

**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
1445 Ross Avenue
Dallas, Texas 75202-2733

PREPARED BY

Jim Afghani
Environmental Engineer
Permitting Section (6WQ-PP)
Water Division (6WQ)
VOICE: 214-665-6615
FAX: 214-665-2191
EMAIL: afghani.jim@epa.gov

DATE PREPARED

August 10, 2016

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued July 8, 2011, with an effective date of September 1, 2011, and an expiration date of August 31, 2016.

RECEIVING WATER – BASIN

North Playa Lake (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 |
| ML | 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 July 8, 2011, with an effective date of September 1, 2011, and an expiration date of August 31, 2016, are:

- A. Mass limits for BOD₅ and TSS increased due to the increased design flow for the facility.
- B. BOD₅ and TSS percent removal limits have been added in accordance with secondary treatment requirements at 40 CFR 133.102.
- C. The monitoring frequencies have been increased for the following pollutants: pH, BOD₅, TSS and *E. coli* due to the increased design flow for the facility.
- D. Discharge limits for metals (Copper, Silver, Selenium, Thallium and Zinc) have been added.
- E. Monitoring frequency for TRC has been modified due to the increased design flow for the facility.
- F. Monitoring for outfalls 001 and 002 except for DO and whole effluent toxicity testing has been combined and shall be conducted at the end of the chlorine contact chamber (sampling point 003).
- G. Sludge reporting requirements have been incorporated due to the increased design flow for the facility.
- H. Reporting requirements for nutrients (Total Nitrogen and Total Phosphorus) have been added.
- I. A required report summarizing activities related to pollution prevention program has been Added.
- J. The *E. coli* limits have been revised to reflect the designated use of the receiving water.
- K. Dissolved oxygen (DO) limit of 5 mg/l has been assigned based on designated use of warm-water aquatic life in 20.6.4.99 NMAC.

II. DISCHARGE LOCATION

The discharge from the WWTP is to the North Playa Lake (outfall 001) and Golf Course Pond (outfall 002) in waterbody segment No. 20.6.4.99 NMAC.

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. APPLICANT ACTIVITY

As described in the application, the facility is located at 506 South D.L. Ingram Boulevard, 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 federally owned sanitary wastewater treatment facility equivalent to a POTW with a recently upgraded design flow capacity from 0.75 MGD to 1.13 MGD serving 10,982 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 de-chlorination. Raw wastewater can flow into one of three headworks structures: Huber pretreatment system; grit and grease collection device; and old (original) headworks. The primary headworks is the Huber pretreatment system. This system removes grit and grease and screens out debris, such as rags and personal hygiene products. Two alternating screw pumps upstream of the Huber unit lift raw wastewater into this packaged unit. Raw wastewater flows through a Parshall flume before discharging to a pump station (wet well) that lifts raw wastewater to the SBR basins. The secondary headworks is the grit and grease collection device. The grit and grease collection device consists of a traveling bridge, grit pump, grit classifier with auger, grease blade, and grease auger. The screw pumps and Huber unit can be bypassed to the grit and grease collection device by opening a sluice gate at a large manhole upstream of the Huber unit. The Huber unit can be bypassed to perform maintenance on this unit or for other reasons. Pretreated wastewater from the grit and grease collection device enters the same wet well as the Huber unit. In addition, the Huber unit and grit and grease collection device share a common Parshall flume. The old (original) headworks is the back-up headworks to the grit and grease collection device. Again, a sluice gate at the manhole upstream of the Huber unit can be opened to allow flow to this headworks. This headworks is typically not used unless maintenance must be performed on both the Huber unit and grit and grease collection device.

