

NPDES PERMIT NO. NM0023311

FACT SHEET

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

I. APPLICANTS

City of Las Cruces
P.O. Box 20000
Las Cruces, NM 88004

II. ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

III. PREPARED BY

Isaac Chen
Environmental Engineer
NPDES Permits & Technical Branch (6WQ-PP)
Water Quality Protection Division
VOICE: 214-665-7364
FAX: 214-665-2191
EMAIL: chen.isaac@epa.gov

IV. DATE PREPARED

November 9, 2009

V. DOCUMENT ABBREVIATIONS

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

BAT - best available technology
economically achievable
BMP – best management plan
BOD₅ – five-day biochemical oxygen
demand
BPJ - best professional judgment
CD – critical dilution

CFR – Code of Federal Regulations
cfs – cubic feet per second
CIU - Categorical Industrial User's
COD – chemical oxygen demand
OE – United States Corp of Engineers
CWA – Clean Water Act
DMR – discharge monitoring report

EPA – United States Environmental Protection Agency
ESA - Endangered Species Act
FWS – United States Fish and Wildlife Service
MGD – million gallons per day
NMAC – New Mexico Administrative Code
NMED – New Mexico Environment Department
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 - Publicly Owned Treatment Works
RP - reasonable potential
SIC - standard industrial classification
SIU - Significant Industrial User's
su - standard units
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
WET - whole effluent toxicity
WQCC - New Mexico Water Quality Control Commission
WWTP - wastewater treatment plant

VI. PERMIT ACTION

EPA is proposing reissuance of the current permit issued July 9, 2004, with an effective date of September 1, 2004, and an expiration date of August 31, 2009.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of May 1, 2009.

VII. DISCHARGE LOCATION

The facility is located at 2851 West Amador, Las Cruces, NM. The effluent from the site is discharged into the Rio Grande in water quality Segment No. 20.6.4.101 of the Rio Grande Basin. The discharge is located on that water at Latitude 32° 17' 33" North and Longitude 106° 49' 27" West, in Dona Ana County, New Mexico.

VIII. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, effective July 17, 2005, and amended through August 1, 2007). The receiving waterbody, Segment No. 20.6.4.101, has designated uses of irrigation, livestock watering, wildlife habitat, marginal warmwater aquatic life, and secondary contact.

IX. APPLICANT ACTIVITY

Under SIC Code 4952 the discharge is from a POTW. The treatment processes include primary clarifiers, roughing filters, aeration basins, secondary clarifiers, and chlorine contact basin with dechlorination. The facility design flow was 8.9 MGD and has been increased to 13.5 MGD after adding a flow equalization basin at the head of the treatment plant.

X. SEWAGE SLUDGE PRACTICES

The sludge produced at the site passes through digesters and drying beds to produce compost. Compost is given to the public and local farms.

XI. EFFLUENT CHARACTERISTICS

The facility submitted effluent data with its Application Form 2A, dated March 19, 2009. The permit application was received on March 30, 2009, and determined to be administratively complete in EPA's letter dated April 6, 2009. Conventional and nonconventional compounds reported in the application are shown below.

Pollutant	Daily Maximum	Daily Average
(Unit: mg/l unless specified)		
BOD	14.0	8.1
TSS	12.0	7.4
FC (cfu/100 ml)	91.0	17.0
TRC	0.7	< 0.01
DO	7.5	6.4
TKN	12.0	8.3*
Nitrate + Nitrite	24.3	20.9*
O&G	< 5	< 5*
Phosphorus	2.24	2.01*
TDS	730	727*

* Based on three sampling results

Effluent characteristics indicate that the following priority pollutants were detected in the discharge and their average concentrations are:

Pollutant	Conc. ug/l
Aluminum, total	39
Zinc, total	18
Bis (2-ethylhexyl) Phthalate	9.1

Total aluminum concentration was reported above EPA's MQL. Average concentrations of zinc and Bis (2-ethylhexyl) Phthalate are below EPA's MQLs. The current permit established quarterly monitoring requirements for diazinon in influent and effluent. The permittee has reported less than detection, at 0 µg/l, of diazinon in DMRs for both influent and effluent.

The DMR data over the past two years (January 2007 through May 2009) was reviewed and five reported values were reported as outside permit limitations.

