

NPDES PERMIT NO. NM0029483

FACT SHEET

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

APPLICANT

City of Sunland Park Wastewater Treatment Plant
Camino Real Regional Utility Authority
P.O. Box 429
Sunland Park, NM 88063

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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DATE PREPARED

September 30, 2014

PERMIT ACTION

Proposed reissuance of the current permit issued September 13, 2007, with an effective date of October 1, 2007 and an expiration date of September 30, 2012.

RECEIVING WATER – BASIN

Rio Grande River (HUC: 130301) of the of the Rio Grande-Caballo Basin

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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
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
cfu	colony forming units
CWA	Clean Water Act
DO	dissolved oxygen
DMR	discharge monitoring report
ELG	effluent limitations guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
FWS	United States Fish and Wildlife Service
HUC	Hydrologic Unit Codes
LA	load allocation
MDL	maximum discharge load
mg/L	Milligrams per liter
ML	maximum limit
MOS	margin of safety
MPN	Most Probable Number
µg/L	Micrograms per liter
MGD	million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
SQL	Minimum quantification level
O&G	Oil and grease
PCB	Polychlorinated Biphenyl
POTW	publically owned treatment works
RAS	return activated sludge
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

USGS	United States Geological Service
WAS	waste activated sludge
WET	Whole effluent toxicity
WLA	Wasteload allocation
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.

1. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued September 13, 2007, with an effective date of October 1, 2007 and an expiration date of September 30, 2012, are:

- The flow monitoring frequency has changed from continuous to daily, in accordance with NMIP based on design capacity.
- pH monitoring frequency has changed from 1/week to daily, in accordance with NMIP based on design capacity.
- BOD and TSS effluent sample monitoring has changed from a 24 hour composite sampling method to a 6 (six) hour composite, in accordance with NMIP based on design capacity.
- Percent removal of BOD and TSS has been added, in accordance with secondary treatment requirements at 40 CFR 133.102.
- The critical dilution has changed from 60% in the previous permit to 9.9% (99% using the acute to chronic ratio) in the proposed permit.
- The WET protection has changed from acute in the previous permit to chronic in the proposed permit. Using the 10:1 acute to chronic ratio, acute testing at 99% critical dilution is used to provide equivalent protection as chronic testing at 9.9%..
- The 2007 TMDL for *E. coli* in the Main Stem of the Lower Rio Grande (from the International Boundary with Mexico to Elephant Butte Dam) wasteload allocation for the facility has been incorporated into the draft permit.
- The monitoring for *E. coli* has been increased from once per week to 5/week based on the continued *E. coli* impairment, approved TMDL, and *E. coli* NPDES compliance history of four (4 in 24 months) *E. coli* exceedances, as listed in Table 2.

2. APPLICATION LOCATION AND ACTIVITY

The facility is located at P.O. Box 429, Sunland Park, Doña Ana County, NM. The effluent from the site is discharged into Rio Grande in water quality Segment NM-2101_00 of the Rio Grande River Basin. The discharge is located on that water at Latitude 31° 47' 54" North and Longitude 106° 33' 24" West, in Doña Ana, county New Mexico.

Under the SIC of 4952, the discharger is a POTW. The design flow is 2.0 MGD serving a population of approximately 18,400.

Wastewater is pumped to the POTW by eight lift stations. At the treatment plant a main lift station lifts the wastewater up to the treatment units. Influent then goes through the entrance works which consists of an automatic bar screen with a manual backup, a grit chamber for grit removal. Solids collected from the bar screen and grit chamber are disposed in the local landfill. The lift station is attached to an alarm system which protects against overflow problems. An additional lift station has been constructed near the Sunland Park North (Santa Teresa) WWTP, which is used to transport wastewater to the City of Sunland Park WWTP, for treatment.

The wastewater flow then enters the aeration basin. Air is provided by four blowers. Two blowers run continuously while one is resting and these units are alternated on a daily basis. Wastewater flows to two circular final clarifiers from the aeration basin.

