter	Table 3, mg/kg (Exceptional Quality)	Average, mg/kg	Maximum, mg/kg
Arsenic	41.0	9.44	13.1
Cadmium	39.0	1.2	21.4
Copper	1,500.0	400.75	435
Lead	300.0	19	23.7
Mercury	17.0	1.35	1.65
Molybdenum	75.0	18.25	21.5
Nickel	400.0	18.18	21.5
Selenium	36.0	15.63	1020
Zinc	2,800.0	854	

PATHOGEN MONITORING DATA (Anaerobic Cake)

The **Permittee** was not required to monitor the anaerobic biosolids (sludge cake) for pathogens. Therefore, there is not any monitoring data for the Class B biosolids. All biosolids land applied in 2014 met the Class B pathogen standards through anaerobic digestion.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include:

1. The development of a pollution prevention team:
2. Development of drainage maps and materials stockpiles:
3. An inventory of exposed materials:
4. Spill reporting and response procedures:
5. A preventative maintenance program:
6. Employee training:
7. Certification that storm water discharges are not mixed with non-storm water discharges:
8. Compliance site evaluations and potential pollutant source identification, and:
9. Visual examinations of storm water discharges.

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

PERMIT DURATION

It is recommended that this permit be effective for a duration no greater than five (5) years.

Drafted by
Dan Griffin P.E., Discharge
Dan Griffin P.E., Biosolids
Mike George, Storm Water
Jennifer Robinson, Pretreatment
Utah Division of Water Quality
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: March 8, 2016

Ended: May 4, 2016

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

The Public Noticed of the draft permit was published in The Daily Herald.

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

Questions regarding the compliance schedule were raised during the comment period along with a request to extend the public notice period to answer those questions. As a result, the public notice period was extended to May 4, and the compliance schedule was clarified. The clarification is not considered a Major change; as a result, the permit does not require another public notice. 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.

ATTACHMENT 1

Waste-Load Parameters for Wastewater

Discharge Permit

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Spanish Fork City

Waste-Load Parameters for Wastewater Discharge Permit

February 2014



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533 W 2600 S Suite 275 Bountiful, UT 84010

www.aquaeng.com

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Introduction

This report is intended to address several different parameters used to determine the waste load allocation for the Spanish Fork City Wastewater Treatment Facility. There are two constituents that are changing substantially from the previous permit. The constituents that are changing are Total Residual Chlorine (TRC) and Ammonia.

Several discharge permit cycles ago some of this information was gathered on the receiving water Dry Creek, and at that time the data was used to determine the waste load allocation for the discharge permit. However, the data was given to DWA and it appears that most of that information is no longer available. A new model is being used to establish the waste load allocation and it is important to use the best data possible to calibrate the model.

This report will provide the information gathered by the City which should be used in the waste load allocation for the Spanish Fork Discharge Permit. TRC and ammonia are the primary parameters of concern because they are being proposed to change in the new discharge permit. The City staff was used to sample Dry Creek and the sampling data was used to determine decay rates for each of the two parameters.

Total Residual Chlorine

The Total Residual Chlorine (TRC) permit requirement is recommended to be substantially lowered. The City staff collected TRC concentrations on several locations of Dry Creek as shown in Figure 1. The TRC was measured on several days in June 2013. The purpose of the sampling was to determine the first order decay rate for chlorine in Dry Creek. The travel times were based on the model developed for the waste load allocation. The sampling data is along with the first order decay rate is contained in Appendix A. A summary of the decay rates are shown in Table 1.

The water temperatures were not recorded as part of the sampling effort for TRC. The temperature used to normalize the decay rate to 20 deg C was based on the average value of the river temperature (16.9 deg C) taken during Ammonia sampling on four days between June 5th, 2013 and June 11th, 2013.

Table 1

Date	Decay Rate (1/day)	Decay Rate @20 deg C (1/day)
6/4/2013	19.43	24.00
6/6/2013	17.27	21.34
6/7/2013	25.01	30.90
6/8/2013	17.24	21.30
6/11/2013	32.47	40.11
6/12/2013	32.21	39.79
Min	17.24	21.30
Max	32.47	40.11
Average	24.17	29.86
20th Percentile	17.27	21.34

Decay rate was normalized to 20 degrees C using the modified van't Hoff Arrhenius equation as follows;

$$K_2 = K_1 * \Theta^{(T_2 - T_1)}$$

Equation 1

Where;

K_2 : Normalized Decay Rate at 20 deg C

K_1 : Decay Rate at River Temp

Θ : Temperature Coefficient (1.07)

(Typical value range from 1.02 to 1.10)

T_2 : Temperature (20 deg C)

T_1 : Temperature (Measured)

The Temperature Coefficient used by Qual2Kw appears to be 1.07 and that is what was used to adjust the decay rate to a normalized 20 deg C rate. However, the literature values range from 1.02 to 1.10.

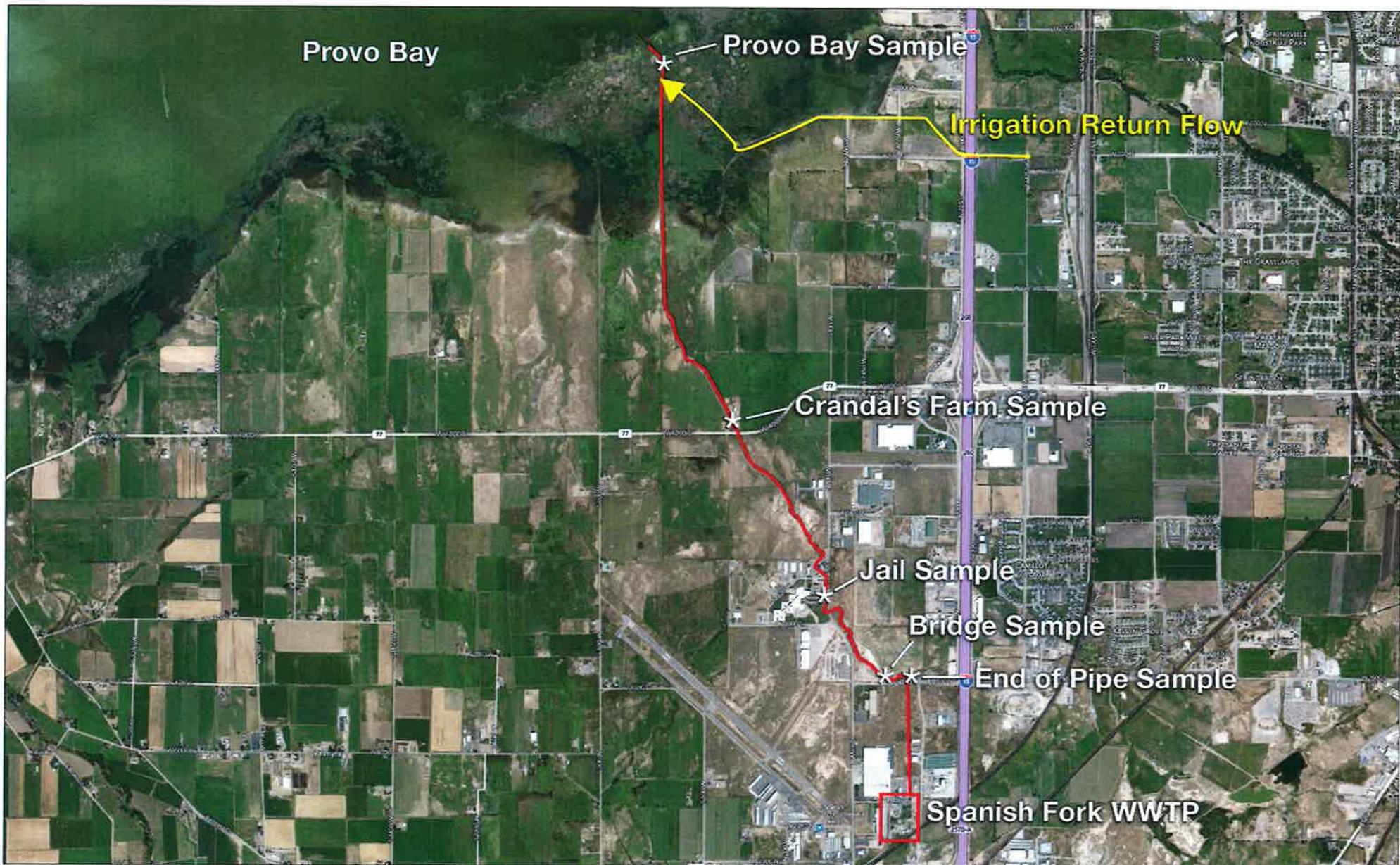


Figure 1 - Spanish Fork Discharge Dry Creek Sample Locations

The normalized decay rates vary depending on the temperature coefficient used in the equation. The lowest (θ value of 1.02) average decay rate based on the TRC measurement would be 25.71/day. The highest (θ value of 1.10) average decay rate would be 32.55/day. The TRC concentration at the Provo Bay Sample site never had a concentration that could be measured. The Crandal's Farm Sample site only had a single sample that was above detectable capability of the TRC sampling equipment.

Based on the travel time assumptions the normalized decay rate varied from 21.30/day to 40.11/day. The average was 29.86/day and the 20th percentile was 21.34/day. It would be best to run the model using both the average decay rate and the 20th percentile to see what each one would do to the discharge permit.

Flow

One of the major components of the model is the flow. The summer flow is substantially lower because most of the flow is diverted upstream from the discharge of the treatment facility. However, a portion of the diverted flow returns to the creek prior to entering Provo Bay. The location of the drainage ditch is shown in Figure 1. This flow should be included in the model. The City estimated the flow to be about 1 MGD.

Ammonia

The water quality standard for ammonia is determined by water temperature, and pH. In addition to the sampling done to verify the decay rate used for ammonia the pH and water temperature were gathered to better determine the water quality limit on ammonia. Dry Creek should not have an ammonia standard because of the classification of 3E. The ammonia standard is critical as Dry Creek reaches Provo Bay because this is the concentration that will determine the permit limits for the wastewater facility.

The City staff sampled ammonia at several locations along Dry Creek as shown in Figure 1. A summary of the data is contained in Appendix B-Ammonia Decay Rates. The data is summarized and a first order decay rate is calculated for each day of sampling. The lab data from the sampling is shown in Appendix C- Ammonia Sampling.

