

**NPDES PERMIT NO. NM0028827
FACT SHEET**

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

APPLICANT:

City of Las Vegas WWTP
905 12th Street
Las Vegas, NM 87701

ISSUING OFFICE:

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Region 6
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DATE PREPARED:

May 10, 2011

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued January 30, 2006, with an effective date of March 1, 2006, and an expiration date of February 28, 2011.

RECEIVING WATER – BASIN

Gallinas River – Pecos 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
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
E. coli	Escherichia coli
FCB	Fecal coliform bacteria
FWS	United States Fish and Wildlife Service
ug/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
MGD	Million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
ng/l	Nanograms per liter (one part per trillion)
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
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 January 30, 2006, with an effective date of March 1, 2006, and an expiration date of February 28, 2011, are:

1. FCB limits have been removed from the current permit to comply with the current NMWQS.
2. Ammonia frequency has been reduced from three times per week to once a week based on the current NMIP.
3. Aluminum and Cadmium limits have been established in the permit.
4. Limits for percent removal of BOD₅ and TSS have been added.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located on South Highway 85 (0.5 mile south of Las Vegas) in the City of Las Vegas, San Miguel County, New Mexico.

Under the Standard Industrial Classification Code 4952, the applicant operates a POTW with a design flow capacity of 2.50 MGD serving a population of approximately 15,000.

Raw wastewater enters the plant a 12 inch Parshall flume, with a pulsar electrosonic totalizer, followed by an aerated grit chamber. Grit is removed from the bottom of the grit chamber via grit pumps and is sent to the grit cyclone. The separated water is directed back to the flow through the plant. The solids are then sent to the grit classifier, where the rest of the water and some organic material are sent through the plant, while the heavy organic material and grit is washed and deposited in a dumpster for final disposal at a landfill. The last unit in the headworks is grease removal.

The influent passes to an internal lift station, then into two aeration basins along with Return Activated Sludge (RAS). Wastewater exits the aeration basins and is split into two secondary clarifiers. Floating solids are removed by a skimmer arm, sent to the clarifier's hoppers, and pumped back to the head of the aeration basin. RAS is drawn continually from the bottom of the two secondary clarifiers and sent back to the aeration basins.

Flow from the secondary clarifiers is then recombined and is then sent through two disc filters. Water exiting the disc filters is then sent through a UV system for disinfection. There is a diversion at this point: one is when the facility is sending water within the city limits for reuse purposes and the other one is the water that is not sent out for reuse enters an effluent basin that contains a wet well, flow meter, 18-inch Cipoletti (trapezoid) weir, and discharge pipe. An ISCO automatic sampler is housed in a refrigerator and located on a floor grate over the weir. The permittee collects its effluent samples just below the weir. The treated wastewater continues via gravity flow for approximately 700 feet through an underground pipe to the outfall located on the bank of the Gallinas River.

As described in the application, the facility is located at 2000 E of I-25 & Grand Avenue in the City of Las Vegas, San Miguel County, New Mexico. The effluent from the treatment plant is discharge into the Gallinas River in Segment No. 20.6.4.220 of the Pecos River Basin.

Discharges are located on that water at:

Outfall 001: Latitude 35° 32' 19" North; Longitude 105° 12' 35" West

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received January 24, 2011, are presented below:

POLLUTANT TABLE - 1

Parameter	Avg	Max
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	1.28	2.58
Temperature, winter	12 °C	15 °C
Temperature, summer	19 °C	20 °C
pH, minimum, standard units (SU)	N/A	6.61
pH, maximum, standard units (SU)	N/A	7.79
Biochemical Oxygen Demand, (BOD)	2.77	9.16
Fecal Coliform (FCB) (bacteria/100 ml)	1.52	54
Total Suspended Solids (TSS)	4.03	11.46
Ammonia (NH ₃)	0.87	17.93
Chlorine, Total Residual (TRC)	0.00	0.00
Dissolved Oxygen	6.33	6.55
Total Kjeldahl Nitrogen (TKN)	1.80	2.20
Nitrate plus Nitrite Nitrogen	8.63	16
Oil and grease	1.50	2.50
Phosphorus, Total	1.39	1.40
Total Dissolved Solids (TDS)	487	496
Aluminum, ug/l	51.6	93.7
Antimony, ug/l	ND	ND
Arsenic, ug/l	ND	ND
Barium, ug/l	19.2	135.5
Beryllium, ug/l	ND	ND
Boron, ug/l	72.1	139
Cadmium, ug/l	1.33	2
Chromium, ug/l	2.67	6
Cobalt, ug/l	2.92	6
Copper, ug/l	2.15	2.31
Lead, ug/l	ND	ND
Mercury, ug/l	ND	ND