Parameter	Value	Limitation	Date
pH	6.2 – 7.2 (s.u.)	6.6 – 9.0	11/08
TRC	0.7 (mg/l)	Non-detectable at 0.033 mg/l	01/07
TRC	0.35 (mg/l)	Non-detectable at 0.033 mg/l	11/07
TRC	0.18 (mg/l)	Non-detectable at 0.033 mg/l	03/09
FC	1239 (cfu/100 ml)	400 cfu/100 ml	11/07

XII. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at 40 CFR 122.44. The draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a), on BPJ in the absence of guidelines, NMWQS and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

A. Reason for Permit Issuance

It is proposed that the permit be issued for a five-year term, following regulations promulgated at 40 CFR 122.46(a). The proposed permit term will coordinate with the EPA Basin Statewide Management Approach to Permitting in New Mexico, adopted March 2, 2000. This program also known as the Statewide Basin Management Approach to Permitting is a comprehensive framework to better coordinate and integrate water resource management activities geographically by river basin.

B. Technology-Based Versus Water Quality Standards-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 CFR 122.44, the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a) or on State WQS and requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

C. 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 effluent limitations guidelines where applicable, on BPJ in the absence of guidelines, or on a combination of the two.

Secondary treatment effluent limitations, established at 40 CFR 133.102(a) and 40 CFR 133.102(b) are 30 mg/l for the 30-day average and 45 mg/l for the 7-day average for both BOD₅ and TSS. Mass loadings are calculated based on the new design flow of 13.5 MGD.

D. Sewage Sludge Practices

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in 40 CFR Part 503 "Standards for the Use or Disposal of Sewage Sludge."

E. Waste Water Pollution Prevention Requirements

The facility has six (6) non-categorical Significant Industrial Users (SIUs) and they are:

Facility Name	Processes	Flow Rate (gpd)	Discharge Type
American Linen	Industrial laundry	19,800	Intermittent
ConAgra dba Gilroy Foods	Chile processing and onion dehydrating	139,000	Intermittent
Young Pecan Company	Nut shelling and roasting	16,000	Intermittent
Memorial Medical Center	Hospital waste and laundry	152,000	Continuous
Mountain View Regional Medical Center	Hospital waste and laundry	33,260	Continuous
New Mexico State University	None	504,000	Continuous

EPA determined that the permittee must develop a full pretreatment program and revised requirements are proposed in the permit.

F. Water Quality Based Limitations

1. General Comments

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. Effluent limitations and/or conditions established in the draft permit are in compliance with State WQS and the applicable water quality management plan.

2. State Water Quality Numerical Standards

a. GENERAL COMMENTS

The water quality standards that the permit must meet are for perennial Segment 20.6.4.101 NMAC.

b. WATER QUALITY STANDARDS

The current WQS adopted by WQCC as effective July 17, 2005, and amended through August 1, 2007. The WQCC established the revised WQS in accordance with, and under authority of, the NM Water Quality Act [Chapter 74, Article 6, NMSA 1978 Annotated]. The WQS have been approved by EPA in accordance with Section 303 of the CWA.

c. REASONABLE POTENTIAL

Effluent data were screened against the EPA approved 2005 WQS. Stream flow data from gauge station 42RGrand044.2 in Rio Grande below Picacho Bridge were used to calculate the 4Q3 low

flow and harmonic mean flow. The critical low flow 4Q3 is 48.1 cfs and the harmonic mean flow is 341 cfs. The stream geometric mean TSS is 190.8 mg/l and the geometric mean hardness is 240.7 mg/l. Total aluminum of 39 µg/l is the only pollutant detected above its MQL needed for RP screen. The following equation is used to determine an instream waste concentration (IWC) and a discharge has RP if IWC is greater than applicable WQS.

$$\text{IWC} = \frac{(\text{stream flow} \times \text{ambient conc.}) + (\text{discharge flow} \times 2.13 \times \text{discharge conc.})}{(\text{stream flow} + \text{discharge flow})}$$

Because the ambient concentration is zero and the flow has 30% dilution, the calculated IWC indicates no RP for the discharge to cause or contribute violations of State WQS for aluminum.

d. PERMIT ACTION - WATER QUALITY-BASED LIMITS

Regulations promulgated at 40 CFR 122.44(d) require water quality-based limitations, where appropriate, limits in addition to, or more stringent than effluent limitation guidelines (technology based). NMWQS that are applicable for this discharge are based on 20.6.4 NMAC.

