

NPDES PERMIT NO. NM0022101

FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT

Village of Taos Ski Valley
38 Ocean Blvd
Taos Ski Valley, NM 87525

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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PREPARED BY

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DATE PREPARED

April 12, 2011

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued February 27, 2006, with an effective date of April 1, 2006, and an expiration date of March 31, 2011.

RECEIVING WATER – BASIN

Rio Hondo – Rio Grande Basin

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
Cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitations guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
mg/L	Milligrams per liter
µg/L	Micrograms per liter
MGD	million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
ML	Minimum quantification level
O&G	Oil and grease
PCB	Polychlorinated Biphenyl
POTW	Publically owned treatment works
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
WLA	Wasteload allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

In this document, references to State WQS and/or rules shall collectively mean either or both the State of New Mexico and/or the Pueblo of Taos.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued February 27, 2006 with an effective date of April 1, 2006, and an expiration date of March 31, 2010, are:

- A. *E. coli* limits made more stringent.
- B. pH limits made more stringent.
- C. FCB limits made more stringent.
- D. 7-day average mass limitation have been added to the permit for BOD, TSS, ammonia-nitrogen, total nitrogen, and total phosphorus.
- E. *E. coli* monitoring frequency has been modified.
- F. FBC monitoring frequency has been modified.
- G. BOD₅ sample type has been modified.
- H. TSS sample type has been modified.
- I. WET testing has been changed to a 48 hour acute test.

II. APPLICATION LOCATION and ACTIVITY

As described in the application, the wastewater treatment plant is located at 38 Ocean Blvd., in the Village of Taos Ski Valley, Taos County, New Mexico. The effluent from the treatment plant is discharged into the Rio Hondo. The discharge is located on that water at latitude 36° 35' 46" N and longitude 105° 27' 38" W, in Taos County, New Mexico.

Under the SIC Code 4952, the discharge is from a publicly owned treatment works (POTW) with a design capacity of 0.167 MGD serving a population that fluctuates from 500 to 5,000 depending on the season of the year.

As described in the application and a Compliance Evaluation Inspection dated April 8, 2009, the treatment processes for the facility is as follows:

Wastewater in the collection system flows by gravity to the headworks of the WWTP where an influent Parshall flume and staff gauge are in place. A grit removal system with a screw pump and bagging system is on line. The grit removed is taken to the Taos County landfill after passing the paint filter test. Flow from the headworks then proceeds to the flow equalization basins.

Two in-ground flow equalization basins are used to control and equalize the flow volume of the treatment units. A substantial freeboard is maintained in the tanks to ensure that they can adequately handle any excess infiltration and inflow during summer months. Diffused aeration helps alleviate the growth of filamentous bacteria in the equalization basins.

Solids from the Anoxic selector, backwash from the pressure filters, and liquids from the sludge dewatering process are returned to the equalization basins. After flow equalization, wastewater enters the main treatment building. Influent flow is controlled by a "pinch" valve which can maintain a constant influent flow to the aeration basins.

The facility has four 25,000 thousand gallon aeration basins operated in series. From the aeration basins, wastewater then passes through a splitter box into one of two secondary circular, conal bioclarifiers operated in parallel, where settling of activated sludge takes place. Return activated sludge is directed to the first aeration basin. Under normal operating conditions, a three to four foot sludge level is maintained in this unit. Floating materials are moved into a scum pit using a scum sweep arm. Contents of the scum pit are pumped to the sludge storage tanks. Wastewater from the bioclarifiers is pumped to two pressure filters which run in series. Back flushed water is sent back to the flow equalization basins to be run through the plant again for additional treatment. After the filters, water passes through a series of two ultraviolet disinfection units and is then discharged to the Rio Hondo.

Final disposal of sludge is at a land fill on the West Taos Mesa that utilizes surface disposal. According to the NMED Ground Water Quality Bureau this site is currently unpermitted, and the Taos Ski Valley WWTP will need to find an alternative disposal site.

III. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, amended through January 14, 2011). The facility discharges into the Rio Hondo in Waterbody Segment No. 20.6.4.129 of the Rio Grande Basin. The designated uses of this receiving water are domestic water supply, high quality coldwater aquatic life, irrigation, wildlife habitat, livestock watering, and primary contact.

