

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0036242

Owner: City of Mexico
Address: 300 North Coal, Mexico, MO 65265

Continuing Authority: Same as above
Address: Same as above

Facility Name: Mexico Wastewater Treatment Plant
Facility Address: 1050 North Agricultural, Mexico, MO 65265

Legal Description: NE ¼, SW ¼, Sec. 24, T51N, R9W, Audrain County
UTM Coordinates: X=597459, Y=4337602

Receiving Stream: Unnamed tributary to South Fork of the Salt River
First Classified Stream and ID: South Fork of the Salt River (C) (00142) 303(d)
USGS Basin & Sub-watershed No.: (07110006-0503)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC#4952

The use or operation of this facility shall be by or under the supervision of a **Certified “A” Operator**

Trickling Filter / peak flow basin / activated sludge / anaerobic sludge digestion/ effluent re-aeration / ultraviolet disinfection / sludge is land applied

Design population equivalent is 38,235

Design flow is 3.0 MGD

Actual flow is 1.89 MGD

Design sludge production is 600 dry tons/year

Actual sludge production is 573 dry tons/year

Outfall #002, #003, #004, #005 - Outfalls eliminated, no exposure

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

October 9, 2009
Effective Date

November 27, 2012
Revised Date

Sara Parker Pauley, Director, Department of Natural Resources

October 8, 2014
Expiration Date

John Madras, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 2 of 10
 PERMIT NUMBER MO-0036242

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand ₅ ** June 1 – September 30	mg/L		20	15	once/week	24 hr. composite
October 1 – May 31			35	25		
Total Suspended Solids **	mg/L		45	30	once/week	24 hr. composite
pH – Units	SU	***		***	once/week	grab
Temperature	°C	*		*	once/week	grab
Ammonia as N (May 1 – Oct 31)	mg/L			1.2	once/week	grab
(Nov 1 – April 30)				2.7		
Oil & Grease	mg/L	15		10	once/month	grab
Escherichia coliform (E. coli) (Note 1)	#/100 mL		1,030	206	once/week	grab
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	7.0		7.0	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE DECEMBER 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 10	
					PERMIT NUMBER MO-0036242	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 - continued</u>						
Cyanide, Amenable to Chlorination	µg/L	8		4	once/quarter****	grab
Total Hardness	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	32.3		16.1	once/quarter****	grab
Lead, Total Recoverable	µg/L	16.2		8.1	once/quarter****	grab
Zinc, Total Recoverable	µg/L	253		126.3	once/quarter****	grab
Acetone	mg/L	*		*	once/quarter****	grab
Methylene Chloride	mg/L	*		*	once/quarter****	grab
Methanol	mg/L	*		*	once/quarter****	grab
Toluene	mg/L	*		*	once/quarter****	grab
Triethylamine	mg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE NEXT REPORT IS DUE <u>JANUARY 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #12			once/year	24 hr. composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2013</u> .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** This facility is required to meet a removal efficiency of 85% or more.
- *** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- **** See table below for quarterly sampling.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1 - Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 4 of 10	
		PERMIT NUMBER MO-0036242	
The facility is required to meet a removal efficiency of 65% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u>			
Biochemical Oxygen Demand ₅	mg/L	once/month	24 hr. composite
Total Suspended Solids	mg/L	once/month	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE NEXT REPORT IS DUE <u>DECEMBER 28, 2012</u> .			

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.

D. SPECIAL CONDITIONS (continued)

6. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

8. The permittee is authorized to receive, stabilize, and land apply domestic sludge as per Standard Conditions Part III. The permittee is not authorized to receive, stabilize, and land apply industrial sludge.

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report annually in November to the Northeast Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

10. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

11. The permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:

- (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
- (b) A summary of the status of Industrial User compliance over the reporting period;
- (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
- (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

12. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	LC50%*	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	100%	Annually	24 hr. composite	Sample in any month, Report in August

* LC50 = AEC / 0.3; however, the LC50 can not be greater than 100%

Dilution Series						
100%	50%	25%	12.5%	6.25%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

D. SPECIAL CONDITIONS (continued)

12. Whole Effluent Toxicity (WET) Test shall be conducted as follows (continued):

- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
 - (4) Failure of at least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.
 - (5) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
 - (6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
 - (10) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC₅₀ concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC₅₀ concentration must be greater than 100%; **AND**,
 - (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.
- (c) Test Conditions
- (1) Test Type: Acute Static non-renewal
 - (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
 - (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
 - (4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