Contents of the final clarifier are discharged to the ultraviolet disinfection unit. The effluent proceeds through an effluent flow box. The effluent flow is measured using a 12 inch Parshall flume, an instantaneous flow meter and totalizer. Samples for NPDES permit monitoring are collected from this unit. The flow is then discharged via an underground pipe to the Rio Grande in Segment 20.6.4.101 NMAC of the Rio Grande Basin. Return activated sludge is sent back to the aeration basin from the final clarifiers.

Waste activated sludge is pumped to the sludge thickener and then to the four cell aerobic digester. Sludge from the digester is then pumped to the belt filter press. Pressed sludge is placed into a truck to be transported to the local landfill. The belt filter press is operated on a daily basis for approximately four hours. Presently the drying beds are used as a backup only for this facility in case the belt filter press goes down. A polymer is added to the sludge as it enters the belt filter press to allow for greater separation of the water and solids. Dried sludge is hauled to the local landfill where it is stockpiled and then mixed with cover dirt for disposal in the landfill. The sludge disposal site is restricted from public access.

3. RECEIVING STREAM STANDARDS

City of Sunland Park WWTP is classified as a major municipal discharger under the federal Clean Water Act's Section 402 NPDES permit program and is assigned permit number NM0029483. The discharge is to the Rio Grande in stream segment 20.6.4.101 NMAC. This stream segment has the following designated uses: irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat, and primary contact.

4. EFFLUENT CHARACTERISTICS

A quantitative description of the facility effluent discharge(s) described in the EPA Permit Application Form 2A, received April 4, 2012, is presented in Table 1 below:

TABLE 1 -

Parameter	Max	Avg	Number of Samples	ML/MDL
	(mg/L unless noted)			
Flow, million gallons/day (MGD)	2.70	1.70	365	N/A
pH, minimum, standard units (su)	7.34	N/A	n/a	N/A
pH, maximum, standard units (su)	7.39	N/A	n/a	N/A
Biochemical Oxygen Demand, 5-day (BOD ₅)	18.50	7.26	4	N/A
<u>E. coli</u> (MPN /100 mL)	173	3.63	4	N/A
Total Suspended Solids (TSS)	8.51	4.60	4	N/A
Temperature (*C) (Winter)	20	18.78	5	N/A
Temperature (*C) (Summer)	29.8	27.06	5	N/A
Ammonia (NH ₃)	0.85	0.85	1	.05
Chlorine, Total Residual (TRC)	0.0	0.0	31	1.9
Dissolved Oxygen (DO)	6.72	6.72	1	N/A
Total Kjeldahl Nitrogen (TKN)	6.0	6.0	1	0.5
Nitrate plus Nitrite Nitrogen	3.30	3.30	1	0.1
Oil & Grease	8.8	8.8	1	2.0
Phosphorous	0.06	0.06	1	0.05
Total Dissolved Solids (TDS)	1227	1227	1	10.0

Table 2 contains a summary of the last 24-months of available DMR effluent data: June 2012 through May 2014 (June 2014 has not been logged). The DMRs shows no exceedances of permit limits for BOD₅, pH, TSS, and TRC. E. coli shows four (4) exceedances and has been used as basis for increase in monitoring frequency.

