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-0128241
Owner:	Schreiber Foods, Inc.
Address:	400 N. Washington Street, Green Bay, WI 54302
Continuing Authority:	Same as Above
Address:	Same as Above
Facility Name:	Schreiber Foods, Inc.
Facility Address:	49 North Eisenhower, Monett, MO 65708
Legal Description:	See Pages 2-8
UTM (X / Y):	See Pages 2-8
Receiving Stream:	See Pages 2-8
First Classified Stream and ID:	See Pages 2-8
USGS Basin & Sub-watershed No.:	See Pages 2-8

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 Pages 2-8

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

May 1, 2019
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

March 31, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

All Permitted Features – Industrial Sludge – SIC #2022
This is a no-discharge pretreatment facility with two anaerobic digesters and a sludge storage tank. Wastewater is discharged to Monett WWTF (MO-0021440). Sludge is land applied.

Design flow is 27,550 gallons per day (1-in-10 year design flow including net rainfall minus evaporation).
Design average daily flow is 27,400 gallons per day (dry weather flows).
Design sludge production is 1,660 dry tons/year.

Land Application:

Irrigation areas:	1138 acres
Equipment type:	tank truck
Vegetation:	Grass hay, pasture, and row crops
Application rate is based on:	Plant Available Nitrogen (PAN) method

Permitted Feature #001, Site 15, 80 Acres
Legal Description: W ½, SE ¼ Sec. 12, T25N, R28W, Barry County
UTM Coordinates: X=415849, Y=4082999
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207–0703)

Permitted Feature #002, Site 17, 20 Acres
Legal Description: SE ¼, NE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415741, Y=4081824
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207–0703)

Permitted Feature #003, Site 18, 6 Acres
Legal Description: SE ¼, SE ¼, Sec. 12, T25N, R28W, Barry County
UTM Coordinates: : X=416129, Y=4082651
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207–0703)

Permitted Feature #004, No longer in used as a land application site.

Permitted Feature #005, No longer in used as a land application site.

Permitted Feature #006, Site 46, 40 Acres
Legal Description: NW ¼, SW ¼, Sec. 7, T25N, R27W, Barry County
UTM Coordinates: X=416691, Y=4083195
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207–0703)

Permitted Feature #007, Site 49, 60 Acres
Legal Description: SE ¼, NW ¼, Sec. 7, T25N, R27W, Barry County
UTM Coordinates: X=417046, Y=4083453
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207–0703)

Permitted Feature #008, Site 52, 24 Acres
Legal Description: NW ¼, NW ¼, Sec. 8, T25N, R27W, Barry County
UTM Coordinates: X=418270, Y=4084042
Receiving Stream: Tributary to Clear Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0704)

Permitted Feature #009, No longer in used as a land application site.

Permitted Feature #010, No longer in used as a land application site.

Permitted Feature #011, No longer in used as a land application site.

Permitted Feature #012, No longer in used as a land application site.

Permitted Feature #013, Site 84, 40 Acres
Legal Description: NW ¼, NE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415830, Y=4082377
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #014, No longer in used as a land application site.

Permitted Feature #015, Site 89, 55 Acres
Legal Description: NW ¼, NW ¼, Sec. 7, T25N, R27W, Barry County
UTM Coordinates: X=416656, Y=4083833
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #016, Site 96, 14 Acres
Legal Description: NW ¼, SW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416724, Y=4081638
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #017, Site 97, 12 Acres
Legal Description: NW ¼, SW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416488,Y=4081606
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #018, Site 98, 7 Acres
Legal Description: SE ¼, SE ¼, Sec. 12, T25N, R28W, Barry County
UTM Coordinates: X=416380, Y=4082683
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #019, Site 104, 7 Acres
Legal Description: SE ¼, NE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=416275, Y=4081818
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #020, Site 107, 24 Acres
Legal Description: SW ¼, NE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415887, Y=4081970
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #021, Site 112, 20 Acres
Legal Description: NE ¼, SE ¼, Sec. 12, T25N, R28W, Barry County
UTM Coordinates: X=416228, Y=4083011
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #022, No longer in used as a land application site.

Permitted Feature #023, Site 117, 11 Acres
Legal Description: SE ¼, SE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=416127, Y=4081144
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #024, Site 118, 14 Acres
Legal Description: NW ¼, SE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415896, Y=4081726
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #025, Site 119, 15 Acres
Legal Description: SE ¼, SE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=416154, Y=4082078
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #026, Site 120, 32 Acres
Legal Description: SE ¼, NW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416904, Y=4081864
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #027, Site 121, 30 Acres
Legal Description: SW ¼, SW ¼, Sec. 7, T25N, R27W, Barry County
UTM Coordinates: X=416799, Y=4082740
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #028, Site 123, 32 Acres
Legal Description: NE ¼, SW ¼, Sec. 18, T25N, R27W, Barry County
UTM (Coordinates: X=417012, Y= 4081675
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #029, No longer in used as a land application site.

Permitted Feature #030, Site 126, 40 Acres
Legal Description: NE ¼, NE ¼, NE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=416127, Y= 4082383
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #031, Site 129, 20 Acres
Legal Description: NW ¼, NE ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=417487, Y=4081450
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #032, Site 135, 28 Acres
Legal Description: NE ¼, SE ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415456, Y=4081551
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #033, Site 138, 14 Acres
Legal Description: SE ¼, SE ¼, Sec. 12, T25N, R28W, Barry County
UTM Coordinates: X=416219, Y=4082857
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #034, Site 151, 10 Acres
Legal Description: SW ¼, NW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416572 , Y=4082080
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #035, No longer in used as a land application site.

Permitted Feature #36, Site 163, 10 Acres
Legal Description: SW ¼, NW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416565, Y=4081861
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #037, Site 178, 20 Acres
Legal Description: SW ¼, NW ¼, Sec. 5, T25N, R27W, Barry County
UTM Coordinates: X=418428, Y=4084815
Receiving Stream: Tributary to Clear Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0704)

Permitted Feature #038, No longer in used as a land application site.

Permitted Feature #039, No longer in used as a land application site.

Permitted Feature #040, No longer in used as a land application site.

Permitted Feature #041, Site 188, 75 Acres
Legal Description: N ½, NW ¼, Sec. 18, T25N, R27W, Barry County
UTM Coordinates: X=416659, Y=4082357
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #042, No longer in used as a land application site.

Permitted Feature #043, No longer in used as a land application site.

Permitted Feature #044, Site 196, 20 Acres
Legal Description: SE ¼, SW ¼, Sec. 5, T25N, R27W, Barry County
UTM Coordinates: X=418852, Y=4084317
Receiving Stream: Tributary to Clear Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0704)

Permitted Feature #045 - Main Permitted Feature. Pretreatment facility with two aerobic digesters and sludge storage tank.
Legal Description: SW ¼, SE ¼, Sec. 31, T26N, R27W, Barry County
UTM Coordinates: X=416758, Y=4086056
Receiving Stream: Tributary to Clear Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0704)

East and West Digester
Dimensions: (Length x Width) Surface Area Depth from Bottom
Freeboard: (top berm to spillway): 2 feet depth
Maximum operating level: 9 feet depth
Minimum operating level: 2 feet depth
Storage volume (minimum to maximum water levels) 212,674 gallons
Total Volume 231,000 gallons
Storage Capacity: 8.25 days

Holding Tank 26' x 20'
Freeboard: (top berm to spillway): 3 feet depth
Storage volume (minimum to maximum water levels) 66,000 gallons
Total Volume 66,000 gallons
Storage Capacity: 2.3 days

Permitted Feature #046, No longer in used as a land application site.

Permitted Feature #047, Site 198, 40 Acres
Legal Description: NW ¼, SW ¼, Sec. 7, T25N, R27W, Barry County
UTM Coordinates: X=416679, Y=4083570
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #048, No longer in used as a land application site.

Permitted Feature #049, Site 200, 118 Acres
Legal Description: N ½, N ½, Sec. 8, T25N, R27W, Barry County
UTM Coordinates: X=419226, Y=4083885
Receiving Stream: Tributary to Clear Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0704)

Permitted Feature #050, No longer in used as a land application site.

Permitted Feature #051, No longer in used as a land application site.

Permitted Feature #052, No longer in used as a land application site.

Permitted Feature #053, No longer in used as a land application site.

Permitted Feature #054, No longer in used as a land application site.

Permitted Feature #55, No longer in used as a land application site.

Permitted Feature #56, Site 207, 120 Acres
Legal Description: NW ¼, Sec. 13, T25N, R28W, Barry County
UTM Coordinates: X=415041, Y=4082101
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

Permitted Feature #57, Site 207, 40 Acres
Legal Description: NE ¼, NE ¼, Sec. 12, T25N, R28W, Barry County
UTM Coordinates: X=416316, Y=4083991
Receiving Stream: Tributary to Hudson Creek, Losing
First Classified Stream and ID: 100K Extent-Remaining Streams (C) (3960)
USGS Basin & Sub-watershed No.: (11070207-0703)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMITTED FEATURE #045	**TABLE A-1 STORAGE BASIN LIMITATIONS AND MONITORING REQUIREMENTS**			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: SB					
STORAGE TANK					
Freeboard Φ	Feet	*	-	once/weekly	measured
Precipitation	Inches	*	-	daily	measured
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JUNE 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
LIMIT SET: LW					
INDUSTRIAL SLUDGE €, ◊					
pH	SU	*		once/quarter	grab
Nitrate plus Nitrite as N	mg/L	*		once/quarter	grab
Ammonia Nitrogen as N	mg/L	*		once/quarter	grab
Nitrogen, Kjeldahl Total	mg/L	*		once/quarter	grab
Phosphorous, Total	mg/L	*		once/quarter	grab
Total Solids	%	*		once/quarter	grab
Boron, Total	mg/L	*		once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURES #001- #008, #013, #015-#028, #030-#034, #036-#037, #041, #044, #047, #049, #056- #057	**TABLE A-2** **LAND APPLICATION FIELD LIMITATIONS AND MONITORING REQUIREMENTS**				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: LA					
INDUSTRIAL SLUDGE APPLICATION Ϫ					
Application Area	Acres	*		once/day	measured
Application Rate	Inches/Acre	*		once/day	measured
Volume Irrigated	Gallons	*		once/day	measured
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY FOR PERMITTED FEATURES WHEN LAND APPLICATION OCCURS, REPORTS ARE DUE BY THE 28TH OF THE FOLLOWING MONTH. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE MOUNTS.					
LIMIT SET: AR					
SOIL MONITORING ▼					
pH (salt) Ξ	SU	*		once/permit cycle	grab
Nitrate plus Nitrite as N	mg/kg	*		once/permit cycle	grab
Nitrogen, Total	mg/kg	*		once/permit cycle	grab
Phosphorus, Bray P1 method	mg/kg	*		once/permit cycle	grab
Chlorides	mg/kg	*		once/permit cycle	grab
Total Sodium	mg/kg	*		once/permit cycle	grab
Exchangeable Sodium	%	*		once/permit cycle	grab
MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE WITH THE ANNUAL REPORT; THE REPORT IS DUE JANUARY 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

