

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-0026310

Owner: City of Mountain View
Address: PO Box 1090, Mountain View, MO 65548

Continuing Authority: Same as above
Address: Same as above

Facility Name: Mountain View Wastewater Treatment Plant
Facility Address: 1809 County Road 3160, Mountain View, MO 65548

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

Receiving Stream: Unnamed Tributary to Jam Up Creek (U) Losing (L), 303(d), ONRW
First Classified Stream and ID: Jam Up Creek (C) (02696) Losing (L), 303(d), ONRW
USGS Basin & Sub-watershed No.: (11010008-050001)

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

FACILITY DESCRIPTION

See page 2

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.

February 25, 2011
Effective Date

Sara Parker Pauley, Director
Missouri Department of Natural Resources

February 24, 2016
Expiration Date

Gary L. Gaines, P.E., Director, Southeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall # 001 – Publicly Owned Treatment Works (POTW) – Standard Industrial Classification (SIC) Code(s): # 4952 (Sewerage systems-domestic) – **Class “A” Certified Wastewater Operator Required**

Overflow – Diversion from secondary treatment. Discharge from this outfall shall be considered an unauthorized bypass pursuant to [40 CFR 122.41(m)] and shall be reported pursuant to [40 CFR 122.41(m)]

Peak Flow Holding Basin

Flows dependent upon precipitation

Storage capacity is 508,000

Wastewater contained by the peak flow basin during peak flow events is pumped back to the headworks of the treatment plant when hydraulic capacity becomes available.

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179708, Y = 40954874

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Outfall # 002 – POTW – SIC: # 4952 – **Class “A” Certified Wastewater Operator Required**

Anaerobic/anoxic/extended aeration basin/Two (2) final clarifiers/Two (2) traveling bridge filters/Two (2) aerobic digesters/Ultraviolet disinfection/Effluent holding basin. Effluent holding basin is used to irrigate Dayne Glass Municipal Golf Course on a seasonal basis. Sludge is land applied.

Design population equivalent is 3,837

Design flow is 500,000 gallons per day

Design peak flow is 1.6 MGD

Average flow is 413,000 gallons per day

Design Sludge Production is 69 dry tons per year.

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179708, Y = 40954874

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Outfall # 003 – POTW – SIC: # 4952 – **Class “A” Certified Wastewater Operator Required**

Emergency discharge from irrigation holding basin. Partial irrigation of treated wastewater at the city golf course.

Actual flow dependent upon irrigation needs.

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179679, Y = 40955151

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Irrigation Design Basis:

Design dry weather flows

Avg Annual

500,000 gpd*

Storage Basin/Tank:

Freeboard for basin: 1 foot

Actual flow

83,000 gpd*

Storage volume (minimum to maximum water levels) 204,750 gallons*

Design PE: 3,837

Days of Storage (Storage Capacity):

Design for Dry weather Flows: 2.5 days*

* – Flow is only diverted to the storage basin as needed for consumptive irrigation.

Land Application:

Irrigation Volume/year: flow is dependent upon irrigation needs

Irrigation areas: 50 acres at design loading

Application rates/acre: 0.3 inch/hour; 0.22 inch/day; 1.55 inches/week; 53.92 inches/year