TABLE – 2

DMR Effluent Data													
Date	BOD ₅				pH		TSS				TRC	E. coli	
	30 Day Avg	7 Day Avg	30 Day Avg	7 Day Avg	Min	Max	30 Day Avg	7 Day Avg	30 Day Avg	7 Day Avg	Max	30 Day Avg	Daily Max
	lbs/day	lbs/day	mg/L	mg/L	s.u.	s.u.	lbs/day	lbs/day	mg/L	mg/L	µg/L	cfu/100 mL	cfu/100 mL
Limit	500	750	30	45	6.6	9	500	750	30	45	19	126	410
6/30/2012	21.92	35.03	1.8	2.8	7.28	7.6	18.63	23.77	1.53	1.9	N/A(*1)	3.03	12.0
7/31/2012	17.18	31.82	1.38	2.5	7.41	7.48	18.8	31.82	1.51	2.5	N/A(*1)	1.32	3.0
8/31/2012	14.33	20.13	1.1	1.5	7.37	7.49	48.72	134.19	3.74	10.0	N/A(*1)	2.71	73.0
9/30/2012	15.05	21.95	1.15	1.6	7.39	7.46	26.56	35.67	2.03	2.6	N/A(*1)	1.78	10.0
10/31/2012	13.49	16.76	1.1	1.3	7.25	7.54	30.04	36.17	2.45	2.8	N/A(*1)	1.0	1.0
11/30/2012	15.38	31.31	1.32	2.6	7.12	7.67	27.03	51.78	2.32	4.3	N/A(*1)	1.74	3.3
12/31/2012	73.97	152.54	6.1	11.8	7.1	7.54	42.2	53.0	3.48	4.1	N/A(*1)	7.5	190.0
1/31/2013	24.13	38.24	2.26	3.5	7.24	7.4	43.88	76.48	4.11	7.0	N/A(*1)	1.23	3.0
2/28/2013	10.77	11.78	1.03	1.10	7.27	7.38	24.05	35.34	2.30	3.30	N/A(*1)	1.0	1.0
3/31/2013	20.74	47.37	1.95	4.0	7.14	7.42	25.10	32.57	2.36	2.75	N/A(*1)	1.0	1.0
4/31/2013	17.38	27.55	1.65	2	7.29	7.37	21.38	29.63	2.03	2.75	N/A(*1)	1.0	1.0
5/31/2013	12.92	20.87	1.18	1.9	7.27	7.48	22.89	26.91	2.09	2.45	N/A(*1)	1.15	2.0
6/31/2013	30.9	39.78	2.73	3.4	7.2	7.42	23.2	33.93	2.05	2.9	N/A(*1)	7.01	22.0
7/31/2013	14.97	18.24	1.23	1.4	7.37	7.55	18.86	29.96	1.55	2.3	N/A(*1)	1.68	4
8/31/2013	53.82	138.99	4.68	11.43	7.16	7.21	53.02	97.28	4.61	8.0	N/A(*1)	3.66	18.0
9/30/2013	45.20	129.76	3.74	9.86	7.27	7.39	35.53	47.38	2.94	3.6	N/A(*1)	1.19	2
10/31/2013	29.97	37.04	2.72	3.3	7.23	7.36	60.59	92.05	5.5	8.2	N/A(*1)	4.04	12
11/31/2013	23.9	29.05	2.28	2.7	7.05	7.38	41.2	61.32	3.93	5.7	N/A(*1)	8.19	50

12/31/2013	21.07	30.90	2.1	3.0	7.17	7.60	28.39	38.62	2.83	3.75	N/A(*1)	7.83	700 (*2)
1/31/2014	27.72	69.57	2.8	6.7	7.05	7.48	28.51	45.69	2.88	4.40	N/A(*1)	4.45	1300(*2)
2/28/2014	47.28	87.43	4.78	8.7	7.16	7.49	116.82	198.48	11.81	19.75	N/A(*1)	1.5	5
3/31/2014	79.37	97.71	7.75	9.35	7.24	7.36	133.55	229.90	13.04	22.0	N/A(*1)	40.70	920(*2)
4/30/2014	168.81	304.38	16.18	28.58	7.3	7.73	101.62	260.93	9.74	24.5	N/A(*1)	50.34	411.0(*2)
5/31/2014	116.36	249.21	10.9	22.95	7.37	7.67	64.91	139.53	6.08	12.85	N/A(*1)	8.24	16.0

Footnote Table 2:

(*1) UV disinfection used

(*2) Exceedance of effluent limitation.

TABLE 3

DMR Violations for Previous Permit Term		
Parameter	Value	Dates of Violation
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	5/31/2008
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	7/31/2008
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	8/31/2008
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	10/31/2008
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	2/28/2009
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	6/30/2009
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	8/31/2009
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	4/30/2011
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	5/31/2011
<u>E. coli</u> Effluent Gross	Required monitoring DMR value overdue	11/30/2013
<u>E. coli</u> Effluent Gross	Required monitoring DMR value overdue	11/30/2013
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	12/31/2013
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	1/31/2014
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	3/31/2014
<u>E. coli</u> Effluent Gross	DMR Effluent Numeric Violation	4/30/2014
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007

L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007
48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2007
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2007
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2009
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2009
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
48Hr Acute Daphnia pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010
48Hr Acute Daphnia pulex Effluent Gross	Required monitoring DMR value overdue	12/31/2010

