

NPDES PERMIT NO. NM0030236

FACT SHEET

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

APPLICANT

Cannon Air Force Base
506 North D.L. Ingram Blvd
Cannon Air Force Base, NM 88103

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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DATE PREPARED

March 24, 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

North Playa (Outfall 001) and Golf Course Pond (Outfall 002).

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
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 limitation 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 (one part per million)
ug/l	Micrograms per liter (one part per billion)
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
MQL	Minimum quantification level
O&G	Oil and grease
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
USFWS	United States Fish & Wildlife Service
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 the State of New Mexico.

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, 2011, are:

- A. Limits for pH have been made more stringent.
- B. Limits for *E. coli* bacteria have been made more stringent.
- C. Limits for FCB have been removed.
- D. Monitoring frequency for pH has been modified
- E. Monitoring frequency for *E. coli* has been modified.
- F. Monitoring frequency for TSS has been modified.
- G. Monitoring frequency for BOD has been modified.
- H. Monitoring frequency for TRC has been modified.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located at 506 South D.L. Ingram Blvd, approximately 8 miles west of Clovis, NM, and 12 miles north of Portales, NM in Curry County, New Mexico.

Under the SIC Code 4952, the discharge is from a privately owned sanitary wastewater treatment facility equivalent to a POTW with a design flow capacity of 0.75 MGD serving 6,200 people. The applicant's activities also include SIC Codes 9711 and 4581, which are National Security and Airports, Flying Fields, and Airport Terminal Services, respectively.

The Cannon Air Force Base (AFB) WWTP is a Sequencing Batch Reactor (SBR) treatment system with chlorine disinfection and dechlorination. Raw wastewater enters the WWTP site and discharges into the original entrance works facility or the grit and grease collection system entrance works facility. The original entrance works facility consists of a manual bar screen and a mechanical bar screen. Screened wastewater then flows through the original Parshall flume and discharges into the influent pump station. The grit and grease collection system entrance works facility consists of an automatic screening system and a manual bar screen. Screened wastewater flows through a new Parshall flume into the grit and grease collection system. This system consists of a traveling bridge, grit pump, grit classifier with auger, grease blade, and grease auger. The wastewater leaves the grit and grease collection system and discharges into the new influent pump station.

Two basins with common wall construction are provided for the SBR wastewater treatment process. Each reactor basin is 55 feet x 55 feet with a water level that varies between a minimum of 13 feet and a maximum of 18 feet. Aeration is provided through coarse bubble aeration, mixing is accomplished through floating downdraft mixers, decanting is achieved through a floating decanter, and sludge transfer is accomplished by use of submersible sewage pumps or gravity flow.

One serpentine-type chlorine contact chamber is provided for effluent disinfections. Chlorination of the effluent is accomplished by injection of a sodium hypochlorite solution into

the treated effluent from the SBRs, and dechlorination of the effluent from the chlorine contact chamber is accomplished by injection of a sodium bisulfate solution.

One square digester, in a common wall arrangement with the SBR, is provided with coarse bubble aeration, a floating downdraft mixer, and a decanter. The digester was designed with the same dimensions as the SBR reactor basins. Digested sludge is withdrawn from the bottom of the digester and sent to sludge drying beds. A sludge stockpiling area is provided adjacent to the sludge drying beds to provide additional treatment of the sludge removed from the drying beds.

Two synthetically lined wastewater storage basins, each capable of storing approximately 8 million gallons of either raw or treated effluent, are projected to be completed in July 2011. The 8-million gallon raw wastewater storage basin will be used in the event that unsuitable material enters the treatment system (e.g., firefighting foam) or in the event that the plant needs to be shut down for repairs or maintenance. The 8-million gallon effluent storage basin will be used to store wastewater following treatment. Upon completion of the project, water from the chlorine contact basin can be routed via gravity flow to the North Playa Lake (Outfall 001) or can be diverted via a diaphragm pump to the effluent storage basin. Treated wastewater from the effluent storage basin will be discharged to the Golf Course Pond (Outfall 002).