Field slopes: 25 acres: 0-8%; 25 acres: 8-15%

Equipment type: sprinklers

Vegetation: grassland

Application rate based on: hydraulic loading rate

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 8	
					PERMIT NUMBER MO-0026310	
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 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall # 002 and # 003</u>						
Flow	MGD	*		*	daily	24 hr. total
Biochemical Oxygen Demand ₅ **	mg/L		15	10	once/month	24 hr. composite
Total Suspended Solids**	mg/L		20	15	once/month	24 hr. composite
pH – Units	SU	***		***	once/month	grab
<i>Escherichia coli (E. coli)</i>	#/100mL	37		25	once/week	grab
Dissolved Oxygen	mg/L	*		*	once/month	grab
Oil and Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>April 28, 2011</u> .						
Ammonia as N (April 1–September 30)	mg/L	9.6		1.9	once/quarter*****	grab
(October 1–March 31)	mg/L	15.2		3.1	once/quarter*****	grab
Temperature	°C	*		*	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2011</u> .						
Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/5 years	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE/5 YEARS</u> ; THE FIRST REPORT IS DUE <u>January 28, 2015</u> .						
<u>Outfall # 003</u> - at golf course – irrigated wastewater (Notes 1-5)						
Storage Basin Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	gallons/ acre	*			daily	total
Rainfall	inches	*			daily	total
<i>Escherichia coli (E. coli)</i> ****	#/100 mL	126			once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>January 28, 2012</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. Influent and effluent samples used to determine percent removal shall be taken the same day.
- *** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
- **** The Monthly Average Limit for *E. coli* is expressed as a geometric mean. Final effluent limits of 126 colonies per 100 ml daily maximum and monthly average applicable year round due to losing stream designation.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

***** See table below for quarterly sampling

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

Note 1 – Monitor only when irrigating wastewater at the golf course. Records shall be maintained and summarized into an annual operating report that shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

- a. Record of maintenance and repairs performed during the previous calendar year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the previous calendar year;
- b. The number of days the basin has discharged during the previous calendar year, the discharge flow, the reasons discharge occurred and effluent analysis performed;

Note 2 – There shall be no discharge during normal operation. Annual irrigation rates shall not exceed consumptive uptake rates of the vegetation grown.

Note 3 - Basin freeboard shall be reported as basin water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 – Wastewater that is irrigated at the golf course shall be sampled at the irrigation pump or wet well.

Note 5 – Wastewater stored in the irrigation basin shall be land applied during suitable conditions so that there is no-discharge from the basin or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year, 365-day rainfall or the 25-year, 24-hour storm event. An emergency discharge may also occur when the hydraulic capacity of the treatment plant has been exceeded but must adhere to the limitations set forth for Outfall #003.

C. FINAL INFLUENT MONITORING REQUIREMENTS

Facility required to meet a removal efficiency of 85% or more. 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>Outfall 002 - 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 MONTHLY; THE FIRST REPORT IS DUE April 28, 2011.

C. INFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

** This facility is required to meet a removal efficiency of 85% or more. Influent and effluent samples used to determine percent removal shall be taken the same day.

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.

D. SPECIAL CONDITIONS (continued)

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to area-wide wastewater treatment system 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.
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 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 Department's Southeast Regional Office with the Discharge Monitoring Reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
9. Irrigation Design. Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit.
10. Equipment Checks During Irrigation. The irrigation system and application site shall be visually inspected at least once/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.

D. SPECIAL CONDITIONS (continued)

11. Wastewater Irrigation System.

- (a) Discharge Reporting. Any unauthorized discharge from the storage basin or irrigation system shall be reported to the Department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
- (b) Storage Basin Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage basin shall be clearly marked. The storage basin shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year, 24-hour storm events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Treated wastewater may be stored in the basin from March 1st to November 30th for the purpose of irrigating the golf course. The water level in the storage basin shall be lowered to the minimum operating level prior to each winter by November 30.
- (c) Escherichia coli (E. coli). Wastewater that exceeds *E. coli* limits of 126 colonies/100mL shall not be irrigated at the golf course.
- (d) Public Access. The public shall not be allowed into an area when irrigation of the wastewater is being conducted.
- (e) General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
- (f) Saturated/Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions.
- (g) Buffer Zones. There shall be no irrigation within 300 feet of water supply withdrawal; 150 feet of dwelling; or 50 feet of the property line.
- (h) Operation and Maintenance Manual. The permittee shall develop, maintain and implement an O&M Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to the Regional Office for review and approval.
- (i) Labeling. All piping and sprinklers associated with the distribution or transmission of wastewater shall be color-coded and labeled or tagged to warn against the consumptive use of contents.
- (j) Emergency Outfall. The storage basin shall have a designated outfall from which a sample may be collected and flow measured.

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

SUMMARY OF WET TESTING FOR THIS PERMIT					
OUTFALL	A.E.C. %	LC 50%	FREQUENCY	SAMPLE TYPE	MONTH
002 and 003	100	100	Once / 5 years	24 hr. composite	Any Month in 2014 (Report by January 28, 2015)

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.