The Rio Hondo flows into the Rio Grande in Waterbody Segment No. 20.6.4.122 of the Rio Grande Basin, which is bordered to the east by the Pueblo of Taos. The Pueblo of Taos has WQS approved by EPA on June 19, 2006. The Pueblo of Taos WQS establish designed uses of the Rio Grande as wildlife habitat, coldwater fishery, irrigation, livestock & wildlife watering, aquatic life (acute and chronic criteria), and primary human contact/ceremonial use.

IV. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) was not included in the EPA Permit Application Form 2A received December 27, 2011. However, a summary of the available pollutant data from January 2008 through December 2010 taken from DMRs shows no exceedances of permit limits for BOD₅, pH, TSS, TRC, fecal coliform and *E. coli* bacteria (See Pollutant Table 2).

POLLUTANT TABLE – 1

Date	BOD ₅			pH		TSS			TRC	Fecal Coliform		<i>E. coli</i>	
	30 DAY AVG	30 DAY AVG	7 DAY AVG	Min.	Max.	30 DAY AVG	30 DAY AVG	7 DAY AVG	Max.	30 DAY AVG	Daily Max	30 DAY AVG	Daily Max
	lbs/day	mg/L	mg/L	s.u.	s.u.	lbs/day	mg/L	mg/L	µg/L	cfu/100 mL	cfu/100 mL	cfu/100 mL	cfu/100 mL
Limit	23.8	30	45	6.0	9.0	23.8	30	45	19	500	500	126	126
1/31/2008	2.62	3.95	5.79	6.78	7.02	2.4	3.13	3.2	NA	<1	<1	<1	<1
2/29/2008	<1.15	<2	<2	6.94	7.15	.23	.4	.43	NA	<1	<1	<1	<1
3/31/2008	<1.13	<2	<2	7.4	7.39	.49	.94	1.07	NA	<1	<1	<1	<1
4/30/2008	.93	2.4	2.54	6.95	7.26	.47	1.15	1.6	NA	<1	<1	6	6
5/31/2008	1.83	2.67	2.67	6.49	7.1	.73	1	1	NA	<1	<1	<1	<1
6/30/2008	2.51	3.37	3.37	6.74	6.99	.14	.6	.6	NA	<1	<1	<1	<1
7/31/2008	<.86	<2	<2	6.53	7.06	.12	2	2	NA	<1	<1	<1	<1
8/31/2008	<.95	<2	<2	6.95	7.05	1.18	2.4	2.4	NA	2	2	<1	<1
9/30/2008	.58	1.51	1.51	7.1	7.38	2.86	9.27	9.27	NA	13	13	<1	<1
10/31/2008	<.34	<2	<2	6.76	7.13	1.83	5.1	5.1	NA	2	2	<1	<1
11/30/2008	<.36	<2	<2	7.09	7.25	1.06	6.1	9.2	NA	<1	<1	<1	<1
12/31/2008	1.48	2.36	3.18	7.14	7.36	.53	2.3	3.6	NA	<1	<1	<1	<1
1/31/2009	1.31	2.4	2.89	6.99	7.18	.39	.7	.9	NA	<1	<1	<1	<1
2/28/2009	1.25	2.57	2.66	6.91	7.08	1.8	3.3	4.1	NA	<1	<1	<1	<1
3/31/2009	4.38	3.94	4.57	6.8	7.18	.94	1.2	2.2	NA	2	4	1	2
4/30/2009	1.24	3.09	3.56	6.87	7.04	1.67	5.3	8.4	NA	3	3	16	16
5/31/2009	1.09	2.48	2.48	6.99	7.13	.14	.4	.4	NA	<1	<1	<1	<1
6/30/2009	.83	1.97	1.97	6.9	7.09	1.79	6	6	NA	<1	<1	<1	<1
7/31/2009	1.3	2.16	2.16	6.75	7.01	.66	4.9	4.9	NA	<1	<1	<1	<1
8/31/2009	.35	<2	<2	6.75	6.93	.93	5.2	5.2	NA	2	2	<1	<1
9/30/2009	.55	2.04	2.04	6.48	6.67	.94	4.1	4.1	NA	<1	<1	2	2
10/31/2009	.82	1.87	1.87	6.37	7.27	.77	2.1	2.1	NA	<1	<1	<1	<1
11/30/2009	.41	<2	<2	7.22	7.39	.47	2.94	4.47	NA	<1	<1	<1	<1
12/31/2009	2.29	4.2	5.15	7.05	7.41	.73	2.4	3.2	NA	<1	<1	<1	<1
1/31/2010	1.78	3.33	4.19	6.7	7.17	.34	5.3	7.1	NA	1	1	1	1
2/28/2010	2.09	3.85	4.98	6.85	6.95	.5	1.1	1.5	NA	2	2	1	1
3/31/2010	1.5	<2	<2	6.82	7.03	.94	1.1	1.2	NA	4	4	<1	<1
4/30/2010	1.56	<2	<2	6.73	7.08	.59	.7	1.1	NA	<1	<1	<1	<1
5/31/2010	<1.67	<2	<2	7.1	7.2	6.46	12.7	12.7	NA	<1	<1	<1	<1
6/30/2010	2.7	2.79	2.79	6.9	7.2	4.94	5.1	5.1	NA	<1	<1	<1	<1
7/31/2010	3.26	5.74	5.74	7.02	7.15	2.04	3.66	3.66	NA	<1	<1	<1	<1
8/31/2010	1.38	2.53	2.53	7.11	7.39	2.33	4.2	4.2	NA	<1	<1	<1	<1
9/30/2010	1.31	2.42	2.42	7.02	7.42	.7	1.65	1.65	NA	<1	<1	<1	<1
10/31/2010	.66	<2	<2	7.08	7.17	.08	.3	.3	NA	<1	<1	<1	<1
11/30/2010	.54	<2	<2	6.79	7.21	.13	.5	.9	NA	<1	<1	<1	<1
12/31/2010	.41	<2	<2	7.06	7.27	.34	1.2	2.2	NA	<1	<1	<1	<1