* Monitoring requirement only
Φ Storage Basin freeboard shall be reported as Storage Basin water level in feet below the overflow level.
Є Sludge that is land applied shall be sampled at the storage basin or application equipment prior to land application.
Ϫ Reporting is only required for permitted features where land application occurred during the month. If no land application occurs at a permitted feature, no reporting is required. These are unscheduled parameters.
▼ See Section D. Land Application System Condition #2(k) Soil Monitoring for additional guidance.
Ξ Soil pH shall be maintained in a range that is optimal for plant growth.
◊ See table below for quarterly sampling

MINIMUM QUARTERLY SAMPLING REQUIREMENTS			
QUARTER	**MONTHS**	**EFFLUENT PARAMETERS**	**REPORT IS DUE**
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. This permit does not authorize the discharge of wastewater or sludge, except during emergency discharge conditions. Other materials, chemicals and substances not considered wastewater or sludge being treated and disposed of by the land application system are not authorized to be discharged regardless of weather conditions.

2. Emergency and Unauthorized Discharges.
   (a) Monitoring. Any emergency or unauthorized discharge shall be monitored for the parameters in the table below at least once during the discharge event. Additional monitoring may be required by the Department on a case-by-case basis. The facility shall submit test results, along with the number of days the storage basin(s) has discharged during the month, via the Electronic Discharge Monitoring Report (eDMR) Submission System by the 28th day of the month after the discharge ceases. Permittee shall monitor for the following constituents:

Constituent	Units
Effluent Flow	MGD
Biochemical Oxygen Demand$_5$	mg/L
Total Suspended Solids	mg/L
Ammonia as N	mg/L
pH – Units	SU
Oil & Grease	mg/L
E. coli*	#/100mL

* Sampling for E. coli is required year round.

   (b) Emergency Discharges. An emergency discharge from wastewater storage structures may only occur if rainfall exceeds the 10-year 365-day rainfall event (chronic) or the 25-year 24-hour rainfall event (catastrophic). The facility shall make all reasonable attempts to return the water level in the lagoon to below the maximum operating level. Design Storm Maps and Tables can be found at http://ag3.agebb.missouri.edu/design_storm/.

   (c) Unauthorized Discharges. Discharge for any other reason than what is stated in 1(b) of this Special Condition shall constitute a permit violation and shall be reported in accordance with Standard Conditions Part 1 Section B.2. Unauthorized discharges are to be reported to the Southwest Regional Office during normal business hours or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours.

3. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Sludge/Biosolids Annual Reports;
         (i) In addition to the annual Sludge/Biosolids report submitted to the department, the permittee must submit Sludge/Biosolids Annual Reports electronically using EPA's NPDES Electronic Reporting Tool ("NeT") (https://cdx.epa.gov/).
      (3) Pretreatment Program Reports;
      (4) Any additional report required by the permit excluding bypass reporting.

      After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
      (5) Bypass reporting, See Special Condition #XX for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.

C. SPECIAL CONDITIONS (CONTINUED)

(e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

4. 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 report the "Non-Detect" 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).

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

6. Hazardous waste regulated under the Missouri Hazardous Waste Law and regulations shall not be land applied under this permit.

7. Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained with the permit and made available to the department upon request.

8. Permittee shall adhere to the following minimum BMPs:
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
   (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
   (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
   (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
   (e) 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, to comply with effluent limits.
   (f) Prevent pesticide spills or discharges from any point source by complying with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label.

9. Changes in Discharges of Toxic Pollutant
   In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
   (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
      (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
      (4) One milligram per liter (1 mg/L) for antimony;
      (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
      (6) The notification level established by the Department in accordance with 40 CFR 122.44(f).

C. SPECIAL CONDITIONS (CONTINUED)

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
(1) Five hundred micrograms per liter (500 µg/l);
(2) One milligram per liter (1 mg/l) for antimony;
(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
(4) The level established by the Director in accordance with §122.44(f).

10. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to 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 contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

11. All permitted features, including emergency outfalls, must be clearly marked in the field. The permitted features and land application fields shall also be marked on the aerial or topographic site map included with the Operation and Maintenance manual.

12. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems, including key operating procedures, an aerial or topographic site map with the permitted features, land application fields, and irrigation buffer zones marked, and a brief summary of the operation of the facility. The O & M manual shall be made available to the operator and available to the department upon request. The O&M Manual shall be reviewed and updated at least every five years.

13. An all-weather access road shall be provided to the treatment facility.

D. LAND APPLICATION CONDITIONS

1. Land application equipment shall be visually inspected daily during land application to check for equipment malfunctions and leaks. The application system shall be operated so as to provide uniform distribution of wastes over the entire land application site and shall be capable of applying the annual design flow during an application period of less than 100 days or 800 hours per year. Land application equipment shall be calibrated at least once annually.

2. Land Application Fields.
(a) This special condition does not apply to fertilizer products that are exempted under the Missouri Clean Water Law and regulations, 10 CSR 20-6.015(3)(B)8.
(b) If land application sites listed in this permit are also included as land application sites in another permit, the wastewater and sludge applications from other sources shall be included in the application rates in the facility description. Records of the amount and application rate of wastewater or sludge from other sources must be kept.
(c) Public Access Restrictions. This permit does not authorize application of wastewater to public use areas.
(d) No land application shall occur when the soil is frozen, snow covered, or saturated. There shall be no application during a precipitation event or if a precipitation event that is likely to create runoff is forecasted to occur within 24 hours of a planned application.
(e) Land application shall occur only during daylight hours.
(f) Land application fields shall be checked daily during land application for runoff. Sites that utilize spray irrigation shall monitor for the drifting of spray across property lines.
(g) Setback distances from sensitive features. There shall be no land application within:
(1) 300 feet of any well, sinkhole, losing stream, wetland, or cave entrance, water supply impoundment or stream intake;
(2) 150 feet of an occupied residence, public building, or public use area;
(3) 50 feet of gaining perennial or intermittent stream, public or privately owned pond or lake;
(4) 50 feet of property line or public road.
(h) Sludge application slope limitations for application sites are as follows;
(1) Slopes of 6 percent or less there are no limitations.
(2) Slopes of 7 to 12 percent, biosolids when may be applied with no limitation when soil conservation practices are used to meet the minimum erosion levels.
(3) Slopes greater than 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

D. LAND APPLICATION CONDITIONS (CONTINUED)

(i) Sludge should not be applied to fields used to grow food crops for human consumption to be eaten raw, such as leafed vegetables or root crops.
(j) Sludge shall not be applied to within thirty (30) days of grazing or forage harvesting. The recommendations of the State Milk Board shall be followed.
(k) Soil Monitoring.
  (1) Composite soil samples shall be collected every five years from each field listed in this permit where land application has occurred in the last 12 months. No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old.
  (2) Soil sampling shall be in accordance with University of Missouri (MU) Guides G9215, Soil Sampling Pastures or G9217, Soil Sampling Hayfields and Row Crops or other methods approved by the department. The recommendation of one composite sample per 20 acres in G9215 and G9217 is not required by this permit, however, this is a useful method to identify soil fertility fluctuations in large fields due to past management practices, soil type, and variability of crop yields. There shall be at least one composite sample per 80 acres.
  (3) Testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (North Central Regional Research Publication 221 Revised), or Soil Testing in Missouri (MU Extension Guide EC923), or other methods approved by the department.
(l) Sludge land applications shall not exceed agronomic rates to ensure agricultural use of nutrients and prevent contamination of surface and groundwater. The agronomic rate is the amount of sludge applied to a field to meet the fertilizer recommendation.

3. Nitrogen Loading Rate. Land application to fields listed in this permit shall use the following protocols to determine the amount of sludge to be applied.
(a) The fertilizer recommendation shall be based on the following:
  (1) The nutrient recommendation (nitrogen or phosphorus) for each crop. Recommendations can be found in University of Missouri Extension Guide WQ430 Crop/Nutrient Considerations for Biosolids or from publications by other land grant universities in adjoining states,
  (2) Realistic yield goal for each crop. Yield goals should be based on actual crop yield records from multiple years for each field. Good judgment should be used to counteract unusually high or low yields. If a field's yield history is not available the USDA county wide average or other approved source may be used, and
  (3) The most recent soil test.
(b) Sludge applications shall be conducted according to one the following nutrient based management practices.
  (1) Plant Available Nitrogen (PAN) based application. This method can be used when soil test phosphorus (P) levels are 120 pounds or less per acre using Bray P-1 test method, or if the field has been assessed by Missouri Phosphorus Index (P-index) with a low or medium rating. The amount of sludge to be applied shall be adjusted annually based on the PAN calculation using the current sludge nutrient analysis and the following:
    (i) For non-legume crops, the nitrogen fertilizer recommendation shall be adjusted to account for nitrogen credits from a preceding legume crop and residual nitrogen from the previous year's application. Nitrogen removal rates can be found in WQ430.
    (ii) For legume crops, the nitrogen removal capacity of the legume crops should be based on the estimated nitrogen content of the harvested crop as defined in WQ430 and a realistic yield goal. The estimated nitrogen content of the crop must be adjusted using nitrogen credits for residual nitrogen fertilizer from the previous year's application.

