

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-0029742

Owner: U.S. Army Installation Management Command & FLW
Address: 1334 First Street, Fort Leonard Wood, MO 65473

Continuing Authority: Same as above
Address: Same as above

Facility Name: Fort Leonard Wood Wastewater Treatment Plant
Facility Address: 185 Sewer Plant Road, Fort Leonard Wood, MO 65473

Legal Description: NE ¼, SW ¼, Sec. 02, T35N, R11W, Pulaski County
UTM Coordinates: X= 578539, Y= 4182431

Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

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 wastewater and stormwater 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 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

March 19, 2012
Effective Date

August 1, 2016
Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

March 18, 2017
Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #004 – Inflow and Infiltration/ Peak Flow Basin - Discharges from this outfall is no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii).

Outfall #001 – Federally Owned Treatment Works – SIC #9711

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

Bar screens/ primary clarification/ oxidation ditches/ secondary clarification/ anthracite filters/ sand filters/ chlorination/ dechlorination/ aerobic sludge digestion/ sludge is land applied

Design population equivalent is 50,000.

Design flow is 5.0 million gallons per day.

Actual flow is 2.02 million gallons per day.

Design sludge production is 1,400 dry tons/year.

Legal Description:	NE ¼, SW ¼, Sec. 02, T35N, R11W, Pulaski County
UTM Coordinates:	X= 578539, Y= 4182431
Receiving Stream:	Tributary to Dry Creek (C) (3960) (losing)
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) (3960) (losing)
USGS Basin & Sub-watershed No.:	(10290202-0404)

OUTFALL #001	TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 3 of 12
		PERMIT NUMBER MO-0029742

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **August 1, 2016** and remain in effect through **July 31, 2017**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		15	10	once/week	composite**
Total Suspended Solids	mg/L		20	15	once/week	composite**
<i>E. coli</i> (Note 1, Page 5)	#/100mL	126		*	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	3.7 7.5		1.4 2.9	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
Total Residual Chlorine (Note 2, Page 5)	µg/L	< 130		< 130	once/week	grab
Cyanide (Note 3, Page 5)	µg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Nitrogen	mg/L	*		*	once/quarter****	grab
Chloroform	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter****	grab
Mercury, Total Recoverable	µg/L	*		*	once/quarter****	grab
N-nitrosodimethylamine	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2016.

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.5		9.0	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2016.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen (Note 2, Page 5)	mg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2016.

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 4 of 12
		PERMIT NUMBER MO-0029742

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 on **August 1, 2017** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		15	10	once/week	composite**
Total Suspended Solids	mg/L		20	15	once/week	composite**
<i>E. coli</i> (Note 1, Page 5)	#/100mL	126		*	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	5.8 10.2		1.1 2.7	once/week	grab
Oil & Grease	mg/L	15		10	once/week	grab
Total Residual Chlorine (Note 2, Page 5)	µg/L	< 130		< 130	once/week	grab
Cyanide (Note 3, Page 5)	µg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2017. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Nitrogen	mg/L	*		*	once/quarter****	grab
Chloroform	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter****	grab
Mercury, Total Recoverable	µg/L	*		*	once/quarter****	grab
N-nitrosodimethylamine	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2017.

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.5		9.0	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2017.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen (Note 2, Page 5)	mg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2017.

- * Monitoring requirement only.
- ** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
- *** pH is measured in pH units and is not to be averaged.
- **** See table below for quarterly sampling requirements.

Minimum Sampling Requirements			
Quarter	Months	Effluent Parameters	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

Note 1 –Effluent limits of 126 #/100 mL daily maximum and monitoring only for monthly average for *E. coli* are applicable year round due to losing stream designation. No more than 10% of samples over the course of a calendar year shall exceed the 126 #/100 mL daily maximum.

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

- (a) The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 17 µg/L (daily maximum limit) and 8 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.
- (b) Disinfection is required year-round.
- (c) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**
- (d) If no chlorine was used in a given sampling period, an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary. Simply report as “0 µg/L” for TRC and “NA” for DO.

Note 3 – This effluent limit is below the accepted minimum quantification level (ML). The Department has determined the current acceptable ML of Cyanide amenable to chlorination to be 10 µg/L when using SM 4500-CN^G. Cyanides Amenable to Chlorination after Distillation in *Standard Methods for the Examination of Water and Wastewater*, 22nd Edition. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 10 µg/L will be considered violations of the permit and values less than the minimum quantification level of 10 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of Cyanide in excess of the effluent limits stated in the permit.

OUTFALL #001	TABLE A-3. WHOLE EFFLUENT TOXICITY FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS			PAGE NUMBER 6 of 12		
				PERMIT NUMBER MO-0029742		
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 on July 21, 2016 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Acute Whole Effluent Toxicity (Note 4)	TU _a	*			once/year	composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE NEXT REPORT IS DUE <u>OCTOBER 28, 2016</u> .						
Chronic Whole Effluent Toxicity (Note 5)	TU _c	*			once/permit cycle	composite**
<u>WET TEST</u> REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2020</u> .						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

Note 4 – The Acute WET test shall be conducted once per year during the 1st, 2nd, 3rd, and 5th year of the permit cycle. See Special Condition #20 for additional requirements.

Note 5 –The Chronic WET test shall be conducted during the 4th year of the permit cycle. See Special Condition #21 for additional requirements.

TABLE B. INFLUENT MONITORING REQUIREMENTS			PERMIT NUMBER MO-0029742
The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective on July 21, 2016 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
Biochemical Oxygen Demand ₅	mg/L	once/quarter*****	grab
Total Suspended Solids	mg/L	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2016</u> .			

***** See table below for quarterly sampling requirements.

Minimum Sampling Requirements			
Quarter	Months	Influent Parameters	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and March 1, 2015, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. Also, refer to Section VI of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at <http://dnr.mo.gov/pubs/pub2481.htm>.
2. 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 including acute and chronic Whole Effluent Toxicity (WET) tests, 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.
 - (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publicly Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
3. All outfalls must be clearly marked in the field. This does not include instream monitoring locations.
4. 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.
5. Report as no-discharge when a discharge does not occur during the report period. For instream samples, report as "no flow" if no stream flow occurs during the report period.
6. Water Quality Standards
 - (a) To the extent required by law, 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;

D. SPECIAL CONDITIONS (continued)

- (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. Changes in existing pollutants or the addition of new pollutants to the treatment facility

The permittee must provide adequate notice to the Director of the following:

- (a) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and
- (b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- (c) For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quality and quantity of effluent introduced into the POTW, and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. Reporting of Non-Detects:

- (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
- (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
- (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
- (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
- (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the "<MDL" shall be reported as indicated in item (c).

9. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

10. The permittee shall comply with any applicable requirements listed in 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.

11. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002) or the Departments' CMOM Model located at <http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc>. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at <http://dnr.mo.gov/pubs/pub2574.htm>.

The permittee shall also submit a report to the Southeast Regional Office annually, by January 28th, for the previous calendar year. The report shall contain the following information:

- (a) A summary of the efforts to locate and eliminate sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
- (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
- (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.

D. SPECIAL CONDITIONS (continued)

12. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office or by using the online Sanitary Sewer Overflow/Facility Bypass Application, located at: <http://dnr.mo.gov/modnrcag/> during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.
13. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
14. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.
15. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.
16. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
17. An all-weather access road shall be provided to the treatment facility.
18. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.
19. Land application of biosolids shall be conducted in accordance with Standard Conditions III and a Department approved biosolids management plan. Land application of biosolids during frozen, snow covered, or saturated soil conditions in accordance with the additional requirements specified in WQ426 shall occur only with prior approval from the Department.
20. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
 - o The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
 - o The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
 - (b) Chemical and physical analysis of the upstream control sample 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. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.

D. SPECIAL CONDITIONS (continued)

- (f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), Un-ionized Ammonia (mg/L), Total Alkalinity (mg/L), Total Hardness (mg/L), Chloroform (µg/L), Copper, Total Recoverable (µg/L), Mercury (µg/L), N- nitrosodimethylamine (µg/L), Zinc, Total Recoverable (µg/L).
 - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.
21. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
- (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
 - a. The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
 - b. The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
 - (b) Chemical and physical analysis of the upstream control sample 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. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), Un-ionized Ammonia (mg/L), Total Alkalinity (mg/L), Total Hardness (mg/L), Chloroform (µg/L), Copper, Total Recoverable (µg/L), Mercury (µg/L), N- nitrosodimethylamine (µg/L), Zinc, Total Recoverable (µg/L).
 - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

D. SPECIAL CONDITIONS (continued)

22. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be developed and implemented within 180 days of the effective date of the permit. Through implementation of the SWPPP, the permittee shall minimize the release of pollutants in stormwater from the facility to the waters of the state. The SWPPP shall be developed in consultation with the concepts and methods described in the following document: Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.
- (a) The SWPPP must identify any stormwater outfall from the facility and Best Management Practices (BMPs) used to prevent or reduce the discharge of contaminants in stormwater. The stormwater outfalls shall either be marked in the field or clearly marked on a map and maintained with the SWPPP.
 - (b) The SWPPP must include a schedule and procedures for a once per month routine site inspection.
 - i. The monthly routine inspection shall be documented in a brief written report, which shall include:
 - i. The person(s) conducting the inspection.
 - ii. The inspection date and time.
 - iii. Weather information for the day of the inspection.
 - iv. Precipitation information for the entire period since the last inspection.
 - v. Description of the discharges observed, including visual quality of the discharges (sheen, turbid, etc.).
 - vi. Condition of BMPs
 - vii. If BMPs were replaced or repaired.
 - viii. Observations and evaluations of BMP effectiveness.
 - ii. Any deficiency observed during the routine inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
 - iii. The routine inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
 - iv. The routine inspection reports shall be made available to Department personnel upon request.
 - (c) The SWPPP must include a schedule and procedures for a once per year comprehensive site inspection.
 - (1) The annual comprehensive inspection shall be documented in a written report, which shall include:
 - i. The person(s) conducting the inspection.
 - ii. The inspection date and time.
 - iii. Findings from the areas of your facility that were examined;
 - iv. All observations relating to the implementation of your control measures including:
 - 1. Previously unidentified discharges from the site,
 - 2. Previously unidentified pollutants in existing discharges,
 - 3. Evidence of, or the potential for, pollutants entering the drainage system;
 - 4. Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, and
 - 5. Additional control measures needed to address any conditions requiring corrective action identified during the inspection.
 - v. Any required revisions to the SWPPP resulting from the inspection;
 - vi. Any incidence of noncompliance observed or a certification stating that the facility is in compliance with Special Condition #23.
 - (2) Any deficiency observed during the comprehensive inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
 - (3) The comprehensive inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
 - (4) The comprehensive inspection reports shall be made available to Department personnel upon request.
 - (d) The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested.
 - (e) The SWPPP must be reviewed and updated at a minimum once per permit cycle, as site conditions or control measures change.

D. SPECIAL CONDITIONS (continued)

23. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP.
- (a) Permittee shall adhere to the following minimum Best Management Practices (BMPs):
- (1) Minimize the exposure of industrial material storage areas, loading and unloading areas, dumpsters and other disposal areas, maintenance activities, and fueling operations to rain, snow, snowmelt, and runoff, by locating industrial materials and activities inside or protecting them with storm resistant coverings, if warranted and practicable.
 - (2) Provide good housekeeping practices on the site to prevent potential pollution sources from coming into contact with stormwater and provide collection facilities and arrange for proper disposal of waste products, including sludge.
 - (3) Implement a maintenance program to ensure that the structural control measures and industrial equipment is kept in good operating condition and to prevent or minimize leaks and other releases of pollutants.
 - (4) Prevent or minimize the spillage or leaks of fluids, oil, grease, fuel, etc. from equipment and vehicle maintenance, equipment and vehicle cleaning, or activities.
 - (5) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed.
 - (6) Provide stormwater runoff controls to divert, infiltrate, reuse, contain, or otherwise minimize pollutants in the stormwater discharge.
 - (7) Enclose or cover storage piles of salt or piles containing salt, used for deicing or other commercial or industrial purposes.
 - (8) Provide training to all employees who; work in areas where industrial materials or activities are exposed to stormwater, are responsible for stormwater inspections, are members of the Pollution Prevention Team. Training must cover the specific control measures and monitoring, inspection, planning, reporting and documentation requirements of this permit. Training is recommended annually for any applicable staff and whenever a new employee is hired who meets the description above.
 - (9) Eliminate and prevent unauthorized non-stormwater discharges at the facility.
 - (10) Minimize generation of dust and off-site tracking of raw, final, or waste materials by implementing appropriate control measures.
24. Due to the changing nature of activities at Fort Leonard Wood and possible discharges into the collection system serving the treatment facility, the Department is requiring the facility to perform annual expanded effluent testing according the directions found on Part D – Expanded Effluent Testing Data found on Form B2 – Application for Operating Permit for Facilities That Receive Primarily Domestic Waste and Have a Design Flow More Than 100,000 Gallons Per Day at the following web address: <http://dnr.mo.gov/forms/780-1805-f.pdf>. The results of the expanded effluent tests shall be reported to the Water Protection Program, P.O. Box 176, Jefferson City, MO 65102.

E. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations as soon as reasonably achievable or no later than **1 year** of the effective date of this permit.

1. Within **1 year** of the modification date of this permit, the permittee shall attain compliance with the final effluent limits.

Please submit progress reports to the Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd, Poplar Bluff, MO 63901.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION
OF
MO-0029742
FORT LEONARD WOOD 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 stormwater 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

Part I – Facility Information

Facility Type: FOTW - SIC #4952

Facility Description:

Bar screens/ primary clarification/ oxidation ditches/ secondary clarification/ anthracite filters/ sand filters/ chlorination/ dechlorination/ aerobic sludge digestion/ sludge is land applied

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- Yes.

- No.

Application Date: 3/26/14

Expiration Date: 3/18/17

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	7.8	Secondary	Domestic

Facility Performance History:

The facility exceeded effluent limits for BOD in 8/13, *E. coli* in 8/13 and 7/12, and Ammonia in 8/13. A compliance inspection of the treatment plant was performed by the Southeast Regional Office May 31, 2012. At the time of the inspection the facility was in compliance. A Sanitary Sewer Overflow Inspection of the facility was performed by the United States Environmental Protection Agency Region VII Environmental Sciences and Technology Division and Environmental Field Compliance Branch August 17-21, 2015.

Comments:

Changes in this permit include the addition of Dissolved Oxygen monitoring, Cyanide monitoring, effluent nutrient monitoring, chronic WET testing, and annual expanded effluent testing. See the Fact Sheet for more information regarding the addition and removal of effluent parameters. Special conditions were updated to include the addition of inflow and infiltration reporting requirements, reporting of Non-detects, bypass reporting requirements, and annual expanded effluent testing.

Part II – Operator Certification Requirements

- This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee 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 20-9.020(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 a

- | | |
|--|---|
| <input type="checkbox"/> - Municipalities | <input type="checkbox"/> - State agency |
| <input checked="" type="checkbox"/> - Federal agency | <input type="checkbox"/> - Private Sewer Company regulated by the Public Service Commission |
| <input type="checkbox"/> - County | <input type="checkbox"/> - Public Water Supply Districts |
| <input type="checkbox"/> - Public Sewer District | |

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

This facility currently requires an operator with a (A) Certification Level. Please see **Appendix - Classification Worksheet** Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator’s Name: Shane Harrell
 Certification Number: 4866
 Certification Level: A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

- This facility is not required to have a certified operator.

Part III– Operational Monitoring

- As per [10 CSR 20-9.010(4)], the facility is not required to conduct operational monitoring.

- As per [10 CSR 20-9.010(4)], the facility is required to conduct operational monitoring.

Part IV – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Dry Creek (losing)	C	3960	AQL, IRR, LWW, SCR, WBC(B), HHP	10290202-0404	0.0

*As per 10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission’s water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream’s beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; **CDF** = Cold-water fishery (Current narrative use is cold-water habitat.); **CLF** = Cool-water fishery (Current narrative use is cool-water habitat); **EAH** = Ephemeral Aquatic Habitat; **MAH** = Modified Aquatic Habitat; **LAH** = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation that supports swimming uses and has public access;

WBC-B = Whole body contact recreation that supports swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; WHP = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): **GRW** = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (C, E, P, P1)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Dry Creek (losing)	0.0	0.0	0.0

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Facilities with a design flow greater than 100,000 gallons per day are required to sample their effluent quarterly for Total Phosphorus and Total Nitrogen per 10 CSR 20-7.015(9)(D)7. Upstream monitoring for these parameters is necessary to determine background concentrations in order to complete calculations related to future effluent limit derivation where necessary or appropriate.

Receiving Water Body's Water Quality

No stream surveys have been performed at this facility.

Part V – 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.

- The facility discharges to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

- The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

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

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

- This is a New facility, backsliding does not apply.

- 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.
- The sampling frequency for the Oil & Grease has been reduced to once/ quarter as the facility has shown good compliance history and the Department concludes this frequency is still protective of Water Quality Standards and protective of aquatic life.
- Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
- WET testing requirements were changed from pass/fail to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requiring the department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient numerical data to conduct an analytical reasonable potential analysis. The permit writer has made a reasonable potential determination which concluded the facility does not have reasonable potential at this time but monitoring is required. Implementation of the toxic unit monitoring requirement will allow the department to effect numeric criteria in accordance with water quality standards established under §303 of the CWA.

ANTIDegradation:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], 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.

- No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

- This permit contains new and/or expanded discharge, please see **APPENDIX FOR ANTIDegradation ANALYSIS**.

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.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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. Additional information regarding biosolids and sludge is located at the following web address:

<http://extension.missouri.edu/main/DisplayCategory.aspx?C=74>, items WQ422 through WQ449.

- Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan.

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc.

- This condition is not applicable to the permittee for this facility.

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.

- The facility is currently under enforcement action.

- The facility is not currently under Water Protection Program enforcement action.

DISCHARGE MONITORING REPORTS:

On July 30, 2013, EPA proposed the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which requires electronic reporting of NPDES information rather than the currently-required paper-based reports from permitted facilities. To comply with the upcoming federal rule, the Department is asking all permittees to begin submitting discharge monitoring data online. For permittees already using the Department's eDMR data reporting system, those permittees will be required to exclusively use the eDMR data reporting system.

- The permittee/facility is currently using the eDMR data reporting system.

- The permittee/facility is not currently using the eDMR data reporting system. To sign up for the eDMR system, visit the Department's eDMR page at <http://dnr.mo.gov/env/wpp/edmr.htm>.

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

- This permittee has an approved pretreatment program in accordance with the requirements of [40 CFR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program.

- 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.

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

- A RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS**.

- A RPA was not conducted for this facility.

• **Conservative assumption:**

The following conservative assumptions have been made regarding the facility:

- Ammonia is a constituent of domestic wastewater. A reasonable potential to violate water quality standards is assumed.
- Default multipliers from EPA guidance were utilized to calculate effluent limits.
- No degradation of ammonia has been calculated.

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.

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

- Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

- At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at <http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc>. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at <http://dnr.mo.gov/pubs/pub2574.htm>. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

- This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes 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. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.

- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

- The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia. The one year schedule of compliance allowed for this facility should provide adequate time for the facility to evaluate and make any operational changes needed to meet final limitations.

- This permit does not contain a SOC.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges.

- 10 CSR 20-6.200 and 40 CFR 122.26 includes treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 mgd or more, or are required to have an approved pretreatment program under 40 CFR part 403, as an industrial activity in which permit coverage is required.

In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan. A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting to the Department a completed NPDES Form 3510-11 – No Exposure Certification for Exclusion from NPDES Stormwater Permitting. That document and additional information may be found at <http://water.epa.gov/polwaste/npdes/stormwater/Conditional-No-Exposure-Exclusion.cfm>. Upon approval of the "No Exposure", the permit can be modified to remove the SWPPP requirements. If the facility chooses to retain the conditional exclusion for "no exposure", the facility is required to renew the "No Exposure" exemption during the permit renewal period by submitting NPDES Form 3510-11 with Form B2.

- 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.

- This operating permit is drafted under premises of a petition for variance.

- 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 total amount of pollutant that may be discharged into that stream without endangering its water quality.

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

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

Where C = downstream concentration C_e = effluent concentration
Cs = upstream concentration Q_e = effluent flow
Q_s = upstream 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

- Wasteload allocations were not calculated.

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.

- A WLA study including model was submitted to the Department.

- A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(4)], 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.

WHOLE EFFLUENT TOXICITY (WET) TEST:

- The permittee is required to conduct WET test for this facility.

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.

Under the federal 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 (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean

Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility that exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- Facility handles 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 with a Design Flow \geq 22,500 gpd.
- Other – please justify.

- At this time, the permittee is not required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

- Bypasses occur or have occurred at this facility.

- This facility does not anticipate bypassing.

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

- This facility discharges to a 303(d) listed stream.

- This facility does not discharge to a 303(d) listed stream.

- This facility discharges to a stream with an EPA approved TMDL.

Part VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri’s current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America’s mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be “of conservation concern”. Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

Summer – 5.8 mg/L daily maximum, 1.1 mg/L monthly average.
Winter – 10.2 mg/L daily maximum, 2.7 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing will be:

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	0.7	3.4
Winter	6	7.8	2.3	13

Summer: April 1 – September 30

Chronic WLA: $C_e = ((7.75 + 0.0)0.7 - (0.0 * 0.01))/7.75$
 $C_e = 0.7 \text{ mg/L}$

Acute WLA: $C_e = ((7.75 + 0.0)3.4 - (0.0 * 0.01))/7.75$
 $C_e = 3.4 \text{ mg/L}$

$LTA_c = 0.7 \text{ mg/L} (0.391) = 0.27 \text{ mg/L}$

$LTA_a = 3.4 \text{ mg/L} (0.100) = 0.34 \text{ mg/L}$

[CV = 2.58, 99th Percentile, 30 day avg.]

[CV = 2.58, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$MDL = 0.27 \text{ mg/L} (9.98) = 2.6 \text{ mg/L}$

$AML = 0.27 \text{ mg/L} (1.89) = 0.5 \text{ mg/L}$

[CV = 2.58, 99th Percentile]

[CV = 2.58, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((7.75 + 0.0)2.3 - (0.0 * 0.01))/7.75$
 $C_e = 2.3 \text{ mg/L}$

Acute WLA: $C_e = ((7.75 + 0.0)13 - (0.0 * 0.01))/7.75$
 $C_e = 13 \text{ mg/L}$

$LTA_c = 2.3 \text{ mg/L} (0.663) = 1.53 \text{ mg/L}$

$LTA_a = 13 \text{ mg/L} (0.201) = 2.62 \text{ mg/L}$

[CV = 1.01, 99th Percentile, 30 day avg.]

[CV = 1.01, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.53 mg/L (4.97) = 7.6 mg/L
AML = 1.53 mg/L (1.33) = 2.0 mg/L

[CV = 1.01, 99th Percentile]
[CV = 1.01, 95th Percentile, n =30]

Summer – 2.7 mg/L daily maximum, 0.5 mg/L monthly average.
Winter – 7.6 mg/L daily maximum, 2.0 mg/L monthly average.

These estimated limits above are based in part on the actual performance of the plant at the time of the drafting of this permit and should not be construed as future effluent limitations. Future effluent limits, based on the EPA’s 2013 water quality criteria for ammonia, will depend in part on the actual performance of the facility at the time the permit is renewed.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VII – Effluent Limits Determination

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 lists 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.

- | | |
|---|--|
| <input type="checkbox"/> Missouri or Mississippi River [10 CSR 20-7.015(2)] | <input type="checkbox"/> Subsurface Water [10 CSR 20-7.015(7)] |
| <input type="checkbox"/> Lake or Reservoir [10 CSR 20-7.015(3)] | <input type="checkbox"/> All Other Waters [10 CSR 20-7.015(8)] |
| <input checked="" type="checkbox"/> Losing [10 CSR 20-7.015(4)] | |
| <input type="checkbox"/> Metropolitan No-Discharge [10 CSR 20-7.015(5)] | |

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/week-days	monthly	T
BOD ₅	mg/L	1		15	10	15/10	1/week	monthly	C
TSS	mg/L	1		20	15	20/15	1/week	monthly	C
<i>Escherichia coli</i> **	#/100mL	1, 3	126		*	126/126	1/week	monthly	G
Ammonia as N (Apr 1 – Sep 30)	mg/L	2, 3	5.8		1.1	3.7/1.4	1/week	monthly	G
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	10.2		2.7	7.5/2.9	1/week	monthly	G
Oil & Grease	mg/L	1, 3	15		10	15/10	1/week	monthly	G
Chlorine, Total Residual	µg/L	1, 3	< 130		< 130	17/8	1/week	monthly	G
Cyanide	µg/L	1, 3	*		*	***	1/week	monthly	G
Total Nitrogen	mg/L	1	*		*	***	1/quarter	quarterly	G
Total Phosphorus	mg/L	1	*		*	***	1/quarter	quarterly	G
Chloroform	µg/L	7	*		*	***	1/quarter	quarterly	G
Copper, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	G
Mercury	µg/L	7	*		*	***	1/quarter	quarterly	G
N-nitrosodimethylamine	µg/L	7	*		*	***	1/quarter	quarterly	G
Zinc, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	G
Acute Whole Effluent Toxicity	TUa	1, 9	*			***	1/year	annually	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	1/permit cycle	1/permit cycle	C
PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.5		9.0	6.5-9.0	1/month	monthly	G
PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Dissolved Oxygen (DO)	mg/L	3, 7	*		*	***	1/month	monthly	G

* - Monitoring requirement only.

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

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

**** - C = 24-hour composite

G = Grab

T = 24-hr. total

E = 24-hr. estimate

Basis for Limitations Codes:

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

OUTFALL #001 – 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).**
 - 15 mg/L Weekly Average and 10 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].
- **Total Suspended Solids (TSS).**
 - 20 mg/L Weekly Average and 15 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].

- ***Escherichia coli (E. coli)***. Discharges to losing streams shall not exceed 126 per 100 mL as a Daily Maximum at any time, as per 10 CSR 20-7.031(5)(C). Monitoring only for a monthly average. No more than 10% of samples over the course of the calendar year shall exceed 126 #/100 mL daily maximum as per 10 CSR 20-7.015(9)(B)1.G.
- **Total Ammonia Nitrogen**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: $C_e = ((7.75 + 0.0)1.5 - (0.0 * 0.01))/7.75$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((7.75 + 0.0)12.1 - (0.0 * 0.01))/7.75$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.3905) = 0.59 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.100) = 1.21 \text{ mg/L}$

[CV = 2.58, 99th Percentile, 30 day avg.]
 [CV = 2.58, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 0.59 mg/L (9.9761) = 5.8 mg/L
 AML = 0.59 mg/L (1.89) = 1.1 mg/L

[CV = 2.58, 99th Percentile]
 [CV = 2.58, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((7.75 + 0.0)3.1 - (0.0 * 0.01))/7.75$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((7.75 + 0.0)12.1 - (0.0 * 0.01))/7.75$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.663) = 2.06 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.201) = 2.44 \text{ mg/L}$

[CV = 1.01, 99th Percentile, 30 day avg.]
 [CV = 1.01, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.06 mg/L (4.97) = 10.2 mg/L
 AML = 2.06 mg/L (1.33) = 2.7 mg/L

[CV = 1.01, 99th Percentile]
 [CV = 1.01, 95th Percentile, n =30]

- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA: $C_e = ((7.75 + 0.0)10 - (0.0 * 0.0))/7.75$
 $C_e = 10 \text{ µg/L}$

Acute WLA: $C_e = ((7.75 + 0.0)19 - (0.0 * 0.0))/7.75$
 $C_e = 19 \text{ µg/L}$

$LTA_c = 10 (0.527) = 5.3 \text{ µg/L}$
 $LTA_a = 19 (0.321) = 6.1 \text{ µg/L}$

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 5.3 (3.11) = 17 µg/L
 AML = 5.3 (1.55) = 8 µg/L

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n = 4]

The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 17 µg/L (daily maximum limit) and 8 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.

- **Total Phosphorus and Total Nitrogen.** Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N). Nitrate + Nitrite can be analyzed together or separately.
- **pH.** – 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.
- **Dissolved Oxygen.** Monitoring only included to determine if the facility has the reasonable potential to cause a violation of water quality standards in the receiving stream. Dechlorination chemicals have the potential to reduce dissolved oxygen concentrations in the discharge, resulting in an anoxic discharge, unless carefully controlled. Data will be reviewed upon renewal to determine if an effluent limitation is necessary to protect water quality.
- **Cyanide, Amenable to Chlorination.** Weekly testing for this parameter is being required this permit cycle. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.
- **Chloroform.** Quarterly monitoring for this parameter is being required based upon results of the facilities expanded effluent testing. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.
- **Copper, Total Recoverable.** Quarterly monitoring for this parameter is being required based upon results of the facilities expanded effluent testing. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.
- **Mercury, Total Recoverable.** Quarterly monitoring for this parameter is being required based upon results of the facilities expanded effluent testing. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.
- **N-nitrosodimethylamine.** Quarterly monitoring for this parameter is being required based upon results of the facilities expanded effluent testing. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.
- **Zinc, Total Recoverable.** Quarterly monitoring for this parameter is being required based upon results of the facilities expanded effluent testing. A reasonable potential analysis of the discharge data will be conducted at the time of renewal to determine if the facility's discharge will exceed water quality standards.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards. Where no mixing is allowed, the acute criterion must be met at the end of the pipe. However, when using an LC50 as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC50 value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration is 100% a limit of 1.0 TUa will apply. If more than 50% of the organisms survive at 100% effluent, the permittee should report TUa <1.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

- **Chronic Whole Effluent Toxicity.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification:

Sampling and Reporting Frequency was retained from previous permit except for Oil & Grease testing, see Part V of the Fact Sheet for more information. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)6.A.

WET Test Sampling Frequency Justification. 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 Whole Effluent Toxicity

- **No less than ONCE/YEAR:**

- Facility is designated as a Major facility or has a design flow \geq 1.0 MGD.
- Facility incorporates a pretreatment program and dilution of the receiving stream is 100x or greater.
- Facility continuously or routinely exceeds their design flow.
- Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

Chronic Whole Effluent Toxicity

- **No less than ONCE/PERMIT CYCLE:**

- Facilities with a design flow of greater than 1.0 million gallons per day, but less than 10 million gallons per day, shall conduct and submit to the Department a chronic WET test no less than once per five years.

Sampling Type Justification:

As per 10 CSR 20-7.015, BOD₅, TSS, and WET test samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, Ammonia as N, *E. coli*, TRC, Oil & Grease, Total Phosphorus. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia and TRC, and the fact that pH and DO cannot be preserved and must be sampled in the field. As Ammonia, Oil & Grease, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab.

Part VIII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

- 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.

Cost Analysis for Compliance - 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 – Cost Analysis for Compliance**

- The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part IX – 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.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

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 was June 3, 2016 – July 5, 2016, no comments were received.

DATE OF FACT SHEET: APRIL 14, 2016, MAY 12, 2016

COMPLETED BY:

EMILIE TWINING GERDES, ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 526-0827
Emilie.Twining-Gerdes@dnr.mo.gov

Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	5
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	5
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	
Plant pumping of main flow (lift station at the headworks)	3	
PRIMARY TREATMENT		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	
Chemical addition (except chlorine, enzymes)	4	4
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	
Land Disposal – low rate	3	
High rate	5	
Overland flow	4	
Total from page ONE (1)	----	32

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	
Raw wastes subject to toxic waste discharge	6	
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	10
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Waste Treatment Polishing Pond	2	
Chemical/physical – without secondary	15	
Chemical/physical – following secondary	10	10
Biological or chemical/biological	12	
Carbon regeneration	4	
DISINFECTION		
Chlorination or comparable	5	5
Dechlorination	2	2
On-site generation of disinfectant (except UV light)	5	
UV light	4	
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	6
Total from page TWO (2)	----	70
Total from page ONE (1)	---	32
Grand Total	---	102

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	95.94	1.5	95.94	30.00	16/0.1	2.58	6.00	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	21.93	3.1	21.93	29.00	7.5/0.08	1.01	2.92	YES
Ammonia as Nitrogen (Summer) future	3.4	95.94	0.7	95.94	30.00	16/0.1	2.58	6.00	YES
Ammonia as Nitrogen (Winter) future	8.1	21.93	2.3	21.93	29.00	7.5/0.08	1.01	2.92	YES

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

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

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

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.



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MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.



STANDARD CONDITIONS FOR NPDES PERMITS
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MISSOURI CLEAN WATER COMMISSION
REVISED
MAY 1, 2013

PART II - SPECIAL CONDITIONS – PUBLICLY OWNED
TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW, and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
March 1, 2015

**PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER
TREATMENT FACILITIES**

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
 - a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
 - b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

 - a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
 - b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri

 - a. Haulers that land apply septage must obtain a state permit
 - b. Do not apply more than 30,000 gallons of septage per acre per year.
 - c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
 - d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
 - e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

- a. Biosolids shall be monitored to determine the quality for regulated pollutants
- b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
- c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids ceiling concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

¹ Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

- d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

¹ You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

- e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total ¹	Annual	Total ¹	Annual	Total ¹
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

¹ Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances ¹

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000 ²
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil) ³
Other	⁴

¹ Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

² This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

³ Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

⁴ Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹Volatilization factor is 0.7 for surface application and 1 for subsurface application.
- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
 - b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
 - c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

- At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See Notes 1, 2 and 3)			
	Metals, Pathogens and Vectors	Nitrogen TKN ¹	Nitrogen PAN ²	Priority Pollutants and TCLP ³
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	-- ⁴
10,001 +	1 per week	1 per week	1 per day	-- ⁴

¹ Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

² Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

³ Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

⁴ One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids.

This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

Note 3: Table 5 is not applicable for incineration

- If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
- Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.
- At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

- The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
- Reporting period
 - By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
- Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
- Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual report contents. The annual report shall include the following:
- a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
 - b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
 - f. Contract Hauler Activities:

If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.



DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT LEONARD WOOD
14000 MSCOE LOOP, SUITE 120
FORT LEONARD WOOD, MO 65473-8929

RECEIVED

WATER PROTECTION PROGRAM

REPLY TO
ATTENTION OF

20 MAR 2014

Environmental Office

Missouri Department of Natural Resources
Water Protection Program
NPDES Permit Unit
Post Office Box 176
Jefferson City, Missouri 65102

Dear Sirs:

Fort Leonard Wood received a letter from the Missouri Department of Natural Resources dated February 14, 2014 requesting disclosure of industrial discharges to the sanitary sewer system of our wastewater treatment plant, National Pollutant Discharge Elimination System Permit Number MO-0029742. Fort Leonard Wood is structured much like any municipality with the exception of industry and manufacturing. For this reason, there is a limited number of process discharges into the sewer system. We have surveyed the collection system, as per the letter and discussion with MDNR staff, and have identified the following industrial user discharges:

- a. Boiler Treatment
- b. Cooling Tower Water
- c. Decontamination Training
- d. Oil/Water Separators
- e. Dental Clinics
- f. Boiler Maintenance
- g. Investigative Derived Wastewater

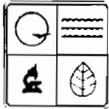
Please find enclosed supporting documentation for modification to our existing discharge permit which expires on March 18, 2017. If there are any questions regarding this permit application, or if additional information is required, please contact Carl Stenger via e-mail at carl.e.stenger.civ@mail.mil or by telephone at (573) 596-0131, extension 63723.

Sincerely,

Bobby N. Rakes, Jr.
Director, Directorate of Public Works

Enclosure

RECEIVED



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

AP1802

WATER PROTECTION PROGRAM

FACILITY NAME

Fort Leonard Wood Wastewater Treatment

PERMIT NO.

MO-0029742

COUNTY

Pulaski

APPLICATION OVERVIEW

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

BASIC APPLICATION INFORMATION

- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

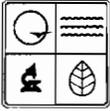
SUPPLEMENTAL APPLICATION INFORMATION

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act / CERCLA Wastes*.
SIUs are defined as:
 - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
 - 2. Any other industrial user that meets one or more of the following:
 - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

MO 780-1805 (09-08)

SE
Pulaski



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

No Fee Received

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
<i>10/14</i>	<i>550</i>

PART A – BASIC APPLICATION INFORMATION

1. This application is for:

An operating permit and antidegradation review public notice.

A construction permit following an appropriate operating permit and antidegradation review public notice.

A construction permit, a concurrent operating permit and antidegradation review public notice.

A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).

An operating permit for a new or unpermitted facility. Construction Permit # _____

An operating permit renewal: Permit #MO-_____ Expiration Date _____

An operating permit modification: Permit #MO-0029742 Reason: Inclusion of industrial discharge

1.1 Is this a Federal/State Funded Project? Yes No Funding Agency/Project #: _____

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? Yes No

2. FACILITY

NAME Fort Leonard Wood Wastewater Treatment Plant		TELEPHONE NUMBER WITH AREA CODE (573) 596-0078	
ADDRESS (PHYSICAL) 185 Sewer Plant Road	CITY Fort Leonard Wood	STATE MO	ZIP 65473

2.1 LEGAL DESCRIPTION (Plant Site): $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$, Sec. , T , R County

2.2 UTM Coordinates Easting (X): 1,753,200. Northing (Y): 711,350.00
 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3. OWNER

NAME U.S. Army Installation Management Command & FLW		TITLE Directorate of Public Works (DPW)		TELEPHONE NUMBER WITH AREA CODE (573) 596-0882	
ADDRESS 1334 First Street	CITY Fort Leonard Wood	STATE MO	ZIP 65473		

3.1 Request review of draft permit prior to Public Notice? Yes No

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME Same As Owner		CITY	
ADDRESS	CERTIFICATE NUMBER (IF APPLICABLE)	STATE	ZIP

5. OPERATOR

NAME Shane Harrell	TITLE Operator	TELEPHONE NUMBER WITH AREA CODE (573) 596-0589
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6. FACILITY CONTACT

NAME Keith Pendleton	TITLE Civil Engineering Tech
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MO 780-1805 (09-08)

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART A – BASIC APPLICATION INFORMATION		
7. ADDITIONAL FACILITY INFORMATION		
7.1 BRIEF DESCRIPTION OF FACILITIES Preliminary, Primary and Secondary Treatment (trickling filters/activated sludge), effluent filtration and chlorination/dechlorination, aerobic digestion and land application of sludge.		
7.2 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A TOPOGRAPHIC MAP OF THE AREA EXTENDING AT LEAST ONE MILE BEYOND FACILITY PROPERTY BOUNDARIES. THIS MAP MUST SHOW THE OUTLINE OF THE FACILITY AND THE FOLLOWING INFORMATION. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.) a. The area surrounding the treatment plant, including all unit processes. b. The location of the downstream landowner(s). (See Item 10.) c. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable. d. The actual point of discharge. e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant. f. Any areas where the sewage sludge produced by the treatment works is stored, treated or disposed. g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored or disposed.		
7.3 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.		
7.4 FACILITY SIC CODE 9711 / 4952	DISCHARGE SIC CODE: 9711 / 4952	FACILITY NAICS CODE: DISCHARGE NAICS CODE:
7.5 NUMBER OF SEPARATE DISCHARGE POINTS		
7.6 NUMBER OF PEOPLE PRESENTLY CONNECTED OR POPULATION EQUIVALENT 33,000		DESIGN POPULATION EQUIVALENT 50,000
NUMBER OF UNITS PRESENTLY CONNECTED HOMES 2447 APARTMENTS _____ TRAILERS _____ OTHER _____		
TOTAL DESIGN FLOW (ALL OUTFALLS) 5.0 MGD		ACTUAL FLOW 1.4 MGD
7.7 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If Yes, attach an explanation.)		
7.8 LENGTH OF THE SANITARY SEWER COLLECTION SYSTEM IN MILES 90 miles		
7.9 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
7.10 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS Jan - Dec	B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR? 7 (year round)	
7.11 IS WASTEWATER LAND APPLIED? (If Yes, Attach Form I) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	7.12 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
7.13 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> <i>Antidegradation Review by MDNR</i>		
7.14 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST FIVE YEARS. ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE.		
8. LABORATORY CONTROL INFORMATION		
8.1 LABORATORY WORK CONDUCTED BY PLANT PERSONNEL		
Lab work conducted outside of plant.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART A – BASIC APPLICATION INFORMATION

9. SLUDGE HANDLING, USE AND DISPOSAL

9.1 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25?
 Yes No

9.2 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS
 Design Dry Tons/Year 1,400 Actual Dry Tons/Year 331.16 (FY13)

9.3 CAPACITY OF SLUDGE HOLDING STRUCTURES

9.4 SLUDGE STORAGE PROVIDED
 Cubic Feet ^{27.648} Days of Storage ³⁰ Average Percent Solids of Sludge ^{2.8} No Sludge Storage is Provided

9.5 TYPE OF STORAGE
 Holding Tank Basin Building Concrete Pad Other (Describe) _____

9.6 SLUDGE TREATMENT
 Anaerobic Digester Storage Tank Lime Stabilization Lagoon
 Aerobic Digester Air or Heat Drying Composting Other (Attach Description)

9.7 SLUDGE USE OR DISPOSAL
 Land Application Contract Hauler Hauled to Another Treatment Facility Solid Waste Landfill
 Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) Incineration
 Other (Attach Explanation Sheet) _____

9.8 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY

NAME
Fort Leonard Wood Wastewater Treatment Plant

ADDRESS 185 Sewer Plant Road	CITY Fort Leonard Wood	STATE MO	ZIP 65473
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CONTACT PERSON Shane Harrell	TELEPHONE NUMBER WITH AREA CODE (573) 596-0589	PERMIT NO. MO- 0029742
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9.9 SLUDGE USE OR DISPOSAL FACILITY
 By Applicant By Others (Complete Below)

NAME

ADDRESS	CITY	STATE	ZIP
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CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO. MO-
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9.10 DO THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503?
 Yes No (Attach Explanation)

10. DOWNSTREAM LANDOWNER(S). (ATTACH ADDITIONAL SHEETS AS NECESSARY.)

NAME

Reed Eugene

ADDRESS 15305 Texas Road	CITY St. Robert	STATE MO	ZIP 65584
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11. DRINKING WATER SUPPLY INFORMATION

11.1 SOURCE OF YOUR DRINKING WATER SUPPLY Big Piney River

A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)
Fort Leonard Wood Water Treatment Plant

B. PRIVATE WELL
1 Medium Yield, 15 Low Yield Wells

C. SURFACE WATER (LAKE, POND OR STREAM)
Big Piney River

11.2 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)?
 Yes No

11.3 DOES YOUR SUPPLY SERVE HOUSING THAT IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING THAT IS OCCUPIED SEASONALLY?
 Yes No

END OF PART A

Wastewater Treatment Plant

Legend

Buildings

Wells

- Domestic Water
- Extraction
- Injection
- Irrigation
- Monitoring

Main

Springs

Sludge Application Sites

Rivers and Streams

- Dry
- Intermittent
- Permanent

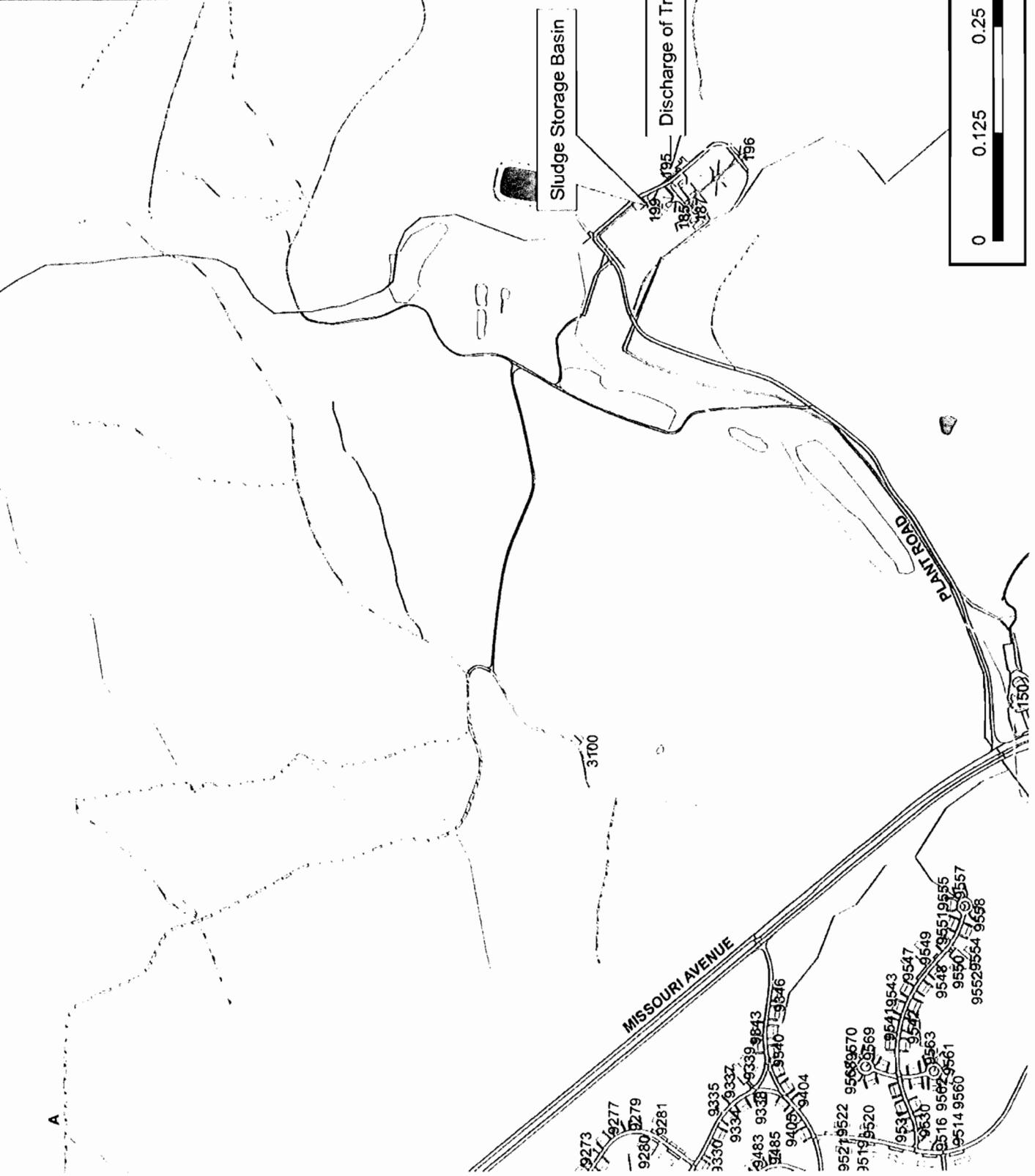
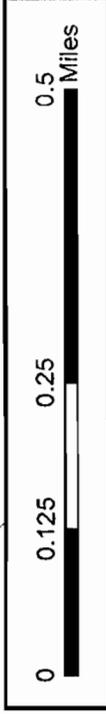
Lakes and Ponds

- Dry
- Intermittent
- Permanent

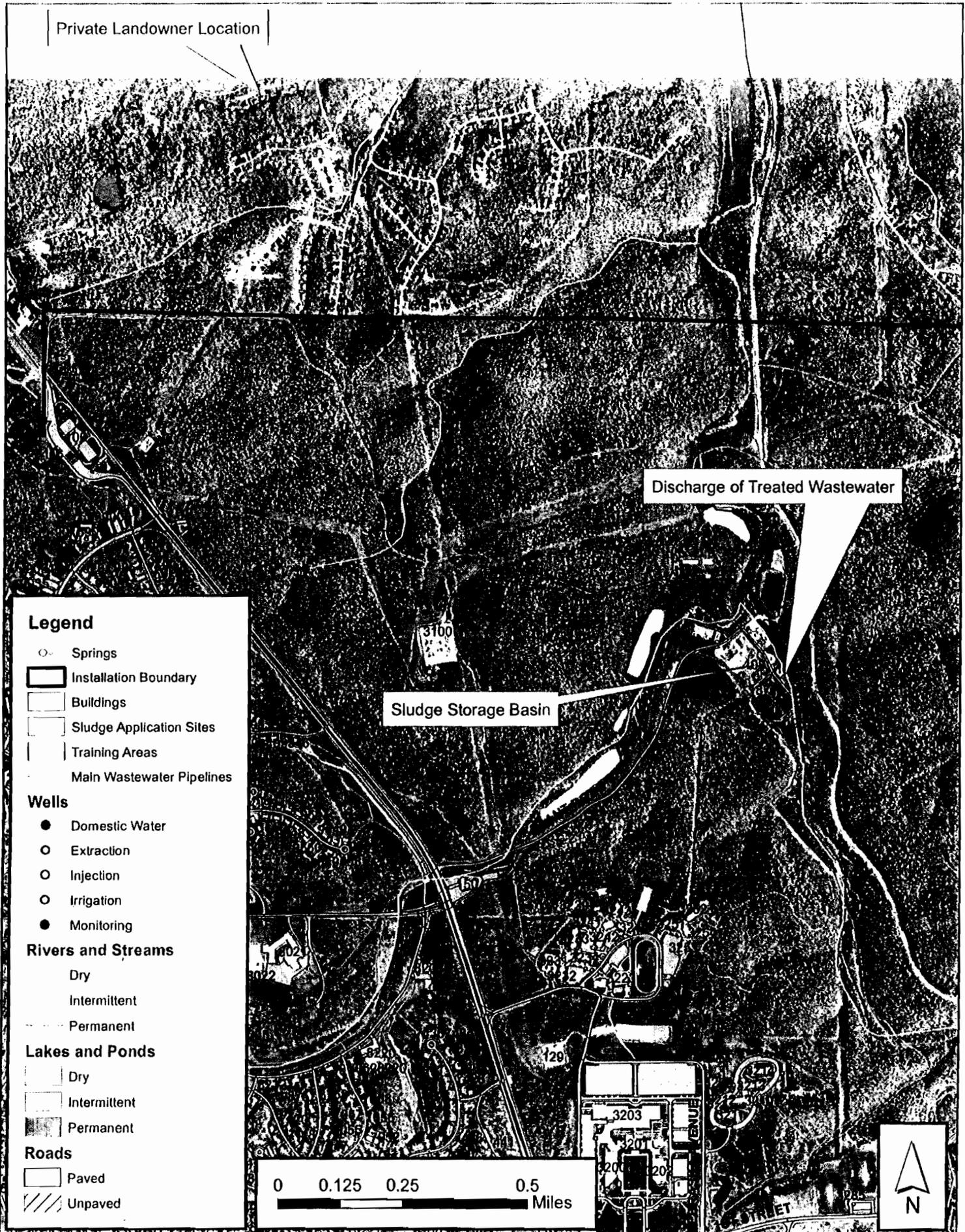
Training Areas

Roads

- Paved
- Unpaved



Wastewater Treatment Plant



Private Landowner Location

Discharge of Treated Wastewater

Sludge Storage Basin

Legend

- Springs
- ▭ Installation Boundary
- ▭ Buildings
- ▭ Sludge Application Sites
- ▭ Training Areas
- Main Wastewater Pipelines

Wells

- Domestic Water
- Extraction
- Injection
- Irrigation
- Monitoring

Rivers and Streams

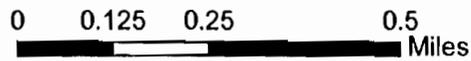
- Dry
- Intermittent
- Permanent

Lakes and Ponds

- ▭ Dry
- ▭ Intermittent
- ▭ Permanent

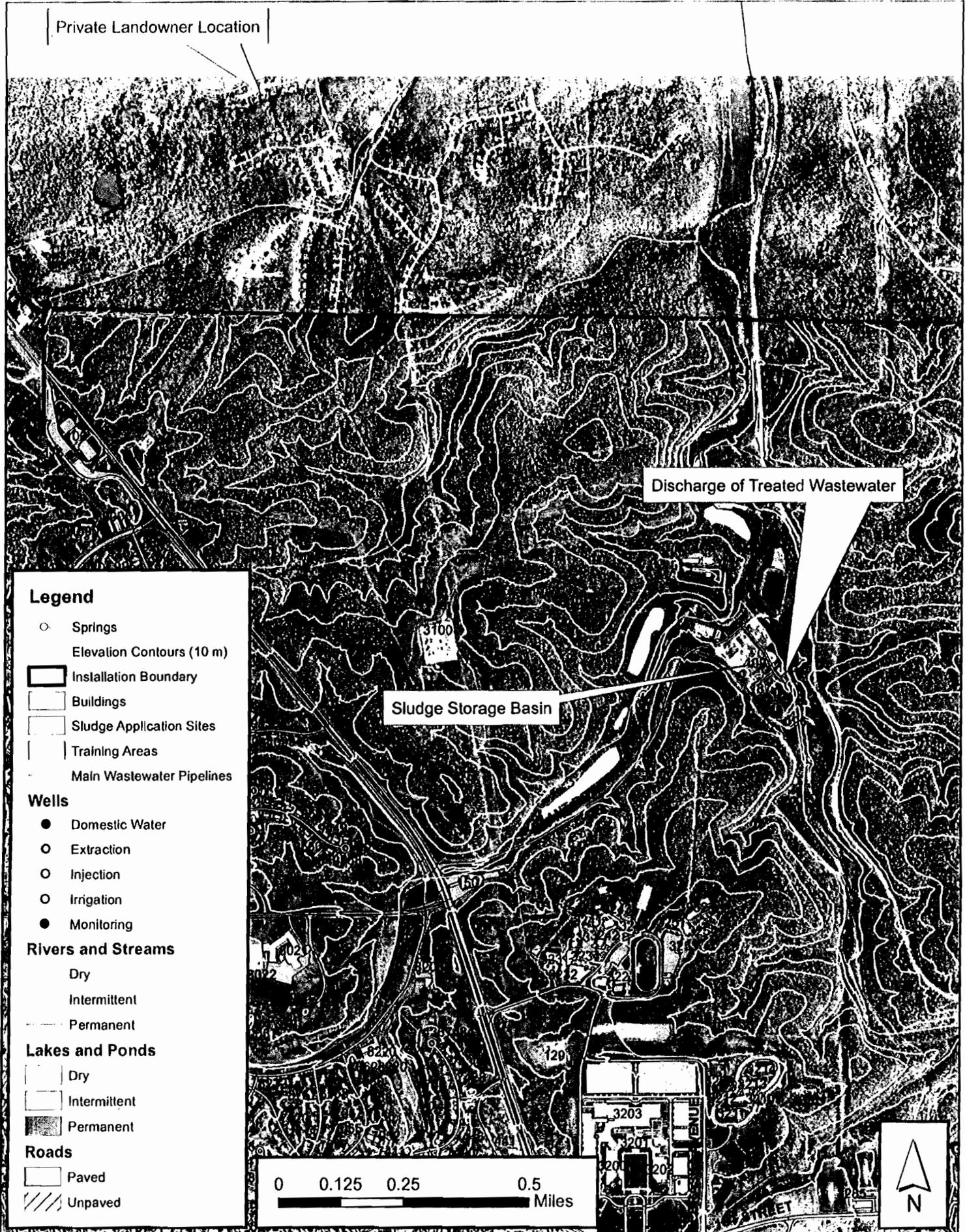
Roads

- ▭ Paved
- ▨ Unpaved



Wastewater Treatment Plant

Private Landowner Location



Legend

- Springs
- Elevation Contours (10 m)
- ▭ Installation Boundary
- ▭ Buildings
- ▭ Sludge Application Sites
- ▭ Training Areas
- Main Wastewater Pipelines

Wells

- Domestic Water
- Extraction
- Injection
- Irrigation
- Monitoring

Rivers and Streams

- Dry
- Intermittent
- Permanent

Lakes and Ponds

- ▭ Dry
- ▭ Intermittent
- ▭ Permanent

Roads

- ▭ Paved
- ▨ Unpaved

0 0.125 0.25 0.5 Miles



MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL			
FACILITY NAME Fort Leonard Wood WWTP		PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART B – ADDITIONAL APPLICATION INFORMATION			
20. INFLOW AND INFILTRATION			
ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND INFILTRATION. Gallons Per Day 20,000 GPD			
BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION. Ref. CMOM submitted to MODNR			
20.1 OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)			
ARE ANY OPERATIONAL OR MAINTENANCE ASPECTS (RELATED TO WASTEWATER TREATMENT AND EFFLUENT QUALITY) OF THE TREATMENT WORKS THE RESPONSIBILITY OF A CONTRACTOR? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)			
NAME TFW			
MAILING ADDRESS PO Box 950, Fort Leonard Wood, MO 65473			
TELEPHONE NUMBER WITH AREA CODE 573-596-0078			
RESPONSIBILITIES OF CONTRACTOR full scope operation & maintenance			
20.2 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ABOUT ANY UNCOMPLETED IMPLEMENTATION SCHEDULE OR UNCOMPLETED PLANS FOR IMPROVEMENTS THAT WILL AFFECT THE WASTEWATER TREATMENT, EFFLUENT QUALITY OR DESIGN CAPACITY OF THE TREATMENT WORKS. IF THE TREATMENT WORKS HAS SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES OR IS PLANNING SEVERAL IMPROVEMENTS, SUBMIT SEPARATE RESPONSES FOR EACH. (IF NONE, GO TO QUESTION B-20.3.)			
A. List the outfall number that is covered by this implementation schedule Outfall No. 001		B. Indicate whether the planned improvements or implementation schedule are required by local, state or federal agencies. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
20.3 WASTEWATER DISCHARGES: COMPLETE QUESTIONS 20.4 THROUGH 20.7 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.			
20.4 DESCRIPTION OF OUTFALL			
OUTFALL NUMBER			
A. LOCATION ¼ ____ ¼ ____ ¼ ____ Section ____ Township ____ Range ____ <input type="checkbox"/> E <input type="checkbox"/> W UTM Coordinates Easting (X): ____ Northing (Y): ____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			
B. Distance from Shore (If Applicable) ____ ft.		C. Depth Below Surface (If Applicable) ____ ft.	D. Average Daily Flow Rate ____ mgd
E. Does this outfall have either an intermittent or periodic discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Provide the following information:			
Number of Days Per Year Discharge Occurs:	Average Duration of Each Discharge:	Average Flow Per Discharge: mgd	Months in Which Discharge Occurs:
Is Outfall Equipped with a Diffuser? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
20.5 DESCRIPTION OF RECEIVING WATER			
B. Name of Receiving Water			
B. Name of Watershed (If Known)		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)	
B. Name of State Management/River Basin (If Known)		U.S. Geological Survey 8-Digit Hydrologic Cataloging Unit Code (If Known)	
B. Critical Flow of Receiving Stream (If Applicable) Acute ____ cfs Chronic ____ cfs		B. Total Hardness of Receiving Stream at Critical Low Flow (If Applicable) mg/L of CaCO ₃	

MO 780-1805 (09-08)

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART B – ADDITIONAL APPLICATION INFORMATION (CONTINUED)

20.6 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? Check All That Apply
 Primary Secondary Advanced Other (Describe)

B. INDICATE THE FOLLOWING REMOVAL RATES (AS APPLICABLE)
 Design BOD₅ Removal Or Design CBOD₅ Removal 85 % Design SS Removal 85 %
 Design P Removal ___% Design N Removal ___% Other ___%

C. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:
 chlorination

If disinfection is by chlorination, is dechlorination used for this outfall? Yes No

Does the treatment plant have post aeration? Yes No

20.7 EFFLUENT TESTING DATA. ALL APPLICANTS THAT DISCHARGE TO WATERS OF THE U.S. MUST PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING PARAMETERS. PROVIDE THE INDICATED EFFLUENT DATA FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION OF COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136.

OUTFALL NUMBER

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	VALUE	UNITS	VALUE	UNITS	NO. OF SAMPLES
pH (Minimum)		S.U.		S.U.	
pH (Maximum)		S.U.		S.U.	
FLOW RATE		MGD		MGD	
TEMPERATURE (Winter)		°C		°C	
TEMPERATURE (Summer)		°C		°C	

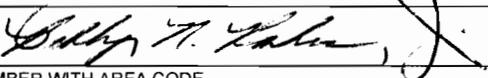
*For pH report a minimum and a maximum daily value.