* NA - Chlorine was not used for disinfection and was not monitored.

In addition, available pollutant data from DMRs for ammonia-nitrogen, total phosphorus (seasonal), and total nitrogen (seasonal) was evaluated. Data from April 2009 to December 2010 was chosen to reflect the final-phase limitations for these pollutants in the current permit issued

February 27, 2006 with an effective date of April 1, 2006 and an expiration date of March 31, 2011. No exceedances for total phosphorus were reported during this period. Exceedances for ammonia-nitrogen concentration limitations occurred in December 2009, January 2010, and December 2010. Concentration limitations for total nitrogen were exceeded in December 2009 and December 2010. The results are as follows in Pollutant Tables 3 and 4:

POLLUTANT TABLE – 2

Date	Ammonia-Nitrogen		
	30 DAY AVG	30 DAY AVG	7 DAY AVG
	lbs/day	mg/L	mg/L
Limit	5.34	3.2	3.2
4/30/2009	0.11	.27	.31
5/31/2009	.07	.2	.2
6/30/2009	.06	.2	.2
7/31/2009	.13	.94	.94
8/31/2009	.07	.6	.6
9/30/2009	.05	.2	.2
10/31/2009	.08	.02	.02
11/30/2009	.05	.2	.2
12/31/2009	1.92	8.21	12.8
1/31/2010	.34	5.3	7.1
2/28/2010	.19	.34	.52
3/31/2010	<.2	<.25	<.41
4/30/2010	.15	.21	.22
5/31/2010	<.07	<.8	<1
6/30/2010	.75	<1	<1
7/31/2010	<.34	<1	<1
8/31/2010	<.46	<1	<1
9/30/2010	<.41	<1	<1
10/31/2010	.38	<1	<1
11/30/2010	.28	.89	1.4
12/31/2010	.86	1.63	3.5