Parameter	Avg	Max
	(mg/l unless noted)	
Molybdenum, ug/l	5.21	8
Nickel, ug/l	3.45	8.47
Selenium, ug/l	ND	ND
Silver, ug/l	ND	ND
Thallium, ug/l	ND	ND
Uranium, ug/l	1.6	1.81
Vanadium, ug/l	ND	ND
Zinc, ug/l	45.4	49
Cyanide, ug/l	ND	ND
Total Phenolic Compounds, ug/l	3.37	5.1
Hardness (as CaCO ₃)	153.3	160
Radium 226+228, pci/l	0.79	0.934
Tritium, pci/l	10.5	21
Gross Alpha, pg/l	1.63	2.67
Acrolein, ug/l	ND	ND
Acrylonitrile, ug/l	ND	ND
Benzene, ug/l	ND	ND
Bromoform, ug/l	ND	ND
Carbon Tetrachloride, ug/l	ND	ND
Chlorobenzene, ug/l	ND	ND
Chlorodibromo-Methane, ug/l	ND	ND
Chloroethane, ug/l	ND	ND
2-Chloro-ethylvinyl Ether	ND	ND
Chloroform	0.6	0.9
Dichlorobromo-Methane	ND	ND
1,1-Dichloroethane	ND	ND
1,2-Dichloroethane	ND	ND
Trans-1,2-Dichloro-Ethylene	ND	ND
1,1-Dichloroethylene	ND	ND
1,2-Dichloropropane	ND	ND
1,3-Dichloro-Propylene	ND	ND
Ethylbenzene	ND	ND
Methyl Bromide	ND	ND
Methyl Chloride	ND	ND
Methylene Chloride	ND	ND
1,1,2,2-Tetrachlor-Ethane	ND	ND
Tetrachloro-Ethylene	ND	ND
Toluene	ND	ND
1,1,1-Trichloroethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Trichloroethylene	ND	ND
Vinyl Chloride	ND	ND
P-Chloro-M-Cresol	ND	ND

Parameter	Avg	Max
	(mg/l unless noted)	
2-Chlorophenol	ND	ND
2,4-Dichlorophenol	ND	ND
2,4-Dichlorophenol	ND	ND
2,4-Dimethylphenol	ND	ND
4,6-Dinitro-O-Cresol	ND	ND
2,4-Dinitrophenol	ND	ND
2-Nitrophenol	ND	ND
4-Nitrophenol	ND	ND
Pentachlorophenol	ND	ND
Phenol	43.4	81.9
2,4,6-Trichlorophenol	ND	ND
Acenaphthene	ND	ND
Anthracene	ND	ND
Benzidine	ND	ND
Benzo(A)anthracene	ND	ND
Benzo(A)pyrene	ND	ND
3,4 Benzo-fluoranthene	ND	ND
Benzo(GH)perylene	ND	ND
Benzo(k)fluoroanthene	ND	ND
Bis(2-chloroethoxy)methane	ND	ND
Bis(2-chloroethyl)ether	ND	ND
Bis(2-chloroiso-propyl)ether	ND	ND
Bis(2-ethylhexyl)phthalate	19.7	30.6
4-Bromophenyl phenyl ether	ND	ND
Butyl benzyl phthalate	ND	ND
2-chloronaphthalene	ND	ND
4-chlorophenyl phenyl ether	ND	ND
Chrysene	ND	ND
Di-N-butyl phthalate	ND	ND
Di-N-octyl phthalate	ND	ND
Dibenzo(A,H) anthracene	ND	ND
1,2-dichlorobenzene	ND	ND
1,3-dichlorobenzene	ND	ND
1,4-dichlorobenzene	ND	ND
3,3-dichlorobenzidine	ND	ND
Diethyl phthalate	ND	ND
Dimethyl phthalate	ND	ND
2,4-dinitrotoluene	ND	ND
2,6-dinitrotoluene	ND	ND
1,2-diphenylhydrazine	ND	ND
Fluoranthene	ND	ND
Fluorene	ND	ND
Hexachlorobenzene	ND	ND

Parameter	Avg	Max
	(mg/l unless noted)	
Hexachlorobutadiene	ND	ND
Hexachlorocyclopentadiene	ND	ND
Hexachloroethane	ND	ND
Indeno(1,2,3-CD)pyrene	ND	ND
Isophorone	ND	ND
Naphthalene	ND	ND
Nitrobenzene	ND	ND
N-Nitrosodi-N-propylamine	ND	ND
N-Nitrosodi-methylamine	ND	ND
N-Nitrosodi-phenylamine	ND	ND
Phenanthrene	ND	ND
Pyrene	ND	ND
1,2,4-Trichlorobenzene	ND	ND
2,3,7,8-TCDD, pg/l	ND	ND

IV. REGULATORY AUTHORITY/PERMIT ACTION

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

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The previous permit expired February 28, 2011, and a permit renewal application was received January 24, 2011, in accordance with provisions found at 40 CFR §122.21(d) and (e). Additional permit application information was received on March 28, 2011; and was deemed administratively incomplete on March 31, 2011.