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD ₅		mg/L		mg/L		See Enclosure A	& B
	CBOD ₅		mg/L		mg/L			
FECAL COLIFORM			#/100 mL		#/100 mL		See Enclosure A	& B
TOTAL SUSPENDED SOLIDS (TSS)			mg/L		mg/L			
AMMONIA (AS N)			mg/L		mg/L			
CHLORINE (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN			mg/L		mg/L			
TOTAL KJELDAHL NITROGEN (TKN)			mg/L		mg/L		See Enclosure	C
NITRATE PLUS NITRITE NITROGEN			mg/L		mg/L			
OIL AND GREASE			mg/L		mg/L			
PHOSPHORUS (TOTAL)			mg/L		mg/L			
TOTAL DISSOLVE SOLIDS (TDS)			mg/L		mg/L			
OTHER			mg/L		mg/L			

END OF PART B

PART C - CERTIFICATION	
30. CERTIFICATION	
All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.	
ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
PRINTED NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)	
Bobby N. Rakes, Jr Director, Directorate of Public Works	
SIGNATURE 	
TELEPHONE NUMBER WITH AREA CODE	
(573) 596-0840	
DATE SIGNED	
19 MAR 14	
Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.	
<p>For Design Flows Less than 1 Million Gallons Per Day, Send Completed Form to:</p> <p style="text-align: center;">Appropriate Regional Office</p> <p>Map of regional offices with addresses and phone numbers is available on the Web at www.dnr.mo.gov/regions/ro-map.pdf.</p>	<p>For Design Flows of 1 Million Gallons Per Day or Greater, Send Completed Form to:</p> <p style="text-align: center;">Department of Natural Resources Water Protection Program ATTN: NPDES Permits and Engineering Section P.O. Box 176 Jefferson City, MO 65102</p>
END OF PART C.	
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.	
Do not complete the remainder of this application, unless:	
<ol style="list-style-type: none"> 1. Your facility design flow is equal to or greater than 1,000,000 gallons per day. 2. Your facility is a pretreatment treatment works. 3. Your facility is a combined sewer system. 	
Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.	

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA

40. EXPANDED EFFLUENT TESTING DATA

Refer to the supplemental application information to determine whether Part D applies to the treatment works.

40.1 EFFLUENT TESTING: IF THE TREATMENT WORKS HAS A DESIGN FLOW GREATER THAN OR EQUAL TO 1 MILLION GALLONS PER DAY OR IT HAS (OR IS REQUIRED TO HAVE) A PRETREATMENT PROGRAM, OR IS OTHERWISE REQUIRED BY THE PERMITTING AUTHORITY TO PROVIDE THE DATA, THEN PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING POLLUTANTS. PROVIDE THE INDICATED EFFLUENT TESTING INFORMATION **FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED**. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136. INDICATE IN THE BLANK ROWS PROVIDED BELOW ANY DATA YOU MAY HAVE ON POLLUTANTS NOT SPECIFICALLY LISTED IN THIS FORM. EFFLUENT TESTING MUST NOT BE MORE THAN FOUR AND ONE-HALF YEARS OLD.

OUTFALL NUMBER (Complete Once for Each Outfall Discharging Effluent to Waters of the State.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES			
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS												
ANTIMONY	<0.005	MG/L								1	EPA 200.7	0.005
ARSENIC	<0.005	MG/L								1	EPA 200.7	0.005
BERYLLIUM	<0.005	MG/L								1	EPA 200.7	0.005
CADMIUM	<0.005	MG/L								1	EPA 200.7	0.005
CHROMIUM	<0.005	MG/L								1	EPA 200.7	0.005
COPPER	0.008	MG/L								1	EPA 200.7	0.005
LEAD	<0.005	MG/L								1	EPA 200.7	0.005
MERCURY	<0.0002	MG/L								1	SM 3112 B	0.0002
NICKEL	<0.005	MG/L								1	EPA 200.7	0.005
SELENIUM	<0.005	MG/L								1	EPA 200.7	0.005
SILVER	<0.005	MG/L								1	EPA 200.7	0.005
THALLIUM	<0.005	MG/L								1	EPA 200.7	0.005
ZINC	0.069	MG/L								1	EPA 200.7	0.005
CYANIDE	<0.004	MG/L								1	SM4500CNE	0.004
TOTAL PHENOLIC COMPOUNDS	<0.05	MG/L								1	EPA 420.1	0.05
HARDNESS (as CaCO ₃)	190	MG/L								1	SM2340B	2.5

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER METALS REQUESTED BY THE PERMIT WRITER.

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES			
VOLATILE ORGANIC COMPOUNDS												
ACROLEIN	<25	UG/L								1	EPA 624	25
ACRYLONITRILE	<25	UG/L								1	EPA 624	25
BENZENE	<1.0	UG/L								1	EPA 624	1.0
BROMOFORM	<1.0	UG/L								1	EPA 624	1.0
CARBON TETRACHLORIDE	<1.0	UG/L								1	EPA 624	1.0
CHLOROBENZENE	<1.0	UG/L								1	EPA 624	1.0
CHLORODIBROMO-METHANE	<1.0	UG/L								1	EPA 624	1.0
CHLOROETHANE	<1.0	UG/L								1	EPA 624	1.0
2-CHLORO-ETHYLVINYL ETHER	<5.0	UG/L								1	EPA 624	5.0
CHLOROFORM	3.1	UG/L								1	EPA 624	1
DICHLOROBROMO-METHANE	<1.0	UG/L								1	EPA 624	1.0
1,1-DICHLORO-ETHANE	<1.0	UG/L								1	EPA 624	1.0
1,2-DICHLORO-ETHANE	<1.0	UG/L								1	EPA 624	1.0
TRANS-1,2-DICHLOROETHYLENE	<1.0	UG/L								1	EPA 624	1.0
1,1-DICHLORO-ETHYLENE	<1.0	UG/L								1	EPA 624	1.0
1,2-DICHLORO-PROPANE	<1.0	UG/L								1	EPA 624	1.0
1,3-DICHLORO-PROPYLENE	<1.0	UG/L								1	EPA 624	1.0
ETHYLBENZENE	<1.0	UG/L								1	EPA 624	1.0
METHYL BROMIDE	<1	UG/L								1	EPA 624	1
METHYL CHLORIDE	<1.0	UG/L								1	EPA 624	1.0
METHYLENE CHLORIDE	<1.0	UG/L								1	EPA 624	1.0
1,1,2,2-TETRACHLOROETHANE	<1.0	UG/L								1	EPA 624	1.0
TETRACHLORO-ETHANE	<1.0	UG/L								1	EPA 624	1.0
TOLUENE	<1.0	UG/L								1	EPA 624	1.0
3,4-BENZO-FLUORANTHENE	<5	UG/L								1	EPA 625	5
BENZO(GH) PHERYLENE	<5.0	UG/L								1	EPA 625	5.0
BENZO(K) FLUORANTHENE	<5	UG/L								1	EPA 625	5

MO 780-1805 (09-08)

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
BIS (2-CHLOROTHOXY) METHANE	<5.0	UG/L							1	EPA 625	5.0
BIS (2-CHLOROETHYL) – ETHER	<5.0	UG/L							1	EPA 625	5.0
BIS (2-ETHYLHEXYL) PHTHALATE	<5.0	UG/L							1	EPA 625	5.0
4-BROMOPHENYL PHENYL ETHER	<5.0	UG/L							1	EPA 625	5.0
BUTYL BENZYL PHTHALATE	<5.0	UG/L							1	EPA 625	5.0
2-CHLORONAPH-THALENE	<5.0	UG/L							1	EPA 625	5.0
4-CHLORPHENYL PHENYL ETHER	<5.0	UG/L							1	EPA 625	5.0
CHRYSENE	<5.0	UG/L							1	EPA 625	5.0
DI-N-BUTYL PHTHALATE	<5.0	UG/L							1	EPA 625	5.0
DEBENZO (A,H) ANTHRACENE	<5	UG/L							1	EPA 625	5
1,2-DICHLORO-BENZENE	<1.0	UG/L							1	EPA 624	1.0
1,3-DICHLORO-BENZENE	<1.0	UG/L							1	EPA 624	1.0
1,4-DICHLORO-BENZENE	<1.0	UG/L							1	EPA 624	1.0
3,3-DICHLORO-BENZIDINE	<10	UG/L							1	EPA 625	10
DIETHYL PHTHALATE	<5.0	UG/L							1	EPA 625	5.0
DIMETHYL PHTHALATE	<5.0	UG/L							1	EPA 625	5.0
2,4-DINITRO-TOLUENE	<5	UG/L							1	EPA 625	5
2,6-DINITRO-TOLUENE	<5.0	UG/L							1	EPA 625	5.0
1,2-DIPHENYL-HYDRAZINE	<5.0	UG/L							1	EPA 625	5.0
1,1,1-TRICHLORO-ETHANE	<1.0	UG/L							1	EPA 624	1.0
1,1,2-TRICHLORO-ETHANE	<1.0	UG/L							1	EPA 624	1.0
TRICHLORETHYLENE	<1.0	UG/L							1	EPA 624	1.0
VINYL CHLORIDE	<1.0	UG/L							1	EPA 624	1.0

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER VOLATILE ORGANIC COMPOUNDS REQUESTED BY THE PERMIT WRITER

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES			
BASE-NEUTRAL COMPOUNDS												
ACENAPHTHENE	<5.0	UG/L								1	EPA 625	5.0
ACENAPHTHYLENE	<5.0	UG/L								1	EPA 625	5.0
ANTHRACENE	<5.0	UG/L								1	EPA 625	5.0
BENZIDINE	<50	UG/L								1	EPA 625	5.0
BENZO(A)ANTHRACENE	<5.0	UG/L								1	EPA 625	5.0
BENZO(A)PYRENE	<5.0	UG/L								1	EPA 625	5.0
FLUORANTHENE	<5.0	UG/L								1	EPA 625	5.0
FLUORENE	<5.0	UG/L								1	EPA 625	5.0
HEXACHLOROBENZENE	<5	UG/L								1	EPA 625	5.0
HEXACHLOROCYCLO-PENTADIENE	<5.0	UG/L								1	EPA 625	5.0
HEXACHLOROETHANE	<5.0	UG/L								1	EPA 625	5.0
INDENO (1,2,3-CD) PYRENE	<5.0	UG/L								1	EPA 625	5.0
ISOPHORONE	<5.0	UG/L								1	EPA 625	5.0
NAPHTHALENE	<5.0	UG/L								1	EPA 625	5.0
NITROBENZENE	<5.0	UG/L								1	EPA 625	5.0
N-NITROSODI-PROPYLAMINE	<5.0	UG/L								1	EPA 625	5.0
N-NITROSODI-METHYLAMINE	10	UG/L								1	EPA 625	10
N-NITROSODI-PHENYLAMINE	<5.0	UG/L								1	EPA 625	5.0
PHENANTHRENE	<5	UG/L								1	EPA 625	5
PYRENE	<5.0	UG/L								1	EPA 625	5.0
1,2,4-TRICHLOROBENZENE	<5.0	UG/L								1	EPA 625	5.0

USE THIS SPACE (OR SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER BASE-NEUTRAL COMPOUNDS REQUESTED BY THE PERMIT WRITER.

END OF PART D
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

CERTIFICATE OF ANALYSIS

November 21, 2011

LB & B ASSOCIATES
FRED STAFFORD
PO BOX 439
FORT LEONARD WOOD, MO 65473

Re: CaSi File/Case/Log: 1174/113550-3551/3134

Please refer to the following page(s) for results of analysis.

Laboratory analyses were performed on samples utilizing procedures published in Title 40 of the Code of Federal Regulations, Parts 136 or 141, or in EPA Publication SW-846, 3rd edition, September, 1986, and the latest promulgated update. Data qualifiers may be appended to this report. The appendix is an integral part of this report.

All results are reported on a wet weight basis, unless otherwise noted.

Samples are maintained in the laboratory for fourteen (14) days following issuance of the final report, unless an alternate arrangement is agreed to in writing. All samples determined to be hazardous, or which may not be disposed to the publicly owned treatment works (POTW) or to the sanitary landfill, will be returned to you for proper disposal.

Thank you for utilizing Consulting Analytical Services International, Inc. If you have any questions or require assistance, please contact me at 417.882.1017.

Consulting Analytical Services International, Inc.



LISA C. BERGER, M.S.
President, QA Officer



CONSULTING ANALYTICAL SERVICES INTERNATIONAL, INC.

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LB & B ASSOCIATES

Re: CaSi File/Case/Log: 1174/113550-3551/3134

Samples Received: 11-15-11, 09:30

November 21, 2011

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PRIORITY POLLUTANTS: METALS, CYANIDE, PHENOLICS

CONTROL NUMBER		113550	113551	FLAG	UNITS	ANALYSIS DATE
SAMPLE DESCRIPTION		EFFLUENT COMPOSITE	EFFLUENT GRAB			
PARAMETER	METHOD	11-19-11 07:00	11-19-11 07:00			
Antimony, total	EPA 200.7	<0.005			mg/l	11-16-11
Arsenic, total	EPA 200.7	<0.005			mg/l	11-15-11
Beryllium, total	EPA 200.7	<0.005			mg/l	11-16-11
Cadmium, total	EPA 200.7	<0.005			mg/l	11-15-11
Chromium, total	EPA 200.7	<0.005			mg/l	11-15-11
Copper, total	EPA 200.7	0.008			mg/l	11-15-11
Lead, total	EPA 200.7	<0.005			mg/l	11-15-11
Mercury, total	SM 3112 B	<0.0002			mg/l	11-17-11
Nickel, total	EPA 200.7	<0.005			mg/l	11-15-11
Selenium, total	EPA 200.7	<0.005			mg/l	11-15-11
Silver, total	EPA 200.7	<0.005			mg/l	11-16-11
Thallium, total	EPA 200.7	<0.005			mg/l	11-16-11
Zinc, total	EPA 200.7	0.069			mg/l	11-15-11
Calcium, total	EPA 200.7	40.8			mg/l	11-16-11
Magnesium, total	EPA 200.7	21.5			mg/l	11-16-11
Hardness	SM 2340 B	190			mg/l	11-16-11
Cyanide, total	SM 4500-CN E		<0.004		mg/l	11-16-11
Phenolics, total	EPA 420.1		<0.05		mg/l	11-18-11

This report is written confirmation of prior verbal or electronic conveyance of analytical results.



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LB & B ASSOCIATES

Re: CaSi File/Case/Log: 1174/113550-3551/3134

Samples Received: 11-15-11, 09:30

November 21, 2011

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PRIORITY POLLUTANT: VOLATILE FRACTION

CONTROL NUMBER		113551	FLAG	UNITS	ANALYSIS DATE
SAMPLE DESCRIPTION		EFFLUENT GRAB			
PARAMETER	METHOD	11-19-11 07:00			
1,1,1-Trichloroethane	SW 624	<1.0		ug/l	11-17-11
1,1,2,2-Tetrachloroethane	SW 624	<1.0		ug/l	11-17-11
1,1,2-Trichloroethane	SW 624	<1.0		ug/l	11-17-11
1,1-Dichloroethane	SW 624	<1.0		ug/l	11-17-11
1,1-Dichloroethylene	SW 624	<1.0		ug/l	11-17-11
1,2-Dichloroethane	SW 624	<1.0		ug/l	11-17-11
1,2-Dichloropropane	SW 624	<1.0		ug/l	11-17-11
2-Chloroethylvinyl Ether	SW 624	<5.0	EV	ug/l	11-17-11
Acrolein	SW 624	<25	EV	ug/l	11-17-11
Acrylonitrile	SW 624	<25		ug/l	11-17-11
Benzene	SW 624	<1.0		ug/l	11-17-11
Bromodichloromethane	SW 624	<1.0		ug/l	11-17-11
Bromoform	SW 624	<1.0		ug/l	11-17-11
Bromomethane	SW 624	<1		ug/l	11-17-11
Carbon Tetrachloride	SW 624	<1.0		ug/l	11-17-11
Chlorobenzene	SW 624	<1.0		ug/l	11-17-11
Chloroethane	SW 624	<1.0		ug/l	11-17-11
Chloroform	SW 624	3.1		ug/l	11-17-11
Chloromethane	SW 624	<1.0		ug/l	11-17-11
Dibromochloromethane	SW 624	<1.0		ug/l	11-17-11
Ethylbenzene	SW 624	<1.0		ug/l	11-17-11
Methylene Chloride	SW 624	<1.0		ug/l	11-17-11
Tetrachloroethylene	SW 624	<1.0		ug/l	11-17-11
Toluene	SW 624	<1.0		ug/l	11-17-11
Trichloroethylene	SW 624	<1.0		ug/l	11-17-11
Vinyl Chloride	SW 624	<1.0		ug/l	11-17-11
1,2-Dichloroethylene (cis)	SW 624	<1.0		ug/l	11-17-11
1,2-Dichloroethylene, (trans)	SW 624	<1.0		ug/l	11-17-11
cis-1,3-Dichloropropene	SW 624	<1.0		ug/l	11-17-11
trans-1,3-Dichloropropene	SW 624	<1.0		ug/l	11-17-11
1,2-Dichlorobenzene	SW 624	<1.0		ug/l	11-17-11
1,3-Dichlorobenzene	SW 624	<1.0		ug/l	11-17-11
1,4-Dichlorobenzene	SW 624	<1.0		ug/l	11-17-11



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LB & B ASSOCIATES

Re: CaSi File/Case/Log: 1174/113550-3551/3134

Samples Received: 11-15-11, 09:30

November 21, 2011

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PRIORITY POLLUTANTS: BASE/NEUTRAL EXTRACTABLE FRACTION

CONTROL NUMBER		113551	FLAG	UNITS	ANALYSIS DATE
SAMPLE DESCRIPTION		EFFLUENT GRAB			
PARAMETER	METHOD	11-19-11 07:00			
1,2,4-Trichlorobenzene	SW 625	<5.0		ug/l	11-17-11
1,2-Diphenylhydrazine	SW 625	<5.0		ug/l	11-17-11
2,4,6-Trichlorophenol	SW 625	<5.0		ug/l	11-17-11
2,4-Dichlorophenol	SW 625	<5.0		ug/l	11-17-11
2,4- and 2,5-Dimethylphenol	SW 625	<10		ug/l	11-17-11
2,4-Dinitrophenol	SW 625	<25		ug/l	11-17-11
2,4-Dinitrotoluene	SW 625	<5		ug/l	11-17-11
2,6-Dinitrotoluene	SW 625	<5.0		ug/l	11-17-11
2-Chloronaphthalene	SW 625	<5.0		ug/l	11-17-11
2-Chlorophenol	SW 625	<5.0		ug/l	11-17-11
2-Nitrophenol	SW 625	<5.0		ug/l	11-17-11
Dichlorobenzidine 3, 3'	SW 625	<10	EV	ug/l	11-17-11
4,6-Dinitro-o-Cresol	SW 625	<15		ug/l	11-17-11
4-Bromophenyl Phenyl Ether	SW 625	<5.0		ug/l	11-17-11
4-Chlorophenyl Phenyl Ether	SW 625	<5.0		ug/l	11-17-11
4-Nitrophenol	SW 625	<20	CH	ug/l	11-17-11
Acenaphthene	SW 625	<5.0		ug/l	11-17-11
Acenaphthylene	SW 625	<5.0		ug/l	11-17-11
Anthracene	SW 625	<5.0		ug/l	11-17-11
Benzidine	SW 625	<50		ug/l	11-17-11
Benzo (a) Anthracene	SW 625	<5.0		ug/l	11-17-11
Benzo (a) Pyrene	SW 625	<5.0		ug/l	11-17-11
Benzo (b) + (j) Fluoranthene	SW 625	<5		ug/l	11-17-11
Benzo (g,h,i) Perylene	SW 625	<5.0		ug/l	11-17-11
Benzo (k) Fluoranthene	SW 625	<5		ug/l	11-17-11
bis (2-Chloroethoxy) Methane	SW 625	<5.0		ug/l	11-17-11
bis (2-Chloroethyl) Ether	SW 625	<5.0		ug/l	11-17-11
bis (2-Chloroisopropyl) Ether	SW 625	<5.0		ug/l	11-17-11
bis (2-Ethylhexyl) Phthalate	SW 625	<5.0		ug/l	11-17-11
Butyl Benzyl Phthalate	SW 625	<5.0		ug/l	11-17-11
Chrysene	SW 625	<5.0		ug/l	11-17-11



CONSULTING ANALYTICAL SERVICES INTERNATIONAL, INC.

2804 EAST BATTLEFIELD • SPRINGFIELD, MISSOURI 65804-4014 • 417.882.1017 • 417.882.1018

LB & B ASSOCIATES

Re: CaSi File/Case/Log: 1174/113550-3551/3134
 Samples Received: 11-15-11, 09:30

November 21, 2011

Page 5

PRIORITY POLLUTANTS: BASE/NEUTRAL EXTRACTABLE FRACTION, CONTINUED

CONTROL NUMBER		113551	FLAG	UNITS	ANALYSIS DATE
SAMPLE DESCRIPTION		EFFLUENT GRAB			
PARAMETER	METHOD	11-19-11 07:00			
Di-n-butylphthalate	SW 625	<5.0		ug/l	11-17-11
Di-n-octylphthalate	SW 625	<5.0		ug/l	11-17-11
Dibenzo (a,h) Anthracene	SW 625	<5		ug/l	11-17-11
Diethylphthalate	SW 625	<5.0		ug/l	11-17-11
Dimethylphthalate	SW 625	<5.0		ug/l	11-17-11
Fluoranthene	SW 625	<5.0		ug/l	11-17-11
Fluorene	SW 625	<5.0		ug/l	11-17-11
Hexachlorobenzene	SW 625	<5		ug/l	11-17-11
Hexachlorobutadiene	SW 625	<5		ug/l	11-17-11
Hexachlorocyclopentadiene	SW 625	<5.0	IV	ug/l	11-17-11
Hexachloroethane	SW 625	<5.0		ug/l	11-17-11
Indeno (1,2,3-cd) Pyrene	SW 625	<5.0		ug/l	11-17-11
Isophorone	SW 625	<5.0	IV, CH	ug/l	11-17-11
N-Nitrosodi-n-Propylamine	SW 625	<5.0		ug/l	11-17-11
N-Nitrosodimethylamine	SW 625	10		ug/l	11-17-11
N-Nitrosodiphenylamine	SW 625	<5.0		ug/l	11-17-11
Naphthalene	SW 625	<5.0		ug/l	11-17-11
Nitrobenzene	SW 625	<5.0		ug/l	11-17-11
p-Chloro-m-Cresol	SW 625	<5.0		ug/l	11-17-11
Pentachlorophenol	SW 625	<15		ug/l	11-17-11
Phenanthrene	SW 625	<5		ug/l	11-17-11
Phenol	SW 625	<5		ug/l	11-17-11
Pyrene	SW 625	<5.0	CL	ug/l	11-17-11

APPENDIX

MDL	Method Detection Limit.
AC	Analyzed by collector.
B	Analyte is also present in the method blank or load blank. The reported sample concentration has been blank corrected.
BF	The daily bromoform breakdown check for this QC batch and required for the trap used for this analysis did not meet the breakdown criteria.
C	Due to matrix interference(s) and/or high concentration(s) of analyte(s) present in the sample, dilution was required causing the spike level for the analyte to be below the reporting limit and/or below the lowest point of the calibration curve.
CC	This analyte is a method CCC compound and did not meet the continuing calibration method criteria.
CH	The continuing calibration verification (CCV) standard recovery for this analyte was above the method or SOP limit. The reported sample concentration may be biased high.
CL	The continuing calibration verification (CCV) standard recovery for this analyte was below the method or SOP limit. The reported sample concentration may be biased low.
E	Concentration or reporting limit is an estimated value. Matrix interferences and/or sample heterogeneity were noted at the time of sample analysis.
EB	BOD sample dilutions did not meet the "two and one" rule. The reported concentration is an estimated value.
EC	Exceeds method control limits. The reported concentration is an estimated value.
EM	Microbiological sample dilutions did not produce colony densities falling in the ideal range. The reported concentration is an estimated value.
EV	Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.
H	Sample holding time exceeded.
HP	Regulatory preparation holding time for this analysis was exceeded.
HS	Headspace was present in VOC vial with a bubble size greater than approximately 6mm in diameter.
IC	The calibration curve for this analyte did not meet the method calibration criteria. The reported sample concentration is estimated.
IL	Due to matrix interference(s), one or more internal standards for this analysis were below the method control limit. The reported sample concentration may be biased high.
IV	The initial calibration verification (ICV) standard for this analyte was above the method or SOP limit. The reported sample concentration is estimated.
IX	Due to matrix interferences, the surrogate(s) and/or MS/MSD analyte(s) did not meet method qualitative criteria or were subject to chromatographic peak distortion(s). The reported sample concentration for each analyte is estimated.
IY	The initial calibration verification (ICV) standard recovery for this analyte was below the method or SOP limit. The reported sample concentration is estimated.
JC	The reporting limit standard for this analyte was not included in the calibration curve. The result or non-detect value is an estimated value above the MDL. A detectable result has not been verified quantitatively.
L	Reporting limit higher than normal due to limited sample volume available.
LL	The Laboratory Control Sample (LCS) recovery for this analyte was below the method or laboratory quality control limit. The reported sample concentration may be biased low.
LH	The Laboratory Control Sample (LCS) recovery for this analyte was above the method or laboratory quality control limit. The reported sample concentration may be biased high.
LM	The Laboratory Control Sample for this analyte was not within the laboratory or method quality control limit. The recovery was within one standard deviation of the limit. This marginal exceedance is statistically likely and acceptable by NELAP.
M	Reporting limit higher than normal due to matrix interferences.
MB	The Matrix Spike and Matrix Spike Duplicate for this analyte were below the method or laboratory control limit. The reported sample concentration is estimated.
MH	The MS and/or MSD recovery for this analyte was above the method or laboratory control limit. The reported sample concentration is estimated.
MI	Due to sample heterogeneity and/or sample matrix interferences, the MS and/or MSD recovery for this analyte did not meet the method or laboratory control limits. The reported sample concentration is estimated.
ML	The MS and/or MSD recovery for this analyte was below the method or laboratory control limit. The reported sample concentration is estimated.
MP	The MS/MSD recoveries for this analyte exceeded the method or laboratory precision control limit. The reported sample concentration is estimated.
MV	An MS/MSD was performed on this sample and the spike level was insignificant relative to the concentration of the analyte in the sample and/or sample heterogeneity was noted at the time of analysis. Reported concentration is an estimated value.
OC	The response for this analyte exceeded the calibration range of the instrument.
P	Exceeds quality control limits. Insufficient sample volume remained for duplicate preparation and analysis.
PF	The MS and/or MSD for this sample did not meet laboratory control limits. The PDS (post-digested spike) did not meet method criteria. The reported sample concentration is estimated.
RB	Reported concentration is below the reporting limit but within the instrument calibration range and above the calculated MDL.
SI	One or more surrogate recoveries for this analysis were not within the method or laboratory control limits. The sample result(s) or reporting limit(s) for this analysis are estimated due to sample heterogeneity and/or sample matrix interferences.
SL	The surrogate recovery for this analysis was below the method or laboratory control limits. The reported sample concentration may be biased low.
X	This sample does not match the typical chromatographic pattern for this petroleum product.
Y	Recommended sample preservation procedure was not followed or was inadequate to this sample matrix.

CASI CHAIN OF CUSTODY DOCUMENTATION

(PLEASE DO NOT WRITE IN SHADED AREAS)

CLIENT: LB & B ASSOCIATES

MAILING ADDRESS: Building 2220, Door 9 Fort Leonard Wood, MO 65473

PHONE: FAX: EMAIL:

SHIPPING ADDRESS:

REPORT TO: Fred Stafford P.O. # FIC 333252

LAB USE ONLY: COOLER BOX MAIL COURIER WALK IN OTHER

PACKING: *DESIGNS* LABELS: *NOS* COOLER NUMBER *Casi*

BROKEN/LEAKING CONTAINERS SEAL INTACT

VOA BUBBLES PRESERVATIVE ADEQUATE Y N

SAMPLE ON CHAIN NOT RECEIVED COOLER TEMP. °C

DISCREPANCIES: SAMPLE DATA CONTAINER DATA

DESCRIPTION (Effluent, Stormwater, Sludge) DATE Collected TIME Collected G C M TYPE # PRESERVATIVE

Wastewater 1/19/11 7:50 X 500 P 1 HNO₃ X

Wastewater 1/19/11 2:26 X 1000 G 1 None/Amber X

Wastewater 1/19/11 9:00 X 40 G 1 HCl X

Wastewater 1/19/11 1:15 X 500 P 1 NaOH X

Wastewater 1/19/11 1:15 X 500 G 1 CuSO₄/H₂SO₄ X

REMARKS: 1 of 3 violable vials broken

RELINQUISHED BY: (SIGNATURE) DATE TIME RECEIVED BY: (SIGNATURE)

RELINQUISHED BY: (SIGNATURE) DATE TIME RECEIVED BY: (SIGNATURE)

CONSULTING ANALYTICAL SERVICES INTERNATIONAL INCORPORATED

2804 EAST BATTLEFIELD ROAD SPRINGFIELD, MISSOURI 65804

PHONE: 417-882-1017 FAX: 417-882-1018 EMAIL: lberger@casilab.com

LISA C. BERGER, M.S., President

FILE/CASE/LOG: 1174/135580-3551 3134

PROJECT DESCRIPTION:

SAMPLED BY: *STAFFORD*

STANDARD (2-3 WEEKS) PRIORITY (7 WORKING DAYS) EMERGENCY (3 WORKING DAYS)

TEMP DATE: TIME: PERMIT #

ANALYTICAL TESTS REQUESTED

Priority Pollutant Metals + Ca Mg

Priority Pollutant Extractables

Priority Pollutant Volatiles

Cyanide

Total Phenolics

FLOW DATA:

CHLORINE:

CONTROL NO.

SAMPLES ARE DISCARDED SOON AFTER ANALYSIS, UNLESS PRIOR ARRANGEMENTS ARE MADE. SAMPLES THAT CANNOT BE DISPOSED TO THE POTW, OR SANITARY LANDFILL WILL BE RETURNED TO THE CLIENT.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP		PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A. Number of Non-Categorical SIUs		B. Number of CIUs	
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME			
MAILING ADDRESS			CITY
		STATE	ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU'S DISCHARGE.			
Boiler Treatment			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S)			
MSD provided			
RAW MATERIAL(S)			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent <i>See Attached Blue Down Chart</i>			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C. gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits		<input type="checkbox"/> Yes	<input type="checkbox"/> No
B. Categorical Pretreatment Standards		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

Part F

Boiler Blow Down Chart

FT. LEONARD WOOD ESTIMATED STEAM BOILER BLOW DOWN RATE, GPY 2.24.14							
BLDG.	BLR.	#STM/ HOUR	#B/D / HOUR	GAL / HOUR	GAL / DAY*	DAYS/ YEAR*	GPY <small>x 1,000,000</small>
311	1	12,554	900	108	2,590	150	0.388
311	2	16,112	1,143	137	3,289	150	0.493
311	3	17,250	1,224	146	3,522	150	0.528
3201	1	15,975	1,133	136	3,260	150	0.489
3201	2	15,975	1,133	136	3,260	150	0.489
3201	3	3,905	277	33	799	150	0.120
3201	4	3,905	277	33	799	150	0.120

* 24 Hours per Day
 Steam Boilers Are Regularly Rotated For Duty

MATERIAL SAFETY DATA SHEET

ALKALINITY BOOSTER AC 250

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1

MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2

PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 250
TRADE NAME OR CHEMICAL NAME... ALKALINITY BOOSTER AC 250
SYNONYMS..... NA
CHEMICAL FAMILY..... Water Treatment Additive
NFPA - HEALTH HAZARD..... 3
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 1
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA- Not Applicable ND- Not Determined

SECTION 3

HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC. 313	CARCINOGEN?
Sodium Hydroxide	1310-73-2	45-55	2 mg/m3	2 mg/m3	No	No

SECTION 4

SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... Sodium Hydroxide, Solution
D.O.T. HAZARD CLASS..... 8
D.O.T. LABELS REQUIRED..... Corrosive
UN/NA I.D. NUMBER..... UN 1824
PACKAGING GROUP..... II
NON BULK SHIPPING NAME..... Sodium Hydroxide, Solution, 8, UN 1824, PG II
BULK SHIPPING NAME..... Same

SECTION 5

PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 266-284°F (130-140°C) / 50-54°F (10-12°C)
pH..... >13.0
VAPOR PRESSURE mm. Hg @20° C..... Similar to water
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 48-55
SPECIFIC GRAVITY @20°C..... 1.50
SOLUBILITY IN WATER..... Miscible
EVAPORATION RATE..... (Water=1) ND
APPEARANCE AND ODOR..... None.

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... None
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (% V)..... NA

ALKALINITY BOOSTER AC 250

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA... Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES... Cool containers with water but note chemical is water reactive.
UNUSUAL FIRE & EXPLOSION HAZARDS... Contact with reactive metals (aluminum) may result in the generation of flammable hydrogen gas.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY... Stable
Conditions to Avoid... Avoid contact with acids, nitrogen containing organics, carbohydrates, phosphorous, explosives, organic peroxides, aluminum, tin, and zinc.
CHEMICAL INCOMPATIBILITY... NA
HAZARDOUS DECOMPOSITION PRODUCTS... Carbon monoxide with carbohydrates, hydrogen with aluminum, zinc and tin.
HAZARDOUS POLYMERIZATION... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Contact with the skin is irritating, and can result in chemical burns.
EYE CONTACT... Contact with the eyes is very irritating, resulting in chemical burns and possible vision loss.
INHALATION... Irritating to the nose, throat, mouth and lungs. May also cause burns to the respiratory tract which can cause shortness of breath, wheezing, choking, chest pain, and result in permanent lung damage.
INGESTION... Irritation and possible scarring of mucousal linings. Can cause burns to the entire gastrointestinal tract.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN... Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES... Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION... If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Neutralize with dilute acidic material and flush with water to sanitary sewer.
WASTE DISPOSAL METHOD... Corrosive. Dispose of in accordance with federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... Yes. Hazardous Waste Number: D002
CONTAINER DISPOSAL... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with all regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Respirator not required with most applications.
VENTILATION... Local exhaust is generally sufficient to minimize exposure.
PROTECTIVE CLOTHING... Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION... Chemical goggles.
OTHER PRECAUTIONS... Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC201A

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 201A
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC201A
SYNONYMS..... Catalyzed Sodium Sulfite
CHEMICAL FAMILY..... Internal Boiler Water Treatment
NFPA - HEALTH HAZARD..... 1
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC. 313	CARCINOGEN?
None	NA	-	NA	NA	No	NA

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON-BULK SHIPPING NAME..... Compounds, Boiler Cleansing, Dry
BULK SHIPPING NAME..... NA

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... NA
pH..... 8.5 (1% Solution)
VAPOR PRESSURE mm Hg @20° C..... NA
VAPOR DENSITY (Air = 1)..... NA
PERCENT VOLATILE BY WEIGHT (%)..... NA
SPECIFIC GRAVITY @20°C..... NA
SOLUBILITY IN WATER..... Appreciable
EVAPORATION RATE..... NA
APPEARANCE AND ODOR..... Off-white to tan free flowing powder with characteristic odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR % V..... NA

BOILER WATER TREATMENT AC201A

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA..... Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... Oxides of sulfur may be liberated in very hot fires.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... NA
CHEMICAL INCOMPATIBILITY..... NA
HAZARDOUS DECOMPOSITION PRODUCTS... Sulfur dioxide
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... May cause skin irritation.
EYE CONTACT... May cause irritation.
INHALATION... May cause mild irritation.
INGESTION... May cause mild irritation.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN..... Wash exposed skin with soap and water. Launder contaminated clothing before reuse.
EYES..... Promptly flush eyes with large amounts of water. Get medical attention if any discomfort persists.
INGESTION... If swallowed, INDUCE VOMITING. Get medical attention. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Get medical attention if indicated.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Carefully sweep up and place in suitable containers for proper disposal. Flush residues with water to sanitary sewer.
WASTE DISPOSAL METHOD..... Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... NA
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION..... Approved filter type mask for dusts as needed.
VENTILATION..... Local exhaust is generally sufficient.
PROTECTIVE CLOTHING..... Chemical resistant gloves may be worn, but not required.
EYE PROTECTION..... Chemical goggles.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

RETURN LINE TREATMENT AC 210



Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

UNSPC NUMBER: A 210
TRADE NAME & GENERIC NAME: RETURN LINE TREATMENT AC 210
SYNOPSIS: FACILITY
GENERIC FAMILY: Return Line Treatment
NFPA HEALTH HAZARD: 2
FIRE HAZARD:
REACTIVITY HAZARD:
NFPA HAZARD: 4 Extreme 2 Moderate 1 Slightly 0 Insignificant
PEY: NA= Not Applicable, ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME	CAS NUMBER	WT	FLV TWA	REL	SPC 311	CARCINOGEN
Dialdehydeset hard	199-37-8	440	10 ppm	10 ppm	No	No
Di-nonylamine	109-91-8	415	10 ppm	10 ppm	No	No

SECTION 4 SHIPPING DATA

DOT PROPER SHIPPING NAME: NA
DOT HAZARD CLASS: NA
DOT LABELS REQUIRED: NA
UNDOT NUMBER: NA
DOT HAZARD GROUP: NA
DOT PROPER SHIPPING NAME: Compound, Solid, Oxidant, Irritant, Toxic
DOT SHIPPING NAME: Same

SECTION 5 PHYSICAL DATA

SOLUBILITY IN WATER: Insoluble
PH: 10-11
VAPOR PRESSURE @ 20°C: 0.001 mm Hg
VAPOR DENSITY: 1.0
PERCENT SOLUBLE BY WEIGHT: 100
SPECIFIC GRAVITY @ 20°C: 1.04
BOILING POINT @ 760 mm Hg: 200°C
FLASH POINT: 100°C
APPEARANCE AND ODOR: Water white to pale yellow liquid with amine odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE LIMITS: Lower: 1.5% Upper: 10.0%
AUTOFLAMMABILITY: 100°C

RETURN LINE TREATMENT AC 210

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

FLAMMABILITY (GASES OR VAPORS) No
EXTINGUISHING MEDIA Water
SPECIAL FIRE FIGHTING PROCEDURES Wear self-contained breathing apparatus and protective clothing
INITIAL FIRE & EXPLOSION HAZARDS NA

SECTION 7

REACTIVITY DATA

STABILITY Stable
HAZARDOUS REACTION NA
DECOMPOSITION TEMPERATURE 500 F (260 C)
HAZARDOUS DECOMPOSITION PRODUCTS Carbon monoxide, carbon dioxide, and nitrogen oxides.
HAZARD OF POLYMERIZATION Will not polymerize

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT May cause severe irritation upon contact
EYES May cause severe irritation upon contact
INHALATION High concentrations of fumes may be irritating. May cause nausea and vomiting.
INGESTION May cause nausea, vomiting and/or abdominal pain.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops get medical attention. Launder contaminated clothing before reuse.
EYES Flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SOIL OR LEAF RESIDUES Avoid skin contact and keep upwind. Eliminate ignition sources. Absorb with sand or inert material and place in suitable container for disposal. Do not discharge into waterways.
HAZARDOUS WASTE DISPOSAL NA
CONTAINER DISPOSAL Empty containers may contain residues. Thoroughly clean, then after the required number of disposal in accordance with government regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE EQUIPMENT NIOSH/MSHA approved respirator required to be worn in areas needed to maintain level
VENTILATION Local and/or mechanical exhaust to maintain exposure below PEL.
CLOTHING REQUIREMENTS Protective clothing, boots, gloves necessary to prevent skin contact.
EYE PROTECTIVE EQUIPMENT Safety glasses and face shield.
TYPE OF FACILITY Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is consistent with the warranty expressed in MSDS 1. It is that of our knowledge to the best of our knowledge. The information does not constitute an offer of insurance or any other financial product. Manufacturer assumes no responsibility for the use of this information.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC 204

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 204
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC 204
SYNONYMS..... Liquid Phosphate
CHEMICAL FAMILY..... Internal Boiler Water Treatment
NFPA HEALTH HAZARD..... 0
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC 313	CARCINOGEN?
None	NA	NA	NA	NA	No	NA

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON BULK SHIPPING NAME... Compounds, Boiler Cleansing, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 220°F (105°C) / 20°F (-7°C)
pH..... 6.0
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 65
SPECIFIC GRAVITY @20°C..... 1.397
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Water white, odorless liquid.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (% V)..... NA

BOILER WATER TREATMENT AC 204

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA... Not combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY... Stable
Conditions to Avoid... NA
CHEMICAL INCOMPATIBILITY... NA
HAZARDOUS DECOMPOSITION PRODUCTS... NA
HAZARDOUS POLYMERIZATION... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Extended contact may cause skin irritation in extremely sensitive people.
EYE CONTACT... May cause irritation.
INHALATION... Irritation unlikely.
INGESTION... Irritation unlikely.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN... Wash exposed skin with soap and water. Launder contaminated clothing before reuse.
EYES... Promptly flush eyes with large amounts of water. Get medical attention if any discomfort persists.
INGESTION... If swallowed, DO NOT INDUCE VOMITING. Get medical attention. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Get medical attention if indicated.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Flush with water to sanitary sewer.
WASTE DISPOSAL METHOD... Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... NA
CONTAINER DISPOSAL... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Respirator not required.
VENTILATION... Local exhaust is sufficient.
PROTECTIVE CLOTHING... Chemical resistant gloves may be worn, but not required.
EYE PROTECTION... Safety glasses with shields or chemical goggles.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC 604

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER: AC 604
TRADE NAME OR CHEMICAL NAME: BOILER WATER TREATMENT AC 604
SYNONYMS: K1086 1
CHEMICAL FAMILY: Internal Boiler Water Treatment
NFPA HEALTH HAZARD: 1
FLAMMABILITY HAZARD: 0
REACTIVITY HAZARD: 1
NFPA STATEMENT: 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant
KEY: NA-Not Applicable ND-Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	REL.	SEC. 313	CARCINOGEN
None	NA	NA	NA	NA	No	NA

SECTION 4 SHIPPING DATA

UNSP. PRODUCT SHIPPING NAME: NA
UNSP. HAZARD CLASS: NA
UNSP. LABELS REQUIRED: NA
UNSP. NA 111 NUMBER: NA
UNSP. HAZARD GROUP: NA
NA 111 SHIPPING NAME: Compounds, Boiler Treating, liquid
UNSP. SHIPPING NAME: Same

SECTION 5 PHYSICAL DATA

REL. VAPOR PRESSURE (mm Hg) @ 20°C: ND
BP (mm Hg): 4.5/0.5
VAPOR PRESSURE (mm Hg) @ 100°C: ND
VAPOR DENSITY (AIR = 1): 1.1
PERCENT VOLATILE BY WEIGHT: 100
SPECIFIC GRAVITY (WATER = 1): 1.09
SOLUBILITY IN WATER: Complete
EVAPORATION RATE: Water 10/100
APPEARANCE AND ODOR: Amber liquid with faint acrylate odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (COP. METHOD): NA
AUTOIGNITION TEMPERATURE: NA
CORROSIVITY LIMITED IN WATER: NA

BOILER WATER TREATMENT AC 604

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA... Not Combustible Info
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY... Stable
CONDITIONS TO AVOID... NA
CHEMICAL INCOMPATIBILITY... NA
HAZARDOUS DECOMPOSITION PRODUCTS... NA
HAZARDOUS POLYMERIZATION... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... May cause skin irritation
EYE CONTACT... May cause irritation
INHALATION... Metals may cause irritation to nose and throat
INGESTION... May cause nausea

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN... Wash exposed skin with soap and water... Launder contaminated clothing before reuse
EYES... Promptly flush eyes with large amounts of water... Get medical attention if any discomfort persists
INGESTION... IF SWALLOWED, INDUCE VOMITING... Get medical attention... Never give anything by mouth to an unconscious person
INHALATION... Move to fresh air... Get medical attention if indicated

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact... Flush with large amounts of water to sanitary sewer
WASTE DISPOSAL METHOD... Dispose of in accordance with all federal, state and local regulations
HAZARDOUS WASTE CHARACTERISTICS... NA
CONTAINER DISPOSAL... Empty containers may contain residues... Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Best practice not required with best applications
VENTILATION... Local exhaust is generally sufficient to minimize exposure
PROTECTIVE CLOTHING... Respirator gloves, apron, boots as necessary to prevent skin contact
EYE PROTECTION... Chemical splash
OTHER PRECAUTIONS... Safety shower and eyewash fountains should be easily accessible

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or interpretation of this data.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC 255

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 255
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC 255
SYNONYMS..... K12035 /
CHEMICAL FAMILY..... Oxygen Scavenger
NFPA HEALTH HAZARD..... 1
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC. 313	CARCINOGEN?
Sodium Bisulfite	7681-57-4	<20	5 mg/m3	5 mg/m3	No	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON BULK SHIPPING NAME..... Compounds, Boiler Cleansing, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT #/60 mmHg... 112°F (-100°C) / ND
PH..... 7.5
VAPOR PRESSURE mm Hg @20°C..... ND
VAPOR DENSITY (AIR = 1)..... ND
PERCENT VOLATILE BY WEIGHT (V)..... 80
SPECIFIC GRAVITY @20°C..... 1.20
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Pink liquid with characteristic odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (L & U)..... NA

BOILER WATER TREATMENT AC 255

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA

Not Combustible

SPECIAL FIRE FIGHTING PROCEDURES: Oxides of sulfur may be liberated in very hot fire. Wear self contained breathing apparatus.

INDUSTRIAL FIRE & EXPLOSION HAZARD DATA: NA

SECTION 7

REACTIVITY DATA

STABILITY OR REACTIVITY: Stable

Conditions to Avoid: Temperature above 110°F (100%)

CHEMICAL INCOMPATIBILITY: Strong acids, strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of sulfur

HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT: May cause irritation upon contact

EYE CONTACT: May cause irritation upon contact

INHALATION: May cause breathing difficulties in sensitive individuals, particularly asthmatics

INGESTION: May cause irritation

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN: Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.

EYES: Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.

INGESTION: If swallowed, INVOKE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.

INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

GUIDE FOR LEAK PROCEDURES: Flush with large amounts of water to sanitary sewer.

WASTE DISPOSAL METHOD: Dispose of in accordance with all Federal, state and local regulations.

HAZARDOUS WASTE IDENTIFICATION: NA

WASTE DISPOSAL: Empty containers may contain residues. Thoroughly clean them after use for recycling, reuse, or dispose of in accordance with regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Respirator not required with most applications.

VENTILATION: Local exhaust is generally sufficient to minimize exposure.

PROTECTIVE CLOTHING: Neoprene gloves, apron, boots - as necessary to prevent skin contact.

EYE PROTECTION: Chemical goggles.

OTHER PRECAUTIONS: Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this page relates only to the specific material described herein. Manufacturer assumes no responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

BOILER WATER TREATMENT AC 2550



Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 2550
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC 2550
SYNONYMS..... NA
CHEMICAL FAMILY..... Oxygen Scavenger
NFPA HEALTH HAZARD..... 1
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PFL	SEC. 313	CARCINOGEN?
Sodium Bisulfite	7681-57-4	<20	5 mg/m3	5 mg/m3	No	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON BULK SHIPPING NAME..... Compounds, Boiler Cleansing, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / ND
PH..... 7.9
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (Wt)..... 85
SPECIFIC GRAVITY @20°C..... 1.19
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Clear liquid with characteristic odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (L & U)..... NA

SECTION 6**FIRE AND EXPLOSION HAZARD DATA**

CONT'D

EXTINGUISHING MEDIA..... Not Combustible
 SPECIAL FIRE FIGHTING PROCEDURES... Oxides of sulfur may be liberated in very hot fire. Wear self-contained breathing apparatus.
 UNUSUAL FIRE & EXPLOSION HAZARDS... NA

SECTION 7**REACTIVITY DATA**

PRODUCT STABILITY..... Stable
 Conditions to Avoid..... Temperatures above 212°F (100°C)
 CHEMICAL INCOMPATIBILITY..... Strong acids, strong oxidizers
 HAZARDOUS DECOMPOSITION PRODUCTS... Oxides of sulfur
 HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8**HEALTH HAZARD DATA**

SKIN CONTACT... May cause irritation upon prolonged contact.
 EYE CONTACT... May cause irritation upon contact.
 INHALATION... May cause breathing difficulties in sensitive individuals, particularly asthmatics.
 INGESTION... May cause irritation.

SECTION 9**EMERGENCY AND FIRST AID PROCEDURES**

SKIN.....Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
 EYES.....Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
 INGESTION...If swallowed, INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
 INHALATION... Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10**ENVIRONMENTAL DATA**

SPILL OR LEAK PROCEDURES... Flush with large amounts of water to sanitary sewer.
 WASTE DISPOSAL METHOD..... Dispose of in accordance with all federal, state and local regulations.
 HAZARDOUS WASTE 40CFR261... NA
 CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean then offer for recycling, reuse, or dispose of in accordance with regulations.

SECTION 11**SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION.....Respirator not required with most applications.
 VENTILATION.....Local exhaust is generally sufficient to minimize exposure.
 PROTECTIVE CLOTHING.....Neoprene gloves, apron, boots - as necessary to prevent skin contact.
 EYE PROTECTION.....Chemical goggles.
 OTHER PRECAUTIONS.....Safety shower and eyewash fountains should be easily accessible.

SECTION 12**SUPPLIER INFORMATION**

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



OXYGEN SCAVENGER AC201

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER: AC201
TRADE NAME OR NOMINAL NAME: OXYGEN SCAVENGER AC201
FORM: liquid white
CHEMICAL FAMILY: Internal Boiler Water Treatment
NFPA HEALTH HAZARD: 3
FLAMMABILITY HAZARD: 0
CORROSIVITY HAZARD: 0
NFPA REACTIVITY: 4 Extreme 3 High 2 Moderate 1 Slight 0 Insignificant
PEL: NA Not Applicable ND Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	PEL	SEC 31	CARCINOGEN
Sodium Bisulfite	7681-57-4	<15	5 mg/m3	5 mg/m3	No	No

SECTION 4 SHIPPING DATA

UNSPICED SHIPPING NAME: Bisulfite, Aqueous Solutions, N.O.S. (Sodium Bisulfite)
HAZARD CLASS: Toxic (6th Material, Class 6)
ANSI 481, Libb: 100, 100, 100, 100
UNNA: 1500
HAZARD CLASS: 6.1
NUN BULK SHIPPING NAME: Bisulfite, Aqueous Solutions, N.O.S. (Sodium Bisulfite), H, UN 2691, PG III
DOT SAFETY NAME: Bisulfite, Aqueous Solutions, N.O.S. (Sodium Bisulfite), H, UN 2691, PG III, SQ II 14, 199
lbs. of net in one package

SECTION 5 PHYSICAL DATA

UNSPICED NUMBER: 1500
Molecular Weight: 126.04
VAPOR PRESSURE mm Hg @ 20°C: ND
VAPOR DENSITY (Air = 1): ND
BOILING POINT BY WEIGHT: 60
SPECIFIC GRAVITY (20°C): 1.10
SOLUBILITY IN WATER: Complete
EVALUATION BASE: Water-soluble
APPEARANCE: Pink liquid with pungent odor

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY: NA
EXPLOSION: NA

OXYGEN SCAVENGER AC201

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

FLAMMABILITY LIMITS IN AIR: NA
EXTINGUISHING MEDIA: Not Combustible
SPECIAL FIRE FIGHTING CONSIDERATIONS: Oxides of sulfur may be liberated in very hot fire. Wear self-contained breathing apparatus.
INITIAL FIRE & EXPLOSION HAZARDS: NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY: Stable
Conditions to Avoid: Temperatures above 212°F (100°C)
CHEMICAL INCOMPATIBILITY: Strong acids, strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: oxides of sulfur
HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN IRRITANT: May cause irritation. Can be corrosive to the skin upon prolonged contact.
EYE IRRITANT: May cause irritation upon contact. Can be corrosive, causing severe burns.
INHALATION: May cause breathing difficulties in sensitive individuals, particularly asthmatics.
INGESTION: May cause irritation.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN: Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists, get prompt medical attention. Consider contaminated clothing as a source.
EYES: Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION: Do not swallow. INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SOIL & GROUNDWATER: Neutralize with appropriate alkaline material. Absorbent inert material and place in suitable container for proper disposal. Flush neutralizer residues to sanitary sewer.
WATER POLLUTION: Dispose of in accordance with applicable state and federal regulations.
HAZARDOUS WASTE: NA
CONTAINER DISPOSAL: Empty containers may contact water. Immediately clean thereafter for recycling or else dispose of in accordance with regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH MSHA approved air or cartridge respirator or equivalent approved respirator, quantity of flow.
VENTILATION: Local and/or mechanical exhaust to maintain exposure below PEL.
EYE PROTECTION: Wear full chemical safety glasses, as necessary to prevent eye contact.
SKIN PROTECTION: Chemical goggles and full face shield.
OTHER PRECAUTIONS: Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no responsibility for the use of this information.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC 610

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 610
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC 610
SYNONYMS..... NA
CHEMICAL FAMILY..... Internal Boiler Water Treatment
NFPA HEALTH HAZARD..... 1
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC. 313	CARCINOGEN?
None	NA	NA	NA	NA	NO	NA

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON-BULK SHIPPING NAME..... Compounds, Boiler Cleansing, liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / ND
pH..... 8.0-10.0
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (AIR = 1)..... 1
PERCENT VOLATILE BY WEIGHT (%)..... 95
SPECIFIC GRAVITY @20°C..... 1.03
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... light amber liquid with faint acrylic odor

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Pest Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (L/V)..... NA

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA... Not Combustible
 SPECIAL FIRE FIGHTING PROCEDURES... NA
 UNUSUAL FIRE & EXPLOSION HAZARDS... NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY... Stable
 Conditions to Avoid... NA
 CHEMICAL INCOMPATIBILITY... NA
 HAZARDOUS DECOMPOSITION PRODUCTS... NA
 HAZARDOUS POLYMERIZATION... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... May cause skin irritation
 EYE CONTACT... May cause irritation
 INHALATION... Mists may cause irritation to nose and throat.
 INGESTION... May cause nausea.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN... Wash exposed skin with soap and water. Launder contaminated clothing before reuse.
 EYES... Promptly flush eyes with large amounts of water. Get medical attention if any discomfort persists.
 INGESTION... If swallowed, INDUCE VOMITING. Get medical attention. Never give anything by mouth to an unconscious person.
 INHALATION... Move to fresh air. Get medical attention if indicated.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Flush with large amounts of water to sanitary sewer.
 WASTE DISPOSAL METHOD... Dispose of in accordance with all federal, state and local regulations.
 HAZARDOUS WASTE 49CFR261... NA
 CONTAINER DISPOSAL... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Respiration not required with most applications.
 VENTILATION... Local exhaust is generally sufficient to minimize exposure.
 PROTECTIVE CLOTHING... Neoprene gloves, apron, boots as necessary to prevent skin contact.
 EYE PROTECTION... Chemical goggles.
 OTHER PRECAUTIONS... Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP		PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A. Number of Non-Categorical SIUs		B. Number of CIUs	
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME			
MAILING ADDRESS		CITY	STATE ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU'S DISCHARGE.			
Cooling Tower			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S)			
MSD provided			
RAW MATERIAL(S)			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent <i>See attached cooling tower loss chart</i>			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C. gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits		<input type="checkbox"/> Yes	<input type="checkbox"/> No
B. Categorical Pretreatment Standards		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

PART F
Cooling Tower Water Loss Chart

FT. LEONARD WOOD ESTIMATED COOLING TOWER WATER LOSS VIA BLEED OFF, GPY 2.24.14					
TOWER	TONNAGE	GPM_{EVAP.}	GPM_{B/O}	DAYS/YR	GPY_{85% LOAD* x 1,000,000 gallon}
2369 (2)*	1,100 each	28.0/Chiller	28.0/Chiller	245*	8.40
1021	900	15.3	15.3	245	4.60
490	300	7.65	7.65	245	2.70
745 (2)*	800 each	20.4	20.4	245	7.20
311 (2)*	1,050 each	26.8	26.8	365	11.6
3200 (2)*	400 each	10.2	10.2	300	4.40
3203 (2)	1,000 each	25.2	25.2	300	10.8

- * Typically only one chiller on at any time.
 245 days (April 1 - October 31)
 Cycles of Concentration Calculated On Chlorides (vs Calculated On Conductivity)*
 Cycles of Concentration Calculated On Conductivity Can Be 50-75% Higher Than
 Calculated On Chlorides.
 Average Load Estimated @ 85%

MATERIAL SAFETY DATA SHEET



ACIDIC CLEANER AC 007

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER: AC 007
TRADE NAME OR CHEMICAL NAME: ACIDIC CLEANER AC 007
SYNONYMS: NA
CHEMICAL FAMILY: Acid Cleaner
NFPA - HEALTH HAZARD: 2
FIRE HAZARD: 0
REACTIVITY HAZARD: 1
NFPA STATE: 4-Extreme 3-High 2-Moderate 1-Light 0-Insignificant
PPE: NA= Not Applicable, NDA= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	PEL	SEC. 31	CARCINOGEN
Hydrochloric Acid	7647-01-0	<15	5 ppm	5 ppm	No	No

SECTION 4 SHIPPING DATA

UN 1799 PROPER SHIPPING NAME: Hydrochloric Acid, Solution
HAZARD CLASS: 8 (Corrosive Material)
UN NA I.D. NUMBER: UN 1799
PACKING GROUP: II
NON BULK SHIPPING NAME: Hydrochloric Acid, Solution, 5, UN 1799, PG II
BULK SHIPPING NAME: Same

SECTION 5 PHYSICAL DATA

APPEARANCE AND ODOR: Light yellow liquid with characteristic odor
MELTING POINT: NA
FREEZING POINT: NA
VAPOR PRESSURE: NA
VAPOR DENSITY: NA
PERCENT VOLATILE BY WEIGHT: NA
SPECIFIC GRAVITY: NA
SOLUBILITY IN WATER: Soluble
EVAPORATION RATE: Water Soluble
APPEARANCE AND ODOR: Light yellow liquid with characteristic odor

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLAMMABLE LIMIT (Test Method): NA
AUTOIGNITION TEMPERATURE: NA
FLAMMABILITY LIMITS IN AIR (%): NA

ACIDIC CLEANER AC 007

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA: Not combustible.
SPECIAL FIRE FIGHTING PROCEDURES: Material is not highly volatile. Beware of contact.
UNUSUAL FIRE & EXPLOSION HAZARDS: In airless spaces, intense heat from fires should be avoided with water to prevent vapor pressure build up which could result in container rupture.

SECTION 7

REACTIVITY DATA

REACTIVITY STABILITY: Stable.
Conditions to Avoid: None.
CHEMICAL INCOMPATIBILITY: Strong alkalis, soft metals, evolution of flammable gas.
HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes.
HAZARDOUS POLYMERIZATION: Will Not Occur.

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT: Irritation possible if in contact. May be absorbed through skin.
EYE CONTACT: Irritation upon contact, may cause burns upon prolonged contact.
INHALATION: Headache, "runny nose", cough, and irritation of throat and upper respiratory tract.
INGESTION: Nausea and vomiting.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN: Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES: Immediately flush eyes with large amount of water for 15 minutes and get medical attention.
INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

AVOID OR LEAK REMEDIES: Avoid skin contact. Neutralize with appropriate material and absorb with sand or inert material. Place into suitable container for disposal. Clean neutralized residues with water secondary to water.
WASTE DISPOSAL METHOD: Corrosive. Dispose in accordance with all federal, state and local regulations.
HAZARDOUS WASTE CHARACTERIZATION: Yes. Hazardous Waste Number: 3602.
CONTAINER DISPOSAL: Empty containers may contain residuals. Thoroughly clean, then either for recycling, reuse, or dispose in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH/MSHA approved can or cartridge respirator for gas and vapor as needed to maintain P.E.L.
VENTILATION: Local and/or mechanical exhaust to maintain exposure below P.E.L.
PROTECTIVE CLOTHING: Nonporous, acid, alkali, chemical resistant suits as necessary to prevent skin contact.
EYE PROTECTION: Safety goggles and/or face shield.
OTHER PRECAUTIONS: Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best of our knowledge and belief. The data on this sheet applies only to the specific material described herein. We do not assume any responsibility for use or misuse of this data.