The normalized decay rates vary depending on the temperature coefficient used in the equation. The lowest (θ value of 1.02) average decay rate based on the ammonia measurement was 3.72/day and the highest (θ value of 1.10) average decay rate was 4.59/day.

Normalized decay rate was calculated using the modified van't Hoff Arrhenius equation explained in Equation 1 using the measured river temperature at the time of ammonia sampling. The normalized decay rates varied from 1.73/day to 6.112/day. The average decay rate was 4.20/day with a 20th percentile of 2.16/day as shown in Table 2. It would be best to run the model using both the average and the 20th percentile to see how the difference would change the discharge permit limit.

Table 2

Date	temp (deg C)	Decay Rate (1/day)	Normalized Decay Rate @20 C (1/day)
6/5/2013	16	2.95	3.87
6/6/2013	15.5	1.28	1.73
6/10/2013	20	5.64	5.64
6/11/2013	16	4.66	6.11
Min		1.28	1.73
Max		5.64	6.11
Average		3.57	4.20
20th Percentile		1.61	2.16

Historical temperature and pH information was evaluated from the sample sites shown in Figure 2. Storet stations 4995970 and 4996000 were both in similar locations on Dry Creek. The data was combined in the two stations to evaluate both Temperature and pH.

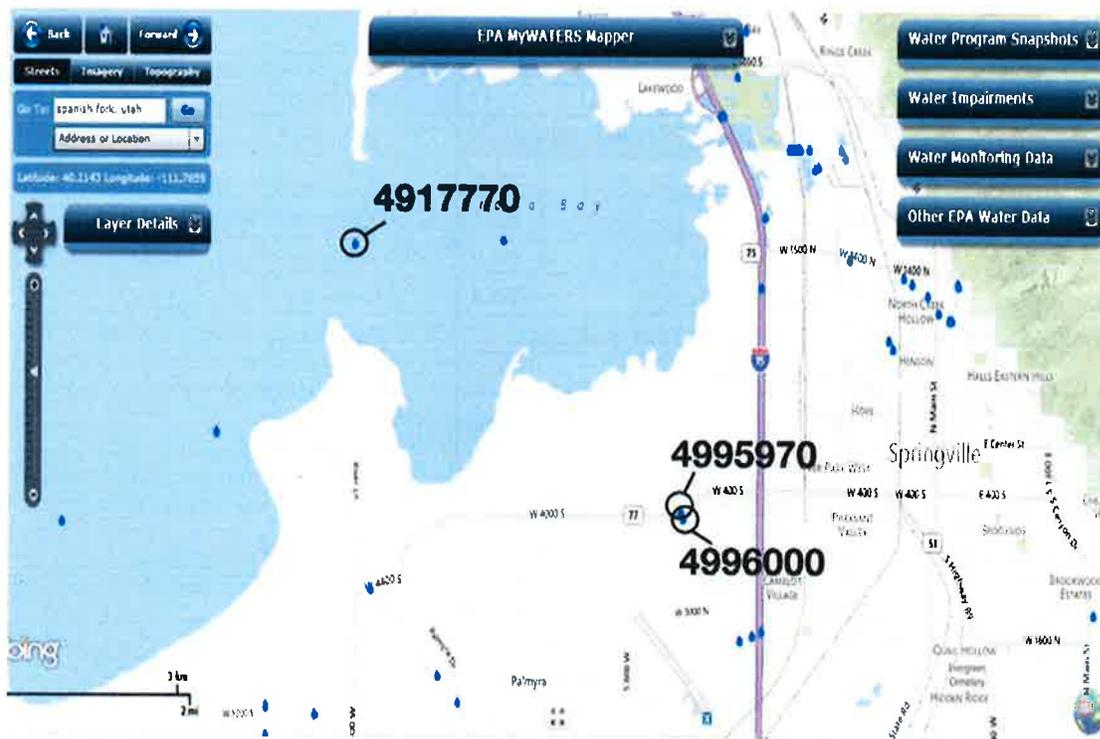


Figure 2

Table 3 is a summary of the data sampled at the Storet sites on Dry Creek. The data was sorted seasonally to reflect the breakdown in the model.

Table 3

Dry Creek pH Summary			
Winter pH		Summer pH	
Min	7.2	Min	6.8
Max	8.6	Max	8.5
Average	8.0	Average	7.8
80th Percentile	8.2	80th Percentile	8.1
Spring pH		Fall pH	
Min	6.7	Min	6.5
Max	8.7	Max	8.3
Average	7.8	Average	7.9
80th Percentile	8.3	80th Percentile	8.1

The temperature summary is shown in Table 4.

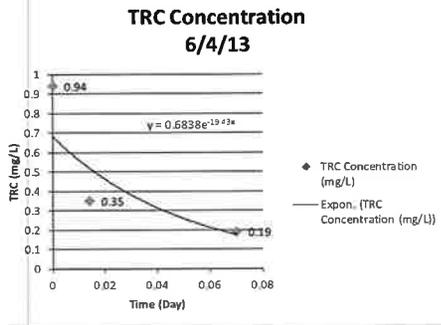
Table 4

Dry Creek Temperature Summary			
Winter Temperature		Summer Temperature	
Min	3.6	Min	15.6
Max	11.1	Max	22.7
Average	7.2	Average	18.9
80th Percentile	8.3	80th Percentile	20.2
Spring Temperature		Fall Temperature	
Min	7.9	Min	8.3
Max	21.1	Max	15.0
Average	13.5	Average	11.1
80th Percentile	16.8	80th Percentile	12.3

Appendix A – TRC Sampling

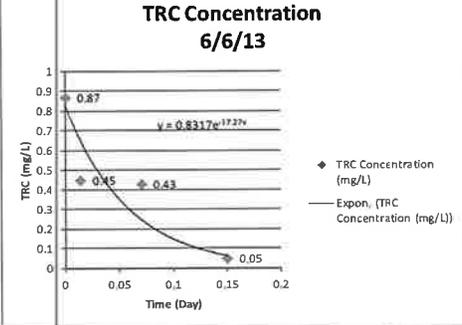
6/4/2013 10:05

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	0.94	7.7
Bridge	4.88	0.014	0.35	7.9
Jail	4.1	0.07	0.19	7.7
Crandal's Farm	2.7	0.15		
Provo Bay	0.1	0.3		



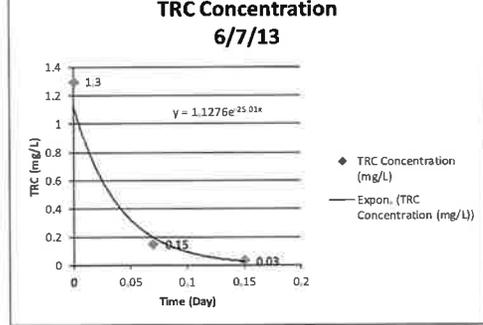
6/6/2013 9:05

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	0.87	8.05
Bridge	4.88	0.014	0.45	8.12
Jail	4.1	0.07	0.43	8.32
Crandal's Farm	2.7	0.15	0.05	8.11
Provo Bay	0.1	0.3	0	7.57



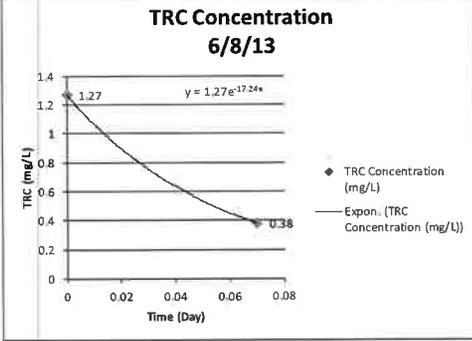
6/7/2013 7:10

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	1.3	8.05
Jail	4.1	0.07	0.15	8.32
Crandal's Farm	2.7	0.15	0.03	8.11
Provo Bay	0.1	0.3	0	7.97



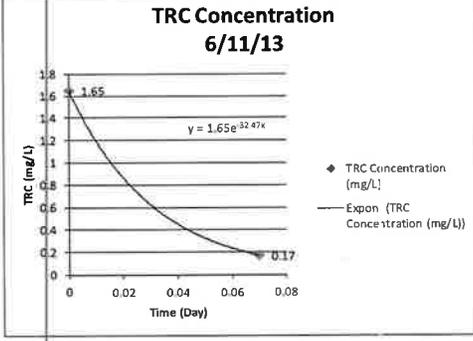
6/8/2013 9:35

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	1.27	7.72
Jail	4.1	0.07	0.38	7.93
Crandal's Farm	2.7	0.15	0	8.07
Provo Bay	0.1	0.3	0	8.03



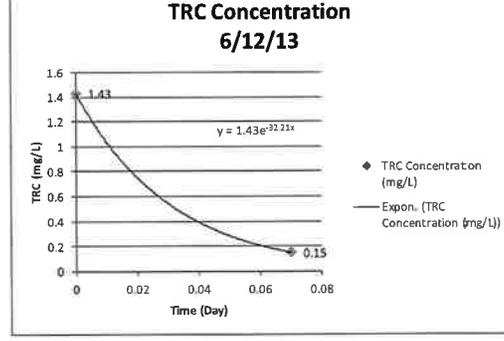
6/11/2013 7:35

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	1.65	7.94
Jail	4.1	0.07	0.17	7.78
Crandal's Farm	2.7	0.15	0	7.88
Provo Bay	0.1	0.3	0	7.95



6/12/2013 7:20

Location Description	Location Station	Travel Time (Day)	TRC Concentration (mg/L)	Ph
End of Pipe	5.08	0	1.43	7.94
Jail	4.1	0.07	0.15	7.78
Crandal's Farm	2.7	0.15	0	7.88
Provo Bay	0.1	0.3	0	7.95