An upgrade has been planned to expand the existing WWTP from a 0.75-MGD facility to a 1-MGD facility. A permit modification will be needed prior to Cannon AFB implementing a design flow increase at the facility if the said event occurs prior to the expiration date of the proposed permit.

The discharge from the WWTP is to receiving waters named North Playa Lake (Outfall 001) and Golf Course Pond (Outfall 002). Discharge locations are as follows:

Outfall 001: Latitude 34° 23' 15" North, Longitude 103° 18' 00" West.

Outfall 002: Latitude 34° 24' 00" North, Longitude 103° 19' 33" West.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received October 1, 2010, and in supplement information provided via email on January 5, 2011 and January 31, 2011 are presented below in Tables 1 and 2:

POLLUTANT TABLE – 1

Outfall 001

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	0.42	0.24
Temperature, winter	21.10° C	16.10° C

Temperature, summer	25.10° C	22.80° C
pH, minimum, standard units (SU)	7.10 su	N/A
pH, maximum, standard units (SU)	7.70 su	N/A
Biochemical Oxygen Demand, (BOD)	10.72	3.08
Fecal coliform (bacteria/100 ml)	20.00	2.76
Total Suspended Solids (TSS)	7.15	2.42
Ammonia (NH ₃)	0.155	0.08
Chlorine, Total Residual (TRC)	0	0
Dissolved Oxygen (DO)	5.32	4.33
Total Kjeldahl Nitrogen (TKN)	2.96	1.22
Nitrate plus Nitrite Nitrogen	1.01	1.04
Oil & Grease	<4.35	<4.35
Phosphorous	3.11	2.84
Total Dissolved Solids (TDS)	880.00	543.00

POLLUTANT TABLE – 2

Outfall 002

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	0.21	0.02
Temperature, winter	21.10° C	16.10° C
Temperature, summer	25.10° C	22.80° C
pH, minimum, standard units (SU)	7.20 su	N/A
pH, maximum, standard units (SU)	7.60 su	N/A
Biochemical Oxygen Demand, (BOD)	8.20	2.48
Fecal coliform (bacteria/100 ml)	41.50	6.46
Total Suspended Solids (TSS)	7.30	2.95
Ammonia (NH ₃)	0.646	0.258
Chlorine, Total Residual (TRC)	0	0
Dissolved Oxygen (DO)	5.32	4.33
Total Kjeldahl Nitrogen (TKN)	1.87	1.21
Nitrate plus Nitrite Nitrogen	<1.00	<1.00
Oil & Grease	<4.49	<4.49
Phosphorous	3.41	2.90
Total Dissolved Solids (TDS)	516.00	479.00

A summary of the last 24-months of available pollutant data: January 2008 though June 2010, taken from DMRs shows no exceedances of permit limits for BOD₅, pH, TSS, TRC and *E. coli* (See Pollutant Tables 3 and 4). TRC was below MQL (non-detect).