DISPERSANT AC 700C

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA Use extinguishing media appropriate for surrounding fire.
NEARBY FIRE FIGHTING EQUIPMENT Use water spray to cool fire exposed containers. Wear self-contained breathing apparatus and full protective gear.
UNUSUAL FIRE & EXPLOSION HAZARDS Material can spatter above 212°F (100°C). Dried product can burn.

SECTION 7

REACTIVITY DATA

Stability Stable.
Reactivity Avoid temperatures above 300°F (150°C), polymer decomposition begins.
Chemical Incompatibility Strong oxidizing agents.
Hazardous Decomposition Products Incomplete combustion can yield carbon monoxide and various hydrocarbon residues.
Hazardous Polymerization Will not occur.

SECTION 8

HEALTH HAZARD DATA

Skin Contact Prolonged or repeated contact may cause slight skin irritation.
Eye Contact Eye contact may cause slight irritation.
Inhalation High concentrations of mists or vapors may cause headache, nausea, irritation of the nose and throat.
Ingestion Effects unknown. Product has a low order of oral toxicity.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

Spills Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Laundry contaminated clothing before reuse.
Eyes Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
Ingestion If swallowed, get medical attention immediately. Never give anything by mouth to an unconscious person.
Respiration Remove from area. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

Physical/Chemical Properties Floor may be slippery, use care to avoid falling. Spill clean up immediately with inert material and place in suitable container for proper disposal. Keep spills and cleaning residue out of municipal sewers and water ways.
Waste Disposal Methods Dispose of liquid waste and dissolved material in accordance with all federal, state and local regulations.
Hazardous Waste Labeling NA.
Container Disposal Empty containers may contain residuals. Thoroughly clean, then offer for recycling or reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

OSHA PEL (T) (C) (S) Respirator not required with most applications.
Respirators Full face respirator is generally indicated for nuisance exposure.
Respiratory Protection Respirator used, special tests are necessary to prevent eye irritation.
Eye Protection None required.
Other Precautions Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

Material is provided with full safety information, except that it is not intended for use as a pesticide. Material is provided for informational purposes only. The supplier disclaims any liability for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

DISPERSANT AC 601 C

Latest Revision Date...02/26/14

Print Date.....02/26/14

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, LLC.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 601C
TRADE NAME OR CHEMICAL NAME... DISPERSANT AC 601 C
SYNONYMS..... NA
CHEMICAL FAMILY..... Acrylic Polymer Blend
NFPA HEALTH HAZARD..... 1
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENT	CAS NO.	CONC.	HAZARD	CONC.	HAZARD	CONC.	HAZARD
None	NA	-	NA	NA	NA	No	NA

SECTION 4 SHIPPING DATA

DOT PROPER SHIPPING NAME... NA
DOT HAZARD CLASS... NA
DOT LABELS REQUIRED..... NA
UNSP. ID NUMBER..... NA
TRAINING GROUP..... NA
DOT UNL. SHIPPING NAME... Compound, Industrial Process Water Treating, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / ND
pH..... 4.8
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1).... >1
PERCENT SOLIDS BY WEIGHT (%).... 80
SPECIFIC GRAVITY @20°C..... 1.11
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... BUAC=1 <1
APPEARANCE AND ODOR..... Clear light yellow liquid with mild odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (% V)... NA

DISPERSANT AC 601 C

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA..... Not combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... Cool drums exposed to heat or fire to prevent steam rupture

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... Temperatures above 350°F (177°C) decomposition occurs.
CHEMICAL INCOMPATIBILITY..... NA
HAZARDOUS DECOMPOSITION PRODUCTS... None known
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Prolonged or repeated contact may cause irritation.
EYE CONTACT... May cause eye irritation upon contact.
INHALATION.... High concentration of mists or vapors may cause respiratory system irritation.
INGESTION..... May be harmful if swallowed.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN..... Wash exposed skin with soap and water. Launder contaminated clothing before reuse.
EYES..... Promptly flush eyes with large amounts of water. Get medical attention if any discomfort persists.
INGESTION... If swallowed, DO NOT INDUCE VOMITING. Get medical attention. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Get medical attention if indicated.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES. Avoid skin contact. Neutralize and absorb with sand or inert material. Store in suitable container for disposal. Flush neutralized residues to sanitary sewer.
WASTE DISPOSAL METHOD.... Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 40CFR261. NA
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean, then offer for recycling or reuse or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION..... NIOSH/MSHA approved filter type mask for dusts, fumes and mists as needed to maintain P.E.L.
VENTILATION..... Local and/or mechanical exhaust to maintain exposure below P.E.L.
PROTECTIVE CLOTHING..... Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION..... Chemical goggles.
OTHER PRECAUTIONS..... Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



BOILER WATER TREATMENT AC 7112

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 7112
TRADE NAME OR CHEMICAL NAME... BOILER WATER TREATMENT AC 7112
SYNONYMS..... NA
CHEMICAL FAMILY..... NA
NFPA - HEALTH HAZARD..... 2
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC. 313	CARCINOGEN?
Ethylene Glycol Monobutyl Ether	111-76-2	<25	20 ppm	20 ppm	Yes	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER..... NA
PACKAGING GROUP..... NA
NON BULK SHIPPING NAME..... Compound, Boiler Cleansing, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... >200°F (>93°C) / ND
pH..... 3.3-4.3
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... 0.1
PERCENT VOLATILE BY WEIGHT (A)..... 82
SPECIFIC GRAVITY @20°C..... 1.024
SOLUBILITY IN WATER..... Emulsifiable
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Clear viscous liquid with mild odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... 5200°F
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (L & U)..... NA

BOILER WATER TREATMENT AC 7112

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA..... Not combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... Cool fire exposed containers with water to prevent steam rupture.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... Contamination. Temperatures above 150°F.
CHEMICAL INCOMPATIBILITY..... Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS... Carbon dioxide, unidentified organic compounds may be formed during combustion.
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... May cause irritation upon prolonged contact.
EYE CONTACT... May cause irritation upon contact.
INHALATION.... Inhalation of mists may cause irritation
INGESTION..... May cause gastrointestinal upset.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN.....Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES.....Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION....If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION...Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Absorb spills onto sand or inert material and place into suitable containers for disposal. Do not flush into waterways.
WASTE DISPOSAL METHOD..... Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 49CFR261... NA
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION.....NIOSH/MSHA approved filter type mask for dusts, fumes and mists as needed to maintain P.E.L.
VENTILATION.....Local and/or mechanical exhaust to maintain exposure below P.E.L.
PROTECTIVE CLOTHING.....Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION.....Chemical goggles.
OTHER PRECAUTIONS..... Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

MICROBIOCIDES 4015



Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 4015
TRADE NAME OR CHEMICAL NAME... MICROBIOCIDES 4015
SYNONYMS..... NA
CHEMICAL FAMILY..... Microbiocide
NFPA HEALTH HAZARD..... 2
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant
KEY..... NA: Not Applicable ND: Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV-TWA	PEL	SEC 13	CARCINOGEN?
Discodium Ethylenebis(dithiocarbamate)	142-59-6	15	Not Established	Not Established	Yes	No
Sodium Dimethyldithiocarbamate	128-94-1	15	Not Established	Not Established	Yes	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... Environmentally Hazardous Substances, Liquid, N.O.S. Sodium Dimethyldithiocarbamate
D.O.T. HAZARD CLASS..... 9
D.O.T. LABELS REQUIRED..... Environmentally Hazardous
UN/NA I.D. NUMBER..... UN 1082
PACKAGING GROUP..... III
NON BULK SHIPPING NAME..... Disinfectants N.O.S.
BULK SHIPPING NAME..... Environmentally Hazardous Substances, Liquid, N.O.S. Sodium Dimethyldithiocarbamate, 9, UN 1082, PG III

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 220°F (104°C) / 32°F (0°C)
PH..... 11.5
VAPOR PRESSURE mm Hg @20°C..... NA
VAPOR DENSITY (Air = 1)..... Similar to water
PERCENT VOLATILE BY WEIGHT (30°C)..... 70
SPECIFIC GRAVITY @20°C..... 1.15
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Pale yellow to amber liquid with slight ammonia odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA

MICROBIOCIDES 4015

SECTION 6 FIRE AND EXPLOSION HAZARD DATA CONT'D

AUTOIGNITION TEMPERATURE... NA
FLAMMABILITY LIMITS IN AIR (L & U)... NA
EXTINGUISHING MEDIA... Not combustible
SPECIAL FIRE FIGHTING PROCEDURES... Self contained breathing apparatus may be required in fires within enclosed areas.
UNUSUAL FIRE & EXPLOSION HAZARDS... Hydrogen sulfide and flammable by products may be generated under extreme heat or contact with strong acids

SECTION 7 REACTIVITY DATA

PRODUCT STABILITY... Stable
Conditions to Avoid... NA
CHEMICAL INCOMPATIBILITY... Strong acids and oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS... Hydrogen sulfide, carbon disulfide, dimethylnitrosamines
HAZARDOUS POLYMERIZATION... Will not occur

SECTION 8 HEALTH HAZARD DATA

SKIN CONTACT... May cause irritation to skin.
EYE CONTACT... Will cause irritation upon contact with eyes
INHALATION... Mists may cause irritation.
INGESTION... Harmful if swallowed.

SECTION 9 EMERGENCY AND FIRST AID PROCEDURES

SKIN... Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES... Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION... If swallowed, get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10 ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Spills should be absorbed with sawdust or sand and disposed of properly. Do not discharge into waterways.
WASTE DISPOSAL METHOD... Pesticide. Improper disposal of pesticide wastes is a violation of Federal law. Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE ACCRETION... This product is an EPA registered pesticide. Contact the regional office of the EPA for guidance in proper disposal.
CONTAINER DISPOSAL... Empty containers may contain residuals. Triple rinse. Then offer for recycling, reconditioning or disposal in accordance with governmental regulations. See product label.

SECTION 11 SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Respirator not required with most applications.
VENTILATION... Local exhaust is generally sufficient to minimize exposure.
PROTECTIVE CLOTHING... Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION... Chemical goggles
OTHER PRECAUTIONS... Safety shower and eyewash fountains should be easily accessible.

SECTION 12 SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

CLOSED SYSTEM TREATMENT AC 301

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 301
TRADE NAME OR CHEMICAL NAME... CLOSED SYSTEM TREATMENT AC 301
SYNONYMS..... Liquid Nitrite
CHEMICAL FAMILY..... Corrosion Inhibitor
NFPA - HEALTH HAZARD..... 2
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4-Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	PEL	SEC.313	CARCINOGEN?
Sodium Nitrite	7632-00-0	<25	Not Established	Not Established	Yes	No
Sodium Hydroxide	1310 73 2	<3	2 mg/m3	2 mg/m3	No	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... Environmentally Hazardous Substance, Liquid, N.O.S. (Sodium Nitrite)
D.O.T. HAZARD CLASS..... Class 9
D.O.T. LABELS REQUIRED..... Miscellaneous
UN/NA I.D. NUMBER..... UN 3082
PACKAGING GROUP..... III
NON-BULK SHIPPING NAME..... Compound, Industrial Process Water Treating, Liquid
BULK SHIPPING NAME..... Environmentally Hazardous Substance, Liquid, N.O.S. (Sodium Nitrite), 9, UN 3082, PG III, RQ
(If 400 lbs. or more in one package)

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 215°F (102°C) / ND
pH..... 11.5-12.0
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 75
SPECIFIC GRAVITY @20°C..... 1.247
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Yellow-green liquid with characteristic odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA

CLOSED SYSTEM TREATMENT AC 301

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (% V).... NA
EXTINGUISHING MEDIA..... Not combustible
SPECIAL FIRE FIGHTING PROCEDURES... Wear self-contained breathing apparatus.
UNUSUAL FIRE & EXPLOSION HAZARDS... Oxides of nitrogen may be liberated in hot fire.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... Do not mix with acidic materials, oxides of nitrogen can be evolved.
CHEMICAL INCOMPATIBILITY..... Strong acids, strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS... Oxides of nitrogen
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Can cause irritation from alkali constituents.
EYE CONTACT... Can cause irritation and permanent injury if not rinsed immediately.
INHALATION.... Not a likely route of exposure.
INGESTION..... May cause irritation, internal injury.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN.....Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES.....Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION...If swallowed, INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION...Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Keep upwind. Avoid contact with material. Absorb with sand or inert material and place in suitable container for proper disposal. Do not flush into waterways.
WASTE DISPOSAL METHOD..... Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... NA
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION.....Respirator not required with most applications.
VENTILATION.....Local exhaust is generally sufficient to minimize exposure.
PROTECTIVE CLOTHING.....Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION.....Chemical goggles.
OTHER PRECAUTIONS.....Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

SILICA REMOVAL SOLUTION

Latest Revision Date...12/21/12

Print Date.....01/14/14

SECTION 1

MANUFACTURER INFORMATION

AquaComp Water Treatment Services, LLC.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2

PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC SRS
TRADE NAME OR CHEMICAL NAME.. SILICA REMOVAL SOLUTION
SYNONYMS..... NA
CHEMICAL FAMILY..... Alkaline Cleaner
NFPA - HEALTH HAZARD... 3
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3

HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	PEL	SEC 313	CARCINOGENY
Sodium Hydroxide	1310-73-2	<10	2 mg/m3	2 mg/m3	No	No

SECTION 4

SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... Corrosive Liquid, Basic, Inorganic, N.O.S. (Sodium Hydroxide)
D.O.T. HAZARD CLASS..... Corrosive Material Class
D.O.T. LABELS REQUIRED..... Corrosive
UN/NA I.D. NUMBER..... UN 3266
PACKAGING GROUP..... II
NON-BULK SHIPPING NAME..... UN 3266, Corrosive Liquid, Basic, Inorganic, N.O.S. (Sodium Hydroxide) 8, PG II
BULK SHIPPING NAME..... UN 3266, Corrosive Liquid, Basic, Inorganic, N.O.S. (Sodium Hydroxide) 8, PG II, RQ (if 10,000 lbs. or more in one package)

SECTION 5

PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / ND
pH..... 13.4
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 90
SPECIFIC GRAVITY @20°C..... 1.05
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) =1
APPEARANCE AND ODOR..... Nearly colorless liquid with faint odor.

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method) None
AUTOIGNITION TEMPERATURE.. NA

SILICA REMOVAL SOLUTION

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

FLAMMABILITY LIMITS IN AIR (4 V)... NA
EXTINGUISHING MEDIA..... Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES... No special procedures.
UNUSUAL FIRE & EXPLOSION HAZARDS... No unusual hazards.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... NA
CHEMICAL INCOMPATIBILITY..... May react with soft metals forming hydrogen gas.
HAZARDOUS DECOMPOSITION PRODUCTS... None Known
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Continued exposure can cause irritation to the skin. May be corrosive and cause burns.
EYE CONTACT... Contact will be very irritating to the eyes. Can be corrosive and cause burns.
INHALATION... Mists may be irritating and cause burns to the respiratory system.
INGESTION... Irritation and possible scarring of mucosal linings.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN..... Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES..... Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION... If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Aid in breathing if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Neutralize with dilute acidic material and flush with water to sanitary sewer.
WASTE DISPOSAL METHOD..... Corrosive. Dispose of in accordance with federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... Yes. Hazardous Waste Number: D002
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean then offer for recycling, reuse or disposal in accordance with all regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION.....Respirator not required with most applications.
VENTILATION.....Local exhaust is generally sufficient to minimize exposure
PROTECTIVE CLOTHING.....Neoprene gloves, apron, boots as necessary to prevent skin contact.
EYE PROTECTION.....Chemical goggles.
OTHER PRECAUTIONS.....Safety shower and eyewash fountains should be easily accessible

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET

COOLING WATER TREATMENT AC 500C



Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2 PRODUCT IDENTIFICATION

TRADE NAME OR CHEMICAL NAME: COOLING WATER TREATMENT AC 500C
SYNONYMS: K2251
CHEMICAL FAMILY: Scale and Corrosion Treatment
NFPA HEALTH HAZARD: 3
FIRE HAZARD: 3
REACTIVITY HAZARD: 0
NFPA CORROSIVITY: 4-Liquid, 4-High, 2-Moderate, 1-Slight, 0-Insignificant
FPE: NA= Not Applicable, ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV, TWA	PEL	SEC. 41	CARCINOGEN
Polymaleic Acid	26099-09-2	10	Not Established	Not Established	No	No
Sulfuric Acid	7664-93-9	5	1 mg/m3	1 mg/m3	Yes	No

SECTION 4 SHIPPING DATA

PROPER SHIPPING NAME: Corrosive Liquid, N.O.S. Sulfuric Acid, Polymaleic Acid
HAZARD CLASS: Corrosive, Liquid, Class 8
LABELS REQUIRED: Corrosive
UN NA ID NUMBER: 1790
PACKAGING GROUP: II
MAIN ICA SHIPPING NAME: Corrosive Liquid, N.O.S. Sulfuric Acid, Polymaleic Acid, UN 1790, PG II
MUNICIPALITY NAME: Same

SECTION 5 PHYSICAL DATA

APPEARANCE AND ODOR: Light yellow liquid with characteristic burnt sulfur odor
VAPOR PRESSURE (mm Hg) (20°C): ND
VAPOR DENSITY (air = 1): ND
PERCENT VOLATILE BY WEIGHT: ND
SPECIFIC GRAVITY (water = 1): 1.14
SOLUBILITY IN WATER: Soluble
EVAPORATION RATE: Water = 1
APPEARANCE AND ODOR: Light yellow liquid with characteristic burnt sulfur odor

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: T.B. Method NA
AUTOIGNITION TEMPERATURE: NA

COOLING WATER TREATMENT AC 500C

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

FLAMMABILITY LIMITS IN AIR... NA
EXTINGUISHING MEDIA... Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY... Stable
Conditions to Avoid... Temperatures above 212°F (100°C)
CHEMICAL INCOMPATIBILITY... NA
HAZARDOUS DECOMPOSITION PRODUCTS... May form toxic materials, carbon monoxide, carbon dioxide, and oxides of nitrogen.
HAZARDOUS POLYMERIZATION... Will Not occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... May cause skin irritation upon extended contact
EYE CONTACT... May cause irritation and burns upon contact
INHALATION... Irritating to nose and throat
INGESTION... Not determined

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN... Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES... Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION... If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION... Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Neutralize and absorb with sand or inert material. Place in suitable container for disposal. Flush neutralized residue with water to sanitary sewer.
HAZARDOUS WASTE METHOD... Corrosive. Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE LABELING... Yes. Hazardous Waste Number: 3142
CONTAINER DISPOSAL... Empty containers may contain residues. Do a thorough clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION... Respirator not required with most applications.
VENTILATION... Local exhaust is generally sufficient to minimize exposure.
EYE PROTECTION... Respirator gloves, apron, boots, as necessary to prevent skin contact.
EAF PROTECTION... Chemical resistant.
OTHER PRECAUTIONS... Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

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MATERIAL SAFETY DATA SHEET



AC-4010

Latest Revision Date...06/15/09

Print Date.....06/23/09

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

For CHEMICAL EMERGENCY
Call INFOTRAC @ 1-800-535-5053
24 Hrs/ Day, 7 Days/Week

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 4010
TRADE NAME OR CHEMICAL NAME... AC 4010
SYNONYMS NA
CHEMICAL FAMILY..... Organic Microbiocide
NEPA - HEALTH HAZARD..... 3
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NEPA SCALE..... 4-Extreme 3-High 2=Moderate 1-Slight 0-Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV TWA	PEL	SEC 313	CARCINOGEN?
Sodium Hydroxide	1310-73-2	<5	2 mg/m3	2 mg/m3	No	No
Tetrahydro Dimethyl Thiadiazinethione	533-74-4	<30	Not Established	Not Established	Yes	No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... Corrosive Liquid, Basic, Organic, N.O.S. (Sodium Hydroxide)
D.O.T. HAZARD CLASS..... Corrosive Material Class 8
D.O.T. LABELS REQUIRED..... Corrosive
UN/NA I.D. NUMBER..... UN 3267
PACKAGING GROUP..... II
NON-BULK SHIPPING NAME..... Corrosive Liquid, Basic, Organic, N.O.S. (Sodium Hydroxide), 8, UN 3267, PG II
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / ND
pH..... 13.4
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 70
SPECIFIC GRAVITY @20°C..... 1.16
SOLUBILITY IN WATER..... Complete
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Yellow to light green liquid with pungent odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... <200°F (Pensky Martens)
AUTOIGNITION TEMPERATURE..... NA

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

FLAMMABILITY LIMITS IN AIR (L V) ... NA
EXTINGUISHING MEDIA..... Not Combustible
SPECIAL FIRE FIGHTING PROCEDURES... NA
UNUSUAL FIRE & EXPLOSION HAZARDS... Material is strongly alkaline. Beware of exploding drums due to expansion.

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY..... Stable
Conditions to Avoid..... NA
CHEMICAL INCOMPATIBILITY..... Strong acids and temperatures above 212°F.
HAZARDOUS DECOMPOSITION PRODUCTS... Carbon disulfide and hydrogen sulfide may form.
HAZARDOUS POLYMERIZATION..... Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT... Severe skin irritant which may cause burns depending upon contact time and temperature.
EYE CONTACT... Immediate irritation and burns can result upon contact.
INHALATION.... Mists may irritate the respiratory system.
INGESTION..... Immediate esophageal burns will be produced upon ingestion.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN.....Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES.....Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION...If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION...Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES... Avoid skin contact. Absorb onto sand or inert material. Place in suitable container for disposal.
WASTE DISPOSAL METHOD..... Corrosive. Landfill or incinerate. Dispose of in accordance with all federal, state and local regulations.
HAZARDOUS WASTE 40CFR261... Yes. Hazardous Waste Number: D002
CONTAINER DISPOSAL..... Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION.....Respirator not required with most applications.
VENTILATION.....Local exhaust is generally sufficient to minimize exposure.
PROTECTIVE CLOTHING.....Neoprene gloves, apron, boots - as necessary to prevent skin contact.
EYE PROTECTION.....Chemical goggles.
OTHER PRECAUTIONS.....Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



COOLING WATER TREATMENT AC 530C

Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

IDENTITY NUMBER: A-530C
TRADE NAME OR CHEMICAL NAME: COOLING WATER TREATMENT AC 530C
SYNONYMS: F-4240-1
CHEMICAL FAMILY: Scale and Corrosion Inhibitor
NFPA HEALTH HAZARD: 1
FIRE HAZARD: 1
REACTIVITY HAZARD: 1
NFPA STATE: 4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant
KEY: NA- Not Applicable ND- Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

CHEMICAL NAME(S)	CAS NUMBER	% WT	TLV/TWA	REL	SEC 11	CARCINOGEN
None	NA	NA	NA	NA	NO	NA

SECTION 4 SHIPPING DATA

UN/NA PROPER SHIPPING NAME: NA
UN/NA HAZARD CLASS: NA
UN/NA LABELS REQUIRED: NA
UN/NA P.O. NUMBER: NA
UN/NA TRAINING CODE: NA
NON-FLUE SHIPPING NAME: Compounds, Industrial Process Water Treating, Liquid
DUE SHIPPING NAME: Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT (at 1 atm): 110°C / 423°F, ND
PH: 11.0
VAPE PRESSURE (at 20°C): ND
VAPE DENSITY (AIR = 1.0): ND
VAPOR VOLATILE BY WEIGHT (L): ND
SPECIFIC GRAVITY (20°C): 1.11
SOLUBILITY IN WATER: Soluble
EVAPORATION RATE: Water 100%
APPEARANCE AND ODOR: Dark amber liquid with mild odor

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method): NA
AUTOIGNITION TEMPERATURE: NA
FLAMMABILITY LIMITS IN AIR: NA

COOLING WATER TREATMENT AC 530C

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA: Not combustible
SPECIAL FIRE FIGHTING PROCEDURES: Do not extinguish with water to prevent steam rupture
UNUSUAL FIRE & EXPLOSION HAZARDS: NA

SECTION 7

REACTIVITY DATA

PRODUCT STABILITY: Stable
Conditions to Avoid: Temperatures above 212°F
CHEMICAL INCOMPATIBILITY: NA
HAZARDOUS DECOMPOSITION PRODUCTS: None Known
HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION 8

HEALTH HAZARD DATA

SKIN CONTACT: May cause irritation upon extended contact.
EYE CONTACT: May cause irritation and burns upon contact.
INHALATION: Mist may cause irritation to respiratory tract.
INGESTION: Irritation of gastrointestinal system may occur.

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

SKIN: Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
EYES: Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10

ENVIRONMENTAL DATA

SPILL OR LEAK PROCEDURES: Avoid skin contact. Neutralize and flush with large amounts of water to sanitary sewer.
WASTE DISPOSAL METHOD: Dispose in accordance with all federal, state and local regulations.
HAZARDOUS WASTE CODES: NA
CONTAINER DISPOSAL: Empty containers may contain residue. Thoroughly clean, then offer for recycling or reuse or disposal in accordance with governmental regulations.

SECTION 11

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Respirator not required with most applications.
VENTILATION: Local exhaust is generally sufficient to minimize exposure.
PROTECTIVE CLOTHING: Neoprene gloves, apron, boots as necessary to prevent skin contact.
EYE PROTECTION: Chemical goggles.
OTHER PRECAUTIONS: Safety shower and eyewash fountains should be easily accessible.

SECTION 12

SUPPLIER INFORMATION

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MATERIAL SAFETY DATA SHEET

AC 50TTA



Latest Revision Date...01/30/07

Print Date.....03/20/07

SECTION 1 MANUFACTURER INFORMATION

AquaComp Water Treatment Services, Inc.
P.O. Box 897
St. Charles, MO 63302-0897
Ph. (636) 949-3100 Fax (636) 949-3100

SECTION 2 PRODUCT IDENTIFICATION

PRODUCT NUMBER..... AC 50TTA
TRADE NAME OR CHEMICAL NAME... AC 50TTA
SYNONYMS NA
CHEMICAL FAMILY..... Internal Boiler Treatment
NFPA HEALTH HAZARD..... 2
FIRE HAZARD..... 0
REACTIVITY HAZARD..... 0
NFPA SCALE..... 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant
KEY..... NA= Not Applicable ND= Not Determined

SECTION 3 HAZARDOUS INGREDIENTS

Table with 7 columns: CHEMICAL NAME(S), CAS NUMBER, % WT, TLV-TWA, PEL, SEC. 313, CARCINOGEN?
Row 1: Sodium Hydroxide, 1310-73-2, <1, 2 mg/m3, 2 mg/m3, No, No

SECTION 4 SHIPPING DATA

D.O.T. PROPER SHIPPING NAME... NA
D.O.T. HAZARD CLASS..... NA
D.O.T. LABELS REQUIRED..... NA
UN/NA I.D. NUMBER NA
PACKAGING GROUP..... NA
NON-BULK SHIPPING NAME..... Compound, Industrial Process Water Treating, Liquid
BULK SHIPPING NAME..... Same

SECTION 5 PHYSICAL DATA

BOILING/FREEZING POINT @760 mmHg... 212°F (100°C) / 32°F (-8°C)
pH..... 12.3
VAPOR PRESSURE mm Hg @20° C..... ND
VAPOR DENSITY (Air = 1)..... ND
PERCENT VOLATILE BY WEIGHT (%)..... 75
SPECIFIC GRAVITY @20°C..... 1.04
SOLUBILITY IN WATER..... Miscible
EVAPORATION RATE..... (Water=1) <1
APPEARANCE AND ODOR..... Clear yellow liquid with mild odor.

SECTION 6 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Test Method)..... NA
AUTOIGNITION TEMPERATURE..... NA
FLAMMABILITY LIMITS IN AIR (% Vol)..... NA

SECTION 6**FIRE AND EXPLOSION HAZARD DATA**

CONT'D

EXTINGUISHING MEDIA: Not Combustible
 SPECIAL FIRE FIGHTING PROCEDURES: NA
 UNUSUAL FIRE & EXPLOSION HAZARDS: Beware of exploding drums from expansion.

SECTION 7**REACTIVITY DATA**

PRODUCT STABILITY: Stable
 Conditions to Avoid: NA
 CHEMICAL INCOMPATIBILITY: Strong acids, strong oxidizers.
 HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide and nitrogen oxide upon burning after water loss.
 HAZARDOUS POLYMERIZATION: Will Not Occur

SECTION 8**HEALTH HAZARD DATA**

SKIN CONTACT: May cause irritation or burns depending upon contact time and temperature.
 EYE CONTACT: Immediate irritation and burns may result from contact.
 INHALATION: Unlikely route of exposure with normal handling.
 INGESTION: Esophageal burns possible upon ingestion.

SECTION 9**EMERGENCY AND FIRST AID PROCEDURES**

SKIN: Remove contaminated clothing and flush exposed skin with soap and water. If irritation persists or develops, get medical attention. Launder contaminated clothing before reuse.
 EYES: Immediately flush eyes with large amounts of water for 15 minutes and get medical attention.
 INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Never give anything by mouth to an unconscious person.
 INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SECTION 10**ENVIRONMENTAL DATA**

SPILL OR LEAK PROCEDURES: Avoid skin contact. Neutralize with appropriate material and absorb with sand or inert material. Place in suitable container for disposal. Flush neutralized residues with water to sanitary sewer.
 WASTE DISPOSAL METHOD: Dispose of in accordance with all federal, state and local regulations.
 HAZARDOUS WASTE 40CFR261: No.
 CONTAINER DISPOSAL: Empty containers may contain residuals. Thoroughly clean, then offer for recycling, reuse, or disposal in accordance with governmental regulations.

SECTION 11**SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION: Respirator not required with most applications.
 VENTILATION: Local exhaust is generally sufficient to minimize exposure.
 PROTECTIVE CLOTHING: Neoprene gloves, apron, boots as necessary to prevent skin contact.
 EYE PROTECTION: Chemical goggles.
 OTHER PRECAUTIONS: Safety shower and eyewash fountains should be easily accessible.

SECTION 12**SUPPLIER INFORMATION**

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

MATERIAL SAFETY DATA SHEET



MICROBIOCIDES 2106

Latest Revision Date...08/07/06 Print Date.....05/26/06

SECTION 1 MANUFACTURER INFORMATION

QUES INDUSTRIES, INC.
5420 W. 140TH STREET
CLEVELAND, OH 44142
PH (216) 267-8989 FAX (216) 267-8998

SECTION 2 PRODUCT IDENTIFICATION

Product Name: Microbicides 2106
CAS No.:
Molecular Weight:
Molecular Formula:
Chemical Name:
Synonyms:
Trade Name:
Supplier:
Date of Revision:
Revision Number:
Revision Description:

SECTION 3 HAZARDOUS INGREDIENTS

Chemical Name	Wt %								
Polychlorinated biphenyls	100								

SECTION 4 SHIPPING DATA

UN Number:
Proper Shipping Name:
Hazard Class:
Packing Group:
DOT Name:
DOT ID Number:
DOT Label Code:
DOT Label Description:

SECTION 5 PHYSICAL DATA

Appearance:
Color:
Odor:
Boiling Point:
Melting Point:
Density:
Vapor Pressure:
Flash Point:
Solubility:
Stability:

SECTION 6 FIRE AND EXPLOSTION HAZARD DATA

Flammability:
Explosive Limits:
Reactivity:
Hazardous Reactions:
Incompatible Materials:

MICROBIOCTIDE 2106

SECTION 6

FIRE AND EXPLOSION HAZARD DATA

CONT'D

EXTINGUISHING MEDIA: ...
FORMAL FIRE FIGHTING: ...
HAZARDOUS FIRE FIGHTING: ...

SECTION 7

REACTIVITY DATA

STABILITY: ...
REACTIVITY: ...
POLYMERIZATION: ...

SECTION 8

HEALTH HAZARD DATA

ON CONTACT: ...
INGESTION: ...
INHALATION: ...

SECTION 9

EMERGENCY AND FIRST AID PROCEDURES

IF IN CONTACT: ...
IF SWALLOWED: ...
IF INHALED: ...

SECTION 10

ENVIRONMENTAL DATA

SPECIFIC TOXIC PROCEDURES: ...
WATER POLLUTION: ...
BIODEGRADATION: ...
PERSISTENCE: ...

SECTION 11

SPECIAL PROTECTION INFORMATION

REGISTRATION: ...
CONTAMINATION: ...
HAZARDOUS: ...

SECTION 12

SUPPLIER INFORMATION

REGISTRATION: ...
HAZARDOUS: ...

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001	
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A. Number of Non-Categorical SIUs	B. Number of CIUs N/A		
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME			
MAILING ADDRESS			CITY
		STATE	ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU's DISCHARGE.			
Decontamination Training			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S)			
RAW MATERIAL(S)			
MSD Provided - There has been no use of this chemical for several years.			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C.			
gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
B. Categorical Pretreatment Standards	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

EnviroFoam Technologies, Inc.
MATERIAL SAFETY DATA SHEET
Effective Date: October 10, 2002

SECTION I: MATERIAL IDENTIFICATION

MANUFACTURER'S NAME & ADDRESS: EMERGENCY TELEPHONE NUMBER:

24 Hour Emergency Assistance:	703-527-3887
ChemTrec:	800-424-9300
General MSDS Assistance:	
EnviroFoam Technologies, Inc.	(800) 542-4665
2903 Wall Triana Highway, Suite 5B	(256) 319-0137
Huntsville, Alabama 35824	

NAME OF MATERIAL: EasyDECON 200-5300
TRADE NAMES/SYNONYMS: EasyDECON Foam, Enhanced Formula
CREATION DATE OF THIS MSDS: October 10, 2002
REVISION DATE OF THIS MSDS: October 10, 2002

SECTION II: COMPOSITION & INFORMATION ON INGREDIENTS

	OSHA PEL ppm mg/m ³	ACGIH TLV ppm mg/m ³
EXPOSURE LIMITS:		
COMPONENT: Quaternary Ammonium Compounds, Benzyl-C ₁₂ -C ₁₆ Alkyl Dimethyl Chlorides CAS NUMBER: 68424-85-1 PERCENTAGE BY WEGHT: 2.8-3.1		none established
COMPONENT: Quaternary Ammonium Compounds, N,N,N,N'-Pentamethyl-N' Tallow Alkyl-trimethylenedi-, Chlorides CAS NUMBER: 68607-29-4 PERCENTAGE BY WEIGHT: 0.5-1.5		none established
COMPONENT: Hydrogen Peroxide CAS NUMBER: 124-43-6 PERCENTAGE BY WEIGHT: 2.8-4.0%	1 none listed	1 none listed
COMPONENT: INERT INGREDIENTS: PERCENTAGE BY WEIGHT: Balance of formula		

SECTION III: PHYSICAL DATA

BOILING POINT: 200F	FREEZING POINT: 26F
SPECIFIC GRAVITY (H₂O=1): 1.09-1.12	EVAPORATION RATE: N/A
SOLUBILITY IN WATER: COMPLETE	PH: 9.7-9.9
APPEARANCE: LIGHT YELLOW OR BLUE	ODOR: SWEET
VAPOR PRESSURE (mmHg): N/A	VAPOR DENSITY (air-1): N/A
HAZARD RATINGS: HEALTH = 1 FIRE=0 REACTIVITY=0 PERSONAL PROTECTION =B	

SECTION IV: FIRE & EXPLOSION DATA

FIRE AND EXPLOSION HAZARDS: No fire hazard. In a fire, overheated sealed containers may explode from overpressure. Pure Fortifier unblended may release oxygen upon heating and add to combustion. Booster is a combustible material and will burn in a fire. The blended EasyDECON is an effective foam for use against Class A fires.

EXTINGUISHING MEDIA: For fuel sources around containers, carbon dioxide, regular dry chemical, regular foam, water.

FIRE FIGHTING: Move container from fire area if it can be done without risk.
Do not get water inside container. Cool well after the fire is out. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: NONE, by Cleveland open cup

SECTION V: HEALTH HAZARD DATA

EYE: Contact with eyes may cause severe irritation; prolonged eye contact may cause permanent damage. Each component as well as the finished blend can cause severe eye irritation, and prolonged contact without rinsing can result in permanent damage.

SKIN: Prolonged contact with skin may cause irritation.

INGESTION: If swallowed, can cause severe damage to mucous membranes.

HALATION: No known effects. Aspiration of liquid into respiratory passages will cause severe damage to mucous membranes.

CARCINOGENICITY: This product (or components of its mixture) is not listed in IARC Monograph, the NTF Sixth Annual Report or the current ACGIH TLV's as a carcinogen or potential carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention:

SKIN CONTACT: Flush with cool running water. If irritation develops get medical attention.

INGESTION: If conscious, give plenty of water. **DO NOT** induce vomiting. **DO NOT** give liquids by mouth to an unconscious patient. Get medical attention.

BREATHING: Move to fresh air. If breathing becomes labored consider oxygen, get medical attention. Give rescue breathing if breathing stops, get medical attention.

SECTION VI: STABILITY AND REACTIVITY

STABILITY: Stable at normal temperatures and pressure.

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Minimize contact with material. Keep out of water supplies.

INCOMPATIBILITIES: Strong acids, alkaline earth metals. Strong oxidizing materials not listed for use with this product.

HAZARDOUS DECOMPOSITION: Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

SECTION VII: SPILL & ACCIDENTAL RELEASE MEASURE

IN CASE OF RELEASED OR SPILLED MATERIAL: For large quantities, keep out of water supplies. Flood with water and drain to a chemical sewer or wastewater treatment plant.

OCCUPATIONAL RELEASE: Avoid touching spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

SECTION VIII: EXPOSURE CONTROLS, PERSONAL PROTECTION

VENTILATION: Provide local exhaust or process enclosure ventilation system.

Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a face shield

Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: For prolonged use or exposure in unventilated structures, a NIOSH approved respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use:

Any chemical cartridge respirator with organic vapor cartridge(s).

Any chemical cartridge respirator with a full-face piece and organic vapor cartridge(s).

Any air-purifying respirator with a full-face piece and an organic vapor canister.

For Unknown Concentrations or Immediately Dangerous to Life or Health-

Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full-face piece.

SECTION IX: ADDITIONAL INFORMATION & PRECAUTIONS

There are no ingredients or no ingredients of sufficient quantity in this product to require reporting under SARA or CERCLA statutes.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: CAUTION! May cause skin irritation. May cause respiratory and digestive tract irritation. May cause severe eye irritation and possible injury. Do not get in eyes. Avoid contact with skin and clothing.

SECTION X: D.O.T. SHIPPING AND STORAGE INFORMATION

PROPER SHIPPING NAME: Not regulated

D.O.T. LABEL REQUIRED: None

HAZARD CLASS: n.a.

UN/UA: n.a.

PACKAGING GROUP: n.a.

REPORTABLE QTY OF PRODUCT: n.a.

Store and handle in accordance with all current regulations and standards. OSHA 29 CFR 1910.106. See original container for storage recommendations. Keep separated from incompatible substances.

This information is given without any warranty or representation. It is believed to be correct but does not claim to be all-inclusive and shall be used only as a guide. EnviroFoam Technologies, Inc. shall not be held liable for any damage resulting from handling or contact with the above product. It is offered solely for your consideration, investigation and verification.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME	Fort Leonard Wood WWTP
PERMIT NO.	MO-0029742
OUTFALL NO.	001

PART F - INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.

GENERAL INFORMATION

60.1 PRETREATMENT PROGRAM

Does the treatment works have, or is it subject to, an approved pretreatment program? Yes No

60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or Sius AND CATEGORICAL INDUSTRIAL USERS, or CIUS. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS

A. Number of Non-Categorical Sius

B. Number of CIUS

60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION

Supply the following information for each Sius. If more than one Sius discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME

MAILING ADDRESS

CITY	STATE	ZIP
------	-------	-----

60.4 INDUSTRIAL PROCESSES

DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE Sius'S DISCHARGE.

Used Oil Separation from water at Maintenance Facilities

60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)

Describe all of the principle processes and raw materials that affect or contribute to the Sius's discharge.

PRINCIPAL PRODUCT(S)

Water separated from oil is discharged to the sanitary sewer. Oil is pumped per attached schedule and MSD provided.

RAW MATERIAL(S)

60.6 FLOW RATE

A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent. Continuous Intermittent

B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent. Continuous Intermittent

60.7 PRETREATMENT STANDARDS

Indicate whether the Sius is subject to the following

A. Local Limits Yes No

B. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE Sius

Has the Sius caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years? No Yes. If Yes, describe each episode

OIL SEPARATORS AND WASH RACKS:

Facility #	Type	Quantity	Frequency
672	Gravel & Oil Separator	1	A
673	Gravel & Oil Separator	1	A
680	Gravel & Oil Separator	1	A
681	Gravel & Oil Separator	1	A
600 Motor Pool Wash Rack	Gravel & Oil Separator	1	S
772	Gravel & Oil Separator	1	A
773	Gravel & Oil Separator	1	A
780	Gravel & Oil Separator	1	A
782	Gravel & Oil Separator	1	A
700 Motor Pool Wash Rack	Gravel & Oil Separator	1	S
872	Gravel & Oil Separator	1	A
873	Gravel & Oil Separator	1	A
880	Gravel & Oil Separator	1	A
881	Gravel & Oil Separator	1	A
800 Motor Pool Wash Rack	Gravel & Oil Separator	1	Q
950	Gravel & Oil Separator	1	S
990	Gravel & Oil Separator	1	A
991	Gravel & Oil Separator	1	A
998	Gravel & Oil Separator	1	A
999	Gravel & Oil Separator	1	A
900 Motor Pool Wash Rack	Gravel & Oil Separator	1	Q
1382	Gravel & Oil Separator	1	A
1382	Sediment Collection Pits	5	M
1383	Gravel & Oil Separator	1	A
1390	Gravel & Oil Separator	2	A
1390 Motor Pool Wash Rack	Gravel & Oil Separator	1	S
5007	Oil Separator	1	A
5052	Gravel & Oil Separator	1	A
5053	Gravel & Oil Separator	1	A
5053 Wash Rack	Gravel & Oil Separator	1	A
5072	Oil Separator	1	S
TA207 Wash Rack	Gravel & Oil Separator	1	A
2558 Wash Rack	Gravel & Oil Separator	1	A
5074	Gravel & Oil Separator	1	A
12410	Gravel & Oil Separator	1	Q
12700	Gravel & Oil Separator	2	B
P.O.L. Bulk Storage Facility	Gravel & Oil Separator	1	A
2211 Wash Rack	Gravel & Oil Separator	1	A
DOL Complex (5265)	Gravel & Oil Separator	8	A
2581	Oil Separator	2	A
Rock Quarry	Oil Separator	1	A
5138 Wash Rack	Gravel & Oil Separator	1	A
5268 TMP Wash Facility	Sediment Collection Troughs	3	A
10380	Oil Separator	1	A

USED OIL

MATERIAL SAFETY DATA SHEET



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: USED OIL

SYNONYMS: Waste oil; Used lubricating oil; Oil and water mixture

PRODUCT PART

NUMBER(S): Not applicable.

PRODUCT USE:

Oil or water mixture for re-refining or reprocessing.
If this product is used in combination with other products, refer to the
Material Safety Data Sheets for those products.

24-HOUR EMERGENCY PHONE NUMBERS
MEDICAL AND TRANSPORTATION (SPILL):

1-800-468-1760

These numbers are for
emergency use only. If
you desire non-emergency
product information,
please call a phone
number listed below.

MANUFACTURER/SUPPLIER: Safety-Kleen Systems, Inc.

5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1 then Extension 7500

MSDS FORM NUMBER: 81451

ISSUE: September 20, 2007

ORIGINAL ISSUE: January 15, 1990

SUPERSEDES: June 11, 2007

PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

**USED OIL
MATERIAL SAFETY DATA SHEET**

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL	ACGIH TLV®	LD _a	LC ₅₀ ^b
80 to 100	Lubricating oils, used	Used oil	70514-12-4	N. Av.	N. Av.	N. Av.	N. Av.
0 to 20*	Water/solids			N. Av.	N. Av.	N. Av.	N. Av.
0 to 10*	Hydrocarbon solvents, diesel fuel, jet fuel, mineral spirits, etc.			N. Av.	N. Av.	N. Av.	N. Av.
0 to 1.5*	Metals: May include lead, iron, zinc, copper, chromium, arsenic, nickel, and others: each below 1.0 WT%.			N. Av.	N. Av.	N. Av.	N. Av.
0 to 1.0*	Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3 WT%.			N. Av.	N. Av.	N. Av.	N. Av.
0 to 0.5*	Chlorinated solvents. N. Av. = Not Available			N. Av.	N. Av.	N. Av.	N. Av.

*Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

^aOral-Rat LD₅₀ (mg/kg)

^bInhalation-Rat LC₅₀

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE

Liquid, black and viscous (thick), petroleum odor.

WARNING!

PHYSICAL HAZARDS

Combustible liquid.

HEALTH HAZARDS

May be harmful if inhaled.
May be harmful if absorbed through skin.
May be harmful or fatal if swallowed.
May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.
Suspect cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Contains material which can cause birth defects.
Contains material which can cause central nervous system damage.

ENVIRONMENTAL HAZARDS

Product may be toxic to fish, plants, wildlife, and/or domestic animals.

**USED OIL
MATERIAL SAFETY DATA SHEET**

POTENTIAL HEALTH EFFECTS

Effects may vary depending on material composition. Typical effects may

include:

INHALATION (BREATHING): High concentrations of vapor or mist may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES:

May cause irritation.

SKIN:

May cause irritation. Product may be absorbed through the skin and cause harm as noted under **INHALATION (BREATHING)**.

INGESTION (SWALLOWING):

May be harmful or fatal if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing cardiovascular, liver, kidney, respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC:

Prolonged or repeated inhalation may cause oil pneumonia, lung tissue inflammation, fibrous tissue formation, and/or toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

CANCER INFORMATION:

This product contains mineral oils, untreated or mildly treated, which can cause cancer. This product may contain hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics which can cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**.

POTENTIAL ENVIRONMENTAL EFFECTS

Product may be toxic to fish, plants, wildlife, and/or domestic animals. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

**USED OIL
MATERIAL SAFETY DATA SHEET**

SECTION 4: FIRST AID MEASURES

INHALATION: (BREATHING) Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

EYES: If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

SKIN: Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.

INGESTION: (SWALLOWING) Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything to an unconscious person by mouth.

NOTE TO PHYSICIANS: Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: >200°F (93°C) (minimum) Pensky-Martens Closed Cup

FLAMMABLE LIMITS IN AIR: Not available.

AUTOIGNITION TEMPERATURE: Not available.

HAZARDOUS COMBUSTION PRODUCTS: Decomposition and combustion materials may be toxic. Burning may produce phosgene gas, nitrogen oxides, carbon monoxide, and unidentified organic compounds.

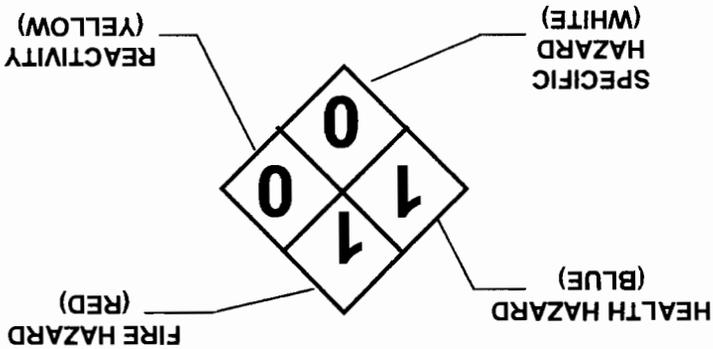
CONDITIONS OF FLAMMABILITY: Heat, sparks, or flame. Product may burn but does not ignite readily.

EXTINGUISHING MEDIA: Use carbon dioxide, regular foam, dry chemical, water spray, or water fog.

**USED OIL
MATERIAL SAFETY DATA SHEET**

**NFPA 704
HAZARD
IDENTIFICATION:**

This information is intended solely for the use by individuals trained in this system.



**FIRE FIGHTING
INSTRUCTIONS:**

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact. Product may be sensitive to static discharge, which could result in fire or explosion.

**FIRE AND
EXPLOSION HAZARDS:**

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface waters and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION**.

**USED OIL
MATERIAL SAFETY DATA SHEET**

SECTION 7: HANDLING AND STORAGE

HANDLING:

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, storage tanks, tanker trucks, and rail tank cars should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

**SHIPPING AND
STORING:**

Keep container tightly closed when not in use and during transport. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORT INFORMATION** for Packing Group information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING
CONTROLS:**

Use general ventilation, process enclosures, local exhaust ventilation, or other engineering controls to control air-borne levels. Where explosive mixtures may be present, equipment safe for such locations should be used.

PERSONAL PROTECTIVE EQUIPMENT

**RESPIRATORY
PROTECTION:**

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

**EYE
PROTECTION:**

Wearing chemical goggles is recommended. Contact lens may be worn with eye protection.

**SKIN
PROTECTION:**

Where prolonged or repeated skin contact is likely, wear neoprene nitrile (4 mil minimum), PVC (polyvinyl chloride), or equivalent protective gloves; wearing natural rubber or equivalent gloves is not recommended.

When product is heated and skin contact is likely, wear heat-insulating gloves, boots, and other protective clothing.

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

**USED OIL
MATERIAL SAFETY DATA SHEET**

PERSONAL HYGIENE: Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with the product.

OTHER PROTECTIVE EQUIPMENT: Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR: Liquid, black and viscous (thick), petroleum odor. Not available.

ODOR THRESHOLD: Not available.

MOLECULAR WEIGHT: Not applicable.

SPECIFIC GRAVITY: 0.8 to 1.0 at 60°F (15.6°C) (water = 1)

DENSITY: 6.7 to 8.3 LB/US gal (800 to 1000 g/l) (approximately)

VAPOR DENSITY: greater than 1 (air = 1) (based on kerosene)

VAPOR PRESSURE: Not available.

BOILING POINT: Not available.

FREEZING/MELTING POINT: Not available.

pH: Not applicable.

EVAPORATION RATE: less than 1 (butyl acetate = 1)

SOLUBILITY IN WATER: Slight.

FLASH POINT: >200°F (93°C) (minimum) Pensky-Martens Closed Cup

FLAMMABLE LIMITS IN AIR: Not available.

AUTOIGNITION TEMPERATURE: Not available.

**USED OIL
MATERIAL SAFETY DATA SHEET**

STABILITY: Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.

SECTION 10: STABILITY AND REACTIVITY

INCOMPATIBILITY: Avoid acids, alkalis, oxidizing agents, reducing agents, reactive halogens, or reactive metals.

REACTIVITY: Polymerization is not known to occur under normal temperatures and pressures. Not reactive with water.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal temperatures and pressures. Also see SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.

SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION: Based on best current information, there may be known human sensitization associated with this product.

MUTAGENICITY: Based on best current information, there may be mutagenicity associated with this product.

CARCINOGENICITY: Mineral oils, untreated or mildly treated are listed by IARC as a known carcinogen. Mineral oils, untreated or mildly treated are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.

There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are listed by OSHA as known carcinogens. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are listed by IARC as known, probable, or possible carcinogens. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are classified by NTP as known carcinogens or as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are recognized by ACGIH as confirmed or suspected human carcinogens.

Also see SECTION 3: CANCER INFORMATION.

**USED OIL
MATERIAL SAFETY DATA SHEET**

REPRODUCTIVE TOXICITY: Based on best current information, there may be reproductive toxicity associated with this product.

TERRATOGENICITY: Based on best current information, there may be teratogenicity associated with this product.

TOXICOLOGICALLY SYNERGISTIC PRODUCT(S): Based on best current information, there may be toxicologically synergistic products associated with this product.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

OCTANOL/WATER PARTITION COEFFICIENT: Not available.

VOLATILE ORGANIC COMPOUNDS: Not available.
As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

DOT: Not regulated.

TDG: Not regulated.

EMERGENCY RESPONSE: Not applicable.
GUIDE NUMBER: Reference North American Emergency Response Guidebook

SECTION 15: REGULATORY INFORMATION

USA REGULATIONS Based on the ingredient(s) listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) **302 AND 304:** Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

**USED OIL
MATERIAL SAFETY DATA SHEET**

SARA SECTIONS 311 AND 312: This product poses the following physical and health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):
Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard

SARA SECTION 313: This product may contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

CERCLA: This product may contain "hazardous substances" listed pursuant to Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA: Not available.

CALIFORNIA: This product is not for sale or use in the State of California.

CANADIAN REGULATIONS WHMIS: Not regulated

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): Not available.

SECTION 16: OTHER INFORMATION

REVISION INFORMATION: Change from MSIS to MSDS.

LABEL/OTHER INFORMATION: Not available.

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product as supplied to the user.



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MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001	
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A.	Number of Non-Categorical SIUs 1	B.	Number of CIUs 6
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME Dental Clinics Bldgs. 500 & 1603 & new building			
MAILING ADDRESS		CITY	STATE ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU's DISCHARGE. Tooth repair & maintenance (currently 60 dental chairs) mercury recovered			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S)			
RAW MATERIAL(S) mercury amalgam			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C. gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
B. Categorical Pretreatment Standards		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

MATERIAL SAFETY DATA SHEET

TYTIN FC AMALGAM

1 - IDENTIFICATION

Manufacturer: Kerr Corporation
Address: 1717 Collins Ave.
City, State, Zip: Orange, CA 92867
Emergency: 1-800-424-9300
Telephone: Chemtree 1-800-537-7123
Date Prepared: November 16, 2004

2 - COMPOSITION INFORMATION

Hazardous Ingredients

	CAS #	PEL	TLV	%
Mercury	7439-97-6	0.05 mg/m ³	0.05 mg/m ³	44.5*

* (% Based on final Amalgam composition by weight)

Other Ingredients

Alloy powder contains silver, tin and copper metals.

3 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 674 °F
Specific Gravity (H₂O = 1): 13.35
Vapor Pressure (mm Hg): 0.0012 mm Hg @ 68 °F
Melting Point: -38 °F
Vapor Density: N/E
Evaporation Rate: N/E
Solubility in Water: 0.0002g/100g water @ 68 °F
Appearance and Odor: Powder: Odorless dark-gray alloy of silver, tin and copper. Liquid: Mercury is a silvery, mobile, odorless liquid.
This MSDS addresses the mercury (liquid) portion of the product, which is a known health hazard. The powder is not considered to be hazardous. The health hazard data section references information relative to bulk quantities of elemental mercury and may not reflect the actual hazards of small quantities such as those encountered with this product.

4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): N/A
Flammable Limits: LEL: N/A UEL: N/A
Extinguishing Media: Carbon dioxide, dry chemical foam
Special Fire Fighting Procedures: Firefighters should wear self-contained breathing apparatus when fighting a fire in an area containing mercury.
Unusual Fire Fighting Procedures: Emits toxic fumes in fire conditions.

5 - REACTIVITY DATA

Stability: Stable
Conditions to Avoid: High temperatures.
Incompatibility (Material to Avoid): Halogens, ammonia, and strong oxidizing agents.
Hazardous Decomposition Byproducts: Mercury Vapor.
Hazardous Polymerization: Will not occur

6 - HEALTH HAZARD DATA Acute/Chronic

Routes of Entry:

Skin: Irritant/Sensitizer/Neurotoxin/Nephrotoxin
Acute Exposure: May cause redness and irritation. Chronic Exposure: Possible sensitization, dermatitis and swelling. Mercury may be absorbed through intact skin causing urinary problems
Eyes: Irritant.
Acute Exposure: Contact may cause irritation. Mercury is corrosive and may cause corneal injury or burns. Chronic Exposure: Mercury may be deposited in the lens of the eye, causing visual disturbances.
Inhalation: Irritant/Sensitizer/Neurotoxin
Acute Exposure: Inhalation of mercury vapor can cause cough, fever, nausea, and vomiting. Chronic Exposure: Inhalation of high concentrations mercury vapor over a long period causes mercurialism. Findings are extremely variable & include tremors, salivation, stomatitis, loosening of teeth, blue lines on gums, pain & numbness in extremities.
Ingestion: Neurotoxic/nephrotoxic
Acute Exposure: May cause nausea, vomiting, kidney damage and nerve effects. Chronic Exposure: Symptoms include Central Nervous System (CNS) disorders.

Carcinogenicity - NTP: No
IARC Monographs: No OSHA Regulated Carcinogen: No

7 - EMERGENCY AND FIRST AID PROCEDURES

Skin: Wash thoroughly with soap and water. Use hand cream. If irritation persists, consult a physician.
Eye: Flush with water for at least 15 minutes. Consult a physician.
Inhalation: Move to fresh air. If irritation persists, consult a physician.
Ingestion: Contact a physician. May cause neurotoxic/nephrotoxic effects.

8 - PRECAUTIONS FOR SAFE HANDLING & USE

Steps to be taken in case material is released or spilled: Isolate the area and begin clean-up immediately. Do not touch spilled material. Cover all liquid droplets with a commercially available mercury vapor suppressant such as HG-X or elemental Sulfur. Collect the droplets using specialized mercury vacuum cleaners.

Waste Disposal Method: Material should not be allowed to enter sewers. All scrap mercury liquid and set alloy must be sent for reclamation by a commercial metal recycling facility.

Precautions to be taken in handling and storing: Store in a cool, dry place away from ignition sources.

Other precautions: Use according to directions. Wash hands thoroughly before smoking or eating.

9 - CONTROL MEASURES

Respiratory Protection (Specify Type): Not needed for small quantities as encountered in this product. AVOID BREATHING OF VAPORS. HIGHLY TOXIC - IRRITANT - SENSITIZER.

VENTILATION:

Local Exhaust: Use in a well ventilated area to keep exposure under 0.05 mg/m³.

Mechanical (General): Should be sufficient

Protective Gloves: Chemical resistant or latex gloves required

Eye Protection: Safety glasses with side shields. Full face shields

Work/Hygiene Practices: USE ONLY ACCORDING TO DIRECTIONS.

Wash thoroughly after handling. Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

10 - TRANSPORTATION INFORMATION

Regulated: DOT, IATA, IMO
Proper Shipping Name: Mercury
Hazard Class: 8
UN Number: 2809
Packing Group: III
Label: Corrosive
NOTE: See 49 CFR 173.4

11 - SPECIAL INFORMATION

HMIS (Hazardous Material Identification System) Rating:

H3 F0 R0

[HMIS Index: 4 - Severe Hazard; 3 - Serious Hazard;

2 - Moderate Hazard; 1 - Slight Hazard; 0 - Minimum Hazard]

State RTK: California Proposition 65 WARNING:

This product contains mercury, a chemical known to the State of California to cause birth defects or other reproductive harm.

Stenger, Carl E CIV USARMY USAG (US)

From: Dowling, Morgan T CIV USARMY MEDCOM DENTAC (US)
Sent: Friday, February 14, 2014 2:48 PM
To: Stenger, Carl E CIV USARMY USAG (US)
Subject: RE: Dental Clinic Mercury Amalgam (UNCLASSIFIED)
Attachments: scannedDoc.pdf

Classification: UNCLASSIFIED
Caveats: FOUO

MR Stenger,

The DENTAC has no free mercury. The amalgam capsules we use in our clinics come in a jug of 500 capsules. These are single use capsules that have a metal alloy/mercury mix contained within a fixed capsule. When used, the capsule is mixed and the amalgam is placed in the patients mouth. Any extra amalgam is placed in a collection container and recycled. Once mixed, there is no mercury, just an amalgam. None of the amalgam/mercury up to this point reaches the sewer system. When we remove old amalgam fillings we use high speed hand pieces that produces amalgam dust and small particles. This is captured by our suction system and then that processes thru two filters before the waste goes out the building. Below I have answered the questions you asked as best I can. Please feel free to call if you need any further data.