POLLUTANT TABLE – 3

Date	Total Phosphorus			Total Nitrogen		
	30 DAY AVG	30 DAY AVG	7 DAY AVG	30 DAY AVG	30 DAY AVG	7 DAY AVG
	lbs/day	mg/L	mg/L	lbs/day	mg/L	mg/L
Seasonal Limit	0.8	0.5	0.75	13.65	8.2	12.3
4/30/2009	.08	.24	.35	1.25	2.81	6.01
11/30/2009	.03	.13	.14	1.13	4.18	4.45
12/31/2009	.04	.17	.23	2.71	11.26	16.4
1/31/2010	.04	<.07	<.09	.19	.35	.64
2/28/2010	.06	.1	.13	1.98	3	6.58
3/31/2010	.07	.11	.19	<5.92	<7.92	<10.69
4/30/2010	.03	.04	.08	1.49	2.03	4.15
11/30/2010	.01	.03	.05	.97	3.16	8.6
12/31/2010	.05	.1	.15	3.83	9.15	13.1
Seasonal Limit	1.6	1.0	1.5	46.55	27.9	41.2
5/31/2009	.01	.03	.03	1.48	4.21	4.21
6/30/2009	.08	.25	.25	3.08	10.25	10.25

5/31/2010	.19	.25	.5	<1.66	<1.98	<4.2
6/30/2010	.12	.17	.22	4.03	5.31	6.94
Seasonal Limit	1.2	1.5	2.25	27.7	16.6	24.9
7/31/2009	.03	.24	.24	.25	1.83	1.83
8/31/2009	.06	.17	.17	2.57	6.99	6.99
7/31/2010	.1	.214	.263	1.08	2.21	2.9
8/31/2010	.06	.11	.18	<1.09	<2.35	<2.7
Seasonal Limit	0.8	2.5	3.75	21.1	12.7	19
9/30/2009	.04	.15	.15	.16	.6	.6
10/31/2009	.05	.13	.13	<2.18	<5.32	<5.32
9/30/2010	<.03	<.08	<.1	1.28	3.05	4.2
10/31/2010	.02	.043	.044	.92	2.4	2.5

V. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR § 122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and § 136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing NPDES permit initially issued February 27, 2006 with an effective date of April 1, 2006, and an expiration date of March 31, 2010 is administratively continued until this permit is reissued.

VI. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 require that NPDES permit limits are developed that meet the more stringent of either technology-based ELGs, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for TSS and BOD₅. Water quality-based effluent limitations are established in the proposed draft permit for

ammonia-nitrogen, fecal coliform bacteria, *E. coli* bacteria, total nitrogen, total phosphorus, TRC, and pH.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT – The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT – Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT – The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The facility is a POTW. POTWs have technology-based ELGs established at 40 CFR 133, Secondary Treatment Regulation. Pollutants with ELGs established in this Chapter are BOD, TSS and pH. BOD₅ limits of 30 mg/L for the 30-day average and 45 mg/L for the 7-day average are found at 40 CFR §133.102 (a). TSS limits; also 30 mg/L for the 30-day average and 45 mg/L for the 7-day average, are found at 40 CFR §133.102(b). ELGs for pH are between 6-9 s.u. and are found at 40 CFR §133.102 (c).

Per the facility's request, the current permit issued February 27, 2006 with an effective date of April 1, 2006 and an expiration date of March 31, 2011, relied on the previous design capacity of 0.095 MGD to determine loading limitations in lieu of seeking review under New Mexico's anti-degradation policy. The proposed permit continues to utilize the 0.095 MGD design capacity for these calculations.

Regulations at 40 CFR § 122.45 (f)(1) require all pollutants limited in permits to have limits expressed in terms of mass such as pounds per day. When determining mass limits for POTWs or WWTPs, the plant's design flow is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

Loading in lbs/day = pollutant concentration in mg/L * 8.345 lbs/gal * design flow in MGD

30-day average BOD₅/TSS loading = 30 mg/L * 8.345 lbs/gal * 0.095 MGD

30-day average BOD₅/TSS loading = 23.8 lbs.

7-day average BOD₅/TSS loading = 45 mg/L * 8.345 lbs/gal * 0.095 MGD

7-day average BOD₅/TSS loading = 35.7 lbs.