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. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, aluminum, cadmium, TRC, ammonia, and pH.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The City of Las Vegas WWTP is a POTW treating sanitary wastewater. POTW's have 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, 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, 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). 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 POTW's, 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 * 2.5 MGD

30-day average BOD/TSS loading = 626 lbs

A summary of the technology-based limits for the City of Las Vegas WWTP is:

Final Effluent Limits – 2.5 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD	626	939	30	45
BOD ₅ , % removal, minimum	≥ 85% (*1)	N/A	N/A	N/A
TSS	626	939	30	45
TSS, % removal, minimum	≥ 85% (*1)	N/A	N/A	N/A

Footnote:*1 – Percent removal is calculated using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration.

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 New Mexico State Standards for Interstate and Intrastate Surface Waters are found at 20.6.4 NMAC, amended through January 14, 2011, and are found on the NMED's website at <ftp://ftp.nmenv.state.nm.us/www/swqb/Standards/2010/20.6.4NMAC-Integrated2010-11-01.pdf>

The Gallinas River has designated uses of irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life and primary contact. For New Mexico, designated uses of irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life and primary contact need protective limits.

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

Gallinas River stream segment WQS require pH to be between 6.6 and 9.0 su. The State of New Mexico limits are more limiting than the technology-based limits presented earlier. The draft permit shall establish 6.6 to 9.0 su's for pH based on State of New Mexico stream segment specific WQS.

b. Bacteria

Stream segment specific (20.6.4.220 NMAC) WQS for E. coli bacteria is 126 cfu/100 ml daily monthly geometric mean and 410 cfu/100 ml daily maximum. These limits are identical to the previous permit and are continued in the draft permit.

Fecal coliform bacteria (FCB) have been replaced in the WQS by E. coli. The limitations for FCB in the draft permit will be removed. This does not constitute antibacksliding as E. coli has replaced FCB as the indicator bacteria for the protection of primary contact beneficial uses.

c. TOXICS

i. General Comments

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

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not

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

The facility is designated a major POTW for permitting purposes and must supply the expanded pollutant testing list described in EPA Application Form 2A as presented above in Part III of this Fact Sheet.

ii. 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 establish a critical low flow designated as 4Q3, as the minimum average four consecutive day flow which occurs with a frequency of once in three years. The SWQB of the NMED provided EPA with the 4Q3 of 0.559 cfs (0.3606 MGD) and a harmonic mean flow of 5.62 cfs (3.626 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:

$CD = Q_e / (FQ_a + Q_e)$, where:

Q_e = facility flow (2.50 MGD)

Q_a = critical low flow of the receiving waters (0.3606 MGD)

F = fraction of stream allowed for mixing (1.0)

$$\begin{aligned} CD &= 2.50 \text{ MGD} / [(1.0) (0.3606) + 2.50] \\ &= 0.874 \\ &= 87.4 \% \end{aligned}$$

Data from the following sources are used to calculate initial dilution, in-stream wastewater concentrations, and effluent limitations:

Stream TSS (mg/l): 16 (From the previous permit).

Stream Hardness (mg/l): 493 (From the previous permit). For screening purposes, a maximum value of 400 mg/l is used.

To determine if a pollutant has a reasonable potential to exceed a numeric criteria, the following steady state complete mixing zone model is used:

$$C_d = \{(FQ_a * C_a) + (Q_e * C_e)\} / (FQ_a + Q_e) \text{ Where:}$$

C_d = Instream wastewater concentration

F = Fraction of stream allowed for mixing, as applicable, $F = 1.0$

C_e = reported pollutant concentration

2.13 = Statistical multiplier, (an estimate of the 95th percentile) for either a single available effluent concentration, or a geometric mean of effluent data concentration, as discussed in the EPA Region 6 document titled Effluent Variability Policy, dated September 17, 1991, or the most current revision thereof.

C_a = Ambient stream concentration, if available

Q_e = Wastewater treatment design flow in MGD (municipal facilities) 2.5 MGD

Q_a = Critical low flow, 4Q3, of receiving stream, 0.3606 MGD

This screen is shown as **Appendix C** of the Fact Sheet.