Three SBR basins with common wall construction are provided for the 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. The third SBR basin, although constructed with the December 2013 WWTP upgrade project, was not brought into service until August 2016. It was brought into service for two primary reasons. First, to handle additional storm water during the monsoon season. In the past, basins would enter "storm mode" as a result of only two SBRs being in operation. Storm mode shortens the treatment cycle of wastewater entering the SBR basins. Storm mode reduces some phases of the normal 144-minute treatment cycle each SBR basin goes through. When the plant enters storm mode, additional chlorine is injected to ensure pathogen destruction in accordance with NPDES permit limits is achieved. Storm water inflow/infiltration (I/I) has been drastically reduced through five projects since 1994. Cannon AFB has expended millions of dollars over these years to correct I/I issues by raising manholes, sealing manhole collars, repairing damaged sewer lines, etc. Second, the third SBR basin will allow Cannon AFB to more quickly drain the nine million gallon (9 MG) raw wastewater storage

basin. As with the 9 MG treated wastewater storage basin, Cannon AFB must maintain at least a two feet freeboard on this basin. Although typical daily flows into the WWTP do not necessitate that a third SBR basin be brought on-line, understanding the operation of a third SBR basin now will prepare Cannon AFB for when daily average flows do necessitate its use. In addition, storm water associated with monsoons that might otherwise require Cannon AFB to place this excess in the 9 MG raw wastewater storage basin, will be capable of treatment given the additional treatment capacity a third SBR basin provides. Cannon AFB replaced the former coarse bubble diffusers in the SBR basins with fine bubble diffusion with the WWTP upgrade project.

One square digester basin, in a common wall arrangement with the SBR basins, is provided with coarse bubble aeration, a floating downdraft mixer, and 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 one or more of the ten 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. One serpentine-type chlorine contact chamber is provided for effluent disinfection. Effluent chlorination is accomplished by injecting sodium hypochlorite solution into the decanted supernatant from the SBR basins, and de-chlorination of the wastewater from the chlorine contact chamber is accomplished by injecting a sodium bisulfate solution.

Two synthetically-lined wastewater storage basins can store up to 9 MG of raw and treated wastewater. The raw wastewater storage basin was accepted by Cannon AFB in January 2012. Shortly after acceptance, pipes on the outside of the SBR basins and sludge digester burst due to lack of insulation. Cannon AFB diverted flow to the raw wastewater storage basin for five days until repairs were made. The 9 MG raw wastewater storage basin will also 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. As stated previously, Cannon AFB will also use this basin in the event storm water I/I causes the system to enter storm mode. The treated wastewater storage basin was first used in April 2015. Treated wastewater will be pumped to this basin directly from the chlorine contact basin and then pumped to the golf course pond for irrigation and used for construction activity (e.g., dust suppression) directly from the basin via a fill stand completed in September 2015.

Water from the chlorine contact basin can be routed via gravity flow to the North Playa Lake or diverted via a diaphragm pump to the treated wastewater storage basin. Treated wastewater from the treated wastewater storage basin will be discharged to the golf course pond utilizing the existing pipeline from the 190,000-gallon storage tank. The 190,000-gallon storage tank will no longer be used except during contingencies. Diversion valves installed on the discharge line of the treated wastewater storage basin can direct water back to the headworks of the WWTP, if water is not acceptable for discharge after treatment (e.g., water contains excessive amount of firefighting foam), or to the North Playa Lake. However, the golf course pond will be the primary discharge location.

IV. EFFLUENT CHARACTERISTICS

Following is a quantitative description of the existing discharge(s) described in the EPA Permit Application Form 2A received June 13, 2013:

POLLUTANT TABLE 1: Outfall 001

| Parameter | Maximum | Average |
|--|---------------------|----------|
| | (mg/l unless noted) | |
| Flow, million gallons/day (MGD) | 0.31MGD | 0.22 MGD |
| Temperature, winter | 22.00° C | 17.00° C |
| Temperature, summer | 26.00° C | 23.43° C |
| pH, minimum, standard units (SU) | 7.31 su | N/A |
| pH, maximum, standard units (SU) | 7.50 su | N/A |
| Biochemical Oxygen Demand, (BOD) | 6.62 | 3.59 |
| Fecal coliform/E. coli (bacteria/100 ml) | 28.00 | 1.65 |
| Total Suspended Solids (TSS) | 7.30 | 3.11 |
| Ammonia (NH ₃) | 0.26 | 0.12 |
| Chlorine, Total Residual (TRC) | <0.01 | <0.01 |
| Dissolved Oxygen (DO) | 5.00 | 3.64 |
| Total Kjeldahl Nitrogen (TKN) | 0.95 | 0.86 |
| Nitrate plus Nitrite Nitrogen | 1.90 | 1.12 |
| Oil & Grease | 1.09 | 0.36 |
| Phosphorous | 3.35 | 2.93 |
| Total Dissolved Solids (TDS) | 870.00 | 532.00 |