Technology-Based Effluent Limits – 0.095 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/L (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD ₅	23.8	35.7	30	45
TSS	23.8	35.7	30	45
pH	NA	NA	6.0 - 9.0 s.u.	

NA- Not applicable.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with the State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State and Tribal Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through January 14, 2011). The facility discharges into the Rio Hondo thence to the Rio Grande

in Waterbody Segment No. 20.6.4.129. The designated uses of this receiving water are domestic water supply, high quality coldwater aquatic life, irrigation, wildlife habitat, livestock watering, and primary contact.

The Rio Hondo flows into the Rio Grande in Waterbody Segment No. 20.6.4.122 of the Rio Grande Basin, which is bordered to the east by the Pueblo of Taos. The Pueblo of Taos has WQS approved by EPA on June 19, 2006. The Pueblo of Taos WQS establish designed uses of the Rio Grande as wildlife habitat, coldwater fishery, irrigation, livestock & wildlife watering, aquatic life (acute and chronic criteria), and primary human contact/ceremonial use.

In this document, references to State WQS and/or rules shall mean collectively either or both the Pueblo of Taos and/or the State of New Mexico. Where different standards apply for a particular pollutant, the most stringent standard has been used to develop effluent limitations in order to protect for all applicable designated uses.

4. Permit Action – Water Quality-Based Limits

Regulations promulgated at 40 CFR 122.44(d) require limits in addition to, or more stringent than ELGs (technology based). State WQS that are more stringent than ELGs are as follows:

a. pH

The State of New Mexico WQS criteria applicable to the high quality coldwater aquatic life designated use and Pueblo of Taos WQS criteria for the cold water fishery designated use require pH to be between 6.6 and 8.8 s.u. This is more limiting than the technology-based limits presented earlier, and is also more restrictive than the current permit. The draft permit shall establish 6.6 to 8.8 s.u. for pH.

b. Bacteria

The previous permit had limits for fecal coliform bacteria (FCB) of 500 cfu/100 mL monthly geometric average and a 500 cfu/100 mL single maximum. Since the previous permit issuance, New Mexico has adopted *E. coli* as the State bacteria standard in lieu of FCB. However, Pueblo of Taos numeric criteria for the ceremonial use – primary human contact designated use requires a monthly geometric mean for FCB of 200 cfu/100 mL and single sample of 400 cfu/100 mL. Therefore, the draft permit will propose FCB limits of 200 cfu/100 mL monthly geometric average and a 400 cfu/100 mL single maximum, which are more restrictive than the current permit.

The NMWQS criteria require *E. coli* of 126 cfu/100 mL monthly geometric mean and single sample of 410 cfu/100 mL, end-of-pipe to protect the primary contact designated use. Pueblo of Taos numeric criteria for the ceremonial use – primary human contact designated use requires a monthly geometric mean for *E. coli* of 126 cfu/100 mL and single sample of 235 cfu/100 mL. The draft permit will propose *E. coli* bacteria limits of 126 cfu/100 mL monthly geometric average and a 235 cfu/100 mL single maximum, which are more restrictive than the current permit.

c. Toxics

(i) General Comments

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criteria, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of “publicly owned treatment works” (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to “make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities,” per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

The facility is designated as a major. During the development of the current permit, expanded testing including the pollutants listed in section D of Form 2A were not found at concentrations that exceeded RP. The treatment plant has no non-categorical Significant Industrial User’s (SIU) and no Categorical Industrial User’s (CIU). No changes are anticipated in the presence or concentration of these pollutants in the facility’s discharge. Therefore, testing of these pollutants was not necessary.

Ammonia-nitrogen and TRC are toxics that have been identified in previous permits to be limited and are discussed below.

(ii) Critical Conditions

Critical conditions are used to establish certain permit limitations and conditions. The State of New Mexico WQS allow a mixing zone for establishing pollutant limits in discharges. Both states establish a critical low flow designated as 4Q3, as the minimum average four consecutive day flow which occurs with a frequency of once in three years. The SWQB of the NMED provided EPA with the 4Q3 for the Taos Ski Valley.

