

**STATEMENT OF BASIS  
MORONI FEED COMPANY  
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER  
UPDES PERMIT NUMBER: UT0020222  
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020222  
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000000  
MAJOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name:	Matt Cook	Facility Name:	Moroni Wastewater Treatment Plant
Position:	Moroni Feed President/CEO		
		Mailing Address:	PO Box 308 Moroni, Utah 84646
Person Name:	Kerry Farnsworth	Telephone:	(435) 436-8211
Position:	Wastewater Treatment Plant Superintendent		
Person Name:	Adam Dyches	Actual Address:	350 South 300 West Moroni, Utah
Position:	Plant Operation		

**DESCRIPTION OF FACILITY**

The Moroni City Water Reclamation Facility (MWRF) consists of the following unit processes: mechanical screen, primary clarifier, pre-aeration basin then to the membrane bioreactor system with UV disinfection. The sludge is pumped to two aerobic digesters and then to the solids handling facility for dewatering. The facility has been in service since 1974 with a design capacity of 1.1 MGD. The facility is located at 350 West 300 South in Moroni, Sanpete County, Utah.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

Total residual chlorine (TRC) has been added back into the permit since the permittee has had process problems and has continued to use chlorine to disinfect the effluent. The limits have changed due to a new wasteload analysis (WLA).

The ammonia limit has changed due to a new WLA and due to a change in the standard which added a chronic standard for ammonia to Class 3C waters. The ammonia chronic standard rule change was affective on January 12, 2009.

Since the WLA was used to develop the limits for this permit a flow requirement will be required.

Pretreatment conditions have changed such that detection levels will be required to be below water quality standards as stated in the WLA to ensure protection of water quality standards.

## **DISCHARGE**

### **DESCRIPTION OF DISCHARGE**

The Moroni Wastewater Treatment Plant has been reporting self-monitoring results on Discharge Monitoring Reports (DMRs) on a monthly basis.

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

The discharge from Outfall 001 flows into the San Pitch River and thence into the Sevier River. The discharge from Outfall 002 flows into the Rock Dam Irrigation Canal, and the return irrigation flows into the San Pitch River. The irrigation canal is Class 4; the San Pitch River is Class 2B, 3C, 3D and 4, according to *Utah Administrative Code (UAC) R317-2-12.7*:

- Class 2B -protected for secondary contact recreation such as boating, wading or similar uses.
- Class 3C -protected for nongame fish and other 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.
- Class 4 -protected for agricultural uses including irrigation of crops and stockwatering.

### **BASIS FOR EFFLUENT LIMITATIONS**

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD<sub>5</sub>), E.coli, pH and percent removal for BOD<sub>5</sub> and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. Limitations on dissolved oxygen (DO), ammonia, TRC and total dissolved solids (TDS) are based on a waste load 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
Flow, MGD	1.1	NA	NA	NA
BOD <sub>5</sub> , mg/L	25	35	NA	NA
BOD <sub>5</sub> Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E. Coli, no./100 mL	126	157	NA	NA
TRC, mg/L				
Spring	0.055	NA	NA	0.098
Summer	0.016	NA	NA	0.029
Fall	0.131	NA	NA	0.235
Winter	0.158	NA	NA	0.283
WET, Acute Biomonitoring	NA	NA	NA	LC <sub>50</sub> > 100% End of pipe
DO, mg/L	NA	NA	5.5	NA
Ammonia, mg/L				
Spring	21.8	NA	NA	65.6
Summer	4.2	NA	NA	23.7
Fall	12.5	NA	NA	35.0
Winter	24.2	NA	NA	80.1
TDS, mg/L	NA	NA	NA	1200
Oil & Grease, mg/L	NA	NA	NA	10
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable.

### SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit will require DMR reports to be submitted monthly and quarterly biomonitoring reports, as applicable, on DMR forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

<b>Self-Monitoring and Reporting Requirements</b>			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent Effluent	2 X weekly	Composite	mg/L
	2 X weekly	Composite	mg/L
TSS, Influent Effluent	2 X weekly	Composite	mg/L
	2 X weekly	Composite	mg/L
E. Coli	2 X Weekly	Grab	mg/L
TRC	2 X weekly	Grab	mg/L
WET, Acute Biomonitoring	Quarterly	Composite	Pass/Fail
Oil & Grease	Monthly	Grab	mg/L
pH	2 X Weekly	Grab	SU
DO	2 X Weekly	Grab	mg/L
Ammonia	2 X Weekly	Grab	mg/L
TDS	Monthly	Grab	mg/L
Metal Influent Effluent	2 X Yearly	Composite	mg/L
	2 X Yearly	Composite	mg/L
Toxic Organic	1 <sup>st</sup> , 3 <sup>rd</sup> and 5 <sup>th</sup> year of the permit cycle	Grab	mg/L

## **BIOSOLIDS**

### **DESCRIPTION OF BIOSOLIDS TREATMENT AND DISPOSAL**

After the influent is screened the solids are stabilized in the membrane bioreactor plant, and dewatered with a belt press to about 15 percent solids. After the solids are dewatered with the belt press, The MWRf hauls the solids off site and composts the solids to achieve Class A biosolids standards. To achieve Class A requirements, the windrows need to maintain a temperature of at least 131° F (55° C), for at least 15 days, and be turned a minimum of five times during those fifteen days. If the product fails to meet Class A standards, the product cannot be sold or given away to the public and must be disposed in a sanitary landfill and be covered daily with soil or another approved material for vector attraction reduction. In 2010 the MWRf sold or gave away 186 dry metric tons (DMT) of Class A biosolids to the public.