D. SPECIAL CONDITIONS (continued)

12. Whole Effluent Toxicity (WET) Test shall be conducted as follows (continued):

- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) Reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

E. SCHEDULE OF COMPLIANCE

Headwork Analysis

1. The permittee shall submit an annual Headwork Analysis Report due on the anniversary date of the effective date of this operating permit. These reports are to be submitted to the Water Protection Program's Pretreatment Coordinator. These Headwork Analysis Reports shall contain, at a minimum, the following:
 - (a) Samples obtained at each Significant Industrial User (SIU) [i.e., both categorical and non-categorical] for appropriate Pollutants of Concern (POC) for the specific SIU.
 - (b) Samples obtained from the wastewater treatment facility's headwork for appropriate POC for each specific SIU.
 - (c) All samples shall be established and reported as a mass (i.e., pounds per day), unless it can only be reported as a concentration or in other standard units (i.e. pH).
 - (d) Sampling and analysis shall be performed in accordance with the techniques prescribed in 10 CSR 20-7.015(9)(A).
 - (e) Samples shall be obtained at a minimum of once per quarter
 - (f) The permittee shall compare the analysis from the SIU with analysis from the treatment facility's headwork and determine if received influent is being subjected to other sources for appropriate POC.
 - (g) If the permittee determines that other sources are increasing appropriate POCs, then the permittee shall locate these sources and take appropriate action to ensure compliance with the Final Effluent Limitations Table A.
 - (h) If the permittee determines that there are no new SIU or new POCs, the permittee may submit the following: "No new SIU's or POCs to report."
 - (i) The permittee may submit for an operating permit modification if it is determined, by the permittee and approved by the department, that there are no other sources or that other sources are insignificant. If approved, the modification is for the terms and conditions of this operating permit and shall not negate or waive any requirement of the permittee's approved Pretreatment Program. Regardless, this condition shall be reviewed upon the next renewal for future applicability.

Table A – Final Effluent Limitations Compliance Schedule

2. The permittee shall attain compliance with Table A – Final Effluent Limits as soon as possible, but no later than three (3) years after the effective date of this operating permit.
3. Within one (1) year of the effective date of this operating permit, the permittee shall submit a report detailing progress made in attaining compliance with the Table A – Final Effluent Limits. If the permittee determines that an upgrade and/or expansion is needed, then the permittee shall take all necessary steps to ensure that Item #2 is met.
4. Within two (2) years of the effective date of this operating permit, the permittee shall submit a report detailing progress made in attaining compliance with the Table A – Final Effluent Limits. If the permittee determines that an upgrade and/or expansion is needed, then the permittee shall take all necessary steps to ensure that Item #2 is met.

PERMIT TRANSFER

This permit may be transferred to a new owner by submitting an "Application for Transfer of Operating Permit" signed by the seller and buyer of the facility, along with the appropriate modification fee.

PERMIT RENEWAL REQUIREMENTS

Unless this permit is terminated, the permittee shall submit an application for the renewal of this permit no later than six (6) months prior to the permit's expiration date. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

TERMINATION

In order to terminate this permit, the permittee shall notify the department by submitting Form J, included with the State Operating Permit. The permittee shall complete Form J and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination. A closure plan shall be submitted to the department and approved prior to initiating closure activities.

DUTY OF COMPLIANCE

The permittee shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal. This permit authorizes only the activities described in this permit.

**Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF MODIFICATION OF
MO-0036242
MEXICO WASTEWATER TREATMENT PLANT**

The Federal Water Pollution Control Act (“Clean Water Act” Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the “Clean Water Act”). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (department) under an approved program, operating in accordance with federal and state laws (Federal “Clean Water Act” and “Missouri Clean Water Law” Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.
This Factsheet is for a Major facility.

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description:

Wastewater enters the Mexico WWTP through a 30-inch interceptor and a 21-inch interceptor. The wastewater normally flows to a Flow Control Structure, Screening Chamber, and then to the Raw Wastewater Pumping Station. The water may first enter a peak-flow (I&I) basin during high flows. Wastewater then flows to the Parshall Flume and Grit Chamber before entering one of two Primary Basins then into the Trickling Filter. From the Trickling filter wastewater then flows to an Intermediate Pumping Station then to two Aeration Basins. From these two aeration basins, flow is equally split and sent to one of three Secondary Clarifiers. The wastewater then flows to a Re-aeration Basin before being discharged through Outfall #001.