48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	12/31/2010
L/F Pass/Fail 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2013
L/F Pass/Fail 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2013
Lethal Static Renewal 48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2013
Lethal Static Renewal 48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2013
48Hr Acute D. pulex Effluent Gross	Required monitoring DMR value overdue	6/30/2013
48Hr Acute P. promela Effluent Gross	Required monitoring DMR value overdue	6/30/2013
TSS Effluent Gross	Required monitoring DMR value overdue	1/31/2011
TSS Effluent Gross	Required monitoring DMR value overdue	11/30/2013
TSS Effluent Gross	Required monitoring DMR value overdue	11/30/2013
TSS Effluent Gross	Required monitoring DMR value overdue	11/30/2013
TSS Effluent Gross	Required monitoring DMR value overdue	11/30/2013
TRC Disinfection Process	Required monitoring DMR value overdue	6/30/2013
TRC Disinfection Process	Required monitoring DMR value overdue	10/31/2013
TRC Disinfection Process	Required monitoring DMR value overdue	11/30/2013
TRC Disinfection Process	Required monitoring DMR value overdue	12/31/2013
TRC Disinfection Process	Required monitoring DMR value overdue	1/31/2014
BOD, 5-day, 20 deg C	Required monitoring DMR value overdue	11/30/2013
BOD, 5-day, 20 deg C	Required monitoring DMR value overdue	11/30/2013
BOD, 5-day, 20 deg C	Required monitoring DMR value overdue	11/30/2013
BOD, 5-day, 20 deg C	Required monitoring DMR value overdue	11/30/2013
pH Effluent Gross	Required monitoring DMR value overdue	11/30/2013
pH Effluent Gross	Required monitoring DMR value overdue	11/30/2013
Flow, in conduit or thru treatment plant Effluent Gross	Required monitoring DMR value overdue	11/30/2013
Flow, in conduit or thru treatment plant Effluent Gross	Required monitoring DMR value overdue	11/30/2013
Chlorine, total residual disinfection	Required monitoring DMR value overdue	2/28/2014
Chlorine, total residual disinfection	Required monitoring DMR value overdue	3/31/2014

5. REGULATORY AUTHORITY/PERMIT ACTION

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

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing NPDES permit initially issued September 13, 2007 with an effective date of October 1, 2007, and an expiration date of September 30, 2012 is administratively continued until this permit is reissued.

6. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

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

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

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

6.2. 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 City of Sunland Park 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. BOD 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).

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

Loading in lbs/day = pollutant concentration in mg/L * 8.345 lbs/gal * design flow in MGD
 30-day average BOD/TSS loading = 30 mg/L * 8.345 lbs/gal * 2.0 MGD
 30-day average BOD/TSS loading = 500 lbs/day
 Daily maximum BOD/TSS loading = 45 mg/L * 8.345 lbs/gal * 2.0 MGD
 Daily maximum BOD/TSS loading = 750 lbs/day

TABLE 4
 Technology-Based Effluent Limits – 2.0 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/L (unless noted)	
Parameter	30-Day Avg.	Daily Max.	30-Day Avg.	Daily Max.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD	500	750	30	45
TSS	500	750	30	45
pH	NA	NA	6.0 - 9.0 s.u.	

6.3. WATER QUALITY BASED LIMITATIONS

6.3.1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on

federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with the State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

6.3.2. 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.

6.3.3. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through June 5, 2013). The facility discharges to the Rio Grande River. This is designated as segment number 20.6.4.101. The designated uses of the receiving water require protective limits for irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat, and primary contact.

6.3.4. Permit Action – Water Quality-Based Limits

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

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

6.3.4.1. pH

The State of New Mexico WQS to protect the primary contact and marginal warmwater aquatic life uses is specified in 20.6.4.900.D NMAC and requires pH to be between 6.6 and 9.0 s.u. This is more limiting than the technology-based limits presented earlier. The draft permit shall

establish 6.6 to 9.0 s.u. for pH based on the State's WQS. The monitoring frequency will remain daily as an instantaneous grab (field measurement) sample.