D. SPECIAL CONDITIONS (continued)

12. WET Test (continued):

- (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.
 - (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.

D. SPECIAL CONDITIONS (continued)

12. WET Test (continued):

- (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.
 - (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.

D. SPECIAL CONDITIONS (continued)

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

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0026310
Mountain View 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 , Minor , Industrial Facility ; Variance ; Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: POTW, 92-500
Facility SIC Code(s): 4952

Outfall # 001 – Publicly Owned Treatment Works (POTW) – Standard Industrial Classification (SIC) Code: # 4952 (Sewerage systems-domestic) **Class “A” Certified Wastewater Operator Required**

Overflow – Diversion from secondary treatment. Discharge from this outfall shall be considered an unauthorized bypass pursuant to [40 CFR 122.41(m)] and shall be reported pursuant to [40 CFR 122.41(m)]

Peak Flow Holding Basin

Flows dependent upon precipitation

Storage capacity is 508,000

Wastewater contained by the peak flow basin during peak flow events is pumped back to the headworks of the treatment plant when hydraulic capacity becomes available.

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179708, Y = 40954874

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Outfall # 002 – POTW – SIC # 4952 **Class “A” Certified Wastewater Operator Required**

Anaerobic/anoxic/extended aeration basin/Two (2) final clarifiers/Two (2) traveling bridge filters/Two (2) aerobic digesters/Ultraviolet disinfection/Effluent holding basin. Effluent holding basin is used to irrigate Dayne Glass Municipal Golf Course on a seasonal basis. Sludge is land applied.

Design population equivalent is 3,837

Design flow is 500,000 gallons per day

Design peak flow is 1.6 MGD

Design Sludge Production is 69 dry tons per year.

Average flow is 413,000 gallons per day

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179708, Y = 40954874

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Outfall # 003 – POTW – SIC # 4952 Class “A” Certified Wastewater Operator Required

Emergency discharge from irrigation holding basin. Partial irrigation of treated wastewater at the city golf course. Actual flow dependent upon irrigation needs.

Legal Description: SE ¼, NE ¼, Sec. 23, T27N, R7W, Howell County

UTM Coordinates: X = 6179679, Y = 40955151

Receiving Stream: Unnamed tributary to Jam Up Creek (U) (losing) [303(d)] (ONRW)

First Classified Stream and ID: Jam Up Creek (C) (02696) (losing) [303(d)] (ONRW)

USGS Basin & Sub-watershed No.: (11010008-050001)

Irrigation Design Basis:

Design dry weather flows

Actual flow

Design PE: 3,837

Avg Annual

500,000 gpd*

83,000 gpd*

Storage Basin/Tank:

Freeboard for basin: 1 foot

Storage volume (minimum to maximum water levels) 204,750 gallons*

Days of Storage (Storage Capacity):

Design for Dry weather Flows: 2.5 days*

* – Flow is only diverted to the storage basin as needed for consumptive irrigation.

Land Application:

Irrigation Volume/year: flow is dependent upon irrigation needs

Irrigation areas: 50 acres at design loading

Application rates/acre: 0.3 inch/hour; 0.22 inch/day; 1.55 inches/week; 53.92 inches/year

Field slopes: 25 acres: 0-8%; 25 acres: 8-15%

Equipment type: sprinklers

Vegetation: grassland

Application rate based on: hydraulic loading rate

Application Date: July 2, 2010

Expiration Date: December 31, 2010

Last Inspection: February 23, 2010

In Compliance ;

Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	Varies	Primary	Overflow	2.6
002	.77	Tertiary	Treated Domestic Sewage	2.6
003	Varies	Tertiary	Overflow/Treated Domestic Sewage	2.6

Comments: The City has inflow and infiltration problems. The City has an approved capacity, management, operation, and maintenance program. This facility has entered into a Voluntary Compliance Agreement (VCA) with the Department to address bypasses at the wastewater treatment facility that were formerly authorized by outfall #001. Such bypasses are no longer authorized in this permit. The VCA is public record and is available for review via a Sunshine Law Request.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County

- Public Water Supply Districts:
- Private sewer company regulated by the Public Service Commission:
- State or Federal agencies:

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections.

