



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 W. 15th STREET, SUITE 3200
HELENA, MONTANA 59626

STATEMENT OF BASIS

PERMITTEE: U.S. Bureau of Reclamation, Yellowtail Field Office
Yellowtail Dam Wastewater Treatment Facility
Crow Indian Reservation, Montana

CONTACT: Carol Link, Support Services Supervisor
Yellowtail Field Office
P.O. Box 7551
Yellowtail, MT 59035
(406)666-2443

PERMIT NUMBER: MT0022993

RECEIVING WATERS: Afterbay Reservoir/Bighorn River

LOCATION: S ½ of Section 18, Township 6S, Range 30E,

POPULATION: Approximately 20 employees four days a week

A. Permit Status

The current National Pollutant Discharge Elimination System (NPDES) permit for the Yellowtail Dam wastewater treatment facility (facility) became effective on February 1, 2005 and expired on December 31, 2009. In April 2009, the Bureau of Reclamation (BOR) submitted an application for renewal. The 2005 issued permit has been administratively extended until the permit is renewed.

B. Facility Description

The Yellowtail Dam is located on the Bighorn River in southeastern Montana on the Crow Reservation and is operated by the BOR. The Yellowtail Dam wastewater treatment facility (facility) is a package plant consisting of an extended mechanical aeration treatment plant with trickling sand filters and UV disinfection. The facility treats sanitary wastes from restrooms in the dam and power plant. The design flow is 0.0006 million gallons per day (gpd). The discharge is at the downstream toe of the dam directly into the Afterbay Reservoir/Bighorn River and is continuous.

C. Past Discharge Data

Table 1: Discharge Data from 2006-2009						
Parameter	Units	2005 Permit Limit	Minimum Value	Maximum Value	Average Value	Number of Samples
Flow	mgd	--	0.0007	0.012	0.00078	29
Biological Oxygen Demand (BOD ₅)	mg/L	30/45 ⁽¹⁾	<2.0	34	8.99	47
Total Suspended Solids (TSS)	mg/L	30/45 ⁽¹⁾	<1.0	129	15	47
pH	s.u.	6.0-9.0	5.97	7.81		46
Oil and Grease	Visual	10 mg/L			(2)	
⁽¹⁾ 30-Day Average/7-Day Average ⁽²⁾ No visual detections.						

D. Compliance History

Discharge data over the from 2006-2009 shows exceedances of the 30-Day average BOD₅ limit three times; exceedances of the 30-Day TSS limit ten times; and exceedance of the 7-Day TSS limit six times. According to the permittee, the cause of the highest TSS value, 129 mg/L was the changing of the sand filter.

An inspection of the facility conducted by the Environmental Protection Agency (EPA) in March 2008, identified the failure of the BOR to submit Discharge Monitoring Reports (DMRs) for 2007. Subsequent to the inspection, the BOR submitted the 2007 DMRs. Since 2007, the required DMRs have been received by EPA.

E. Technology Based Effluent Limitations

40 CFR Part 133.102, Federal Secondary Treatment Regulation, establishes effluent limitations for BOD₅, TSS, and pH for Publicly Owned Treatment Works (POTWs) as shown in Table 2. POTWs are defined as being owned by a State, Tribe, or municipality. The Yellowtail Dam wastewater treatment facility does not meet the definition of a POTW, however the wastewater being treated is essentially the same as that being discharged from municipal systems. Therefore, based on best professional judgment, the effluent limitations in Table 2 will apply.

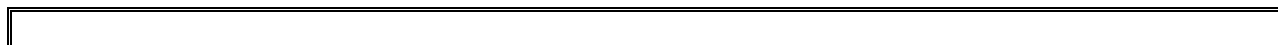


Table 2: Technology Based Effluent Limitations			
Effluent Characteristic	Units	30-Day Average	7-Day Average
BOD ₅	mg/L	30	45
TSS	mg/L	30	45
The pH of the effluent shall not be less than 6.0 nor greater than 9.0 in any single sample or analysis.			