6.3.4.2. Bacteria

New Mexico WQS for E. coli bacteria are specified in 20.6.4.900.D NMAC. The NMWQS designed to protect the primary contact use requires a monthly geometric mean E. coli limit of 126 cfu/100 mL or less and a single sample E. coli limit of 410 cfu/100 ml or less. Due to the TMDL on the receiving waterbody, the WLA of will be applied. See more of a description in the 303(d) List Impairments section.

6.3.4.3. Dissolved Oxygen

An evaluation of the permittee's impact on the receiving water dissolved oxygen was completed as part of the permitting process. A steady state model (LA-QUAL) was used to evaluate the biochemical oxygen demand of the discharge and associated constituents including ammonia. A complete characterization of the receiving water was not available. Certain parameters, including flow, were available and were utilized. However, the receiving water model also used default values to estimate the various unavailable hydrodynamic and water quality parameters. The discharge was modeled using data obtained from the application, permits limits and defaults were used for unavailable discharge characterization data.

The evaluation demonstrated that the discharge would not cause an excursion of the in-stream D.O. standard of 5 mg/L. The output file is attached as Fact Sheet Appendix 1.

6.3.4.4. Toxics

6.3.4.4.1. Critical Conditions

Critical conditions are used to establish certain permit limitations and conditions. The State of New Mexico WQS allows a mixing zone for establishing pollutant limits in discharges. The state establishes 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. According to an email from Sandra Gabaldon, of NMED to Jenelle Hill of EPA- Region 6, the 4Q3 for the receiving water is 18.29 MGD.

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 (2.0 MGD)

Q_a = critical low flow of the receiving waters (18.29 MGD)

F = fraction of stream allowed for mixing (1.0)

$$CD = (2.0 \text{ MGD} / [(1.0)(18.29 \text{ MGD}) + 2.0]) * 100 = 9.9\%$$

The critical dilution shall be 9.9%.

According to the NMIP, if it is determined that a facility is to receive chronic biomonitoring requirements at a critical dilution of 10% or less, then an acute to chronic ratio of 10:1 may be used in order to allow acute biomonitoring in lieu of chronic. This will result in a shorter test duration, and a higher critical dilution by decreasing the ratio between the amount of effluent and receiving water used as well as a reduction in the cost per biomonitoring test for the permittee.

Acute to Chronic Ratio $CD = 9.9\% * 10 = 99\%$

6.3.4.4.2. TRC

In instances where a facility uses chlorine for disinfection of the wastewater, or is used as an emergency back-up to a system using another bacteria control technology such as ultraviolet light, or is used to remove filamentous algae, or when chlorine is used to disinfect process equipment used at the facility, a TRC limit is listed in the permit. The limits for TRC are based on acute and chronic chlorine limitations for the protection of aquatic life and the protection of wildlife habitat found in the Table of Numeric Criteria (20.6.4.900.J.2 NMAC).

The facility uses UV for disinfection, according to the August 18, 2013 NMED inspection report. The Wildlife Habitat criteria for TRC is 11 µg/L, so the end-of-pipe limit will be 11 µg/L. The TRC monitoring requirement and limitation will apply when chlorine is used in the treatment process, either alone, or in combination with ultraviolet light treatment.

6.3.5. 303(d) List

Under Section 303(d)(1) of the CWA, states are required to develop a list of waters within a state that are impaired and establish a TMDL for each pollutant. Section 303(d) of the Clean Water Act requires states to develop TMDL management plans for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standards. It also allocates that load capacity to known point sources and nonpoint sources at a given flow. TMDLs are defined in 40 CFR Part 130 as the sum of the individual WLA for point sources and LA for nonpoint sources and natural background conditions, and include a MOS.

The receiving waterbody, the Rio Grande, is listed on the current "2012-2014 State of New Mexico 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs)." The Lower Rio Grande watershed is located in south-central New Mexico. The SWQB conducted an intensive surface water quality survey of the Lower Rio Grande basin in 2004. Water quality monitoring stations were located throughout the Lower Rio Grande watershed during the intensive watershed survey to evaluate the impact of tributary streams and ambient water quality conditions. As a result of assessing data generated during this monitoring effort, combined with data from outside sources that met SWQB quality assurance requirements, impairment determinations of New Mexico water quality standards for E. coli were documented for Rio Grande (International Mexico Boundary to Leasburg Dam) and Rio Grande (Leasburg Dam to Percha Dam).