POLLUTANT TABLE – 3

Outfall 001

Date	BOD ₅			pH		TSS			TRC	E. coli	
	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
	lbs/day	mg/L	mg/L	s.u.	s.u.	lbs/day	mg/L	mg/L	µg/L	cfu/100 mL	cfu/100 mL
Limit	188	30	45	6	9	188	30	45	11	548	2507
1/31/08	7.5	2.52	4.3	7.3	7.6	5.5	1.82	2.63	0	1.1	1.5
2/29/08	8.2	2.65	3.33	7.3	7.5	5.6	2.06	2.66	0	1.2	1.5
3/31/08	5.5	1.81	1.81	7.2	7.5	4.3	1.65	2	0	1	1
4/30/08	7.69	2.89	3.6	7.3	7.5	3.7	1.49	2.15	0	1	1
5/31/08	10.8	4.68	5.27	7.2	7.4	2.8	1.26	1.7	0	1	1
6/30/08	6.6	2.97	3.04	7.3	7.4	4.6	1.84	3.45	0	1	1
7/31/08	9.7	3.37	3.37	7.2	7.4	8	3.02	3.65	0	9	9
8/31/08	11.1	4.1	5.18	7.2	7.4	6.55	2.25	2.68	0	8.2	15
9/30/08	9.47	3.62	6.77	7.1	7.7	9.2	3.41	4.13	0	1.2	2
10/31/08	8	2.93	3.9	7.3	7.5	5.7	2.29	2.6	0	2	4
11/30/08	6.7	2.59	2.76	7.3	7.5	11.9	4.63	6.8	0	2.2	5
12/31/08	11.3	4.2	5.83	7.3	7.4	6.8	2.73	2.98	0	1	1
1/31/09	6.8	2.57	3.4	7.3	7.5	8.9	3.06	3.65	0	1	1
2/28/09	8.8	3.32	3.42	7.3	7.5	5.1	2.94	3.3	0	1	1
3/31/09	4.8	2.41	2.88	7.3	7.6	6.6	3.61	4.1	0	1	1
4/30/09	9	4.89	5.69	7.3	7.6	4	2.18	3.8	0	1	1
5/31/09	4.8	2.52	2.59	7.3	7.5	4.3	2.27	2.6	0	1	1
6/30/09	8.9	4.28	4.35	7.3	7.5	5.7	2.47	3.65	0	1	1
7/31/09	10	4.48	4.48	7.3	7.5	7.9	3.25	3.95	0	1.3	2
8/31/09	10.4	4.14	5.74	7.4	7.5	4.8	2.26	2.5	0	1.3	2
9/30/09	5.8	2.66	3.02	7.3	7.5	4.8	2.06	2.85	0	1.3	2
10/31/09	6.8	2.48	2.55	7.3	7.5	2.7	1.28	1.5	0	1.3	2
11/30/09	5.3	2.48	2.73	7.2	7.5	4.3	2.02	2.37	0	1	1
12/31/09	5.5	2.54	2.76	7.2	7.5	4.2	2.06	3.15	0	1	1
1/31/10	5.8	2.77	3.47	7.2	7.5	4.3	1.95	2.15	0	1	1
2/28/10	5.5	2.48	2.73	7.2	7.3	4.9	2.48	3	0	1	1
3/31/10	6.5	3.19	5.46	7.2	7.5	4.4	2.2	3.7	0	1.4	3
4/30/10	7.7	3.63	3.94	7.2	7.3	4.8	2.19	2.5	0	1	1
5/31/10	9.7	4.37	5.27	7.2	7.7	5.2	2.38	3	0	1	1
6/30/10	6.6	2.75	3.57	7.3	7.6	4.4	1.55	2.15	0	6.3	40
7/31/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
8/31/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
9/30/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR- EPA has not received DMR report