      (i) PAN = [Ammonia Nitrogen x volatilization factor*] + [Organic Nitrogen x 0.2] + [Nitrate Nitrogen]
      (ii) *Volatilization factor is 0.7 for surface application and 1 for subsurface application.

  (2) Phosphorus based application. This method must be used when soil test phosphorus (P) levels are above 120 pounds per acre using Bray P-1 test method, or if the P-index rating is high. The amount of sludge to be applied shall be adjusted annually based the phosphorus content of the current sludge nutrient analysis and may be done applied according to one of the following methods;
    (i) The annual amount of phosphorus applied shall not exceed the planned crop's phosphorus removal estimate from WQ430, or from publications by other land grant universities in adjoining states or,
    (ii) Multi-year phosphorus applications. Sludge applications can exceed the annual planned phosphate removal estimate for the crop when a multi-year phosphorus application is utilized. The multi-year application must comply with the following conditions:
      a. The amount of sludge applied shall not exceed the nitrogen fertilizer recommendation or the estimated nitrogen (i) removal capacity of the planned crop during the year of the application;
      b. The amount of phosphorus banked shall not exceed four years of the estimated crop removal rate for the planned crop rotation;
      c The actual application rate shall not exceed the multi-year application rate; and

D. LAND APPLICATION CONDITIONS (CONTINUED)

d No additional sludge applications shall occur until the applied phosphorus has been removed from the field by crop removal or harvest.

(3) No land application can occur if the P-index rating for a field is very high.

4. Record Keeping
   (a) A daily land application log shall be prepared and kept on file at the permittee office location for each application site showing dates of application, weather condition (sunny, overcast, raining, below freezing etc…), soil moisture condition, application method.
   (b) A record of monthly visual storage structure inspections shall be maintained.
   (c) A record of land application equipment inspections and calibrations as well as land application field inspections shall be maintained.
   (d) A record of all PAN calculations.
   (e) All records and monitoring results shall be maintained for at least five years and shall be made available to the department upon request.

5. Annual Report on Land Application. An annual report is required in addition to other reporting requirements under Section A of this permit. The annual report shall be submitted by January 28 of each year. The report shall include, but is not limited to, a summary of the following:
   (a) Record of maintenance and repairs during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year.
   (b) The number of days the storage structure discharged during the year, the discharge flow, reason the discharge occurred and effluent analysis performed.
   (c) A summary for each field used for land application showing number of acres used number of days application occurred, crop grown and yield, and total amount of wastewater and/or sludge applied (gal. or tons/acre).
   (d) For fields where the total nitrogen application exceeds 150 lbs./acre, submit PAN calculations to document that the applied nitrogen will be utilized.
   (e) Narrative summary of any problems or deficiencies identified, corrective action taken and improvements planned.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL,
OF
MO-0128241
SCHREIBER FOODS

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 for less.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)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 (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

This Factsheet is for Industrial Land Application activity.

Part I FACILITY INFORMATION

Facility Type: Industrial
Facility SIC Code(s): 2022
Application Date: 06/29/2017
Expiration Date: 12/21/2017
Last Inspection: 06/12/2013 and was in compliance

FACILITY DESCRIPTION:
This is a no-discharge pretreatment facility with two anaerobic digesters and a sludge storage tank. Wastewater is discharged to Monett WWTF (MO-0021440). Sludge is land applied. Stormwater is covered by permit #MOR103314.

PERMITTED FEATURE(S) TABLE:

PERMITTED FEATURE	TREATMENT LEVEL	EFFLUENT TYPE
#045	Pre-treatment	Industrial wastewater and sludge
#001-#003, #006-#008, #013, #015-#021, #023-#028, #030-#034, #036-#037, #044, #047, #0490-#050, #056-#057	Land application	Industrial sludge

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last five years. The conditions of the facility at the time of inspection were found to be satisfactory.

MAJOR WATER USER:
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2337.htm
✓ Not applicable; this permittee cannot withdraw water from the state in excess of 70 gpm/0.1 MGD.

Part II RECEIVING STREAM INFORMATION

RECEIVING WATER BODY'S WATER QUALITY:
The receiving stream has no concurrent water quality data available.

303(D) LIST:
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. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

✓ Not applicable; this facility does not discharge to an impaired segment of a 303(d) listed stream.

TOTAL MAXIMUM DAILY LOAD (TMDL):
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; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/

✓ Applicable; Clear Creek is associated with the 1999 EPA Approved TMDL for Ammonia, BOD, and Suspended Solids (NFR - nonfilterable residue).

✓ This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Clear Creek.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven 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.

Missouri or Mississippi River: ☐
Lake or Reservoir: ☐
Losing: ☒
Metropolitan No-Discharge: ☐
Special Stream: ☐
Subsurface Water: ☐
All Other Waters: ☒

RECEIVING STREAMS TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	DISTANCE TO SEGMENT (MILES)	12-DIGIT HUC
#001-#003, #006-#007, #013,#015-#021, #023-#028, #030-#034, #036-#037, #047, #056-#057	Tributary to Hudson Creek	n/a	n/a	GEN		11070207-0703
	100K Extent-Remaining Streams	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.05 – 0.48	
#008, #044-#045, #049-#050	Tributary to Clear Creek	n/a	n/a	GEN		11070207-0704
	100K Extent-Remaining Streams	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.15 -0.38	

n/a not applicable
WBID Waterbody ID: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip
* 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; CLH = Cool Water Habitat; CDH = Cold 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 MONITORING REQUIREMENTS:
No receiving water monitoring requirements are recommended at this time.

Part III RATIONALE & DERIVATION OF LIMITATIONS & PERMIT CONDITIONS

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.
- ✓ Not Applicable; The facility is a no-discharge system that does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(O)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 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.

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.
- ✓ Not Applicable; No degradation proposed and no further review necessary. This is a no-discharge system and antidegradation does not apply.

BENCHMARKS:
When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water's current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

✓ Not applicable; this facility does not have any stormwater/stormwater-only outfalls.

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.

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

COMPLIANCE AND ENFORCEMENT:

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

✓ Not Applicable; The permittee/facility is not currently under Water Protection Program enforcement action.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The facility does not have an associated ELG.

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-7.015(1)11, and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ This facility is not required to monitor groundwater for the water protection program.

REASONABLE POTENTIAL (RP):

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 causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines 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 [40 CFR Part 122.44(d)(1)(iii)].

✓ Not applicable; an RPA was not conducted for this facility.

DOMESTIC SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, 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 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: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).

✓ Not applicable; this condition is not applicable to the permittee for this facility.

INDUSTRIAL SLUDGE:
Industrial sludge is solids, semi-solids, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

✓ Applicable; Permittee land applies industrial sludge in accordance with Standard Conditions III and a Department approved sludge management plan.

NO-DISCHARGE LAND APPLICATION:
Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015 and all facility operations and maintenance requirements listed in 10 CSR 20-8.020(15). These requirements ensure appropriate operation of the no-discharge land application systems and prevent unauthorized and illicit discharges to waters of the state. Land applications by a contract hauler on fields that the permittee has a spreading agreement on are not required to be in this permit. A spreading agreement does not constitute the field being rented or leased by the permittee as they do not have any control over management of the field.

✓ Applicable; This permit authorizes operation of a no-discharge land application system to treat wastewater or sludge.

LAND APPLICATION RATES:
In accordance with 10 CSR 20-8.020(15), wastewater and sludge must be land applied at either hydraulic loading rates, nitrogen loading rates, or trace elements loading rates.

Conversion Factors for laboratory testing results: [mg/L or mg/kg or ppm] x [conversion factor] = [pounds per Unit Volume]

Unit Volume	Conversion Factors
lbs./acre inch	0.226
lbs./1,000 gallons	0.0083
lbs./100 cubic feet	0.0062
lbs/ton (wet weight)	0.002

✓ Applicable; **Nitrogen Loading Rates –** this considers overall nutrient management of the land application system. The fertilizer recommendation is the amount of nutrients required for a crop to produce the expected yield. The agronomic rate is the amount of sludge applied to a field to supply the amount of nutrients to meet the fertilizer recommendation. For more information on nutrient management, PAN calculations, and land application best management practices, consult the following University of Missouri Extension Guides:

WQ421 State and EPA Regulations for Domestic Wastewater Sludge and Biosolids
WQ422 Land Application of Septage
WQ423 Monitoring Requirements for Biosolids Land Application
WQ424 Biosolids Standards for Pathogens and Vectors
WQ425 Biosolids Standards for Metals and Other Trace Substances
WQ426 Best Management Practices for Biosolids Land Application
WQ427 Benefits and Risks of Biosolids
WQ428 Activity and Movement of Plant Nutrients and Other Trace Substances
WQ429 Interpretation of Laboratory Analysis of Biosolids Samples
WQ430 Crop/Nutrient Considerations of Biosolids
WQ431 Collection and Storage of Biosolids
WQ432 Equipment for Off-site Application of Biosolids
WQ433 Equipment for On-site Land Application of Biosolids
WQ434 Operating Considerations for Biosolids Equipment
WQ449 Biosolids Glossary of Terms

Nitrogen based applications are when the amount of sludge applied is based on the nitrogen fertilizer recommendation for the planned crop. Phosphorous based applications are when the amount of sludge applied is based on the phosphorous fertilizer recommendation for the planned crop.

Fertilizer recommendations can also be obtained by using one of the following tools:

The University of Missouri Extension online fertilizer recommendation calculator at http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx.

The Missouri P-Index is a tool to evaluate the potential for phosphorus loss from land application fields. It uses information such as soil test phosphorus result, cropping practices, RUSLE, land cover, and distance to water to calculate a rating for the risk phosphorus transport from the field. The P-index is available at http://nmplanner.missouri.edu/tools/pindex.asp0.

The Missouri Soil Testing Association provides a list of accredited labs at http://soilplantlab.missouri.edu/soil/msta.aspx.

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(10), 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 October 25, 2012 the department issued a 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 an affordability analysis.