This facility currently requires an operator with a A Certification Level. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE: As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category list effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATER BODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Trib to Jam Up Creek	(U)(Losing)	----	General Criteria	11010008	Current
Jam Up Creek	(C)(Losing)	2696	LWW, AQL, WBC(B)***		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

** - Ecological Drainage Unit

***UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Trib to Jam Up Creek (U)(Losing)	0	0	0

MIXING CONSIDERATIONS: Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)]. Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS: No receiving water monitoring requirements recommended at this time.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES: As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ; The facility is an existing facility.

ANTI-BACKSLIDING: A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

ANTIDEGRADATION: In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY: As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE: Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Applicable (renewal and modifications to existing operating permits) ; This facility has been approved to land apply as per Permit Standard Conditions III and a department approved bio-solids management plan.

COMPLIANCE AND ENFORCEMENT: Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ; The permittee/facility is not currently under Water Protection Program enforcement action. The Environmental Protection Agency will be working with the City under an Administrative Compliance Order.

PRETREATMENT PROGRAM: The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through. Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ; The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA): Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

Applicable ; A RPA was conducted for this facility. See Part VII Appendix A.

REMOVAL EFFICIENCY: Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage at www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

Applicable ; Final Effluent Limits. Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSOs), AND INFLOW & INFILTRATION (I&I): Collection systems are a critical element in the successful performance of the wastewater treatment process. Under certain conditions, poorly designed, built, managed, operated, and/or maintained systems can pose risks to public health, the environment, or both. Causes of SSOs include, but are not limited to, the following: high levels of I&I during wet weather; blockages; structural, mechanical, or electrical failures; collapsed or broken sewer pipes; insufficient conveyance capacity; and vandalism. Effective and continuous management, operation, and maintenance, as well as ensuring adequate capacity and rehabilitation when necessary are critical to maintaining collection system capacity and performance while extending the life of the system.

Applicable ; The permittee is required to develop or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance.

The Environmental Protection Agency has informed the Department that discharges from Outfall #001 are considered unauthorized bypasses pursuant to 40 CFR 122.41 (m) and shall be reported pursuant to 40 CFR 122.41 (m). Such bypasses can no longer be authorized in permits.

SCHEDULE OF COMPLIANCE (SOC): A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ; This permit does not contain a schedule of compliance.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP): A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Not Applicable ; At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE: As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ; This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS: As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined to total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ; Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n": Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WATER QUALITY STANDARDS: Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WLA MODELING: There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ; A WLA study was either not submitted or determined not applicable by department staff.

WHOLE EFFLUENT TOXICITY (WET) TEST: A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ; In accordance with the Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System. Furthermore, WET testing is a means by which the department determines that [10 CSR 20-7.031(3)(D, F, & G)] are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under [10 CSR 20-6.010(8)(A)4] to be performed by specialist who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136]. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL): Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable ; Jacks Fork River is listed on the 1998 Missouri 303(d) List for fecal coliform. An approved TMDL can be viewed at <http://www.dnr.mo.gov/env/wpp/tmdl/2681-jacks-fork-r-tmdl.pdf>

– This facility is considered to be a source of the above listed pollutant(s) and was assigned waste load allocation limits.

Part V – Effluent Limits Determination

Outfall # 001 - Overflow

DERIVATION AND DISCUSSION OF LIMITS: This facility has entered into a Voluntary Compliance Agreement (VCA) with the Department to address bypasses at the wastewater treatment facility that were formerly authorized by outfall #001. Such bypasses are no longer authorized in this permit. The VCA is public record and is available for review via a Sunshine Law Request.