POLLUTANT TABLE – 4

Outfall 002

Date	BOD ₅			pH		TSS			TRC	E. coli	
	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
	lbs/day	mg/L	mg/L	s.u.	s.u.	lbs/day	mg/L	mg/L	µg/L	cfu/100 mL	cfu/100 mL
Limit	188	30	45	6	9	188	30	45	11	548	2507
1/31/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2/29/08	3.06	1.99	1.99	7.3	7.5	3.47	2	2	0	1.4	2
3/31/08	3.6	2.44	2.6	7.4	7.5	4	2.79	4.7	0	1	1
4/30/08	3.82	2.46	3	7.3	7.5	4.33	2.95	2.95	0	1	1
5/31/08	3.2	2.03	2.77	7.4	7.5	4	2.51	3.6	0	1	1
6/30/08	2.7	1.81	1.93	7.3	7.5	3.4	2.4	3.3	0	1.6	2
7/31/08	2.7	1.73	2.15	7.3	7.6	3	1.98	2.32	0	3	6.5
8/31/08	1.8	1.24	1.24	7.2	7.4	7.7	5	5	0	3.5	3.5
9/30/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/31/08	2.3	1.84	2.03	7.3	7.5	4	2.7	2.7	0	1	1
11/30/08	3.9	2.66	2.66	7.3	7.6	4.6	2.95	2.95	0	1	1
12/31/08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/31/09	5.4	3.61	4.01	7.3	7.5	3.6	2.43	2.85	0	1	1
2/28/09	4.7	3.06	3.54	7.4	7.5	4.7	3.12	3.6	0	6	36.5
3/31/09	3.8	2.59	2.89	7.4	7.5	7	4.55	5.45	0	1.4	2
4/30/09	3.8	2.44	2.44	7.5	7.6	5.2	3.3	3.3	0	22	22
5/31/09	2.4	2.05	2.23	7.3	7.5	4.3	3.23	4.5	0	1.4	2
6/30/09	3	2.37	2.92	7.4	7.6	2.9	1.99	2.15	0	2	2
7/31/09	3.6	2.43	2.66	7.4	7.5	2.8	1.91	2	0	2.8	8
8/31/09	9.9	6.49	6.49	7.4	7.5	4.7	3	3	0	2	2
9/30/09	2.8	2.2	2.23	7.3	7.5	1.5	1.59	1.58	0	1	1
10/31/09	2.4	1.84	1.87	7.4	7.5	3.6	3	3	0	4	4
11/30/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/31/09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/31/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2/28/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3/31/10	4.1	2.68	2.68	7.2	7.4	4.5	3.05	4.7	0	1	1
4/30/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/31/10	3.6	2.58	2.58	7.4	7.4	6.1	4.3	4.3	0	19	19
6/30/10	3.2	2.33	2.81	7.4	7.5	2.8	1.85	2	0	1	1
7/31/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
8/31/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
9/30/10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR- EPA has not received DMR report

ND- No discharge

IV. 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 previous permit will expired March 31, 2011. The application was received on October 1, 2010. The existing permit will be administratively continued until this permit is issued.

V. 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 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, 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 *E. coli* bacteria, 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 WWTP treating sanitary wastewater. 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).

Based on BPJ, the same limitations will be used for Cannon AFB as would apply to a POTW because the two types of facilities operate exactly alike. However, based on BPJ a daily maximum limitation will be maintained in the permit in lieu of a 7-day average because the facility is not a POTW but does treat sanitary wastewater as a POTW does.

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:

0.75 MGD Design Flow

Loading in lbs/day = pollutant concentration in mg/l * 8.345 lbs/gal * design flow in MGD
 30-day average BOD/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.75 MGD
 30-day average BOD/TSS loading = 188 lbs

Daily maximum BOD₅/TSS loading = 45 mg/L * 8.345 lbs/gal * 0.75 MGD
 Daily maximum BOD₅/TSS loading = 282 lbs

A summary of the technology-based limits for the facility is included below:

Final Effluent Limits – 0.75 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	Daily Max.	Daily Max.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD ₅	188	282	30	45
TSS	188	282	30	45
pH	NA	NA	6.0 - 9.0 s.u. (*1)	

Footnote: *1 – See Section V.C.4.b below.

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 applicable 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 Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, amended through August 1, 2007). The facility discharges into waters named North Playa and Golf Course Pond (located in a historic playa basin). The designated uses of these receiving waters, in Water Quality Segment No. 20.6.4.99, are aquatic life, wildlife habitat, livestock watering, and secondary contact. EPA was unable to approve section 20.6.4.99 of the NM WQS because the State did not submit a Use Attainability Assessment (UAA) to support an aquatic life designation that does not meet the CWA §101(a)(2) objective as required by 40 CFR 131.10(j)(1). The CWA sections 101(a)(2) and 303(c) require water quality standards to provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water, functions commonly referred to as “fishable/swimmable” uses. EPA’s current water quality regulation effectively establishes a rebuttable presumption that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it can be demonstrated that such uses are not attainable. Prior to submittal of UAA, the designated uses of warmwater aquatic life and primary contact recreation are applicable to the receiving water.