✓ Not applicable; this permit does not contain a SOC.

SPILL REPORTING:

Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the Noncompliance Reporting requirement found in Standard Conditions Part I.

STORMWATER PERMITTING:

A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day. The amount of stormwater discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability increases the flash of the stream.

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used 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 waters of the state from a permitted facility. 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 storm water discharges.

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate

documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: http://dnr.mo.gov/forms/index.html.

✓ Not applicable; at this time, the permittee is not required to develop and implement a SWPPP.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

One of the major strategies of the Clean Water Act (CWA) in making "reasonable further progress toward the national goal of eliminating the discharge of all pollutants" is to require effluent limitations based on the capabilities of the technologies available to control those discharges. Technology-based effluent limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs).

✓ Not applicable; this facility does not discharge process wastewater therefore is not subject to TBEL POC analysis.

VARIANCE:

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

✓ Not applicable; this operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving waters, then the other must be used.

✓ Not applicable; wasteload allocations were not calculated.

WLA MODELING:

Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

Part IV PERMIT LIMITS & MONITORING DETERMINATION

Effluent limitations derived and established for this permit are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. 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.

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is 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.

(A) 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.
- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates putrescent wastewater would be discharged from the facility.
- For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because all outfalls have TSS limitations; however, they are all based on technology for the processes involved; values discharged from all outfalls are typically below WQ limitations, therefore no RP.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- The permit writer considered specific toxic pollutants when writing this permit. The no-discharge effluent limitation prohibits pollutants from being discharged. This effluent limitation is protective of human health, animals, and aquatic life.

(E) There shall be no significant human health hazard from incidental contact with the water.
- It is the permit writer’s opinion that this criterion is the same as (D).

(F) There shall be no acute toxicity to livestock or wildlife watering.
- It is the permit writer’s opinion that this criterion is the same as (D).

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
- For all outfalls, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.
- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.

(H) 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.
- There are no solid waste disposal activities or any operation that has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

PERMITTED FEATURE #045 – Storage Tank
Limitations derived and established in the below Storage Basin 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.

STORAGE BASIN LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
STORAGE BASIN						
FREEBOARD	Feet	*	new	once/month	once/year	measured
PRECIPITATION	Inches	*	new	once/month	once/year	measured
INDUSTRIAL SLUDGE						
pH	SU	*	same	once/quarter	once/quarter	grab
Nitrate plus Nitrite as N	mg/L	*	same	once/quarter	once/quarter	grab
Ammonia Nitrogen as N	mg/L	*	same	once/quarter	once/quarter	grab
Nitrogen, Kjeldahl Total	mg/L	*	same	once/quarter	once/quarter	grab
Phosphorous, Total	mg/L	*	same	once/quarter	once/quarter	grab
Total Solids	%	*	same	once/quarter	once/quarter	grab
Boron, Total	mg/L	*	same	once/quarter	once/quarter	grab

* - Monitoring requirement only

PERMITTED FEATURE #00# – DERIVATION AND DISCUSSION OF LIMITS:

STORAGE TANK:

Freeboard
Monitoring requirement only. In order to determine compliance with 10 CSR 20-8.020(15)(F)2., monitoring of freeboard in the storage basin is required.

Precipitation
Monitoring requirement only. In order to determine compliance with 10 CSR 20-8.020(15)(F)2., monitoring of freeboard in the storage basin is required. Additionally, precipitation monitoring allows the permittee to operate the land application activity to prevent over application during saturated conditions that may result in a discharge.

SLUDGE:

pH
Monitoring requirement only. Monitoring for pH is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

Nitrate plus Nitrite as N
Monitoring requirement only. In accordance with 10 CSR 20-8.020(15)(F)7., if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Nitrogen, Total Kjeldahl
Monitoring requirement only. In accordance with 10 CSR 20-8.020(15)(F)7., if wastewater land applied exceeds 150 lbs/acre/year or total nitrogen, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Ammonia Nitrogen as N
Monitoring requirement only. Monitoring for Ammonia Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

Total Phosphorous as P
Monitoring requirement only. Monitoring for Total Phosphorous as Pis included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

Percent Solids
Monitoring requirement only. Monitoring for Percent Solidsis included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

Total Boron
Monitoring requirement only. Monitoring for total boron is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.]

PERMITTED FEATURES #001-#008, #013, #015-#028, #030-#034, #036-#037, #041, #044, #047, #049, #056- #057– Land Application Fields

Limitations derived and established in the below Land Application Field 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.

STORAGE BASIN LIMITATIONS TABLE

PARAMETERS	UNIT	DAILY MAX	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
WASTEWATER APPLICATION						
APPLICATION AREA	Acres	*	same	once/day	once/year	measured
APPLICATION RATE	Inches/Acre	*	same	once/day	once/year	measured
VOLUME IRRIGATED	Gallons	*	same	once/day	once/year	measured
INDUSTRIAL SLUDGE APPLICATION						
APPLICATION AREA	Acres	*	same	once/quarter	once/year	measured
APPLICATION RATE	Inches/Acre	*	same	once/quarter	once/year	measured
VOLUME IRRIGATED	Gallons	*	same	once/quarter	once/year	measured
SOIL MONITORING						
pH (salt)	SU	*	same	once/permit	once/permit	grab
Nitrate Nitrogen as N	mg/kg	*	same	once/permit	once/permit	grab
Nitrogen, Total	mg/kg	*	same	once/permit	once/permit	grab
Phosphorus, Bray P1 method	mg/kg	*	same	once/permit	once/permit	grab
Chlorides	mg/kg	*	same	once/permit	once/permit	grab
Total Sodium	mg/kg	*	same	once/permit	once/permit	grab
Exchangeable Sodium	%	*	same	once/permit	once/permit	grab

* - Monitoring requirement only

PERMITTED FEATURE #001-#008, #013, #015-#028, #030-#034, #036-#037, #041, #044, #047, #049, #056- #057– DERIVATION AND DISCUSSION OF LIMITS:

SLUDGE APPLICATION:

Application Area
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 and 10 CSR 20-8.020(15), monitoring of application activity is required. Monitoring the area will allow the permittee to ensure compliance with setback distances and are prevents illicit discharges to waterbodies.

Application Rate
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 and 10 CSR 20-8.020(15), monitoring of application activity is required. Monitoring the rate will allow the permittee to ensure appropriate permeability and plant uptake is occurring and will prevent soil saturation that may result in runoff and illicit discharges to waterbodies. This will also prevent sludge buildup that may clog soils, which likewise will cause runoff and illicit discharges of wastewater to waterbodies.

Volume Irrigated
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 and 10 CSR 20-8.020(15), monitoring of application activity is required. Monitoring the volume irrigated will allow the permittee to ensure over application does not occur and that hydraulic loading is maintained within design levels. This will also help prevent runoff and illicit discharges due to soil saturation. This will also prevent sludge buildup that may clog soils, which likewise will cause runoff and illicit discharges of wastewater to waterbodies.

SOIL MONITORING:

pH
Monitoring requirement only. Monitoring for pH is included to determine nutrient loading rates on the land application fields. [10 CSR 20-8.020(15)(F)7.] Soil monitoring will ensure that soils pH is in the optimal range for plant growth and nutrient uptake.

Nitrate Nitrogen as N
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of nitrate nitrogen as N, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., which states if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Ammonia as N
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of total nitrogen, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., if wastewater land applied exceeds 150 lbs/acre/year or total nitrogen, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Phosphorous as P, Bray P1
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of nitrate nitrogen as N, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., which states if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Chlorides
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of nitrate nitrogen as N, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., which states if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Total Sodium
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of nitrate nitrogen as N, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., which states if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Exchangeable Sodium
Monitoring requirement only. Wastewater and sludge can contain variable concentration of nutrients. Soils and plants have limited capacity to uptake the nutrients found in the wastewater and sludge being land applied. Soil monitoring will ensure that soils do not contain excess amounts of nitrate nitrogen as N, thus preventing proper treatment of wastewater and sludge. This will also ensure compliance with 10 CSR 20-8.020(15)(F)7., which states if wastewater land applied exceeds 10 mg/L of nitrate nitrogen as N, then the permittee must utilize nitrogen loading rates and develop a nutrient management plan to plant appropriate crop for nutrient uptake.

Part V SAMPLING & REPORTING REQUIREMENTS

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

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

SAMPLING FREQUENCY JUSTIFICATION:
Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

SAMPLING TYPE JUSTIFICATION:
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, and volatile organic samples

Part VI ADMINISTRATIVE REQUIREMENTS

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

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. http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf. 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 three 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.

✓ This permit will maintain synchronization by expiring the end of the fourth quarter, 2022.

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 from October 5, 2018 to November 5, 2018. No responses received.

DATE OF FACT SHEET: APRIL 8, 2019

COMPLETED BY:

GREG CALDWELL, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION – INDUSTRIAL PERMITS UNIT
(573) 526-1426
greg.caldwell@dnr.mo.gov

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
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.

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.

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.
   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 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

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.

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
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 Actor 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 factor[1]).
    [1] Volatilization 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:

        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x 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 ≥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 ≥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

1. 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 and permit holders that landfill their sludge.

2. 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.
3. 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.
4. 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

1. 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.
2. Reporting period
    a. 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.
    b. 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.
3. Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
4. 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.

Schreiber

RECEIVED
OCT 16 2017
Water Protection Program

October 6, 2017

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

RE: Application for Renewal of Nondomestic Permit MO-0128241
Schreiber Foods Inc. – Monett, MO

To Whom It May Concern:

In early July of this year our facility, Schreiber Foods Inc. (Schreiber), located at of 10 Dairy Street, Monett, Missouri submitted Form A and information required by this form to your office in regard to a land application permit renewal. The enclosed documents are Form C, Form R, along with other required documents required by the Missouri Clean Water Law (Chapter644 R.S. Mo.) and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) for the application for renewal of Nondomestic Permit MO-0128241. Even though Form A and its supplement documents we previous submitted, they are also included with this letter to ensure all required documents are available for review.