As shown in **Appendix C** of the Fact Sheet, Aluminum and Cadmium demonstrate RP to violate WQS consistent with the designated uses for the receiving water. Effluent limitations and monitoring requirements for total aluminum and total cadmium are established based on the data provided in the application. During the period of public notice, if the permittee provides two sets of new data by utilizing the more sensitive analytical methods, EPA may re-calculate the effluent limitations based on the new reasonable potential for these two parameters. Data for manganese and strontium 90 were not reported in the permit application. The permittee should submit three sets of data for manganese and strontium 90 after the end of the public comment period or may be subject to the limitations and monitoring requirements for these parameters.

iii. Ammonia

The previous permit had year-round limitations for total ammonia of 4.0 mg/l, 30-day average and 6.0 mg/l, daily maximum. Ammonia control of 4 mg/l at the edge of the mixing zone demonstrates compliance with toxicity problems associated with ammonia discharges from wastewater for lethal effects.

The permittee violated its ammonia limits during the last permit cycle and also had biomonitoring failures. As a result, ammonia limit is continued in the proposed permit.

iv. TRC

The application indicates that the facility uses ultraviolet (UV) light for bacteria control. TRC limitations will be continued in the draft permit, however, under limited circumstances. Those times are when chlorine is either used as a back-up system during power failures and/or when chlorine is used to disinfect process treatment equipment. During those times, TRC limitations will be monitored and reported daily.

Since the facility discharges to perennial water, TRC limitation is calculated as follows:

$$CD = 87.4\%$$

The calculated in-stream concentration for chronic would be: $11 \text{ ug/l} / 0.874 = 12.58 \text{ ug/l}$. The acute end-of-pipe concentration for chlorine is 19 ug/l . The chronic end-of-pipe concentration for chlorine is more stringent than the acute concentration, since 12.58 ug/l is less than 19 ug/l .

The draft permit proposes to change the limit from 12.4 ug/l to 11 ug/l , based on 40 CFR 122.44 (l)(2)(i)(B)(2), technical mistakes. The previous permit presented an incorrect technical basis for the derivation of the limit, and did not accurately compare in-stream concentration for chronic to that of acute end-of-pipe concentration. The draft permit proposes to limit TRC as follows:

“Prior to final disposal, the effluent shall contain NO MEASURABLE total residual chlorine (TRC) at any time. NO MEASURABLE will be defined as no detectable concentration of TRC as determined by any approved method established in 40 CFR 136. If during the term of this permit the minimum quantification level for TRC becomes less than 11 ug/l , then 11 ug/l shall become the effluent limitation. The maximum TRC shall be monitored by instantaneous grab sample on a daily basis.”

5. 303(d) List Impacts

The Gallinas River (Pecos to San Augustin), Segment 20.6.4.220 is listed as impaired on the “State of New Mexico Part 303(d) List for Assessed Stream and River Reaches, 2010-2012.” The waterbody is assessed as Category 4C with irrigation, livestock watering and wildlife habitat as fully supporting but marginal coldwater aquatic life as being impaired and primary contact as not assessed. Low flow alterations are listed as primary cause of impairment. There is no schedule date for a TMDL. The proposed permit is limited for Aluminum and Cadmium based on the result of the water quality screening. There are no additional requirements beyond the already proposed technology-based and/or water-quality based requirements are needed in the proposed permit.

The standard reopener language in the permit allows additional permit conditions if warranted by the additional data and/or TMDLs are completed.

D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i) (1). Sample frequency is based on the November, 2009, NMIP. Flow is proposed to be monitored daily by totalizing meter. E. coli bacteria, BOD, and TSS shall be sampled once a week. Sample type for BOD and TSS is 6-Hour composite, which is consistent with the previous permit and with the NMIP. Sample type for E. coli shall be by grab sample. Consistent with the 2009 NMIP, ammonia, aluminum and cadmium shall be monitored three times per week using grab sample. TRC shall be monitored daily if chlorine is used in the plant as either an emergency/backup bacteria control and/or if used to disinfect process equipment. Sample type for TRC shall be instantaneous grab. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY TESTING

OUTFALL 001

In Section V.C.4.c.ii above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 87%. Based on the nature of the discharge; POTW, the design flow; more than 1.0 MGD, the nature of the receiving water; perennial, and the critical dilution; 87%, the NMIP directs the WET test to be a 7 day chronic test using *Ceriodaphnia dubia* and *Pimephales promelas* at a once per three-month frequency consistent with the NMIP. The test series will be 0% (control), 28%, 37%, 49%, 65%, and 87%. The critical dilution has been reduced from 89% in the previous permit to 87% due to a new 4Q3 reading for the receiving water from NMED. This will not constitute backsliding because this change does not modify a limitation to a less stringent limitation.