1. Quantity of Mercury Amalgam used in B. 1608 and in B. 500.

Building 500 - 500 capsules a month
Building 1608 - 2500 capsules per month

2. A MSD Sheet for the Mercury Amalgam used.
MSDS attached.

3. Frequency of use for Mercury Amalgam.
Every day/hourly.

Morgan Dowling
Administrative Officer
USA Dental Activity
1724 Nebraska Ave
Fort Leonard Wood, MO 65473
Comm: (573) 596-0388
DSN: 581-0388
FAX: (573) 596-0410

-----Original Message-----

From: Stenger, Carl E CIV USARMY USAG (US)
Sent: Thursday, February 13, 2014 11:16 AM
To: Dowling, Morgan T CIV USARMY MEDCOM DENTAC (US)
Subject: Dental Clinic Mercury Amalgam (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Sir,

I am in the process of modification of the discharge permit for the FLW wastewater treatment plant. As part of that process, I must report process discharges into the sanitary sewer system. I am requesting some information from DENTAC regarding Mercury Amalgam. I have been informed that you are the POC for that information, but if not, please put me in contact with the proper POC. The information I need is:

1. Quantity of Mercury Amalgam used in B. 1608 and in B. 500.
2. A MSD Sheet for the Mercury Amalgam used.
3. Frequency of use for Mercury Amalgam.

I am in the process of the permit modification now, so the sooner I can get this information, the better. Thank you in advance for your support.

V/R,

Carl Stenger

Directorate of Public Works

Environmental Division, South Annex

B. 751, 6394 Colorado Avenue

Phone: (573) 596-0131, ext.63723

FAX : (573) 596-1628

Your opinion matters to me! If you would like, please click on the ICE link below to rate the service you received today.

http://ice.disa.mil/index.cfm?fa=card&sp=90035&s=447&dep=*DoD&sc=5

Classification: UNCLASSIFIED
Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP		PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A. Number of Non-Categorical SIUs		B. Number of CIUs	
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME			
MAILING ADDRESS			CITY
		STATE	ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU's DISCHARGE.			
Boiler Maintenance			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S) Water/Propylene Glycol			
RAW MATERIAL(S) MSD Provided			
60.6 FLOW RATE			
A. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
gpd <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent <i>5,000 gal/yr of 20-35% Glycol</i>			
B. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.			
C. gpd <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent			
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A. Local Limits		<input type="checkbox"/> Yes	<input type="checkbox"/> No
B. Categorical Pretreatment Standards		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory?			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

MATERIAL SAFETY DATA SHEET

Page 1 of 6

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

ECO-SMART HTF

CHEMICAL NAME

Mixture

USE

Varies

COMPANY IDENTIFICATION

INDUSTRIAL SOLUTIONS, LLC
PO BOX 413
ROGERSVILLE, MO 65742

TELEPHONE

OFFICE 417-693-6085
EMERGENCY 800-255-3924

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS:

<u>COMPONENTS</u>	<u>CAS No.</u>	<u>% by Wt.</u>	<u>OSHA PEL</u>
Propylene Glycol	000057-55-6	>94	None Established
Dipotassium Phosphate	007758-11-4	<4	None Established

NOTE:

All the components of this material are on the Toxic Substances Control Act Chemical Substances inventory.

3. HAZARDS IDENTIFICATION

- Can cause eye irritation
- Prolonged exposure can cause skin irritation
 - Do not swallow

Potential Health effects

Eye: May cause stinging irritation, tearing, or redness

Skin Contact: Repeated or prolonged contact may cause dryness or irritation

Ingestion: May cause mouth and throat irritation when swallowed; ingestion of large quantities may cause discomfort

Inhalation: If used in applications where a mist is generated, may cause irritation to nose and throat.

Signs and Symptoms of Exposure: Irritation to skin, watering or redness in eyes, discomfort, throat irritation if swallowed.

4. FIRST AID MEASURES

EYE: Flush with water. If irritation occurs call for medical assistance.

Skin: Remove contaminated clothing. Wash with soap and water. Call for medical attention if symptoms prevail.

Ingestion: DO NOT induce vomiting. Get medical assistance.

Inhalation: Remove person to fresh air. Call for medical attention.

5. FIRE FIGHTING MEASURES

Flash Point 215F **Method:** ASTM D-92

Flammable Limits (%BY VOLUME IN AIR) Lower: ND **Upper:** ND

Extinguishing Media Non Flammable Use available media to cool material.

NFPA Ratings: Health - 1 Flammability - 1 Reactivity - 0
(0 - Insignificant, 1 - Slight, 2 - Moderate, 3 - High, 4 - Extreme)

NA - Not Applicable

ND - Not Determined

Fire Fighting Instructions: Non -Flammable. Wear protective clothing and self-contained breathing apparatus. Use available media to cool containers exposed to fire

Combustion or Decomposition Products: May cause smoke and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY NUMBER (24hrs.): 800 255-3924

Spill Procedures: Personal Protective Equipment must be worn; see Section 8 for recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed into inert material. Check under transportation and Labeling (DOT/CERCLA) and Other Regulatory Information Section (SARA) for hazardous substances to determine regulatory reporting requirements for spills.

7. HANDLING AND STORAGE

Handling and Storage: Avoid eye and prolonged skin contact as with all industrial materials. Wash thoroughly after handling. Follow all MSDS/label precautions after container is emptied because they may retain product residues. Store in a cool, dry place. Keep containers closed when not in use.

Read and follow all precaution on product label

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective Equipment

Eye / Face Protection: Use chemical goggles or face shield.

Skin Protection: Minimize contact by wearing protective clothing and oil resistant gloves.

Respiratory Protection: Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Use self contained breathing apparatus for entry into confined space and other poorly ventilated areas.

Clothing

Recommendation: Long sleeve shirt is recommended. Wear a chemically Protective apron when contact with material may occur. Avoid wearing jewelry that may entrap chemical and cause skin irritation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue Liquid
Odor:	Odorless
Specific Gravity (water = 1):	1.05
Viscosity SUS@100F:	ND
Flash Point:	215F
PH (as is):	ND
PH (dilute) @5%:	ND
Solubility in water (5):	100%
Vapor Pressure (mm Hg):	0.22@68F
Vapor Density (air = 1):	2.62
Volatile Organic Compound	ND

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products:	May cause smoke and oxides of carbon.
Chemical Stability:	Material is normally stable at room temperature and pressure.
Conditions to Avoid:	NA
Incompatibility with other materials:	Oxidizing or acidic materials
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Skin: The LD50 for skin absorption in rabbits is greater than 10,000 mg/kg.

Ingestion: The oral LD50 for female rats is about 20.3 g/kg.

Mutagenicity (Effects on genetic material): Results of in vitro (test tube) mutagenicity tests have been negative. Results of mutagenicity tests in animals have been negative.

12. ECOLOGICAL INFORMATION

Environmental Fate Movement and Partitioning: Based largely on data for major component(s). Bioconcentration potential is low. (BCF less than 100 or Low Pow less than 3)

Degradation and Persistence: Based largely or completely on data for major component(s). Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/THOD greater than 40%).

Ectotoxicity: Based largely or completely on data for major component(s). Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species).

13. DISPOSAL CONSIDERATIONS

Any disposal practice must be in compliance with local, state, and federal laws and regulations. Empty containers must be handled with care due to product residue. Industrial Solutions, LLC will provide a list of companies which recycle or handle waste material t customers upon request. For information call 417-693-6085

14. TRANSPORT INFORMATION

DOT Shipping Name:	Not regulated
DOT Hazard Class:	Not regulated
DOT Packaging Group	NA
DOT/UN Identification:	NA

15. REGULATORY INFORMATION

TSCA STATUS: All components are listed in TSCA inventory.

CERCLA Reportable Quantity: This product does not contain any RQ substances.

SARA Title III: Title III of the Superfund Amendments and Reauthorization Act of 1986:

Section 302 Extremely Hazardous: Not an extremely hazardous substance.

- **Immediate (Acute) Health Effects:** No
 - **Delayed (Chronic) Health Effects:** No
 - **Fire Hazzard:** No
 - **Sudden Release of Pressure Hazard:** No
-

Reactivity Hazard: No

Carcinogenicity Status: Constituents not listed by: IARA, NTP, OSHA

SARA 313 Toxic Proposition 65 Status:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% in Product</u>
----------------------	-------------------	---------------------

This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) listed under SARA Section 313.

California Proposition 65 Status:

Not Applicable

16. OTHER INFORMATION

Label Hazard Ratings:

NFPA

Fire - 1

Health - 1

Reactivity - 0

Specific Hazard - None

HMIS

Fire - 1

Health - 1

Reactivity - 0

Personal Protection Index - C

MSDS Revision Statement:

All Sections revised.

Part F Continuation

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.		
FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES (CONTINUED)		
60.9 RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE		
RCRA WASTE. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
WASTE TRANSPORT. Method by which RCRA waste is received. (Check all that apply) <input type="checkbox"/> Truck <input type="checkbox"/> Rail <input type="checkbox"/> Dedicated Pipe		
WASTE DESCRIPTION. Give EPA hazardous waste number and amount (volume or mass, specify units).		
EPA HAZARDOUS WASTE NUMBER	AMOUNT	UNITS
60.10 CERCLA, OR SUPERFUND, WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER AND OTHER REMEDIAL ACTIVITY WASTEWATER		
REMEDATION WASTE. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Provide a list of sites and the requested information for each current and future site.		
60.11 WASTE ORIGIN		
Describe the site and type of facility at which the CERCLA/RCRA or other remedial waste originates (or is expected to originate in the next five years). Groundwater derived from a regular program of sampling a network of groundwater monitoring wells across Fort Leonard Wood. The majority of wells are sampled semi-annually and generate minimal waste. Some wells will be sampled on an annual basis or every 5 years. Expect <50 gallons twice/yr. Primary constituents are Perchloroethylene (PCE) and Trichloroethylene (TCE). PCE avg concentration 10-15 ppb and TCE <10ppb. Also, groundwater derived from drilling and developing monitoring wells including equipment decon. Generated once every few years. Amount varies around 3,000 to 5,000 gallons of groundwater and/or recovered potable water. Main constituents are PCE and TCE at levels <10ppb, but typically below drinking water MCLs.		
60.12 POLLUTANTS		
List the hazardous constituents that are received (or are expected to be received). Included data on volume and concentration, if known. (Attach additional sheets if necessary) PCE and TCE		
60.13 WASTE TREATMENT		
A. Is this waste treated (or will it be treated) prior to entering the treatment works? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe the treatment (provide information about the removal efficiency):		
B. Is the discharge (or will the discharge be) continuous or intermittent? <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent If intermittent, describe the discharge schedule: See Section 60.11		
END OF PART F		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.		
FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
PART G – COMBINED SEWER SYSTEMS		
70. COMBINED SEWER SYSTEMS (COMPLETE THIS PART IF THE TREATMENT WORKS HAS A COMBINED SEWER SYSTEM.)		
Refer to the Supplemental Application Information to determine whether Part G applies to the treatment works.		
70.1 SYSTEM MAP		
Provide a map indicating the following: (May be included with basic application information.)		
A. All CSO Discharges.		
B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)		
C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.		
70.2 SYSTEM DIAGRAM		
Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information:		
A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.		
B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.		
C. Locations of In-Line or Off-Line Storage Structures.		
D. Locations of Flow-Regulating Devices.		
E. Locations of Pump Stations.		
70.3 PERCENT OF COLLECTION SYSTEM THAT IS COMBINED SEWER		
70.4 POPULATION SERVED BY COMBINED SEWER COLLECTION SYSTEM		
70.5 NAME OF ANY SATELLITE COMMUNITY WITH COMBINED SEWER COLLECTION SYSTEM		
70.6 CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT		
70.7 DESCRIPTION OF OUTFALL		
A. Outfall Number		
B. Location		
C. Distance from Shore (if applicable) _____ ft		D. Depth Below Surface (if applicable) _____ ft
E. Which of the following were monitored during the last year for this CSO?		
<input type="checkbox"/> Rainfall <input type="checkbox"/> CSO Pollutant Concentrations <input type="checkbox"/> CSO <input type="checkbox"/> CSO Flow Volume <input type="checkbox"/> Receiving Water Quality		
F. How many storm events were monitored last year?		
70.8 CSO EVENTS		
A. Give the Number of CSO Events in the Last Year _____ Events <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		B. Give the Average Duration Per CSO Event _____ Hours <input type="checkbox"/> Actual <input type="checkbox"/> Approximate
C. Give the Average Volume Per CSO Event _____ Million Gallons <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		D. GIVE THE MINIMUM RAINFALL THAT CAUSED A CSO EVENT IN THE LAST YEAR _____ INCHES OF RAINFALL
70.9 DESCRIPTION OF RECEIVING WATERS		
A. Name of Receiving Water		
B. Name of Watershed/River/Stream System		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)
Name of State Management/River Basin		U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)
70.10 CSO OPERATIONS		
Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)		
END OF PART G.		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Facilities less than or equal to 100,000 gallons per day of domestic waste must use FORM B.)
(Facilities that receive wastes other than domestic must fill out FORM A and other forms as appropriate.)

PART A – BASIC APPLICATION INFORMATION

1. Check which parameter is applicable. **Do not check more than one item.** Construction and operating permit refer to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch.

Effective Sept. 1, 2008, a facility will be required to use **MISSOURI'S ANTIDegradation Rule and Implementation Procedure**. For more information, this document is available at www.dnr.mo.gov/env/wpp/docs/aip-cwc-appr-050708.pdf. This procedure will be applicable to new and expanded wastewater facilities and requires the proposed discharge to a water body to undergo a level of Antidegradation Review that documents the use of a water body's available assimilative capacity is justified.

1.1 Self – explanatory.

- 1.2 An operating permit and antidegradation review public notice requires a Water Quality/Antidegradation Review Sheet to be submitted with the application (No fee required).

CONSTRUCTION PERMIT FEES (Include fee with application.)

\$750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day.

\$2,200 for sewage treatment facility with a design flow of 500,000 gallons per day or more.

DOMESTIC OPERATING PERMIT FEES (Annual operating permit fees are based on flow.)

Annual fee/Design flow

Annual fee/Design flow

\$3,000..... 30,000 gpd to 1 mgd

\$3,500..... >1 million gallons per day

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of two percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, Public Sewer District, Public Water District, or other publicly owned treatment works). Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf. New Public Sewer System facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

a. Municipals - \$200 each.

b. All others – 25 percent of annual fee.

Note: Facility name or address changes where owner, operator and continuing authority remain the same are not considered transfers.

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.

2.1 Self – explanatory.

- 2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

3. Owner – Provide the legal name and address of the owner.

- 3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check Yes to review the draft permit prior to public notice. Check No to waive the process and expedite the permit.

4. Continuing Authority – Provide the permanent organization, which will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources Regional Office.

5. Operator – Provide the name, certificate number and telephone number of the operator of the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

- 7.1 Provide a brief description of the wastewater treatment facilities.

- 7.2 A topographic map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri at 573-368-2125.

- 7.3 Self – explanatory.

- 7.4 For Standard Industrial Codes, visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the appropriate Department of Natural Resources Regional Office.

- 7.5 – 8.1 Self – explanatory.

- 9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.

- 9.2 – 9.9 Self – explanatory.

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Continued)

- 9.10 Refer to University of Missouri Extension Environmental Quality publications about biosolids - numbers WQ420-426. Available on the Web at <http://extension.missouri.edu/explore/envqual/>. Additionally, the federal sludge regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
10. Provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way.
11. – 11.3 Self – explanatory.

PART B – ADDITIONAL APPLICATION INFORMATION

20. – 20.3 Self – explanatory.
- 20.4 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
- 20.5 – 20.7 Self – explanatory.

PART C – CERTIFICATION

30. Signature – All applications must be signed as follows and the signatures must be original:
- a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
 - b. For a partnership or sole proprietorship, by a general partner or the proprietor.
 - c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

PART D – EXPANDED EFFLUENT TESTING DATA

- 40.1 Self – explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

- 50.1 – 50.3 Self – explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

60. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
- 60.1 Self – explanatory
- 60.2 A non-categorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
- i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- 60.3 – 60.13 Self – explanatory.

PART G – COMBINED SEWER SYSTEMS

70. – 70.10 Self – explanatory.

This completed form, along with the applicable permit fees, should be submitted to the appropriate Department of Natural Resources Office (See end of Part C). Submittal of an incomplete application may result in the application being returned. Map of regional offices with addresses and phone numbers are available on the Web at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, please contact the appropriate Regional Office or the Department of Natural Resources, Water Protection Program, Water Pollution Branch, NPDES Permits and Engineering Section at 573-751-6825.

RECEIVED

MAR 27 2001

WATER PROTECTION PROGRAM

ENCLOSURE A

DATE	BOD (5 DAY), PPM										SUSPEND SOLIDS										PRIMARY DIGESTER										HOLDING TANKS				
	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL PH	FINAL D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL. ACIDS	DIGESTER TEMP	DIG. SOL. %	DIG. VOL. %	TANK TEMP	TANK PH	TANK SOL. %	TANK VOL. %	VOLATILE REDUCTION							
1	TR	127	126	62	15.4	13.9	304	76	92	30.7	13	7.1	6.6	0.0	63	60	72	6.9			86														
2	FR										50	7.0	7.2	0.0	65	100	48	6.8			87														
3	SA											7.1	7.1	0.0	62	60	40	6.9			90														
4	SU											7.1	6.8	0.0	62	80	60	6.8	1360	90	90														
5	MO											6.8	8.4	0.0	67	40	94	6.6			86														
6	TE											7.0	8.4	0.0	68	80	50	6.4			87														
7	WE	147	51	39	7.2	5.2	258	68	188	11	6.8	6.7	8.6	0.0	65	80	70	6.4			88														
8	TR										10	7.1	8.4	0.0	62	80	50	6.5			86														
9	FR											6.8	9.8	0.0	60	80	70	6.5			87														
10	SA											6.8	9.5	0.0	61	60	50	6.5			87														
11	SU											7.0	9.3	0.0	62	60	60	6.5	1290	300	85														
12	MO											7.0	9.0	0.0	62	80	44	6.5			85														
13	TE	439	28	76	3.9	7.6	345	48	96	5	7.3	7.0	9.1	0.0	63	40	32	6.5			85														
14	WE										20	7.0	9.0	0.0	65	40	48	6.5			86														
15	TR											7.3	7.6	0.0	67	70	52	6.4			91														
16	FR											7.2	7.4	0.0	60	50	36	6.9			89														
17	SA											7.2	7.3	0.0	60	40	64	6.9			89														
18	SU											7.2	7.2	0.0	62	40	48	6.9	1220	220	89														
19	MO											7.2	7.2	0.0	62	60	56	6.9			90														
20	TE	174	27	30	4.3	4.3	368	37.5	120	8.8	8.1	7.3	6.8	0.0	64	50	56	6.9			90														
21	WE										75	7.2	4.7	0.0	66	50	60	6.5			89														
22	TR											7.1	5.2	0.0	69	60	40	7.1			93														
23	FR											7.1	6.1	0.0	65	60	40	7.2			90														
24	SA											6.9	9.1	0.0	65	60	36	7.2			90														
25	SU											7.0	9.8	0.0	62	40	44	7.1			89														
26	MO											7.0	8.6	0.0	63	40	40	7.1			90														
27	TE	303	67	77	6.2	6.2	475	116	268	12	6.3	7.1	8.5	0.0	59	20	25	7.1			90														
28	WE										75	7.1	8.1	0.0	60	30	46	7.0			90														
29	TR											7.3	7.3	0.0	66	20	74	7.6			97														
30	FR											6.4	7.3	0.0	68	40	60	6.5			98														
TOTAL		1190	299	284	37	37.2	1750	346	764	67.5	41.5	230	2.11	235	0.0	1905	1670	1565																	
MAX		439	126	77	15.4	13.9	475	116	268	30.7	13	7.5	7.3	9.8	0.0	69	100	94																	
MIN		127	27	30	3.9	4.3	258	37.5	92	5	6.3	10	6.4	4.7	0.0	59	20	25																	
AVERAGE		238	59.8	56.8	7.4	7.4	350	69.1	153	13.5	8.3	46	7.0	7.8	0.0	63.5	56	52.2																	
SLUDGE IN HOLDING TANKS IN GAL																											420,000								

PREPARED BY:

APPROVED BY:

POST ENGINEER:

DATE	DAY	April-10 WEATHER		SEWAGE FLOW MGD										SETTLABLE SOLID ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	TR		90	66	7.2	7.2	6.0	4.2	4.82	3.15	2.18	2.5	90	60	90	0	20	4.6	110,235
2	FR	15/10	70	68	7.2	7.2	9.1	3.6	5.07	3.25	1.96	2.5	96	66	35	0	-	-	110,235
3	SA		74	64	7.3	7.1	7.9	4.9	5.15	3.82	1.96	2.8	108	72	33	0.5	-	-	110,235
4	SU		72	64	7.2	7.1	5.3	3.9	4.82	4.24	2.10	2.5	108	72	30	0.5	-	-	110,235
5	MO		81	62	7.0	6.9	5.6	4.0	5.99	3.78	2.74	2.4	96	78	20	0	-	-	110,235
6	TE		81	65	6.9	7.0	5.3	3.5	4.92	3.48	2.77	2.4	96	72	25	0	-	-	110,235
7	WE		75	63	6.8	6.9	5.4	4.0	4.84	3.24	2.69	2.8	108	90	40	0	14	4.5	110,235
8	TR		62	64	6.9	7.0	5.4	4.3	4.84	3.43	2.62	2.7	108	90	35	0	-	-	110,235
9	FR		74	63	7.0	6.9	5.3	4.0	4.71	3.30	2.47	2.6	108	96	50	2	-	-	110,235
10	SA		81	64	6.9	6.9	4.8	4.1	4.34	2.67	1.96	2.7	108	108	45	1	-	-	110,235
11	SU		82	65	7.0	6.9	4.8	3.5	4.45	2.69	2.00	2.7	108	108	48	2	-	-	110,235
12	MO		81	66	7.0	7	5.4	3.5	4.63	2.86	2.21	2.8	120	120	44	1	-	-	110,235
13	TE		84	66	7.1	6.9	4.8	4.1	4.56	2.69	2.16	2.8	120	120	49	1	19	4.2	110,235
14	WE		84	68	6.9	6.9	5.3	4.0	4.57	2.83	2.06	2.7	126	126	46	0	-	-	110,235
15	TR		87	69	7.2	7.1	5.1	3.6	4.58	2.76	2.04	2.2	126	126	21	1	-	-	110,235
16	FR		65	62	7.1	7.2	5.1	3.4	4.50	2.76	1.98	2.2	126	126	32	1	-	-	110,235
17	SA		75	63	7.2	7.1	4.6	3.4	4.25	2.56	1.83	2.3	132	108	29	0	-	-	110,235
18	SU		72	65	7.0	7.0	4.7	3.5	4.33	2.67	1.98	2.3	132	108	26	1	-	-	110,235
19	MO		76	65	7.1	7.0	4.8	3.6	4.50	2.80	1.99	2.2	131	126	25	0	-	-	110,235
20	TE		71	67	7.2	7.1	5.3	3.6	4.47	2.80	2.01	2.2	132	126	26	0	21	2.9	110,235
21	WE		77	68	7.1	7.0	5	3.8	4.62	2.93	2.11	2.3	132	118	31	3	-	-	110,235
22	TR	5/10	74	71	7.2	7.2	5.8	3.5	4.48	2.78	-	2.1	126	112	22	1	-	-	110,235
23	FR	1/10	76	70	7.6	7.4	5	3.9	4.50	2.69	-	2.3	108	102	60	2	-	-	110,235
24	SA	7/10	71	65	7.2	7.0	5.6	3.8	4.54	2.77	-	2.2	120	120	67	9	-	-	110,235
25	SU	2/10	56	63	6.9	6.8	4.9	4.4	4.53	2.88	-	2.3	120	120	60	2	-	-	110,235
26	MO		56	63	7.1	6.9	4.9	3.6	4.48	2.79	-	2.3	144	132	55	2	-	-	110,235
27	TE		58	60	7.3	7.1	4.5	3.5	4.42	2.68	-	2.1	132	120	58	2	22	8	110,235
28	WE		74	63	7.2	7.0	5.2	3.4	4.41	2.65	-	2.2	144	144	45	1	-	-	110,235
29	TR		80	68	7.2	7.4	5.1	3.9	3.18	2.73	-	2.5	144	144	100	5	-	-	110,235
30	FR	4/10	80	70	6.5	6.5	5.2	3.5	5.84	2.10	-	2.5	144	144	230	50	-	-	110,235
TOTAL		3 4/10	2239	1960	212.5	210.7	161.2	114.0	139.33	88.78	45.8	73.1	3593	13254	1477	88	96	24 2/10	3307050
MAX		15/10	90	71	7.6	7.4	9.1	4.9	5.99	4.24	2.77	2.8			230	50.0	0	8.0	110235
MIN		1/10	56	60	6.5	6.5	4.5	3.4	3.18	2.10	1.83	2.1			20.0	0	0	2.9	110235
AVERAGE			74.6	65.3	7.1	7.0	5.4	3.8	4.6	3.0	2.2	2.4	119.8	108	49.2			4.8	110235
PREPARED BY			APPROVED BY										POST ENGINEER						

May-10

SEWAGE FLOW

SETTLABLE SOLID

DATE	DAY	WEATHER		SEWAGE FLOW M G D						SETTLABLE SOLID ML/LITER									
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	SA		73	68	6.7	6.6	4.7	4.1	4.35	2.78		2.5	120	156	168	53	-	-	131,712
2	SU		70	69	6.9	6.7	4.6	3.6	4.46	2.69		2.6	144	144	175	0	-	-	131,589
3	MO		78	72	7.3	7.1	5.1	3.7	4.44	2.68		2.6	144	144	161	44	-	-	131,714
4	TE		83	69	7.2	7.1	5.3	3.4	4.53	2.69		2.5	144	144	10	1	19	13	131,700
5	WE		84	70	7.1	7.1	4.9	3.8	4.35	2.54		2.5	156	156	10	2	-	-	131,234
6	TR		86	71	7.1	6.8	5	3.5	4.57	2.75		2.1	132	156	10	5	-	-	56,500
7	FR		80	66	7.0	6.9	4.8	3.5	4.41	2.63		2.1	138	144	30	6	-	-	56,489
8	SA		70	66	6.9	6.9	4.7	3.5	4.08	2.20		2.1	144	144	25	1	-	-	56,479
9	SU		57	64	7.0	6.9	4.7	3.3	4.37	2.52		2.2	144	144	24	1	-	-	56,500
10	MO	6/10	54	60	6.9	6.8	5.1	3.8	4.77	3.29		2.1	144	144	42	2	-	-	56,498
11	TE		79	63	7.0	6.9	5.2	3.9	4.60	2.46		2.2	144	144	28	1	21	8.1	56,897
12	WE		81	62	7.1	7.0	6	4.4	4.93	3.62		2.2	144	144	40	1	-	-	56,400
13	TR	17/10	81	64	6.9	6.4	6.3	4.3	5.09	3.60		2.5	144	144	10	5	-	-	56,448
14	FR	14/10	79	64	6.9	6.9	16.2	4.1	7.20	4.81		2.2	144	144	40	5	-	-	56,412
15	SA	3/10	67	63	6.9	6.8	8.3	5.4	6.79	5.15		2.2	78	144	37	3	-	-	56,432
16	SU	7/10	70	61	7.1	7.1	10.9	4.8	6.73	4.76		2.3	30	138	44	5	-	-	56,422
17	MO	1/10	61	61	7.1	7.0	6.5	5.0	5.44	4.09		2.5	42	96	35	4	-	-	56,432
18	TE		78	63	7.2	7.0	5.3	4.2	4.93	3.64		2.5	48	69	31	2	19	5.4	56,412
19	WE	5/10	70	62	7.1	6.9	5.2	4.1	4.70	3.56		2.6	42	48	39	4	-	-	56,487
20	TR	19/10	72	63	6.9	6.9	10.8	6.6	5.48	5.48		3.1	84	84	3	0	-	-	56,498
21	FR		82	66	6.9	6.9	5.7	4.6	5.71	5.03		3.0	84	84	4	0	-	-	56,448
22	SA		85	69	7.0	6.9	5.1	4.2	4.83	3.83	2.71	2.9	48	84	10	0	-	-	56,421
23	SU		89	73	7.1	7.0	5.0	4.2	4.76	3.53	2.75	2.9	45	84	9	0	-	-	56,432
24	MO		94	76	7.3	7.1	5.3	4.1	4.73	3.82	2.72	3.1	66	78	0	0	-	-	56,423
25	TE		85	73	7.3	7.1	4.8	4.2	1.87	3.47	2.68	3.0	78	66	15	0	24	4.5	56,454
26	WE		98	77	7.2	7.1	5.1	3.6	4.55	3.41	2.64	3.1	42	48	11	0	-	-	56,432
27	TR		89	79	7.2	7.3	5.2	3.8	4.63	3.46	2.71	2.9	42	54	8	0	-	-	56,448
28	FR		100	78	6.4	6.3	5.3	3.9	4.35	3.16	2.58	3.2	48	60	8	0	-	-	56,449
29	SA		88	78	6.6	6.5	4.6	3.6	4.00	2.72	2.44	3.1	54	60	9	0	-	-	56,448
30	SU		87	79	6.8	6.7	4.3	3.2	4.10	2.70	2.46	3.0	96	108	9	0	-	-	56,489
31	MO	1/10	84	78	6.9	6.8	4.8	3.2	4.12	2.59	2.45	3.10	120	120	11	0.00	-	-	56,478
TOTAL		73/10	2454	2127	217	213.5/10	184.8/10	125.6/10	147.9/10	105.64	26.2/10	80.9/10	3033	3477	1056	145	83	31	2126177
MAX		19/10	100	79	7.3	7.3	16.2	6.6	7.2	5.48	2.75	3.2			175.0	53.0	24.0	13.0	131714
MIN		1/10	54	60	6.4	6.3	4.3	3.2	1.87	2.2	2.44	2.1			0.0	0	19.0	4.5	56400
AVERAGE			79.2	68.6	7.0	6.9	6.0	4.1	4.8	3.4	2.91	2.6	97.8	112.2	34.1		20.8	7.8	68586

PREPARED BY

APPROVED BY

POST ENGINEER

JUNE 2010		BOD (5 DAY), PPM					SUSPEND SOLIDS					PRIMARY DIGESTER										HOLDING TANKS								
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION	
1	TE	-	-	-	-	-	-	-	-	-	-	-	7.0	6.8	0.0	76	20	60	6.4	-	-	104	-	-	-	-	-	-	-	
2	WE	143	42	38	4.8	4.6	196	33.3	84	2.4	1.7	100	7.0	6.6	0.0	77	20	68	6.5	-	-	103	-	-	-	-	-	-	-	
3	TR	-	-	-	-	-	-	-	-	-	-	-	7.0	6.5	0.0	72	40	68	6.5	-	-	97	-	-	-	-	-	-	-	
4	FR	-	-	-	-	-	-	-	-	-	-	-	7.0	6.5	0.0	74	20	60	6.4	-	-	96	-	-	-	-	-	-	-	
5	SA	-	-	-	-	-	-	-	-	-	-	-	7.0	6.5	0.0	74	20	64	6.4	-	-	96	-	-	-	-	-	-	-	
6	SU	-	-	-	-	-	-	-	-	-	-	-	7.1	6.5	0.0	74	20	56	6.5	1400	90	96	-	-	-	-	-	-	-	
7	MO	-	-	-	-	-	-	-	-	-	-	-	7.0	6.6	0.0	73	40	40	6.5	-	-	97	-	-	-	-	-	-	-	
8	TE	165	96	40	8.1	8.2	679	232	172	15	11.7	320	6.9	8.9	0.0	70	40	60	6.5	-	-	96	-	-	-	-	-	-	-	
9	WE	-	-	-	-	-	-	-	-	-	-	-	7.0	7.5	0.0	72	50	76	6.5	-	-	96	-	-	-	-	-	-	-	
10	TR	-	-	-	-	-	-	-	-	-	-	-	6.4	6.2	0.0	80	50	68	6.3	-	-	100	-	-	-	-	-	-	-	
11	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	6.7	0.0	71	40	52	6.5	-	-	99	-	-	-	-	-	-	-	
12	SA	-	-	-	-	-	-	-	-	-	-	-	7.0	6.6	0.0	72	20	40	6.5	-	-	99	-	-	-	-	-	-	-	
13	SU	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	74	20	44	6.5	1320	280	100	-	-	-	-	-	-	-	
14	MO	-	-	-	-	-	-	-	-	-	-	-	7.0	6.4	0.0	75	40	64	6.5	-	-	100	-	-	-	-	-	-	-	
15	TE	167	126	74.4	8.2	7.5	455	228	800	13	13.7	300	7.0	6.4	0.0	76	60	44	6.5	-	-	99	-	-	-	-	-	-	-	
16	WE	-	-	-	-	-	-	-	-	-	-	-	7.0	6.3	0.0	74	40	48	6.5	-	-	99	-	-	-	-	-	-	-	
17	TR	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	78	20	60	6.6	-	-	102	-	-	-	-	-	-	-	
18	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	72	40	56	6.6	1240	280	100	-	-	-	-	-	-	-	
19	SA	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	75	50	32	6.6	-	-	100	-	-	-	-	-	-	-	
20	SU	-	-	-	-	-	-	-	-	-	-	-	7.1	6.5	0.0	76	30	56	6.6	-	-	100	-	-	-	-	-	-	-	
21	MO	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	77	40	52	6.6	-	-	101	-	-	-	-	-	-	-	
22	TE	471	256	240	6.0	5.0	215	120	52	6.4	5.6	75	7.0	6.4	0.0	79	50	56	6.5	-	-	101	-	-	-	-	-	-	-	
23	WE	-	-	-	-	-	-	-	-	-	-	-	7.1	6.4	0.0	80	50	48	6.6	-	-	101	-	-	-	-	-	-	-	
24	TR	-	-	-	-	-	-	-	-	-	-	-	7.1	5.8	0.0	78	60	40	6.6	-	-	106	-	-	-	-	-	-	-	
25	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	5.6	0.0	79	40	40	6.7	-	-	104	-	-	-	-	-	-	-	
26	SA	-	-	-	-	-	-	-	-	-	-	-	7.1	5.7	0.0	79	60	40	6.6	-	-	104	-	-	-	-	-	-	-	
27	SU	-	-	-	-	-	-	-	-	-	-	-	7.0	5.6	0.0	80	40	40	6.6	1220	160	104	-	-	-	-	-	-	-	
28	MO	-	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	79	60	10	6.5	-	-	104	-	-	-	-	-	-	-	
29	TE	-	-	-	-	-	-	-	-	-	-	-	7.0	5.4	0.0	77	40	56	6.5	-	-	104	-	-	-	-	-	-	-	
30	WE	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	78	20	60	6.4	-	-	105	-	-	-	-	-	-	-	
TOTAL		946	520	392.4	27.1	25.3	1545	613	1108	36.8	32.7	795	210	191	0	2271	1140	1558	-	-	-	-	-	-	-	-	-	-	-	
MAX		471	256	240	8.2	8.2	679	232	800	15	13.7	320	7.1	8.9	0.00	80	60	76	-	-	-	-	-	-	-	-	-	-	-	-
MIN		143	42	38	4.8	4.6	196	33.3	52	2.4	1.7	75	6.4	5.3	0	70	20	10	-	-	-	-	-	-	-	-	-	-	-	
AVERAGE		236	130	98.1	6.8	6.3	386.3	153	277	9.2	8.18	199	7.0	6.4	0	75.7	38	51.9	-	-	-	-	-	-	-	-	-	-	-	
PREPARED BY:																														
APPROVED BY:																														
POST ENGINEER:																														

June-10

SEWAGE FLOW

SETTLABLE SOLID

DATE	DAY	WEATHER		SEWAGE FLOW M G D										SETTLABLE SOLID ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED,GAL.
1	TE		86	78	7.1	7.0	4.6	3.7	4.22	2.93	2.43	3.0	120	120	8	0	-	-	56,448
2	WE	2 5/10	88	79	7.0	6.8	9.6	3.7	4.69	3.28	2.51	3.1	120	120	9	0	20	4.8	56,498
3	TR		86	76	6.7	6.7	6.3	4.3	5.38	4.04	2.57	2.8	132	132	12	2	-	-	56,354
4	FR		90	77	6.9	6.8	5.4	3.3	4.18	3.04	2.46	2.5	138	126	15	3	-	-	56,450
5	SA		89	78	6.9	6.9	4.6	3.5	3.82	2.54	2.37	2.6	144	120	12	1	-	-	56,487
6	SU		84	77	7.0	7.0	4.2	2.8	4.02	2.73	2.49	2.6	144	126	14	4	-	-	56,298
7	MO		83	76	7.1	7.0	4.5	3.4	3.92	2.74	2.40	2.5	144	144	18	3	-	-	56,358
8	TE	1 3/10	81	72	6.9	6.8	7.2	3.1	4.38	3.37	2.48	2.3	144	132	27	6	18	6.4	56,448
9	WE		88	74	7.0	6.9	5.5	4.2	4.66	3.90	2.55	2.4	144	144	21	4	-	-	56,500
10	TR		90	83	6.7	6.3	4.5	3.5	4.33	3.15	2.55	2.1	150	132	22	5	-	-	56,387
11	FR	4/10	90	75	6.9	6.8	5.4	3.7	4.50	3.78	2.56	2.3	156	132	15	2	-	-	56,895
12	SA		94	75	6.9	6.8	4.4	3.3	3.94	3.13	2.35	2.2	150	132	17	3	-	-	56,448
13	SU		91	77	7.0	6.9	4.6	3.5	3.91	2.73	2.37	2.3	150	138	15	2	-	-	56,394
14	MO		90	78	7.0	6.8	4.6	3.6	4.16	3.28	2.49	2.3	129	144	17	2	-	-	56,412
15	TE	8/10	89	78	7.0	6.9	7.5	3.3	4.43	3.75	2.49	2.3	132	144	16	3	19	8.4	56,312
16	WE	1/10	91	78	7.1	7.0	5.2	3.4	4.12	3.18	2.42	2.4	144	132	14	1	-	-	56,452
17	TR		98	83	6.9	6.9	4.7	3.7	4.34	3.29	2.57	2.1	150	132	15	2	-	-	56,542
18	FR		96	81	6.9	7.0	4.9	3.6	4.03	3.22	2.36	2.1	144	132	20	2	-	-	56,149
19	SA		96	81	7.0	6.9	4.3	3.5	3.91	2.95	2.34	2.2	144	132	17	2	-	-	56,448
20	SU		92	80	7.0	6.9	4.5	3.1	4.05	3.10	2.43	2.1	138	114	17	2	-	-	56,389
21	MO		96	81	7.1	7.0	5.3	3.7	4.05	3.15	2.34	2.2	132	132	15	3	-	-	28,224
22	TE		98	83	7.1	7.2	5.2	3.6	4.11	3.29	2.44	2.3	132	120	18	5	22	5.6	29,356
23	WE		96	83	7.1	7.1	4.5	3.3	4.08	3.17	2.43	2.3	132	120	17	4	-	-	28,548
24	TR		94	80	6.9	7.0	4.9	3.5	4.33	3.49	2.57	2.2	138	120	15	0	-	-	28,359
25	FR		93	81	7.0	6.9	4.6	3.5	1.69	3.23	2.46	2.3	138	120	12	0	-	-	28,224
26	SA		93	82	7.1	7.0	4.3	3.5	4.14	3.00	2.34	2.3	144	132	14	0	-	-	28,298
27	SU		94	83	7.0	6.9	4.5	3.3	3.94	2.96	2.38	2.2	150	132	12	0	-	-	28,315
28	MO		88	82	7.1	7.2	4.4	3.3	4.21	3.33	2.52	2.3	144	138	18	6	-	-	28,459
29	TE		89	79	7.0	7.1	5.3	3.4	3.96	2.98	2.39	2.1	132	132	16	3	-	-	28,561
30	WE		88	81	7.0	7.0	4.4	3	4.03	3.07	2.43	2.3	144	132	15	3	-	-	28,534
TOTAL		5 1/10	2221	2371	209 4/10	207 5/10	153 9/10	104 3/10	123 5/10	95.83	73 5/10	70 7/10	4203	3906	473	73	78	25 2/10	1413547
MAX		2 5/10	98	83	7.1	7.2	9.6	4.3	5.38	4.04	2.57	3.1			27.0	6.0	0	8.4	56895
MIN		1/10	81	72	6.7	6.3	4.2	2.8	1.69	2.54	2.34	2.1			8.0	0	0	4.8	28224
AVERAGE			90.7	79.0	7.0	6.9	5.1	3.5	4.1	3.2	2.4	2.4	140	130	15.8	18.3	19.8	6.3	47118.2

PREPARED BY

APPROVED BY

POST ENGINEER

JULY 2010		BOD (5 DAY), PPM										SUSPEND SOLIDS										PRIMARY DIGESTER										HOLDING TANKS					
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF. PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION								
1	TR	127				6.9	351	252	272	11	4.7				77	20						110															
2	FR											10	7.1	6.4	0.0	78	40					107															
3	SA												7.0	6.4	0.0	79	30					106															
4	SU												7.0	6.5	0.0	77	20					106															
5	MO												7.1	6.5	0.0	78	30					105															
6	TE	75	120	74	5.7	6.7	472	296	444	11	12.3		7.1	6.6	0.0	79	20				105																
7	WE											25	7.1	6.7	0.0	77	40				105																
8	TR												7.1	6.8	0.0	76	40				109																
9	FR												6.8	4.1	0.0	78	40				108																
10	SA												6.9	4.8	0.0	78	40				107																
11	SU												6.9	5.7	0.0	75	60				106																
12	MO												7.0	6.8	0.0	77	40				108																
13	TE	174	106	40	11.7	8.3	362.5	324	372	6	4.7		7.0	6.1	0.0	79	40				108																
14	WE											30	7.0	5.7	0.0	80	40				110																
15	TR												6.8	3.5	0.0	82	20				107																
16	FR												7.0	3.4	0.0	82	20				106																
17	SA												7.0	3.5	0.0	82	40				106																
18	SU												7.0	3.6	0.0	82	20				106																
19	MO												7.0	3.6	0.0	81	20				102																
20	TE	135	100	68	10.8	7.3	285.3	172	504	18	8.7		7.0	4.2	0.0	79	40				100																
21	WE											10	6.9	4.5	0.0	80	40				98																
22	TR												6.9	4.5	0.0	82	50				97																
23	FR												7.1	5.4	0.0	82	50				98																
24	SA												7.0	5.3	0.0	84	10				99																
25	SU												7.0	6.2	0.0	81	10				98																
26	MO												6.9	8.4	0.0	76	20				97																
27	TE												7.0	7.3	0.0	77	10				97																
28	WE	134	180	82	8	7.0	127.5	296	392	6	6.5		7.0	6.8	0.0	80	30				97																
29	TR											10	7.1	6.2	0.0	77	70				103																
30	FR												7.1	5.4	0.0	79	50				105																
31	SA												7.2	7.2	0.0	81	40				102																
TOTAL		645	506	264	36.2	36.2	1598	1340	1984	52	36.9	85	217	175	0	2455	1040	1326																			
MAX		174	180	82	11.7	8.3	472	324	504	18	12.3	30	7.1	8.4	0.00	84	70	64																			
MIN		75	100	40	5.7	6.7	127.5	172	272	6	4.7	10	6.8	3.4	0	75	10	20																			
AVERAGE		129	126.5	66	9.05	7.2	319.7	268	397	10.4	7.4	21.3	7.2	5.8	0	81.8	35	44.2																			
PREPARED BY:		APPROVED BY:										POST ENGINEER:																									

SLUDGE IN HOLDING TANKS IN GAL 250,000

DATE	DAY	WEATHER					SEWAGE FLOW MGD								SETTLEABLE SOLID ML/LITER				
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	#1 PRI. CLAR. SLUDGE LEVEL IN IN.	#2 PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	TR		97	82	6.9	7.0	4.5	3.5	3.81	2.96	75.99	2.2	150	132	8	0	21	5.9	28,220
2	FR		97	83	6.9	6.9	4.8	3.6	3.99	2.95	2.44	2.5	150	126	8	0	-	-	27,640
3	SA		88	83	6.9	6.9	4.2	3.2	3.72	2.66	2.32	2.4	150	132	10	0	-	-	28,950
4	SU		80	81	7.0	6.9	4.0	3.3	3.82	2.65	2.41	2.5	150	130	9	2	-	-	27,940
5	MO		91	82	7.0	7.3	4.5	3.2	3.94	2.85	2.44	2.6	144	126	18	10	-	-	28,350
6	TE		89	83	7.0	7.3	4.5	3.4	4.05	3.03	2.42	2.8	144	144	20	11	21	6.8	28,390
7	WE		86	81	7.1	7.4	4.4	3.1	4.09	3.13	2.45	2.7	126	132	21	9	-	-	28,565
8	TR	2	89	79	7.1	7.2	9.2	3.2	4.41	3.74	2.53	2.0	132	132	15	4	-	-	28,360
9	FR	4/10	92	83	6.9	6.7	6.0	3.9	4.69	4.68	2.38	2.3	66	132	20	10	-	-	28,425
10	SA		89	82	7.0	6.8	4.3	3.2	3.81	2.75	2.31	2.4	60	132	19	6	-	-	28,430
11	SU	9/10	84	77	6.8	6.8	5.2	3.3	4.11	3.24	2.41	2.3	60	132	9	5	-	-	28,320
12	MO	3/10	84	80	6.9	6.8	5.1	3.5	4.41	2.71	2.53	2.5	72	120	21	0	-	-	29,458
13	TE		97	81	7.0	6.9	5.3	3.8	4.20	2.56	2.46	2.3	72	120	14	0	-	-	28,964
14	WE		100	83	7.0	7.1	4.7	3.6	4.25	3.42	2.52	2.3	75	108	17	0	20	5.1	29,945
15	TR		92	80	6.9	6.1	4.5	3.4	4.14	3.78	2.43	2.5	72	96	12	10	-	-	42,895
16	FR		96	80	6.9	7.0	4.5	3.2	4.12	3.39	1.81	2.7	82	96	16	3	-	-	28,532
17	SA		98	83	6.9	7.0	4.6	3.0	3.67	2.99	0.59	2.6	90	102	18	2	-	-	28,689
18	SU		94	84	6.9	6.9	4.3	3.0	3.85	3.16	0.63	2.6	84	102	19	3	-	-	28,468
19	MO		97	84	7.0	7.0	4.5	3.1	3.98	3.31	0.68	2.5	81	84	16	2	-	-	28,765
20	TE	6/10	91	81	7.0	7.0	4.8	3.4	4.04	3.40	0.66	2.6	78	84	17	4	23	8.5	28,426
21	WE	1	87	78	7.1	6.3	5.7	3.2	4.53	4.04	0.74	2.7	72	78	10	6	-	-	29,681
22	TR		91	84	6.8	6.5	4.5	3.6	4.20	3.76	0.72	2.9	66	66	12	4	-	-	28,645
23	FR		93	85	6.9	6.7	4.3	3.9	4.24	3.47	0.76	2.8	60	36	15	4	-	-	29,221
24	SA	1/10	108	86	6.9	6.8	4.4	3.6	3.84	3.17	0.64	2.8	66	42	16	4	-	-	27,651
25	SU	2/10	84	84	7.0	6.9	4.4	3.4	3.40	3.40	0.69	2.8	84	60	15	4	-	-	27,324
26	MO	1	78	76	6.8	6.9	10.5	3.3	4.09	3.91	0.74	2.5	108	84	25	16	-	-	28,135
27	TE		94	80	6.9	6.8	4.8	3.8	4.40	3.97	0.73	2.7	120	96	21	10	-	-	27,482
28	WE		91	82	7.0	6.9	4.5	3.3	4.01	3.35	0.67	2.6	104	78	16	4	29	4.0	27,369
29	TR	1/10	90	81	6.9	7.0	4.6	3.4	4.20	3.51	0.70	2.6	108	78	15	2	-	-	28,142
30	FR		93	83	6.8	6.9	4.5	3.2	4.06	3.38	0.68	2.7	102	78	12	1	-	-	27,589
31	SA		89	84	6.8	6.9	4.6	3.2	3.94	3.10	0.70	3.3	96	72	15	1	-	-	27,489
TOTAL		6 6/10	2826	2535	215	213 6/10	154 7/10	104 8/10	126	102 4/10	122 2/10	79 7/10	3024	3130	479	137	114	30 3/10	894460
MAX	2	108	86	7.1	7.4	10.5	3.9	4.69	4.68	76	2.9			25.0	16.0	29.0	8.5	42895	
MIN	1/10	78	76	6.8	6.1	4	3	3.4	2.56	0.59	2.0			8.0	0	20.0	4.0	27324	
AVERAGE		91.3	81.8	6.9	6.9	5.0	3.4	4.1	3.3	3.94	2.6	98	101	15.5		22.8	6.1	28854	
PREPARED BY			APPROVED BY										POST ENGINEER						

AUG. 2010	BOD (5 DAY) PPM						SUSPEND SOLIDS						PRIMARY DIGESTER						HOLDING TANKS											
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO ₂ USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION	
1	SU	-	-	-	-	-	-	-	-	-	-	7.0	6.3	0.0	84	25	101	6.4	1420	480	110	108								
2	MO	-	-	-	-	-	-	-	-	-	-	7.3	6.1	0.0	85	15	121	6.4				108								
3	TE	-	-	-	-	-	-	-	-	-	-	6.8	6.9	0.0	89	15	91	6.5				104								
4	WE	-	-	-	-	-	-	-	-	-	-	7.1	5.8	0.0	87	105	61	6.5	1480	680	105	105								
5	TR	96	210	76	14	9.2	33.3	268	312	4	5.8	-	7.1	6.0	0.0	83	40	28	6.5		105	105								
6	FR	-	-	-	-	-	-	-	-	-	-	10	7.0	5.6	0.0	83	0	20	6.5		100	100								
7	SA	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	82	40	0	6.5			100	100								
8	SU	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	83	40	14	6.5	1260	220	100	100								
9	MO	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	83	10	32	6.5			98	98								
10	TE	107	210	130	11.6	8.6	57.1	252	64	13	8.8	-	7.0	5.3	0.0	83	30	81	6.5		98	98								
11	WE	-	-	-	-	-	-	-	-	-	-	350	7.0	5.3	0.0	93	20	16	6.5		97	97								
12	TR	-	-	-	-	-	-	-	-	-	-	-	7.1	5.7	0.0	93	20	12	6.8		93	93								
13	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	5.1	0.0	94	40	20	6.5		97	97								
14	SA	-	-	-	-	-	-	-	-	-	-	-	7.0	5.3	0.0	91	20	16	6.5		97	97								
15	SU	-	-	-	-	-	-	-	-	-	-	-	7.0	5.8	0.0	88	20	12	6.5	1270	160	97	97							
16	MO	-	-	-	-	-	-	-	-	-	-	-	7.1	4.8	0.0	89	40	12	6.5		102	102								
17	TE	175	42	54	4.5	7.0	169	176	880	9	5.8	-	7.1	4.7	0.0	87	20	16	6.5		102	102								
18	WE	-	-	-	-	-	-	-	-	-	-	-	5	7.0	4.7	0.0	85	20	20	6.5		102	102							
19	TR	-	-	-	-	-	-	-	-	-	-	-	7.1	4.7	0.0	83	20	24	6.4		103	103								
20	FR	-	-	-	-	-	-	-	-	-	-	-	7.0	4.7	0.0	80	30	24	6.5		103	103								
21	SA	-	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	79	30	8	6.5		102	102								
22	SU	-	-	-	-	-	-	-	-	-	-	-	7.1	5.1	0.0	82	40	0	6.5	1220	360	103	103							
23	MO	-	-	-	-	-	-	-	-	-	-	-	7.0	4.5	0.0	83	40	0	6.5		103	103								
24	TE	120	156	153	7.6	5.8	169	116	405	4.0	5.8	-	7.0	4.3	0.0	81	20	0	6.5		103	103								
25	WE	-	-	-	-	-	-	-	-	-	-	-	25	7.0	4.5	0.0	79	20	8	6.5		102	102							
26	TR	-	-	-	-	-	-	-	-	-	-	-	7.1	4.7	0.0	77	40	12	6.6		107	107								
27	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	5.6	0.0	68	40	20	6.5		108	108								
28	SA	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	72	40	16	6.5		108	108								
29	SU	-	-	-	-	-	-	-	-	-	-	-	7.0	5.0	0.0	76	40	24	6.5	1200	320	108	108							
30	MO	-	-	-	-	-	-	-	-	-	-	-	7.0	5.1	0.0	75	40	32	6.5		107	107								
31	TE	-	-	-	-	-	-	-	-	-	-	-	7.0	4.8	0.0	75	30	30	6.5		107	107								
TOTAL		498	618	413	37.7	30.6	428.4	812	1603	30	26.2	390	218	164	0	2572	950	516												
MAX		175	210	153	14	9.2	169	268	880	13	8.8	350	7.3	6.9	0.00	94	105	61												
MIN		96	42	54	4.5	5.8	33.3	116	6.4	4	5.8	5	6.8	4.3	0	68	0	0												
AVERAGE		125	154.5	103.3	9.4	7.7	107.1	203	401	7.5	6.6	97.5	7.0	5.3	0.0	83.0	30.6	16.6												

PREPARED BY:

APPROVED BY:

POST ENGINEER:

SLUDGE IN HOLDING TANKS IN GAL

150,000

sour = 0.26

DATE	DAY	WEATHER		SEWAGE FLOW MG D								SETTLABLE SOLID ML/LITER							
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	#1 PRI. CLAR. SLUDGE LEVEL IN IN.	#2 PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	SU		96	79	6.5	6.5	4.3	3.0	4.34	3.02	0.77	3.2	90	72	12	0.2	-	-	28,224
2	MO		92	82	6.7	6.8	3.9	2.7	4.11	3.05	0.24	2.7	96	69	15	0	-	-	29,356
3	TE		102	84	6.6	6.6	4.5	2.7	1.70	2.60	0.87	2.3	96	84	16	1.5	-	-	28,224
4	WE		104	84	6.7	6.8	4.1	3.1	4.11	3.62	0.80	2.5	96	72	15	1	-	-	29,567
5	TR		98	81	6.9	6.9	4.1	3.3	3.76	3.52	0.75	2.5	102	72	12	0	20	4.2	28,524
6	FR		90	80	6.9	6.9	4.0	3.0	3.55	3.26	0.30	2.6	90	72	20	1	-	-	28,364
7	SA		93	83	6.9	6.8	4.0	3.0	3.25	2.70	0.50	2.5	90	72	17	1	-	-	37,567
8	SU		95	84	7.0	6.9	3.8	3.1	3.46	3.08	0.70	2.6	90	72	17	1	-	-	37,191
9	MO		101	85	7.0	7.0	4.4	3.0	3.61	3.34	0.71	2.7	96	84	18	1	-	-	37,258
10	TE		96	84	6.9	7.0	4.1	3.0	3.52	3.34	0.65	2.6	96	72	19	2	31	5	37,562
11	WE		104	85	7.0	6.9	4.2	2.7	3.30	3.25		2.6	90	66	18	1	-	-	37,415
12	TR	1/10	104	87	6.9	6.9	4.3	2.9	3.95	3.33		2.9	78	66	18	1	-	-	36,981
13	FR		101	88	6.9	7.0	4.0	3.0	3.35	3.57		2.4	84	72	12	0	-	-	37,135
14	SA		98	86	6.9	6.9	4.8	3.1	3.74	4.00		2.6	78	72	14	0	-	-	37,156
15	SU	7/10	93	86	6.9	6.9	3.8	2.9	3.68	3.68		2.6	78	60	16	1	-	-	36,981
16	MO		89	87	6.9	7.1	3.8	2.7	3.59	3.60		2.3	78	72	10	0	-	-	37,268
17	TE		82	86	7.0	7.0	3.8	2.7	3.36	3.03	0.36	2.3	84	60	10	0	26	10	37,824
18	WE		91	85	6.9	6.9	4.0	2.9	3.42	3.04	0.65	2.4	108	72	11	0	-	-	37,956
19	TR		92	86	6.9	7.0	3.9	2.8	3.71	2.66	0.75	2.3	108	66	15	0	-	-	37,989
20	FR	4/10	92	84	7.0	6.9	3.9	3	3.71	3.24	0.72	2.5	78	60	15	0	-	-	37,756
21	SA	9/10	92	81	6.9	6.9	4.2	3.3	3.77	3.66	0.73	2.5	84	90	21	1	-	-	37,826
22	SU		88	83	7.0	6.9	4.1	3.0	3.84	2.98	0.83	2.6	78	60	16	1	-	-	38,126
23	MO		89	85	7.0	6.9	3.9	3.1	3.67	3.08	0.74	2.5	78	60	11	0	-	-	38,265
24	TE		87	83	6.9	7.0	3.9	3.3	3.53	3.01	0.70	2.6	84	60	10	0	28	6	37,956
25	WE		80	80	7.0	6.9	3.8	3.2	2.88	2.31	0.66	2.6	96	84	11	0	-	-	37,581
26	TR		78	79	7.0	6.9	3.7	1.6	3.54	1.17	0.53	3.7	90	80	12	0	-	-	37,642
27	FR		80	70	7.0	6.9	3.7	2.1	3.48	2.79	0.62	2.3	80	65	10	0	-	-	37,592
28	SA		93	75	7.0	6.9	3.8	3.1	3.25	2.75	0.57	2.5	84	60	10	0	-	-	37,598
29	SU		95	78	7.0	6.9	3.8	2.7	3.34	2.83	0.54	2.4	72	48	10	0	-	-	37,425
30	MO		89	78	6.9	6.9	4.0	2.8	3.69	2.80	0.71	2.5	70	50	11	0	-	-	37,268
31	TE		88	78	7.0	6.9	4.2	2.9	3.82	3.73	0.79	2.40	76	52	10	0.00	-	-	37,165
TOTAL		14/10	2872	2556	214	213	124	89	110	96	16	79	2698	2116	432	13	105	25	110742
MAX		9/10	104	88	7.0	7.1	4.8	3.3	4.34	4.00	0.87	3.7			21.0	2.0	0	10.0	38,265
MIN		1/10	78	70	6.5	6.5	3.7	1.6	1.7	1.17	0.24	2.3			10.0	0	0	4.2	28,224
AVERAGE			92.6	82.5	6.9	6.9	4.0	2.9	3.5	3.1	6/10	2.6	87.0	68.3	13.9			5.0	35,830