The sludge design dry tons/year is 600 with actual being 573 dry tons/year. Sludge storage consists of one holding tank and one lagoon with 80,208 cubic feet of sludge storage provided for approximately 31 days of storage. Sludge treatment consists of an anaerobic digester with sludge being land applied by the permittee.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	4.65	Secondary	Domestic	0.1
002	Storm Water outfalls eliminated, no exposure. Please see the comment section below.			
003				
004	Outfall eliminated, specific reporting requirements have been removed. Please see comment section below.			
005				

Comments:

This modification is to incorporate sight specific hardness data into the effluent limits calculations for metals as detailed below.

There are no other changes to this permit. For derivation and explanation of other permit limits and conditions please see the permit issued on November 18, 2011.

Part II – Effluent Limits Determination

Outfall #001 – Main Facility Outfall

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Copper, Total Recoverable	µg/L	2/3	interim * final 32.3		interim * final 16.1	No	N/A
Lead, Total Recoverable	µg/L	2/3	interim * final 16.2		interim * final 8.1	No	N/A
Zinc, Total Recoverable	µg/L	2/3	interim * final 253		interim * final 126.3	No	N/A

* - Monitoring requirement only.

** - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

*** - # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.

**** - This parameter was not in the previous permit. It is expected that this parameter will be removed upon final issuance, when E. coli is given daily maximum or weekly average limitations.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960
Lead	0.662	0.662
Zinc	0.978	0.986

Conversion factor for Pb is hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 243 mg/L.

- **Total Hardness.** Monitoring requirement only, metal toxicity varies by hardness.

- **Copper, Total Recoverable.** Effluent limitations have been retained from the previous operating permit. The previous fact sheet, from the permit issued on October 9, 2009, stated the following:

This is a Pollutant of Concern, please see Appendix D – Industrial Users. Protection of Aquatic Life CCC = 19.1 µg/L, CMC = 31.0 µg/L. Mixing considerations not applicable; therefore, criteria = WLA (after conversion).

Chronic = $19.1/0.960 = 19.9$ µg/L; thus, Chronic WLA = 19.9 µg/L

Acute = $31/0.960 = 32.3$ µg/L; thus, Acute WLA = 32.3 µg/L

$LTA_c = 19.9 (0.527) = 10.5$ µg/L

[CV = 0.6, 99th Percentile]

$LTA_a = 32.3 (0.321) = 10.4$ µg/L

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 10.4 (3.11) = 32.3 µg/L

[CV = 0.6, 99th Percentile]

AML = 10.4 (1.55) = 16.1 µg/L

[CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable.** Effluent limitations have been retained from the previous operating permit. The previous fact sheet, from the permit issued on October 9, 2009, stated the following:

This is a Pollutant of Concern, please see Appendix D – Industrial Users. Protection of Aquatic Life CCC = 6.5 µg/L, CMC = 167 µg/L. Mixing considerations not applicable; therefore, criteria = WLA (after conversion).

Chronic = $6.5/0.662 = 9.8$ µg/L

Acute = $167/0.662 = 252$ µg/L

Chronic WLA = 9.8 µg/L

Acute WLA = 252 µg/L

$LTA_c = 9.8 (0.527) = 5.2$ µg/L

[CV = 0.6, 99th Percentile]

$LTA_a = 252 (0.321) = 80.9$ µg/L

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 5.2 (3.11) = 16.2 µg/L

[CV = 0.6, 99th Percentile]

AML = 5.2 (1.55) = 8.1 µg/L

[CV = 0.6, 95th Percentile, n = 4]

- **Zinc, Total Recoverable.** Effluent limitations have been retained from the previous operating permit. The previous fact sheet, from the permit issued on October 9, 2009, stated the following:

This is a Pollutant of Concern, please see Appendix D – Industrial Users. Protection of Aquatic Life CCC = 249 µg/L, CMC = 249 µg/L. Mixing considerations not applicable; therefore, criteria = WLA (after conversion).

Chronic = $249/0.98 = 254$ µg/L

Acute = $249/0.98 = 254$ µg/L

Chronic WLA = 254 µg/L

Acute WLA = 254 µg/L

$LTA_c = 254 (0.527) = 134$ µg/L

[CV = 0.6, 99th Percentile]

$LTA_a = 254 (0.321) = 81.5$ µg/L

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 81.5 (3.11) = 253 µg/L

[CV = 0.6, 99th Percentile]

AML = 81.5 (1.55) = 126.3 µg/L

[CV = 0.6, 95th Percentile, n = 4]

Part III – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Applicable; The Department is required to determine findings of affordability because the permit applies to a **combined or separate sanitary sewer system for a publically-owned treatment works.**

Finding of affordability - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **Appendix – Affordability Analysis**

Part IV – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

The department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit is tentatively scheduled to begin October 5, 2012.