For water segment 20.6.4.101 NMAC, there is a specific WQS range for pH, so a pH range of 6.6 – 9.0 is established based on the water segment-specific criteria. The current permit has effluent limitations for fecal coliform based on segment-specific criteria of the previous WQS. The draft permit proposes to delete the monitoring requirement and effluent limitation for fecal coliform because the WQS for fecal coliform was replaced with E. coli in the latest EPA approved NMWQS. There is an approved TMDL for bacteria. The draft permit applies the TMDL daily E. coli concentration of 126 cfu/100 ml and daily load of 42.5 billion cfu (Bcfu) at the point of discharge. This change is consistent with State WQS and also provides appropriate control for contribution of bacteria to the stream. The draft permit establishes effluent limitation and monitoring requirement for TRC based on acute aquatic life criteria.

5. Whole Effluent Toxicity Limitations

The critical dilution in the current permit is 22% and the current permit contains a lethal WET limit. EPA has determined through the reasonable potential process that the discharge has a reasonable potential to exceed both pimephales promelas and ceriodaphnia dubia lethal and sublethal requirements. RP analysis for WET is attached to the Fact Sheet. The facility has increased its design flow from 8.9 MGD to 13.5 MGD and based on the new 4Q3 flow of 48.1 cfs (31 MGD) the new CD is 30%. The discharger must comply with the toxicity limitations and reporting requirements for both lethal and sublethal endpoints. A three-year compliance schedule is proposed for the sublethal limit. No compliance schedule is given for lethal limit because the lethal WET limit was established in the existing permit.

G. 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). EPA has developed “Procedures for Implementing NPDES Permits in New Mexico” dated July 23, 2009, (2009 IP) to replace the “Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Streams” dated May 5, 1995. EPA has

established recommended monitoring frequencies based on the size of facility, type of treatment process, nature of pollutant parameter, and other factors in the 2009 IP. In accordance with the 2009 IP, technology based pollutants, such as BOD₅ and TSS, are to be monitored daily for POTWs with activated sludge treatment technology and greater than 10 MGD. Monitoring frequencies for WQ-based pH and E. coli are also proposed daily. These changes result in increase of monitoring frequency for the facility.

H. Summary of Significant Changes from the Existing Permit

There are significant changes of permit conditions from the current permit:

1. Replace monitoring requirement and effluent limitation of fecal coliform with E. coli;
2. Change mass loading limitations for BOD and TSS;
3. Add WET limit for sublethal endpoint;
4. Change critical dilution from 22% to 30%;
5. Establish new monitoring frequencies for pH, BOD, TSS, and E. coli; and
6. Include modified pretreatment conditions.

XIII. 303(d) LIST

The Rio Grande segment 20.6.4.101 is listed on the current “2008 - 2010 State of New Mexico 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs) for not supporting secondary contact and E. coli is the probable cause of impairment. The proposed permit adopts the concentration and load assigned to the facility in the TMDL for E. coli for the Lower Rio Grande dated May 8, 2007. The E. coli loading limitation is based on the previous 8.9 MGD design capacity. No increase of load is allowed into the impaired water.

XIV. 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. The NMED has run an antidegradation test and found the impact is de-minimis of the assimilative capacity.

XV. ANTIBACKSLIDING

The proposed permit does not relax any effluent limitations. Effluent limitations for fecal coliform in the current permit are replaced with E. coli according to approved TMDL.

XVI. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, five species in Dona Ana County are listed as endangered: least tern, northern aplomado falcon, Rio Grande silvery minnow, Sneed pincushion cactus and southwestern willow flycatcher; and one threatened species: Mexican spotted owl. No critical habitats have been designated for any above species in Dona Ana County.

The EPA conducted a biological evaluation (BE) for the authorization of municipal storm water discharges from Las Cruces urbanized area (UA). Up to five applicants with operational control of the municipal storm sewer systems (MS4s) within the Las Cruces UA, Dona Ana County, the City of Las Cruces, and the Towns of Mesilla, Dona Ana and University Park, applied for authorization to discharge municipal storm water under EPA's General Permit for small MS4s in New Mexico, NMR040000, effective on July 1, 2007. The BE considered the direct, indirect, and cumulative effects on listed threatened and endangered species and designated critical habitat of authorization of discharges of municipal storm water under EPA's general permit NMR040000. The BE for the MS4s General Permit has provided useful information for EPA in its determination of effect on the listed species by the municipal wastewater discharges. EPA determines that this permitting action has no effect on the listed species as discussed below.