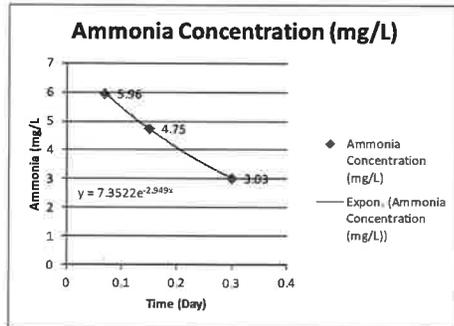
Summary TRC Decay

Date	Measured Decay Rate (1/day)	Decay Rate @20 deg C (1/day)		
		Θ: Temperature Coefficient		
		1.07	1.02	1.1
6/4/2013	19.43	24.00	20.67	26.17
6/6/2013	17.27	21.34	18.37	23.26
6/7/2013	25.01	30.90	26.61	33.69
6/8/2013	17.24	21.30	18.34	23.22
6/11/2013	32.47	40.11	34.54	43.74
6/12/2013	32.21	39.79	34.27	43.39
Min	17.24	21.30	18.34	23.22
Max	32.47	40.11	34.54	43.74
Average	24.17	29.86	25.71	32.55
20th Percentile	17.27	21.34	18.37	23.26

Appendix B-Ammonia Decay Rates

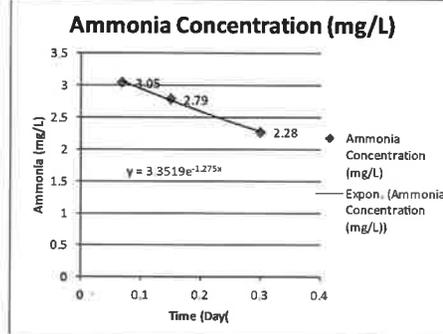
6/5/2013

Location Description	Location Station	Travel Time (Day)	Ammonia Concentration (mg/L)	pH	Temp (°C)
End of Pipe	5.08	0	9.85	8.05	16
Jail	4.1	0.07	5.96	8.32	16
Crandal's Farm	2.7	0.15	4.75	8.11	16
Provo Bay	0.1	0.3	3.03	7.79	16



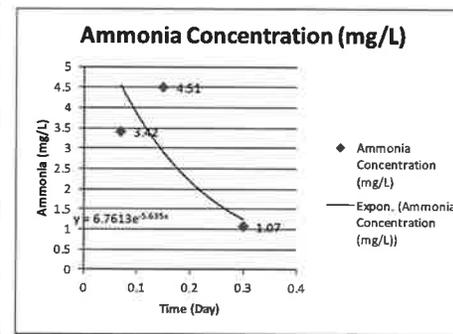
6/6/2013

Location Description	Location Station	Travel Time (Day)	Ammonia Concentration (mg/L)	pH	Temp (°C)
End of Pipe	5.08	0	10.1	7.59	16
Jail	4.1	0.07	3.05	7.95	15
Crandal's Farm	2.7	0.15	2.79	7.98	14
Provo Bay	0.1	0.3	2.28	7.97	16



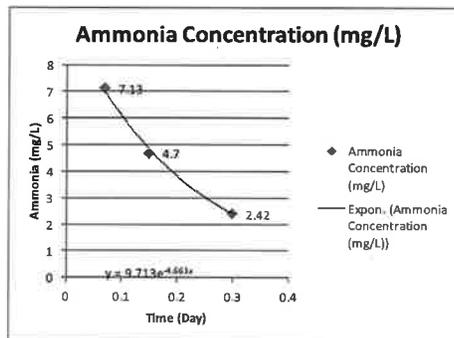
6/10/2013

Location Description	Location Station	Travel Time (Day)	Ammonia Concentration (mg/L)	pH	Temp (°C)
End of Pipe	5.08	0	9.95	7.94	20
Jail	4.1	0.07	3.42	7.78	20
Crandal's Farm	2.7	0.15	4.51	7.88	20
Provo Bay	0.1	0.3	1.07	7.95	20



6/11/2013

Location Description	Location Station	Travel Time (Day)	Ammonia Concentration (mg/L)	pH	Temp (°C)
End of Pipe	5.08	0	10.8	7.67	16
Jail	4.1	0.07	7.13	7.89	16
Crandal's Farm	2.7	0.15	4.7	7.84	16
Provo Bay	0.1	0.3	2.42	7.9	16



Summary Ammonia Decay

Date	temp (deg C)	Measured Decay Rate (1/day)	Decay Rate @20 C (1/day)		
			$\Theta=1.07$	$\Theta=1.02$	$\Theta=1.1$
6/5/2013	16	2.949	3.866	3.192	4.318
6/6/2013	15.5	1.275	1.729	1.394	1.958
6/10/2013	20	5.635	5.635	5.635	5.635
6/11/2013	16	4.663	6.112	5.047	6.827
Min		1.275	1.729	1.39	1.96
Max		5.635	6.112	5.64	6.83
Average		3.572	4.197	3.72	4.59
20th Percentile		1.610	2.156	1.75	2.43

Appendix C- Ammonia Sampling



Timpview Analytical Laboratories

1165 North 1600 West, Orem, Utah, 84057 (801) 229-2282



Certificate of Analysis

Spanish Fork City (WW)
Dennis Sorensen
40 South Main
Sp. Fork, UT 84660
Fax: 801-804-4521
DW System # :

Work Order #: 56704
PO# / Project Name:
Date / Time Received: 6/6/13 13:13
Batch Temp °C: 6.8 Rec'd on Ice
Date Reported: 6/7/13

Sample Name: #1 End of Pipe

Collected: 6/5/13 9:45 Matrix: Wastewater

Collected By:

Parameter	Lab ID #	Method	Analysis Date / Time	Result	Units	MRL	Flags
Ammonia (NH3-N), Direct ISE	F306-252A	4500(NH3)D	6/7/13 12:00	9.85	mg/L	0.5	

Sample Name: #2 Jail

Collected: 6/5/13 9:55 Matrix: Wastewater

Collected By:

Parameter	Lab ID #	Method	Analysis Date / Time	Result	Units	MRL	Flags
Ammonia (NH3-N), Direct ISE	F306-253A	4500(NH3)D	6/7/13 12:00	5.96	mg/L	0.5	

Sample Name: #3 Crandal's Farm

Collected: 6/5/13 10:05 Matrix: Wastewater

Collected By:

Parameter	Lab ID #	Method	Analysis Date / Time	Result	Units	MRL	Flags
Ammonia (NH3-N), Direct ISE	F306-254A	4500(NH3)D	6/7/13 12:00	4.75	mg/L	0.5	

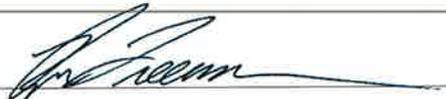
Sample Name: #4 Provo Bay

Collected: 6/5/13 14:00 Matrix: Wastewater

Collected By:

Parameter	Lab ID #	Method	Analysis Date / Time	Result	Units	MRL	Flags
Ammonia (NH3-N), Direct ISE	F306-255A	4500(NH3)D	6/7/13 12:00	3.03	mg/L	0.5	

Comments:

Reviewed by: 
Ryan Freeman, Technical Director

Flag Legend

P- Sample not properly preserved (preservative added upon receipt) C- Sample not submitted in proper container type B- Batch Blank contains detectable level of analyte D- Batch Duplicate outside QC limits M- Matrix Spike recovery outside QC limits L- Lab Control Standard outside QC limits H- Sample hold time exceeded S- Analysis performed by a certified subcontract laboratory N- Laboratory does not carry NELAP certification for this parameter B2- BOD dilution water blank DO uptake greater than 0.2 Jh- Estimated Value. Result may be biased slightly high. Spike or Surrogate recovery above QC limits. Jlo- Estimated Value. Result may be biased slightly low. Spike or Surrogate recovery below QC limits. UJ- Spike or Surrogate recovery below QC limits, but no analyte detected. O- BOD oxygen uptake not in ideal range.



Timpview Analytical Laboratories

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Certificate of Analysis

Spanish Fork City (WW)

Dennis Sorensen

40 South Main

Sp. Fork, UT 84660

Fax: 801-804-4521

DW System # :

Work Order #: 56707

PO# / Project Name:

Date / Time Received: 6/6/13 13:13

Batch Temp °C: 6.8 Rec'd on Ice

Date Reported: 6/7/13

Sample Name: #1 End of Pipe

Collected: 6/6/13 7:10 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F306-258A	4500(NH3)D	6/7/13 12:00	10.1	mg/L	0.5	

Sample Name: #2 Jail

Collected: 6/6/13 7:30 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F306-259A	4500(NH3)D	6/7/13 12:00	3.05	mg/L	0.5	

Sample Name: #3 Crandal's Farm

Collected: 6/6/13 7:45 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F306-260A	4500(NH3)D	6/7/13 12:00	2.79	mg/L	0.5	

Sample Name: #4 Provo Bay

Collected: 6/6/13 8:20 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F306-261A	4500(NH3)D	6/7/13 12:00	2.28	mg/L	0.5	

Comments:

Reviewed by:

Ryan Freeman, Technical Director

Flag Legend

P- Sample not properly preserved (preservative added upon receipt) C- Sample not submitted in proper container type B- Batch Blank contains detectable level of analyte D- Batch Duplicate outside QC limits M- Matrix Spike recovery outside QC limits L- Lab Control Standard outside QC limits H- Sample hold time exceeded S- Analysis performed by a certified subcontract laboratory N- Laboratory does not carry NELAP certification for this parameter B2- BOD dilution water blank DO uptake greater than 0.2 Jhi- Estimated Value. Result may be biased slightly high. Spike or Surrogate recovery above QC limits. Jlo- Estimated Value. Result may be biased slightly low. Spike or Surrogate recovery below QC limits. UJ- Spike or Surrogate recovery below QC limits, but no analyte detected. O- BOD oxygen uptake not in ideal range.



Timpview Analytical Laboratories

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Certificate of Analysis

Spanish Fork City (WW)

Dennis Sorensen

40 South Main

Sp. Fork, UT 84660

Fax: 801-804-4521

DW System # :

Work Order #: 56758

PO# / Project Name:

Date / Time Received: 6/11/13 12:17

Batch Temp °C: 6 Rec'd on Ice

Date Reported: 6/13/13

Sample Name: End of Pipe

Collected: 6/10/13 9:10 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-401A	4500(NH3)D	6/13/13 10:50	9.95	mg/L	0.5	

Sample Name: Jail

Collected: 6/10/13 9:45 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-402A	4500(NH3)D	6/13/13 10:50	3.42	mg/L	0.5	

Sample Name: Crandal's Farm

Collected: 6/10/13 9:57 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-403A	4500(NH3)D	6/13/13 10:50	4.51	mg/L	0.5	

Sample Name: Provo Bay

Collected: 6/10/13 10:20 Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-404A	4500(NH3)D	6/13/13 10:50	1.07	mg/L	0.5	

Comments:

Reviewed by:

Ryan Freeman, Technical Director

Flag Legend

P- Sample not properly preserved (preservative added upon receipt) C- Sample not submitted in proper container type B- Batch Blank contains detectable level of analyte D- Balch Duplicate outside QC limits M- Matrix Spike recovery outside QC limits L- Lab Control Standard outside QC limits H- Sample hold time exceeded S- Analysis performed by a certified subcontract laboratory N- Laboratory does not carry NELAP certification for this parameter B2- BOD dilution water blank DO uptake greater than 0.2 Jh- Estimated Value. Result may be biased slightly high. Spike or Surrogate recovery above QC limits. Jlo- Estimated Value. Result may be biased slightly low. Spike or Surrogate recovery below QC limits. UJ- Spike or Surrogate recovery below QC limits, but no analyte detected. O- BOD oxygen uptake not in ideal range.