PREPARED BY

APPROVED BY

POST ENGINEER

SEPT. 2010		BOD (5 DAY), PPM					SUSPEND SOLIDS					PRIMARY DIGESTER										HOLDING TANKS								
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF TEMP.	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION	
1	WE	134	138	75	4.8	5	109	220	212	10	5.8	5	6.8	8.0	0.0	64	60	28	6.7				106							
2	TR	-	-	-	-	-	-	-	-	-	-	5	7.1	4.4	0.0	67	60	24	6.6				105							
3	FR	-	-	-	-	-	-	-	-	-	-	7.1	6.0	0.0	75	80	20	6.6				99								
4	SA	-	-	-	-	-	-	-	-	-	-	7.0	5.1	0.0	66	80	28	6.6				104								
5	SU	-	-	-	-	-	-	-	-	-	-	7.0	4.8	0.0	70	60	24	6.6	160	120		104								
6	MO	-	-	-	-	-	-	-	-	-	-	7.0	4.6	0.0	72	60	20	6.6				104								
7	TE	-	-	-	-	-	-	-	-	-	-	7.1	4.8	0.0	69	40	30	6.5				104								
8	WE	116	312	111	7.2	9.2	92	196	320	18	2.8	10	7.0	4.6	0.0	68	40	24	6.5			104								
9	TR	-	-	-	-	-	-	-	-	-	-	10	7.0	4.3	0.0	70	40	36	6.6			104								
10	FR	-	-	-	-	-	-	-	-	-	-	7.0	4.3	0.0	71	30	36	6.5				104								
11	SA	-	-	-	-	-	-	-	-	-	-	7.0	5.4	0.0	70	50	40	6.5				104								
12	SU	-	-	-	-	-	-	-	-	-	-	7.0	5.0	0.0	71	20	24	6.5				104								
13	MO	-	-	-	-	-	-	-	-	-	-	7.0	4.8	0.0	72	40	24	6.5				104								
14	TE	-	-	-	-	-	-	-	-	-	-	7.0	4.8	0.0	72	40	24	6.5				103								
15	WE	-	-	-	-	-	-	-	-	-	-	6.9	5.6	0.0	72	70	40	6.5				103								
16	TR	36.2	177	46	10.8	4	171.5	192	372	6	4.3	75	6.6	4.0	0.0	73	40	56	6.6			97								
17	FR	-	-	-	-	-	-	-	-	-	-	7.0	4.3	0.0	76	40	4	6.6				99								
18	SA	-	-	-	-	-	-	-	-	-	-	6.9	4.3	0.0	76	30	36	6.6				100								
19	SU	-	-	-	-	-	-	-	-	-	-	7.0	4.3	0.0	78	30	36	6.6	1240	50	100	100								
20	MO	-	-	-	-	-	-	-	-	-	-	7.0	4.3	0.0	79	30	44	6.6				100								
21	TE	230	132	4	4.6	5.8	408	154	330	8.8	9.2	-	7.0	4.3	0.0	79	20	16	6.5			101								
22	WE	-	-	-	-	-	-	-	-	-	-	176	6.8	4.3	0.0	82	20	24	6.4			90								
23	TR	-	-	-	-	-	-	-	-	-	-	7.0	4.7	0.0	83	30	30	6.4				93								
24	FR	-	-	-	-	-	-	-	-	-	-	6.8	4.2	0.0	77	60	40	6.5				98								
25	SA	-	-	-	-	-	-	-	-	-	-	6.9	4.2	0.0	75	30	20	6.5				98								
26	SU	-	-	-	-	-	-	-	-	-	-	6.8	4.4	0.0	70	50	40	6.5	1200	260		97								
27	MO	-	-	-	-	-	-	-	-	-	-	6.9	4.8	0.0	67	40	16	6.5				97								
28	TE	93	150	90	10.6	4	118	188	164	13	3.9	-	7.0	4.6	0.0	65	30	36	6.5			97								
29	WE	-	-	-	-	-	-	-	-	-	-	176	7.1	4.5	0.0	76	30	48	6.6			102								
30	TR	-	-	-	-	-	-	-	-	-	-	7.0	4.7	0.0	71	40	40	6.6				100								
TOTAL		610	909	326	38	28	898.5	950	1398	55.8	26	442	188	129	0	2175	1280	908												
MAX		230	312	111	10.8	9.2	408	220	372	18	9.2	176	7.1	8.0	0.00	83	80	56												
MIN		36.2	132	4	4.6	4	92	154	164	6	2.8	5	6.8	4.0	0	64	20	4												
AVERAGE		122	181.8	65.2	7.6	5.6	179.7	190	280	11.2	5.2	88.4	7.0	4.8	0	72.5	43	30.3												

PREPARED BY:

APPROVED BY:

POST ENGINEER:

SLUDGE IN HOLDING TANKS IN GAL

350,000

SOUR = 0.39

DATE	DAY	September-10		SEWAGE FLOW										SETTLABLE SOLID					
		WEATHER		MG D										ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	WE	3 1/10	68	65	6.7	6.7	9.9	3.5	6.20	4.09	0.85	1.6	84	48	25	4	9	9.6	37,198
2	TR	2	83	65	6.9	7.0	10.5	4.4	5.51	5.96	0.87	2.1	72	48	12	0	-	-	37,459
3	FR		78	73	6.6	7.0	5.6	4.2	4.75	5.76	0.74	1.7	72	54	12.5	0.5	-	-	36,812
4	SA		78	67	6.9	6.9	4.3	3.7	4.02	3.59	0.73	2.0	60	36	10	0	-	-	36,955
5	SU		82	70	7.0	6.9	4.3	3.6	4.08	3.30	0.79	2.1	48	36	10	0	-	-	37,134
6	MO		86	73	6.9	7.0	4.3	3.1	4.11	3.36	0.79	2.1	60	55	10	0	-	-	36,985
7	TE		78	70	7.0	6.9	4.3	3.4	4.17	3.58	0.79	2.2	56	50	11	0	-	-	36,892
8	WE		77	70	7.0	6.9	4.8	3.4	4.14	3.78	0.82	2.3	60	60	10	0	19	7.7	37,152
9	TR	2 2/10	78	71	7.0	7.0	10.7	3.1	6.22	4.83	0.86	-	60	60	10	0	-	-	37,500
10	FR		82	69	7.0	7.1	6.5	4.3	5.84	5.11	0.80	2.2	60	54	13	3	-	-	37,500
11	SA	3/10	84	70	6.9	7.0	5.0	3.7	4.94	4.04	0.82	2.2	54	42	10	0	-	-	37,500
12	SU		81	73	7.0	6.9	4.7	3.5	4.07	3.11	0.70	2.3	56	44	11	0	-	-	37,500
13	MO		87	74	7.0	7.0	5.0	3.4	4.55	3.40	0.82	2.3	54	48	10	0	-	-	37,500
14	TE		79	73	7.0	7.0	4.8	3.4	4.34	3.42	0.74	2.2	60	48	10	0	-	-	37,500
15	WE	1	80	71	6.9	6.8	8.6	3.8	4.56	3.67	0.78	2.1	84	84	19	4	-	-	37,500
16	TR	4/10	80	76	6.9	6.6	8.0	4.9	6.55	4.59	0.86	3.0	84	84	8	1.5	18	4.6	37,500
17	FR		82	80	6.9	6.7	5.5	4.0	4.78	3.99	0.79	2.3	84	84	10	1	-	-	37,500
18	SA		83	79	6.9	6.8	4.7	3.9	4.41	3.40	0.76	2.3	60	66	10	0	-	-	37,500
19	SU		84	81	6.9	6.9	5.2	3.8	4.49	3.45	0.78	2.4	60	66	11	0	-	-	37,500
20	MO		90	83	7.0	6.9	5.1	4.1	4.89	2.63	0.85	2.3	57	72	10	0	18.6	4.5	37,500
21	TE		91	-	-	0.0	5.5	4.0	4.43	1.40	0.72	2.5	54	63	0	0	-	-	37,500
22	WE	4/10	85	85	6.9	6.6	5.7	4.0	5.07	3.87	0.89	2.6	60	66	13	0.7	-	-	37,500
23	TR		88	87	6.9	6.8	5.4	3.3	4.34	3.57	0.68	2.1	110	115	8	1	-	-	37,500
24	FR	5/10	87	81	6.8	6.5	5.3	3.6	4.68	3.85	0.77	2.4	82	88	12	1	-	-	37,500
25	SA		78	78	6.9	6.8	4.6	3.8	3.52	3.34	0.75	2.4	72	60	11	0	-	-	37,500
26	SU		60	73	6.9	6.8	4.9	4.0	4.27	3.50	0.80	2.5	72	60	11	1	-	-	37,500
27	MO		72	71	6.8	6.8	4.6	3.2	4.37	3.39	0.76	2.3	75	72	10	0	-	-	37,500
28	TE		76	69	6.9	6.9	4.9	3.6	4.37	3.36	0.77	2.4	96	84	10	0	31	10	37,500
29	WE		76	70	6.9	7.0	5.8	3.4	4.31	3.22	0.73	2.9	84	84	8	0.5	-	-	37,500
30	TR		75	76	7.1	6.4	4.9	3.2	4.05	2.99	0.65	2.1	84	78	8	3	-	-	37,500
TOTAL		9 9/10	2408	2143	200 5/10	198 6/10	173 4/10	111 3/10	140	111 6/10	23 5/10	65 9/10	2074	1609	323 5/10	21 2/10	95 6/10	36 4/10	1121587
MAX		3 1/10	91	87	7.1	7.1	10.7	4.9	6.55	5.96	0.89	3.0	110.0	115.0	25.0	4.0	0	10.0	37500
MIN		3/10	60	65	6.6	0.0	4.3	3.1	3.52	1.4	0.65	1.6	48.0	36.0	0.0	0	0	4.5	36812
AVERAGE			80.3	73.9	6.9	6.6	5.8	3.7	4.7	3.7	0.8	2.2	69.1	63.6	10.8	0.7	19.1	7.3	37386.2

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POST ENGINEER

oct	2010	BOD (5 DAY), PPM						SUSPEND SOLIDS						PRIMARY DIGESTER						HOLDING TANKS									
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO ₂ USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION
1	FR												7.0	4.8	0.0	70	30	24	6.6				100						
2	SA												7.0	4.7	0.0	67	50	24	6.5				100						
3	SU												6.9	4.7	0.0	65	30	24	6.5				99						
4	MO												7.0	4.8	0.0	65	50	36	6.5				99						
5	TE	109	126	88	15.4	6.2	129.6	104	276	10			6.8	4.8	0.0	61	30	28	6.5				100						
6	WE												7.0	4.5	0.0	66	50	40	6.5				99						
7	TR												6.8	4.0	0.0	72	40	34	6.6				102						
8	FR												6.9	3.8	0.0	74	40	38	6.5				103						
9	SA												7.0	3.9	0.0	74	20	36	6.5				103						
10	SU												6.9	3.7	0.0	75	40	28	6.5				103						
11	MO												6.9	3.8	0.0	74	50	32											
12	TE	115	153	66	4.8	7.1	47.3	160	588	6	2.5		6.9	4.0	0.0	72	30	40											
13	WE												7.0	4.0	0.0	70	60	28											
14	TR												7.0	4.6	0.0	65	40	24											
15	FR												7.0	4.3	0.0	64	40	24											
16	SA												7.0	4.3	0.0	70	20	36											
17	SU												6.9	4.4	0.0	68	40	40											
18	MO												7.0	4.0	0.0	72	40	32											
19	TE	132	216	42	3.6	3.6	120.5	208	212	10	2.6		7.0	4.0	0.0	69	40	32											
20	WE												8.5	7.0	4.5	0.0	69	20	32										
21	TR												6.8	5.3	0.0	65	0	28											
22	FR												6.9	5.6	0.0	65	40	30											
23	SA												7.0	4.9	0.0	70	40	50											
24	SU												7.0	5.1	0.0	68	20	32											
25	MO												7.0	4.8	0.0	69	20	44											
26	TE	112	128	40	12.2	6.2	174	284	240	7	1.5		7.0	5.1	0.0	67	60	32											
27	WE												9.5	7.0	4.9	0.0	66	40	8										
28	TR												7.0	4.6	0.0	53	40	4											
29	FR												7.0	4.7	0.0	57	10	20											
30	SA												7.0	4.7	0.0	63	10	6											
31	SU												7.0	4.7	0.0	63	20	10											
TOTAL		468	623	236	36	23.1	471.4	756	1316	33	10.6	284	216	140	0	2088	1060	896											
MAX		132	216	88	15.4	7.1	174	284	588	10	4	100	7	5.6	0.00	75	60	50											
MIN		109	126	40	3.6	3.6	47.3	104	212	6	1.5	4	6.8	3.7	0	53	0	4											
AVERAGE		117.0	155.8	59.0	9.0	5.8	117.9	189.0	329.0	8.3	2.7	71.0	7.2	4.7	0	69.6	35	29.9											

PREPARED BY:

APPROVED BY:

POST ENGINEER:

SLUDGE IN HOLDING TANKS IN GAL

OUT OF SERVICE

OUT OF SERVICE

October-10

SEWAGE FLOW

SETTLABLE SOLID

WEATHER

M G D

ML/LITER

DATE	DAY	RAIN INCHES	AIR TEMP	SEWAGE FLOW										SETTLABLE SOLID					
				TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	FR		75	74	7.0	6.5	4.5	3.2	3.80	2.68	0.62	2.3	84	78	10	2	-	-	37,632
2	SA		74	69	6.9	6.7	4.5	3.0	3.94	2.85	0.66	2.5	72	72	9	0	-	-	37,632
3	SU		61	66	6.9	6.7	4.1	2.9	3.83	2.59	0.64	2.4	72	72	10	1	-	-	37,632
4	MO		61	65	6.9	6.7	4.3	3.0	4.01	2.89	0.64	2.3	60	60	11	2	-	-	37,632
5	TE		68	63	6.9	6.7	5.1	3.3	3.63	2.65	-2.23	2.3	90	72	11	1	29	11	37,632
6	WE		74	68	6.9	6.8	4.6	3.4	0.00	2.99	0.72	2.4	84	72	11	1	-	-	37,632
7	TR		78	76	6.4	6.3	5.1	3.2	3.75	2.93	0.65	2.1	72	48	20	4	-	-	37,632
8	FR		80	78	6.6	6.5	4.2	2.7	3.72	2.87	0.65	2.3	72	48	22	2	-	-	37,632
9	SA		84	77	6.7	6.6	4.3	2.7	3.49	2.59	0.60	2.3	72	42	20	2	-	-	37,632
10	SU		84	77	6.8	6.7	4.0	3.0	3.52	2.60	0.60	2.4	84		18	1	-	-	37,632
11	MO		76	74	6.8	6.7	4.2	3.1	3.74	2.44	0.70		93	40	15	1	-	-	37,632
12	TE		75	73	6.9	6.7	4.3	3.1	3.77	2.93	0.67		132	72	14	2	20	12	37,632
13	WE		72	70	7.0	6.9	4.5	3.4	3.64	2.80	0.62	2.3	102	48	15	1	-	-	37,632
14	TR		74	68	6.8	6.9	4.3	3.5	3.75	2.81	0.65	3.0	96	48	12	0	-	-	37,632
15	FR		73	68	6.9	6.9	4.2	3.3	3.65	2.80	0.61	2.8	78	36	15	0	-	-	37,632
16	SA		80	71	6.9	7.0	4.0	2.6	3.46	2.57	0.59		72	30	11	0	-	-	37,632
17	SU		75	69	6.9	6.7	4.1	2.5	3.59	2.59	0.61	2.8	60	36	14	0	-	-	37,632
18	MO		81	73	7.0	6.9	4.3	2.8	3.83	2.94	0.70	2.7	69	42	14	0	-	-	37,632
19	TE		70	72	6.9	6.8	4.1	2.7	3.47	2.72	0.60	2.5	80	36	13	0	18	9.2	37,632
20	WE		78	69	7.0	6.9	3.7	2.5	3.35	3.07	0.66	2.4	72	36	15	2	-	-	37,632
21	TR		65	73	6.7	6.5	3.6	2.5	3.48	2.86	0.67	2.3	108	60	20	1.5	-	-	55,687
22	FR		68	71	6.8	6.7	4.1	2.6	3.42	2.70	0.66	1.1	84	60	15	1	-	-	68,792
23	SA		76	73	6.9	6.8	3.8	2.6	3.36	2.65	0.67	1.4	78	66	13	1	-	-	37,632
24	SU		72	70	6.8	6.8	3.6	2.4	3.28	2.52	0.62	1.3	108	84	12	1	-	-	37,632
25	MO		76	71	6.9	6.8	3.8	2.9	2.81	2.95	0.67	1.2	96	84	15	1	-	-	37,632
26	TE		73	68	7.0	6.9	4.2	2.7	3.48	2.82	0.66	1.3	102	84	18	2	16	12	37,632
27	WE		68	67	6.9	6.8	4.4	2.3	3.32	2.86	0.38	1.5	96	84	17	2	-	-	37,632
28	TR		68	57	6.9	6.8	3.8	2.4	2.80	2.74	0.92	2.0	78	78	12	1	-	-	37,632
29	FR		70	60	6.9	6.9	3.2	0.7	2.57	2.58	0.71	2.0	78	72	12	1	-	-	37,632
30	SA		75	65	7.0	6.9	3.3	2.0	2.35	2.26	0.65	2.1	78	72	13	1	-	-	37,632
31	SU		75	65	7.0	6.9	3.4	1.0	2.45	2.31	0.50	2.10	84	72	14	1	-	-	37,632
TOTAL	0	2279	2160	212 9/10	209 4/10	127 6/10	84	103 2/10	84 5/10	17 1/10	60 1/10	2606	1804	441	35 5/10	83	44.2	1215807	
MAX	0	84	78	7.0	7	5.1	3.5	4.01	3.07	0.92	3.0			22.0	4.0	0	12.0	68792	
MIN	0	61	57	6.4	6.3	3.2	0.7	0	2.26	-2.23	1.1			9.0	0	0	9.2	37632	
AVERAGE		73.5	69.7	6.9	6.8	4.1	2.7	3.3	2.7	0.55	2.1	84.1	60.1	14.2			11.1	39220	
PREPARED BY		APPROVED BY										POST ENGINEER							

DATE	DAY	November-10 WEATHER					SEWAGE FLOW MGD							SETTLABLE SOLID ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	MO	2/10	61	64	6.8	6.7	3.5	1.8	2.85	2.64	0.97	2.3	84	72	15	1	-	-	42,000
2	TE	9/10	56	60	6.9	6.7	4.2	2.2	3.37	3.24	1.06	2.2	120	84	16	0	-	-	42,500
3	WE		64	58	6.8	6.7	3.9	1.8	2.82	2.60	0.82	2.3	102	84	14	1	26	10	42,500
4	TR		65	64	6.8	6.8	4.0	1.7	3.02	2.47	1.06	2.1	102	84	15	1	-	-	42,500
5	FR		71	66	6.9	6.8	3.6	2.1	2.90	2.75	1.07	2.0	126	108	15	1	-	-	42,500
6	SA		68	67	6.7	6.8	3.1	1.2	1.83	0.94	0.36	1.9	120	120	11	0	-	-	42,500
7	SU		69	62	6.7	6.8	3.0	1.2	2.11	1.88	0.60	1.8	96	96	15	1	-	-	46,357
8	MO		71	68	6.7	6.9	4.1	1.4	3.70	2.14	0.93	1.9	108	108	19	1.5	-	-	46,268
9	TE		73	69	6.9	6.9	3.4	2.0	2.15	1.98	0.92	2.1	96	78	21	0.1	22	13	52,149
10	WE		74	70	7.2	7.2	3.3	1.9	3.23	5.39	0.30	2.2	90	66	10	1	-	-	50,148
11	TR		70	69	7.1	7.1	3.6	1.2	2.46	2.25	0.57	2.7	96	72	15	1	-	-	50,148
12	FR		70	65	7.1	7.2	3	1.4	2.48	2.41	0.47	2.0	102	72	12	1	-	-	50,148
13	SA		45	54	7.2	7.1	3.4	1.2	2.27	2.22	0.49	2.1	84	66	13	1	-	-	50,148
14	SU		48	52	7.1	7.1	3.8	1.2	2.36	2.22	0.60	2.1	72	60	12	1	-	-	50,148
15	MO		56	51	7.2	7.0	3.5	1.6	2.74	2.62	0.99	2.0	60	69	14	2	-	-	50,148
16	TE		62	53	7.0	7.0	3.4	1.5	2.49	2.41	0.60	2.2	96	69	15	1	23	10	50,148
17	WE	3/10	54	50	7.0	7.0	3.6	1.2	2.63	2.44	0.67	2.2	84	60	14	2	-	-	50,148
18	TR		45	49	6.9	7.0	3.9	1.8	2.98	2.34	1.20	2.0	84	66	8	2	-	-	48,542
19	FR		54	53	6.9	7.0	3.3	1.5	2.70	1.34	0.83	1.9	78	60	15	0	-	-	48,132
20	SA		61	53	6.9	7.0	3.3	1.6	2.78	2.90	1.28	1.8	60	42	15	1	-	-	48,025
21	SU		74	56	7.1	7.0	3.2	1.8	2.81	2.86	1.01	1.9	60	42	14	2	-	-	48,238
22	MO	2/10	71	57	6.9	6.9	3.5	1.2	2.46	2.50	0.41	1.8	48	60	16	2	-	-	47,238
23	TE			0	0	0	2.6	0.8	####	####	####		36	36	0	0	-	-	0
24	WE			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
25	TR			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
26	FR			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
27	SA			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
28	SU			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
29	MO			0			0	0	####	####	####	0	0	0			-	-	0
30	TE			0			0	0	0.00	0.00	0.00	0	0	0			-	-	0
TOTAL		1 6/10	1382	1310	152 8/10	152 7/10	80 2/10	35 3/10	#VALUE!	#VALUE!	#VALUE!	45 5/10	2004	1674	314	23 6/10	71	33	1040633
MAX		9/10	74	70	7.2	7.2	4.2	2.2	####	####	####	2.7			21.0	2.0	0	13.0	52149
MIN		2/10	45	0	0	0.0	0	0	####	####	####	0.0			0.0	0	0	10.0	0
AVERAGE			46.1	43.7	5.1	5.1	2.7	1.2	####	####	####	1.5	66.8	55.8	10.5			1.1	34688
PREPARED BY		APPROVED BY										POST ENGINEER							

DEC	2010	BOD (5 DAY), PPM					SUSPEND SOLIDS											
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED
1	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	TR	102	108	126	41	6.8	164.7	64	300	13	4.1	-	7.0	4.8	0.0	46	20	12
3	FR	-	-	-	-	-	-	-	-	-	-	160	7.4	4.5	0.0	55	20	30
4	SA	-	-	-	-	-	-	-	-	-	-	-	7.3	4.6	0.0	54	10	10
5	SU	-	-	-	-	-	-	-	-	-	-	-	7.2	5.0	0.0	51	20	12
6	MO	124	106	104	6.2	5.5	373	48	304	11.2	2.7	110	-	-	-	-	20	24
7	TE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
8	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
9	TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	10
10	FR	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	50	15	20
11	SA	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	50	50	8
12	SU	-	-	-	-	-	-	-	-	-	-	-	7.2	5.1	0.0	49	50	8
13	MO	-	-	-	-	-	-	-	-	-	-	-	7.4	4.9	0.0	43	10	24
14	TE	-	-	-	-	-	-	-	-	-	-	-	7.4	2.2	0.0	47	20	20
15	WE	-	-	-	-	-	-	-	-	-	-	-	7.3	2.6	0.0	45	14	28
16	TR	300	-	-	-	10	134	64	212	10	4.2	150	7.3	2.4	0.0	48	6	-8
17	FR	-	-	-	-	-	-	-	-	-	-	-	7.2	2.3	0.0	50	10	20
18	SA	-	-	-	-	-	-	-	-	-	-	-	7.2	2.3	0.0	49	0	0
19	SU	-	-	-	-	-	-	-	-	-	-	-	7.3	2.3	0.0	52	10	12
20	MO	-	-	-	-	-	-	-	-	-	-	-	7.2	2.4	0.0	53	10	4
21	TE	131	126	165	3	3.4	121	84	1460	9	3.4	-	7.2	3.1	0.0	52	10	20
22	WE	-	-	-	-	-	-	-	-	-	-	25	7.1	3.2	0.0	49	10	4
23	TR	-	-	-	-	-	-	-	-	-	-	-	7.0	2.8	0.0	52	20	10
24	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	2.6	0.0	53	20	10
25	SA	-	-	-	-	-	-	-	-	-	-	-	7.2	2.8	0.0	52	10	0
26	SU	-	-	-	-	-	-	-	-	-	-	-	7.2	2.8	0.0	51	20	12
27	MO	-	-	-	-	-	-	-	-	-	-	-	7.1	2.8	0.0	52	10	8
28	TE	-	165	-	8.2	4.7	125	52	2280	8	5.2	-	7.1	2.7	0.0	54	20	26
29	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
30	TR	-	-	-	-	-	-	-	-	-	-	15	7.2	9.0	0.0	49	30	10
31	FR	-	-	-	-	-	-	-	-	-	-	-	7.1	8.0	0.0	63	30	8
TOTAL		657	505	395	58.4	30.4	917.7	312	4556	51.2	19.6	460	188	9.9	0	1321	515	356
MAX		300	165	165	4.1	10	373	84	2280	13	5.2	160	7.4	9.0	0.00	55	50	30
MIN		102	106	104	3	3.4	121	48	212	8	2.7	15	7	2.2	0	43	0	-8
AVERAGE		164	126.3	131.7	14.6	6.1	183.5	62.4	911	10.2	3.9	92	7.2	3.8	0.0	50.8	17	11.5

PREPARED BY:

APPROVED BY:

POST ENGINEER:

SLUDGE IN HOLDING TANKS IN GAL

FORT LEONARD WOOD

DA FORM 4247

WASTE WATER PLANT

December-10		SEWAGE FLOW											SETTLABLE SOLID						
DATE	DAY	WEATHER		MGD											ML/LITER				
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	WE		35	48	7.0	6.9	3.5	2.4	2.81	3.04	1.77	1.8	18	18	10	0	-	-	39,351
2	TR		42	59	7.3	7.3	3.8	2.3	3.09	3.04	1.70	2.3	42		10	0	48	13.6	18,365
3	FR		48	60	7.3	7.3	4.8	2.1	2.80	3.08	1.46	2.6	48		15	0	-	-	17,936
4	SA		33	56	7.2	7.2	3.1	2.2	2.56	2.90	1.33	2.4	36		13	0	-	-	17,856
5	SU		36	53	7.2	7.1	3.0	1.2	2.31	2.46	0.73	2.5	42		14	1	-	-	17,684
6	MO		36	60	7.1	7.2	3.6	2.0	2.55	0.79	1.09	3.4	42		30	0	39.2	12.9	17,364
7	TE		35	56	7.2	7.2	3.4	1.6	2.47	0.06	0.90	3.1	36		20	1	-	-	15,639
8	WE		37	55	7.2	7.2	3.3	1.3	2.50	0.00	0.93	3.1	30		18	1	-	-	17,364
9	TR		47	60	7.2	7.1	3.2	1.4	2.84	1.53	1.20	3.5	18		13	0	-	-	17,638
10	FR		48	56	7.4	7.3	3.7	1.8	3.17	3.37	1.74	3.3	12		9	0	-	-	17,469
11	SA	2/10	28	55	7.4	7.3	3.6	2.0	2.85	3.11	1.45	3.4	12		10	0	-	-	17,624
12	SU		23	52	7.2	7.1	3.7	2.6	2.93	3.18	1.45	3.2	6		12	0	-	-	17,397
13	MO		28	45	7.4	7.4	3.7	1.8	2.89	3.11	1.23	3.5	6		8	0	-	-	14,256
14	TE		31	56	7.5	7.3	2.8	1.0	2.19	2.49	0.32	3.8	4		13	0	-	-	14,256
15	WE		28	54	7.4	7.3	3.0	1.0	2.06	2.38	0.26	3.5	12		12	0	-	-	14,256
16	TR		31	57	7.3	7.3	3.1	1.3	2.32	2.48	0.46	4.5	12		15	0	16.4	17.8	14,256
17	FR		34	61	7.4	7.3	3.4	1.0	2.22	2.51	0.32	4.6	12		13	0	-	-	14,256
18	SA		35	59	7.3	7.2	2.3	1.0	1.88	1.95	0.20	4.5	12		12	0	-	-	14,256
19	SU		46	63	7.4	7.3	2.5	1.1	1.71	1.46	0.47	4.3	9		10	0	-	-	14,256
20	MO		44	63	7.3	7.2	2.3	1.0	1.71	1.60	0.30	3.8	12		9	0	-	-	14,256
21	TE		48	63	7.3	7.2	2.5	1.0	1.81	1.65	0.45	3.7	12		9	0	18	9.5	14,256
22	WE		38	60	7.2	7.2	2.7	0.8	1.71	1.65	0.59	3.8	9		9	0	-	-	14,256
23	TR		39	63	7.3	7.2	2.2	0.9	1.76	1.74	0.29	5.9	9		10	0	-	-	14,256
24	FR		37	64	7.3	7.2	3.0	1.1	1.91	1.82	0.41	7.0	12		8	0	-	-	14,256
25	SA		29	62	7.3	7.3	1.7	1.2	1.54	1.85	0.21	6.7	12		8	0	-	-	14,256
26	SU		29	62	7.3	7.2	2.0	0.9	1.75	1.84	0.45	6.9	12		9	0	-	-	14,256
27	MO		32	63	7.3	7.2	2.1	1.1	1.83	1.81	0.22	6.8	9		9	0	-	-	14,256
28	TE		39	64	7.3	7.2	2.5	0.9	2.06	2.14	0.39	6.8	12		9	0	6	1	14,256
29	WE		38	64	7.2	7.2	2.5	1.2	2.13	0.80	0.52	4.7	12		8	0	-	-	10,236
30	TR		59	54	7.3	-	3.3	1.4	2.51	1.44	0.99	-	-		8	0	-	-	0
31	FR		62	58	7.3	-	7.0	1.2	3.27	2.97	0.30	-	-		8	0	-	-	0
TOTAL		2/10	1175	1805	225 8/10	209 4/10	97 3/10	43 8/10	72 2/10	64 2/10	24 1/10	119 4/10	520	18	361	3	127 6/10	54 8/10	470019
MAX		2/10	59	64	7.5	7.4	4.8	2.6	3.17	3.37	1.77	7.0			30.0	1.0	48.0	17.8	39351
MIN		2/10	23	45	7	6.9	1.7	0.8	1.54	0	0.2	1.8			8.0	0	6.0	1.0	0
AVERAGE			37.9	58.2	7.3	6.8	3.1	1.4	2.3	2.1	0.78	3.9	17.9	0.6	11.6		25.5	11.0	15162
PREPARED BY			APPROVED BY										POST ENGINEER						
DA FORM 4247																			

JAN 2011		BOD (5 DAY), PPM				SUSPEND SOLIDS														
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	TRICKLING FILTER EFF.	DITCH INFULENT	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	EFF OIL & GREASE	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	
1	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.0	7.2	0.0	51	20	10	
2	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.1	6.3	0.0	52	30	24	
3	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	3.8	0.0	54	20	28	
4	TE	97	-	-	4.8	6.9	74.3	-	6300	7	7.4	-	7	7.1	3.3	0.0	53	20	10	
5	WE	-	-	-	-	-	-	-	-	-	-	200	7	7.0	4.2	0.0	54	20	24	
6	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.4	4.1	0.0	52	30	20	
7	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.3	0.0	50	30	44	
8	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.2	0.0	50	20	16	
9	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.3	0.0	49	20	20	
10	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	48	20	20	
11	TE	-	-	-	3.4	1.4	116	-	132	16	2	-	6	7.1	4.5	0.0	48	20	20	
12	WE	-	-	-	-	-	-	-	-	-	-	15	-	7.0	4.3	0.0	46	30	60	
13	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	48	50	44	
14	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.4	0.0	48	10	10	
15	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.4	0.0	49	10	6	
16	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	49	40	44	
17	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	49	20	32	
18	TE	40	-	100	-	2.5	130.5	-	20	4	3.5	-	-	7.1	4.6	0.0	49	40	12	
19	WE	-	-	-	-	-	-	-	-	-	-	220	6	7.2	4.6	0.0	48	20	12	
20	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	43	60	50	
21	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	27	20	22	
22	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.7	0.0	36	10	16	
23	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	43	20	24	
24	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	6.1	0.0	44	10	11	
25	TE	115	-	-	10.1	1.8	130.5	-	-	4	4.3	-	-	7.2	5.9	0.0	44	40	29	
26	WE	-	-	-	-	-	-	-	-	-	-	25	6	7.2	5.7	0.0	47	20	20	
27	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.7	0.0	52	30	24	
28	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	4.6	0.0	51	20	38	
29	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	54	20	6	
30	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	52	20	16	
31	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	47	40	24	
TOTAL		252	0	100	18.3	12.6	451.3	0	6452	31	17.2	460	25	222	147	0	1487	780	736	
MAX		115	0	100	10.1	6.9	130.5	0	6300	16	7.4	220	7	7.4	7.2	0.00	54	60	60	
MIN		40	0	100	3.4	1.4	74.3	0	20	4	2	15	6	7.0	3.3	0	27	10	6	
AVERAGE		84	0	100.0	6.1	3.2	112.8	0	2151	7.8	4.3	115	6	7.2	4.7	0.0	48.0	25.2	23.7	
PREPARED BY:		APPROVED BY:										POST ENGINEER:								
SLUDGE IN HOLDING TANKS IN GAL																				

FORT LEONARD WOOD

DA FORM 4247

WASTE WATER PLANT

January-11		SEWAGE FLOW MG D										SETTLABLE SOLID ML/LITER							
DATE	DAY	WEATHER					MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	#1 PRI. CLAR. SLUDGE LEVEL IN IN.	#2 PRI. CLAR. SLUDGE LEVEL IN IN.	ML/LITER				
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT									RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	SA		32	59	7.2		3.4	2	2.10	2.74	1.35				10			-	
2	SU		35	60	7.3		2.4	1.6	2.06	2.64	0.40				10			-	
3	MO		48	63	7.3		2.9	2.0	2.40	2.55	0.68				11			-	
4	TE		38	64	7.3		2.9	1.3	2.27	2.68	0.32				10		19	0.5	
5	WE		48	63	7.2		3.2	1.6	2.23	2.59	0.05				11			-	
6	TR		38	57	7.4		3.3	1.5	2.27	2.62	0.14				12			-	
7	FR		36	53	7.3		2.8	1.5	2.43	2.80	0.35				12			-	
8	SA		33	53	7.2		2.6	1.4	2.07	2.31	0.01				10			-	
9	SU		29	52	7.3		3.0	1.1	2.24	2.47	0.15				9			-	
10	MO		31	52	7.3		3.1	1.4	2.58	2.17	0.50				12			-	
11	TE		23	53	7.3		2.8	1.6	2.34	2.67	0.20				11		21	0.2	
12	WE		21	48	7.2		3.7	1.9	2.70	3.41	0.78				11			-	
13	TR		26	53	7.8		3.3	1.8	2.62	3.61	0.41				20			-	
14	FR		38	54	7.4		3.2	1.3	2.55	2.05	0.36				18			-	
15	SA		42	54	7.5		2.7	2.0	2.34	2.87	0.20				17			-	
16	SU		36	53	7.3		3.5	1.9	2.44	3.05	0.39				16			-	
17	MO	1/10	42	55	7.3		3.1	2.2	2.70	2.17	0.75				17			-	
18	TE		39	54	7.3		3.1	1.8	3.06	3.64	1.19				15		24.5	0.5	
19	WE		34	53	7.1		2.8	1.7	2.14	2.06	1.16				15			-	
20	TR		32	47	7.3		3.2	1.2	2.71	2.82	0.49				15			-	
21	FR		30	35	7.4		3.1	1.2	2.31	2.80	0.33				18			-	
22	SA		39	41	7.4		2.7	1.3	2.06	2.39	0.30				17			-	
23	SU		31	46	7.3		2.7	1.2	2.24	2.69	0.31				15			-	
24	MO		32	48	7.2		2.4	1.4	2.18	1.60	0.61				17			-	
25	TE		36	47	7.2		3.1	1.3	2.46	3.34	0.20				16		35	0.4	
26	WE		48	51	7.3		3.2	1.6	2.66	2.62	0.29				46			-	
27	TR		41	57	7.3		2.8	1.2	2.32	2.57	0.22				28			-	
28	FR		51	56	7.3		3	1.2	2.50	2.69	0.31				25			-	
29	SA		59	58	7.3		2.5	1.1	2.21	2.55	0.20				19			-	
30	SU		39	56	7.3		3.7	0.9	2.48	2.63	0.38				21			-	
31	MO		37	51	7.2		3.2	1.6	2.10	2.50	0.23				25			-	
TOTAL		1/10	1144	1646	226 5/10	0	93 4/10	46 8/10	73 8/10	82.3	13 3/10	0			509		99 5/10	1 6/10	
MAX		1/10	59	64	7.8	0	3.7	2.2	3.06	3.64	1.35	0.0			46.0		0	0.5	
MIN		1/10	21	35	7.1	0.0	2.4	0.9	2.06	1.6	0.01	0.0			9.0		0	0.2	
AVERAGE			36.9	53.1	7.3	0.0	3.0	1.5	2.4	2.7	0.43	0.0			16.4			0.4	
PREPARED BY			APPROVED BY						POST ENGINEER										
DA FORM 4247																			



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: 11012245-1	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
CALCULATION					PIA
Plant Available Nitrogen		8405 mg/kg Dry	01/26/11 00:00	EML	PIA
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/18/11 14:33	asb	PIA
SM (18) 4500 N ORG B					PIA
Nitrogen, Organic		610 mg/kg	01/26/11 00:00	EML	
Nitrogen, Organic		17000 mg/kg Dry	01/26/11 00:00	EML	
SM (18) 4500 NH3 B,H					PIA
Nitrogen, Ammonia as N Distilled		250 mg/kg	01/18/11 09:21	Igalr	
Nitrogen, Ammonia as N Distilled		7200 mg/kg Dry	01/18/11 09:21	Igalr	
SM (18) 4500 NH3 H					PIA
Nitrogen, Total Kjeldahl as N		860 mg/kg	01/20/11 10:02	Igalr	
Nitrogen, Total Kjeldahl as N		24000 mg/kg Dry	01/20/11 10:02	Igalr	
SM (18) 4500 NO3 F					PIA
Nitrate/Nitrite, Total as N	<	0.2 mg/kg	01/21/11 13:39	Igth	
Nitrate/Nitrite, Total as N	<	5.7 mg/kg Dry	01/21/11 13:39	Igth	
SM (18) 4500 P B,F					PIA
Phosphorus, Total as P		400 mg/kg	01/19/11 10:05	Igalr	
Phosphorus, Total as P		11000 mg/kg Dry	01/19/11 10:05	Igalr	
SW-846 3051					PIA
Sample Preparation			01/13/11 09:30	JEM	
SW-846 6010B R2.0					PIA
Arsenic	<	0.5 mg/kg	01/17/11 15:48	BAB	
Arsenic	<	14 mg/kg Dry	01/17/11 15:48	BAB	
Cadmium	<	0.1 mg/kg	01/17/11 15:48	BAB	
Cadmium	<	2.8 mg/kg Dry	01/17/11 15:48	BAB	
Chromium		0.26 mg/kg	01/17/11 15:48	BAB	
Chromium		7.4 mg/kg Dry	01/17/11 15:48	BAB	
Copper		4.8 mg/kg	01/17/11 15:48	BAB	
Copper		140 mg/kg Dry	01/17/11 15:48	BAB	
Lead		0.16 mg/kg	01/17/11 15:48	BAB	
Lead		4.6 mg/kg Dry	01/17/11 15:48	BAB	
Molybdenum	<	0.1 mg/kg	01/17/11 15:48	BAB	
Molybdenum	<	2.8 mg/kg Dry	01/17/11 15:48	BAB	
Nickel		0.14 mg/kg	01/17/11 15:48	BAB	
Nickel		4 mg/kg Dry	01/17/11 15:48	BAB	
Potassium		54 mg/kg	01/17/11 10:59	BAB	
Potassium		1500 mg/kg Dry	01/17/11 10:59	BAB	
Selenium	<	0.5 mg/kg	01/17/11 15:48	BAB	
Selenium	<	14 mg/kg Dry	01/17/11 15:48	BAB	
Zinc		9.2 mg/kg	01/17/11 15:48	BAB	



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: 11012245-1 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : COMPOSITE Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SW-846 6010B R2.0					
Zinc		260 mg/kg Dry	01/17/11 15:48	BAB	PIA
SW-846 6020					
Mercury		0.026 mg/kg	01/14/11 12:13	JMW	
Mercury		0.73 mg/kg Dry	01/14/11 12:13	JMW	

Sample No: 11012245-2 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:48	asb	PIA
SM (18) 9221C,E					
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-3 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:49	asb	PIA
SM (18) 9221C,E					
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-4 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.4 %	01/17/11 10:50	asb	PIA
SM (18) 9221C,E					
Fecal Coliform	<	5900 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: 11012245-5 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5%	01/17/11 10:50	asb	
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-6 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.6%	01/17/11 10:52	asb	
SM (18) 9221C,E					PIA
Fecal Coliform	<	5600 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-7 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.7%	01/17/11 10:53	asb	
SM (18) 9221C,E					PIA
Fecal Coliform	<	5400 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-8 Collect Date 01/11/11 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5%	01/17/11 10:54	asb	
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	
SM (18) 9222D					PIA
Fecal Coliform, Geometric Mean	<	5700 mpn/dry g	01/13/11 09:30	KJB	



PDC Laboratories, Inc.

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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

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PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by the Federal or State Government or their agencies is not implied.

PIA	PDC Laboratories - Peoria, IL NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230 State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17553 Drinking Water Certifications: Indiana (C-IL-040); Kansas (E-10338); Missouri (00870); Wisconsin (998294430) Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430) Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin(998294430) UST Certification: Iowa (240)
SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100253.

Certified by : Elaine Kaufmann
Elaine Kaufman, Project Manager

FEB. 2011		BOD (5 DAY), PPM					SUSPEND SOLIDS												
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	OIL & GREASE	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED
1	WE	147			10.3	2.6	143			13	1.5			6.8	5.9	0.0	40	20	20
2	TR											25		7.1	5.8	0.0	40	20	16
3	FR												6	7.1	4.6	0.0	20	40	12
4	SA													7.1	4.8	0.0	32	20	40
5	SU													7.1	4.6	0.0	36	10	20
6	MO													7.1	4.6	0.0	36	10	12
7	TE													7.2	4.5	0.0	35	40	36
8	WE	85.3			6.5	3.5	137		5.3	3.1		10		7.0	4.6	0.0	34	20	20
9	TR												5	7.1	4.8	0.0	30	20	40
10	FR													7.0	4.4	0.0	47	20	20
11	SA													7.1	4.8	0.0	49	20	16
12	SU													6.9	5.6	0.0	54	40	48
13	MO													7.0	5.0	0.0	55	60	40
14	TE													7.1	5.0	0.0	56	60	40
15	WE	93.8			10.1	4.8	134.3		8	4.3		30		7.1	4.8	0.0	60	20	40
16	TR												8	7.1	4.8	0.0	64	40	24
17	FR													7.1	4.8	0.0	64	40	24
18	SA													7.1	4.8	0.0	48	30	76
19	SU													7.1	4.8	0.0	52	25	22
20	MO													7.1	4.6	0.0	58	25	22
21	TE													7.1	4.8	0.0	51	20	24
22	WE	98.3			3.6	1.3	228		10	3.3				7.1	5.0	0.0	49	20	16
23	TR											15		7.0	4.7	0.0	48	40	15
24	FR													7.0	4.9	0.0	34	40	20
25	SA													7.0	4.5	0.0	34	60	16
26	SU													7.0	4.5	0.0	36	20	16
27	MO													7.0	4.3	0.0	44	40	16
28	TE													7.1	4.6	0.0	42	40	28
TOTAL		424	0	0	30.5	12.2	642.3	0	0	36.3	12.2	80	25.2	197	135	0.0	1219	860	747
MAX		147	0	0	10.3	4.8	228	0	0	13	4.3	30	8.0	7.2	5.9	0.0	64	60	76
MIN		85.3	0	0	3.6	1.3	134.3	0	0	5.3	1.5	10	5.0	6.8	4.3	0.0	20	10	12
AVERAGE		106	0	0.0	7.6	3.1	160.6	0	0	9.08	3.05	20	6.3	7.1	4.8	0.0	43.5	30.7	26.7
PREPARED BY:		APPROVED BY:										POST ENGINEER:							

DATE	DAY	February-11				SEWAGE FLOW M G D					SETTLABLE SOLID ML/LITER			RAW SLUDGE PUMPED, GAL.				
		WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.		RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA
		RAIN INCHES	AIR TEMP															
1	WE	9/10	31	45	7	2.4	1.4	2.28	2.60	0.67			15			-		
2	TR		30	45	7.2	2.8	1.8	2.44	2.47	0.76			16			-		
3	FR		28	33	7.3	2.7	1.5	2.21	2.61	0.34			28		20	0.4		
4	SA		30	38	7.3	3.0	1.2	2.29	2.76	0.43			35			-		
5	SU		43	41	7.3	2.6	1.0	2.06	2.23	0.25			30			-		
6	MO		37	42	7.2	3.2	1.0	2.32	2.63	0.43			28			-		
7	TE		25	40	7.3	3.0	1.1	2.55	3.01	0.62			23			-		
8	WE		18	38	7.3	2.9	1.1	2.24	2.60	0.17			21		20	0.4		
9	TR		15	39	7.3	3.1	1.0	2.35	2.92	0.31			22			-		
10	FR		31	37	7.3	3.3	1.0	2.21	2.65	0.24			26			-		
11	SA		45	55	7.2	3.2	1.0	2.36	2.68	0.41			22			-		
12	SU		53	58	7.3	3.6	1.1	2.34	2.65	0.43			27			-		
13	MO		64	63	7.1	6.1	1.7	3.69	3.91	0.66			36			-		
14	TE		51	63	7.2	4.3	3.1	3.93	5.00	1.12			32			-		
15	WE		56	63	7.3	4.0	2.8	3.40	4.56	0.68			27		20	0.3		
16	TR		73	65	7.2	3.7	1.5	2.99	3.58	0.36			23			-		
17	FR		74	69	7.2	3.8	1.9	2.88	3.26	0.49			30			-		
18	SA		58	63	7.3	3.5	1.5	2.51	2.90	0.33			18			-		
19	SU		62	63	7.3	3.3	1.2	2.25	2.60	0.27			25			-		
20	MO		72	65	7.3	3.8	1.2	2.39	2.71	0.39			20			-		
21	TE		54	59	7.3	2.8	1.3	2.20	2.46	0.19			17			-		
22	WE		49	55	7.2	3.1	1.3	2.39	2.80	0.51			18		22	0.4		
23	TR		42	55	7.2	3.7	1.8	2.58	3.10	0.60			19			-		
24	FR	1 6/10	42	40	7.2	15.2	1.2	5.78	3.74	0.83			30			-		
25	SA		45	40	7.1	5.0	2.8	2.66	5.10	1.52			28			-		
26	SU		41	42	7.1	3.4	2.2	4.18	3.93	1.20			25			-		
27	MO	2/10	74	50	7.2	3.6	2.2	2.85	3.40	1.27			23			-		
28	TE	9/10	46	48	7.3	6.8	3.5	4.48	5.29	1.29			27			-		
TOTAL		3 6/10	1269	1414	202 5/10	111 8/10	45 4/10	78 8/10	90 1/10	16 8/10	0		691		82	15/10		
MAX		1 6/10	74	69	7.3	15.2	3.5	5.78	5.29	1.52	0.0		36.0		22.0	0.4		
MIN		2/10	15	33	7	2.4	1.0	2.06	2.23	0.17	0.0		15.0		20.0	0.3		
AVERAGE			46.0	50.5	7.2	4.0	1.6	2.8	3.2	0.6	0.0		24.7		20.5	0.4		



PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

LB & B Associates Inc.
PO Box 439
Fort Leonard Wood MO, 65473
Attn: Fred Stafford

Date Received: 02/24/11 10:00
Report Date: 03/01/11
Customer #: 255447

Sample No: 1020190-01
Sample Description: GRAB

Collect Date: 02/23/11 07:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Oil & Grease - total	< 6.2 mg/L		02/28/11 08:00	PLI	EPA 1664A



PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9698 • (800) 752-6651 • FAX (309) 692-9689

LB & B Associates Inc.
PO Box 439
Fort Leonard Wood MO, 65473
Attn: Fred Stafford

Date Received: 02/24/11 10:00
Report Date: 03/01/11
Customer #: 255447

Notes

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PIA PDC Laboratories - Peoria, IL

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

CHAIN OF CUSTODY RECORD

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: EBF B ADDRESS: PO BOX 439		PROJECT NUMBER	PHONE NUMBER	FAX NUMBER	DATE SHIPPED	MEANS SHIPPED	3 ANALYSES REQUESTED: _____	
STATE: IL COUNTY: Peoria CONTACT PERSON: SHARON		PROJECT NUMBER	PHONE NUMBER	FAX NUMBER	DATE SHIPPED	MEANS SHIPPED	4 LOGIN # 1020190-1 LAB PROL # _____ TEMPLATE: _____ PROJ. MGR: _____	
SAMPLE DESCRIPTION: SEED RESULTS BY 2-28-11		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	MATRIX TYPE	BOTTLE TYPE	COUNT	REMARKS
2 OUT RD 001		2-23-11	9:30	X	WW	1	1	oil + base
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH FEE IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE		NORMAL	RUSH	DATE RESULTS NEEDED	6 The sample temperature will be guaranteed upon receipt at the lab. By returning this area you warrant that the temperature of the sample is within the range of 0-4°C. By not returning this area you allow the lab to proceed with analyzed testing regardless of the sample temperature.			
7 RELINQUISHED BY: (SIGNATURE) [Signature] DATE: 2-23-11 TIME: _____		RECEIVED BY: (SIGNATURE) [Signature] DATE: 2-23-11 TIME: _____		COMMENTS: (FOR LAB USE ONLY)		8 SAMPLE TEMPERATURE UPON RECEIPT: _____ CHILL PROCESS STARTED PRIOR TO RECEIPT: _____ SAMPLE(S) RECEIVED ON ICE: _____ PROPER BOTTLES RECEIVED IN GOOD CONDITION: _____ BOTTLES FILLED WITH ADEQUATE VOLUME: _____ SAMPLES RECEIVED WITHIN HOLD TIMES: _____ (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE: _____		

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

PAGE _____ OF _____

DATE	DAY	March-11						SEWAGE FLOW						SETTLEABLE SOLID ML/L					
		WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH SEC. CLAR.	INFLUENT AMMONIA	M G D				1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	1# SEC. CLAR. SLUDGE LEVEL IN IN.	2# SEC. CLAR. SLUDGE LEVEL IN IN.	RAW	SEC. CLAR.	FINAL	
		RAIN INCHES	AIR TEMP					MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW								TOTAL RECIRCULAT
1	TE		67	52	7.3	7.1	18.2	4.1	2.7	2.0	4.1	1.3	-	-	18	18	23	5	0
2	WE		48	53	7.3	7.1	18.0	3.6	2.3	1.9	4.2	1.2	-	-	24	24	23	5	0
3	TR		53	60	7.4	7.2	21.0	3.2	2.0	1.7	3.4	1.1	-	-	54	42	12	0	0
4	FR	1 8/10	70	58	7.3	7.2	-	6.0	2.2	2.2	3.8	1.2	-	-	60	30	18	0	0
5	SA		41	54	7.3	7.1	-	6.0	3.4	3.3	5.0	1.0	-	-	30	42	17	0	0
6	SU		50	55	7.3	7.1	-	3.7	2.0	2.4	4.0	0.3	-	-	30	18	19	0	0
7	MO		51	52	7.2	7.0	29.5	3.5	1.8	1.9	2.8	0.9	-	-	30	24	21	0	0
8	TE	1 9/10	44	50	7.0	6.9	-	8.5	1.4	3.7	4.2	0.9	-	-	36	36	32	0	0
9	WE		44	48	7.2	7.1	21.2	5.5	3.6	4.0	4.1	4.1	-	-	78	72	21	0	0
10	TR		42	55	7.5	7.7	21.0	3.9	2.9	1.8	4.6	1.4	-	-	42	48	10	0	0
11	FR		56	58	7.3	7.2	-	3.8	2.6	2.2	3.9	1.2	-	-	54	63	15	0	0
12	SA		75	59	7.3	7.2	-	3.4	2.0	1.6	3.2	1.2	-	-	24	24	17	0	0
13	SU	2/10	57	56	7.2	7.1	-	3.5	2.5	1.7	3.8	1.3	-	-	36	30	19	0	0
14	MO	2 9/10	41	46	7.0	6.9	-	14.4	2.5	5.4	5.0	1.1	-	-	10	12	26	0	0
15	TE		53	51	7.1	7.0	22.0	4.4	3.3	3.3	5.0	1.2	-	-	31	53	20	0	0
16	WE		75	56	7.2	7.2	23.0	4.3	2.4	2.5	4.6	1.2	-	-	108	54	17	0	0
17	TR		77	61	7.2	7.2	-	4.0	2.4	2.2	3.4	1.3	-	-	108	84	12	1	0
18	FR		58	62	7.3	7.2	-	3.8	2.4	1.2	2.1	2.0	-	-	30	50	15	1	0
19	SA	8/10	57	51	7.2	7.2	-	6.4	2.0	1.8	2.1	1.2	-	-	18	24	17	0	0
20	SU		82	55	7.2	7.1	-	4.2	3.0	2.0	4.8	1.4	-	-	24	30	17	0	0
21	MO		83	59	7.3	7.2	-	3.9	2.8	2.0	3.9	1.3	-	-	78	78	15	0	0
22	TE		68	59	7.3	7.2	30.0	3.7	2.0	2.1	3.4	0.8	-	-	90	60	13	0	0
23	WE		78	60	7.2	7.2	-	3.8	1.6	2.1	3.2	0.7	-	-	54	90	16	0	0
24	TR		44	49	7.3	7.2	-	3.6	1.6	2.0	2.9	0.6	-	-	30	68	20	1	0
25	FR		43	49	7.3	7.2	-	3.1	1.8	2.1	3.2	0.3	-	-	42	84	20	0	0
26	SA	1 5/10	36	47	7.1	7.1	-	6.1	1.2	2.7	4.1	0.4	-	-	48	54	26	0	0
27	SU		41	49	7.2	7.1	-	3.5	2.6	2.5	4.0	0.6	-	-	36	36	18	0	0
28	MO		48	50	7.2	7.1	-	3.5	2.0	2.3	3.5	0.6	-	-	90	84	16	0	0
29	TE		45	47	7.3	7.2	-	3.6	2.0	2.3	3.1	0.3	-	-	37	45	13	0	0
30	WE		49	48	7.2	7.2	30.0	3.4	2.3	2.3	3.1	0.5	-	-	96	84	15	0	0
31	TR		51	49	7.2	7.1	-	3.5	2.0	2.2	3.2	0.8	-	-	84	72	22	0	0
TOTAL		9 1/10	1727	1658	224.4	221.6	233.9	141.9	71.3	73.3	115.7	33.4	0	0	1530	1533	565	13	0
MAX		2.9	83.0	62.0	7.5	7.7	30.0	14.4	3.6	5.4	5.0	4.1			108	90.0			
MIN		0.2	36.0	46.0	7.0	6.9	18.0	3.1	1.2	1.2	2.1	0.3			10.0	12.0			
AVERAGE			56	53.5	7.2	7.1	7.5	4.6	2.3	2.4	3.7	1.1			49.4	49.5			
PREPARED BY			APPROVED BY										POST ENGINEER						
DA FORM 4247																			



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood MO, 65473
 Attn: Fred Stafford

Date Received: 03/03/11 9:45
 Report Date: 03/09/11
 Customer #: 255447
 PO#: FStafford

Sample No: **1030438-01**
 Sample Description: **OUTFALL 001**

Collect Date: **03/02/11 07:00**
 Matrix: **Waste Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/08/11 07:30	PLI	EPA 1664A



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Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager



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Date Received: 03/11/11 9:45
 Report Date: 03/22/11
 Customer #: 255447
 PO#: FTL229850

Sample No: 1031380-01
 Sample Description: OUTFALL 001

Collect Date: 03/10/11 07:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/22/11 07:30	JRL2	EPA 1664A



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Attn: Fred Stafford

Date Received: 03/11/11 9:45
Report Date: 03/22/11
Customer #: 255447
PO#: FTL229850

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Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
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SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

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Certified by: Elaine Kaufmann, Project Manager

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 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected MO

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

PROJECT NUMBER PHONE NUMBER R.O. NUMBER FAX NUMBER MEANS SHIPPED DATE SHIPPED		(FOR LAB USE ONLY) LOGIN # <u>1031380-91</u> LOGGED BY: <u>120</u> LAB PROJ.# TEMPLATE: PROJ. MGR.	
SAMPLE DESCRIPTION AS YOU WANT ON REPORT <u>out fall soil</u>		REMARKS	
DATE COLLECTED TIME COLLECTED DATE RESULTS NEEDED RUSH		MATRIX TYPE BOTTLE COUNT DATE TIME DATE TIME	
3-10-11 9:30 X		ww 1 3/11/11 10:45	
TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH TX IS SUBJECT TO PDC JUDGE APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE PHONE #		COMMENTS (FOR LAB USE ONLY)	
RELINQUISHED BY (SIGNATURE) DATE TIME		SAMPLE TEMPERATURE UPON RECEIPT CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLES RECEIVED ON ICE PROPER BOTTLES RECEIVED (GOOD CONDITION) SAMPLES RECEIVED WITHIN HOLD TIME SAMPLES RECEIVED WITHIN HOLD TIME(S) EXCLUDES TYPICAL FIELD PARAMETERS DATE AND TIME TAKEN FROM SAMPLE BOTTLE	
RELINQUISHED BY (SIGNATURE) DATE TIME		11 °C FOR N FOR N FOR N FOR N	

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client. PAGE ____ OF ____



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PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 03/17/11 10:00
Report Date: 03/28/11
Customer #: 255447
PO#: FTC2230028

Sample No: 1031889-01
Sample Description: OUTFALL 001

Collect Date: 03/16/11 06:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 8.0 mg/L		03/25/11 08:00	JRL2	EPA 1664A



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Date Received: 03/17/11 10:00
 Report Date: 03/28/11
 Customer #: 255447
 PO#: FTC2230028

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 Wastewater Certifications: Arkansas (88-0877); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager

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 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

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1 CLIENT: <u>LCR</u> ADDRESS: <u>90 BIRCH AVE</u> CITY: <u>Peoria</u> STATE: <u>Illinois</u> COUNTY: <u>Peoria</u> CONTACT PERSON: <u>John S. ...</u>		PROJECT NUMBER: _____ PHONE NUMBER: _____ P.O. NUMBER: <u>FC0220028</u> FAX NUMBER: _____		MEANS SHIPPED: _____ DATE SHIPPED: _____		(FOR LAB USE ONLY) LOGIN # <u>19861</u> LAB PROL # _____ TEMPLATE: _____ PROL MGR: _____	
2 SAMPLE DESCRIPTION: AS YOU WANT ON REPORT <u>out 1st 001</u>		DATE COLLECTED: <u>3-6-11</u> TIME: <u>6:30</u> MATRIX TYPE: <u>WW</u> BOTTLE COUNT: <u>1</u>		MATRIX TYPES: WASTEWATER DRINKING WATER GROUND WATER WASTEWATER WASTEWATER LIGHT LEACHATE OTHER: _____		REMARKS: <u>Oil Filter</u>	
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH FEE IS SUBJECT TO PDC LABS ADDITIONAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX _____		NORMAL _____ RUSH _____ PHONE _____ E-MAIL _____		DATE RESULTS NEEDED: _____		(FOR LAB USE ONLY) COMMENTS: The sample temperature will be measured upon receipt at the lab. By initiating this area you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0-18°C. By not initiating this area you allow the lab to proceed with analytical testing regardless of the sample temperature.	
7 RELINQUISHED BY: (SIGNATURE) <u>[Signature]</u>		RECEIVED BY: (SIGNATURE) <u>[Signature]</u>		DATE: _____ TIME: _____		(FOR LAB USE ONLY) COMMENTS: SAMPLE TEMPERATURE UPON RECEIPT: _____ SAMPLE TEMPERATURE PRIOR TO RECEIPT (FOR PROPER BOTTLES RECEIVED IN GOOD CONDITION FOR ANALYSIS): _____ SAMPLES RECEIVED WITH ADEQUATE VOLUME FOR ANALYSIS: _____ SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS): _____ DATE AND TIME TAKEN FROM SAMPLE BOTTLE: _____	

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Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 03/28/11 9:45
Report Date: 04/01/11
Customer #: 255447
PO#: FTC230134

Sample No: 1032722-01
Sample Description: OUTFALL 001

Collect Date: 03/25/11 07:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/31/11 08:00	JRL2	EPA 1664A



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Date Received: 03/28/11 9:45
 Report Date: 04/01/11
 Customer #: 255447
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 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager



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march

LB & B Associates Inc.
 PO Box 439
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 Attn: Fred Stafford

Date Received: 03/28/11 9:45
 Report Date: 05/09/11
 Customer #: 255447
 PO#: FTC230139

Sample No: 1032708-01
 Sample Description: SLUDGE COMPOSITE

Collect Date: 03/25/11 07:30
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Distilled Nutrients - PIA</u>					
Ammonia-N	8000 mg/kg dry		03/29/11 09:59	Igalr	EPA 350.1 - QC 10-107-06-1-I & J
<u>General Chemistry - PIA</u>					
Nitrogen - total organic	42000 mg/kg dry di		04/01/11 11:17	Igalr	calculation
Solids - total solids (TS)	2.1 %		03/26/11 15:00	TCH	SM 2540G 18Ed
<u>Nutrients - PIA</u>					
Nitrate/Nitrite-N	29 mg/kg dry		03/29/11 15:34	TTH	EPA 353.2 - SM 4500NO3 F 18Ed - QC
Phosphorus - total as P	18000 mg/kg dry		04/08/11 12:30	Igalr	10-107-04-1-C EPA 365.1SM4500-P BF
Total Kjeldahl Nitrogen (TKN)	50000 mg/kg dry		04/01/11 11:17	Igalr	SM 4500-N B & NH3-H 18Ed
<u>Total Metals - PIA</u>					
Cadmium	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Chromium	13 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Copper	250 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Lead	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Mercury	< 4.7 mg/kg dry		04/04/11 15:23	JMW	SW 6020
Molybdenum	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Nickel	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Potassium	4100 mg/kg dry		03/31/11 09:45	KJP	SW 6010B
Selenium	< 120 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Zinc	430 mg/kg dry		03/30/11 13:07	KJP	SW 6010B

Sample No: 1032706-01RE1
 Sample Description: SLUDGE COMPOSITE

Collect Date: 03/26/11 07:30
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Total Metals - PIA</u>					
Arsenic	< 23 mg/kg dry		04/21/11 15:18	KJP	SW 6010B



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Date Received: 03/28/11 9:45
 Report Date: 05/09/11
 Customer #: 255447
 PO#: FTC230139

Sample No: 1032706-02
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E
Fecal coliform bacteria - Geometric Mean	9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-03
 Sample Description: SLUDGE GRAB

Collect Date: 03/26/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-04
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9400 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-05
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					

1032706



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Date Received: 03/28/11 9:45
 Report Date: 05/09/11
 Customer #: 255447
 PO#: FTC230139

Sample No: 1032706-05
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-06
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.2 %		03/28/11 16:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-07
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032708-08
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

1032706



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Date Received: 03/28/11 9:45
 Report Date: 05/09/11
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 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Report revised 5/9/11 - Arsenic was re-prepped and re-analyzed to achieve lower reporting limit.