### **LIMITATIONS AND SELF-MONITORING REQUIREMENTS**

The self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below. At a minimum, all metals, pathogens and applicable vector attraction reduction requirements shall be monitored according to *40 CFR 503.16,(a)(1)*.

<b>Minimum Frequency of Monitoring Based Upon Dry Metric Tons (DMT)</b>	
Amount of Biosolids Produced Per Year	<b><u>Monitoring Frequency</u></b>
> 0 to < 290 DMT	<b><u>Once Per Year</u></b>
> 290 < 1,500 DMT	<b><u>Four Times Per Year</u></b>

Heavy Metals Monitoring

The MWRF is required to sample for the nine heavy metals, listed in 40 CFR 503.13 Tables 1 and 3, prior to the time of sale or giveaway to the public and must be disposed in the landfill.

Pathogen Monitoring for Class A Biosolids

The biosolids must meet a “*process to further reduce pathogens*” (PFRP), and be sampled for either *salmonella* or *fecal coliform* and pass the testing requirements. If the biosolids have not met a PFRP, and passed the testing requirements, the biosolids cannot be sold or given away to the public and must be disposed in the landfill.

Vector Attraction Reduction Monitoring

The biosolids must be monitored to meet vector attraction reduction (VAR) requirements for time and temperature. If the biosolids do not meet the VAR requirements, the biosolids cannot be sold or given away to the public and must be disposed in the landfill.

**MONITORING DATA (Pathogens)**

The MWRF sampled for fecal coliform 7 times in 2010. All seven samples were less than 1,000 most probable number per gram of total solids allowing the biosolids to be sold or given away to the public.

MWRF Fecal Coliform Monitoring Data, 2010	
Geo-mean of the 7 samples, Most Probable Number Per Gram	Maximum of the 7 samples, Most Probable Number Per Gram
57.7 MPN/gram	349.0 MPN/Gram

**MONITORING DATA (Heavy Metals)**

The MWRF sampled for heavy metals once in 2010. All samples of the metals were below 40 CFR 503.13, Table 3 if the biosolids are to be sold or given away to the public.

Heavy Metals	MWRF 2010, Yearly Average and Maximum mg/kg	40 CFR 503.13, Table 3, Exceptional Quality Biosolids Table mg/kg
Total Arsenic	6.7	41.0
Total Cadmium	0.80	39.0
Total Copper	347.0	1500.0
Total Lead	4.6	300.0
Total Mercury	0.08	17.0
Total Molybdenum	5.4	N/A
Total Nickel	13.3	420.0
Total Selenium	3.2	100.0
Total Zinc	440.0	2800.0

## **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 I.D. of the permit) to be handed out to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions 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 land application to home lawns and gardens.

40 CFR 503.13, Tables 1 and 3 of Heavy Metal Limitations

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

**Pathogens**

**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 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids (or less than 3 MPN of *Salmonella* per 4 grams of total solids) to be considered Class A biosolids. The PFRP will be accomplished through the windrow method of composting. (*Using the windrow method of composting, the temperature needs to be maintained at 55 °C (131 °F) or higher for fifteen days, with a minimum of five turnings during those fifteen days.* (40 CFR 503.32(a)(8)(ii), Appendix B, B, I.) 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 SUVSWD will need dispose of the biosolids in the landfill.

**Vector Attraction Reduction**

If the biosolids are to be sold or given away, the MWRf will need to meet a method of vector attraction reduction under 40 CFR 503.33. The MWRf intends to meet a vector attraction reduction requirement by the method listed below.

Under 40 CFR 503.33(b)(5), Aerobic treatment of the solids for at least 14 days at over 40° C (104° F) with an average temperature of over 45° C (113° F).

## **RECORD KEEPING**

The record keeping requirements from *40 CFR 503.17* are included under *Part III.F.* of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the heavy metals concentrations. If the biosolids continue to meet the heavy 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.

## **REPORTING REQUIREMENTS**

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

## **STORM WATER**

### **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.

Moroni Feed Company is currently covered under the UPDES Multi Sector General Permit for Industrial Activities.

### **BIOMONITORING REQUIREMENTS**

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

Since the permittee is a major municipal discharger, the renewal permit will require acute whole effluent toxicity (WET) testing. The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

### **PERMIT DURATION**

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

**PUBLIC NOTICE INFORMATION**

This section will be completed once the public comment period is completed.

Drafted by  
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