As mentioned in the July correspondence, the manufacturing facility is undergoing a large addition and renovation project which will affect the quantity of effluent coming from the production facility to the wastewater treatment plant (WWTP). Because the anticipated completion date is still several months away, exact calculations for increased wastewater effluent from the production facility have not been determined, but it is estimated the effluent will double. The numbers in the renewal application forms for process quantities are for the current production operation. Design capacity at the WWTP is significantly above the wastewater effluent potential of the combined current and expanded production facility.

Under the permit Standard Conditions for NPDES Permits Part 1 Section B, Schreiber must give notice as soon as possible of any planned physical alterations or additions to the permitted facility when certain changes occur. The facility addition is to the production facility which sends wastewater effluent to the WWTP, not the WWTP itself (the WWTP is the permitted facility). However, the increase in effluent to the WWTP will increase the quantity of sludge being land applied and processed wastewater effluent being discharged to the municipal wastewater treatment plant. This increase in capacity does not:

- Significantly change the nature or increase the quantity of pollutants discharged.
- Result in a significant change in the sludge use or disposal practices.
- Result in a new or substantially different discharge or sludge characteristics.

Please direct all inquiries regarding the above information to Jill Erdmann at (920) 455-2241.

Sincerely,

Jill Erdmann
Environmental Engineer
cc: Dan Swearington – Plant Manager, Schreiber Foods

27422

RECEIVED
OCT 16 2017
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED: 10-16-17	FEE SUBMITTED: -0- O.S.

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:
   - ☐ An operating permit for a new or unpermitted facility:
     Please indicate the original Construction Permit # _____
   - ☑ An operating permit renewal:
     Please indicate the permit # MO- 0128241 Expiration Date 12-31-2017
   - ☐ An operating permit modification:
     Please indicate the permit # MO-_____ Modification Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) ☐ YES ☑ NO

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE / FAX	
Schreiber Foods Inc.		(417) 235-6061 / FAX	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
49 North Eisenhower	Monett	MO	65708

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
Schreiber Foods Inc.	jill.erdmann@schreiberfoods.com	(920) 455-2241 / FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
400 North Washington Street	Green Bay	WI	54302

3.1 Request review of draft permit prior to public notice? ■ YES ☐ NO

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
Schreiber Foods Inc.	jill.erdmann@schreiberfoods.com	(920) 455-2241 / FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
400 North Washington Street	Green Bay	WI	54302

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE / FAX	
Mike Dalton	7622-A	(417) 235-9007 / FAX	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
49 Noth Eisenhower	Monett	MO	65708

6. FACILITY CONTACT

NAME	TITLE / E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX
Dan Swearingen	Plant Manager / danny.swearingen@schreiberfoods	(417) 235-6061 / FAX

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 2022 and NAICS _____ 002 – SIC _____ and NAICS _____
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION (Complete all forms that are applicable.)

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)	YES ☑	NO ☐
B.	Is application for storm water discharges only? If yes, complete Form C or 2F.	YES ☐	NO ☑
C.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C or 2F and D.	YES ☐	NO ☑
D.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☑
E.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☑	NO ☐

F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.

F. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

☑ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☐ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

10. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME			
ADDRESS	CITY	STATE	ZIP CODE

11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Dan Swearingen, Plant Manager	(417) 235-6061
SIGNATURE	DATE SIGNED
	6/27/17

MO 780-1479 (09-16)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

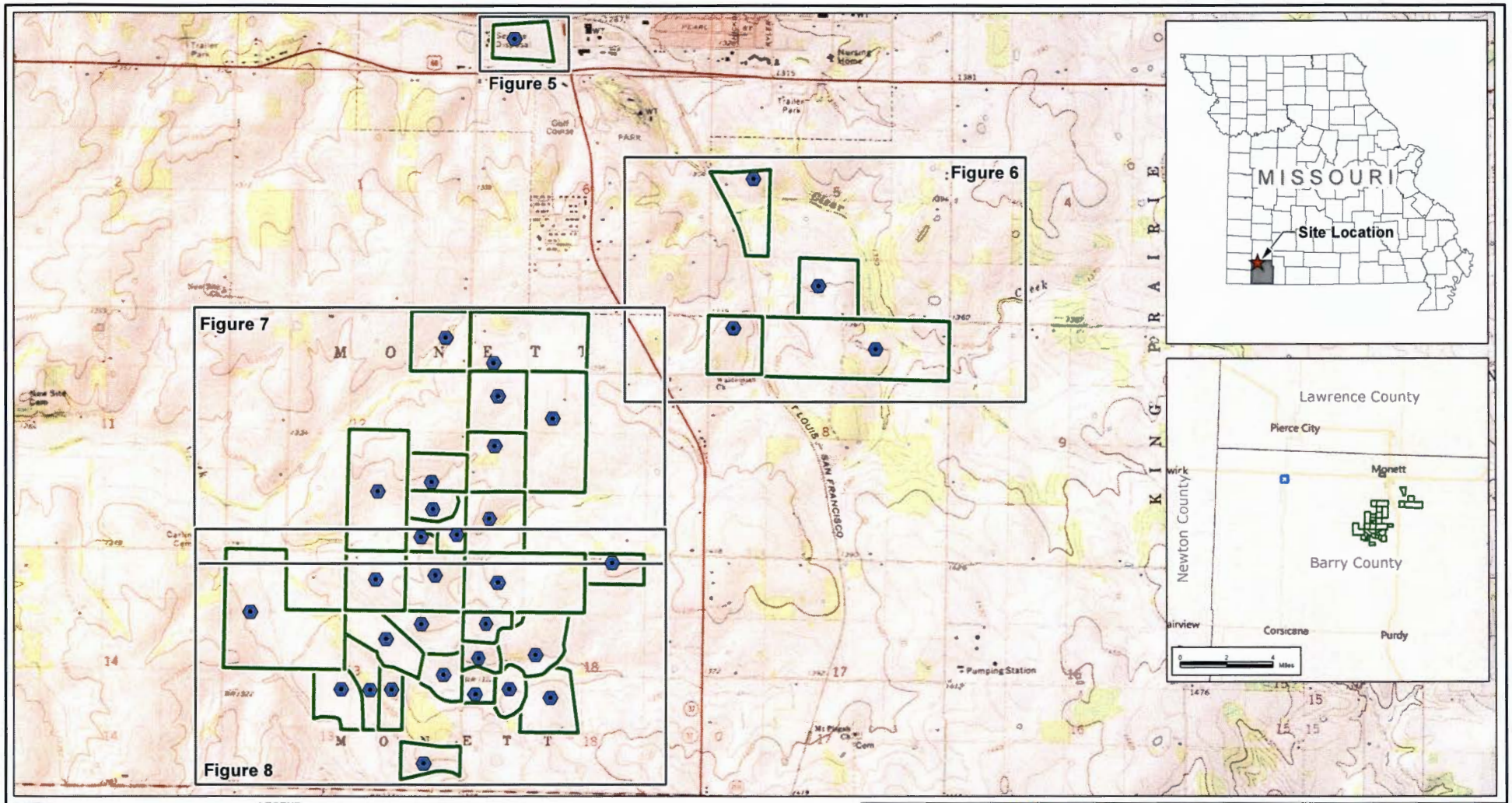
Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- ☐ Appropriate Fees?
- ☐ Map at 1" = 2000' scale?
- ☐ Signature?
- ☐ Form C or 2F, if applicable?
- ☐ Form D, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☐ Form R (Sludge), if applicable?
- ☐ Revised Nutrient Management Plan, if applicable?

2017

PERMITTED FEATURE	Active	SITE #	ACRES		1ST CLASSIFIED STREAM AND ID	USGS BASIN & SUB-WATERSHED NO.
001	1	15	80	g	Hudson Creek (C) (03237)	(11070207-0703)
002	1	17	20	g	Hudson Creek (C) (03237)	(11070207-0703)
003	1	18	6	g	Hudson Creek (C) (03237)	(11070207-0703)
004	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
005	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
006	1	46	40	g	Hudson Creek (C) (03237)	(11070207-0703)
007	1	49	60	g	Hudson Creek (C) (03237)	(11070207-0703)
008	1	52	24		Clear Creak (C) (03239) 303 (d)	(11070207-0704)
009	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
010	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
011	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
012	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
013	1	84	40	g	Hudson Creek (C) (03237)	(11070207-0703)
014	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
015	1	89	55	g	Hudson Creek (C) (03237)	(11070207-0703)
016	1	96	14	g	Hudson Creek (C) (03237)	(11070207-0703)
017	1	97	12	g	Hudson Creek (C) (03237)	(11070207-0703)
018	1	98	7	g	Hudson Creek (C) (03237)	(11070207-0703)
019	1	104	7	g	Hudson Creek (C) (03237)	(11070207-0703)
020	1	107	24	g	Hudson Creek (C) (03237)	(11070207-0703)
021	1	112	20	g	Hudson Creek (C) (03237)	(11070207-0703)
022	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
023	1	117	11	g	Hudson Creek (C) (03237)	(11070207-0703)
024	1	118	14	g	Hudson Creek (C) (03237)	(11070207-0703)
025	1	119	15	g	Hudson Creek (C) (03237)	(11070207-0703)
026	1	120	32	g	Hudson Creek (C) (03237)	(11070207-0703)
027	1	121	30	g	Hudson Creek (C) (03237)	(11070207-0703)
028	1	123	32	g	Hudson Creek (C) (03237)	(11070207-0703)
029	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
030	1	126	40	g	Hudson Creek (C) (03237)	(11070207-0703)
031	1	129	20	g	Hudson Creek (C) (03237)	(11070207-0703)
032	1	135	28	g	Hudson Creek (C) (03237)	(11070207-0703)
033	1	138	14	g	Hudson Creek (C) (03237)	(11070207-0703)
034	1	151	10	g	Hudson Creek (C) (03237)	(11070207-0703)
035	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
036	1	163	10	g	Hudson Creek (C) (03237)	(11070207-0703)
037	1	178	20		Clear Creak (C) (03239) 303 (d)	(11070207-0704)
038	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
039	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
040	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
041	1	188	75	g	Hudson Creek (C) (03237)	(11070207-0703)
042	0	NO LONGER IN USE AS A LAND APPLICATION SITE		g	Hudson Creek (C) (03237)	(11070207-0703)
043	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
044	1	196	20		Clear Creak (C) (03239) 303 (d)	(11070207-0704)
045	0	MAIN PERMITTED FEATURE, EMERGENCY DISCHARGE ONLY FROM DIGESTERS AND HOLDING TANK			Clear Creak (C) (03239) 303 (d)	(11070207-0704)
046	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
047	1	198	40	g	Hudson Creek (C) (03237)	(11070207-0703)
048	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
049	1	200	118		Clear Creak (C) (03239) 303 (d)	(11070207-0704)
050	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
051	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
052	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
053	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
054	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
055	0	NO LONGER IN USE AS A LAND APPLICATION SITE				
056	1	207	120	g	Hudson Creek (C) (03237)	(11070207-0703)
057	1	208	40	g	Hudson Creek (C) (03237)	(11070207-0703)
	33		1098			