DATE OF FACT SHEET: (09/24/2012)

COMPLETED BY:

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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APPENDIX – Affordability Analysis

Missouri Department of Natural Resources
Water Protection Program
Affordability Determination and Finding
(In accordance with RSMo 644.145)

Operating Permit Modification
Mexico WWTF
MO-0036242

Section 644.145 RSMo requires DNR to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system or publicly-owned treatment works.”

Description:

Outfall #001 – POTW – SIC#4952

Trickling Filter / peak flow basin / activated sludge / anaerobic sludge digestion/ effluent re-aeration / ultraviolet disinfection / sludge is land applied

Legal Description: NE ¼, SW ¼, Sec. 24, T51N, R9W, Audrain County

UTM Coordinates: X=597459, Y=4337602

Receiving Stream: Unnamed tributary to South Fork of the Salt River

First Classified Stream and ID: South Fork of the Salt River (C) (00142) 303(d)

USGS Basin & Sub-watershed No.: (07110006-0503)

New Permit Requirements or Requirements Now Being Enforced:

This is a modification of an operating permit with no new or expanded conditions. The facility has demonstrated its ability to meet these permit limits. Discharge Monitoring Reports (DMRs) provide data that support the Department’s finding that this facility is capable of meeting the final effluent limitations with no new cost.

Range of Anticipated Costs Associated with Complying with Requirements:

This is a modification of an operating permit with no new or expanded conditions that does not involve any significant costs for the permittee.

(1) A community’s financial capability and ability to raise or secure necessary funding (*examine key indicators of the communities ability to raise funds*);

This is a modification for an operating permit with no new or expanded conditions and does not involve any significant costs for the permittee. The community has no need to secure funding or require changes to the rate structure. Therefore, the community shall incur no new costs and financial capability exists.

(2) *Affordability of pollution control options for the individuals or households of the community;*

This is a modification for an operating permit with no new or expanded conditions, thus maintaining existing pollution control options. Therefore, no rate increase to individuals or households of the community is required to achieve the pollution control conditions of this permit.

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

This is a modification for an operating permit with no new or expanded conditions, thus maintaining existing overall costs and environmental benefits. There will be no new costs or environmental benefits of control technologies unless the facility initiates technology upgrades.

(4) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations; and**
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained;**

This is a modification for an operating permit with no new or expanded conditions, thus no implementation schedule is required. No improvements are necessary, resulting in no new economic impacts on distressed populations and no other new cost burden.

The facility has demonstrated the ability to comply with the conditions in the permit, avoiding any violations or fines that would result in financial hardships.

(5) An assessment of other community investments relating to environmental improvements;

This is a modification for an operating permit with no new environmental improvements; therefore, it will not affect the timing or funding of other community investments.

(6) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;

See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.

This is a modification for an operating permit with no new or expanded conditions. Existing efforts to control combined sewer overflows and wet weather flows at the facility are sufficient to meet the requirements of this permit. No new cost burden exists.

(7) An assessment of any other relevant local community economic condition.

This is a modification for an operating permit with no new or expanded conditions. It creates no new cost burden that could be affected by local economic conditions.

Mexico's population has decreased 2.2% from 1990 to 2010. In terms of economic strength, Audrain County is above average when compared to other counties in the State. The percentage of labor force is 7% below the State average, the per capita wealth¹ is 25% below the State average and the per capita income is 17% below the State's average.

In terms of retail sales, Audrain County has lost retail customers from surrounding counties and the County residents spend less than the state average on retail goods and services. The buying power index of Audrain County residents is lower than average compared to the rest of the regional economy².

Conclusion and Finding

This is a modification for an operating permit with no new or expanded conditions. The facility is currently capable of meeting the permit requirements. No new cost burden exists.

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in low or no burden with regard to the community's overall financial capability and low or no financial impact for most individual customers/households.

¹ Per capita wealth is calculated by taking a sum of appraised value of residential property, mobile homes and motor vehicles and this sum is then divided by County population.

² http://www.missourieconomy.org/pdfs/wc_wia_retail_trade_analysis.pdf