4. Permit Action - Water Quality-Based Limits

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

a. BACTERIA

The criterion for the designated use of primary contact recreation (20.6.4.900D NMAC) for *E. coli* bacteria is 126 cfu/100 ml daily monthly geometric mean and 410 cfu/100 ml daily maximum. These limits are more stringent than those of the previous permit, which established the daily monthly geometric mean as 548 cfu/100 ml and a daily maximum of 2507 cfu/100 ml.

b. pH

The criterion for the designated use of warmwater aquatic life (20.6.4.900H(4) NMAC) for pH is 6.6 to 9.0 standard units. The draft permit will propose these water quality limits, which are more restrictive than the technology-based limits presented earlier and used in the previous 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 and 2S, 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 minor, and does not need to fill out the expanded pollutant testing section Part D of Form 2A. There are no toxics that need to be placed in the draft permit except for those presented 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 the NMWQS and NMIP 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 Cannon AFB.

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 (0.75 MGD)

Q_a = critical low flow of the receiving waters (0.0 cfs)

F = fraction of stream allowed for mixing (1.0)

$$\begin{aligned} CD &= 0.75 \text{ MGD} / [(1.0)(0) + 0.75] \\ &= 1 \\ &= 100\% \end{aligned}$$

For discharges to lakes or reservoirs such as in this permit, the Q_a shall be 0. Therefore the critical dilution shall be 100%.

iii. TRC

The previous permit established water quality-based effluent limitations for TRC of 11 ug/l. This requirement will be maintained in the draft permit.

5. TMDL Requirements

NA

6. Other Requirements

NA

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). Changes to sample frequencies have been made based on the NMIP in order to ensure consistency with similar sized facilities.

Technology based pollutants; BOD and TSS are proposed to be monitored three times per month. These frequencies are more stringent than the once per month frequency used in the current permit. Sample type for BOD and TSS are 3-hour composite as opposed to the 24-hour composite sample type used in the current permit. Flow is proposed to be monitored continuously by totalizing meter, which is the same frequency as the current permit.

Water quality-based pollutant monitoring frequency for *E. coli* shall be three times per month by grab sample as opposed to the once per month by grab sample frequency of the previous permit. The pollutant pH shall be monitored five times per week, which is greater than the once per

month frequency of the previous permit, using instantaneous grab samples. TRC shall be sampled five times per week using instantaneous grab samples. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

OUTFALL 001

In Section V.C.4.c.ii.(b) above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 100%. Based on the nature of the discharge; POTW, the design flow; 0.75 MGD, the nature of the receiving water; lake, and the critical dilution; 100%, the Table 12 of the NMIP directs the WET test to be a 48-hour acute test using *Daphnia pulex* and *Pimephales promelas* at a once per six months frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the vertebrate test species for the following 2-5 years of the permit. The vertebrate species (*Pimephales promelas*) may be reduced to once per year. If any tests fail during that time the frequency will revert back to the once per three months frequency for the remainder of the permit term. The vertebrate species shall resume monitoring at a once per six months frequency on the last day of the 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 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent.

The previous permit established WET biomonitoring with CD = 100%. DMR reports reveal one (1) passing test for both the *Ceriodaphnia dubia* and *Pimephales promelas* species during the last permit term. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP exists. However, EPA is overruling this finding because Canon Air Force Base has not failed a WET test during their last permit term and is conducting tests at the maximum critical dilution. EPA concludes that this effluent does not cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will not be established in the proposed permit.

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 North Playa Lake 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:

EFFLUENT CHARACTERISTIC

DISCHARGE MONITORING

30-DAY AVG MINIMUM 7-DAY MINIMUM

Whole Effluent Toxicity Testing
(48 hour Static Renewal) 1/

Daphnia pulex

REPORT

REPORT

Pimephales promelas

REPORT

REPORT

EFFLUENT CHARACTERISTIC

MONITORING REQUIREMENTS

FREQUENCY

TYPE

Whole Effluent Toxicity Testing
(48 hour Static Renewal) 1/

Daphnia pulex

1/ 6 months

24-Hr. Composite

Pimephales promelas

1/ 6 months

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.