The Lower Rio Grande watershed (USGS HUC 13030102 and 13030101) is located in Doña Ana, Sierra, and Socorro Counties in south central New Mexico. This survey included the geographic area draining into the portion of the Rio Grande located from Elephant Butte Dam to the New Mexico-Texas Border and the International Boundary with Mexico.

Among the probable sources of bacteria are municipal point sources discharges such as wastewater treatment facilities, poorly maintained or improperly installed (or missing) septic tanks, runoff from the numerous confined animal feeding operations (CAFOs), impervious surface/parking lot runoff, livestock grazing of valley pastures and riparian areas, upland livestock grazing, in addition to wastes from pets, waterfowl, and other wildlife. Temperature can also play a role in E. coli concentrations. Howell et. al. (1996) observed that bacteria re-growth increases as water temperature increases, which definitely is a concern along the Lower Rio Grande.

The DMR revealed that the City of Sunland Park WWTP was in violation for E. coli for the reporting month of 12/31/13, 1/31/14, 3/31/14, and 4/30/14.

The approved WLA for E. coli bacteria from the TMDL is established as a discharge limitation in this permit. The WLA for the City of Sunland Park WWTP was calculated using the more conservative limit of the geometric mean value (126 cfu/100 mL), the design flow of the WWTP, and a conversion factor to get a loading limit in “cfu/day” using the following equation:

$$\text{WLA (cfu/day)} = (2.0\text{MGD})(126)(3.79 \times 10^7) = 9.55 \times 10^9$$

For conversion of cfu to the reportable MPN:

$$1 \text{ cfu (colony forming units)} = 1 \text{ MPN (most probable number)}$$

A standard reopener clause is established in the permit that would allow additional conditions if an additional watershed TMDL is developed and/or new water quality standards are established.

6.4. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity 40 CFR 122.48(b) and to assure compliance with permit limitations 40 CFR 122.44(i)(1). Technology based pollutants; BOD₅ and TSS, are proposed to be monitored once a week consistent with the previous permit. Flow shall be sampled continuously (daily) by totalizing meter, consistent with the previous permit. Sample type for BOD₅ and TSS is measured 1/week by a 6-hour composite sample consistent with the previous permit. The technology based monitoring frequencies and sample types are consistent with the NMIP.

Water quality-based pollutant monitoring frequency for E. coli shall be sampled 5 times per week using grab samples based on the continued E. coli impairment, approved TMDL, and E. coli NPDES compliance history. TRC and pH shall be measured daily by instantaneous grab (field measurement), which is consistent with the NMIP. Regulations at 40 CFR Part 136 define instantaneous grab as being analyzed within 15-minutes of collection.

6.5. EFFLUENT TESTING FOR APPLICATION RENEWAL

In addition to the parameters identified in this fact sheet, EPA designated major POTWs are required to sample and report other parameters listed in tables of the EPA Form 2A and WET testing for its permit renewal. The minimum pollutant testing for NPDES permit renewals specified in Form 2A requires three samples for each of the parameters being tested. Current practice is to obtain the three samples over a short time frame, sometimes within two weeks during the renewal testing process. In order to obtain a meaningful snapshot of pollutant testing for permit renewal purposes, the draft permit shall require that the testing for Tables A.12, B.6, and Part D of EPA Form 2A, or its equivalent if modified in the future, during the second, third and fourth years after the permit effective date. This testing shall coincide with any required WET testing event for that year. The permittee shall report the results as a separate attachment in tabular form sent to the Permits and Technical Assistance Section Chief of the Water Quality Protection Division within 60 days of receipt of the lab analysis.

6.6. WET REQUIREMENTS

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. In Section V.C.4.c.ii.(b) above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 9.9%. Because the CD is $\leq 10\%$, an acute-to-chronic ratio of 10:1 referenced in footnote 6 of Table 11 of the NMIP is used. As a result, the CD is 99%. Based on the nature of the discharge (POTW), the design flow (2.0 MGD), the nature of the receiving water (perennial stream), and the critical dilution (99%), Table 11 (footnote 6) of the NMIP directs the WET test to be a 48-hour acute test using *Daphnia pulex* and *Pimephales promelas* at a once per quarter frequency for the first year of the permit term. If all tests pass during the first year of the permit term, the permittee may REQUEST a monitoring frequency for either or both test species for the following 2-5 years of the permit term. The invertebrate species (*Daphnia pulex*) testing frequency may be reduced to once per six (6) months. The vertebrate species (*Pimephales promelas*) testing frequency 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 will revert back to the once per three months frequency for the remainder of the permit term. The both species shall resume quarterly monitoring at a once per three 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 31%, 42%, 56%, 74%, and 99%.