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

DATE	DAY	April-11						SEWAGE FLOW						SETTLEABLE					
		WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH SEC. CLAR.	INFLUENT AMMONIA	M G D				1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	1# SEC. CLAR. SLUDGE LEVEL IN IN.	2# SEC. CLAR. SLUDGE LEVEL IN IN.	RAW	SEC. CLAR.	FINAL	
		RAIN INCHES	AIR TEMP					MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW								TOTAL RECIRCULAT
1	FR		58	50	7.1	7.2		3.1	1.5	2.2	2.9	0.5	-	-	54	54	19	0	0
2	SA		72	54	7.2	7.2		3.2	1.7	1.9	2.9	0.4	-	-	24	36	17	0	0
3	SU		92	73	7.3	7.2	-	3.6	1.9	2.1	3.5	0.3	-	-	30	42	18	0	0
4	MO		55	66	7.3	7.2	-	3.2	2.0	2.1	3.1	0.7	-	-	48	65	16	0	0
5	TE		69	65	7.2	7.2	-	3.2	2.0	2.1	2.9	0.3	-	-	54	68	16	0	0
6	WE		80	69	7.2	7.2	19.0	3.3	1.2	2.2	2.7	0.3	-	-	36	36	17	0	0
7	TR		75	70	7.1	7.1	-	3.0	1.1	3.3	3.3	0.2	-	-	24	36	13	0	0
8	FR		85	70	7.3	7.2	-	3.2	1.1	1.0	2.1	0.4	-	-	24	36	19	0	0
9	SA		83	72	7.3	7.2	-	3.4	1.2	1.9	2.3	2.3	-	-	24	36	18	0	0
10	SU		91	74	7.3	7.3	-	3.4	1.1	2.0	2.9	0.3	-	-	15	18	17	0	0
11	MO	1 3/10	72	70	7.2	7.1	-	5.1	2.7	2.6	3.9	1.0	-	-	6	4	22	0	0
12	TE		69	68	7.3	7.2	-	3.7	2.5	1.8	3.7	1.4	-	-	36	48	17	0	0
13	WE		73	70	7.3	7.2	-	3.8	1.9	1.6	3.3	1.4	-	-	66	54	17	0	0
14	TR		78	81	6.9	7.0	-	3.1	1.8	1.9	3.0	0.7	-	-	66	60	20	0	0
15	FR	2	54	56	7.0	7.0	16.0	12.0	1.8	4.0	3.9	1.0	-	-	42	54	25	0	0
16	SA		70	59	7.1	7.1	-	4.0	2.4	1.5	3.7	1.0	-	-	48	48	21	0	0
17	SU		77	64	7.2	7.1	-	2.7	1.7	1.3	3.0	1.0	-	-	48	48	17	0	0
18	MO		68	63	7.2	7.1	-	3.0	1.6	1.3	4.0	0.9	-	-	36	48	18	0	0
19	TE	1/10	82	66	7.2	7.1	29.0	2.8	1.3	1.7	4.0	0.4	-	-	36	42	19	0	0
20	WE		60	62	7.2	7.1	-	2.4	1.5	1.5	3.2	0.4	-	-	30	30	17	0	0
21	TR	1 8/10	71	72	7.1	7.1	-	6.6	1.5	2.2	3.7	0.5	-	-	36	38	20	0	0
22	FR	1 4/10	79	76	6.9	6.9	-	8.2	3.8	6.1	4.6	0.0	-	-	24	24	18	0	0
23	SA	1 9/10	65	77	6.9	6.9	-	13.0	4.0	4.0	4.1	3.5	-	-	12	15	22	0	0
24	SU	1 7/10	54	72	7.0	6.9	-	8.5	5.4	4.4	5.3	1.6	-	-	3	6	18	0	0
25	MO	3 4/10	57	76	7.0	7.0	-	17.5	6.5	8.9	7.2	1.6	-	-	36	48	21	0	0
26	TE	2/10	72	76	6.8	6.6	-	8.5	5.1	5.9	6.6	1.8	-	-	45	50	22	1	0
27	WE	4/10	58	63	7.0	7.0	-	6.2	4.3	3.5	4.6	1.7	-	-	66	66	23	1	0
28	TR		81	84	7.0	7.0	20.0	5.5	2.5	2.8	4.2	1.6	-	-	54	60	18	0	0
29	FR		81	86	6.9	6.9	-	3.4	2.3	1.9	4.3	1.2	-	-	42	81	23	0	0
30	SA		72	84	7	6.9	-	3.6	2.5	1.6	2.3	1.3	-	-	36	36	22	0	0
TOTAL		14 2/10	2153	2088	213 5/10	212 2/10	84.0	156.2	71.9	81.5	111.2	29.7	0	0	1101	1287	570	2	0
MAX		3 4/10	92	86	7.3	7.3	29.0	17.5	6.5	8.9	7.2	3.5			66.0	81.0		0	0.0
MIN		1/10	54	50	6.8	6.6	16.0	2.4	1.1	1.0	2.1	0.0			3.0	4.0		0	0.0
AVERAGE			71.8	69.6	7.1	7.1	21.0	5.2	2.4	2.7	3.7	1.0			36.7	42.9			0.0
PREPARED BY		APPROVED BY										POST ENGINEER							
DA FORM 4247																			



PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9698 • (800) 752-6651 • FAX (309) 692-9689



LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 04/04/11 9:35
Report Date: 04/06/11
Customer #: 255447
PO#: FTL230226

Sample No: 1040133-01
Sample Description: OUTFALL 001

Collect Date: 04/01/11 07:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		04/06/11 07:46	JRL2	EPA 1664A



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Date Received: 04/04/11 9:35
 Report Date: 04/06/11
 Customer #: 255447
 PO#: FTL230226

Notes

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 Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
 Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT ADDRESS 2000 N. 1st St. Peoria, IL 61615		PROJECT NUMBER 87230276		MEANS SHIPPED DATE SHIPPED		(FOR LAB USE ONLY) LOGGED BY: <i>JK</i> LAB PROJ. # <i>1540133-1</i> TEMPLATE: PROJ. MGR.:	
CITY Peoria, IL		PHONE NUMBER 309-692-9689		DATE COLLECTED 4-1-11 9:30		REMARKS Oil & Grease	
STATE IL		P.O. NUMBER 87230276		DATE RESULTS NEEDED X		MATRIX TYPES: KW-HASTMETER DW-DRINKING WATER SW-GROUND WATER WWS-SLUDGE LW-LEACHATE OTHER:	
CONTACT PERSON Bob Sappin		FAX NUMBER 309-692-9689		MATRIX TYPE WW 1		BOTTLE COUNT	
SAMPLE DESCRIPTION AS YOU WANT ON REPORT 001 Reel 001		DATE COLLECTED 4-1-11 9:30		DATE RESULTS NEEDED X		BOTTLE COUNT 1	
TURNDOWN TIME REQUESTED (IF APPLICABLE) (RUSH FAX IS SUBJECT TO PDC LAB APPROVAL AND SURCHARGE)		NORMAL RUSH PHONE		DATE RESULTS NEEDED E-MAIL		The sample temperatures will be measured upon receipt at the lab. By initiating this area you request the lab notify you before proceeding with analysis. If sample temperatures are outside of the range of 0-15.0°C. By not including this area you allow the lab to proceed with analytical testing regardless of the sample temperature.	
RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>		RECEIVED BY (SIGNATURE) <i>[Signature]</i>		DATE TIME		COMMENTS (FOR LAB USE ONLY)	
RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>		RECEIVED BY (SIGNATURE) <i>[Signature]</i>		DATE TIME		SAMPLE TEMPERATURE UPON RECEIPT CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE PROPER BOTTLES RECEIVED IN GOOD CONDITION FOR N BOTTLES FILLED WITH ADEQUATE VOLUME SAMPLES RECEIVED WITHIN HOLD TIMES (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE	

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/08/11 10:00
 Report Date: 04/17/11
 Customer #: 255447
 PO#: FStafford

Sample No: 1040950-01
 Sample Description: OUTFALL 001

Collect Date: 04/07/11 06:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Oil & Grease - total	< 9.0 mg/L		04/14/11 07:30	JRL2	EPA 1664A



PDC Laboratories, Inc.
 P.O. Box 9671 • Peoria, IL 61612-9671
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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/08/11 10:00
 Report Date: 04/17/11
 Customer #: 255447
 PO#: FStafford

Notes

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 Hazardous/Solid Waste Certifications: Arkansas (88-0877); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager



PDC Laboratories, Inc.
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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/18/11 9:45
 Report Date: 04/24/11
 Customer #: 255447
 PO#: FTC230400

Sample No: 1041846-01
 Sample Description: OUTFALL 001

Collect Date: 04/15/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 1.4 mg/L		04/22/11 07:30	JRL2	EPA 1664A



PDC Laboratories, Inc.
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LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 04/18/11 9:45
Report Date: 04/24/11
Customer #: 255447
PO#: FTC230400

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UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 309-692-9688
 FAX # 309-692-9689

State where samples collected _____

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

<p>1 PROJECT NUMBER: <u>20230400</u> P.O. NUMBER: <u>20230400</u> PHONE NUMBER: _____ FAX NUMBER: _____</p>		<p>MEANS SHIPPED: _____ DATE SHIPPED: _____</p>		<p>LOGGED BY: <u>ASG/18167</u> LAB PROJ: _____ TEMPLATE: _____ PROJ. MGR.: _____</p>	
<p>2 SAMPLE DESCRIPTION: AS YOU WANT ON REPORT <u>OUTfall 001</u></p>		<p>DATE COLLECTED: <u>4-15-11</u> TIME: <u>2:00</u> DATE SHIPPED: _____ TIME: _____</p>		<p>REMARKS: <u>0.1 K-Crease</u></p>	
<p>3 MATRIX TYPES: WW-WASTEWATER DW-DRINKING WATER GW-GROUND WATER SW-SURFACE WATER MS-SOLID WASTE LW-LEACHATE OTHER: _____</p>		<p>DATE RECEIVED: _____ TIME: _____ DATE SHIPPED: _____ TIME: _____</p>		<p>RECEIVED BY: (SIGNATURE) _____</p>	
<p>4 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH FAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX IF DIFFERENT FROM ABOVE</p>		<p>DATE RESULTS NEEDED: _____ DATE RECEIVED: _____</p>		<p>RECEIVED BY: (SIGNATURE) _____</p>	
<p>5 RELINQUISHED BY: (SIGNATURE) _____</p>		<p>DATE: _____ TIME: _____</p>		<p>RECEIVED BY: (SIGNATURE) _____</p>	
<p>6 RELINQUISHED BY: (SIGNATURE) _____</p>		<p>DATE: _____ TIME: _____</p>		<p>RECEIVED BY: (SIGNATURE) _____</p>	

7 COMMENTS: (FOR LAB USE ONLY)
 SAMPLE TEMPERATURE UPON RECEIPT: _____ °C
 CHILL PROCESS STARTED PRIOR TO RECEIPT: _____
 SAMPLE(S) RECEIVED ON ICE: _____
 PROPER BOTTLES RECEIVED IN GOOD CONDITION: _____
 BOTTLES FILLED WITH ADEQUATE VOLUME FOR N: _____
 SAMPLE(S) RECEIVED WITHIN HOLD TIMES: _____
 (INCLUDES ALL HOLD TIMES)
 CLOSURE AND TIME TAKEN FROM SAMPLE BOTTLE: _____

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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 04/29/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042536-01
 Sample Description: OUTFALL 001

Collect Date: 04/22/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 1.4 mg/L		04/28/11 07:15	JRL2	EPA 1664A



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LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 04/25/11 9:30
Report Date: 04/29/11
Customer #: 255447
PO#: FTC230528

Notes

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- SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager



PDC Laboratories, Inc.
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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-01
 Sample Description: SLUDGE COMPOSITE

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Distilled Nutrients - PIA</u>					
Ammonia-N	5600 mg/kg dry		04/26/11 11:42	Igalr	EPA 350.1 - QC 10-107-06-1-I & J
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.9 %		04/28/11 08:30	BRS	SM 2540G 18Ed
<u>Nutrients - PIA</u>					
Nitrate/Nitrite-N	19 mg/kg dry		04/27/11 18:50	TTH	EPA 353.2 - SM 4500NO3 F 18Ed - QC 10-107-04-1-C
Phosphorus - total as P	25000 mg/kg dry		05/04/11 12:58	Igalr	EPA 365.1SM4500-P BF
Total Kjeldahl Nitrogen (TKN)	66000 mg/kg dry		05/12/11 14:35	Igalr	SM 4500-N B & NH3-H 18Ed
<u>Total Metals - PIA</u>					
Arsenic	< 27 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Cadmium	< 5.3 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Chromium	11 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Copper	320 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Lead	15 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Mercury	1.6 mg/kg dry		04/28/11 11:12	JMW	SW 6020
Molybdenum	< 5.3 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Nickel	9.4 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Potassium	8300 mg/kg dry		04/28/11 11:22	JMW	SW 6010B
Selenium	< 27 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Zinc	470 mg/kg dry		04/28/11 11:24	JMW	SW 6010B

Sample No: 1042514-02
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.9 %		04/28/11 08:30	BRS	SM 2540G 18Ed
<u>Microbiology - PIA</u>					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E
Fecal coliform bacteria - Geometric Mean	12000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

1042514



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-03
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.9 %		04/26/11 08:30	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-04
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.9 %		04/26/11 08:30	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-05
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.7 %		04/27/11 08:54	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	23000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-06
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.8 %		04/27/11 08:54	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

1042514



PDC Laboratories, Inc.
 P.O. Box 9671 • Peoria, IL 61612-9071
 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-07
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.8 %		04/28/11 08:33	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-08
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.8 %		04/28/11 08:33	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E



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Notes

This report shall not be reproduced, except in full, without the written approval of the laboratory.

PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by Federal or State Governments or their agencies is not implied.

- PIA PDC Laboratories - Peoria, IL
 NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
 Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
 Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615
 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: <u>LBIAB</u> ADDRESS: <u>Pc Fos 404</u> CITY: <u>East Moline</u> STATE: <u>MO</u> CONTACT PERSON: <u>Ellen Sappington</u>		2 SAMPLE DESCRIPTION: <u>As you want on report</u>		3 ANALYSIS REQUESTED: <u>metals</u>		4 (FOR LAB USE ONLY) LOGIN: <u>104 2514-8</u> LAB PROJ. # <u>1</u> LOGGED BY: <u>[Signature]</u> LAB PROJ. # <u>1</u> TEMPLATE: PROJ. MGR.:	
5 PROJECT NUMBER: <u>51230528</u> PHONE NUMBER: P.O. NUMBER: FAX NUMBER:		6 MEANS SHIPPED: <u>1</u> DATE SHIPPED: MATRIX TYPES: UNWASTED DW-DRINKING WATER DW-INDUSTRIAL WATER WWSL-SLUDGE WWSL-LEACHATE OTHER:		7 ANALYSIS RECEIVED: <u>metals</u>		8 COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT: <u>17 °C</u> CHILL PROCESS STARTED PRIOR TO RECEIPT: <u>NO</u> SAMPLE(S) RECEIVED ON ICE: <u>NO</u> BOTTLES FILLED WITH ADEQUATE VOLUME: <u>NO</u> SAMPLES RECEIVED WITHIN HOLD TIME(S): <u>NO</u> (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE:	
9 TURNAROUND TIME REQUESTED (PLEASE CIRCLE): (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE):		10 DATE RESULTS NEEDED:		11 DATE:		12 RECEIVED BY: (SIGNATURE)	
13 RELINQUISHED BY: (SIGNATURE)		14 RECEIVED BY: (SIGNATURE)		15 DATE:		16 RECEIVED BY: (SIGNATURE)	
17 RELINQUISHED BY: (SIGNATURE)		18 RECEIVED BY: (SIGNATURE)		19 DATE:		20 RECEIVED BY: (SIGNATURE)	

Copies: white should accompany samples to PDC Labs; Yellow copy to be retained by the client.

PAGE ____ OF ____



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/27/11 11:00
 Report Date: 05/03/11
 Customer #: 255447
 PO#: FTC230538

Sample No: 1042850-01
 Sample Description: OUTFALL 001

Collect Date: 04/26/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 1.4 mg/L		05/02/11 07:30	JRL2	EPA 1664A



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LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 04/27/11 11:00
Report Date: 05/03/11
Customer #: 255447
PO#: FTC230538

Notes

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- PIA PDC Laboratories - Peoria, IL
NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615
 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1		2		3		4	
PROJECT NUMBER	P.O. NUMBER	MEANS SHIPPED	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	MATRIX TYPE	BOTTLE COUNT
111111	PTC-30538	DATE SHIPPED	4-26-11	2:00	X	WW	1
<p>2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT</p> <p>001 Cell 001</p>							
<p>3 ANALYSIS REQUESTED</p> <p>011 A Greyn</p>							
<p>4 (FOR LAB USE ONLY)</p> <p>LOGGED BY: [Signature]</p> <p>LAB PROJ. #</p> <p>TEMPLATE:</p> <p>PROJ. MGR.:</p>							
<p>5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH RATE IS SUBJECT TO PDC LABS APPROVAL AND 2.0X CHARGE)</p> <p>6 DATE RESULTS NEEDED</p> <p>7 RECEIVED BY: (SIGNATURE)</p> <p>8 RECEIVED BY: (SIGNATURE)</p> <p>9 RECEIVED BY: (SIGNATURE)</p>							
<p>10 COMMENTS: (FOR LAB USE ONLY)</p> <p>11 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>12 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>13 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>14 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>15 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>16 SAMPLE TEMPERATURE UPON RECEIPT</p> <p>17 SAMPLE TEMPERATURE UPON RECEIPT</p>							

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

RECEIVED

WATER PROTECTION PROGRAM

ENCLOSURE B

April-10

DATE	DAY	WEATHER		SEWAGE FLOW MG D									SETTLABLE SOLID ML/LITER						
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	TR		90	66	7.2	7.2	6.0	4.2	4.82	3.15	2.18	2.5	90	60	90	0	20	4.6	110,235
2	FR	1 5/10	70	68	7.2	7.2	9.1	3.6	5.07	3.25	1.96	2.5	96	66	35	0	-	-	110,235
3	SA		74	64	7.3	7.1	7.9	4.9	5.15	3.82	1.96	2.8	108	72	33	0.5	-	-	110,235
4	SU		72	64	7.2	7.1	5.3	3.9	4.82	4.24	2.10	2.5	108	72	30	0.5	-	-	110,235
5	MO		81	62	7.0	6.9	5.6	4.0	5.99	3.78	2.74	2.4	96	78	20	0	-	-	110,235
6	TE		81	65	6.9	7.0	5.3	3.5	4.92	3.48	2.77	2.4	96	72	25	0	-	-	110,235
7	WE		75	63	6.8	6.9	5.4	4.0	4.84	3.24	2.69	2.8	108	90	40	0	14	4.5	110,235
8	TR		62	64	6.9	7.0	5.4	4.3	4.84	3.43	2.62	2.7	108	90	35	0	-	-	110,235
9	FR		74	63	7.0	6.9	5.3	4.0	4.71	3.30	2.47	2.6	108	96	50	2	-	-	110,235
10	SA		81	64	6.9	6.9	4.8	4.1	4.34	2.67	1.96	2.7	108	108	45	1	-	-	110,235
11	SU		82	65	7.0	6.9	4.8	3.5	4.45	2.69	2.00	2.7	108	108	48	2	-	-	110,235
12	MO		81	66	7.0	7	5.4	3.5	4.63	2.86	2.21	2.8	120	120	44	1	-	-	110,235
13	TE		84	66	7.1	6.9	4.8	4.1	4.56	2.69	2.16	2.8	120	120	49	1	19	4.2	110,235
14	WE		84	68	6.9	6.9	5.3	4.0	4.57	2.83	2.06	2.7	126	126	46	0	-	-	110,235
15	TR		87	69	7.2	7.1	5.1	3.6	4.58	2.76	2.04	2.2	126	126	21	1	-	-	110,235
16	FR		65	62	7.1	7.2	5.1	3.4	4.50	2.76	1.98	2.2	126	126	32	1	-	-	110,235
17	SA		75	63	7.2	7.1	4.6	3.4	4.25	2.56	1.83	2.3	132	108	29	0	-	-	110,235
18	SU		72	65	7.0	7.0	4.7	3.5	4.33	2.67	1.98	2.3	132	108	26	1	-	-	110,235
19	MO		76	65	7.1	7.0	4.8	3.6	4.50	2.80	1.99	2.2	131	126	25	0	-	-	110,235
20	TE		71	67	7.2	7.1	5.3	3.6	4.47	2.80	2.01	2.2	132	126	26	0	21	2.9	110,235
21	WE		77	68	7.1	7.0	5	3.8	4.62	2.93	2.11	2.3	132	118	31	3	-	-	110,235
22	TR	5/10	74	71	7.2	7.2	5.8	3.5	4.48	2.78	-	2.1	126	112	22	1	-	-	110,235
23	FR	11/10	76	70	7.6	7.4	5	3.9	4.50	2.69	-	2.3	108	102	60	2	-	-	110,235
24	SA	7/10	71	65	7.2	7.0	5.6	3.8	4.54	2.77	-	2.2	120	120	67	9	-	-	110,235
25	SU	2/10	56	63	6.9	6.8	4.9	4.4	4.53	2.88	-	2.3	120	120	60	2	-	-	110,235
26	MO		56	63	7.1	6.9	4.9	3.6	4.48	2.79	-	2.3	144	132	55	2	-	-	110,235
27	TE		58	60	7.3	7.1	4.5	3.5	4.42	2.68	-	2.1	132	120	58	2	22	8	110,235
28	WE		74	63	7.2	7.0	5.2	3.4	4.41	2.65	-	2.2	144	144	45	1	-	-	110,235
29	TR		80	68	7.2	7.4	5.1	3.9	3.18	2.73	-	2.5	144	144	100	5	-	-	110,235
30	FR	4/10	80	70	6.5	6.5	5.2	3.5	5.84	2.10	-	2.5	144	144	230	50	-	-	110,235
TOTAL		3 4/10	2239	1960	212.5	210.7	161.2	114.0	139.33	88.78	45.8	73.1	3593	3254	1477	88	96	24 2/10	3307050
MAX		1 5/10	90	71	7.6	7.4	9.1	4.9	5.99	4.24	2.77	2.8			230	50.0	0	8.0	110235
MIN		1/10	56	60	6.5	6.5	4.5	3.4	3.18	2.10	1.83	2.1			20.0	0	0	2.9	110235
AVERAGE			74.6	65.3	7.1	7.0	5.4	3.8	4.6	3.0	2.2	2.4	119.8	108	49.2			4.8	110235

PREPARED BY

APPROVED BY

POST ENGINEER

May-10				SEWAGE FLOW								SETTLABLE SOLID							
DATE	DAY	WEATHER		MG D								ML/LITER							
		RAIN INCHES	AIR TEMP	TEMP PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	SA		73	68	6.7	6.6	4.7	4.1	4.35	2.78		2.5	120	156	168	53			131,712
2	SU		70	69	6.9	6.7	4.6	3.6	4.46	2.69		2.6	144	144	175	0			131,589
3	MO		78	72	7.3	7.1	5.1	3.7	4.44	2.68		2.6	144	144	161	44			131,714
4	TE		83	69	7.2	7.1	5.3	3.4	4.53	2.69		2.5	144	144	10	1	19	13	131,700
5	WE		84	70	7.1	7.1	4.9	3.8	4.35	2.54		2.5	156	156	10	2			131,234
6	TR		86	71	7.1	6.8	5	3.5	4.57	2.75		2.1	132	156	10	5			56,500
7	FR		80	66	7.0	6.9	4.8	3.5	4.41	2.63		2.1	138	144	30	6			56,489
8	SA		70	66	6.9	6.9	4.7	3.5	4.08	2.20		2.1	144	144	25	1			56,479
9	SU		57	64	7.0	6.9	4.7	3.3	4.37	2.52		2.2	144	144	24	1			56,500
10	MO	6/10	54	60	6.9	6.8	5.1	3.8	4.77	3.29		2.1	144	144	42	2			56,498
11	TE		79	63	7.0	6.9	5.2	3.9	4.60	2.46		2.2	144	144	28	1	21	8.1	56,897
12	WE		81	62	7.1	7.0	6	4.4	4.93	3.62		2.2	144	144	40	1			56,400
13	TR	17/10	81	64	6.9	6.4	6.3	4.3	5.09	3.60		2.5	144	144	10	5			56,448
14	FR	14/10	79	64	6.9	6.9	16.2	4.1	7.20	4.81		2.2	144	144	40	5			56,412
15	SA	3/10	67	63	6.9	6.8	8.3	5.4	6.79	5.15		2.2	78	144	37	3			56,432
16	SU	7/10	70	61	7.1	7.1	10.9	4.8	6.73	4.76		2.3	30	138	44	5			56,422
17	MO	1/10	61	61	7.1	7.0	6.5	5.0	5.44	4.09		2.5	42	96	35	4			56,432
18	TE		78	63	7.2	7.0	5.3	4.2	4.93	3.64		2.5	48	69	31	2	19	5.4	56,412
19	WE	5/10	70	62	7.1	6.9	5.2	4.1	4.70	3.56		2.6	42	48	39	4			56,487
20	TR	19/10	72	63	6.9	6.9	10.8	6.6	5.48	5.48		3.1	84	84	3	0			56,498
21	FR		82	66	6.9	6.9	5.7	4.6	5.71	5.03		3.0	84	84	4	0			56,448
22	SA		85	69	7.0	6.9	5.1	4.2	4.83	3.83	2.71	2.9	48	84	10	0			56,421
23	SU		89	73	7.1	7.0	5.0	4.2	4.76	3.53	2.75	2.9	45	84	9	0			56,432
24	MO		94	76	7.3	7.1	5.3	4.1	4.73	3.82	2.72	3.1	66	78	0	0			56,423
25	TE		85	73	7.3	7.1	4.8	4.2	1.87	3.47	2.68	3.0	78	66	15	0	24	4.5	56,454
26	WE		98	77	7.2	7.1	5.1	3.6	4.55	3.41	2.64	3.1	42	48	11	0			56,432
27	TR		89	79	7.2	7.3	5.2	3.8	4.63	3.46	2.71	2.9	42	54	8	0			56,448
28	FR		100	78	6.4	6.3	5.3	3.9	4.35	3.16	2.58	3.2	48	60	8	0			56,449
29	SA		88	78	6.6	6.5	4.6	3.6	4.00	2.72	2.44	3.1	54	60	9	0			56,448
30	SU		87	79	6.8	6.7	4.3	3.2	4.10	2.70	2.46	3.0	96	108	9	0			56,489
31	MO	1/10	84	78	6.9	6.8	4.8	3.2	4.12	2.59	2.45	3.10	120	120	11	0.00			56,478
TOTAL		73/10	2434	2127	217	213.5/10	184.8/10	125.6/10	147.9/10	105.64	26.2/10	80.9/10	3033	3477	1056	145	83	31	2126177
MAX		19/10	100	79	7.3	7.3	16.2	6.6	7.2	5.48	2.75	3.2			175.0	53.0	24.0	13.0	131714
MIN		1/10	54	60	6.4	6.3	4.3	3.2	1.87	2.2	2.44	2.1			0.0	0	19.0	4.5	56400
AVERAGE			79.2	68.6	7.0	6.9	6.0	4.1	4.8	3.4	2.91	2.6	97.8	112.2	34.1		20.8	7.8	68586
PREPARED BY				APPROVED BY								POST ENGINEER							

		June-10					SEWAGE FLOW							SETTLABLE SOLID					
DATE	DAY	WEATHER					M G D							ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	TE		86	78	7.1	7.0	4.6	3.7	4.22	2.93	2.43	3.0	120	120	8	0	-	-	56,448
2	WE	2.5/10	88	79	7.0	6.8	9.6	3.7	4.69	3.28	2.51	3.1	120	120	9	0	20	4.8	56,498
3	TR		86	76	6.7	6.7	6.3	4.3	5.38	4.04	2.57	2.8	132	132	12	2	-	-	56,354
4	FR		90	77	6.9	6.8	5.4	3.3	4.18	3.04	2.46	2.5	138	126	15	3	-	-	56,450
5	SA		89	78	6.9	6.9	4.6	3.5	3.82	2.54	2.37	2.6	144	120	12	1	-	-	56,487
6	SU		84	77	7.0	7.0	4.2	2.8	4.02	2.73	2.49	2.6	144	126	14	4	-	-	56,298
7	MO		83	76	7.1	7.0	4.5	3.4	3.92	2.74	2.40	2.5	144	144	18	3	-	-	56,358
8	TE	1.3/10	81	72	6.9	6.8	7.2	3.1	4.38	3.37	2.48	2.3	144	132	27	6	18	6.4	56,448
9	WE		88	74	7.0	6.9	5.5	4.2	4.66	3.90	2.55	2.4	144	144	21	4	-	-	56,500
10	TR		90	83	6.7	6.3	4.5	3.5	4.33	3.15	2.55	2.1	150	132	22	5	-	-	56,387
11	FR	4/10	90	75	6.9	6.8	5.4	3.7	4.50	3.78	2.56	2.3	156	132	15	2	-	-	56,895
12	SA		94	75	6.9	6.8	4.4	3.3	3.94	3.13	2.35	2.2	150	132	17	3	-	-	56,448
13	SU		91	77	7.0	6.9	4.6	3.5	3.91	2.73	2.37	2.3	150	138	15	2	-	-	56,394
14	MO		90	78	7.0	6.8	4.6	3.6	4.16	3.28	2.49	2.3	129	144	17	2	-	-	56,412
15	TE	8/10	89	78	7.0	6.9	7.5	3.3	4.43	3.75	2.49	2.3	132	144	16	3	19	8.4	56,312
16	WE	1/10	91	78	7.1	7.0	5.2	3.4	4.12	3.18	2.42	2.4	144	132	14	1	-	-	56,452
17	TR		98	83	6.9	6.9	4.7	3.7	4.34	3.29	2.57	2.1	150	132	15	2	-	-	56,542
18	FR		96	81	6.9	7.0	4.9	3.6	4.03	3.22	2.36	2.1	144	132	20	2	-	-	56,149
19	SA		96	81	7.0	6.9	4.3	3.5	3.91	2.95	2.34	2.2	144	132	17	2	-	-	56,448
20	SU		92	80	7.0	6.9	4.5	3.1	4.05	3.10	2.43	2.1	138	114	17	2	-	-	56,389
21	MO		96	81	7.1	7.0	5.3	3.7	4.05	3.15	2.34	2.2	132	132	15	3	-	-	28,224
22	TE		98	83	7.1	7.2	5.2	3.6	4.11	3.29	2.44	2.3	132	120	18	5	22	5.6	29,356
23	WE		96	83	7.1	7.1	4.5	3.3	4.08	3.17	2.43	2.3	132	120	17	4	-	-	28,548
24	TR		94	80	6.9	7.0	4.9	3.5	4.33	3.49	2.57	2.2	138	120	15	0	-	-	28,359
25	FR		93	81	7.0	6.9	4.6	3.5	1.69	3.23	2.46	2.3	138	120	12	0	-	-	28,224
26	SA		93	82	7.1	7.0	4.3	3.5	4.14	3.00	2.34	2.3	144	132	14	0	-	-	28,298
27	SU		94	83	7.0	6.9	4.5	3.3	3.94	2.96	2.38	2.2	150	132	12	0	-	-	28,315
28	MO		88	82	7.1	7.2	4.4	3.3	4.21	3.33	2.52	2.3	144	138	18	6	-	-	28,459
29	TE		89	79	7.0	7.1	5.3	3.4	3.96	2.98	2.39	2.1	132	132	16	3	-	-	28,561
30	WE		88	81	7.0	7.0	4.4	3	4.03	3.07	2.43	2.3	144	132	15	3	-	-	28,534
TOTAL		5 1/10	2721	2371	209 4/10	207 5/10	153 9/10	104 3/10	123 5/10	95.83	73 5/10	70 7/10	4203	3396	473	73	79	25 2/10	1413547
MAX		2.5/10	98	83	7.1	7.2	9.6	4.3	5.38	4.04	2.57	3.1			27.0	6.0	0	8.4	56895
MIN		1/10	81	72	6.7	6.3	4.2	2.8	1.69	2.54	2.34	2.1			8.0	0	0	4.8	28224
AVERAGE			90.7	79.0	7.0	6.9	5.1	3.5	4.1	3.2	2.4	2.4	140	130	15.8	18.3	19.8	6.3	47118.2
PREPARED BY		APPROVED BY										POST ENGINEER							

FORT LEONARD WOOD

July-10

SEWAGE FLOW

SETTLABLE SOLID

DATE	DAY	WEATHER		SEWAGE FLOW MG D										SETTLABLE SOLID ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	#1 PRI. CLAR. SLUDGE LEVEL IN IN.	#2 PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	TR		97	82	6.9	7.0	4.5	3.5	3.81	2.96	75.99	2.2	150	132	8	0	21	5.9	28,220
2	FR		97	83	6.9	6.9	4.8	3.6	3.99	2.95	2.44	2.5	150	126	8	0	-	-	27,640
3	SA		88	83	6.9	6.9	4.2	3.2	3.72	2.66	2.32	2.4	150	132	10	0	-	-	28,950
4	SU		80	81	7.0	6.9	4.0	3.3	3.82	2.65	2.41	2.5	150	130	9	2	-	-	27,940
5	MO		91	82	7.0	7.3	4.5	3.2	3.94	2.85	2.44	2.6	144	126	18	10	-	-	28,350
6	TE		89	83	7.0	7.3	4.5	3.4	4.05	3.03	2.42	2.8	144	144	20	11	21	6.8	28,390
7	WE		86	81	7.1	7.4	4.4	3.1	4.09	3.13	2.45	2.7	126	132	21	9	-	-	28,565
8	TR	2	89	79	7.1	7.2	9.2	3.2	4.41	3.74	2.53	2.0	132	132	15	4	-	-	28,360
9	FR	4/10	92	83	6.9	6.7	6.0	3.9	4.69	4.68	2.38	2.3	66	132	20	10	-	-	28,425
10	SA		89	82	7.0	6.8	4.3	3.2	3.81	2.75	2.31	2.4	60	132	19	6	-	-	28,430
11	SU	9/10	84	77	6.8	6.8	5.2	3.3	4.11	3.24	2.41	2.3	60	132	9	5	-	-	28,320
12	MO	3/10	84	80	6.9	6.8	5.1	3.5	4.41	2.71	2.53	2.5	72	120	21	0	-	-	29,458
13	TE		97	81	7.0	6.9	5.3	3.8	4.20	2.56	2.46	2.3	72	120	14	0	-	-	28,964
14	WE		100	83	7.0	7.1	4.7	3.6	4.25	3.42	2.52	2.3	75	108	17	0	20	5.1	29,945
15	TR		92	80	6.9	6.1	4.5	3.4	4.14	3.78	2.43	2.5	72	96	12	10	-	-	42,895
16	FR		96	80	6.9	7.0	4.5	3.2	4.12	3.39	1.81	2.7	82	96	16	3	-	-	28,532
17	SA		98	83	6.9	7.0	4.6	3.0	3.67	2.99	0.59	2.6	90	102	18	2	-	-	28,689
18	SU		94	84	6.9	6.9	4.3	3.0	3.85	3.16	0.63	2.6	84	102	19	3	-	-	28,468
19	MO		97	84	7.0	7.0	4.5	3.1	3.98	3.31	0.68	2.5	81	84	16	2	-	-	28,765
20	TE	6/10	91	81	7.0	7.0	4.8	3.4	4.04	3.40	0.66	2.6	78	84	17	4	23	8.5	28,426
21	WE	1	87	78	7.1	6.3	5.7	3.2	4.53	4.04	0.74	2.7	72	78	10	6	-	-	29,681
22	TR		91	84	6.8	6.5	4.5	3.6	4.20	3.76	0.72	2.9	66	66	12	4	-	-	28,645
23	FR		93	85	6.9	6.7	4.3	3.9	4.24	3.47	0.76	2.8	60	36	15	4	-	-	29,221
24	SA	1/10	108	86	6.9	6.8	4.4	3.6	3.84	3.17	0.64	2.8	66	42	16	4	-	-	27,651
25	SU	2/10	84	84	7.0	6.9	4.4	3.4	3.40	3.40	0.69	2.8	84	60	15	4	-	-	27,324
26	MO	1	78	76	6.8	6.9	10.5	3.3	4.09	3.91	0.74	2.5	108	84	25	16	-	-	28,135
27	TE		94	80	6.9	6.8	4.8	3.8	4.40	3.97	0.73	2.7	120	96	21	10	-	-	27,482
28	WE		91	82	7.0	6.9	4.5	3.3	4.01	3.35	0.67	2.6	104	78	16	4	29	4.0	27,369
29	TR	1/10	90	81	6.9	7.0	4.6	3.4	4.20	3.51	0.70	2.6	108	78	15	2	-	-	28,142
30	FR		93	83	6.8	6.9	4.5	3.2	4.06	3.38	0.68	2.7	102	78	12	1	-	-	27,589
31	SA		89	84	6.8	6.9	4.6	3.2	3.94	3.10	0.70	3.3	96	72	15	1	-	-	27,489
TOTAL		6 6/10	2829	2535	215	213 8/10	154 7/10	104 8/10	126	102 4/10	122 2/10	79 7/10	3024	3130	479	137	114	30 3/10	894460
MAX		2	108	86	7.1	7.4	10.5	3.9	4.69	4.68	76	2.9			25.0	16.0	29.0	8.5	42895
MIN		1/10	78	76	6.8	6.1	4	3	3.4	2.56	0.59	2.0			8.0	0	20.0	4.0	27324
AVERAGE			91.3	81.8	6.9	6.9	5.0	3.4	4.1	3.3	3.94	2.6	98	101	15.5		22.8	6.1	28854

PREPARED BY

APPROVED BY

POST ENGINEER

AUG. 2010	BOD (5 DAY), PPM						SUSPEND SOLIDS						PRIMARY DIGESTER						HOLDING TANKS														
	DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION			
1	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.0	6.3	0.0	84	25	10	6.4	1420	480	110										
2	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.3	6.1	0.0	85	15	12	6.4													
3	TE	-	-	-	-	-	-	-	-	-	-	-	-	6.8	6.9	0.0	89	15	9	6.5													
4	WE	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.8	0.0	87	105	61	6.5	1480	680	105										
5	TR	96	210	76	14	9.2	33.3	268	312	4	5.8	-	-	7.1	6	0.0	83	40	28	6.5													
6	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.6	0.0	83	0	20	6.5													
7	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	82	40	0	6.5													
8	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	83	40	14	6.5	1260	220	100										
9	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	83	10	32	6.5													
10	TE	107	210	130	11.6	8.6	57.1	252	6.4	13	8.8	-	-	7.0	5.3	0.0	83	30	8	6.5													
11	WE	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.3	0.0	93	20	16	6.5													
12	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.7	0.0	93	20	12	6.8													
13	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.1	0.0	94	40	20	6.5													
14	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.3	0.0	91	20	16	6.5													
15	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.8	0.0	88	20	12	6.5	1270	160	97										
16	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.1	4.8	0.0	89	40	12	6.5													
17	TE	175	42	54	4.5	7.0	169	176	880	9	5.8	-	-	7.1	4.7	0.0	87	20	16	6.5													
18	WE	-	-	-	-	-	-	-	-	-	-	-	-	7.0	4.7	0.0	85	20	20	6.5													
19	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	4.7	0.0	83	20	24	6.4													
20	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.0	4.7	0.0	80	30	24	6.5													
21	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.5	0.0	79	30	8	6.5													
22	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.1	0.0	82	40	0	6.5	1220	360	103										
23	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.0	4.5	0.0	83	40	0	6.5													
24	TE	120	156	153	7.6	5.8	169	116	405	4.0	5.8	-	-	7.0	4.3	0.0	81	20	0	6.5													
25	WE	-	-	-	-	-	-	-	-	-	-	-	-	7.0	4.5	0.0	79	20	8	6.5													
26	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	4.7	0.0	77	40	12	6.6													
27	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.6	0.0	68	40	20	6.5													
28	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	72	40	16	6.5													
29	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.0	0.0	76	40	24	6.5	1200	320	108										
30	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.0	5.1	0.0	75	40	32	6.5													
31	TE	-	-	-	-	-	-	-	-	-	-	-	-	7.0	4.8	0.0	75	30	30	6.5													
TOTAL		498	618	413	37.7	30.6	428.4	812	1603	30	26.2	-	-	390	218	164	0	2572	950	516													
MAX		175	210	153	14	9.2	169	268	880	13	8.8	-	-	350	7.3	6.9	0.00	94	105	61													
MIN		96	42	54	4.5	5.8	33.3	116	6.4	4	5.8	-	-	5	6.8	4.3	0	68	0	0													
AVERAGE		125	154.5	103.3	9.4	7.7	107.1	203	401	7.5	6.6	-	-	97.5	7.0	5.3	0.0	83.0	30.6	16.6													
PREPARED BY:												APPROVED BY:										POST ENGINEER:											
																						SLUDGE IN HOLDING TANKS IN GAL 150,000											
																						sour = 0.26											

August-10		SEWAGE FLOW MGD										SETTLABLE SOLID ML/LITER																
DATE	DAY	WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.									
		RAIN INCHES	AIR TEMP																									
1	SU		96	79	6.5	6.5	4.3	3.0	4.34	3.02	0.77	3.2	90	72	12	0.2	-	-	28,224									
2	MO		92	82	6.7	6.8	3.9	2.7	4.11	3.05	0.24	2.7	96	69	15	0	-	-	29,356									
3	TE		102	84	6.6	6.6	4.5	2.7	1.70	2.60	0.87	2.3	96	84	16	1.5	-	-	28,224									
4	WE		104	84	6.7	6.8	4.1	3.1	4.11	3.62	0.80	2.5	96	72	15	1	-	-	29,567									
5	TR		98	81	6.9	6.9	4.1	3.3	3.76	3.52	0.75	2.5	102	72	12	0	20	4.2	28,524									
6	FR		90	80	6.9	6.9	4.0	3.0	3.55	3.26	0.30	2.6	90	72	20	1	-	-	28,364									
7	SA		93	83	6.9	6.8	4.0	3.0	3.25	2.70	0.50	2.5	90	72	17	1	-	-	37,567									
8	SU		95	84	7.0	6.9	3.8	3.1	3.46	3.08	0.70	2.6	90	72	17	1	-	-	37,191									
9	MO		101	85	7.0	7.0	4.4	3.0	3.61	3.34	0.71	2.7	96	84	18	1	-	-	37,258									
10	TE		96	84	6.9	7.0	4.1	3.0	3.52	3.34	0.65	2.6	96	72	19	2	31	5	37,562									
11	WE		104	85	7.0	6.9	4.2	2.7	3.30	3.25		2.6	90	66	18	1	-	-	37,415									
12	TR	1/10	104	87	6.9	6.9	4.3	2.9	3.95	3.33		2.9	78	66	18	1	-	-	36,981									
13	FR		101	88	6.9	7.0	4.0	3.0	3.35	3.57		2.4	84	72	12	0	-	-	37,135									
14	SA		98	86	6.9	6.9	4.8	3.1	3.74	4.00		2.6	78	72	14	0	-	-	37,156									
15	SU	7/10	93	86	6.9	6.9	3.8	2.9	3.68	3.68		2.6	78	60	16	1	-	-	36,981									
16	MO		89	87	6.9	7.1	3.8	2.7	3.59	3.60		2.3	78	72	10	0	-	-	37,268									
17	TE		82	86	7.0	7.0	3.8	2.7	3.36	3.03	0.36	2.3	84	60	10	0	26	10	37,824									
18	WE		91	85	6.9	6.9	4.0	2.9	3.42	3.04	0.65	2.4	108	72	11	0	-	-	37,956									
19	TR		92	86	6.9	7.0	3.9	2.8	3.71	2.66	0.75	2.3	108	66	15	0	-	-	37,989									
20	FR	4/10	92	84	7.0	6.9	3.9	3	3.71	3.24	0.72	2.5	78	60	15	0	-	-	37,756									
21	SA	9/10	92	81	6.9	6.9	4.2	3.3	3.77	3.66	0.73	2.5	84	90	21	1	-	-	37,826									
22	SU		88	83	7.0	6.9	4.1	3.0	3.84	2.98	0.83	2.6	78	60	16	1	-	-	38,126									
23	MO		89	85	7.0	6.9	3.9	3.1	3.67	3.08	0.74	2.5	78	60	11	0	-	-	38,265									
24	TE		87	83	6.9	7.0	3.9	3.3	3.53	3.01	0.70	2.6	84	60	10	0	28	6	37,956									
25	WE		80	80	7.0	6.9	3.8	3.2	2.88	2.31	0.66	2.6	96	84	11	0	-	-	37,581									
26	TR		78	79	7.0	6.9	3.7	1.6	3.54	1.17	0.53	3.7	90	80	12	0	-	-	37,642									
27	FR		80	70	7.0	6.9	3.7	2.1	3.48	2.79	0.62	2.3	80	65	10	0	-	-	37,592									
28	SA		93	75	7.0	6.9	3.8	3.1	3.25	2.75	0.57	2.5	84	60	10	0	-	-	37,598									
29	SU		95	78	7.0	6.9	3.8	2.7	3.34	2.83	0.54	2.4	72	48	10	0	-	-	37,425									
30	MO		89	78	6.9	6.9	4.0	2.8	3.69	2.80	0.71	2.5	70	50	11	0	-	-	37,268									
31	TE		88	78	7.0	6.9	4.2	2.9	3.82	3.73	0.79	2.40	76	52	10	0.00	-	-	37,165									
TOTAL		14/10	2872	2556	214	1/10	213	7/10	124	8/10	89	7/10	110	86	1/10	16	2/10	79	7/10	2698	2116	432	13	7/10	105	25	2/10	1110742
MAX		9/10	104	88	7.0	7.1	4.8	3.3	4.34	4.00	0.87	3.7			21.0	2.0	0	10.0										38,265
MIN		1/10	78	70	6.5	6.5	3.7	1.6	1.7	1.17	0.24	2.3			10.0	0	0	4.2										28,224
AVERAGE			92.6	82.5	6.9	6.9	4.0	2.9	3.5	3.1	6/10	2.6	87.0	68.3	13.9													35,830
PREPARED BY		APPROVED BY										POST ENGINEER																

SEPT. 2010	DATE	DAY	BOD (5DAY), PPM					SUSPEND SOLIDS					PRIMARY DIGESTER										HOLDING TANKS							
			RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	PRI. DIG. PH.	PRI. DIG. ALKALINITY	PRI. DIG. VOL ACIDS	DIGESTER TEMP	DIG. SOL %	DIG. VOL %	TANK TEMP	TANK PH.	TANK SOL %	TANK VOL %	VOLATILE REDUCTION
1	WE	134	138	75	4.8	5	109	220	212	10	5.8	5	6.8	8.0	0.0	64	60	28	6.7	106										
2	TR																													
3	FR																													
4	SA																													
5	SU																													
6	MO																													
7	TE																													
8	WE	116	312	111	7.2	9.2	92	196	320	18	2.8	10	7.0	4.6	0.0	68	40	24	6.5	104										
9	TR																													
10	FR																													
11	SA																													
12	SU																													
13	MO																													
14	TE																													
15	WE																													
16	TR	36.2	177	46	10.8	4	171.5	192	372	6	4.3	75	7.0	4.3	0.0	73	40	56	6.6	97										
17	FR																													
18	SA																													
19	SU																													
20	MO																													
21	TE	230	132	4	4.6	5.8	408	154	330	8.8	9.2																			
22	WE																													
23	TR																													
24	FR																													
25	SA																													
26	SU																													
27	MO																													
28	TE	93	150	90	10.6	4	118	188	164	13	3.9																			
29	WE																													
30	TR																													
TOTAL			610	909	326	38	28	898.5	950	1398	55.8	26	442	188	129	0	2175	1280	908											
MAX			230	312	111	10.8	9.2	408	220	372	18	9.2	176	7.1	8.0	0.00	83	80	56											
MIN			36.2	132	4	4.6	4	92	154	164	6	2.8	5	6.8	4.0	0	64	20	4											
AVERAGE			122	181.8	65.2	7.6	5.6	179.7	190	280	11.2	5.2	88.4	7.0	4.8	0	72.5	43	30.3											
PREPARED BY:								APPROVED BY:					POST ENGINEER:																	

SLUDGE IN HOLDING TANKS IN GAL

350,000

SOUR = 0.39

September-10				SEWAGE FLOW MGD								SETTLABLE SOLID ML/LITER							
DATE	DAY	WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	#1 PRI. CLAR. SLUDGE LEVEL IN IN.	#2 PRI. CLAR. SLUDGE LEVEL IN IN.	ML/LITER				RAW SLUDGE PUMPED, GAL.
		RAIN INCHES	AIR TEMP												RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	
1	WE	3 1/10	68	65	6.7	6.7	9.9	3.5	6.20	4.09	0.85	1.6	84	48	25	4	9	9.6	37,198
2	TR	2	83	65	6.9	7.0	10.5	4.4	5.51	5.96	0.87	2.1	72	48	12	0	-	-	37,459
3	FR		78	73	6.6	7.0	5.6	4.2	4.75	5.76	0.74	1.7	72	54	12.5	0.5	-	-	36,812
4	SA		78	67	6.9	6.9	4.3	3.7	4.02	3.59	0.73	2.0	60	36	10	0	-	-	36,955
5	SU		82	70	7.0	6.9	4.3	3.6	4.08	3.30	0.79	2.1	48	36	10	0	-	-	37,134
6	MO		86	73	6.9	7.0	4.3	3.1	4.11	3.36	0.79	2.1	60	55	10	0	-	-	36,985
7	TE		78	70	7.0	6.9	4.3	3.4	4.17	3.58	0.79	2.2	56	50	11	0	-	-	36,892
8	WE		77	70	7.0	6.9	4.8	3.4	4.14	3.78	0.82	2.3	60	60	10	0	19	7.7	37,152
9	TR	2 2/10	78	71	7.0	7.0	10.7	3.1	6.22	4.83	0.86	-	60	60	10	0	-	-	37,500
10	FR		82	69	7.0	7.1	6.5	4.3	5.84	5.11	0.80	2.2	60	54	13	3	-	-	37,500
11	SA	3/10	84	70	6.9	7.0	5.0	3.7	4.94	4.04	0.82	2.2	54	42	10	0	-	-	37,500
12	SU		81	73	7.0	6.9	4.7	3.5	4.07	3.11	0.70	2.3	56	44	11	0	-	-	37,500
13	MO		87	74	7.0	7.0	5.0	3.4	4.55	3.40	0.82	2.3	54	48	10	0	-	-	37,500
14	TE		79	73	7.0	7.0	4.8	3.4	4.34	3.42	0.74	2.2	60	48	10	0	-	-	37,500
15	WE	1	80	71	6.9	6.8	8.6	3.8	4.56	3.67	0.78	2.1	84	84	19	4	-	-	37,500
16	TR	4/10	80	76	6.9	6.6	8.0	4.9	6.55	4.59	0.86	3.0	84	84	8	1.5	18	4.6	37,500
17	FR		82	80	6.9	6.7	5.5	4.0	4.78	3.99	0.79	2.3	84	84	10	1	-	-	37,500
18	SA		83	79	6.9	6.8	4.7	3.9	4.41	3.40	0.76	2.3	60	66	10	0	-	-	37,500
19	SU		84	81	6.9	6.9	5.2	3.8	4.49	3.45	0.78	2.4	60	66	11	0	-	-	37,500
20	MO		90	83	7.0	6.9	5.1	4.1	4.89	2.63	0.85	2.3	57	72	10	0	18.6	4.5	37,500
21	TE		91	-	-	0.0	5.5	4.0	4.43	1.40	0.72	2.5	54	63	0	0	-	-	37,500
22	WE	4/10	85	85	6.9	6.6	5.7	4.0	5.07	3.87	0.89	2.6	60	66	13	0.7	-	-	37,500
23	TR		88	87	6.9	6.8	5.4	3.3	4.34	3.57	0.68	2.1	110	115	8	1	-	-	37,500
24	FR	5/10	87	81	6.8	6.5	5.3	3.6	4.68	3.85	0.77	2.4	82	88	12	1	-	-	37,500
25	SA		78	78	6.9	6.8	4.6	3.8	3.52	3.34	0.75	2.4	72	60	11	0	-	-	37,500
26	SU		60	73	6.9	6.8	4.9	4.0	4.27	3.50	0.80	2.5	72	60	11	1	-	-	37,500
27	MO		72	71	6.8	6.8	4.6	3.2	4.37	3.39	0.76	2.3	75	72	10	0	-	-	37,500
28	TE		76	69	6.9	6.9	4.9	3.6	4.37	3.36	0.77	2.4	96	84	10	0	31	10	37,500
29	WE		76	70	6.9	7.0	5.8	3.4	4.31	3.22	0.73	2.9	84	84	8	0.5	-	-	37,500
30	TR		75	76	7.1	6.4	4.9	3.2	4.05	2.99	0.65	2.1	84	78	8	3	-	-	37,500
TOTAL		9 9/10	2408	2143	200 5/10	198 6/10	173 4/10	111 3/10	140	111 6/10	23 5/10	85 9/10	2077	1909	323 5/10	21 2/10	95 6/10	36 4/10	1121587
MAX		3 1/10	91	87	7.1	7.1	10.7	4.9	6.55	5.96	0.89	3.0	110.0	115.0	25.0	4.0	0	10.0	37500
MIN		3/10	60	65	6.6	0.0	4.3	3.1	3.52	1.4	0.65	1.6	48.0	36.0	0.0	0	0	4.5	36812
AVERAGE			80.3	73.9	6.9	6.6	5.8	3.7	4.7	3.7	0.8	2.2	69.1	63.6	10.8	0.7	19.1	7.3	37386.2
PREPARED BY				APPROVED BY										POST ENGINEER					

DATE	DAY	WEATHER		SEWAGE FLOW MGD								SETTLABLE SOLID ML/LITER							
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED GAL.
1	FR		75	74	7.0	6.5	4.5	3.2	3.80	2.68	0.62	2.3	84	78	10	2	-	-	37,632
2	SA		74	69	6.9	6.7	4.5	3.0	3.94	2.85	0.66	2.5	72	72	9	0	-	-	37,632
3	SU		61	66	6.9	6.7	4.1	2.9	3.83	2.59	0.64	2.4	72	72	10	1	-	-	37,632
4	MO		61	65	6.9	6.7	4.3	3.0	4.01	2.89	0.64	2.3	60	60	11	2	-	-	37,632
5	TE		68	63	6.9	6.7	5.1	3.3	3.63	2.65	-2.23	2.3	90	72	11	1	29	11	37,632
6	WE		74	68	6.9	6.8	4.6	3.4	0.00	2.99	0.72	2.4	84	72	11	1	-	-	37,632
7	TR		78	76	6.4	6.3	5.1	3.2	3.75	2.93	0.65	2.1	72	48	20	4	-	-	37,632
8	FR		80	78	6.6	6.5	4.2	2.7	3.72	2.87	0.65	2.3	72	48	22	2	-	-	37,632
9	SA		84	77	6.7	6.6	4.3	2.7	3.49	2.59	0.60	2.3	72	42	20	2	-	-	37,632
10	SU		84	77	6.8	6.7	4.0	3.0	3.52	2.60	0.60	2.4	84		18	1	-	-	37,632
11	MO		76	74	6.8	6.7	4.2	3.1	3.74	2.44	0.70		93	40	15	1	-	-	37,632
12	TE		75	73	6.9	6.7	4.3	3.1	3.77	2.93	0.67		132	72	14	2	20	12	37,632
13	WE		72	70	7.0	6.9	4.5	3.4	3.64	2.80	0.62	2.3	102	48	15	1	-	-	37,632
14	TR		74	68	6.8	6.9	4.3	3.5	3.75	2.81	0.65	3.0	96	48	12	0	-	-	37,632
15	FR		73	68	6.9	6.9	4.2	3.3	3.65	2.80	0.61	2.8	78	36	15	0	-	-	37,632
16	SA		80	71	6.9	7.0	4.0	2.6	3.46	2.57	0.59		72	30	11	0	-	-	37,632
17	SU		75	69	6.9	6.7	4.1	2.5	3.59	2.59	0.61	2.8	60	36	14	0	-	-	37,632
18	MO		81	73	7.0	6.9	4.3	2.8	3.83	2.94	0.70	2.7	69	42	14	0	-	-	37,632
19	TE		70	72	6.9	6.8	4.1	2.7	3.47	2.72	0.60	2.5	80	36	13	0	18	9.2	37,632
20	WE		78	69	7.0	6.9	3.7	2.5	3.35	3.07	0.66	2.4	72	36	15	2	-	-	37,632
21	TR		65	73	6.7	6.5	3.6	2.5	3.48	2.86	0.67	2.3	108	60	20	1.5	-	-	55,687
22	FR		68	71	6.8	6.7	4.1	2.6	3.42	2.70	0.66	1.1	84	60	15	1	-	-	68,792
23	SA		76	73	6.9	6.8	3.8	2.6	3.36	2.65	0.67	1.4	78	66	13	1	-	-	37,632
24	SU		72	70	6.8	6.8	3.6	2.4	3.28	2.52	0.62	1.3	108	84	12	1	-	-	37,632
25	MO		76	71	6.9	6.8	3.8	2.9	2.81	2.95	0.67	1.2	96	84	15	1	-	-	37,632
26	TE		73	68	7.0	6.9	4.2	2.7	3.48	2.82	0.66	1.3	102	84	18	2	16	12	37,632
27	WE		68	67	6.9	6.8	4.4	2.3	3.32	2.86	0.38	1.5	96	84	17	2	-	-	37,632
28	TR		68	57	6.9	6.8	3.8	2.4	2.80	2.74	0.92	2.0	78	78	12	1	-	-	37,632
29	FR		70	60	6.9	6.9	3.2	0.7	2.57	2.58	0.71	2.0	78	72	12	1	-	-	37,632
30	SA		75	65	7.0	6.9	3.3	2.0	2.35	2.26	0.65	2.1	78	72	13	1	-	-	37,632
31	SU		75	65	7.0	6.9	3.4	1.0	2.45	2.31	0.50	2.10	84	72	14	1	-	-	37,632
TOTAL		0	2279	2160	212 9/10	209 4/10	127 6/10	84	103 2/10	84 5/10	17 1/10	60 1/10	2606	1604	441	35 5/10	83	44.2	1215807
MAX		0	84	78	7.0	7	5.1	3.5	4.01	3.07	0.92	3.0			22.0	4.0	0	12.0	68792
MIN		0	61	57	6.4	6.3	3.2	0.7	0	2.26	-2.23	1.1			9.0	0	0	9.2	37632
AVERAGE			73.5	69.7	6.9	6.8	4.1	2.7	3.3	2.7	0.55	2.1	84.1	60.1	14.2			11.1	39220
PREPARED BY		APPROVED BY										POST ENGINEER							
DA FORM 4247																			

		November-10					SEWAGE FLOW						SETTLABLE SOLID						
DATE	DAY	WEATHER		MGD										ML/LITER					
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	MO	2/10	61	64	6.8	6.7	3.5	1.8	2.85	2.64	0.97	2.3	84	72	15	1	-	-	42,000
2	TE	9/10	56	60	6.9	6.7	4.2	2.2	3.37	3.24	1.06	2.2	120	84	16	0	-	-	42,500
3	WE		64	58	6.8	6.7	3.9	1.8	2.82	2.60	0.82	2.3	102	84	14	1	26	10	42,500
4	TR		65	64	6.8	6.8	4.0	1.7	3.02	2.47	1.06	2.1	102	84	15	1	-	-	42,500
5	FR		71	66	6.9	6.8	3.6	2.1	2.90	2.75	1.07	2.0	126	108	15	1	-	-	42,500
6	SA		68	67	6.7	6.8	3.1	1.2	1.83	0.94	0.36	1.9	120	120	11	0	-	-	42,500
7	SU		69	62	6.7	6.8	3.0	1.2	2.11	1.88	0.60	1.8	96	96	15	1	-	-	46,357
8	MO		71	68	6.7	6.9	4.1	1.4	3.70	2.14	0.93	1.9	108	108	19	1.5	-	-	46,268
9	TE		73	69	6.9	6.9	3.4	2.0	2.15	1.98	0.92	2.1	96	78	21	0.1	22	13	52,149
10	WE		74	70	7.2	7.2	3.3	1.9	3.23	5.39	0.30	2.2	90	66	10	1	-	-	50,148
11	TR		70	69	7.1	7.1	3.6	1.2	2.46	2.25	0.57	2.7	96	72	15	1	-	-	50,148
12	FR		70	65	7.1	7.2	3	1.4	2.48	2.41	0.47	2.0	102	72	12	1	-	-	50,148
13	SA		45	54	7.2	7.1	3.4	1.2	2.27	2.22	0.49	2.1	84	66	13	1	-	-	50,148
14	SU		48	52	7.1	7.1	3.8	1.2	2.36	2.22	0.60	2.1	72	60	12	1	-	-	50,148
15	MO		56	51	7.2	7.0	3.5	1.6	2.74	2.62	0.99	2.0	60	69	14	2	-	-	50,148
16	TE		62	53	7.0	7.0	3.4	1.5	2.49	2.41	0.60	2.2	96	69	15	1	23	10	50,148
17	WE	3/10	54	50	7.0	7.0	3.6	1.2	2.63	2.44	0.67	2.2	84	60	14	2	-	-	50,148
18	TR		45	49	6.9	7.0	3.9	1.8	2.98	2.34	1.20	2.0	84	66	8	2	-	-	48,542
19	FR		54	53	6.9	7.0	3.3	1.5	2.70	1.34	0.83	1.9	78	60	15	0	-	-	48,132
20	SA		61	53	6.9	7.0	3.3	1.6	2.78	2.90	1.28	1.8	60	42	15	1	-	-	48,025
21	SU		74	56	7.1	7.0	3.2	1.8	2.81	2.86	1.01	1.9	60	42	14	2	-	-	48,238
22	MO	2/10	71	57	6.9	6.9	3.5	1.2	2.46	2.50	0.41	1.8	48	60	16	2	-	-	47,238
23	TE			0	0	0	2.6	0.8	####	####	####		36	36	0	0	-	-	0
24	WE			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
25	TR			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
26	FR			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
27	SA			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
28	SU			0	0	0	0	0	####	####	####		0	0	0	0	-	-	0
29	MO			0			0	0	####	####	####	0	0	0			-	-	0
30	TE			0			0	0	0.00	0.00	0.00	0	0	0			-	-	0
TOTAL		1 6/10	1382	1310	152 8/10	152 7/10	80 2/10	35 3/10	#VALUE!	#VALUE!	#VALUE!	45 5/10	2004	1674	314	23 6/10	71	33	1040633
MAX		9/10	74	70	7.2	7.2	4.2	2.2	####	####	####	2.7			21.0	2.0	0	13.0	52149
MIN		2/10	45	0	0	0.0	0	0	####	####	####	0.0			0.0	0	0	10.0	0
AVERAGE			46.1	43.7	5.1	5.1	2.7	1.2	####	####	####	1.5	66.8	55.8	10.5			1.1	34688
PREPARED BY			APPROVED BY						POST ENGINEER										
DA FORM 4247																			

DEC	2010	BOD (5 DAY) PPM					SUSPEND SOLIDS					OTHER						
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED
1	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	TR	102	108	126	41	6.8	164.7	64	300	13	4.1	7.0	4.8	0.0	46	20	12	
3	FR	-	-	-	-	-	-	-	-	-	-	7.4	4.5	0.0	55	20	30	
4	SA	-	-	-	-	-	-	-	-	-	-	7.4	4.6	0.0	54	10	10	
5	SU	-	-	-	-	-	-	-	-	-	-	7.3	4.6	0.0	52	20	4	
6	MO	124	106	104	6.2	5.5	373	48	304	11.2	2.7	7.2	5.0	0.0	51	20	12	
7	TE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	FR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	MO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	TE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	TR	300	-	-	-	10	134	64	212	10	4.2	7.3	2.6	0.0	45	14	28	
17	FR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	MO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	TE	131	126	165	3	3.4	121	84	1480	9	3.4	7.2	2.4	0.0	53	10	4	
22	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	FR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	MO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	TE	-	165	-	8.2	4.7	125	52	2280	8	5.2	7.1	2.8	0.0	52	10	8	
29	WE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	FR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL		657	505	395	58.4	30.4	917.7	312	4556	51.2	19.6	460	188	99	0	1321	515	356
MAX		300	165	165	41	10	373	84	2280	13	5.2	160	7.4	9.0	0.00	55	50	30
MIN		102	106	104	3	3.4	121	48	212	8	2.7	15	7	2.2	0	43	0	-8
AVERAGE		164	126.3	131.7	14.6	6.1	183.5	62.4	911	10.2	3.9	92	7.2	3.8	0.0	50.8	17	11.5

PREPARED BY:

APPROVED BY:

POST ENGINEER:

SLUDGE IN HOLDING TANKS IN GAL.