POLLUTANT TABLE 2: Outfall 002

| Parameter | Maximum | Average |
|--|---------------------|----------|
| | (mg/l unless noted) | |
| Flow, million gallons/day (MGD) | 0.17 MGD | 0.13 MGD |
| Temperature, winter | 22.00° C | 17.00° C |
| Temperature, summer | 26.00° C | 23.43° C |
| pH, minimum, standard units (SU) | 7.32 su | N/A |
| pH, maximum, standard units (SU) | 7.50 su | N/A |
| Biochemical Oxygen Demand, (BOD) | 4.62 | 2.93 |
| Fecal coliform/E. coli (bacteria/100 ml) | 20.00 | 2.30 |
| Total Suspended Solids (TSS) | 5.00 | 1.99 |
| Ammonia (NH ₃) | 0.10 | 0.10 |
| Chlorine, Total Residual (TRC) | <0.01 | <0.01 |
| Dissolved Oxygen (DO) | 5.00 | 3.64 |
| Total Kjeldahl Nitrogen (TKN) | 0.95 | 0.80 |
| Nitrate plus Nitrite Nitrogen | 1.90 | 1.12 |
| Oil & Grease | <4.35 | <4.35 |
| Phosphorous | 2.28 | 2.28 |
| Total Dissolved Solids (TDS) | 880.00 | 611.84 |

A summary of pollutant data from March 2014 through March 2016 at net-DMRs show exceedance of permit limit for Total Residual Chlorine on November 30, 2015 and December 31, 2015. The values were 853 ug/l and 500 ug/l respectively.

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 previous permit will expire August 31, 2016. The application was received on June, 13, 2013 and determined to be administratively complete on February 25, 2015. The existing permit will be administratively continued until this permit is issued.

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 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 BOD₅ and TSS. Water quality-based effluent limitations are established in the proposed draft permit for DO, *E. coli* bacteria, pH, metals and TRC.

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 (Best Practicable Control Technology Currently Available) - 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 (Best Conventional Pollution Control Technology) - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH and O&G.

BAT (Best Available Control Technology Economically Achievable) - 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 BOD₅, 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 6.0-9.0 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:

$$\text{Loading in lbs. /day} = \text{pollutant concentration in mg/l} * 8.345 \text{ lbs. /gal} * \text{design flow in MGD}$$

$$30\text{-day average BOD/TSS loading} = 30 \text{ mg/l} * 8.345 \text{ lbs. /gal} * 1.13 \text{ MGD} = 283 \text{ lbs.}$$

$$\text{Daily maximum BOD}_5\text{/TSS loading} = 45 \text{ mg/L} * 8.345 \text{ lbs. /gal} * 1.13 \text{ MGD} = 424 \text{ lbs.}$$

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

Final Effluent Limits – 1.13 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 | 283 | 424 | 30 | 45 |
| TSS | 283 | 424 | 30 | 45 |
| Percent Removal (minimum), BOD ₅ and TSS | 85% BOD ₅ & TSS (30-day average) | | | |
| 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, effective June 5, 2013). The facility discharges into waters named North Playa Lake 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 warm-water aquatic life, livestock watering, wildlife habitat and primary contact.

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

According to 20.6.4.99 NMAC, site-specific criteria for *E. coli* bacteria is 206 cfu/100 ml or less monthly geometric mean and 940 cfu/100 ml daily maximum or less.

b. pH

The criterion for the designated use of warm-water aquatic life (20.6.4.900 H (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 of 6.0 to 9.0 standard units.

c. Dissolved Oxygen (DO)

Designated use of warm-water aquatic life in 20.6.4.99 NMAC requires that the use-specific criteria in 20.6.4.900 NMAC be used. A dissolved oxygen limit of 5 mg/l or more has been assigned to protect this use.