The EPA Reasonable Potential Analyzer for outfall 001 (Appendix 4) indicates that RP exists for *Ceriodaphnia dubia* and *Pimephales promelas*, but because toxic events were not demonstrated, a reasonable potential for an excursion of the narrative criterion to protect the aquatic life against toxicity does not actually exist. Therefore, EPA concludes that this effluent does not cause or contribute to an exceedance of the state water quality standards, and WET limits will not be established in the proposed permit for the invertebrate or vertebrate species for outfall 001.

TABLE 5

Whole Effluent Toxicity Testing (48 Hr. NOEC) (*1)				
Effluent Characteristic	Discharge Monitoring		Monitoring Requirements	
	30-Day Average Min	48-Hr Min	Frequency	Type
<u>Daphnia pulex</u>	Report	Report	Once/Quarter	24-Hr. Composite
<u>Pimephales promelas</u>	Report	Report	Once/Quarter	24-Hr. Composite

Footnote Table 5:

(*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.

7. FACILITY OPERATIONAL PRACTICES

7.1. SEWAGE SLUDGE PRACTICES

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

7.2. 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.

7.3. INDUSTRIAL WASTEWATER CONTRIBUTIONS

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

7.4. 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.

8. 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 antidegradation policy sets forth the intent to protect the waters whose existing 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.

9. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o), 40 CFR 122.44(l)(i)(A), 40 CFR 122.44(l)(1), and 40 CFR 122.62 (a)(3)(i)(B) which state that final effluent limitations must be as stringent as those in the previous permit, unless new information (e.g. revised WQS), 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 BOD₅ and TSS. All of the changes represent permit requirements that are consistent with the State's WQS and WQMP.

10. ENDANGERED SPECIES CONSIDERATIONS

According to FWS Consultation Tracking Number 02ENNM00-2014-SLI-0214 on April 8, 2014 for Project Number NM0029483 City of Sunland Park WWTP (Factsheet Appendix 3), two species in Dona Ana County are listed as endangered: Least Tern (*Sterna antillarum*) and the Northern aplomado falcon (*Falco femoralis septentrionalis*). The Sneed pincushion cactus (*Coryphantha sneedii* var *sneedii*) is listed as an experimental population and is treated as a threatened species. The yellow-billed cuckoo (*Coccyzus americanus*) is proposed threatened. There is no listed critical habitat listed in the area of the plant or the discharge.

When EPA reissued the permit for the City of Sunland Park WWTP in 2000 and 2007, EPA conducted effect analyses and determined that the action had no effect on the Least Tern, Northern aplomado falcon, Southwestern willow flycatcher, Rio Grande silvery minnow, Sneed pincushion cactus, Bald eagle and Mexican spotted owl. As the current listed species were evaluated in the past and that the nature of the authorized discharge has not been changed since, and the RP has indicated that the discharge does not contribute a significant amount of toxics through its effluent to the environment, the past listing status of 'no effect' will remain the current determination. Therefore, based on information available, EPA has determined that the issuance of this permit will have no effect on these federally listed threatened or endangered species nor will it destroy or adversely modify designated critical habitat.