December-10			SEWAGE FLOW									SETTLABLE SOLID							
DATE	DAY	WEATHER		M G D									ML/LITER						
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	WE		35	48	7.0	6.9	3.5	2.4	2.81	3.04	1.77	1.8	18	18	10	0	-	-	39,351
2	TR		42	59	7.3	7.3	3.8	2.3	3.09	3.04	1.70	2.3	42		10	0	48	13.6	18,365
3	FR		48	60	7.3	7.3	4.8	2.1	2.80	3.08	1.46	2.6	48		15	0	-	-	17,936
4	SA		33	56	7.2	7.2	3.1	2.2	2.56	2.90	1.33	2.4	36		13	0	-	-	17,856
5	SU		36	53	7.2	7.1	3.0	1.2	2.31	2.46	0.73	2.5	42		14	1	-	-	17,684
6	MO		36	60	7.1	7.2	3.6	2.0	2.55	0.79	1.09	3.4	42		30	0	39.2	12.9	17,364
7	TE		35	56	7.2	7.2	3.4	1.6	2.47	0.06	0.90	3.1	36		20	1	-	-	15,639
8	WE		37	55	7.2	7.2	3.3	1.3	2.50	0.00	0.93	3.1	30		18	1	-	-	17,364
9	TR		47	60	7.2	7.1	3.2	1.4	2.84	1.53	1.20	3.5	18		13	0	-	-	17,638
10	FR		48	56	7.4	7.3	3.7	1.8	3.17	3.37	1.74	3.3	12		9	0	-	-	17,469
11	SA	2/10	28	55	7.4	7.3	3.6	2.0	2.85	3.11	1.45	3.4	12		10	0	-	-	17,624
12	SU		23	52	7.2	7.1	3.7	2.6	2.93	3.18	1.45	3.2	6		12	0	-	-	17,397
13	MO		28	45	7.4	7.4	3.7	1.8	2.89	3.11	1.23	3.5	6		8	0	-	-	14,256
14	TE		31	56	7.5	7.3	2.8	1.0	2.19	2.49	0.32	3.8	4		13	0	-	-	14,256
15	WE		28	54	7.4	7.3	3.0	1.0	2.06	2.38	0.26	3.5	12		12	0	-	-	14,256
16	TR		31	57	7.3	7.3	3.1	1.3	2.32	2.48	0.46	4.5	12		15	0	16.4	17.8	14,256
17	FR		34	61	7.4	7.3	3.4	1.0	2.22	2.51	0.32	4.6	12		13	0	-	-	14,256
18	SA		35	59	7.3	7.2	2.3	1.0	1.88	1.95	0.20	4.5	12		12	0	-	-	14,256
19	SU		46	63	7.4	7.3	2.5	1.1	1.71	1.46	0.47	4.3	9		10	0	-	-	14,256
20	MO		44	63	7.3	7.2	2.3	1.0	1.71	1.60	0.30	3.8	12		9	0	-	-	14,256
21	TE		48	63	7.3	7.2	2.5	1.0	1.81	1.65	0.45	3.7	12		9	0	18	9.5	14,256
22	WE		38	60	7.2	7.2	2.7	0.8	1.71	1.65	0.59	3.8	9		9	0	-	-	14,256
23	TR		39	63	7.3	7.2	2.2	0.9	1.76	1.74	0.29	5.9	9		10	0	-	-	14,256
24	FR		37	64	7.3	7.2	3.0	1.1	1.91	1.82	0.41	7.0	12		8	0	-	-	14,256
25	SA		29	62	7.3	7.3	1.7	1.2	1.54	1.85	0.21	6.7	12		8	0	-	-	14,256
26	SU		29	62	7.3	7.2	2.0	0.9	1.75	1.84	0.45	6.9	12		9	0	-	-	14,256
27	MO		32	63	7.3	7.2	2.1	1.1	1.83	1.81	0.22	6.8	9		9	0	-	-	14,256
28	TE		39	64	7.3	7.2	2.5	0.9	2.06	2.14	0.39	6.8	12		9	0	6	1	14,256
29	WE		38	64	7.2	7.2	2.5	1.2	2.13	0.80	0.52	4.7	12		8	0	-	-	10,236
30	TR		59	54	7.3	-	3.3	1.4	2.51	1.44	0.99	-	-		8	0	-	-	0
31	FR		62	58	7.3	-	7.0	1.2	3.27	2.97	0.30	-	-		8	0	-	-	0
TOTAL		2/10	1175	1805	225 8/10	209 4/10	97 3/10	43 8/10	72 2/10	64 2/10	24 1/10	119 4/10	520	18	361	3	127 6/10	54 8/10	470019
MAX		2/10	59	64	7.5	7.4	4.8	2.6	3.17	3.37	1.77	7.0			30.0	1.0	48.0	17.8	39351
MIN		2/10	23	45	7	6.9	1.7	0.8	1.54	0	0.2	1.8			8.0	0	6.0	1.0	0
AVERAGE			37.9	58.2	7.3	6.8	3.1	1.4	2.3	2.1	0.78	3.9	17.9	0.6	11.6		25.5	11.0	15162
PREPARED BY			APPROVED BY									POST ENGINEER							
DA FORM 4247																			



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 12/03/10 09:30
Report Date 12/17/10
Customer # : 255447
P.O. Number : FTC228641
Facility :

Sample No: 10121353-1	Collect Date 12/02/10 07:00
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
CALCULATION					PIA
Plant Available Nitrogen		8000 mg/kg Dry	12/17/10 00:00	EML	PIA
SM (18) 2540B					PIA
Solids, Total		3.6 %	12/06/10 12:56	ASB	PIA
SM (18) 4500 N ORG B					PIA
Nitrogen, Organic		580 mg/kg	12/17/10 00:00	EML	
Nitrogen, Organic		16000 mg/kg Dry	12/17/10 00:00	EML	PIA
SM (18) 4500 NH3 B,H					
Nitrogen, Ammonia as N Distilled		240 mg/kg	12/07/10 09:54	Igalr	
Nitrogen, Ammonia as N Distilled		6700 mg/kg Dry	12/07/10 09:54	Igalr	PIA
SM (18) 4500 NH3 H					
Nitrogen, Total Kjeldahl as N		820 mg/kg	12/10/10 09:08	Igalr	
Nitrogen, Total Kjeldahl as N		23000 mg/kg Dry	12/10/10 09:08	Igalr	PIA
SM (18) 4500 NO3 F					
Nitrate/Nitrite, Total as N	Q	0.4 mg/kg	12/06/10 16:51	Igltt	
Nitrate/Nitrite, Total as N		11 mg/kg Dry	12/06/10 16:51	Igltt	PIA
SM (18) 4500 P B,F					
Phosphorus, Total as P		920 mg/kg	12/08/10 11:23	Igalr	
Phosphorus, Total as P		25000 mg/kg Dry	12/08/10 11:23	Igalr	PIA
SW-846 3051					
Sample Preparation			12/07/10 09:30	JEM	PIA
SW-846 6010B R2.0					
Arsenic	<	0.25 mg/kg	12/09/10 10:52	BAB	
Arsenic	<	6.9 mg/kg Dry	12/09/10 10:52	BAB	
Cadmium	<	0.05 mg/kg	12/09/10 10:52	BAB	
Cadmium	<	1.4 mg/kg Dry	12/09/10 10:52	BAB	
Chromium		0.27 mg/kg	12/09/10 10:52	BAB	
Chromium		7.5 mg/kg Dry	12/09/10 10:52	BAB	
Copper		5.6 mg/kg	12/09/10 10:52	BAB	
Copper		160 mg/kg Dry	12/09/10 10:52	BAB	
Lead		0.29 mg/kg	12/09/10 10:52	BAB	
Lead		8 mg/kg Dry	12/09/10 10:52	BAB	
Molybdenum		0.055 mg/kg	12/09/10 10:52	BAB	
Molybdenum		1.5 mg/kg Dry	12/09/10 10:52	BAB	
Nickel		0.16 mg/kg	12/09/10 10:52	BAB	
Nickel		4.4 mg/kg Dry	12/09/10 10:52	BAB	
Potassium		44 mg/kg	12/08/10 11:13	BAB	
Potassium		1200 mg/kg Dry	12/08/10 11:13	BAB	
Selenium	<	0.25 mg/kg	12/09/10 10:52	BAB	
Selenium	<	6.9 mg/kg Dry	12/09/10 10:52	BAB	
Zinc		9.7 mg/kg	12/09/10 10:52	BAB	



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Laboratory Results

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PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 12/03/10 09:30
Report Date 12/17/10
Customer # : 255447
P.O. Number : FTC228641
Facility :

Sample No: 10121353-1	Collect Date 12/02/10 07:00
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SW-846 6010B R2.0					
Zinc		270 mg/kg Dry	12/09/10 10:52	BAB	PIA
SW-846 6020					
Mercury		0.029 mg/kg	12/16/10 18:01	JMW	
Mercury		0.8 mg/kg Dry	12/16/10 18:01	JMW	

Sample No: 10121353-2	Collect Date 12/02/10 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.9 %	12/06/10 12:58	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5100 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	

Sample No: 10121353-3	Collect Date 12/02/10 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.8 %	12/06/10 12:59	ASB	PIA
SM (18) 9221C,E					PIA
Focal Coliform	<	5300 mpn/dry g	12/03/10 12:20	KJB	
Focal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	

Sample No: 10121353-4	Collect Date 12/02/10 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		4.1 %	12/06/10 13:00	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	4900 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 12/03/10 09:30
Report Date 12/17/10
Customer # : 255447
P.O. Number : FTC228641
Facility :

Sample No: 10121353-5 Collect Date 12/02/10 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.8 %	12/06/10 13:01	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5300 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	

Sample No: 10121353-6 Collect Date 12/02/10 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.8 %	12/06/10 13:01	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5300 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	

Sample No: 10121353-7 Collect Date 12/02/10 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.7 %	12/06/10 13:06	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5400 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	

Sample No: 10121353-8 Collect Date 12/02/10 07:00
Client ID : SLUDGE Site : GRAB Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.6 %	12/06/10 13:07	ASB	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5600 mpn/dry g	12/03/10 12:20	KJB	
Fecal Coliform	<	200 mpn/wet g	12/03/10 12:20	KJB	
SM (18) 9222D					PIA
Fecal Coliform, Geometric Mean	<	5300 mpn/dry g	12/03/10 12:20	KJB	



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 12/03/10 09:30
Report Date 12/17/10
Customer # : 255447
P.O. Number : FTC228641
Facility :

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PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by the Federal or State Government or their agencies is not implied.

PIA	PDC Laboratories - Peoria, IL NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230 State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17553 Drinking Water Certifications: Indiana (C-IL-040); Kansas (E-10338); Missouri (00870); Wisconsin (998294430) Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430) Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998294430) UST Certification: Iowa (240)
SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100253.

Certified by : Elaine Kaufmann
Elaine Kaufman, Project Manager

PDC Laboratories

DATA QUALIFIERS APPLICABLE TO THE "STANDARD QC" PROGRAM

- A** The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The lower of the two results was reported.
- B** _____ present in the method blank at _____.
- C** The batch control sample failed to meet the required acceptance criteria.
- D** Result obtained through analysis of a sample dilution.
- E** Concentration exceeds the instrument calibration range.
- F** Internal standard area failed to meet the required acceptance criteria in repeat instrumental analyses. Results should be interpreted as estimated concentrations.
- G** The Method of Standard Additions (MSA) was used to quantify the concentration.
- H** Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
- J** Estimated value; value between the MDL and the RDL.
- M** Analyte failed to meet the required acceptance criteria for duplicate analysis.
- P** Chemical preservation discrepancy noted at the time of analysis.
- Q** Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
- R** Analyte failed to meet the required acceptance criteria for relative percent difference (RPD) between the Matrix Spike and Matrix Spike Duplicate (MS/MSD).
- S** Surrogate compound diluted below a reliable quantitation level.
- T** Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery was outside of the required acceptance criteria on the second analysis, also. Results should be interpreted as estimated concentrations.
- U** Parameter was analyzed for, but not detected above the reporting limit.
- V** Verification standard recovery failed to meet the required acceptance criteria on repeat instrumental analyses.
- W** Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
- NA** Not analyzed.
- NR** Not requested.
- X** Miscellaneous; see comments.

JAN	2011	BOD (5 DAY), PPM					SUSPEND SOLIDS										POST ENGINEER:							
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	TRICKLING FILTER EFF.	DITCH INFULENT	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	EFF OIL & GREASE	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED					
1	SA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	MO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	TE	97	-	-	4.8	6.9	74.3	-	6300	7	7.4	-	-	-	-	-	-	-	-	-	-	-	-	
5	WE	-	-	-	-	-	-	-	-	-	-	200	7	7.0	4.2	0.0	54	20	24	-	-	-	-	
6	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.4	4.1	0.0	52	30	20	-	-	-	-	
7	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.3	0.0	50	30	44	-	-	-	-	
8	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.2	0.0	50	20	16	-	-	-	-	
9	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.3	0.0	49	20	20	-	-	-	-	
10	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	48	20	20	-	-	-	-	
11	TE	-	-	-	3.4	1.4	116	-	132	16	2	-	6	7.1	4.5	0.0	48	20	20	-	-	-	-	
12	WE	-	-	-	-	-	-	-	-	-	-	15	-	7.0	4.3	0.0	46	30	60	-	-	-	-	
13	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	48	50	44	-	-	-	-	
14	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.4	0.0	48	10	10	-	-	-	-	
15	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.4	0.0	49	10	6	-	-	-	-	
16	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	49	40	44	-	-	-	-	
17	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.5	0.0	49	20	32	-	-	-	-	
18	TE	40	-	-	-	2.5	130.5	-	20	4	3.5	-	-	7.1	4.6	0.0	49	40	12	-	-	-	-	
19	WE	-	-	-	-	-	-	-	-	-	-	220	6	7.2	4.6	0.0	48	20	12	-	-	-	-	
20	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	43	60	50	-	-	-	-	
21	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	27	20	22	-	-	-	-	
22	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.7	0.0	36	10	16	-	-	-	-	
23	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	43	20	24	-	-	-	-	
24	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.2	6.1	0.0	44	10	11	-	-	-	-	
25	TE	115	-	-	10.1	1.8	130.5	-	4	4.3	-	-	-	7.2	5.9	0.0	44	40	29	-	-	-	-	
26	WE	-	-	-	-	-	-	-	-	-	25	-	6	7.2	5.7	0.0	47	20	20	-	-	-	-	
27	TR	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.7	0.0	52	30	24	-	-	-	-	
28	FR	-	-	-	-	-	-	-	-	-	-	-	-	7.1	4.6	0.0	51	20	38	-	-	-	-	
29	SA	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.6	0.0	54	20	6	-	-	-	-	
30	SU	-	-	-	-	-	-	-	-	-	-	-	-	7.2	4.8	0.0	52	20	16	-	-	-	-	
31	MO	-	-	-	-	-	-	-	-	-	-	-	-	7.1	5.3	0.0	47	40	24	-	-	-	-	
TOTAL		252	0	100	18.3	12.6	451.3	0	6452	31	17.2	460	25	7.2	222	147	0	1487	780	736				
MAX		115	0	100	10.1	6.9	130.5	0	6300	16	7.4	220	7	7.4	7.2	0.00	54	60	60					
MIN		40	0	100	3.4	1.4	74.3	0	20	4	2	15	6	7.0	3.3	0	27	10	6					
AVERAGE		84	0	100.0	6.1	3.2	112.8	0	2151	7.8	4.3	115	6	7.2	4.7	0.0	48.0	25.2	23.7					
PREPARED BY:		APPROVED BY:					POST ENGINEER:																	
SLUDGE IN HOLDING TANKS IN GAL																								

January-11							SEWAGE FLOW					SETTLABLE SOLID							
DATE	DAY	WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH PRIMARY EFFLUENT	M G D				TOTAL RECIRCULAT	% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	ML/LITER				
		RAIN INCHES	AIR TEMP				MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW					RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA	RAW SLUDGE PUMPED, GAL.
1	SA		32	59	7.2		3.4	2	2.10	2.74	1.35				10			-	
2	SU		35	60	7.3		2.4	1.6	2.06	2.64	0.40				10			-	
3	MO		48	63	7.3		2.9	2.0	2.40	2.55	0.68				11			-	
4	TE		38	64	7.3		2.9	1.3	2.27	2.68	0.32				10		19	0.5	
5	WE		48	63	7.2		3.2	1.6	2.23	2.59	0.05				11			-	
6	TR		38	57	7.4		3.3	1.5	2.27	2.62	0.14				12			-	
7	FR		36	53	7.3		2.8	1.5	2.43	2.80	0.35				12			-	
8	SA		33	53	7.2		2.6	1.4	2.07	2.31	0.01				10			-	
9	SU		29	52	7.3		3.0	1.1	2.24	2.47	0.15				9			-	
10	MO		31	52	7.3		3.1	1.4	2.58	2.17	0.50				12			-	
11	TE		23	53	7.3		2.8	1.6	2.34	2.67	0.20				11		21	0.2	
12	WE		21	48	7.2		3.7	1.9	2.70	3.41	0.78				11			-	
13	TR		26	53	7.8		3.3	1.8	2.62	3.61	0.41				20			-	
14	FR		38	54	7.4		3.2	1.3	2.55	2.05	0.36				18			-	
15	SA		42	54	7.5		2.7	2.0	2.34	2.87	0.20				17			-	
16	SU		36	53	7.3		3.5	1.9	2.44	3.05	0.39				16			-	
17	MO	1/10	42	55	7.3		3.1	2.2	2.70	2.17	0.75				17			-	
18	TE		39	54	7.3		3.1	1.8	3.06	3.64	1.19				15		24.5	0.5	
19	WE		34	53	7.1		2.8	1.7	2.14	2.06	1.16				15			-	
20	TR		32	47	7.3		3.2	1.2	2.71	2.82	0.49				15			-	
21	FR		30	35	7.4		3.1	1.2	2.31	2.80	0.33				18			-	
22	SA		39	41	7.4		2.7	1.3	2.06	2.39	0.30				17			-	
23	SU		31	46	7.3		2.7	1.2	2.24	2.69	0.31				15			-	
24	MO		32	48	7.2		2.4	1.4	2.18	1.60	0.61				17			-	
25	TE		36	47	7.2		3.1	1.3	2.46	3.34	0.20				16		35	0.4	
26	WE		48	51	7.3		3.2	1.6	2.66	2.62	0.29				46			-	
27	TR		41	57	7.3		2.8	1.2	2.32	2.57	0.22				28			-	
28	FR		51	56	7.3		3	1.2	2.50	2.69	0.31				25			-	
29	SA		59	58	7.3		2.5	1.1	2.21	2.55	0.20				19			-	
30	SU		39	56	7.3		3.7	0.9	2.48	2.63	0.38				21			-	
31	MO		37	51	7.2		3.2	1.6	2.10	2.50	0.23				25			-	
TOTAL		1/10	1144	1646	226 5/10	0	83 4/10	46 8/10	73 8/10	82.3	13 3/10	0			509		69 5/10	1 6/10	
MAX		1/10	59	64	7.8	0	3.7	2.2	3.06	3.64	1.35	0.0			46.0		0	0.5	
MIN		1/10	21	35	7.1	0.0	2.4	0.9	2.06	1.6	0.01	0.0			9.0		0	0.2	
AVERAGE			36.9	53.1	7.3	0.0	3.0	1.5	2.4	2.7	0.43	0.0			16.4			0.4	
PREPARED BY			APPROVED BY									POST ENGINEER							
DA FORM 4247																			



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: 11012245-1	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
CALCULATION					PIA
Plant Available Nitrogen		8405 mg/kg Dry	01/26/11 00:00	EML	PIA
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/18/11 14:33	asb	PIA
SM (18) 4500 N ORG B					PIA
Nitrogen, Organic		610 mg/kg	01/26/11 00:00	EML	PIA
Nitrogen, Organic		17000 mg/kg Dry	01/26/11 00:00	EML	PIA
SM (18) 4500 NH3 B,H					PIA
Nitrogen, Ammonia as N Distilled		250 mg/kg	01/18/11 09:21	Igalr	PIA
Nitrogen, Ammonia as N Distilled		7200 mg/kg Dry	01/18/11 09:21	Igalr	PIA
SM (18) 4500 NH3 H					PIA
Nitrogen, Total Kjeldahl as N		860 mg/kg	01/20/11 10:02	Igalr	PIA
Nitrogen, Total Kjeldahl as N		24000 mg/kg Dry	01/20/11 10:02	Igalr	PIA
SM (18) 4500 NO3 F					PIA
Nitrate/Nitrite, Total as N	<	0.2 mg/kg	01/21/11 13:39	Igth	PIA
Nitrate/Nitrite, Total as N	<	5.7 mg/kg Dry	01/21/11 13:39	Igth	PIA
SM (18) 4500 P B,F					PIA
Phosphorus, Total as P		400 mg/kg	01/19/11 10:05	Igalr	PIA
Phosphorus, Total as P		11000 mg/kg Dry	01/19/11 10:05	Igalr	PIA
SW-846 3051					PIA
Sample Preparation			01/13/11 09:30	JEM	PIA
SW-846 6010B R2.0					PIA
Arsenic	<	0.5 mg/kg	01/17/11 15:48	BAB	PIA
Arsenic	<	14 mg/kg Dry	01/17/11 15:48	BAB	PIA
Cadmium	<	0.1 mg/kg	01/17/11 15:48	BAB	PIA
Cadmium	<	2.8 mg/kg Dry	01/17/11 15:48	BAB	PIA
Chromium		0.26 mg/kg	01/17/11 15:48	BAB	PIA
Chromium		7.4 mg/kg Dry	01/17/11 15:48	BAB	PIA
Copper		4.8 mg/kg	01/17/11 15:48	BAB	PIA
Copper		140 mg/kg Dry	01/17/11 15:48	BAB	PIA
Lead		0.16 mg/kg	01/17/11 15:48	BAB	PIA
Lead		4.6 mg/kg Dry	01/17/11 15:48	BAB	PIA
Molybdenum	<	0.1 mg/kg	01/17/11 15:48	BAB	PIA
Molybdenum	<	2.8 mg/kg Dry	01/17/11 15:48	BAB	PIA
Nickel		0.14 mg/kg	01/17/11 15:48	BAB	PIA
Nickel		4 mg/kg Dry	01/17/11 15:48	BAB	PIA
Potassium		54 mg/kg	01/17/11 10:59	BAB	PIA
Potassium		1500 mg/kg Dry	01/17/11 10:59	BAB	PIA
Selenium	<	0.5 mg/kg	01/17/11 15:48	BAB	PIA
Selenium	<	14 mg/kg Dry	01/17/11 15:48	BAB	PIA
Zinc		9.2 mg/kg	01/17/11 15:48	BAB	PIA



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: 11012245-1	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SW-846 6010B R2.0					
Zinc		260 mg/kg Dry	01/17/11 15:48	BAB	PIA
SW-846 6020					
Mercury		0.026 mg/kg	01/14/11 12:13	JMW	
Mercury		0.73 mg/kg Dry	01/14/11 12:13	JMW	

Sample No: 11012245-2	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:48	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-3	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:49	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: 11012245-4	Collect Date 01/11/11 07:00
Client ID : SLUDGE	Site : GRAB
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.4 %	01/17/11 10:50	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5900 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

Sample No: **11012245-5** Collect Date **01/11/11 07:00**
Client ID : **SLUDGE** Site : **GRAB** Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:50	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: **11012245-6** Collect Date **01/11/11 07:00**
Client ID : **SLUDGE** Site : **GRAB** Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.6 %	01/17/11 10:52	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5600 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: **11012245-7** Collect Date **01/11/11 07:00**
Client ID : **SLUDGE** Site : **GRAB** Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.7 %	01/17/11 10:53	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5400 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	

Sample No: **11012245-8** Collect Date **01/11/11 07:00**
Client ID : **SLUDGE** Site : **GRAB** Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SM (18) 2540B					PIA
Solids, Total		3.5 %	01/17/11 10:54	asb	PIA
SM (18) 9221C,E					PIA
Fecal Coliform	<	5700 mpn/dry g	01/13/11 09:30	KJB	
Fecal Coliform	<	200 mpn/wet g	01/13/11 09:30	KJB	
SM (18) 9222D					PIA
Fecal Coliform, Geometric Mean	<	5700 mpn/dry g	01/13/11 09:30	KJB	



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Attn : Fred Stafford

Date Received : 01/12/11 11:15
Report Date 01/26/11
Customer # : 255447
P.O. Number : FStafford
Facility :

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PIA	PDC Laboratories - Peoria, IL NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230 State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17553 Drinking Water Certifications: Indiana (C-IL-040); Kansas (E-10338); Missouri (00870); Wisconsin (998294430) Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430) Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin(998294430) UST Certification: Iowa (240)
SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100253.

Certified by : Elaine Kaufmann
Elaine Kaufmann, Project Manager

FEB.	2011	BOD (5 DAY), PPM					SUSPEND SOLIDS					OTHER								
DATE	DAY	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTERS	SECONDARY CLARIFIER	FINAL EFFLUENT	RAW SEWAGE	PRIMARY EFFLUENT	TRICKLING FILTER EFF.	SECONDARY EFFLUENT	FINAL EFFLUENT	FINAL FECAL COLIFORM	OIL & GREASE	FINAL EFF PH	FINAL EFF. D.O.	FINAL EFF. CHLORINE	FINAL EFF. TEMP.	CHLORINE USED LBS	SO2 USED	
1	WE	147			10.3	2.6	143		13	1.5	25		6.8	5.9	0.0	40	20	20		
2	TR												7.1	5.8	0.0	40	20	16		
3	FR											6	7.1	4.6	0.0	20	40	12		
4	SA												7.1	4.8	0.0	32	20	40		
5	SU												7.1	4.6	0.0	36	10	20		
6	MO												7.1	4.6	0.0	36	10	12		
7	TE												7.2	4.5	0.0	35	40	36		
8	WE	85.3			6.5	3.5	137		5.3	3.1	10		7.0	4.6	0.0	34	20	20		
9	TR											5	7.0	4.6	0.0	35	40	32		
10	FR												7.1	4.8	0.0	30	20	40		
11	SA												7.0	4.4	0.0	47	20	20		
12	SU												7.1	4.8	0.0	49	20	16		
13	MO												6.9	5.6	0.0	54	40	48		
14	TE												7.0	5.0	0.0	55	60	40		
15	WE	93.8			10.1	4.8	134.3		8	4.3	30	8	7.1	5.0	0.0	56	60	40		
16	TR												7.1	4.8	0.0	60	20	40		
17	FR												7.0	4.8	0.0	64	40	24		
18	SA												7.1	4.8	0.0	48	30	76		
19	SU												7.1	4.8	0.0	52	25	22		
20	MO												7.1	4.6	0.0	58	25	22		
21	TE												7.1	4.8	0.0	51	20	24		
22	WE	98.3			3.6	1.3	228		10	3.3	15		7.1	5.0	0.0	49	20	16		
23	TR											6.2	7.0	4.7	0.0	48	40	15		
24	FR												7.0	4.9	0.0	34	40	20		
25	SA												7.0	4.5	0.0	34	60	16		
26	SU												7.0	4.5	0.0	36	20	16		
27	MO												7.0	4.3	0.0	44	40	16		
28	TE												7.1	4.6	0.0	42	40	28		
TOTAL		424	0	0	30.5	12.2	642.3	0	36.3	12.2	80	25.2	197	135	0.0	1219	860	747		
MAX		147	0	0	10.3	4.8	228	0	13	4.3	30	8.0	7.2	5.9	0.0	64	60	76		
MIN		85.3	0	0	3.6	1.3	134.3	0	5.3	1.5	10	5.0	6.8	4.3	0.0	20	10	12		
AVERAGE		106	0	0.0	7.6	3.1	160.6	0	9.08	3.05	20	6.3	7.1	4.8	0.0	43.5	30.7	26.7		
PREPARED BY:		APPROVED BY:					POST ENGINEER:													

February-11						SEWAGE FLOW					SETTLABLE SOLID						
DATE	DAY	WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	M G D					% OF SOLIDS PUMPED TO DIG.	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	ML/LITER			
		RAIN INCHES	AIR TEMP			MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT				RAW	PRIMARY EFFLUENT	INFLUENT AMMONIA	FINAL AMMONIA
1	WE	9/10	31	45	7	2.4	1.4	2.28	2.60	0.67				15			-
2	TR		30	45	7.2	2.8	1.8	2.44	2.47	0.76				16			-
3	FR		28	33	7.3	2.7	1.5	2.21	2.61	0.34				28		20	0.4
4	SA		30	38	7.3	3.0	1.2	2.29	2.76	0.43				35			-
5	SU		43	41	7.3	2.6	1.0	2.06	2.23	0.25				30			-
6	MO		37	42	7.2	3.2	1.0	2.32	2.63	0.43				28			-
7	TE		25	40	7.3	3.0	1.1	2.55	3.01	0.62				23			-
8	WE		18	38	7.3	2.9	1.1	2.24	2.60	0.17				21		20	0.4
9	TR		15	39	7.3	3.1	1.0	2.35	2.92	0.31				22			-
10	FR		31	37	7.3	3.3	1.0	2.21	2.65	0.24				26			-
11	SA		45	55	7.2	3.2	1.0	2.36	2.68	0.41				22			-
12	SU		53	58	7.3	3.6	1.1	2.34	2.65	0.43				27			-
13	MO		64	63	7.1	6.1	1.7	3.69	3.91	0.66				36			-
14	TE		51	63	7.2	4.3	3.1	3.93	5.00	1.12				32			-
15	WE		56	63	7.3	4.0	2.8	3.40	4.56	0.68				27		20	0.3
16	TR		73	65	7.2	3.7	1.5	2.99	3.58	0.36				23			-
17	FR		74	69	7.2	3.8	1.9	2.88	3.26	0.49				30			-
18	SA		58	63	7.3	3.5	1.5	2.51	2.90	0.33				18			-
19	SU		62	63	7.3	3.3	1.2	2.25	2.60	0.27				25			-
20	MO		72	65	7.3	3.8	1.2	2.39	2.71	0.39				20			-
21	TE		54	59	7.3	2.8	1.3	2.20	2.46	0.19				17			-
22	WE		49	55	7.2	3.1	1.3	2.39	2.80	0.51				18		22	0.4
23	TR		42	55	7.2	3.7	1.8	2.58	3.10	0.60				19			-
24	FR	1 6/10	42	40	7.2	15.2	1.2	5.78	3.74	0.83				30			-
25	SA		45	40	7.1	5.0	2.8	2.66	5.10	1.52				28			-
26	SU		41	42	7.1	3.4	2.2	4.18	3.93	1.20				25			-
27	MO	2/10	74	50	7.2	3.6	2.2	2.85	3.40	1.27				23			-
28	TE	9/10	46	48	7.3	6.8	3.5	4.48	5.29	1.29				27			-
TOTAL		3 6/10	1289	1414	202 5/10	111 8/10	45 4/10	78 8/10	90 1/10	18 8/10	0			691		82	1 5/10
MAX		1 6/10	74	69	7.3	15.2	3.5	5.78	5.29	1.52	0.0			36.0		22.0	0.4
MIN		2/10	15	33	7	2.4	1.0	2.06	2.23	0.17	0.0			15.0		20.0	0.3
AVERAGE			46.0	50.5	7.2	4.0	1.6	2.8	3.2	0.6	0.0			24.7		20.5	0.4



PDC Laboratories, Inc.

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(309) 692-9668 • (800) 752-6651 • FAX (309) 692-9589

LB & B Associates Inc.
PO Box 439
Fort Leonard Wood MO, 65473
Attn: Fred Stafford

Date Received: 02/24/11 10:00
Report Date: 03/01/11
Customer #: 255447

Sample No: 1020190-01
Sample Description: GRAB

Collect Date: 02/23/11 07:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 6.2 mg/L		02/28/11 08:00	PLI	EPA 1664A



PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612 9071
(309) 692-9658 • (309) 732-6651 • FAX (309) 692-9689

LB & B Associates Inc.
PO Box 439
Fort Leonard Wood MO, 65473
Attn: Fred Stafford

Date Received: 02/24/11 10:00
Report Date: 03/01/11
Customer #: 255447

Notes

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
Wastewater Certifications: Arkansas (88-0877); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

A handwritten signature in cursive script that reads "Elaine Kaufmann".

Certified by: Elaine Kaufmann, Project Manager

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

CHAIN OF CUSTODY RECORD

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: LAB 13 ADDRESS: PO BOX 439 CITY: Peoria, IL 61615 STATE: IL		PROJECT NUMBER: _____ PHONE NUMBER: _____ FAX NUMBER: _____ DATE SHIPPED: _____	P.O. NUMBER: 4229618 MATRIX TYPES: <input type="checkbox"/> W-WASTEWATER <input type="checkbox"/> W-DRINKING WATER <input type="checkbox"/> WMS - SLUDGE <input type="checkbox"/> M-SOLID <input type="checkbox"/> L-OIL-LEACHATE <input type="checkbox"/> OTHER: _____	MEANS SHIPPED: _____ ANALYSIS REQUESTED: _____	LOGIN # _____ LAB PROJ # _____ TEMPLATE: _____ PROJ MGR: _____
2 SAMPLE DESCRIPTION: oil & grease AS YOU WAIT ON REPORT		DATE COLLECTED: 2-23-11 TIME COLLECTED: 9:30 SAMPLE TYPE: X MATRIX TYPE: W BOTTLE COUNT: 1	REMARKS:		
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH NOT SUBJECT TO PACKAGER APPROVAL AND SURCHARGES) RUSH RESULTS VIA PLEASE CIRCLE: _____ PHONE # _____ FAX _____ MAIL ADDRESS _____		NORMAL _____ RUSH _____	6 oil & grease COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT: _____ °C CHILL PROCESS STARTED PRIOR TO RECEIPT: _____ SAMPLE(S) RECEIVED ON ICE: _____ PROBLEM(S) RECEIVED IN GOOD CONDITION: _____ SAMPLE(S) RECEIVED WITH HOLD (YOU MAY INCLUDE COMMENTS): _____ (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE: _____		
7 RELINQUISHED BY: (SIGNATURE) DATE: _____ TIME: _____ RECEIVED BY: (SIGNATURE) DATE: _____ TIME: _____		8 COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT: _____ °C CHILL PROCESS STARTED PRIOR TO RECEIPT: _____ SAMPLE(S) RECEIVED ON ICE: _____ PROBLEM(S) RECEIVED IN GOOD CONDITION: _____ SAMPLE(S) RECEIVED WITH HOLD (YOU MAY INCLUDE COMMENTS): _____ (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE: _____			

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

PAGE _____ OF _____

March-11				SEWAGE FLOW									SETTLEABLE SOLID ML/L						
DATE	DAY	WEATHER		MGD									1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	1# SEC. CLAR. SLUDGE LEVEL IN IN.	2# SEC. CLAR. SLUDGE LEVEL IN IN.	RAW	SEC. CLAR.	FINAL
		RAIN INCHES	AIR TEMP	TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH SEC. CLAR.	INFLUENT AMMONIA	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT							
1	TE		67	52	7.3	7.1	18.2	4.1	2.7	2.0	4.1	1.3	-	-	18	18	23	5	0
2	WE		48	53	7.3	7.1	18.0	3.6	2.3	1.9	4.2	1.2	-	-	24	24	23	5	0
3	TR		53	60	7.4	7.2	21.0	3.2	2.0	1.7	3.4	1.1	-	-	54	42	12	0	0
4	FR	1 8/10	70	58	7.3	7.2	-	6.0	2.2	2.2	3.8	1.2	-	-	60	30	18	0	0
5	SA		41	54	7.3	7.1	-	6.0	3.4	3.3	5.0	1.0	-	-	30	42	17	0	0
6	SU		50	55	7.3	7.1	-	3.7	2.0	2.4	4.0	0.3	-	-	30	18	19	0	0
7	MO		51	52	7.2	7.0	29.5	3.5	1.8	1.9	2.8	0.9	-	-	30	24	21	0	0
8	TE	1 9/10	44	50	7.0	6.9	-	8.5	1.4	3.7	4.2	0.9	-	-	36	36	32	0	0
9	WE		44	48	7.2	7.1	21.2	5.5	3.6	4.0	4.1	4.1	-	-	78	72	21	0	0
10	TR		42	55	7.5	7.7	21.0	3.9	2.9	1.8	4.6	1.4	-	-	42	48	10	0	0
11	FR		56	58	7.3	7.2	-	3.8	2.6	2.2	3.9	1.2	-	-	54	63	15	0	0
12	SA		75	59	7.3	7.2	-	3.4	2.0	1.6	3.2	1.2	-	-	24	24	17	0	0
13	SU	2/10	57	56	7.2	7.1	-	3.5	2.5	1.7	3.8	1.3	-	-	36	30	19	0	0
14	MO	2 9/10	41	46	7.0	6.9	-	14.4	2.5	5.4	5.0	1.1	-	-	10	12	26	0	0
15	TE		53	51	7.1	7.0	22.0	4.4	3.3	3.3	5.0	1.2	-	-	31	53	20	0	0
16	WE		75	56	7.2	7.2	23.0	4.3	2.4	2.5	4.6	1.2	-	-	108	54	17	0	0
17	TR		77	61	7.2	7.2	-	4.0	2.4	2.2	3.4	1.3	-	-	108	84	12	1	0
18	FR		58	62	7.3	7.2	-	3.8	2.4	1.2	2.1	2.0	-	-	30	50	15	1	0
19	SA	8/10	57	51	7.2	7.2	-	6.4	2.0	1.8	2.1	1.2	-	-	18	24	17	0	0
20	SU		82	55	7.2	7.1	-	4.2	3.0	2.0	4.8	1.4	-	-	24	30	17	0	0
21	MO		83	59	7.3	7.2	-	3.9	2.8	2.0	3.9	1.3	-	-	78	78	15	0	0
22	TE		68	59	7.3	7.2	30.0	3.7	2.0	2.1	3.4	0.8	-	-	90	60	13	0	0
23	WE		78	60	7.2	7.2	-	3.8	1.6	2.1	3.2	0.7	-	-	54	90	16	0	0
24	TR		44	49	7.3	7.2	-	3.6	1.6	2.0	2.9	0.6	-	-	30	68	20	1	0
25	FR		43	49	7.3	7.2	-	3.1	1.8	2.1	3.2	0.3	-	-	42	84	20	0	0
26	SA	1 5/10	36	47	7.1	7.1	-	6.1	1.2	2.7	4.1	0.4	-	-	48	54	26	0	0
27	SU		41	49	7.2	7.1	-	3.5	2.6	2.5	4.0	0.6	-	-	36	36	18	0	0
28	MO		48	50	7.2	7.1	-	3.5	2.0	2.3	3.5	0.6	-	-	90	84	16	0	0
29	TE		45	47	7.3	7.2	-	3.6	2.0	2.3	3.1	0.3	-	-	37	45	13	0	0
30	WE		49	48	7.2	7.2	30.0	3.4	2.3	2.3	3.1	0.5	-	-	96	84	15	0	0
31	TR		51	49	7.2	7.1	-	3.5	2.0	2.2	3.2	0.8	-	-	84	72	22	0	0
TOTAL		9 1/10	1727	1658	224.4	221.6	233.9	141.9	71.3	73.3	115.7	33.4	0	0	1530	1533	665	13	0
MAX		2.9	83.0	62.0	7.5	7.7	30.0	14.4	3.6	5.4	5.0	4.1			108	90.0			
MIN		0.2	36.0	46.0	7.0	6.9	18.0	3.1	1.2	1.2	2.1	0.3			10.0	12.0			
AVERAGE			56	53.5	7.2	7.1	7.5	4.6	2.3	2.4	3.7	1.1			49.4	49.5			
PREPARED BY			APPROVED BY										POST ENGINEER						
DA FORM 4247																			



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 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood MO, 65473
 Attn: Fred Stafford

Date Received: 03/03/11 9:45
 Report Date: 03/09/11
 Customer #: 255447
 PO#: FStafford

Sample No: 1030438-01
 Sample Description: OUTFALL 001

Collect Date: 03/02/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/08/11 07:30	PLI	EPA 1664A



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LB & B Associates Inc.
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 Fort Leonard Wood MO, 65473
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Date Received: 03/03/11 9:45
 Report Date: 03/09/11
 Customer #: 255447
 PO#: FStafford

Notes

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 Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
 Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 03/11/11 9:45
 Report Date: 03/22/11
 Customer #: 255447
 PO#: FTL229850

Sample No: 1031380-01
 Sample Description: OUTFALL 001

Collect Date: 03/10/11 07:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/22/11 07:30	JRL2	EPA 1664A



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LB & B Associates Inc.
 PO Box 439
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 Attn: Fred Stafford

Date Received: 03/11/11 9:45
 Report Date: 03/22/11
 Customer #: 255447
 PO#: FTL229850

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 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
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- SPM PDC Laboratories - Springfield, MO
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Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-592-9689

CHAIN OF CUSTODY RECORD

State where samples collected MO

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1. CLIENT INFORMATION COMPANY: <u>LABOR</u> ADDRESS: <u>PO BOX 200</u> CITY: <u>PEORIA</u> STATE: <u>MO</u> CONTACT PERSON: <u>VALERIE BARKER</u> PHONE: <u>309-592-9689</u> FAX: <u>309-592-9689</u>		2. ANALYSIS REQUESTED ANALYSIS: <u>1031380-01</u> LOGGED BY: <u>120</u> LAB PROJ #: TEMPLATE: PROJ MGR:	
3. PROJECT INFORMATION PROJECT NUMBER: <u>FT22-2850</u> P.O. NUMBER: PHONE NUMBER: FAX NUMBER: MEANS SHIPPED: DATE SHIPPED:		4. (FOR LAB USE ONLY) LOGIN #: LAB PROJ #: TEMPLATE: PROJ MGR:	
5. SAMPLE DESCRIPTION AS YOU WANT ON REPORT <u>out fall soil</u>		6. MATRIX TYPES WW-WASTEWATER DW-DRINKING WATER SW-SURFACE WATER WU-UTILITY WATER WS-SOLID LT-LEACHATE OTHER: MATRIX TYPE: <u>WW</u> BOTTLE COUNT: <u>1</u>	
7. RECEIVED BY (SIGNATURE) <u>Valerie Barker</u> DATE: <u>3-10-11</u> TIME: <u>9:30</u>		8. COMMENTS (FOR LAB USE ONLY) <u>OK Proceed</u>	
9. RECEIVED BY (SIGNATURE) <u>Valerie Barker</u> DATE: <u>3/11/11</u> TIME: <u>10:14</u>		10. SAMPLE TEMPERATURE UPON RECEIPT CHILL PROCESS STARTED PRIOR TO RECEIPT: <u>NO</u> °C SAMPLES RECEIVED IN COOL CONDITION: <u>NO</u> BOTTLES FILLED WITH ADEQUATE VOLUME: <u>NO</u> SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS): <u>NO</u> DATE AND TIME TAKEN FROM SAMPLE BOTTLE:	

TURNAROUND TIME REQUESTED (PLEASE CIRCLE)
 (RUSH IS SUBJECT TO PDC LAGS, APPROVAL AND SURCHARGE)
 RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE
 NORMAL RUSH DATE RESULTS NEEDED DATE RESULTS NEEDED
 E-MAIL

RELINQUISHED BY (SIGNATURE) DATE TIME
 RELINQUISHED BY (SIGNATURE) DATE TIME

RECEIVED BY (SIGNATURE) DATE TIME
 RECEIVED BY (SIGNATURE) DATE TIME

RECEIVED AT LAB BY (SIGNATURE)
Valerie Barker
 DATE: 3/11/11 TIME: 10:14

The sample temperature will be measured upon receipt at the lab. By initialing this area you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area you allow the lab to proceed with analytical testing regardless of the sample temperature.

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.



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LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 03/17/11 10:00
Report Date: 03/28/11
Customer #: 255447
PO#: FTC2230028

Sample No: 1031889-01
Sample Description: OUTFALL 001

Collect Date: 03/16/11 08:30
Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 8.0 mg/L		03/25/11 08:00	JRL2	EPA 1664A



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LB & B Associates Inc.
PO Box 439
Fort Leonard Wood, MO 65473
Attn: Fred Stafford

Date Received: 03/17/11 10:00
Report Date: 03/28/11
Customer #: 255447
PO#: FTC2230028

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NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PHONE # 800-752-6651
FAX # 309-692-9689

PDC LABORATORIES, INC.
2231 WEST ALTORFER DRIVE
PEORIA, IL 61615

State where samples collected

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: <u>LCR</u> ADDRESS: <u>PO BOX 123</u> CITY: <u>Peoria</u> STATE: <u>IL</u> ZIP: <u>61615</u> CONTACT PERSON: <u>John Doe</u> PHONE: <u>309-123-4567</u> FAX: <u>309-123-4568</u>		PROJECT NUMBER: <u>12345678</u> P.O. NUMBER: <u>98765432</u> PHONE NUMBER: <u>309-123-4567</u> FAX NUMBER: <u>309-123-4568</u> MEANS SHIPPED: <u>Truck</u> DATE SHIPPED: <u>10/15/01</u>		ANALYSIS REQUESTED: <u>As follows</u>		(FOR LAB USE ONLY) LOGIN # <u>12345</u> LAB PROL # <u>67890</u> TEMPLATE: <u>Standard</u> PROL MGR: <u>J.Doe</u>	
2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT: <u>outfall 001</u>		DATE COLLECTED: <u>3-6-11</u> TIME COLLECTED: <u>6:30</u>	RUSH: <u>X</u>	DATE RESULT NEEDED: <u>3-6-11</u> TIME: <u>6:30</u>	MATRIX TYPE: <u>WW</u> MATRIX BOTTLE TYPE: <u>1</u> COUNT: <u>1</u>	REMARKS:	
TURNOURD TIME REQUESTED (PLEASE CIRCLE) (RUSH TX IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)		NORMAL: <u> </u> RUSH: <u> </u>		PHONE: <u> </u> E-MAIL: <u> </u>		COMMENTS: (FOR LAB USE ONLY)	
5 RECEIVED BY: (SIGNATURE) <u>[Signature]</u> DATE: <u>3-6-11</u> TIME: <u>15:00</u>		RECEIVED BY: (SIGNATURE) <u>[Signature]</u> DATE: <u>3-6-11</u> TIME: <u>15:00</u>		RECEIVED AT LAB BY: (SIGNATURE) <u>[Signature]</u> DATE: <u>3-6-11</u> TIME: <u>15:00</u>		SAMPLE TEMPERATURE UPON RECEIPT: <u>15°C</u> CHILL PROCESS STARTED PRIOR TO RECEIPT: <u> </u> SAMPLES RECEIVED ON ICE: <u> </u> BOTTLES FILLED WITH APPROXIMATE VOLUME: <u> </u> SAMPLES RECEIVED WITHIN HOLD TIME(S): <u> </u> (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE: <u> </u>	

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 03/28/11 9:45
 Report Date: 04/01/11
 Customer #: 255447
 PO#: FTC230134

Sample No: 1032722-01
 Sample Description: OUTFALL 001

Collect Date: 03/25/11 07:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		03/31/11 08:00	JRL2	EPA 1664A



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PO Box 439
Fort Leonard Wood, MO 65473
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Date Received: 03/28/11 9:45
Report Date: 04/01/11
Customer #: 255447
PO#: FTC230134

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- PIA PDC Laboratories - Peoria, IL
NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
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Certified by: Elaine Kaufmann, Project Manager

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 PEORIA, IL 61615
 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected

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1 CLIENT PROJECT NUMBER: <u>13034</u> PHONE NUMBER: <u>309-692-9689</u> P.O. NUMBER: <u>13034</u> FAX NUMBER: <u>309-692-9689</u>		3 ANALYSIS REQUESTED ANALYSIS REQUESTED: <u>011-10-10</u>		4 (FOR LAB USE ONLY) LOGGED BY: <u>[Signature]</u> LAB PROJ.: <u>[Signature]</u> TEMPLATE: <u>[Signature]</u> PROJ. MGR.: <u>[Signature]</u>	
2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT <u>outfall 001</u>		MEANS SHIPPED: <u>3/25</u> DATE SHIPPED: <u>3/25</u>		REMARKS <u>Don't BP</u> <u>4-4-11</u>	
DATE COLLECTED: <u>3-25-11</u> TIME COLLECTED: <u>7:30</u>		MATRIX TYPE: <u>WW</u> BOTTLE COUNT: <u>1</u>			
DATE RECEIVED BY: <u>[Signature]</u>		DATE RESULT'S NEEDED: <u>[Signature]</u>			
DATE RELINQUISHED BY: <u>[Signature]</u>		DATE RELINQUISHED BY: <u>[Signature]</u>			

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March

LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 03/28/11 9:45
 Report Date: 05/09/11
 Customer #: 255447
 PO#: FTC230139

Sample No: 1032706-01
 Sample Description: SLUDGE COMPOSITE

Collect Date: 03/25/11 07:30
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
Distilled Nutrients - PIA					
Ammonia-N	8000 mg/kg dry		03/29/11 09:59	Igalr	EPA 350.1 - QC 10-107-08-1-I & J
General Chemistry - PIA					
Nitrogen - total organic	42000 mg/kg dry dr		04/01/11 11:17	Igalr	calculation
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Nutrients - PIA					
Nitrate/Nitrite-N	29 mg/kg dry		03/29/11 16:34	TTH	EPA 353.2 - SM 4500NO3 F 18Ed - QC
Phosphorus - total as P	16000 mg/kg dry		04/06/11 12:30	Igalr	10-107-04-1-C EPA 365.1SM4500-P BF
Total Kjeldahl Nitrogen (TKN)	50000 mg/kg dry		04/01/11 11:17	Igalr	SM 4500-N B & NH3-H 18Ed
Total Metals - PIA					
Cadmium	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Chromium	13 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Copper	250 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Lead	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Mercury	< 4.7 mg/kg dry		04/04/11 15:23	JMW	SW 6020
Molybdenum	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Nickel	< 23 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Potassium	4100 mg/kg dry		03/31/11 09:45	KJP	SW 6010B
Selenium	< 120 mg/kg dry		03/30/11 13:07	KJP	SW 6010B
Zinc	430 mg/kg dry		03/30/11 13:07	KJP	SW 6010B

Sample No: 1032706-01RE1
 Sample Description: SLUDGE COMPOSITE

Collect Date: 03/25/11 07:30
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
Total Metals - PIA					
Arsenic	< 23 mg/kg dry		04/21/11 15:18	KJP	SW 6010B



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Date Received: 03/28/11 9:45
 Report Date: 05/09/11
 Customer #: 255447
 PO#: FTC230139

Sample No: 1032706-02
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E
Fecal coliform bacteria - Geometric Mean	9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-03
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-04
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9400 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-05
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					

1032708



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Date Received: 03/28/11 9:45
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Sample No: 1032706-05
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-06
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.2 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-07
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

Sample No: 1032706-08
 Sample Description: SLUDGE GRAB

Collect Date: 03/25/11 07:30
 Matrix: Sludge Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	2.1 %		03/28/11 15:00	TCH	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 9300 MPN/g dry w		03/28/11 12:25	KJB	SM 9221 C E

1032706



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Date Received: 03/28/11 9:45
Report Date: 05/09/11
Customer #: 255447
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NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Report revised 5/9/11 - Arsenic was re-prepped and re-analyzed to achieve lower reporting limit.

