NPDES PERMIT NO. NM0028487
FACT SHEET

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

APPLICANT

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ISSUING OFFICE

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DATE PREPARED

December 12, 2013

PERMIT ACTION

Renewal of a permit previously issued on June 20, 2008, with an effective date of July 1, 2008, and an expiration date of June 30, 2013.

RECEIVING WATER – BASIN

Rio Grande River 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
DO	Dissolved oxygen
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FWS	United States Fish and Wildlife Service
mg/l	Milligrams per liter
ug/l	Micrograms per liter
lbs	Pounds
MG	Million gallons
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
SS	Settleable solids
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	Waste Load allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued on June 20, 2008, with an effective date of July 1, 2008, and an expiration date of June 30, 2013, are as follow:

- Measurement frequency of pH and TRC has changed from 1/month to 1/week.
- Mass limit for E. coli bacteria has been established.
- Mass limit for BOD_5 and TSS is monitored at Outfall 001 instead.
- Removal percentage for BOD_5 and TSS has been established at Outfall 001.
- WET testing has been established at Outfall 001.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Latitude 31° 59' 56.03" N and Longitude 106° 36' 06.52" W) is located at 1325 West Washington Street, Dona Ana County, New Mexico.

Under the SIC code 4952, the applicant operates Gadsden Independent School District (ISD) #16 WWTP, which has a design flow of 0.09 MGD providing sanitary services for approximately 2,607 students and staffs. The facility consists of two separate treatment plants with one at the High School and the other the Middle School. The WWTP primarily consists of lift stations, screens, aeration basins, clarifiers and chlorination chambers. The effluent is chlorinated and then de-chlorinated before discharged to Rio Grande River. Sewage Sludge is hauled to Dona Ana County South Central Regional WWTP for treatment. Outfall 01A is located right after the de-chlorination unit at the High School and Outfall 01B is located right after the de-chlorination unit at the Middle School; the combined effluent is discharge to the river at Outfall 001. A map of the facility is attached.

III. EFFLUENT CHARACTERISTICS

Data submitted in Form 2A is as follows:

Parameter	**Max**	**Avg**
	(mg/l unless noted)	
Flow (MGD)	0.08	0.01
pH, minimum, standard units (su)	6.4	N/A
pH, maximum, standard units (su)	7.9	N/A
Biochemical Oxygen Demand, 5-day (BOD_5) (lb/day)	6.41	1.37
Total Suspended Solids (TSS) (lb/day)	7.31	1.59
Fecal Coliform (cfu)	72.00	4.56

However, in the previous permit term, DMRs show some exceedences for pH, and TRC, and many exceedences for E. coli bacteria at Outfall 001. A Compliance Evaluation Inspection (CEI) dated July 30, 2012 showed “Unsatisfactory” on recordkeeping and reporting, laboratory, O&M and flow measurement aspects. There were several issues found repeatedly. The latest Administrative Order (AO) issued to the facility on February 14, 2013 stated violations in pH, TRC, E. coli, TSS, and O&M requirements.

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 the 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.

The application was dated February 27, 2013. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a).

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 BOD, and percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for *E. coli* bacteria, pH and TRC.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. General Comments

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, *E. coli* bacteria, 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.

2. Effluent Limitation Guidelines

The facility is a POTW/POTW-like that has technology-based ELG's established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG's established in this Chapter are BOD, TSS and pH. BOD limits of 30 mg/l for the 30-day average and 45 mg/l for the 7-day average and 85% percent (minimum) removal 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, average and 85% percent (minimum) removal are found at 40 CFR §133.102(b). ELG's for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). The draft permit establishes new limits for percent removal for both BOD and TSS. Since these are technology-based there is no compliance schedule provided to meet these limits. Compliance is required on the permit effective date.

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 similar, 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)(l)/(mg)(MG) * design flow in MGD

30-day average BOD/TSS loading = 30 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.09 MGD = 22.5 lbs/day
7-day average BOD/TSS loading = 45 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.09 MGD = 33.8 lbs/day

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

Effluent Characteristic	**Discharge Limitation**			
	lbs/day, unless noted		mg/l, unless noted	
Parameter	30-day Avg	7-day Max	30-day Avg	7-day Max
BOD	22.5	33.8	30	45
BOD, % removal[1]	≥ 85	---	---	---
TSS	22.5	33.8	30	45
TSS, % removal	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	

[1] % removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] * 100.