Timpview Analytical Laboratories

1165 North 1600 West, Orem, Utah, 84057 (801) 229-2282



Certificate of Analysis

Spanish Fork City (WW)

Dennis Sorensen

40 South Main

Sp. Fork, UT 84660

Fax: 801-804-4521

DW System # :

Work Order #: 56759

PO# / Project Name:

Date / Time Received: 6/11/13 12:17

Batch Temp °C: 6 Rec'd on Ice

Date Reported: 6/14/13

Sample Name: End of Pipe

Collected: 6/11/13 7:35

Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-405A	4500(NH3)D	6/14/13 10:40	10.8	mg/L	0.5	

Sample Name: Jail

Collected: 6/11/13 7:50

Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-406A	4500(NH3)D	6/14/13 10:40	7.13	mg/L	0.5	

Sample Name: Crandal's Farm

Collected: 6/11/13 8:02

Matrix: Wastewater

Collected By:

<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-407A	4500(NH3)D	6/14/13 10:40	4.70	mg/L	0.5	

Sample Name: Provo Bay

Collected: 6/11/13 8:37

Matrix: Wastewater

Collected By:

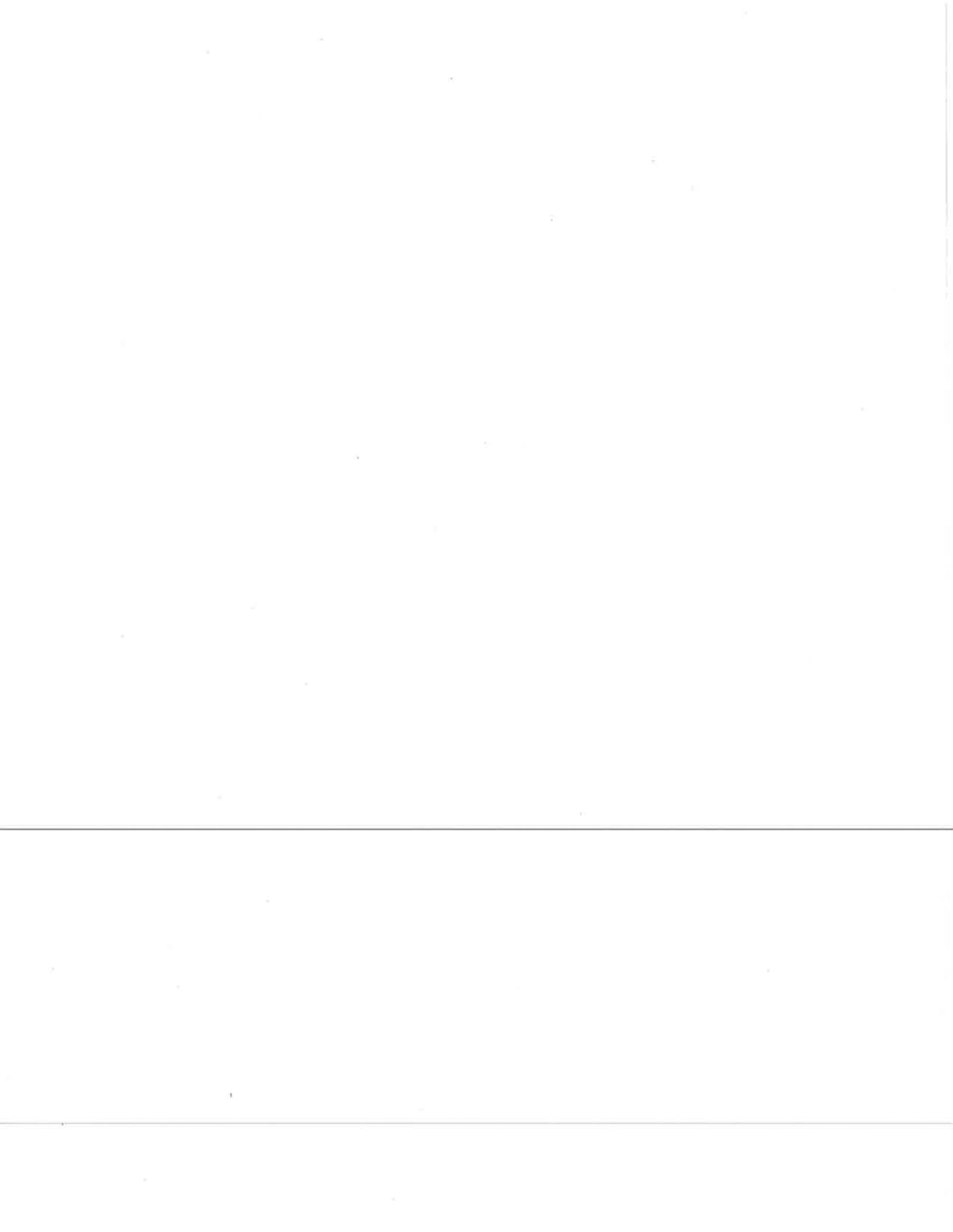
<u>Parameter</u>	<u>Lab ID #</u>	<u>Method</u>	<u>Analysis Date / Time</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Flags</u>
Ammonia (NH3-N), Direct ISE	F311-408A	4500(NH3)D	6/14/13 10:40	2.42	mg/L	0.5	

Comments:

Reviewed by: 
Ryan Freeman, Technical Director

Flag Legend

P- Sample not properly preserved (preservative added upon receipt) C- Sample not submitted in proper container type B- Batch Blank contains detectable level of analyte D- Batch Duplicate outside QC limits M- Matrix Spike recovery outside QC limits L- Lab Control Standard outside QC limits H- Sample hold time exceeded S- Analysis performed by a certified subcontract laboratory N- Laboratory does not carry NELAP certification for this parameter B2- BOD dilution water blank DO uptake greater than 0.2 Jh- Estimated Value. Result may be biased slightly high. Spike or Surrogate recovery above QC limits. Jlo- Estimated Value. Result may be biased slightly low. Spike or Surrogate recovery below QC limits. UJ- Spike or Surrogate recovery below QC limits, but no analyte detected. O- BOD oxygen uptake not in ideal range.



ATTACHMENT 2

Wasteload Analysis

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

Date: April 7, 2014

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

Facility: Spanish Fork Wastewater Treatment Plant
UPDES No. UT0021741

Receiving water: Dry Creek (2B, 3E, 4)
Provo Bay/Utah Lake (2B, 3B, 3D, 4)

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

Discharge

Outfall 001: Dry Creek

The maximum daily design discharge is 10.0 MGD and the maximum monthly design discharge is 5.0 MGD for the facility.

Receiving Water

The receiving water for Outfall 001 is Dry Creek, which is tributary to Utah Lake (Provo Bay).

Per UAC R317-2-13.5.c, the designated beneficial uses for Dry Creek and tributaries from Utah Lake (Provo Bay) to Highway-US are 2B, 3E, and 4.

- *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 3E -- Severely habitat-limited waters. Narrative standards will be applied to protect these waters for aquatic wildlife.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Utah Division of Water Quality
 Wasteload Analysis
 Spanish Fork Wastewater Treatment Plant
 UPDES No. UT0021741

Since the aquatic life use class for Dry Creek (3E) only has narrative standards, the numeric standards for Utah Lake (Provo Bay) were used to determine the WQBELs for this discharge. Per UAC R317-2-13.12.x, the designated beneficial uses for Utah Lake are 2B, 3B, 3D, and 4.

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

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Dry Creek, the 20th percentile of flow measurements from water quality monitoring above the facility outfall was calculated to estimate seasonal critical flow in the receiving water (Table 1). The assumed flows for an unnamed irrigation canal that discharges into Dry Creek near the outlet to Provo Bay is also shown in Table 1.

Table 1: Seasonal critical low flow

Season	Dry Creek (cfs)	Irrigation Canal Return Flow (cfs)
Summer	1.7	1.55
Fall	11.4	0
Winter	10.1	0
Spring	10.2	0

TMDL

Dry Creek is not listed as impaired for any parameters according to the 2010 303(d) list. Utah Lake is listed as impaired for Total Phosphorus and Total Dissolved Solids.

Mixing Zone

The discharge is considered instantaneously fully mixed in the summer since the discharge is more than twice the background receiving water flow. For the remainder of the year, the discharge is assumed to be fully mixed in Dry Creek by the time it enters Provo Bay, which is the compliance point for numeric aquatic life criteria.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total suspended solids (TSS), dissolved oxygen (DO), BOD₅, total phosphorus (TP), total nitrogen (TN), total ammonia (TAM), E. coli, pH, and total residual chlorine (TRC) as determined in consultation with the UPDES Permit Writer.

Utah Division of Water Quality
Wasteload Analysis
Spanish Fork Wastewater Treatment Plant
UPDES No. UT0021741

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 LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (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 LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

Table 2: WET Limits for IC₂₅

Season	Percent Effluent
Summer	82%
Fall	40%
Winter	43%
Spring	43%

Water Quality Modeling

A QUAL2Kw model of the receiving water was built and calibrated under contract by Utah State University (USU) (Neilson et al. 2012). The model was calibrated to synoptic survey data collected in the summer of 2010 by USU and DWQ. The model extends from immediately above the plant discharge to upstream of the crossing at North Main Street (approximately 0.85 km).