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location
- Site Outline
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

SITE LOCATION MAP

WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 1	1
SCALE 0 1,000 2,000 Feet	WEIGHT	REV

Path: X:\FOTHUE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 1 - Site Location Map.mxd Date: 9/11/2017

NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

MAIN PERMITTED FEATURE 045

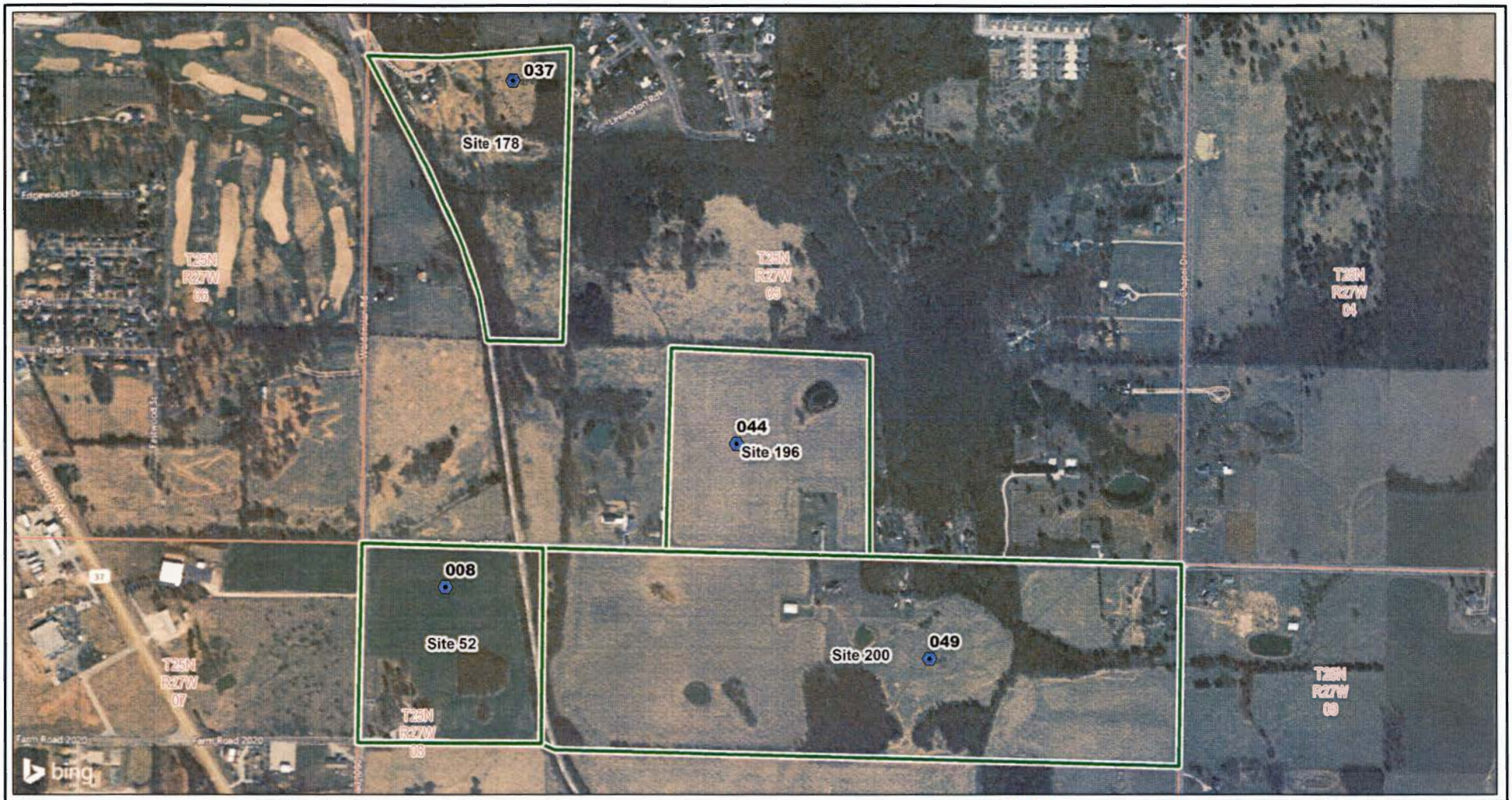
WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 5	1

SCALE 0 100 200 Feet | WEIGHT | REV

Path: K:\FOTH\IE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 5 - Feature 045 - Site Layout Map.mxd Date: 9/11/2017



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

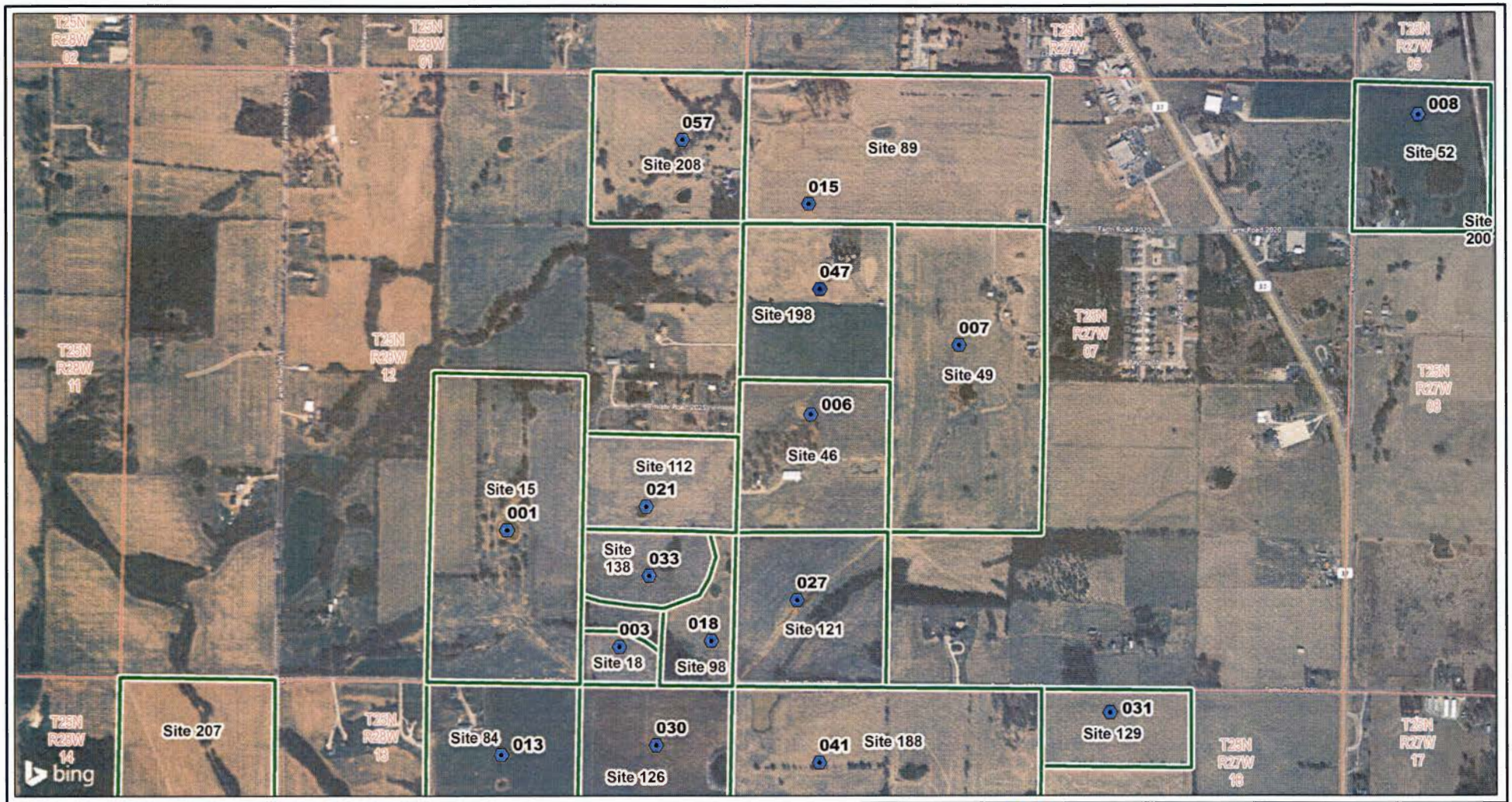
LAND APPLICATION FIELDS

WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 6	1
SCALE 0 300 600 Feet	WEIGHT	REV

Path: X:\FOTHI\E\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 6 - Land Application Fields 1 - Site Layout Map.mxd Date: 9/11/2017