For permitting purposes of certain parameters such as WET, the critical dilution of the effluent to the receiving stream is determined. The critical dilution, CD, is calculated as:

$CD = Q_e / (F \cdot Q_a + Q_e)$, where:

Q_e = facility flow (0.167 MGD)

Q_a = critical low flow of the receiving waters (3.56 MGD [= 5.51 cfs])

F = fraction of stream allowed for mixing (1.0)

$$\begin{aligned} CD &= 0.167 \text{ MGD}/[(1.0)(3.56) + 0.167] \\ &= 0.044 \\ &= 4.4\% \end{aligned}$$

According to the NMIP, if it is determined that a facility is to receive chronic biomonitoring requirements at a critical dilution of 10% or less, then an acute to chronic ratio of 10:1 may be used in order to allow acute biomonitoring in lieu of chronic.

$$\text{Acute critical dilution} = 4.4\% * 10 = 44\%$$

(iii) TRC

The facility used ultraviolet disinfection units for bacterial disinfection under the previous permit, which had limits for TRC of 19 µg/L when chlorine was used. For TRC, State WQS establish acute end-of-pipe criteria of 19 µg/L and chronic in-stream criteria of 11 µg/L. Under the cold water fishery designated use, Pueblo of Taos criteria for TRC is 3 µg/L. At a critical dilution of 4.4%, the acute end-of-pipe criteria of 19 µg/L is the most stringent limitation. The draft permit will maintain the TRC limit of 19 µg/L when chlorine is used.

(iv) Ammonia-Nitrogen

In the current permit, the 30-day average and 7-day average ammonia-nitrogen concentration limitation of 3.2 mg/L was calculated for the discharge based on acute aquatic life criteria. A final loading effluent limitation of 5.34 lbs/day was established based on this concentration limit. The draft permit maintains these limitations for ammonia-nitrogen. The proposed permit includes a 7-day average mass limit of 5.34 lbs/day.

5. TMDL Requirements

NMED finalized a TMDL for the Rio Hondo (South Fork of Rio Hondo to Lake Fork Creek) on June 14, 2005, which addressed total phosphorus and total nitrogen. Federal regulations found at 40 CFR 122.44(d)(1)(vii)(B) require permits to contain limitations necessary to meet the conditions of a waste load allocation established by a TMDL. The current permit included limitations for total phosphorus and total nitrogen.

The current permit maintained seasonal 30-day average mass limits based on the Water Quality Management Plan for the Rio Grande. As previously discussed, the permittee requested that the 0.095 MGD design flow be used to calculate mass loading limitations in the current permit. Therefore, increased phosphorus loading which could have been allowed under the TMDL was not included in the current permit. The seasonal mass limits of the current permit will be brought forward to the proposed permit. The 0.095 MGD design flow has been used to calculate 7-day average mass limits which have been included in the proposed permit. The seasonal

concentration limitations for total phosphorus established in the current permit were consistent with the TMDL and will continue to be utilized in the proposed permit.

Five phases of seasonal mass and concentration limitations for total nitrogen were established in the current permit in accordance with the TMDL. Each phase created seasonal total nitrogen limits based on the number of septic systems captured by the permittee and utilized a two to one non-point source/point source trading ratio. According to information provided by the facility, a sufficient number of septic systems have been captured by permittee to allow for the use of Phase V total nitrogen limits established by the current permit. The proposed permit will continue to utilize the Phase V seasonal total nitrogen limits established by the current permit. The proposed permit includes 7-day average mass limits which have been calculated using the 0.095 MGD design flow.

The following seasonal limitations for total phosphorus and total nitrogen are proposed in the draft permit:

EFFLUENT CHARACTERISTICS		DISCHARGE LIMITATIONS			
Parameter	Time Interval	30 DAY AVG	7 DAY AVG	30 DAY AVG	7 DAY AVG
		lbs/day	lbs/day	mg/L	mg/L
Total Phosphorus	November through April	0.8	1.2	0.5	0.75
	May and June	1.6	2.4	1.0	1.5
	July and August	1.2	1.8	1.5	2.25
	September and October	0.8	1.2	2.5	3.75
Total Nitrogen	November through April	13.65	20.5	8.2	12.3
	May and June	46.55	68.8	27.9	41.2
	July and August	27.7	41.6	16.6	24.9
	September and October	21.1	31.7	12.7	19

6. 303(d) List Impacts

The Rio Hondo, from South Fork Rio Hondo to Lake Fork Creek, is listed on the “2010-2012 State of New Mexico Integrated Clean Water Act Section 303(d) / 305(b) Report.” The waterbody is classified as Category 2 with domestic water supply, high quality coldwater aquatic life, irrigation, and wildlife habitat as fully supporting. Livestock watering and secondary contact have not yet been assessed. No pollutants are identified as an impairment to the waterbody.