The QUAL2Kw model of Dry Creek was extended to Provo Bay based on physiographic information from Google Earth and site data collected by DWQ staff (approximately 5.15 km total). To validate the model parameterization, an additional synoptic survey was conducted by DWQ staff in October 2012 using standard operating procedures (DWQ 2012a). Both the calibrated and validated QUAL2Kw models are available for review by request.

A wasteload QUAL2Kw model was built based on the calibrated model and using seasonal flow and water quality data for the receiving water. Receiving water quality data was obtained from monitoring site 4996030 Dry Creek above Spanish Fork WWTP. The average seasonal value was calculated for each constituent with available data in the receiving water. The wasteload model is available for review by request.

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

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

Utah Division of Water Quality
Wasteload Analysis
Spanish Fork Wastewater Treatment Plant
UPDES No. UT0021741

The limits for total residual chlorine were dependent on travel time and decay rate. The travel time was determined by adding the travel time in the outlet pipe (2,700 linear feet) to the travel time in Dry Creek prior to discharge to Provo Bay (per travel time in QUAL2Kw). Based on field sampling conducted by AQUA Engineering (2014), an average decay rate of 29.9 /day was used for determining chlorine decay through the outlet pipe and Dry Creek. The analysis for TRC is summarized in Appendix C.

Effluent Limits

The effect of the effluent on the DO in the receiving water was evaluated using the QUAL2Kw model. A large amount of filamentous benthic algae growth was observed and predicted in the model downstream of the treatment plant discharge, resulting in a DO sag and high diel range. Other factors contributing to the low minimum DO include low reaeration rate due to the flat gradient of Dry Creek, decay of BOD in the effluent, and sediment oxygen demand (SOD) resulting from decomposition of organic matter. The DO sag recovered somewhat within the model extents; however, in order to meet the minimum DO standard at the mouth of Dry Creek at Provo Bay, ammonia had to be limited during the summer (Table 3).

Table 3: Water Quality Based Effluent Limits Summary

Effluent Constituent	Acute			Chronic		
	Standard ^a	Limit	Averaging Period	Standard ^a	Limit	Averaging Period
Flow (MGD)		10.0	1 day		5.0	30 days
Min. Dissolved Oxygen (mg/L)	3.0	4.0	Instantaneous	5.0	4.0	30 days
BOD ₅ (mg/L) ^d	None	35	7 days	None	25	30 days
Ammonia (mg/L)	Varies		1 hour	Varies		30 days
Summer		18 ^c			7 ^b	
Fall/Winter/Spring		18 ^c			9	
Total Residual Chlorine (mg/L)	0.019		1 hour	0.011		4 days
Summer		48.2			212.1	
Fall		7.0			12.6	
Winter		2.1			3.1	
Spring		5.1			8.7	

a: Applicable standard in Provo Bay.
b: Limit due to minimum DO. All other seasonal ammonia limits due to toxicity criteria.
c: Limit from previous permit – meets water quality standards for this analysis.
d: Limits based on Utah Secondary Treatment Standards (UAC R317-1-3.2).

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 discharge since the pollutant concentration and load are not increasing beyond the design capacity of the facility.

**Utah Division of Water Quality
Wasteload Analysis
Spanish Fork Wastewater Treatment Plant
UPDES No. UT0021741**

Documents:

WLA Document: *spanish_fork_potw_wla_2014_final.docx*
QUAL2Kw Wasteload Model: *spanish_fork_wla_2014.xlsm*

References:

AQUA Engineering. 2014. *Spanish Fork City Waste-Load Parameters for Wastewater Discharge Permit*. City of Spanish Fork.

Neilson, B.T., A.J. Hobson, N. von Stackelberg, M. Shupryt, and J.D. Ostermiller. 2012. *Using QUAL2K Modeling to Support Nutrient Criteria Development and Wasteload Analyses in Utah*. Utah Department of Environmental Quality, Division of Water Quality.

Utah Division of Water Quality. 2012a. *Field Data Collection for QUAL2Kw Model Build and Calibration Standard Operating Procedures Version 1.0*.

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

Date: 2/13/2014

WASTELOAD ANALYSIS [WLA]

Appendix A: QUAL2Kw Analysis for Eutrophication

Discharging Facility: Spanish Fork WWTP
 UPDES No: UT-0021741
 Permit Flow [MGD]: 5.00 Maximum Monthly Flow
 10.00 Maximum Daily Flow

Receiving Water: Dry Creek
 Stream Classification: 2B, 3E, 4
 Stream Flows [cfs]: 1.70 Summer (July-Sept) Critical Low Flow
 11.40 Fall (Oct-Dec)
 10.10 Winter (Jan-Mar)
 10.20 Spring (Apr-June)

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

Modeling Information

A QUAL2Kw model was used to determine these effluent limits.

Model Inputs

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

Headwater/Upstream Information	Summer	Fall	Winter	Spring
Flow (cfs)	1.7	11.4	10.1	10.2
Temperature (deg C)	20.1	9.6	11.0	4.0
Specific Conductance (µmhos)	950	950	950	950
Inorganic Suspended Solids (mg/L)	46.0	56.6	43.4	79.1
Dissolved Oxygen (mg/L)	8.4	10.5	10.3	10.7
CBOD ₅ (mg/L)	2.1	1.9	2.5	2.7
Organic Nitrogen (mg/L)	0.185	0.185	0.185	0.185
NH ₄ -Nitrogen (mg/L)	0.045	0.090	0.082	0.268
NO ₃ -Nitrogen (mg/L)	2.585	3.461	2.122	3.191
Organic Phosphorus (mg/L)	0.075	0.047	0.032	0.068
Inorganic Ortho-Phosphorus (mg/L)	0.124	0.051	0.081	0.059
Phytoplankton (µg/L)	3.7	3.7	3.7	3.7
Detritus [POM] (mg/L)	5.1	6.3	4.8	8.8
Alkalinity (mg/L)	296	296	296	296
pH	8.2	8.3	8.2	8.3

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Discharge Information

Chronic	Summer	Fall	Winter	Spring
Flow (cfs)	5.0	5.0	5.0	5.0
Temperature (deg C)	21.1	15.9	10.6	14.8
Inorganic Suspended Solids (mg/L)	13.6	12.7	9.8	11.1
Organic Nitrogen (mg/L)	5.000	5.000	5.000	5.000
NO3-Nitrogen (mg/L)	6.943	7.144	5.843	8.242
Organic Phosphorus (mg/L)	1.000	1.000	1.000	1.000
Inorganic Phosphorus (mg/L)	4.000	4.000	4.000	4.000
Alkalinity (mg/L)	275	275	275	275
pH	7.5	7.6	7.6	7.5

Acute	Summer	Fall	Winter	Spring
Flow (cfs)	10.0	10.0	10.0	10.0
Temperature (deg C)	21.1	15.9	10.6	14.8
Inorganic Suspended Solids (mg/L)	13.6	12.7	9.8	11.1
Organic Nitrogen (mg/L)	10.000	10.000	10.000	10.000
NO3-Nitrogen (mg/L)	6.943	7.144	5.843	8.242
Organic Phosphorus (mg/L)	2.000	2.000	2.000	2.000
Inorganic Phosphorus (mg/L)	8.000	8.000	8.000	8.000
Alkalinity (mg/L)	275	275	275	275
pH	7.8	8.1	8.1	8.0

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

Effluent Limitations

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

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

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

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

	Standard	Summer	Fall	Winter	Spring
Chronic					
Flow (MGD)	N/A	5.0	5.0	5.0	5.0
NH4-Nitrogen (mg/L)	Varies	7.0	9.0	9.0	9.0
CBOD ₅ (mg/L)	N/A	25.0	25.0	25.0	25.0
Dissolved Oxygen [30-day Ave] (mg/L)	5.0	5.0	5.0	5.0	5.0
Acute					
Flow (cfs)	N/A	10.0	10.0	10.0	10.0
NH4-Nitrogen (mg/L)	Varies	18.0	18.0	18.0	18.0
CBOD ₅ (mg/L)	N/A	35.0	35.0	35.0	35.0
Dissolved Oxygen [Minimum] (mg/L)	3.0	4.0	4.0	4.0	4.0

Summary Comments

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

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Coefficients and Other Model Information

<i>Parameter</i>	<i>Value</i>	<i>Units</i>
Stoichiometry:		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
Inorganic suspended solids:		
Settling velocity	0.2	m/d
Oxygen:		
Reaeration model	USGS(channel-control)	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
Slow CBOD:		
Hydrolysis rate	0	/d
Temp correction	1.047	
Oxidation rate	0.103	/d
Temp correction	1.047	
Fast CBOD:		
Oxidation rate	10	/d
Temp correction	1.047	
Organic N:		
Hydrolysis	0.25219	/d
Temp correction	1.07	
Settling velocity	0.072248	m/d
Ammonium:		
Nitrification	3.840973	/d
Temp correction	1.07	
Nitrate:		
Denitrification	0.440663	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.89485	m/d
Temp correction	1.07	
Organic P:		
Hydrolysis	0.11173	/d
Temp correction	1.07	
Settling velocity	0.153214	m/d
Inorganic P:		
Settling velocity	1.49684	m/d
Sed P oxygen attenuation half sat constant	1.22794	mgO2/L

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Phytoplankton:			
Max Growth rate	2.817285	/d	
Temp correction	1.07		
Respiration rate	0.183875	/d	
Temp correction	1.07		
Death rate	0.75246	/d	
Temp correction	1		
Nitrogen half sat constant	15	ugN/L	
Phosphorus half sat constant	2	ugP/L	
Inorganic carbon half sat constant	1.30E-05	moles/L	
Phytoplankton use HCO3- as substrate	Yes		
Light model	Smith		
Light constant	57.6	langleys/d	
Ammonia preference	16.22865	ugN/L	
Settling velocity	0.217562	m/d	
Bottom Plants:			
Growth model	Zero-order		
Max Growth rate	39.236835	gD/m2/d or /d	
Temp correction	1.07		
First-order model carrying capacity	100	gD/m2	
Basal respiration rate	0.196733	/d	
Photo-respiration rate parameter	0.01	unitless	
Temp correction	1.07		
Excretion rate	0.002735	/d	
Temp correction	1.07		
Death rate	0.00755	/d	
Temp correction	1.07		
External nitrogen half sat constant	464.684	ugN/L	
External phosphorus half sat constant	56.1985	ugP/L	
Inorganic carbon half sat constant	7.79E-05	moles/L	
Bottom algae use HCO3- as substrate	Yes		
Light model	Smith		
Light constant	47.8192	mgO ² /L	
Ammonia preference	23.29875	ugN/L	
Subsistence quota for nitrogen	0.8422416	mgN/gD	
Subsistence quota for phosphorus	0.1719125	mgP/gD	
Maximum uptake rate for nitrogen	956.625	mgN/gD/d	
Maximum uptake rate for phosphorus	98.1245	mgP/gD/d	
Internal nitrogen half sat ratio	3.5499945		
Internal phosphorus half sat ratio	3.8810835		
Nitrogen uptake water column fraction	1		
Phosphorus uptake water column fraction	1		
Detritus (POM):			
Dissolution rate	1.071086	/d	
Temp correction	1.07		
Settling velocity	0.4923905	m/d	
pH:			
Partial pressure of carbon dioxide	370	ppm	