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

LAND APPLICATION FIELDS

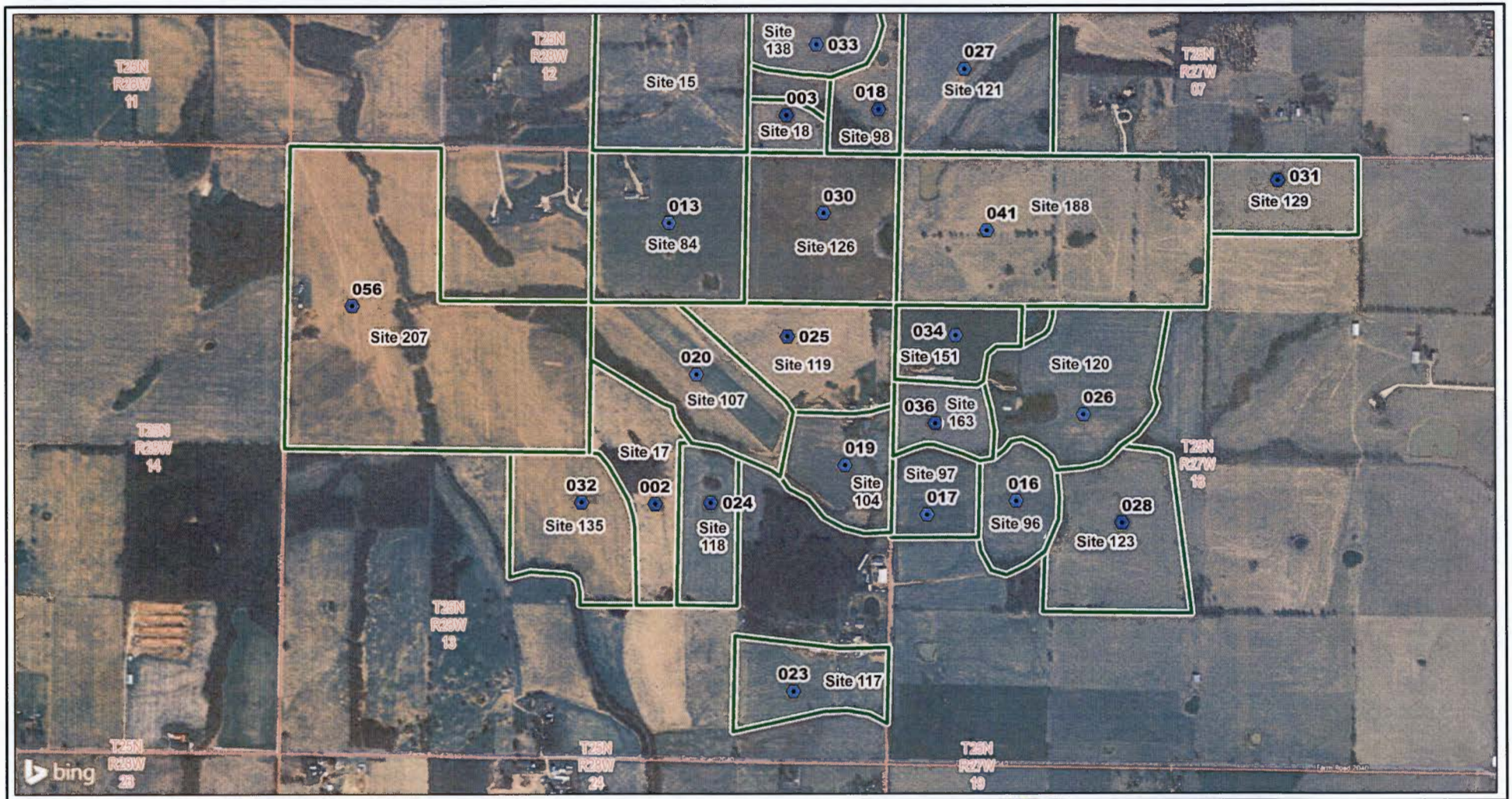
WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 7	1

SCALE 0 400 800 Feet | WEIGHT | REV

Path: K:\FOTH\IE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 7 - Land Application Fields 2 - Site Layout Map.mxd Date: 9/11/2017



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT 10 DAIRY STREET
LINE
PROJECT 155050

DRAWN BJW1 9/11/17
APPROVED SAS1 9/11/17

LAND APPLICATION FIELDS

WASTEWATER NUTRIENT PLAN
10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 8	1

SCALE 0 400 800 Feet | WEIGHT | REV

Path: X:\FOTHIE\Schreiber Foods\155050\GIS\mxd\Monett MO WW Permit\Manual\Figure 8 - Land Application Fields 3 - Site Layout Map.mxd Date: 9/11/2017

RECEIVED

OCT 16 2017

Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING, SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

Schreiber Foods Inc.

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO-0128241

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 2022 Natural Cheese B. SECOND _____

C. THIRD _____ D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____ 1/4 _____ 1/4 SEC _____ T _____ R _____ _____ COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Natural cheese and other ingredients are combined to create sliced and packaged process cheese.

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☑ **NO** *(GO TO SECTION 2.50)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(S) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				C. DURATION *(in days)*
				A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☐ **YES** *(COMPLETE B.)* ☑ **NO** *(GO TO SECTION 2.60)*

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

☐ **YES** *(COMPLETE c.)* ☐ **NO** *(GO TO SECTION 2.60)*

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☑ **NO** *(GO TO 3.00)*

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS *(OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES)* YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.**

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☐ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) ☑ NO (GO TO 3.20)

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☐ **YES** *(LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.)* ☑ **NO** *(GO TO 3.30)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Danny Swearingen - Plant Manager	417-235-6061
SIGNATURE (SEE INSTRUCTIONS)	**DATE SIGNED**
	10/10/17

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic *(as N)*														
H. Oil and Grease														
I. Phosphorus *(as P)*, Total (7723-14-0)														
J. Sulfate *(as SO^4)* (14808-79-8)														
K. Sulfide *(as S)*														
L. Sulfite (as SO^3) (14265-45-3)														
M. Surfactants														
N. Aluminum, Total (7429-90-5)														
O. Barium, Total (7440-39-3)														
P. Boron, Total (7440-42-8)														
Q. Cobalt, Total (7440-48-4)														
R. Iron, Total (7439-89-6)														
S. Magnesium, Total (7439-95-4)														
T. Molybdenum, Total (7439-98-7)														
U. Manganese, Total (7439-96-5)														
V. Tin, Total (7440-31-5)														
W. Titanium, Total (7440-32-6)														

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM C – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS.

All blanks must be filled in when the application is submitted to the appropriate regional office (see map). The form must be signed as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility with possibility of discharge, even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

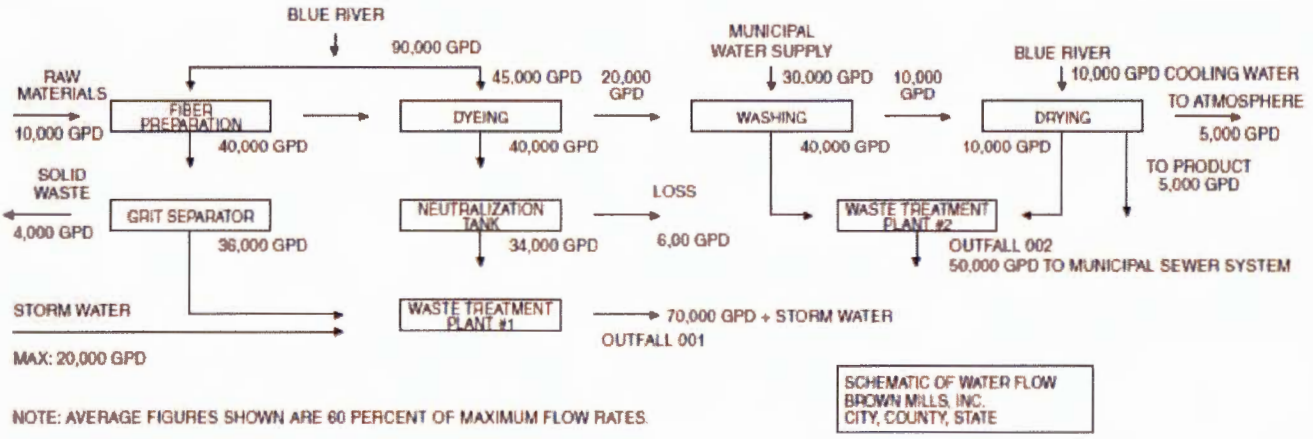
SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional office in your area (see map).

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located.

2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

2.30 Self-explanatory.

2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



2.40 C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measures during days when discharge occurred within the last year in the "Long Term Average" columns.

2.50 A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CPR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by BPT, BCT, or BAT guidelines. If you are unsure whether you are covered by a promulgated effluent guideline, check with your Missouri Department of Natural Resources' Regional Office. You must check yes if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check no.

B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitations are expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked yes to item B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurement used in the applicable effluent guideline. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation, but may not be based on design capacity or on predictions of future increases in operation.

2.60 A. If you check yes to this question, complete all parts of the chart, or attach a copy of any previous submission you have made containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

3.00 These items require you to collect and report data on the pollutants discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

GENERAL INSTRUCTIONS. Part A requires you to report at least one analysis for each pollutant. Part B requires you to mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2A or 2B, Part B) based on you best estimate, and test for those which you believe to be present. Part C requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. (See specific instructions on the form and below Parts A through C).

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as a concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper. (Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Part B).

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the Intake columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)

2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)

3. When applicable, a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

3.00 Part A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Missouri Department of Natural Resources may waive the requirements to test for one or more of these pollutants, upon a determination that testing for the pollutant(s) is not appropriate for your effluent.

Use composite samples for all pollutants in this part, except use grab samples for pH and temperature. See discussion in instructions above for definitions of the columns in Part A. The "Long Term Average Values" column (column 2C) and "Maximum 30 Day Values" column (column 2B) are not compulsory but should be filled out if data is available.

3.00 Part B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff.

Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease and fecal coliform. The Long Term Average Values column (column 3C) and Maximum 30 Day Values column (column 3B) are not compulsory but should be filled out if data is available.

3.00 List any pollutants in Table B that you believe to be present and explain why you believe them to be present in part C. No analysis is required, but you have analytical, you must report it.