According to the NPDES permit application, treated wastewater is not normally discharged to the waters of the U.S. Therefore, carrying out a DO modeling will not yield any useful results for the two outfalls. The applicant also states that the North Playa Lake never overflows to the point where treated wastewater travels outside the boundaries of Cannon AFB. Water spreads to the south, but it is contained in what Cannon AFB considers to be a part of the lake. The golf course pond does overflow due to heavy rainfall, but still remains on Cannon AFB.

As most golf courses on military installations, the golf course on Cannon AFB is built on the lowest point of the installation. NMED issued Ground Water Discharge Permit (DP-873) requires Cannon AFB to maintain at least two feet of freeboard on the pond. When storm water prevents that, DP-873 authorizes Cannon AFB to release treated wastewater to the storm drainage system. Cannon AFB must submit a report to the NMED when that occurs. Both treated wastewater and storm water, in general, do not leave the installation.

d. 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 RP to cause an in-stream excursion above a water quality criterion, 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 major after upgrades to the wastewater treatment system for permitting purposes and has supplied the expanded pollutant testing data in Part D of Form 2A, received on June 13, 2013. Additional data was received attached with a letter dated October 12, 2015 and correspondence (emailed) dated August 9, 2016. June 13, 2013 data in Form 2A consists of maximum daily and average daily discharge values and will not be utilized for RP analysis. October 12, 2015 and August 9, 2016 (collected on November 17, 2015) data sets will

be used to run a water quality screen to determine if discharged pollutant concentrations demonstrate RP to exceed WQS for the various designated uses. If RP exists, the screen would also calculate the appropriate permit limit needed to be protective of such designated uses. The screen is based on the NMIP as of July 10, 2012.

ii. Critical Conditions

Critical conditions are used to establish certain permit limitations and conditions. Per 20.6.4.11.E (1) NMAC (Applicability of Water Quality Standards), mixing zones are not allowed for discharges to lakes, reservoirs, or playas--these effluents shall meet all applicable criteria at the point of discharge. 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 (1.13 MGD)

Q_a = critical low flow of the receiving waters (0)

F = fraction of stream allowed for mixing (1.0)

$$CD = 1.13 \text{ MGD} / [(1.0) (0) + 1.13] = 1 = 100\%$$

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.

iv. Metals

New Mexico Water Quality Standards (NMWQS) for Aluminum, Cadmium, Chromium, Copper, Lead, Manganese, Nickel, Silver and Zinc are hardness based. In order to estimate the dissolved values of these metals, effluent hardness of 20 mg/l was used in RP analysis since dissolved hardness of the receiving waters was not known. RP screening shows that geometric means of effluent concentrations exceed the NMWQS. In draft permit, daily maximum and 30-day average discharge limits of 2.264 ug/l and 2.264 ug/l for Copper, 5 ug/l and 5 ug/l for Selenium total recoverable, 0.202 ug/l and 0.202 ug/l for Silver, 0.470 ug/l and 0.470 ug/l for Thallium and 28.048 ug/l and 28.048 ug/l for Zinc respectively will be assigned.

5. TMDL Requirements & 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 one per week according to table 9 in NMIP. These frequencies are more stringent than the two per month frequency used in the current permit because facility design flow has been increased from 0.75 MGD to 1.13 MGD. Sample type for BOD and TSS are 6-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 one per week by grab sample as opposed to the two per month by grab sample frequency of the current permit. The pollutant pH shall be monitored daily, which is greater than the five per week frequency of the current permit, using instantaneous grab samples. TRC shall be sampled daily as opposed to five times per week using instantaneous grab samples. Current permit does not have any requirements to monitor for metals. However, based on RP screening, metals shall be monitored and sampled three per week by grab samples. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

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; 1.13 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 7-day chronic test using *Ceriodaphnia dubia* and *Pimephales promelas* at a once per three-month 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 *Ceriodaphnia dubia* may be reduced to once per six months and *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-month frequency for the remainder of the permit term.