Outfall # 002 - Main Facility Outfall

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅ ***	mg/L	1		15	10	NO	S
TSS ***	mg/L	1		20	15	NO	S
PH	SU	1	9.0		6.5	YES	6.0-9.0
TEMPERATURE	°C	1/8	*		*	NO	S
AMMONIA AS N	mg/L	2/3/5				YES	
(April 1 – September 30)			9.6		1.9		11.6/2.1
(October 1 – March 31)			15.2		3.1		13.6/2.4
OIL & GREASE (MG/L)	mg/L	1/2	15		10	YES	**
DISSOLVED OXYGEN	mg/L	9	*		*	NO	S
<i>Escherichia coli</i> (<i>E. coli</i>)	#/100 mL	10	37		25	YES	FECAL 59/39
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.			NO	S
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

** - Parameter not previously established in previous state operating permit.

*** Effluent Limits--Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

N/A – Not applicable

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 | |

INFLUENT MONITORING TABLE: Influent monitoring is necessary to determine compliance with effluent % removal requirements. This facility is required to meet a removal efficiency of 85% or more. Influent and effluent samples used to determine percent removal shall be taken the same day.

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
BOD ₅ **	MG/L	1	*		*	No	S
TSS **	MG/L	1	*		*	No	S

* - Monitoring requirement only.

** - This facility is required to meet a removal efficiency of 85% or more. Influent and effluent samples used to determine percent removal shall be taken the same day.

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

- Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)], the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD₅)**. Final effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information** for final effluent limitations.
- **Total Suspended Solids (TSS)**. Final effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information** for final effluent limitations.
- **pH**. Final effluent limitations are based on recent water quality standard changes, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information** for final effluent limitations.
- **Total Ammonia Nitrogen**. The Unnamed Tributary to Jam Up Creek is effluent dominated during low flow conditions at the point of discharge. 10 CSR 20-7.031(3)(I) states that unclassified streams will be held accountable to acute criteria. Since the unclassified stream has no flow upstream of the discharge, no mixing considerations were allowed; therefore, WLA = appropriate criterion. Five years worth of facility effluent data for temperature and pH values was used to determine water quality criteria.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Summer	22	7.6	2.4	17.0
Winter	12	7.6	3.9	17.0

Summer: April 1 – September 30, Winter: October 1 – March 31.

Summer

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = 2.4 \text{ mg/L}$

Acute WLA: $C_e = 17 \text{ mg/L}$

$LTA_c = 2.4 \text{ mg/L (0.498)} = \mathbf{1.2 \text{ mg/L}}$

[CV = 1.8, 99th Percentile, 30 day avg.]

$LTA_a = 17 \text{ mg/L (0.125)} = 2.1 \text{ mg/L}$

[CV = 1.8, 99th Percentile]

MDL = 1.2 mg/L (7.98) = 9.6 mg/L

[CV = 1.8, 99th Percentile]

AML = 1.2 mg/L (1.61) = 1.9 mg/L

[CV = 1.8, 95th Percentile, n = 30]

Winter

Chronic WLA: $C_e = 3.9 \text{ mg/L}$

Acute WLA: $C_e = 17.0 \text{ mg/L}$

$LTA_c = 3.9 \text{ mg/L (0.498)} = \mathbf{1.9 \text{ mg/L}}$

[CV = 1.8, 99th Percentile, 30 day avg.]

$LTA_a = 17.0 \text{ mg/L (0.125)} = 2.1 \text{ mg/L}$

[CV = 1.8, 99th Percentile]

MDL = 1.9 mg/L (7.98) = 15.2 mg/L

[CV = 1.8, 99th Percentile]

AML = 1.9 mg/L (1.62) = 3.1 mg/L

[CV = 1.8, 95th Percentile, n = 30]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	9.6	1.9
Winter	15.2	3.1

A reasonable potential analysis (RPA) was conducted on ammonia. Please see **APPENDIX #A – RPA RESULTS**.

10 CSR 20-7.031 (3) (I) states that unclassified streams will be held accountable to acute criteria. The RPA results are less than the acute standards, however, the permit writer is unsure of meeting chronic standards at the classified portion of Jam Up creek. One data point at 3.3 mg/L seems to elevate the RPA results. All other results in the data set are less than .5 mg/L and would not cause concern for the classified stream portion. The permit writer believes that the facility can consistently meet both acute and chronic criteria. For this reason, monitoring will be reduced to quarterly which will yield a sufficient number of results to perform another RPA at the end of the next permit cycle for verification.