The standard reopener language in the permit allows additional permit conditions if warranted by new or revised TMDLs.

D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity 40 CFR 122.48(b) and to assure compliance with permit limitations 40 CFR 122.44(i)(1). Technology based pollutants; BOD₅ and TSS, are proposed to be monitored twice per month November through April, and once per month May through October consistent with the previous permit. Sample type for BOD₅ and TSS is a grab sample. Flow shall be sampled continuously (daily) by totalizing meter consistent with the previous permit. The technology based monitoring frequencies are consistent with the NMIP.

Water quality-based pollutant monitoring frequency for FCB and *E. coli* shall be sampled twice a month using grab samples, which is consistent with the NMIP. TRC and pH shall be measured daily by instantaneous grab (field measurement), which is consistent with the NMIP. Regulations at 40 CFR Part 136 define instantaneous grab as being analyzed within 15-minutes of collection. Total phosphorus and ammonia-nitrogen shall be sampled twice per month November through April, and once per month May through October by 6-hour composite consistent with the previous permit. Total nitrogen shall be measured once a week November through April and once per month May through October by 6-hour composite consistent with the previous permit.

E. WHOLE EFFLUENT TOXICITY REQUIREMENTS

In Section VI.C.4.c.ii.(b) above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 44%, because the discharge is to a perennial. Based on the nature of the discharge; POTW, the design flow; more than 0.1 MGD but less than 1.0 MGD, the nature of the receiving water; perennial, and the critical dilution; 44%, the NMIP directs the WET test to be a 48 hour acute test using *Daphnia pulex* and *Pimephales promelas* at a once year frequency consistent with the NMIP. Based on the WET Recommendation shown in Appendix A, no WET limits will be established in the proposed permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 19%, 25%, 33%, 44%, and 59%. The low-flow effluent concentration (critical low-flow dilution) is defined as 44% effluent.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001 - the discharge to the Rio Hondo of the treatment system aeration basin. The aeration basin receives process area wastewater, process area stormwater, and treated sanitary wastewater. Discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE MONITORING</u>	
	<u>30-DAY AVG MINIMUM</u>	<u>48-Hr. MINIMUM</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) <u>1/</u>		
<i>Daphnia pulex</i>	REPORT	REPORT
<i>Pimephales promelas</i>	REPORT	REPORT

<u>EFFLUENT CHARACTERISTIC</u>	<u>MONITORING REQUIREMENTS</u>	
	<u>FREQUENCY</u>	<u>TYPE</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) <u>1/</u>		
<i>Daphnia pulex</i>	1/year	24-Hr. Composite
<i>Pimephales promelas</i>	1/year	24-Hr. Composite

FOOTNOTES

1/ Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

VII. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE PRACTICES

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in 40 CFR Part 503 "Standards for the Use or Disposal of Sewage Sludge". EPA may at a later date issue a sludge-only permit. Until such future issuance of a sludge-only permit, sludge management and disposal at the facility will be subject to Part 503 sewage sludge requirements. Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a sludge-only permit has been issued. Part IV of the draft permit contains sewage sludge permit requirements.

B. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

C. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (CIU). The EPA has tentatively determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been required. The facility is required to report to EPA, in terms of character and volume of pollutants any significant indirect dischargers into the POTW subject to pretreatment standards under Section 307(b) of the CWA and 40 CFR Part 403.

D. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results monthly. The monitoring results will be available to the public.

IX. ANTIDegradation

The State of New Mexico and the Pueblo of Taos both have antidegradation requirements to protect existing uses through implementation of their WQS. The limitations and monitoring requirements set forth in the proposed draft are developed from the appropriate State WQS and are protective of those designated uses. Furthermore, the policy's set forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water.

X. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR 122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the effluent limitations of the previous permit for ammonia-nitrogen, total nitrogen, total phosphorus, TRC, BOD₅, and TSS. The pollutants pH, TRC, FCB, and *E. coli* have been made more stringent and this action is not subject to antibacksliding provisions. All of the changes represent permit requirements that are consistent with the State WQS and WQMP.

XI. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>, three species in Taos County are listed as endangered (E) or threatened (T). Two species are birds and include the Southwestern willow flycatcher (*Empidonax traillii extimus*) (E) and the Mexican spotted owl (*Strix occidentalis lucida*) (T). The lone mammalian species includes the black-footed ferret *Mustela nigripes* (E). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Taos County; however, the USFWS, removed the American bald eagle in the

lower 48 states from the Federal List of Endangered and Threatened Wildlife Federal Register, July 9, 2007, (Volume 72, Number 130).

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, EPA has determined that the reissuance of this permit will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat.

Southwestern Willow Flycatchers habitat occurs in riparian areas along streams, rivers, and other wetlands where dense willow, cottonwood, buttonbush and arrowweed are present. The primary reason for decline is the reduction, degradation and elimination of the riparian habitat. Other reasons include brood parasitism by the brown-headed cowbird and stochastic events like fire and floods that destroy fragmented populations. The permit does not authorize activities that may cause destruction of the flycatcher habitat, and issuance of the permit will have no effect on this species.

The **black-footed ferret** research finds that the species has diminished due to the eradication of prairie dogs, the primary source of the ferret’s habitat and food. Main causes of the decline in the ferret population included habitat conversion for farming; efforts to eliminate prairie dogs, which competed with livestock for available prairie forage; and sylvatic plague, a disease that wiped out large numbers of prairie dogs and has also killed ferrets. Reintroduced black-footed ferrets have been designated as “non-essential experimental” populations under the Endangered Species Act. This designation allows, Federal, State, and Tribal resource managers, and private citizens more flexibility in managing new populations. The “non-essential, experimental” designation does not limit land uses such as forest management, agricultural practices, sport hunting, and non-consumptive outdoors recreation. The NPDES program regulates discharge of pollutants and does not regulate forest management practices and agricultural practices. Issuance of this permit will have no effect on the Black-footed Ferret food source or habitat.

Research of available material finds that the primary cause for the population decreases leading to threatened status for the **Mexican Spotted Owl** is destruction of habitat. No pollutants are identified which might affect species habitat or prey species and are not reviewed by the permitting process. Catastrophic fires and elimination of riparian habitat also were identified as threats to species habitat. The NPDES program regulates the discharge of pollutants and does not regulate forest management practices and agricultural practices, which contribute to catastrophic fires and elimination of riparian habitat, and thus, species habitat. The issuance of this permit is found to have no impact on the habitat of this species.

XII. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since construction activities are not planned in the reissuance.

XIII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of either States WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the States Water Quality Standards are either revised or promulgated. Should either State adopt a new WQS, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR 122.44(d). Modification of the permit is subject to the provisions of 40 CFR 124.5.

XIV. VARIANCE REQUESTS

No variance requests have been received.

XV. CERTIFICATION

The permit is in the process of certification by the State of New Mexico following regulations promulgated at 40 CFR §124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XVI. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XVII. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(S)

EPA Application Form 2A received December 27, 2010.

Supplemental information provided via email on March 23, 2011.

B. 40 CFR CITATIONS

Citations to 40 CFR as of March 25, 2011.

Sections 122, 124, 125, 133, 136

C. STATE WATER QUALITY REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through January 14, 2011.

Procedures for Implementing NPDES Permits in New Mexico, November 2009.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2010-2012.

E. PUEBLO OF TAOS REFERENCES

Pueblo of Taos Water Quality Standards, enacted August 13, 2002.

F. OTHER

Compliance Evaluation Inspection of the Village of Taos Ski Valley Wastewater Treatment Plant
NPDES Permit Number NM0022101 April 8, 2009.