Certified by: Elaine Kaufmann, Project Manager

April-11		SEWAGE FLOW MGD											SETTLEABLE SOLID ML/L						
DATE	DAY	WEATHER		TEMP. PLANT INFLUENT	PH PLANT INFLUENT	PH SEC. CLAR.	INFLUENT AMMONIA	MAXIMUM	MINIMUM	INFLUENT FLOW	EFF. FLOW	TOTAL RECIRCULAT	1# PRI. CLAR. SLUDGE LEVEL IN IN.	2# PRI. CLAR. SLUDGE LEVEL IN IN.	1# SEC. CLAR. SLUDGE LEVEL IN IN.	2# SEC. CLAR. SLUDGE LEVEL IN IN.	RAW	SEC. CLAR.	FINAL
		RAIN INCHES	AIR TEMP																
1	FR		58	50	7.1	7.2		3.1	1.5	2.2	2.9	0.5	-	-	54	54	19	0	0
2	SA		72	54	7.2	7.2		3.2	1.7	1.9	2.9	0.4	-	-	24	36	17	0	0
3	SU		92	73	7.3	7.2	-	3.6	1.9	2.1	3.5	0.3	-	-	30	42	18	0	0
4	MO		55	66	7.3	7.2	-	3.2	2.0	2.1	3.1	0.7	-	-	48	65	16	0	0
5	TE		69	65	7.2	7.2	-	3.2	2.0	2.1	2.9	0.3	-	-	54	68	16	0	0
6	WE		80	69	7.2	7.2	19.0	3.3	1.2	2.2	2.7	0.3	-	-	36	36	17	0	0
7	TR		75	70	7.1	7.1	-	3.0	1.1	3.3	3.3	0.2	-	-	24	36	13	0	0
8	FR		85	70	7.3	7.2	-	3.2	1.1	1.0	2.1	0.4	-	-	24	36	19	0	0
9	SA		83	72	7.3	7.2	-	3.4	1.2	1.9	2.3	2.3	-	-	24	36	18	0	0
10	SU		91	74	7.3	7.3	-	3.4	1.1	2.0	2.9	0.3	-	-	15	18	17	0	0
11	MO	1 3/10	72	70	7.2	7.1	-	5.1	2.7	2.6	3.9	1.0	-	-	6	4	22	0	0
12	TE		69	68	7.3	7.2	-	3.7	2.5	1.8	3.7	1.4	-	-	36	48	17	0	0
13	WE		73	70	7.3	7.2	-	3.8	1.9	1.6	3.3	1.4	-	-	66	54	17	0	0
14	TR		78	81	6.9	7.0	-	3.1	1.8	1.9	3.0	0.7	-	-	66	60	20	0	0
15	FR	2	54	56	7.0	7.0	16.0	12.0	1.8	4.0	3.9	1.0	-	-	42	54	25	0	0
16	SA		70	59	7.1	7.1	-	4.0	2.4	1.5	3.7	1.0	-	-	48	48	21	0	0
17	SU		77	64	7.2	7.1	-	2.7	1.7	1.3	3.0	1.0	-	-	48	48	17	0	0
18	MO		68	63	7.2	7.1	-	3.0	1.6	1.3	4.0	0.9	-	-	36	48	18	0	0
19	TE	1/10	82	66	7.2	7.1	29.0	2.8	1.3	1.7	4.0	0.4	-	-	36	42	19	0	0
20	WE		60	62	7.2	7.1	-	2.4	1.5	1.5	3.2	0.4	-	-	30	30	17	0	0
21	TR	1 8/10	71	72	7.1	7.1	-	6.6	1.5	2.2	3.7	0.5	-	-	36	38	20	0	0
22	FR	1 4/10	79	76	6.9	6.9	-	8.2	3.8	6.1	4.6	0.0	-	-	24	24	18	0	0
23	SA	1 9/10	65	77	6.9	6.9	-	13.0	4.0	4.0	4.1	3.5	-	-	12	15	22	0	0
24	SU	1 7/10	54	72	7.0	6.9	-	8.5	5.4	4.4	5.3	1.6	-	-	3	6	18	0	0
25	MO	3 4/10	57	76	7.0	7.0	-	17.5	6.5	8.9	7.2	1.6	-	-	36	48	21	0	0
26	TE	2/10	72	76	6.8	6.6	-	8.5	5.1	5.9	6.6	1.8	-	-	45	50	22	1	0
27	WE	4/10	58	63	7.0	7.0	-	6.2	4.3	3.5	4.6	1.7	-	-	66	66	23	1	0
28	TR		81	84	7.0	7.0	20.0	5.5	2.5	2.8	4.2	1.6	-	-	54	60	18	0	0
29	FR		81	86	6.9	6.9	-	3.4	2.3	1.9	4.3	1.2	-	-	42	81	23	0	0
30	SA		72	84	7	6.9	-	3.6	2.5	1.6	2.3	1.3	-	-	36	36	22	0	0
TOTAL		14 2/10	2153	2088	213 5/10	212 2/10	84.0	156.2	71.9	81.5	111.2	29.7	0	0	1101	1287	670	2	0
MAX		3 4/10	92	86	7.3	7.3	29.0	17.5	6.5	8.9	7.2	3.5			66.0	81.0		0	0.0
MIN		1/10	54	50	6.8	6.6	16.0	2.4	1.1	1.0	2.1	0.0			3.0	4.0		0	0.0
AVERAGE			71.8	69.6	7.1	7.1	21.0	5.2	2.4	2.7	3.7	1.0			36.7	42.9			0.0

PREPARED BY

APPROVED BY

POST ENGINEER



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LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/04/11 9:35
 Report Date: 04/06/11
 Customer #: 255447
 PO#: FTL230226

Sample No: 1040133-01
 Sample Description: OUTFALL 001

Collect Date: 04/01/11 07:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 7.0 mg/L		04/06/11 07:46	JRL2	EPA 1664A



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Certified by: Elaine Kaufmann, Project Manager

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PHONE # 800-752-6651
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State where samples collected

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PROJECT NUMBER P.O. NUMBER PHONE NUMBER FAX NUMBER		MEANS SHIPPED DATE SHIPPED		LOGGED BY LAB PROJ. # TEMPLATE PROJ. NO.	
ADDRESS CITY STATE COUNTY ZIP		MATRIX TYPES: WW-WASTEWATER DW-DRAINAGE WATER VNS-VOLATILE VNS-SOLID LCH-LEACHATE OTHER		LOGIN # 10401331	
SAMPLE DESCRIPTION AS YOU WANT ON REPORT 001 Red 001		DATE COLLECTED TIME COLLECTED DATE RESULTS NEEDED RUSH		COMMENTS (FOR LAB USE ONLY)	
DATE COLLECTED TIME COLLECTED DATE RESULTS NEEDED RUSH		MATRIX TYPE SAMPLE TYPE GRAB COMP TYPE COUNT		01 f Greeny	
DATE COLLECTED TIME COLLECTED DATE RESULTS NEEDED RUSH		MATRIX TYPE SAMPLE TYPE GRAB COMP TYPE COUNT		The sample temperature will be measured upon receipt at the lab. By initiating this area you request that the lab notify you before proceeding with analysis, if the sample temperature is outside of the range of 0-10.0 C. By not initiating this area you allow the lab to proceed with analytical testing regardless of the sample temperature.	
RELINQUISHED BY (SIGNATURE) DATE TIME		RECEIVED BY (SIGNATURE) DATE TIME		SAMPLE TEMPERATURE UPON RECEIPT AT LAB (C) CHILL PROCESS STARTED PRIOR TO RECEIPT AT LAB (C) PROCESSING (C) BOTTLES FILLED WITH ADEQUATE VOLUME SAMPLES RECEIVED WITHIN HOLD TIMES (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE	
RELINQUISHED BY (SIGNATURE) DATE TIME		RECEIVED BY (SIGNATURE) DATE TIME		8	

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.



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 (309) 692-9668 • (800) 752-6651 • FAX (309) 692-9689



LB & B Associates Inc.
 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/08/11 10:00
 Report Date: 04/17/11
 Customer #: 255447
 PO#: FStafford

Sample No: 1040950-01
 Sample Description: OUTFALL 001

Collect Date: 04/07/11 06:30
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Oil & Grease - total	< 9.0 mg/L		04/14/11 07:30	JRL2	EPA 1664A



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PO Box 439
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Attn: Fred Stafford

Date Received: 04/08/11 10:00
Report Date: 04/17/11
Customer #: 255447
PO#: FStafford

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Illinois Department of Public Health Bacteriological Analysis In Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
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Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager



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 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/18/11 9:45
 Report Date: 04/24/11
 Customer #: 255447
 PO#: FTC230400

Sample No: 1041846-01
 Sample Description: OUTFALL 001

Collect Date: 04/15/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Oil & Grease - total	< 1.4 mg/L		04/22/11 07:30	JRL2	EPA 1664A



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PO Box 439
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Attn: Fred Stafford

Date Received: 04/18/11 9:45
Report Date: 04/24/11
Customer #: 255447
PO#: FTC230400

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UST Certification; Iowa (240)
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- STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Certified by: Elaine Kaufmann, Project Manager



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LB & B Associates Inc.
 PO Box 439
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 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-01
 Sample Description: SLUDGE COMPOSITE

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
Distilled Nutrients - PIA					
Ammonia-N	5600 mg/kg dry		04/28/11 11:42	Igalr	EPA 350.1 - QC 10-107-06-1-I & J
General Chemistry - PIA					
Solids - total solids (TS)	1.9 %		04/28/11 08:30	BRS	SM 2540G 18Ed
Nutrients - PIA					
Nitrate/Nitrite-N	19 mg/kg dry		04/27/11 16:50	TTH	EPA 353.2 - SM 4500NO3 F 18Ed - QC
Phosphorus - total as P	25000 mg/kg dry		05/04/11 12:58	Igalr	10-107-04-1-C EPA 385.1SM4500-P BF
Total Kjeldahl Nitrogen (TKN)	66000 mg/kg dry		05/12/11 14:35	Igalr	SM 4500-N B & NH3-H 18Ed
Total Metals - PIA					
Arsenic	< 27 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Cadmium	< 5.3 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Chromium	11 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Copper	320 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Lead	15 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Mercury	1.6 mg/kg dry		04/28/11 11:12	JMW	SW 6020
Molybdenum	< 5.3 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Nickel	9.4 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Potassium	8300 mg/kg dry		04/28/11 11:22	JMW	SW 6010B
Selenium	< 27 mg/kg dry		04/28/11 11:24	JMW	SW 6010B
Zinc	470 mg/kg dry		04/28/11 11:24	JMW	SW 6010B

Sample No: 1042514-02
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.9 %		04/28/11 08:30	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E
Fecal coliform bacteria - Geometric Mean	12000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

1042514



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 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-03
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.9 %		04/26/11 08:30	BRS	SM 2540G 18Ed
<u>Microbiology - PIA</u>					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-04
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.9 %		04/26/11 08:30	BRS	SM 2540G 18Ed
<u>Microbiology - PIA</u>					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-05
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.7 %		04/27/11 08:54	BRS	SM 2540G 18Ed
<u>Microbiology - PIA</u>					
Fecal coliform bacteria	23000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-06
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Solids - total solids (TS)	1.8 %		04/27/11 08:54	BRS	SM 2540G 18Ed
<u>Microbiology - PIA</u>					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

1042514



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Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042514-07
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.8 %		04/28/11 08:33	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E

Sample No: 1042514-08
 Sample Description: SLUDGE GRAB

Collect Date: 04/22/11 07:00
 Matrix: Sludge Composite

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Solids - total solids (TS)	1.8 %		04/28/11 08:33	BRS	SM 2540G 18Ed
Microbiology - PIA					
Fecal coliform bacteria	< 11000 MPN/g dry w		04/25/11 14:10	KJB	SM 9221 C E



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 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 05/16/11
 Customer #: 255447
 PO#: FTC230528

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 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615
 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected _____

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1		2		3		4		5		6		7		8														
CLIENT	PROJECT NUMBER	PHONE NUMBER	P.O. NUMBER	FAX NUMBER	MEANS SHIPPED	DATE SHIPPED	ANALYST REQUESTED	LOGGED BY	LAB PROJ. #	TEMPLATE	PROJ. MGR.	REMARKS	TURNAROUND TIME REQUESTED (PLEASE CIRCLE)	RUSH	PHONE	EMAIL ADDRESS	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED AT LAB BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
LABOR	422-30728		422-30728																									
PO BOX 439																												
Fort Leonard Wood MO																												
FLA SHERMAN																												
SAMPLE DESCRIPTION AS YOU WANT ON REPORT		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	GRAV	COMP	MATRIX TYPE	BOTTLE TYPE	COUNT																			
Dye 4 Sludge		4-22-11	9:00	WWSL			WWSL		1																			
Dye 4 Sludge		4-22-11	9:00	WWSL			WWSL		2																			

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 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 04/29/11
 Customer #: 255447
 PO#: FTC230528

Sample No: 1042536-01
 Sample Description: OUTFALL 001

Collect Date: 04/22/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 1.4 mg/L		04/28/11 07:16	JRL2	EPA 1664A



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 Attn: Fred Stafford

Date Received: 04/25/11 9:30
 Report Date: 04/29/11
 Customer #: 255447
 PO#: FTC230528

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 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
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Elaine Kaufmann

Certified by: Elaine Kaufmann, Project Manager

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 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: <u>1885</u> ADDRESS: <u>PO BOX 379</u> CITY: <u>East Howard</u> STATE: <u>Illinois</u> COUNTY: <u>Peoria</u>		3 ANALYSIS REQUESTED: <u>011 + 110</u>		4 (FOR LAB USE ONLY) LOGIN: <u>1042361</u> LAB PROJ. # <u>of</u> TEMPLATE: PROJ. MGR.:	
2 SAMPLE DESCRIPTION: <u>outfall 001</u>		MEANS SHIPPED:		REMARKS:	
PROJECT NUMBER: <u>1885</u> PHONE NUMBER: <u>309-692-9689</u> R.D. NUMBER: <u>1885</u> FAX NUMBER: <u>309-692-9689</u>		DATE COLLECTED: <u>4-22-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>W/W</u> MATRIX COUNT: <u>1</u>		DATE SHIPPED: DATE SHIPPED:	
SAMPLE TYPE: <u>WASTEWATER</u> CONTAINER: <u>5-GAL. ROUND WATER</u> MATRIX TYPE: <u>W/W</u> MATRIX COUNT: <u>1</u>		DATE RESULTS NEEDED: DATE RESULTS NEEDED:		6 The sample temperature will be measured upon receipt at the lab. By including this area you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not including this area you allow the lab to proceed with analytical testing regardless of the sample temperature.	
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH TX IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX		RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE)		8 COMMENTS: (FOR LAB USE ONLY)	
7 RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE)		RECEIVED AT LAB BY: (SIGNATURE) RECEIVED AT LAB BY: (SIGNATURE)		SAMPLE TEMPERATURE UPON RECEIPT: <u>10</u> °C CHILL PROCESS STARTED PRIOR TO RECEIPT: <u>NO</u> SAMPLE(S) RECEIVED ON ICE: <u>NO</u> PROPER FILLER USED: <u>NO</u> SAMPLES RECEIVED WITH HOLD TIME(S): <u>NO</u> SAMPLES RECEIVED WITH HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS): <u>NO</u> DATE AND TIME TAKEN FROM SAMPLE BOTTLE: <u>4/22/11 7:30 AM</u>	

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 PO Box 439
 Fort Leonard Wood, MO 65473
 Attn: Fred Stafford

Date Received: 04/27/11 11:00
 Report Date: 05/03/11
 Customer #: 255447
 PO#: FTC230538

Sample No: 1042850-01
 Sample Description: OUTFALL 001

Collect Date: 04/26/11 07:00
 Matrix: Waste Water Grab

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Oil & Grease - total	< 1.4 mg/L		05/02/11 07:30	JRL2	EPA 1664A



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Attn: Fred Stafford

Date Received: 04/27/11 11:00
Report Date: 05/03/11
Customer #: 255447
PO#: FTC230538

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UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program

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Certified by: Elaine Kaufmann, Project Manager

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 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615
 PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: <u>12 B/B</u> ADDRESS: <u>10120 95th</u> CITY: <u>Peoria, IL</u> STATE: <u>IL</u> COUNTY: <u>Peoria</u> ZIP: <u>61615</u>		PROJECT NUMBER: <u>12 B/B</u> PHONE NUMBER: <u>309-692-9689</u> P. O. NUMBER: <u>12-5058</u> FAX NUMBER: <u>309-692-9689</u>		MEANS SHIPPED: <u>Hand Delivered</u> DATE SHIPPED: <u>4-26-11</u>		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MATRIX TYPES: WW: WASTEWATER GW: GROUNDWATER SW: SURFACE WATER MS: MUD/SILT SL: SLUDGE MS: MUD/SILT LW: LEACHATE OTHER:		LOGGED BY: <u>Basford</u> LAB PROJ. #: <u>1042850</u> TEMPLATE: PROJ. MGR.:		REMARKS:	
2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT <u>Cell 001</u>		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MEANS SHIPPED: <u>Hand Delivered</u> DATE SHIPPED: <u>4-26-11</u>		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MATRIX TYPES: WW: WASTEWATER GW: GROUNDWATER SW: SURFACE WATER MS: MUD/SILT SL: SLUDGE MS: MUD/SILT LW: LEACHATE OTHER:		LOGGED BY: <u>Basford</u> LAB PROJ. #: <u>1042850</u> TEMPLATE: PROJ. MGR.:		REMARKS:	
3 (MAX 3 REQUIRED)		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MEANS SHIPPED: <u>Hand Delivered</u> DATE SHIPPED: <u>4-26-11</u>		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MATRIX TYPES: WW: WASTEWATER GW: GROUNDWATER SW: SURFACE WATER MS: MUD/SILT SL: SLUDGE MS: MUD/SILT LW: LEACHATE OTHER:		LOGGED BY: <u>Basford</u> LAB PROJ. #: <u>1042850</u> TEMPLATE: PROJ. MGR.:		REMARKS:	
4 (FOR LAB USE ONLY)		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MEANS SHIPPED: <u>Hand Delivered</u> DATE SHIPPED: <u>4-26-11</u>		DATE COLLECTED: <u>4-26-11</u> TIME COLLECTED: <u>7:00</u> MATRIX TYPE: <u>WW</u> MATRIX COUNT: <u>1</u>		MATRIX TYPES: WW: WASTEWATER GW: GROUNDWATER SW: SURFACE WATER MS: MUD/SILT SL: SLUDGE MS: MUD/SILT LW: LEACHATE OTHER:		LOGGED BY: <u>Basford</u> LAB PROJ. #: <u>1042850</u> TEMPLATE: PROJ. MGR.:		REMARKS:	
5 TURBIDIMETER TIME REQUESTED (PLEASE CIRCLE) (RUSH FAX IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE!) RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE PHONE # _____ EMAIL ADDRESS _____ E-MAIL _____		DATE RESULTS NEEDED: _____ RUSH: _____		DATE RESULTS NEEDED: _____ RUSH: _____		DATE RESULTS NEEDED: _____ RUSH: _____		DATE RESULTS NEEDED: _____ RUSH: _____		DATE RESULTS NEEDED: _____ RUSH: _____		DATE RESULTS NEEDED: _____ RUSH: _____	
6 COMMENTS: (FOR LAB USE ONLY)		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____	
7 RELINQUISHED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____	
8 RELINQUISHED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____	
9 SAMPLE TEMPERATURE UPON RECEIPT _____ °C CHILL PROCESS STARTED PRIOR TO RECEIPT _____ TEMPERATURE OF CHILL PROCESS _____ BOTTLES RECEIVED IN GOOD CONDITION _____ BOTTLES FILLED WITH ADEQUATE VOLUME _____ SAMPLES RECEIVED WITHIN HOLD TIMES _____ (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____		RECEIVED BY: (SIGNATURE) _____ DATE: _____ TIME: _____	

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

RECEIVED

Mar 2 1994

WATER PROTECTION PROGRAM

ENCLOSURE C

2010	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS		
DRY=	MG/KG	MG/KG	MG/KG	TOTAL	AVERAGE										
TOTAL KJELDAHL NITROGEN (TKN)	48,000	52,000	49,000	46,000	43,000	17,000	41,000	37,000	40,000	42,000	28,000	23,000	466000	38833.3	
TOTAL PHOSPHOROUS-P	31,000	30,000	31,000	28,000	28,000	31,000	31,000	30,000	30,000	29,000	15,000	25,000	339000	28250.0	
ARSENIC	20	18	26	18	12	18	16	18	16	19	9.6	6.9	197.5	16.5	
CADMIUM	4	3.7	5.3	3.6	2.5	3.6	3.1	3.6	3.1	3.8	0.31	1.4	38.01	3.2	
CHROMIUM	15	17	15	18	16	21	16	17	15	18	12	7.5	187.5	15.6	
COPPER	320	340	330	320	300	430	410	430	410	460	220	160	4130	344.2	
MERCURY	2.1	1.9	6.0	0.71	1.3	2.1	2.7	1.8	4.2	3.1	18	0.8	44.71	3.7	
TOTAL POTASSIUM	2,000	1,800	2,600	1,500	1,200	1,800	1,400	1,200	1,200	1,400	1,600	1,200	18900	1575.0	
MOLYB DENUM	4	5.2	5.3	4.6	4.5	5.4	5.6	5	4.7	5.8	2.9	1.5	54.5	4.5	
NICKEL	8	7.8	7.4	8.6	8	12	10	8.6	11	9.6	5.8	4.4	101.2	8.4	
LEAD	19	24	19	27	28	26	26	20	18	23	7.7	8	245.7	20.5	
SELENIUM	20	18	26	18	12	18	16	18	16	19	9.6	6.9	197.5	16.5	
ZINC	600	670	580	640	550	820	780	750	690	850	380	270	7580	631.7	
TOTAL SOLIDS	2.5	2.7	1.5	2.8	4.0	2.8	3.2	2.8	3.2	2.6	2.6	3.6	34.3	2.9	
AVERAGE															
PAN - MG/KG	17,000	17,000	18,000	16,700	18,000	13,900	16,000	14,500	16,400	16,400	8,700	8,000	164,200	13683.3	
PAN - LB/DT	34	34	36	33.4	0	36	32	27.8	29	32.8	17.4	16	328.4	29.9	
SOUR	0.20	0.16	0.23	0.21	0.03	0.26	0.36	0.36	0.39	0.49	LIMEDED	LIMEDED	0.00	0.00	

	AVERAGE	MIM.	MAX.	# SAMPLES	FECALS		
					MONTH	DAY	MPN/CFU
TOTAL KJELDAHL NITROGEN (TKN)	38,833	17,000	52,000	12			
TOTAL PHOSPHOROUS-P	28,250	15,000	31,000	12	JANUARY	29	33,000
ARSENIC	16.5	6.9	26	12	FEBRUARY	25	13,000
CADMIUM	3.2	0.3	5.3	12	MARCH	4	71,000
CHROMIUM	15.6	7.5	21	12	APRIL	20	7,700
COPPER	344.2	160.0	460	12	MAY	31	5,000
MERCURY	3.7	0.7	18	12	JUNE	10	7,000
TOTAL POTASSIUM	1575.0	1200.0	2600	12	JULY	15	6,100
MOLYB DENUM	4.5	1.5	5.8	12	AUGUST	26	7,100
NICKEL	8.4	4.4	12	12	SEPTEMBER	22	12,000
LEAD	20.5	7.7	28	12	OCTOBER	8	7,450
SELENIUM	16.5	6.9	26	12	NOVEMBER	10	7,800
ZINC	631.7	270.0	850	12	DECEMBER	2	5,300
TOTAL SOLIDS	2.9	1.5	4	12			
PAN-MG/KG	13,683	8,000	18,000	12			
PAN-LB/DT	29.9	0.0	36	12			
SOUR	0.00	0.03	0.49	12			

201	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS		
													MG/KG	MG/KG	
DRY=															
TOTAL KJELDAHL NITROGEN (TKN)	24,000		50,000	66,000											
TOTAL PHOSPHOROUS-P	11,000		16,000	25,000											
ARSENIC	14		23	27											
CADMIUM	2.8		23	5.3											
CHROMIUM	7.4		13	11											
COPPER	140		250	320											
MERCURY	0.7		4.7	1.6											
TOTAL POTASSIUM	1,500		4,100	8,300											
MOLYB DENUM	2.8		23	5.3											
NICKEL	4		23	9.4											
LEAD	4.6		23	15											
SELENIUM	14		100	27											
ZINC	260		430	470											
TOTAL SOLIDS	3.5		2.1	1.9											
PAN - MG/KG	8,405		42,000											50,405	4200.4
PAN - LB/DT	16.81	0	84	0	0	0	0	0	0	0	0	0	0	100.81	9.2
SOUR	LIMED														0.00

	AVERAGE		MIM.	MAX.	# SAMPLES	FECALS			
	TOTAL KJELDAHL NITROGEN (TKN)	TOTAL PHOSPHOROUS-P				MONTH	DAY	MPN/CFU	
	0	0	24,000	66,000	12	JANUARY	26-Jan	5,700	2,000,000
	0.0	0.0	14.0	27	12	FEBRUARY			
	0.0	0.0	2.8	23	12	MARCH	25-Mar	9,300	
	0.0	0.0	7.4	13	12	APRIL	22-Apr	11,000	
	0.0	0.0	140.0	320	12	MAY			
	0.0	0.0	0.7	4.7	12	JUNE			
	0.0	0.0	1500.0	8300	12	JULY			
	0.0	0.0	2.8	23	12	AUGUST			
	0.0	0.0	4.0	23	12	SEPTEMBER			
	0.0	0.0	4.6	23	12	OCTOBER			
	0.0	0.0	14.0	100	12	NOVEMBER			
	0.0	0.0	260.0	470	12	DECEMBER			
TOTAL SOLIDS	0.0	0.0	1.9	3.5	12				
PAN-MG/KG	4,200	8,405	42,000		12				
PAN-LB/DT	9.2	0.0	84		12				
SOUR	0.00	0.00	0.00	0.00	12				

NO SLUDGE HAULED

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Fort Leonard Wood WWTP		PERMIT NO. MO- 00229742	OUTFALL NO. 001
PART E – TOXICITY TESTING DATA			
50. TOXICITY TESTING DATA			
Refer to the Supplemental Application Information to determine whether Part E applies to the treatment works.			
Publicly owned treatment works, or POTWS, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.			
<ul style="list-style-type: none"> A. POTWs with a design flow rate greater than or equal to 1 million gallons per day. B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403). C. POTWs required by the permitting authority to submit data for these parameters <ul style="list-style-type: none"> ◆ At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. ◆ If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete. 			
50.1 REQUIRED TESTS. INDICATE THE NUMBER OF WHOLE EFFLUENT TOXICITY TESTS CONDUCTED IN THE PAST FOUR AND ONE-HALF YEARS.			
CHRONIC		ACUTE	
INDIVIDUAL TEST DATA. Complete the following chart for the last three whole effluent toxicity tests. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.			
	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
A. TEST INFORMATION			
TEST NUMBER	See Enclosure D	See Enclosure F	See Enclosure E
TEST SPECIES AND TEST METHOD NUMBER			
AGE AT INITIATION OF TEST			
OUTFALL NUMBER			
DATES SAMPLE COLLECTED			
DATE TEST STARTED			
DURATION			
B. GIVE TOXICITY TEST METHODS FOLLOWED			
MANUAL TITLE			
EDITION NUMBER AND YEAR OF PUBLICATION			
PAGE NUMBER(S)			
C. GIVE THE SAMPLE COLLECTION METHOD(S) USED. FOR MULTIPLE GRAB SAMPLES, INDICATE THE NUMBER OF GRAB SAMPLES USED.			
24-HOUR COMPOSITE			
GRAB			
D. INDICATE WHERE THE SAMPLE WAS TAKEN IN RELATION TO DISINFECTION. (CHECK ALL THAT APPLY FOR EACH)			
BEFORE DISINFECTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AFTER DISINFECTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AFTER DECHLORINATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. DESCRIBE THE POINT IN THE TREATMENT PROCESS AT WHICH THE SAMPLE WAS COLLECTED			
SAMPLE WAS COLLECTED			
F. FOR EACH TEST, INCLUDE WHETHER THE TEST WAS INTENDED TO ASSESS CHRONIC TOXICITY, ACUTE TOXICITY OR BOTH.			
CHRONIC TOXICITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACUTE TOXICITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. PROVIDE THE TYPE OF TEST PERFORMED			
STATIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STATIC STATIC-RENEWAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FLOW-THROUGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. SOURCE OF DILUTION WATER. IF LABORATORY WATER, SPECIFY TYPE; IF RECEIVING WATER, SPECIFY SOURCE			
LABORATORY WATER			
RECEIVING WATER			

FACILITY NAME Fort Leonard Wood WWTP	PERMIT NO. MO- 0029742	OUTFALL NO. 001
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PART E – TOXICITY TESTING DATA (CONTINUED)

50.1 WHOLE EFFLUENT TOXICITY TESTS DATA (CONTINUED)

	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
I. TYPE OF DILUTION WATER, IF SALT WATER, SPECIFY "NATURAL" OR TYPE OF ARTIFICIAL SEA SALTS OR BRINE USED.			
FRESH WATER			
SALT WATER			
J. GIVE THE PERCENTAGE EFFLUENT USED FOR ALL CONCENTRATIONS IN THE TEST SERIES.			
K. PARAMETERS MEASURED DURING THE TEST. (STATE WHETHER PARAMETER MEETS TEST METHOD SPECIFICATIONS)			
pH			
SALINITY			
TEMPERATURE			
AMMONIA			
DISSOLVED OXYGEN			
L. TEST RESULTS			
ACUTE:			
PERCENT IN SURVIVAL IN 100% EFFLUENT			
LC ₅₀			
95% C.I.			
CONTROL PERCENT SURVIVAL			
OTHER (DESCRIBE)			
CHRONIC:			
NOEC			
IC ₂₅			
CONTROL PERCENT SURVIVAL			
OTHER (DESCRIBE)			
M. QUALITY CONTROL ASSURANCE			
IS REFERENCE TOXICANT DATA AVAILABLE?			
WAS REFERENCE TOXICANT TEST WITHIN ACCEPTABLE BOUNDS?			
WHAT DATE WAS REFERENCED TOXICANT TEST RUN (MM/DD/YYYY)?			
OTHER (DESCRIBE)			

50.2 TOXICITY REDUCTION EVALUATION

Is the treatment works involved in a toxicity reduction evaluation? Yes No

If yes, describe:

50.3 SUMMARY OF SUBMITTED BIOMONITORING TEST INFORMATION

If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

END OF PART E

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

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WATER PROTECTION PROGRAM

ENCLOSURE D



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10062412-1 Collect Date 06/06/10 07:30
Client ID : SLUDGE Site : COMPOSITE Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
EPA 608					PIA
Sample Preparation			06/15/10 13:10	E1H RJGW	PIA
EPA 608, MODIFIED					PIA
4,4'-DDD	T<	16 ug/kg	06/23/10 05:56	LAL	
4,4'-DDD	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
4,4'-DDE	T<	16 ug/kg	06/23/10 05:56	LAL	
4,4'-DDE	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
4,4'-DDT	T<	16 ug/kg	06/23/10 05:56	LAL	
4,4'-DDT	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
Aldrin	T<	8 ug/kg	06/23/10 05:56	LAL	
Aldrin	T<	280 ug/kg Dry	06/23/10 05:56	LAL	
alpha-BHC	T<	8 ug/kg	06/23/10 05:56	LAL	
alpha-BHC	T<	280 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1016	T<	80 ug/kg	06/23/10 05:56	LAL	
Aroclor 1016	T<	2800 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1221	T<	160 ug/kg	06/23/10 05:56	LAL	
Aroclor 1221	T<	5700 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1232	T<	80 ug/kg	06/23/10 05:56	LAL	
Aroclor 1232	T<	2800 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1242	T<	80 ug/kg	06/23/10 05:56	LAL	
Aroclor 1242	T<	2800 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1248	T<	80 ug/kg	06/23/10 05:56	LAL	
Aroclor 1248	T<	2800 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1254	T<	160 ug/kg	06/23/10 05:56	LAL	
Aroclor 1254	T<	5700 ug/kg Dry	06/23/10 05:56	LAL	
Aroclor 1260	T<	160 ug/kg	06/23/10 05:56	LAL	
Aroclor 1260	T<	5700 ug/kg Dry	06/23/10 05:56	LAL	
Aroclors, total	T<	0.5 ug/kg	06/23/10 05:56	LAL	
Aroclors, total	T<	18 ug/kg Dry	06/23/10 05:56	LAL	
beta-BHC	T<	8 ug/kg	06/23/10 05:56	LAL	
beta-BHC	T<	280 ug/kg Dry	06/23/10 05:56	LAL	
Chlordane (technical)	T<	80 ug/kg	06/23/10 05:56	LAL	
Chlordane (technical)	T<	2800 ug/kg Dry	06/23/10 05:56	LAL	
delta-BHC	T<	8 ug/kg	06/23/10 05:56	LAL	
delta-BHC	T<	280 ug/kg Dry	06/23/10 05:56	LAL	
Dieldrin	T<	16 ug/kg	06/23/10 05:56	LAL	
Dieldrin	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
Endosulfan I	T<	8 ug/kg	06/23/10 05:56	LAL	
Endosulfan I	T<	280 ug/kg Dry	06/23/10 05:56	LAL	
Endosulfan II	T<	16 ug/kg	06/23/10 05:56	LAL	
Endosulfan II	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
Endosulfan Sulfate	T<	16 ug/kg	06/23/10 05:56	LAL	
Endosulfan Sulfate	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
Endrin	T<	16 ug/kg	06/23/10 05:56	LAL	
Endrin	T<	570 ug/kg Dry	06/23/10 05:56	LAL	
Endrin Aldehyde	T<	16 ug/kg	06/23/10 05:56	LAL	



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10082412-1	Collect Date 06/08/10 07:30
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 608, MODIFIED				
Endrin Aldehyde	T<	570 ug/kg Dry	06/23/10 05:56	LAL
gamma-BHC (Lindane)	T<	8 ug/kg	06/23/10 05:56	LAL
gamma-BHC (Lindane)	T<	280 ug/kg Dry	06/23/10 05:56	LAL
Heptachlor	T<	8 ug/kg	06/23/10 05:56	LAL
Heptachlor	T<	280 ug/kg Dry	06/23/10 05:56	LAL
Heptachlor Epoxide	T<	8 ug/kg	06/23/10 05:56	LAL
Heptachlor Epoxide	T<	280 ug/kg Dry	06/23/10 05:56	LAL
Methoxychlor	T<	80 ug/kg	06/23/10 05:56	LAL
Methoxychlor	T<	2800 ug/kg Dry	06/23/10 05:56	LAL
Toxaphene	T<	80 ug/kg	06/23/10 05:56	LAL
Toxaphene	T<	2800 ug/kg Dry	06/23/10 05:56	LAL
EPA 824, MODIFIED				
1,1,1-Trichloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,1,1-Trichloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,1,2,2-Tetrachloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,1,2,2-Tetrachloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,1,2-Trichloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,1,2-Trichloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,1-Dichloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,1-Dichloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,1-Dichloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,1-Dichloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,2-Dichlorobenzene	<	24 ug/kg	06/16/10 20:44	AMG
1,2-Dichlorobenzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,2-Dichloroethane	<	24 ug/kg	06/16/10 20:44	AMG
1,2-Dichloroethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,2-Dichloropropane	<	24 ug/kg	06/16/10 20:44	AMG
1,2-Dichloropropane	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,3-Dichlorobenzene	<	24 ug/kg	06/16/10 20:44	AMG
1,3-Dichlorobenzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
1,4-Dichlorobenzene	<	24 ug/kg	06/16/10 20:44	AMG
1,4-Dichlorobenzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
2-Chloroethyl Vinyl Ether	<	24 ug/kg	06/16/10 20:44	AMG
2-Chloroethyl Vinyl Ether	<	870 ug/kg Dry	06/16/10 20:44	AMG
Acrolein	<	240 ug/kg	06/16/10 20:44	AMG
Acrolein	<	8700 ug/kg Dry	06/16/10 20:44	AMG
Acrylonitrile	<	240 ug/kg	06/16/10 20:44	AMG
Acrylonitrile	<	8700 ug/kg Dry	06/16/10 20:44	AMG
Benzene	<	24 ug/kg	06/16/10 20:44	AMG
Benzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Bromodichloromethane	<	24 ug/kg	06/16/10 20:44	AMG
Bromodichloromethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
Bromoform	<	24 ug/kg	06/16/10 20:44	AMG
Bromoform	<	870 ug/kg Dry	06/16/10 20:44	AMG
Bromomethane	<	48 ug/kg	06/16/10 20:44	AMG

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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10062412-1 Collect Date 06/06/10 07:30
Client ID : SLUDGE Site : COMPOSITE Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 624, MODIFIED				
Bromomethane	<	1700 ug/kg Dry	06/16/10 20:44	AMG
Carbon Tetrachloride	<	24 ug/kg	06/16/10 20:44	AMG
Carbon Tetrachloride	<	870 ug/kg Dry	06/16/10 20:44	AMG
Chlorobenzene	<	24 ug/kg	06/16/10 20:44	AMG
Chlorobenzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Chloroethane	<	48 ug/kg	06/16/10 20:44	AMG
Chloroethane	<	1700 ug/kg Dry	06/16/10 20:44	AMG
Chloroform	<	24 ug/kg	06/16/10 20:44	AMG
Chloroform	<	870 ug/kg Dry	06/16/10 20:44	AMG
Chloromethane	<	48 ug/kg	06/16/10 20:44	AMG
Chloromethane	<	1700 ug/kg Dry	06/16/10 20:44	AMG
cis-1,3-Dichloropropene	<	24 ug/kg	06/16/10 20:44	AMG
cis-1,3-Dichloropropene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Dibromochloromethane	<	24 ug/kg	06/16/10 20:44	AMG
Dibromochloromethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
Ethylbenzene	<	24 ug/kg	06/16/10 20:44	AMG
Ethylbenzene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Methylene Chloride	<	24 ug/kg	06/16/10 20:44	AMG
Methylene Chloride	<	870 ug/kg Dry	06/16/10 20:44	AMG
Tetrachloroethene	<	24 ug/kg	06/16/10 20:44	AMG
Tetrachloroethene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Toluene		880 ug/kg	06/16/10 20:44	AMG
Toluene		32000 ug/kg Dry	06/16/10 20:44	AMG
trans-1,2-Dichloroethene	<	24 ug/kg	06/16/10 20:44	AMG
trans-1,2-Dichloroethene	<	870 ug/kg Dry	06/16/10 20:44	AMG
trans-1,3-Dichloropropene	<	24 ug/kg	06/16/10 20:44	AMG
trans-1,3-Dichloropropene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Trichloroethene	<	24 ug/kg	06/16/10 20:44	AMG
Trichloroethene	<	870 ug/kg Dry	06/16/10 20:44	AMG
Trichlorofluoromethane	<	24 ug/kg	06/16/10 20:44	AMG
Trichlorofluoromethane	<	870 ug/kg Dry	06/16/10 20:44	AMG
Vinyl Chloride	<	48 ug/kg	06/16/10 20:44	AMG
Vinyl Chloride	<	1700 ug/kg Dry	06/16/10 20:44	AMG
EPA 625				PIA
Sample Preparation			06/16/10 09:50	MCB
Sample Preparation			06/18/10 09:30	KLT
EPA 625, MODIFIED				PIA
1,2,4-Trichlorobenzene	<	330 ug/kg	06/22/10 02:03	CAH
1,2,4-Trichlorobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
1,2-Dichlorobenzene	<	330 ug/kg	06/22/10 02:03	CAH
1,2-Dichlorobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
1,2-Diphenylhydrazine	<	330 ug/kg	06/22/10 02:03	CAH
1,2-Diphenylhydrazine	<	12000 ug/kg Dry	06/22/10 02:03	CAH
1,3-Dichlorobenzene	<	330 ug/kg	06/22/10 02:03	CAH



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL128097
Facility :

Sample No: 10062412-1	Collect Date 06/06/10 07:30
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 626, MODIFIED				
1,3-Dichlorobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
1,4-Dichlorobenzene	<	330 ug/kg	06/22/10 02:03	CAH
1,4-Dichlorobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2,4,6-Trichlorophenol	<	330 ug/kg	06/22/10 02:03	CAH
2,4,6-Trichlorophenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2,4-Dichlorophenol	<	330 ug/kg	06/22/10 02:03	CAH
2,4-Dichlorophenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2,4-Dimethylphenol	<	330 ug/kg	06/22/10 02:03	CAH
2,4-Dimethylphenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2,4-Dinitrophenol	<	1800 ug/kg	06/22/10 02:03	CAH
2,4-Dinitrophenol	<	59000 ug/kg Dry	06/22/10 02:03	CAH
2,4-Dinitrotoluene	<	330 ug/kg	06/22/10 02:03	CAH
2,4-Dinitrotoluene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2,6-Dinitrotoluene	<	330 ug/kg	06/22/10 02:03	CAH
2,6-Dinitrotoluene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2-Chloronaphthalene	<	330 ug/kg	06/22/10 02:03	CAH
2-Chloronaphthalene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2-Chlorophenol	<	330 ug/kg	06/22/10 02:03	CAH
2-Chlorophenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
2-Nitrophenol	<	330 ug/kg	06/22/10 02:03	CAH
2-Nitrophenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
3,3'-Dichlorobenzidine	<	860 ug/kg	06/22/10 02:03	CAH
3,3'-Dichlorobenzidine	<	24000 ug/kg Dry	06/22/10 02:03	CAH
4,6-Dinitro-2-methylphenol	<	1600 ug/kg	06/22/10 02:03	CAH
4,6-Dinitro-2-methylphenol	<	59000 ug/kg Dry	06/22/10 02:03	CAH
4-Bromophenyl-phenylether	<	330 ug/kg	06/22/10 02:03	CAH
4-Bromophenyl-phenylether	<	12000 ug/kg Dry	06/22/10 02:03	CAH
4-Chloro-3-methylphenol	<	330 ug/kg	06/22/10 02:03	CAH
4-Chloro-3-methylphenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
4-Chlorophenyl-phenyl Ether	<	330 ug/kg	06/22/10 02:03	CAH
4-Chlorophenyl-phenyl Ether	<	12000 ug/kg Dry	06/22/10 02:03	CAH
4-Nitrophenol	<	330 ug/kg	06/22/10 02:03	CAH
4-Nitrophenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Acenaphthone	<	330 ug/kg	06/22/10 02:03	CAH
Acenaphthone	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Acenaphthylene	<	330 ug/kg	06/22/10 02:03	CAH
Acenaphthylene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Anthracene	<	330 ug/kg	06/22/10 02:03	CAH
Anthracene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Benzidine	<	2600 ug/kg	06/22/10 02:03	CAH
Benzidine	<	93000 ug/kg Dry	06/22/10 02:03	CAH
Benzo(a)anthracene	<	330 ug/kg	06/22/10 02:03	CAH
Benzo(a)anthracene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Benzo(a)pyrene	F,<	330 ug/kg	06/22/10 02:03	CAH
Benzo(a)pyrene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Benzo(b)fluoranthene	F,<	330 ug/kg	06/22/10 02:03	CAH



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10062412-1 Collect Date 06/08/10 07:30
Client ID : SLUDGE Site : COMPOSITE Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 625, MODIFIED				
Benzo(b)fluoranthene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Benzo(g,h,i)perylene	F,<	330 ug/kg	06/22/10 02:03	CAH
Benzo(g,h,i)perylene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Benzo(k)fluoranthene	F,<	330 ug/kg	06/22/10 02:03	CAH
Benzo(k)fluoranthene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
bis(2-Chloroethoxy)methane	<	330 ug/kg	06/22/10 02:03	CAH
bis(2-Chloroethoxy)methane	<	12000 ug/kg Dry	06/22/10 02:03	CAH
bis(2-Chloroethyl) Ether	<	330 ug/kg	06/22/10 02:03	CAH
bis(2-Chloroethyl) Ether	<	12000 ug/kg Dry	06/22/10 02:03	CAH
bis(2-Chloroisopropyl)Ether	<	330 ug/kg	06/22/10 02:03	CAH
bis(2-Chloroisopropyl)Ether	<	12000 ug/kg Dry	06/22/10 02:03	CAH
bis(2-Ethylhexyl)phthalate	<	1400 ug/kg	06/22/10 02:03	CAH
bis(2-Ethylhexyl)phthalate	<	51000 ug/kg Dry	06/22/10 02:03	CAH
Butylbenzylphthalate	<	330 ug/kg	06/22/10 02:03	CAH
Butylbenzylphthalate	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Chrysene	<	330 ug/kg	06/22/10 02:03	CAH
Chrysene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Di-n-butylphthalate	<	330 ug/kg	06/22/10 02:03	CAH
Di-n-butylphthalate	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Di-n-octylphthalate	F,<	330 ug/kg	06/22/10 02:03	CAH
Di-n-octylphthalate	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Dibenz(a,h)anthracene	F,<	330 ug/kg	06/22/10 02:03	CAH
Dibenz(a,h)anthracene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Diethylphthalate	<	330 ug/kg	06/22/10 02:03	CAH
Diethylphthalate	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Dimethylphthalate	<	330 ug/kg	06/22/10 02:03	CAH
Dimethylphthalate	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Dioxin Screen	<	330 ug/kg	06/22/10 02:03	CAH
Dioxin Screen	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Fluoranthene	<	330 ug/kg	06/22/10 02:03	CAH
Fluoranthene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Fluorene	<	330 ug/kg	06/22/10 02:03	CAH
Fluorene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Hexachlorobenzene	<	330 ug/kg	06/22/10 02:03	CAH
Hexachlorobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Hexachlorobutadiene	<	330 ug/kg	06/22/10 02:03	CAH
Hexachlorobutadiene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Hexachlorocyclopentadiene	<	330 ug/kg	06/22/10 02:03	CAH
Hexachlorocyclopentadiene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Hexachloroethane	<	330 ug/kg	06/22/10 02:03	CAH
Hexachloroethane	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Indeno(1,2,3-cd)pyrene	F,<	330 ug/kg	06/22/10 02:03	CAH
Indeno(1,2,3-cd)pyrene	F,<	12000 ug/kg Dry	06/22/10 02:03	CAH
Isophorone	<	330 ug/kg	06/22/10 02:03	CAH
Isophorone	<	12000 ug/kg Dry	06/22/10 02:03	CAH
N-Nitrosodimethylamine	<	330 ug/kg	06/22/10 02:03	CAH



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10062412-1 Collect Date 06/06/10 07:30
Client ID : SLUDGE Site : COMPOSITE Localor :

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 625, MODIFIED				
N-Nitrosodimethylamine	<	12000 ug/kg Dry	06/22/10 02:03	CAH
N-Nitrosodiphenylamine	<	330 ug/kg	06/22/10 02:03	CAH
N-Nitrosodiphenylamine	<	12000 ug/kg Dry	06/22/10 02:03	CAH
N-Nitrosodipropylamine	<	330 ug/kg	06/22/10 02:03	CAH
N-Nitrosodipropylamine	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Naphthalene	<	330 ug/kg	06/22/10 02:03	CAH
Naphthalene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Nitrobenzene	<	330 ug/kg	06/22/10 02:03	CAH
Nitrobenzene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Pentachlorophenol	<	1600 ug/kg	06/22/10 02:03	CAH
Pentachlorophenol	<	69000 ug/kg Dry	06/22/10 02:03	CAH
Phenanthrene	<	330 ug/kg	06/22/10 02:03	CAH
Phenanthrene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Phenol	<	330 ug/kg	06/22/10 02:03	CAH
Phenol	<	12000 ug/kg Dry	06/22/10 02:03	CAH
Pyrene	<	330 ug/kg	06/22/10 02:03	CAH
Pyrene	<	12000 ug/kg Dry	06/22/10 02:03	CAH
SM (18) 2540B				PIA
Solids, Total	H	2.8%	06/14/10 13:25	KJP
H - Method Hold Time Exceeded				
SM 4500-C, 9012A, 33				PIA
Cyanide, Total	<	1.2 mg/kg	06/18/10 11:24	lgjfa
Cyanide, Total	<	45 mg/kg Dry	06/18/10 11:24	lgjfa
SW-846 3051				PIA
Sample Preparation			06/16/10 08:15	JEM
SW-846 6010B R2.0				PIA
Antimony	<	0.3 mg/kg	06/16/10 10:59	BAB
Antimony	<	11 mg/kg Dry	06/16/10 10:59	BAB
Arsenic	<	0.5 mg/kg	06/16/10 10:59	BAB
Arsenic	<	18 mg/kg Dry	06/16/10 10:59	BAB
Beryllium	<	0.05 mg/kg	06/16/10 10:59	BAB
Beryllium	<	1.8 mg/kg Dry	06/16/10 10:59	BAB
Cadmium	<	0.1 mg/kg	06/16/10 10:59	BAB
Cadmium	<	3.6 mg/kg Dry	06/16/10 10:59	BAB
Chromium	<	0.49 mg/kg	06/16/10 10:59	BAB
Chromium	<	18 mg/kg Dry	06/16/10 10:59	BAB
Copper	<	10 mg/kg	06/16/10 10:59	BAB
Copper	<	380 mg/kg Dry	06/16/10 10:59	BAB
Lead	<	0.58 mg/kg	06/16/10 10:59	BAB
Lead	<	21 mg/kg Dry	06/16/10 10:59	BAB
Nickel	<	0.27 mg/kg	06/16/10 10:59	BAB
Nickel	<	9.8 mg/kg Dry	06/16/10 10:59	BAB
Selenium	<	0.5 mg/kg	06/16/10 10:59	BAB



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Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Mr. Fred Stafford

Date Received : 06/11/10 09:00
Report Date 06/24/10
Customer # : 255447
P.O. Number : FTL126097
Facility :

Sample No: 10062412-1	Collect Date 06/06/10 07:30
Client ID : SLUDGE	Site : COMPOSITE
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst
SW-846 8010B R2.0				
Selenium	<	18 mg/kg Dry	06/16/10 10:59	BAB
Silver		0.27 mg/kg	06/16/10 10:59	BAB
Silver		9.6 mg/kg Dry	08/16/10 10:59	BAB
Thallium	<	0.3 mg/kg	08/16/10 10:59	BAB
Thallium	<	11 mg/kg Dry	08/16/10 10:59	BAB
Zinc		19 mg/kg	06/16/10 10:59	BAB
Zinc		680 mg/kg Dry	06/16/10 10:59	BAB
SW-846 8020				
Mercury		0.059 mg/kg	06/16/10 18:18	JMW
Mercury		2.1 mg/kg Dry	06/16/10 18:18	JMW
SW-846 9086				
Phenolics		0.13 mg/kg	06/21/10 10:44	lgjfa
Phenolics		4.8 mg/kg Dry	08/21/10 10:44	lgjfa

PIA
PIA

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PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by the Federal or State Government or their agencies is not implied.

PIA	PDC Laboratories - Peoria, IL NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230 State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17653 Drinking Water Certifications: Indiana (C-IL-040); Kansas (E-10338); Missouri (00870); Wisconsin (998294430) Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430) Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin(998294430) UST Certification: Iowa (240)
SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100263.

Certified by: Elaine Kaufman
Elaine Kaufman, Project Manager

PDC Laboratories

DATA QUALIFIERS APPLICABLE TO THE "STANDARD QC" PROGRAM

- A** The presence of this analyte was confirmed using a second column but there was a disparity (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The lower of the two results was reported.
- B** _____ present in the method blank at _____.
- C** The batch control sample failed to meet the required acceptance criteria.
- D** Result obtained through analysis of a sample dilution.
- E** Concentration exceeds the instrument calibration range.
- F** Internal standard area failed to meet the required acceptance criteria in repeat instrumental analyses. Results should be interpreted as estimated concentrations.
- G** The Method of Standard Additions (MSA) was used to quantify the concentration.
- H** Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
- J** Estimated value; value between the MDL and the RDL.
- M** Analyte failed to meet the required acceptance criteria for duplicate analysis.
- P** Chemical preservation discrepancy noted at the time of analysis.
- Q** Analyte failed to meet the required acceptance criteria for spike recovery in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) due to apparent matrix effects.
- R** Analyte failed to meet the required acceptance criteria for relative percent difference (RPD) between the Matrix Spike and Matrix Spike Duplicate (MS/MSD).
- S** Surrogate compound diluted below a reliable quantitation level.
- T** Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) and re-analyzed, and the surrogate recovery was outside of the required acceptance criteria on the second analysis, also. Results should be interpreted as estimated concentrations.
- U** Parameter was analyzed for, but not detected above the reporting limit.
- V** Verification standard recovery failed to meet the required acceptance criteria on repeat instrumental analyses.
- W** Surrogate recovery failed to meet the required acceptance criteria in initial analysis. Sample was re-extracted (if applicable) beyond the maximum allowable hold time, and re-analyzed. The surrogate recovery was within the required acceptance criteria on this second analysis.
- NA** Not analyzed.
- NR** Not requested.
- X** Miscellaneous; see comments.

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WATER PROTECTION PROGRAM

ENCLOSURE E

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
 - 1.1. Data Summation
 - 1.2. Conclusion
2. Method Summation
 - 2.1. Test Conditions and Methods
 - 2.2. Potassium chloride Reference Salt Test
 - 2.2.1. *Pimephales promelas* data
 - 2.2.2. *Ceriodaphnia dubia* data
 - 2.3. Literature Cited
3. Raw Data Bench Sheets
 - 3.1. Initial observations (page 1)
 - 3.2. Zero hour Observations (page 1)
 - 3.3. Twenty-four (24) hour Observations (page 1)
 - 3.4. Forty-eight (48) hour Observations (page 1)
 - 3.5. Survival Data Table (page 2)
 - 3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimophales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival In the Effluent at 48 Hours	100%	100%
Survival In the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival In the Upstream Control (UC) at 48 Hours	N/A	N/A
Statistical Results Comparing the Survival Data of the Effluent with the Control (arc sine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.
Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____

Sara C. Shields, Chemist



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	<i>Ceriodaphnia dubia:</i>	<i>Pimephales promelas:</i>
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	16 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc, located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates Inc.
PO Box 439

Fort Leonard Wood, MO 65473-0439
Attn : Fred Stafford

Date Received : 10/07/10 12:28
Report Date 10/08/10
Customer # : 255447
P.O. Number : FTL127536
Facility :

Sample No: 10101819-1	Collect Date 09/21/10 13:00
Client ID : WET TESTING	Site : OUTFALL 001
	Locator :

Parameter	Qualifier	Result	Analysis Date	Analyst	Lab
SUBCONTRACTED					
WET Test 48 Hr 1 Dil/4 Reqs				SUBCON	PIA

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PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by the Federal or State Government or their agencies is not implied.

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SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100253.

Certified by: Elaine Kaufmann
Elaine Kaufmann, Project Manager

RECEIVED

WATER PROTECTION PROGRAM

ENCLOSURE F



PDC Laboratories, Inc.

2231 W. Altorfer Drive - Peoria, IL 61615
(309) 692-9688 - (800) 752-6651 - FAX (309) 692-9689



Laboratory Results

LB & B Associates Inc.
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SUBCONTRACTED					PIA
WET Test 48 Hr 1 Dil/4 Reps					SUBCON

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SPMO	PDC Laboratories - Springfield, MO EPA DMR-QA Program
STL	PDC Laboratories - St. Louis, MO NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100253.

Certified by : Elaine Kaufmann
Elaine Kaufmann, Project Manager

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
 - 1.1. Data Summation
 - 1.2. Conclusion
2. Method Summation
 - 2.1. Test Conditions and Methods
 - 2.2. Potassium chloride Reference Salt Test
 - 2.2.1. *Pimephales promelas* data
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REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212118
September 22, 2010 through September 24, 2010.

1. REPORT SUMMATION:

1.1. Single Dilution Data Summation

	<i>Pimephales promelas</i> Acute Toxicity Test	<i>Ceriodaphnia dubia</i> Acute Toxicity Test
Survival in the Effluent at 48 Hours	100%	100%
Survival in the Reconstituted Control (RC) at 48 Hours	100%	100%
Survival in the Upstream Control (UC) at 48 Hours	N/A	N/A
Statistical Results Comparing the Survival Data of the Effluent with the Control (arcsine square root transformation)	No Significant Difference at alpha = 0.05 PASS	No Significant Difference at alpha = 0.05 PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion: The mortality observed with both species was determined not to be significantly different than that observed in the control sample.

Based on these results the outfall passed the whole effluent toxicity test with both indicator species.

Approved by _____

Sara C. Shields, Chemist



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

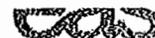
2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	<i>Carlodaphnia dubia:</i>	<i>Pimephales promelas:</i>
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	16 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	4
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Carlodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.



REPORT OF ACUTE TOXICITY TESTING
Fort Leonard Wood Wastewater Treatment Plant
OUTFALL 001 (24 hr composite) AEC = 100%
MO-0029742
EAS LOG# 1212116
September 22, 2010 through September 24, 2010

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on September 2, 2010 using KCL Lot #41713. Following are the results:

2.2.1. *P. promelas* - 48 hr. Acute Test - $LC_{50} = 1.134$ g/l 95%CI (0.856-1.411 g/l)

EAS %CV = 12.2%

National Warning Limits (75th percentile) = 19%CV

National Control Limits (90th percentile) = 33%CV

2.2.2. *C. dubia* - 48 hr. Acute Test - $LC_{50} = 0.459$ g/l 95%CI (0.260-0.657 g/l)

EAS %CV = 21.6%

National Warning Limits (75th percentile) = 29%CV

National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 6th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*, June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027

Fifth Edition October 2002

CLIENT NAME: Fort Leonard Wood Wastewater Treatment Plant, Outfall 001, 24 hr composite

NPDES NUMBER: MO-0029742

TYPE OF METHOD: Single Station, 48 hrs, PP & CD, AEC=100%

DATE & TIME OF COLLECTION: 09/22/10 1300 hrs by Fred Stafford

DATE & TIME OF SUBMISSION: 09/22/10 0855 hrs by Fedler

Upstream Not Available

LOG NUMBER / ID NUMBER	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
PH - SU	09/22/10	0915 hrs	SCS	SB114 (8-8-9-2)	8.89	1212116		3098
	09/22/10	0915 hrs	SCS	EAS 106				7.53
TEMPERATURE °C RECEIVED	09/22/10	0915 hrs	SCS	ERA P176-506(514-570)	559			3
	09/22/10	0915 hrs	SCS	ERA P176-507(107-134)	120			412
SPECIFIC CONDUCTANCE umhos	09/22/10	0915 hrs	SCS	tap water	+			200
	09/22/10	0915 hrs	SCS	cal@840				<0.04
HARDNESS - ppm	09/22/10	0915 hrs	SCS	ERA P180-506(49-8-58-8)	53.8			6.5
	09/22/10	1300 hrs	SCS	ERA P176-506(514-570)	559			83.8
DISSOLVED OXYGEN - ppm	09/22/10	1300 hrs	JPC	EAS #1961 (8-12)	10.4			3.82
	09/22/10	1500 hrs	JPC					
TOTAL DISSOLVED SOLIDS - ppm								
0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	INT RC
PH - SU	09/22/10	1100 hrs	SCS	SB114 (8-8-9-2)	8.89	8.17		100%
	09/22/10	1100 hrs	SCS	EAS 106		25		7.72
TEMPERATURE °C	09/22/10	1100 hrs	SCS	ERA P176-506(514-570)	559	256		25
	09/22/10	1100 hrs	SCS	cal@840		7.5		410
SPECIFIC CONDUCTANCE umhos								
DISSOLVED OXYGEN - ppm								
24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	INT RC
PH - SU	09/23/10	1100 hrs	SCS	SB114 (8-8-9-2)	9.01	7.32		100%
	09/23/10	1100 hrs	SCS	EAS 106		25		7.56
TEMPERATURE °C	09/23/10	1100 hrs	SCS	ERA P176-506(514-570)	562	260		25
	09/23/10	1100 hrs	SCS	cal@840		6.8		411
SPECIFIC CONDUCTANCE umhos								
DISSOLVED OXYGEN - ppm								
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	INT RC
PH - SU	09/24/10	1100 hrs	SCS	SB114 (8-8-9-2)	9.03	8.25		100%
	09/24/10	1100 hrs	SCS	EAS 106		25		8.10
TEMPERATURE °C	09/24/10	1100 hrs	SCS	ERA P176-506(514-570)	561	274		25
	09/24/10	1100 hrs	SCS	cal@840		6.5		423
SPECIFIC CONDUCTANCE umhos								
DISSOLVED OXYGEN - ppm								
FINAL AMMONIA - ppm								

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	INT RC
PH - SU	09/23/10	1100 hrs	SCS	SB114 (8-8-9-2)	9.01	7.71		100%
	09/23/10	1100 hrs	SCS	EAS 106		25		7.84
TEMPERATURE °C	09/23/10	1100 hrs	SCS	ERA P176-506(514-570)	562	266		25
	09/23/10	1100 hrs	SCS	cal@840		7.5		413
SPECIFIC CONDUCTANCE umhos								
DISSOLVED OXYGEN - ppm								
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC <td>UC</td> <td>INT RC</td>	UC	INT RC
PH - SU	09/24/10	1100 hrs	SCS	SB114 (8-8-9-2)	9.03	8.51		100%
	09/24/10	1100 hrs	SCS	EAS 106		25		8.32
TEMPERATURE °C	09/24/10	1100 hrs	SCS	ERA P176-506(514-570)	561	273		25
	09/24/10	1100 hrs	SCS	cal@840		7.2		417
SPECIFIC CONDUCTANCE umhos								
DISSOLVED OXYGEN - ppm								
FINAL AMMONIA - ppm								

11/10/10

2-1-10-10

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Fort Leonard Wood Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 1212116

Date Test Began: September 22, 2010 Time Test Began: 1100 hrs Analyst 1: DFW
 Date Test Finished: September 24, 2010 Time Test Finished: 1100 hrs Analyst 2: KJR
 Analyst 3: SCS

P. promelas (PP)

AGE: 7 days

HATCH NUMBER: 8400 c-k

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-PP	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
24 HR-PP	10,10,10,10		10,10,10,10					
48 HR-PP	10,10,10,10		10,10,10,10					

Ceriodaphnia dubia (CD)

AGE: <24 hours

HATCH NUMBER: 2229 c-k

PERIOD	RC	UC	100%	50%	25%	12.50%	6.25%	X% AEC
0 HR-CD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
24 HR-CD	5,5,5,5		5,5,5,5					
48 HR-CD	5,5,5,5		5,5,5,5					

Approved by: *[Signature]*

Date: 09/28/2010