Atmospheric Inputs:	Summer	Fall	Winter	Spring
Min. Air Temperature, F	57.7	29.5	24.0	45.0
Max. Air Temperature, F	90.5	51.0	44.9	74.2
Dew Point, Temp., F	58.6	35.0	30.3	48.5
Wind, ft./sec. @ 21 ft.	9.8	7.5	7.6	9.2
Cloud Cover, %	10%	10%	10%	10%

Other Inputs:	
Bottom Algae Coverage	100%
Bottom SOD Coverage	100%
Prescribed SOD, gO ₂ /m ² /day	0

Date: 2/13/2014

WASTELOAD ANALYSIS [WLA]

Appendix B: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	Spanish Fork WWTP		
UPDES No:	UT-0021741		
Permit Flow [MGD]:	5.00	Maximum Monthly Flow	
	10.00	Maximum Daily Flow	
Receiving Water:	Dry Creek		
Stream Classification:	2B, 3E, 4		
Stream Flows [cfs]:	1.70	Summer (July-Sept)	Critical Low Flow
	11.40	Fall (Oct-Dec)	
	10.10	Winter (Jan-Mar)	
	10.20	Spring (Apr-June)	
Acute River Width:	100.0%		
Chronic River Width:	100.0%		

Modeling Information

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

Model Inputs

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

Headwater/Upstream Information

	7Q10 Flow
	cfs
Summer	1.7
Fall	11.4
Winter	10.1
Spring	10.2

Discharge Information

	Flow
	MGD
Maximum Daily	10.0
Maximum Monthly	5.0

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

Effluent Limitations

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

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

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

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

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

Parameter	Maximum Concentration			
Physical				
Inorganics				
	Chronic Standard (4 Day Average)		Acute Standard (1 Hour Average)	
	Standard	Limit	Standard	Limit
Phenol			0.010	0.010 mg/L
Hydrogen Sulfide (Undissociated)			0.002	0.002 mg/L

Total Recoverable Metals

Parameter (µg/L)	Chronic Standard (4 Day Average)			Acute Standard (1 Hour Average)		
	Standard	Background	Limit	Standard	Background	Limit
Aluminum	87.0	43.5	101.8	750.0	43.5	870.1
Arsenic	150.0	75.0	175.5	340.0	75.0	385.1
Cadmium	0.7	0.3	0.8	7.4	0.3	8.6
Chromium VI	11.0	5.5	12.9	16.0	5.5	17.8
Chromium III	233.7	116.8	273.4	4888.7	116.8	5699.9
Copper	26.4	13.2	30.9	44.1	13.2	49.4
Cyanide	22.0	11.0	25.7	5.2	11.0	4.2
Iron				1000.0	500.0	1085.0
Lead	15.0	7.5	17.5	384.8	7.5	448.9
Mercury	0.012	0.006	0.014	2.4	0.0	2.8
Nickel	146.2	73.1	171.0	1314.6	73.1	1525.7
Selenium	4.6	2.3	5.4	18.4	2.3	21.1
Silver				30.7	15.4	33.4
Tributyltin	0.072	0.036	0.084	0.46	0.04	0.53
Zinc	336.3	168.1	393.4	336.3	168.1	364.8

Based upon a Hardness of 338 mg/l as CaCO₃

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Organics [Pesticides]

Parameter (µg/L)	Chronic Standard (4 Day Average)			Acute Standard (1 Hour Average)		
	Standard	Background	Limit	Standard	Background	Limit
Aldrin				1.500	0.750	1.628
Chlordane	0.0043	0.00215	0.0050	1.200	0.600	1.302
DDT, DDE	0.001	0.0005	0.0012	0.550	0.275	0.597
Diazinon	0.17	0.085	0.199	0.17	0.085	0.184
Dieldrin	0.0056	0.0028	0.0066	0.240	0.120	0.260
Endosulfan, a & b	0.056	0.028	0.066	0.110	0.055	0.119
Endrin	0.036	0.018	0.042	0.086	0.043	0.093
Heptachlor & H. epoxide	0.0038	0.0019	0.0044	0.260	0.130	0.282
Lindane	0.08	0.04	0.09	1.000	0.500	1.085
Methoxychlor				0.030	0.015	0.033
Mirex				0.001	0.001	0.001
Nonylphenol	6.6	3.3	7.7	28.0	14.0	30.4
Parathion	0.0130	0.0065	0.0152	0.066	0.033	0.072
PCB's	0.014	0.007	0.016			
Pentachlorophenol	15.00	7.5	17.6	19.000	9.500	20.615
Toxephene	0.0002	0.0001	0.000234	0.730	0.365	0.792

Radiological

Parameter	Maximum Concentration
Gross Alpha	15 pCi/L

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Parameter	Maximum Concentration		
	Standard	Background	Limit
Total Dissolved Solids (mg/L)	1200	637	1296
Boron (µg/L)	75	37.5	81.4
Arsenic (µg/L)	100	50	109
Cadmium (µg/L)	10	5	10.9
Chromium (µg/L)	100	50	109
Copper (µg/L)	200	100	217
Lead (µg/L)	100	50	109
Selenium (µg/L)	50	25	54.3
Gross Alpha (pCi/L)	15	7.5	16.3

Utah Division of Water Quality

WASTELOAD ANALYSIS [WLA]
Appendix C: Total Residual Chlorine

Date: 4/7/2014

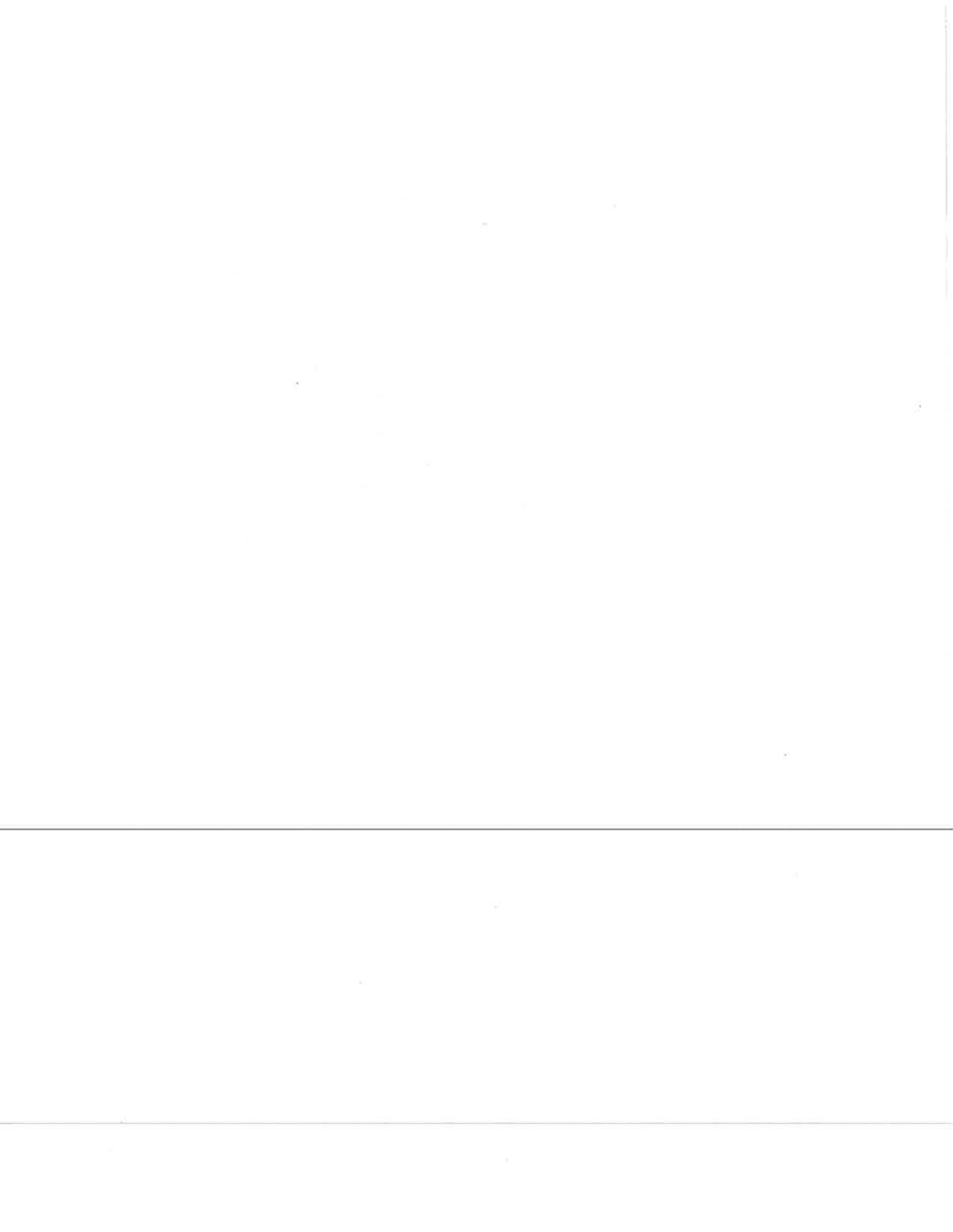
Discharging Facility: Spanish Fork WWTP
 UPDES No: UT-0021741