Out of 21 tests performed during the last permit term, the effluent exhibited no failures for the *Ceriodaphnia dubia*. The EPA Reasonable Potential Analyzer (Appendix A) recommends Whole Effluent Toxicity biomonitoring for the *Ceriodaphnia dubia* test species be added to the permit.

Out of 23 tests performed during the last permit term the effluent exhibited two failures (one at the sublethal endpoint and another at both the lethal and sublethal endpoint). According to the EPA Reasonable Potential Analyzer (Appendix A) the facility has demonstrated exceedances of the State WQS for the *Pimephales promelas* test species. However, in 2005, a TRE was performed that identified ammonia as the cause of toxicity. Ammonia was subsequently limited in the previous permit in lieu of WET limits as indicated under 40 CFR 122.44 (d) (1)(v). EPA notes that the failure for *Pimephales promelas* in September of 2008 coincides with the facility’s failure to meet ammonia limits set in the previous permit term after the TRE was performed. Since *Pimephales promelas* is more sensitive to ammonia than *Ceriodaphnia dubia*, EPA finds this failure to be due to ammonia. Another sublethal failure occurred in June 2009 but occurred at a dilution series point near the new critical dilution. EPA believes that toxicity is non-existent or averted via the ammonia limit maintained in the permit but will still remove the facility’s option for a reduction in monitoring frequency.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001 - the discharge to Gallinas River of the treatment system aeration basin. The aeration basin receives process area wastewater, process area stormwater, and treated sanitary wastewater. Discharges shall be limited and monitored by the permittee as specified below:

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

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

FOOTNOTES

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

VI. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in 40 CFR Part 503 "Standards for the Use or Disposal of Sewage Sludge." The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works. The permittee shall submit an Annual Sludge Status report in accordance with the NPDES Permit NM0028827, Parts I and Parts IV.

B. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

C. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The permittee is required to conduct an industrial user survey. The results of an industrial user survey should consist of a qualitative analysis of pollutants being contributed by all industrial sources in its entire municipal system (including all treatment plants). The industrial users should be asked to provide information on the type and approximate quantity of pollutants discharged into the system. This information may be derived from knowledge of the facility's process, and should not require any sampling at the source. The results are due 6 months from the effective date of the permit.

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.

D. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results monthly. The monitoring results will be available to the public.

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 waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR §122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the mass loading requirements of the previous permit for Ammonia, BOD and TSS. WET changes are also based on changes in critical conditions and past performance. All of the changes represent permit requirements that are consistent with the States WQS and WQMP. The removal of FCB is consistent with the change in criteria established in the NMWQS and was discussed above.

IX. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>, six species in San Miguel County are listed as endangered (E) or threatened (T). The lone aquatic species is the Arkansas River shiner (*Notropis girardiin*). Three of the species are avian and include the bald eagle (*Haliaeetus leucophaeus*), the Mexican spotted owl (*Strix occidentalis lucida*), and the Southwestern willow flycatcher (*Empidonax traillii extimus*). There is also the black-footed ferret (*Mustela nigripes*) and lastly, the Holy Ghost ipomopsis (*Ipomopsis sancti-spiritus*). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in

San Miguel County; however, the USFWS, removed the American bald eagle in the lower 48 states from the Federal List of Endangered and Threatened Wildlife Federal Register, July 9, 2007, (Volume 72, Number 130).

The EPA made a “*no effect*” determination for federally listed species in the previous permit issued January 30, 2006.

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 changes have been made to the US Fish and Wildlife 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 identical to the previous permit except for the removal of FCB and addition of aluminum and cadmium, which is consistent with the States WQS.
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.

X. 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.

XI. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of either States WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the States Water Quality Standards are either revised or promulgated. Should either State 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.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. 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.

XIV. FINAL DETERMINATION

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

XV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Permit Application received January 24, 2011.

B. 40 CFR CITATIONS

Citations to 40 CFR Sections 122, 124, 125, 133, 136

C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through January 14, 2011.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, November 2009.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2010 - 2012.

<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>

D. MISCELLANEOUS CORRESPONDENCE

Letter from Jenaie Franke, EPA, to Honorable Alfonso Ortiz, Jr., Mayor, City of Las Vegas, dated March 31, 2011, informing applicant that its NPDES application received January 24, 2011, is administratively incomplete.

Email from Sarah Holcomb, NMED, to Maria Okpala, EPA, dated March 24, 2011, on critical conditions information.