- **Temperature**. Monitoring requirement due to the toxicity of Ammonia varies by temperature.
- **Escherichia coli (E. coli)**. Discharges to losing streams shall not exceed 126 colonies per 100 mL for *E. coli* at any time, as per 10 CSR 20-7.031(4)(C). Previous limitations for bacteria were 200 colonies per 100 mL for fecal coliform as in-stream water quality standards. A waste load allocation for fecal coliform at 39 colonies per 100 mL was established in a total daily maximum load (TMDL) for the City of Mountain View based on previous fecal coliform standards. An approved TMDL can be viewed at <http://www.dnr.mo.gov/env/wpp/tmdl/2681-jacks-fork-r-tmdl.pdf>. Using a ratio of the previous fecal coliform standard and waste load allocation compared to the new standard for *E. coli* would yield an effluent limit of 25 colonies per 100 mL for the monthly average and 37 colonies per 100 mL for the daily maximum.

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Chromium, Dissolved and Hardness.** A reasonable potential analysis (RPA) was conducted on Chromium. Chromium is Hardness dependant. Please see **APPENDIX #A-RPA RESULTS**. The sample results were compared to both water quality standards for Chromium VI and Chromium III and were found to be below both acute and chronic standards. Therefore, monitoring for Chromium and Hardness will be removed from the permit.
- **Dissolved Oxygen.** Final effluent monitoring conditions have been retained from previous state operating permit.
- **WET Test.** WET Testing schedules and intervals are established in accordance with the department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Acute

No less than ONCE/PERMIT CYCLE:

Municipality or domestic facility with a design flow \geq 22,500 gpd, but less than 1.0 MGD.

Other, please justify.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Summary of Wet Testing for This Permit				
Outfall	A.E.C. %	Frequency	Sample Type	Month
002	100	Once/5 years	24 hr. composite	Any Month in 2014 (Report by January 28, 2015)

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit with the exception of ammonia and temperature which will be quarterly based on RPA results and Whole Effluent Toxicity testing will be reduced to once/permit cycle since the City has consistently passed annual test.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/DAY	ONCE/MONTH
BOD ₅	ONCE/MONTH	ONCE/MONTH
TSS	ONCE/MONTH	ONCE/MONTH
pH	ONCE/MONTH	ONCE/MONTH
TEMPERATURE	ONCE/QUARTER	ONCE/QUARTER
AMMONIA AS N	ONCE/QUARTER	ONCE/QUARTER
OIL & GREASE	ONCE/MONTH	ONCE/MONTH
DISSOLVED OXYGEN	ONCE/MONTH	ONCE/MONTH
<i>E. COLI</i>	ONCE/WEEK	ONCE/WEEK

OUTFALL # 003 – DERIVATION AND DISCUSSION OF LIMITS:

Outfall #003 - at golf course – irrigated wastewater

Wastewater overflows from this outfall is treated wastewater from Outfall # 002 and emergency discharges are being given the same effluent limitations as Outfall # 002 with the exception of tracking wastewater irrigation. See **OUTFALL # 002 – DERIVATION AND DISCUSSION OF LIMITS:**

Daily records for land application are being required to determine if wastewater is being properly land applied. Reports are summarized and submitted annually for review. The monitoring frequencies are being retained from the previous permit.

Part VI – 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: As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

DATE OF FACT SHEET: JANUARY 4, 2011

COMPLETED BY:

Michael Hefner,
Environmental Engineer
Southeast Regional Office
Missouri Department of Natural Resources
(573)840-9750

Part VII – Appendices

APPENDIX #A – RPA RESULTS FOR OUTFALL #002:

CONSTITUENT	CMC	RWC ACUTE	CCC	RWC CHRONIC	REASONABLE POTENTIAL	# OF SAMPLES**	CV***
AMMONIA (MG/L)	17	10.2	2.4	10.2	NO	54	1.8
CHROMIUM VI (µG/L)	15	.77	10	.77	NO	55	3.3
CHROMIUM III (µG/L)	901	.77	117	.77	NO	55	3.3

N/A – Not Applicable

* - Samples reported as Chromium, Total Dissolved are below standards listed for Chromium VI and Chromium III. Metals are hardness dependant. Average hardness was 196.

** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

CMC and CCC values obtained from Table A of the Water Quality Standards 10 CSR 20-7.031.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).