CHRONIC

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day)		Travel Time (min)	Decay Coefficient	Effluent Limit
								@ 20 deg C	@ T deg C			
Discharge (cfs)	Summer	1.7		7.7	9.4							
	Fall	11.4		7.7	19.1							
	Winter	10.1		7.7	17.8							
	Spring	10.2		7.7	17.9							
TRC (mg/L)	Summer	0.000	0.011			0.013	21.1	29.86	31.4	443	0.0001	212.061
	Fall	0.000	0.011			0.027	15.9	29.86	24.8	357	0.0022	12.611
	Winter	0.000	0.011			0.025	10.6	29.86	19.4	357	0.0082	3.100
	Spring	0.000	0.011			0.026	14.8	29.86	23.5	357	0.0029	8.700

ACUTE

	Season	Receiving Water	Standard	Total Effluent	Mixing Zone Boundary	Effluent Limit Without Decay	Temperature (°C)	Decay Rate (/day)		Travel Time (min)	Decay Coefficient	Effluent Limit
								@ 20 °C	@ T °C			
Discharge (cfs)	Summer	1.7		15.5	17.2							
	Fall	11.4		15.5	26.9							
	Winter	10.1		15.5	25.6							
	Spring	10.2		15.5	25.7							
TRC (mg/L)	Summer	0.000	0.019			0.021	21.1	29.86	31.4	355	0.0004	48.202
	Fall	0.000	0.019			0.033	15.9	29.86	24.8	311	0.0047	6.998
	Winter	0.000	0.019			0.031	10.6	29.86	19.4	311	0.0151	2.081
	Spring	0.000	0.019			0.032	14.8	29.86	23.5	311	0.0062	5.116



ATTACHMENT 3

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
288 North 1460 West
P.O. 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. <input type="checkbox"/> Domestic wastes | (Restrooms, employee showers, etc.) |
| 2. <input type="checkbox"/> Cooling water, non-contact | 3. <input type="checkbox"/> Boiler/Tower blowdown |
| 4. <input type="checkbox"/> Cooling water, contact | 5. <input type="checkbox"/> Process |
| 6. <input type="checkbox"/> Equipment/Facility washdown | 7. <input type="checkbox"/> Air Pollution Control Unit |
| 8. <input type="checkbox"/> Storm water runoff to sewer | 9. <input type="checkbox"/> Other describe |

Wastes are discharged to (check all that apply):

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Sanitary sewer | <input type="checkbox"/> Storm sewer |
| <input type="checkbox"/> Surface water | <input type="checkbox"/> Ground water |
| <input type="checkbox"/> Waste haulers | <input type="checkbox"/> Evaporation |
| <input type="checkbox"/> 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:

- | | |
|---|--|
| <input type="checkbox"/> Adhesives | <input type="checkbox"/> Car Wash |
| <input type="checkbox"/> Aluminum Forming | <input type="checkbox"/> Carpet Cleaner |
| <input type="checkbox"/> Battery Manufacturing | <input type="checkbox"/> Dairy |
| <input type="checkbox"/> Copper Forming | <input type="checkbox"/> Food Processor |
| <input type="checkbox"/> Electric & Electronic Components | <input type="checkbox"/> Hospital |
| <input type="checkbox"/> Explosives Manufacturing | <input type="checkbox"/> Laundries |
| <input type="checkbox"/> Foundries | <input type="checkbox"/> Photo Lab |
| <input type="checkbox"/> Inorganic Chemicals Mfg. or Packaging | <input type="checkbox"/> Restaurant & Food Service |
| <input type="checkbox"/> Industrial Porcelain Ceramic Manufacturing | <input type="checkbox"/> Septage Hauler |
| <input type="checkbox"/> Iron & Steel | <input type="checkbox"/> Slaughter House |
| <input type="checkbox"/> Metal Finishing, Coating or Cleaning | |
| <input type="checkbox"/> Mining | |
| <input type="checkbox"/> Nonferrous Metals Manufacturing | |
| <input type="checkbox"/> Organic Chemicals Manufacturing or Packaging | |
| <input type="checkbox"/> Paint & Ink Manufacturing | |
| <input type="checkbox"/> Pesticides Formulating or Packaging | |
| <input type="checkbox"/> Petroleum Refining | |
| <input type="checkbox"/> Pharmaceuticals Manufacturing or Packaging | |
| <input type="checkbox"/> Plastics Manufacturing | |
| <input type="checkbox"/> Rubber Manufacturing | |
| <input type="checkbox"/> Soaps & Detergents Manufacturing | |
| <input type="checkbox"/> Steam Electric Generation | |
| <input type="checkbox"/> Tanning Animal Skins | |
| <input type="checkbox"/> Textile Mills | |

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
P. O. 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 4

Reasonable Potential Analysis Model Output

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		Metal	CN	As	Cd	Cr	Cu	Pb	Ni	Ag	Zn	Mo	Se	Hg
		ARP Val	0.0042	0.385	0.0086	0.0178	0.0494	0.4489	1.5257	0.0334	0.3648	1	0.0211	0.0028
		CRP Val	0.0257	0.1755	0.0008	0.0129	0.0309	0.0175	0.171	1	0.3934	1	0.0054	0.000014
2009	Fall	0.008	0.0027	ND	0.003	0.0081	ND	0.0087	ND	0.03	0.0046	0.0023	ND	
	Win	ND	0.0028	ND	0.003	0.0085	ND	0.0074	ND	0.03	0.0126	0.0019	ND	
2010	Spr	ND	0.004	ND	0.002	0.0076	ND	0.0077	ND	0.04	0.0088	0.0026	0.00000011	
	Sum	ND	0.0028	ND	0.001	0.0008	ND	0.0057	0.001	0.03	0.0075	0.0028	ND	
	Fall	ND	0.0029	ND	0.001	0.0092	ND	0.0058	ND	0.03	0.0073	0.0021	ND	
2011	Win	ND	0.0048	ND	0.0042	0.0227	0.0011	0.007	0.001	0.08	0.0065	0.0033	0.00000313	
	Spr	ND	0.0042	ND	0.0023	0.0062	ND	0.0073	0.0005	0.03	0.0121	0.0029	ND	
	Sum	ND	0.0035	ND	0.0013	0.007	ND	0.0071	ND	0.03	0.0136	0.0027	0.0000032	
	Fall	0.007	0.0028	ND	0.0033	0.0074	ND	0.007	ND	0.03	0.0106	0.0028	0.0000038	
2012	Win	0.005	0.0042	ND	0.0012	0.0087	ND	0.0068	ND	0.04	0.0149	0.0036	0.0000029	
	Spr	0.005	0.0047	ND	0.0017	0.0091	0.0006	0.0042	0.002	0.06	0.0217	0.0038	0.0000049	
	Sum	0.004	0.0036	ND	0.0021	0.0077	0.0005	0.0048	0.002	0.03	0.0068	0.003	0.0000029	
	Fall	0.004	0.0046	0.0002	0.0016	0.0067	ND	0.0106	0.0008	0.04	0.0233	0.0042	0.0000044	
2013	Win	ND	0.0056	ND	0.008	0.0079	ND	0.0055	ND	0.059	0.088	0.0042	ND	
	Spr	ND	0.0046	ND	0.014	0.011	ND	0.0082	ND	0.068	0.0079	0.0033	ND	
	Sum	0.004	0.0036	ND	0.0021	0.0077	ND	0.0048	0.002	0.03	0.0068	ND	0.0000029	
	Fall	ND	0.0048	ND	0.0084	0.0074	ND	0.0038	ND	0.041	0.0064	ND	ND	
2014	Win	ND	0.005	ND	ND	0.0054	ND	ND	ND	ND	0.028	ND	ND	
	Spr	ND	0.004	ND	ND	0.006	ND	0.0022	ND	ND	0.015	0.0034	ND	
	Sum	ND	0.004	ND	ND	0.0067	ND	0.0041	0.00051	0.059	0.016	0.0021	ND	
ND Value		0.005	0.0005	0.0005	0.005	0.001	0.0005	0.0005	0.0005	0.05	0.005	0.0002	0.0001	
Max		0.008	0.0056	0.0005	0.014	0.0227	0.0011	0.0106	0.002	0.08	0.088	0.0042	0.0001	
Run A RP?		YES	No	No	YES	No	No	No	No	No	No	No	No	
Run C RP?		No	No	YES	YES	YES	No	No	No	No	No	YES	YES	