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 that all tests passed for both the *Ceriodaphnia dubia* and *Pimephales promelas* species during the last permit term. The EPA Reasonable Potential Analyzer 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 Outfalls 001 and 002. Discharge for outfalls 001 and 002 shall be monitored for discharge limits by the permittee as specified below:

| EFFLUENT CHARACTERISTIC | DISCHARGE MONITORING | |
|--|----------------------|---------------|
| | 30-DAY AVG MINIMUM | 7-DAY MINIMUM |
| Whole Effluent Toxicity Testing (7-Day Chronic Static Renewal) <u>1</u> / | | |
| <i>Ceriodaphnia dubia</i> | REPORT | REPORT |
| <i>Pimephales promelas</i> | REPORT | REPORT |

| EFFLUENT CHARACTERISTIC | MONITORING REQUIREMENTS | |
|--|-------------------------|------------------|
| | FREQUENCY | TYPE |
| Whole Effluent Toxicity Testing (7-Day Chronic Static Renewal) <u>1</u> / | | |
| <i>Ceriodaphnia dubia</i> | 1/ 3 months | 24-Hr. Composite |
| <i>Pimephales promelas</i> | 1/ 3 months | 24-Hr. Composite |

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

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.” The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works. The permittee shall submit an Annual Sludge Status report in accordance with NPDES Permit NM0030236, Parts I and Parts IV.

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 monthly. The monitoring results will be available to the public.

VIII. 303(d) LIST

Additional permit action is not required at this time since the receiving waters are not on the State's latest approved 303(d) list. 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.

IX. ANTIDegradation

The State of New Mexico has anti-degradation requirements in 20.6.4.8 NMAC to protect the existing uses and level of water quality. The policy sets forth the intent to protect the existing quality of those waters whose quality exceeds their designated use. The limitations and monitoring requirements set forth in the proposed draft permit are developed from the applicable State WQS. State of New Mexico also has a Continuing Planning Process, Anti-degradation Policy Implementation Procedure (Anti-degradation Procedure) adopted by the New Mexico Water Quality Control Commission dated November 30, 2010 that establishes three designations or tiers of waters in New Mexico.

Tier 2 (waters with quality better than necessary to protect the CWA Section 101(a)(2) goals) implementation applies to all classified waters identified in the NMWQS Sections 101 through 899 that are not Tier 1 (waters not supporting designated uses on the CWA §303(d)/§305(b) Integrated List & Report) on a parameter-by-parameter basis) or listed as Tier 3 (Outstanding National Resource Waters or ONRWs) in NMWQS. Tier 2 may apply to unclassified waters depending on the available water quality information.

In this case, the receiving waters are not listed as Tier 3 in 20.6.4.9 NMAC. Also, water quality information has not been assessed pursuant to established protocols. Therefore, further Tier 1 implementation or Tier 2 (Determination of Necessity) screening on a parameter by parameter basis cannot be conducted at this time. The permit requirements and the limits are protective of the receiving waters, which is protective of the designated uses of the unclassified 20.6.4.99 NMAC waters. Discharge is not subject to Tier 2 review at this time.

X. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet anti-backsliding 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 limitations that are at least as stringent as or more stringent than the previous permit. All of the changes represent permit requirements that are consistent with the States WQS and WQMP.

XI. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, <https://ecos.fws.gov/ipac/project/54E64RO6GFEDPIUAHS6I3LE3HQ/resources#endangered-species>, Least Tern (*Sterna antillarum*) is the only specie listed as endangered in Curry County, New Mexico. 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.

XII. HISTORICAL & ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

There are no new constructions proposed.

XIII. 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.

XIV. VARIANCE REQUESTS

No variance requests have been received.

XV. 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.

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 Forms 1, 2A, and 2S received June 13, 2013. In addition, supplemental information provided via letter dated October 12, 2015 and emailed dated August 9, 2016.

B. 40 CFR CITATIONS

Citations to 40 CFR are as of July 22, 2016. 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 June 5, 2013.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, March 15, 2012.

Statewide Water Quality Management Plan, December 23, 2011.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2014-2016 Current EPA Approved Version, November 18, 2014