F. Water Quality Considerations

There are presently no applicable Water Quality Standards on the Crow Reservation. The State of Montana has classified the Bighorn River downstream of the reservation as B-1. These waters are to be suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming, and recreation; grown and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

To protect water quality, the concentration of oil and grease in any single sample shall not exceed 10 mg/L nor shall there be any visible sheen in the receiving water or adjoining shoreline based upon best professional judgment.

The effluent has not previously been monitored for fecal coliforms or E. coli. High TSS values may interfere with UV disinfection. Because of the exceedances of the TSS limitation, monitoring of the effluent for E. coli will be required to ensure that beneficial uses of the receiving water are protected.

G. Final Effluent Limitations

The final effluent limitations are shown in Table 3.

Table 3: Final Effluent Limitations for 001			
Effluent Characteristic	Effluent Limitation		
	30-Day Average <u>a/</u>	7-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
BOD ₅ , mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
Oil and Grease, mg/L	N/A	N/A	10
The pH of the discharge shall not be less than 6.0 or greater than 9.0 at any time.			

a/ See Definitions, Part 1.1. of the Permit, for definition of terms.

Percentage Removal Requirements (TSS and BOD₅ Limitation): In addition to the concentration limits for total suspended solids and BOD₅ indicated above, the arithmetic mean of the concentration for effluent samples collected in a 30-day consecutive period shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).

H. Self-Monitoring Requirements – 001

The self-monitoring requirements are shown in Table 4.

Table 4: 001 – Self Monitoring Requirements		
Effluent Characteristic	Frequency	Sample Type <u>a/</u>
Total Flow, mgd <u>b/</u>	Monthly	Instantaneous
Total BOD ₅ , mg/L <u>c/</u>	Monthly	Composite
Total Suspended Solids, mg/L <u>c/</u>	Monthly	Composite
E. coli, no./100 mL	Quarterly <u>d/</u>	Grab
pH, units	Weekly	Grab
Oil and grease, visual <u>e/</u>	Daily	Visual <u>e/</u>

a/ See Definitions, Part 1.1, for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ 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.

d/ The permittee shall collect E. coli samples for a minimum of 8 quarters beginning with the first calendar quarter after the effective date of the permit. After collection and submittal of 8 quarters of data, the permittee may request reduction or elimination of the monitoring. EPA will review the request, and any changes in the frequency of monitoring will become a part of the permit.

e/ A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken immediately and analyzed in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

I. Biosolids

The use and/or disposal of sewage sludge shall be done under the authorization of an NPDES permit issued for the use and/or disposal of sewage sludge by the EPA Region 8 biosolids program.

J. Endangered Species Act (ESA) Requirements

Section 7(a) of the Endangered Species Act requires federal agencies to insure that any actions authorized, funded, or carried out by an Agency are not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

According to the U.S. Fish and Wildlife Service, Montana Field Office, internet site at <http://www.fws.gov/mountain-prairie/mt.html>, Table 5 lists the federally listed threatened, endangered and candidate species and proposed and designated critical habitat found on the Crow Reservation in Montana.

Table 5. Threatened, Endangered, and Candidate Species on the Crow Reservation			
Common Name	Scientific Name	Status	Habitat
Black-footed Ferret	<i>Mustela nigripes</i>	Endangered, Nonessential experimental	Prairie dog complexes; Eastern Montana
Greater sagegrouse	<i>Centrocercus urophasianuc</i>	Candidate	Eastern, central, and southwestern Montana in sagebrush, sagebrush- grasslands, and associated agricultural lands.

EPA finds this permit is Not Likely to Adversely Affect any of the species listed by the US Fish and Wildlife Service under the Endangered Species Act. This facility discharges to the Bighorn River. No aquatic species are listed on the Crow Reservation. The renewal of this permit does not allow any increase in effluent limitations over the previous permit.

K. National Historic Preservation Act (NHPS) Requirements

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. EPA has evaluated its planned reissuance of the NPDES permit for the Yellowtail Dam Wastewater Treatment Facility to assess this action's potential effects on any listed /eligible historic properties or cultural resources. EPA does not anticipate any impacts on listed/eligible

historic properties or cultural resources because this permit is a renewal and will not be associated with any new ground disturbance or changes to the volume or point of discharge.

Prepared by Rosemary Rowe, June 10, 2010