Month	Flow, MGD		E. coli		DO	pH		O&G	BOD5, mg/L		TSS, mg/L		Ammonia	TRC
	Ave	Max	Ave	Max	Min	Min	Max	Max	Ave	Max	Ave	Max	Max	MAX
Limit	5	10	126	157	4	6.5	9	10	25	35	25	35	18	2
Jan-11	5	7	46	117	4.0	7.3	7.5	0	7	10	7	18	7.1	1.7
Feb-11	5	7	10	30	4.5	7.3	7.7	0	8	10	8	10	10.1	1.8
Mar-11	5	737	10	124	4.0	7.6	7.8	0	8	10	7	8	16.0	1.7
Apr-11	5	8	19	523	4.0	7.6	7.9	0	8	10	7	9	16.0	2.0
May-11	5	8	19	523	4.0	7.6	7.9	0	8	10	7	9	16.0	2.0
Jun-11	5	7	1	3	4.0	7.4	7.8	0	11	15	7	8	9.3	1.9
Jul-11	5	8	2	5	4.0	7.6	7.7	0	7	9	6	8	9.0	1.9
Aug-11	5	7	2	9	4.0	7.2	7.5	0	9	12	7	8	10.0	1.7
Sep-11	5	8	9	25	4.0	7.2	7.6	0	7	8	5	6	6.8	1.7
Oct-11	5	10	14	100	4.0	7.2	7.5	0	6	7	4	5	8.5	1.9
Nov-11	4	7	13	38	4.0	7.2	7.5	0	6	8	6	8	8.8	1.7
Dec-11	4	4	9	38	4.0	7.4	7.5	0	8	9	5	5	13.8	2.0
Jan-12	4	5	5	54	4.5	7.3	7.5	0	8	6	9	6	14.4	2.0
Feb-12	4	5	10	50	4.5	7.4	7.6	0	9	13	6	16	14.0	2.0
Mar-12	4	4	10	25	4.2	7.4	7.7	0	11	15	6	6	12.6	1.9
Apr-12	4	4	13	73	4.5	7.6	7.8	0	10	12	9	12	13.7	1.7
May-12	4	5	6	44	4.3	7.5	7.7	0	9	10	10	13	9.7	2.0
Jun-12	4	5	14	40	4.3	7.5	7.7	0	9	12	9	13	5.5	1.9
Jul-12	4	5	5	18	4.0	7.5	7.7	0	10	11	8	8	7.2	1.9
Aug-12	4	5	5	66	4.0	7.4	7.5	0	10	12	7	9	6.7	1.9
Sep-12	4	5	9	66	4.3	7.4	7.6	0	8	12	6	7	8.3	2.0
Oct-12	4	5	6	12	4.0	7.4	7.6	0	9	12	6	10	9.0	1.9
Nov-12	4.2	4.7	6	36	4	7.3	7.6	0	10	13	8	10	8.7	1.4
Dec-12	4.2	4.9	7	126	4.5	7.4	7.6	0	9	11	9	11	13.5	1.5
Jan-13	4.1	4.6	13	121	5.25	6.4	7.5	0	7	10	8	10	10	1.7
Feb-13	4.6	4.5	17	96	5.25	6.7	7.2	0	9	12	11	18	12.1	1.9
Mar-13	4.3	4.5	13	53	5	6.9	7.0	0	12	14	10	17	10.5	2.0
Apr-13	4.3	4.7	2	15	4.5	6.7	7.3	0	10	12	9	19	12.9	2.0
May-13	4.7	7.1	4	36	4	7.3	7.4	0	9	12	5	6	12.1	1.6
Jun-13	4.6	6.8	1	4	4	7.5	7.8	0	12	16	6	7	12.9	2.0
Jul-13	4.6	4.6	5	5.3	4	7.6	7.7	0	8	11	8	11	20.7	1.3
Aug-13	4.6	7.8	3	4	4	7.4	7.9	0	7	8	6	9	7.55	1.7
Sep-13	4.7	6.4	6	8	4	7.5	7.8	0	9	11	10	15	13.5	1.6
Oct-13	3.9	5.5	9	12.6	4	7.6	7.8	0	9	12	10	12	12	1.4
Nov-13	3.4	4.3	5	130	4.5	7.4	7.8	0	7	9	8	10	14.1	2.0
Dec-13	3.4	8	5	130	4	7.5	7.8	0	9	12	6	8	19.2	2.0
Jan-14	3.2	4.3	1	1	4.5	7.6	7.7	0	7	9	8	16	17.9	2.0
Feb-14	3.6	5.1	1	1	4.25	7.6	7.7	0	10	13	6	10	18.9	2.0
Mar-14	3.4	4.5	1	3	4.5	7.5	7.7	0	8	9	5	5	17.6	1.6
Apr-14	3.9	4.4	5	126	4	7.4	7.7	0	10	11	7	9	10.9	1.6
May-14	4.4	4.8	30	1039	4	7.5	7.8	0	11	19	10	23	18.5	2.0
Jun-14	4.2	4.9	7	7	4.25	7.5	7.7	0	10	11	12	18	12.9	2.0
Jul-14	4.4	4.8	2	2	4	7.1	7.6	0	10	12	10	12	7.4	1.4
Aug-14	4.5	6.4	3	18.9	4	7.6	7.7	0	7	13	6	8	6.79	1.0
Sep-14	4.8	6.3	3	6	4.5	7.1	7.8	0	14	26	6	7	9.01	1.6

RP Procedure Output			Effluent Data	
Facility Name:	Spanish Fork		#	
Permit Number:	UT0020109		1	0.008
Outfall Number:	OO1		2	ND
Parameter	Cyanide (Total)		3	ND
Distribution	Normal		4	ND
Data Units	mg/L		5	ND
Reporting Limit	0.002		6	ND
Significant Figures	2		7	ND
Confidence Interval	99		8	ND
			9	0.007
Maximum Reported Effluent Conc.	0.008	mg/L	10	0.005
Coefficient of Variation (CV)	0.3		11	0.005
RP Multiplier	1.7		12	0.004
Projected Maximum Effluent Conc. (MEC)	0.014	mg/L	13	0.004
Facility Flow	10	MGD	14	ND
Acute Dilution Factor	1		15	ND
Acute Low Flow	2.64	MGD	16	ND
Background Pollutant Conc. (acute)	0.0023	mg/L	17	ND
Acute Receiving Water Conc. (RWC _a)	0.014	mg/L	18	ND
Acute Criterion	0.0042	mg/L	19	ND
Chronic Dilution Factor	1		20	ND
Chronic Low Flow	2.64	MGD		
Background Pollutant Conc. (chronic)	0.0023	mg/L		
Chronic Receiving Water Conc. (RWC _c)	0.014	0		
Chronic Criterion	0.0257	mg/L		
RP for Acute?	YES			
RP for Chronic?	NO			

RP Procedure Output			Effluent Data	
Facility Name:	Spanish Fork		#	
Permit Number:	UT0020109		1	0.0005
Outfall Number:	OO1		2	0.0005
Parameter	Cadmium		3	0.0005
Distribution	Normal		4	0.0005
Data Units	mg/L		5	0.0005
Reporting Limit	0.0005		6	0.0005
Significant Figures	2		7	0.0005
Confidence Interval	95		8	0.0005
			9	0.0005
Maximum Reported Effluent Conc.	0.0002	mg/L	10	0.0005
Coefficient of Variation (CV)	0.47		11	0.0005
RP Multiplier	2.8		12	0.0002
Projected Maximum Effluent Conc. (MEC)	0.00055	mg/L	13	0.0002
Facility Flow	0	MGD	14	0.0005
Acute Dilution Factor	1		15	0.0005
Acute Low Flow	0	MGD	16	0.0002
Background Pollutant Conc. (acute)	0	mg/L	17	0.0005
Acute Receiving Water Conc. (RWC _a)	0.00055	mg/L	18	0.0005
Acute Criterion	0.0086	mg/L	19	0.0005
Chronic Dilution Factor	1		20	0.0005
Chronic Low Flow	0	MGD		
Background Pollutant Conc. (chronic)	0	mg/L		
Chronic Receiving Water Conc. (RWC _c)	0.00055	0		
Chronic Criterion	0.0008	mg/L		
RP for Acute?	NO			
RP for Chronic?	NO			

RP Procedure Output			Effluent Data	
Facility Name:	Spanish Fork		#	
Permit Number:	UT0020109		1	0.0081
Outfall Number:	OO1		2	0.0085
Parameter	Copper		3	0.0076
Distribution	Normal		4	0.0008
Data Units	mg/L		5	0.0092
Reporting Limit	0.0005		6	0.0227
Significant Figures	2		7	0.0062
Confidence Interval	95		8	0.007
			9	0.0074
Maximum Reported Effluent Conc.	0.0227	mg/L	10	0.0087
Coefficient of Variation (CV)	0.56		11	0.0091
RP Multiplier	1.2		12	0.0077
Projected Maximum Effluent Conc. (MEC)	0.027	mg/L	13	0.0067
Facility Flow	0	MGD	14	0.0079
Acute Dilution Factor	1		15	0.011
Acute Low Flow	0	MGD	16	0.0077
Background Pollutant Conc. (acute)	0	mg/L	17	0.0074
Acute Receiving Water Conc. (RWC _a)	0.027	mg/L	18	0.0054
Acute Criterion	0.0494	mg/L	19	0.006
Chronic Dilution Factor	1		20	0.0067
Chronic Low Flow	0	MGD		
Background Pollutant Conc. (chronic)	0	mg/L		
Chronic Receiving Water Conc. (RWC _c)	0.027	0		
Chronic Criterion	0.0309	mg/L		
RP for Acute?	NO			
RP for Chronic?	NO			

RP Procedure Output			Effluent Data	
Facility Name:	Spanish Fork		#	
Permit Number:	UT0020109		1	0.0023
Outfall Number:	OO1		2	0.0019
Parameter	Selenium		3	0.0026
Distribution	Normal		4	0.0028
Data Units	mg/L		5	0.0021
Reporting Limit	0.002		6	0.0033
Significant Figures	2		7	0.0029
Confidence Interval	95		8	0.0027
			9	0.0028
Maximum Reported Effluent Conc.	0.0042	mg/L	10	0.0036
Coefficient of Variation (CV)	0.33		11	0.0038
RP Multiplier	1.1		12	0.003
Projected Maximum Effluent Conc. (MEC)	0.0048	mg/L	13	0.0042
Facility Flow	0	MGD	14	0.0042
Acute Dilution Factor	1		15	0.0033
Acute Low Flow	0	MGD	16	0.003
Background Pollutant Conc. (acute)	0	mg/L	17	0.0002
Acute Receiving Water Conc. (RWCa)	0.0048	mg/L	18	0.002
Acute Criterion	0.0211	mg/L	19	0.0034
Chronic Dilution Factor	1		20	0.0021
Chronic Low Flow	0	MGD		
Background Pollutant Conc. (chronic)	0	mg/L		
Chronic Receiving Water Conc. (RWCc)	0.0048	0		
Chronic Criterion	0.0054	mg/L		
RP for Acute?	NO			
RP for Chronic?	NO			

RP Procedure Output			Effluent Data	
Facility Name:	Spanish Fork		#	
Permit Number:	UT0020109		1	ND
Outfall Number:	OO1		2	ND
Parameter	Mercury		3	0.00000011
Distribution	Normal		4	ND
Data Units	mg/L		5	ND
Reporting Limit	0.0001		6	0.00000313
Significant Figures	2		7	ND
Confidence Interval	95		8	0.0000032
			9	0.0000038
Maximum Reported Effluent Conc.	0.0000049	mg/L	10	0.0000029
Coefficient of Variation (CV)	0.43		11	0.0000049
RP Multiplier	1.4		12	0.0000029
Projected Maximum Effluent Conc. (MEC)	0.0000067	mg/L	13	0.0000044
Facility Flow	0	MGD	14	ND
Acute Dilution Factor	1		15	ND
Acute Low Flow	0	MGD	16	0.0000029
Background Pollutant Conc. (acute)	0	mg/L	17	ND
Acute Receiving Water Conc. (RWC _a)	0.0000067	mg/L	18	ND
Acute Criterion	0.0028	mg/L	19	ND
Chronic Dilution Factor	1		20	ND
Chronic Low Flow	0	MGD		
Background Pollutant Conc. (chronic)	0	mg/L		
Chronic Receiving Water Conc. (RWC _c)	0.0000067	0		
Chronic Criterion	0.000014	mg/L		
RP for Acute?	NO			
RP for Chronic?	NO			