Threatened and Endangered Species Determination	
Species	Determination
Least tern (<i>Sterna antillarum</i>)	No effect
Northern aplomado falcon (<i>Falco femoralis septentrionalis</i>)	No effect
Sneed Pincushion cactus (<i>Coryphantha sneedii</i> var.)	No effect
Southwestern willow flycatcher	Not listed in Dona Ana , NM
Rio Grande silvery minnow	Not listed in Dona Ana , NM
Bald eagle	Delisted due to recovery
Mexican spotted owl	Not listed in Dona Ana , NM
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>)	No effect, proposed listing

Effects of the Action – least tern (*Sterna antillarum*)

Sterna antillarum habitat in Doña Ana County, New Mexico occurs at sparsely vegetated sand or gravel bars in wide, unobstructed river channel, or salt flats along lake shorelines. Riverine nesting habitat consists of unvegetated or sparsely vegetated sand and gravel bars within a wide unobstructed river channel. They usually feed on small fish (i.e. minnows) in shallow waters. Recreational use of sandbars is a major threat to the reproductive success of the tern. The previous permit effective from October 1, 2007 and expired September 30, 2012, listed no effect under the same permit limits as the current proposed permit.

The existing facility does not propose facility enlargement during this permit term. Based on the 2007 permit baseline, any changes to the listing status made by FWS, the site characteristics of the facility, and the needs of the least tern, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the current limit of 2.0 MGD is “no effect” for the least tern (*Sterna antillarum*). If the least tern is sighted within the action area, EPA will review the new information to determine if effects are likely and, if necessary, reinitiate consultation with the FWS.

Effects of the Action – northern aplomado falcon (*Falco femoralis septentrionalis*)

Falco femoralis septentrionalis habitat in Doña Ana County, New Mexico occurs in a variety of habitats: savanna open rangeland, semiarid grasslands with scattered trees and shrubs, coastal prairies along sand ridges, along desert woodlands streams, and in desert grasslands with scattered mesquite and yucca. The *Falco femoralis septentrionalis* is an upper tropic level predator whose prey includes small birds (e.g. doves, cuckoos, woodpeckers), various insects (e.g. crickets, moths, cicadas), rodents and reptiles (e.g. pocket mice, frogs, lizards). The decline of the population is due to the widespread shrub encroachment resulting from control of range fires and intense overgrazing and agricultural development in grassland habitats.

In 2006 the FWS reintroduced a nonessential experimental population of northern aplomado falcon to an area that includes the action area and constitutes a change from the baseline and re-evaluation. Based on the 2001 permit baseline, any changes to the listing status made by FWS, the site characteristics of the facility, and the needs of the northern aplomado falcon, EPA Region 6 has finds that there are no anticipated reductions in the available habitat. Therefore, based on the site characteristics and the needs of the northern aplomado falcon, EPA Region 6 finds that, at the existing discharge of treated effluent of 2.0 MGD, the City of Sunland Park

WWTP “no effect” the northern aplomado falcon (*Falco femoralis septentrionalis*). If a northern aplomado falcon is sighted within the action area, EPA will review the new information to determine if effects are likely and, if necessary, reinitiate consultation with the FWS.

Effects of the Action – Sneed pincushion cactus (*Coryphantha sneedii var sneedii*)

The habitat of the Sneed pincushion cactus is restricted to the Tansil Limestone Formation and grows only on north-facing limestone ledges, slopes and ridgetops with precipitation average of 30 cm/year, in interior chaparral communities. Based on the site characteristics and the needs of the Sneed pincushion cactus, EPA Region 6 finds that there should be no anticipated reductions in available habitat. Therefore, EPA Region 6 finds that at the existing discharge of treated effluent of 2.0 MGD, the City of Sunland Park WWTP “no effect” the Sneed pincushion cactus (*Coryphantha sneedii var sneedii*).

11. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

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

12. PERMIT REOPENER

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

13. VARIANCE REQUESTS

No variance requests have been received.

14. CERTIFICATION

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

15. FINAL DETERMINATION

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

16. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

16.1. APPLICATION(s)

EPA Application Form 2A received April 12, 2012.

16.2. 40 CFR CITATIONS

Citations to 40 CFR as of April 30, 2010.

Sections 122, 124, 125, 133, 136

16.3. STATE WATER QUALITY REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through November 20, 2012.

Procedures for Implementing NPDES Permits in New Mexico, March 15, 2012.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico CWA §303(d) List for Assessed Surface Waters, 2014-2016.

16.4. WHOLE EFFLUENT TOXICITY POLICY DOCUMENTS

EPA Region 6 WET Permitting Strategy, May, 2005. March 9, 2006 letter from Miguel Flores, EPA to L'Oreal Stepney, TCEQ. CC Marcy Leavitt, NMED.