OUTFALL 002

In Section V.C.4.c.ii.(b) above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 100%. Based on the nature of the discharge; POTW, the design flow; 0.75 MGD, the nature of the receiving water; lake, and the critical dilution; 100%, the Table 12 of the NMIP directs the WET test to be a 48-hour acute test using *Daphnia pulex* and *Pimephales promelas* at a once per six months frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the vertebrate test species for the following 2-5 years of the permit. The vertebrate species (*Pimephales promelas*) may be reduced to once per year. If any tests fail during that time the frequency will revert back to the once per three months frequency for the remainder of the permit term. The vertebrate species shall resume monitoring at a once per six months frequency on the last day of the 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 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent.

The previous permit established WET biomonitoring with CD = 100%. DMR reports reveal one (1) passing test for both the *Ceriodaphnia dubia* and *Pimephales promelas* species during the last permit term. The EPA Reasonable Potential Analyzer (See Appendix B) indicates that RP exists. However, EPA is overruling this finding because Canon Air Force Base has not failed a WET test during their last permit term and is conducting tests at the maximum critical dilution. EPA concludes that this effluent does not cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will not be established in the proposed permit.

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 002 - the discharge to the golf course pond 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:

EFFLUENT CHARACTERISTIC	DISCHARGE MONITORING	
	30-DAY AVG MINIMUM	7-DAY MINIMUM
Whole Effluent Toxicity Testing (48 hour Static Renewal) <u>1/</u>		
<i>Daphnia pulex</i>	REPORT	REPORT
<i>Pimephales promelas</i>	REPORT	REPORT

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
	FREQUENCY	TYPE
Whole Effluent Toxicity Testing (48 hour Static Renewal) <u>1/</u>		
<i>Daphnia pulex</i>	1/ 6 months	24-Hr. Composite
<i>Pimephales promelas</i>	1/ 6 months	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.

VI. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE

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 §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 quarterly. The monitoring results will be available to the public.

VII. 303(d) LIST

Additional permit action is not required at this time. A reopener clause will allow permit conditions to be addressed if and when the State assesses the receiving waters, and additional permit limits are required.

VIII. ANTIDegradation

The State of New Mexico has antidegradation requirements to protect existing uses through implementation of its 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.

IX. 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 mass loading requirements of the previous permit for BOD and TSS and the concentration limits for TRC. Concentration limits for *E. coli* and pH are proposed to be more stringent than the requirements of the previous permit. The previous permit had limits for FCB. Since the previous permit issuance, New Mexico has adopted *E. coli* as the State bacteria standard in lieu of FCB. All of the changes represent permit requirements that are consistent with the States WQS and WQMP.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, <http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>, two species in Curry County are listed as endangered or threatened. The black-footed ferret (*Mustela nigripes*), and the least tern (*Sterna antillarum*) are listed as endangered. The American bald eagle (*Haliaeetus leucocephalus*) was previously listed as endangered; 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. EPA makes this determination based on the following:

1. No additions have been made to the USFWS list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
2. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.
3. EPA determines that Items 1 and 2 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “no effect” on listed species and designated critical habitat.

XI. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The application states that a new 8-million gallon storage basin for raw wastewater and a new 8-million gallon basin for treated effluent are being constructed. The permittee shall consult with the State Historic Preservation Office (SHPO) regarding any historic and/or archeological impacts that these and any other construction activities may cause.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if State Water Quality Standards are promulgated or revised. In addition, if the State amends a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that TMDL. Modification of the permit is subject to the provisions of 40 CFR §124.5.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. CERTIFICATION

The permit is in the process of certification by the State Agency 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.

XV. FINAL DETERMINATION

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

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(S)

EPA Application Forms 1, 2A, and 2S received October 1, 2010.

Supplemental information provided via email January 5, 2011 and January 31, 2011.

B. 40 CFR CITATIONS

Citations to 40 CFR are as of October 18, 2010.
Sections 122, 124, 125, 133, 136

C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

Procedures for Implementing National Pollutant Discharge Elimination System 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, 2008 - 2010.