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 approved on June 5, 2013). The discharge is to Rio Grande River (20.6.4.101 NMAC). The designated uses of the receiving water are irrigation, livestock watering, wildlife habitat, marginal warmwater aquatic life 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. pH

For marginal warmwater aquatic life and primary contact, criteria for pH is between 6.6 and 9.0 s.u. pursuant to 20.6.4.900.D and H(6) NMAC.

b. Bacteria

For primary contact, criteria for E. coli bacteria is at 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml daily maximum pursuant to 20.6.4.900.D NMAC.

c. Toxics

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 TRC described below.

d. TRC

The facility uses chlorine to disinfect the effluent. The previous permit established water quality-based effluent limitations for TRC of 19 µg/l (acute criteria); this limit will be continued in the draft permit.

5. 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). Sample frequency is based on Table 9 (page 34 of the NMIP) for design flow of 0.1 MGD or less and based on compliance history.

Parameter	Frequency	Sample Type	Outfall Monitored
Flow	Daily	Continuous	001, 01A & 01B
pH	1/week	Instantaneous Grab	001
BOD_5	1/month	Grab	01A & 01B (for concentration limit) 001 (for mass limit)*
TSS	1/month	Grab	01A & 01B (for concentration limit) 001 (for mass limit)*
% Removal	1/month	Calculation	001
TRC	1/week	Instantaneous Grab	001
E. coli Bacteria	1/month	Grab	001

*Established at this outfall for more clarity instead. It's monitored at 01A & 01B in the existing permit.

D. WHOLE EFFLUENT TOXICITY

The existing permit does not have WET testing. Because of the exceedances including TRC and the AO, EPA proposes the WET testing in this permit draft.

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. The receiving water, perennial stream currently has a 4Q3 of 29.7 cfs (according to a nearby facility NPDES #NM0029629, City of Anthony WWTP issued in December 2012). WET limits will not be established in the proposed permit. Based on the nature of the discharge, a POTW/POTW-like, the design flow of 0.09 MGD, and the nature of the receiving water with the critical dilution of 0.46% approximately, the NMIP directs the WET testing to be 48-hr acute tests using *Daphnia pulex* and *Pimephales promelas* once per permit term. The test is preferably completed at the 5th year of the permit term and the result should be sent along with an application for another NPDES permit renewal.

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 must be 2.1%, 2.8%, 3.6%, 5.0%, and 6.7%. The low-flow effluent concentration (critical low-flow dilution) is defined as 5.0% effluent (rounded up from 4.6%); an acute-to-chronic ratio of 10:1 is used to allow acute WET testing in lieu of chronic. The permittee shall limit and monitor discharge(s) as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
WET Testing (48-hr Static Renewal)[1]	30-day Avg Min.	48-hr Min.	Frequency[2]	Type

Daphnia pulex	Report	Report	Once/5 year	Grab
Pimephales promelas	Report	Report	Once/5 year	Grab

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

[2] The test shall take place between November 1 and April 30 if possible. This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple failures. However, upon failure of any WET test, the permittee must report the results to EPA and NMED, Surface Water Quality Bureau, in writing, within 5 business days of notification of the test failure. EPA and NMED will review the test results and determine the appropriate action necessary, if any.

VI. TMDL REQUIREMENTS

The receiving water segment 20.6.4.101 NMAC (Internal Mexico boundary to Anthony Bridge) has been listed in 303(d) list. TMDL for E. coli bacteria was approved in 2007. The facility has waste load allocation for E. coli of 4.20×10^8 cfu/day with effluent limit of 126 cfu/100ml in the TMDL. Therefore, these requirements are established in the draft permit. The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirements on new or revised TMDLs are completed.

VII. ANTIDEGRADATION

The NMAC, Section 20.6.4.8 "Antidegradation Policy and Implementation Plan" sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets 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 water, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on November 5, 2013 for Dona Ana County, NM, there are two endangered species: Least tern and Sneed pincushion cactus. Both species were listed in the previous permit with determination of "no effect".

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. The draft permit is consistent with the States WQS and does not increase pollutant loadings.

4. EPA determines that Items 1, thru 3 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.

IX. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

X. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if NMWQS are promulgated or revised. In addition, if the State develops 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.

XI. VARIANCE REQUESTS

None

XII. 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 of COE, to the Regional Director of FWS and to the National Marine Fisheries Service prior to the publication of that notice.

XIII. FINAL DETERMINATION

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

XIV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Forms 2A dated on February 27, 2013 and 2S dated December 16, 2013

B. 40 CFR CITATIONS

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 June 5, 2013

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

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2012-2014

TMDL for the Main Stem of the Lower Rio Grande (from the International boundary with Mexico to Elephant Butte Dam), June 11, 2007