Interior Least Tern - The least tern is documented nesting only at or near Bitter Lake National Wildlife Refuge in the Pecos River basin. As a rare vagrant in other parts of the state, the interior least tern is not anticipated to be affected by authorized discharges of municipal wastewater in the City of Las Cruces. No critical habitat for the least tern is designated within or in proximity to the City of Las Cruces.

Northern Aplomado Falcon - There are records of sittings of nesting falcons in Dona Ana from the 1990's. However, these sittings are outside the City of Las Cruces boundaries (Isaack Lake, Jornada Experimental Range, Baylor Canyon Rd (unconfirmed), off I-10 and east of the Lazy E Ranch exit, Santa Theresa airport). Predictive modeling developed by the New Mexico Cooperative Fish and Wildlife Research Unit and published in 2002 with follow-up in 2005 identifies larger patches of habitat with moderate to high suitability in the Otero Mesa northeast of El Paso, south of Silver City, Cooke's Peak northwest of Las Cruces, southern Animas Valley, and surrounding White Sands Missile Range north of Las Cruces. Falcons recently sighted in New Mexico appear to be transients. The Rio Grande and its riparian corridor south Las Cruces do not appear to support habitat essential or suitable for the aplomado falcon.

Aplomado falcon in New Mexico and Arizona received designation as nonessential experimental population in 2006 (USFWS. 2006). Section 10(j) of the Endangered Species Act explicitly states that for the purposes of section 7, the species designated as nonessential will be considered a proposed species, obligating federal agencies to confer (rather than consult) with the Service on proposed activities that are likely to jeopardize the continued existence of the falcon.

Based on available information, EPA has determined that authorization of municipal wastewater discharges from the City of Las Cruces is not likely to jeopardize the continued existence of the Northern aplomado falcon nor will result in the destruction or adverse modification of habitat of the species.

Rio Grande silvery minnow - While the Rio Grande in the vicinity Las Cruces is part of the historical range of the Rio Grande silvery minnow, the fish is currently believed extirpated from this reach of the river. Further, this reach is not included in the minnow's critical habitat designated in New Mexico for the reach of the Rio Grande beginning south of Cochiti Reservoir to Elephant Reservoir. As such, EPA has determined that authorizing discharge municipal wastewater discharges will have no effect on the Rio Grande silvery minnow.

Southwestern Willow Flycatcher - While the historic range of the flycatcher includes the Rio Grande, literature search does not find recent records of its presence in the Las Cruces urbanized area. The online Biota System of New Mexico (BISON-M) references the 1988 New Mexico Game and Fish Handbook as the supporting documentation that the flycatcher breeds in Dona Ana County, New Mexico, and occurs in spring, summer and fall. However, Southwest Regional Gap analysis does not find habitat for the flycatcher in this watershed.

As the southwestern willow flycatcher has rarely been found to be present in the Rio Grande river valley in the vicinity of the Las Cruces and analysis indicates an absence of suitable habitat, EPA has determined that authorized wastewater discharges will have no effect on the Southwestern willow flycatcher.

Sneed Pincushion Cactus - Sneed pincushion cacti are found in the Organ Mountains and do not occur in the vicinity of the Las Cruces urbanized area. Therefore, authorized wastewater discharges from the City of Las Cruces are determined to have no effect on the Sneed pincushion cactus.

Mexican spotted owl - EPA has determined that the Mexican spotted owl are not found in the vicinity of the Las Cruces and therefore the authorization of municipal wastewater discharges from the City of Las Cruces is determined to have no effect on the Mexican spotted owl.

XVII. PERMIT REOPENER

The permit has contained reopener clause. Modification of the permit is subject to the provisions of 40 CFR 124.5.

XVIII. VARIANCE REQUESTS

No variance requests have been received.

XIX. 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.

XX. FINAL DETERMINATION

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

XXI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. Application(s)

EPA Application Form 2A received March 30, 2009.

B. 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, July 23, 2009.

Narrative Toxics Implementation Guidance – Whole Effluent Toxicity, December 16, 2005.

TMDL for the Main Stem of the Lower Rio Grande, May 8, 2009.

Post Third Round NPDES Permit Implementation Strategy, adopted October 1, 1992.

Las Cruces Biological Evaluation.