TABLE B – TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT

Asbestos

HAZARDOUS SUBSTANCES

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan

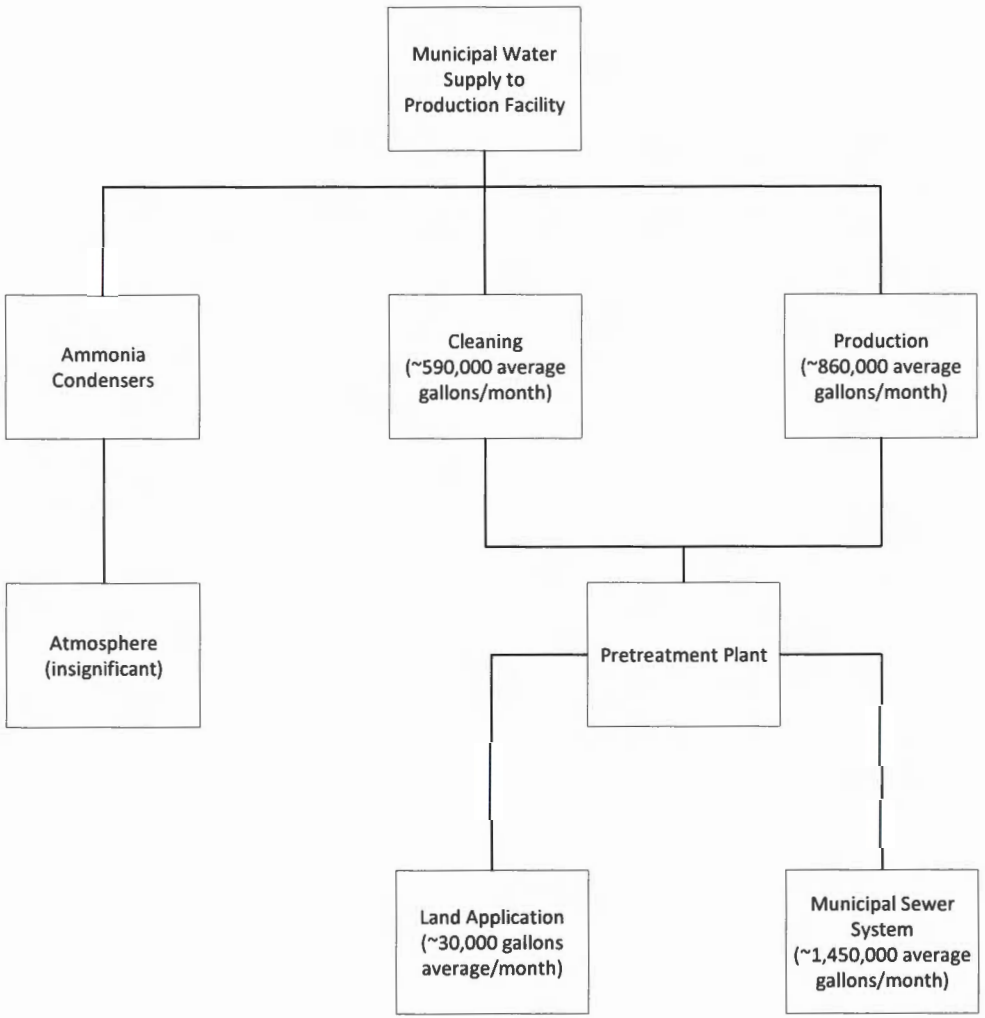
HAZARDOUS SUBSTANCES

Dichlorvos
Diethylamine
Dimethylamine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion

HAZARDOUS SUBSTANCES

Malacl
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfonate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Sytrene

Land Application Permit
FORM C
2.40 A



SCHREIBER FOODS INC.
Schematic of Water Flow
Barry County
Monett, Missouri
September 2017

Wastewater influent coming from the production facility is not metered. All averages are based on the effluent meter for wastewater going to the municipal sewer system.

RECEIVED
OCT 16 2017
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

FORM R – PERMIT APPLICATION FOR LAND APPLICATION OF INDUSTRIAL WASTEWATER BIOSOLIDS AND RESIDUALS

FOR AGENCY USE ONLY
PERMIT NUMBER MO -
DATE RECEIVED

INSTRUCTIONS: FORMS A & C or F (CAFOs) (and D where applicable) must also be submitted for land application of industrial wastewater sludge biosolids or residuals. **Submit FORMS E and G** for land disturbance permit if construction areas total five acres or more.

Attach **FORM I**, if wastewater will be land applied or irrigated.

1.00 FACILITY INFORMATION

1.10 Facility Name
Schreiber Foods Inc.

1.20 Application for:
- ☐ Construction Permit (attach Engineering report, Plans and Specifications per 10 CSR 20-8.020)
- ☐ Operating Permit (if no construction permit, attach engineering documents)
  Date Land Application System Began Operation: _____
- ☑ Operating Permit Renewal

1.30 Months when the business or enterprise will operate or generate sludge or residuals:
■ 12 months per year ☐ Part of year (list Months): _____

1.40 List the Facility outfalls which will be applicable to the land application system from outfalls listed on Form A, C, D and F.
Outfall Nos. ___ ___ ___ ___ ___ ___ ___

2.00 STORAGE BASINS

2.10 Number of storage basins: 3 Type of basin: ☑ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen
☑ Earthen with membrane liner

2.20 Storage basin dimensions at inside top of berm (feet): Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
(Complete Attachment A: Profile Sketch)

	Length	Width	Depth	Freeboard	Berm Width	% Slope
Basin #1:	79	79	11	2	4	1:2
Basin #2:	79	79	11	2	4	1:2

2.21 Storage basin volumes (gallons): Permanent volume means two foot water depth for seal protection, and any required treatment volume capacity.
Basin #1: Gallons: att'd Permanent Volume + _____ Storage = _____ Total volume (gallons)
Basin #2: Gallons: _____ Permanent Volume + _____ Storage = _____ Total volume (gallons)

2.30 Storage Basin operating levels (report as feet below emergency overflow level)
Basin #1: Maximum water level att'd ft. Minimum operating water level _____ ft.
Basin #2: Maximum water level _____ ft. Minimum operating water level _____ ft.

2.40 Storage Basin design storage capacity: (storage between minimum and maximum operating levels for 1-in10 year storm water flows.)
Basin #1: 8.25 days Basin #2: 8.2 days Basin #3: 2.3 days

2.50 Attach Water Balance Test results to verify earthen basin seal in accordance with 10 CSR 20-8.020(13) and (16), when required by the department.

2.60 Attach a sludge management plan for materials that are not land applied.

2.70 Attach a closure plan for lagoons, storage basins and treatment units.

3.00 LAND APPLICATION SYSTEM

3.10 Number of application sites 33 Total Available Acres 1k Minimum & Maximum % field slopes <15
Location: att' ¼ ___ ¼ ___ ¼ ___ Sec. ___ T ___ R _____ County ___ Acres
Location: ___ ¼ ___ ¼ ___ ¼ ___ Sec. ___ T ___ R _____ County ___ Acres
Attach extra sheets as necessary.

3.12 Type of vegetation: ☑ Grass hay ☑ Pasture ☐ Timber ☑ Row crops ☐ Other (describe) _____
Specific Crops and Yields/acre: Goal: _____ Actual for last five years: Att'd

4.20 List of raw materials, chemicals, additives, products, and by-products (Attach extra sheets as necessary)

See attached supplemental information document

4.31 Attach following FORMS for wastewater to be land applied.

FORM C or F is required for all applicants. Use Form F for CAFOs.

FORM D is required for those industries listed in the Form D instructions or when required by the department.

Use actual testing results within last 12 months. For new operations use testing results from other similar operations or from published literature.

4.32 Are there any listed hazardous wastes in the material to be land applied: ☐ YES ☑ NO (If YES, attach testing results)

4.40 A. Are any Pollutants listed in 40 CFR 268.40 believed to be present in detectable concentrations: ☐ YES ☑ NO

B Are any Pollutants listed in 10 CSR 20-7.031 believed to be present in detectable concentrations: ☐ YES ☑ NO

C. Are any Pollutants listed in EPA Process Design Manual for Land Treatment of Municipal Wastewater publication EPA-625/1-81-013, Table 4-5 and Table 4-16 believed present in detectable concentrations: ☑ YES ☐ NO

(Attach a copy of testing results for any pollutants that may be present in detectable concentrations.)

4.50 Environmental Assessment. Do any of the pollutants detected exceed the criteria for pollutant concentrations of limitations contained in the publications referenced in Section 4.40 of this form: ☐ YES ☑ NO

If YES, attach a copy of the Environmental Assessment as required in 10 CSR 20-8.020(3)(D).

5.00 SOIL TESTING RESULTS: Complete information for each pollutant listed and each land application site. Attach results of any other soil testing performed in the last 12 months. Soil sampling and testing should conform to University publication G9110, Sampling Your Soil for Testing; Soil Test Procedures for North Central Region (North Dakota Agricultural Experiment Bulleting 499-Revised); Methods of Soil Analysis, American Society of Agronomy, Inc.; Soil Testing and Plant Analysis, Soil Science Society of America, Inc.; EPA Methods; or other methods approved by the department. Attach extra sheets as necessary.

Total area sampled is 1098 acres. Each composite sample covers 6-120 acres. Each composite consists of ____ subsamples.

Sample depth: ☐ 0-6 inches ☑ 0-12 inches ☐ Other (describe) _____

Pollutant	Concentration (mg/kg or ppm)			Pounds/ Acre	No. Composite Samples	Sample Period
	Minimum	Maximum	Average			
Organic Nitrogen as N						
Ammonia Nitrogen as N	1.0	7.2	2.84			Oct. 2015 - Sept. 2016
Nitrate Nitrogen as N	4.5	56.9	23.6			Oct. 2015 - Sept. 2016
Phosphorus as P (Bray 1P)	36	643	357.2			Oct. 2015 - Sept. 2016
Exchangeable Sodium %	0.02	1.95	.35			Oct. 2015 - Sept. 2016
Organic Matter (percent)	2.0	7.2	4.2			Oct. 2015 - Sept. 2016
Cation Exchange Capacity	10.9	17.0	13.9			Oct. 2015 - Sept. 2016
pH (standard units)	4.4	6.7	5.6			Oct. 2015 - Sept. 2016
Other pollutants present in the material to be land applied: (Attach extra sheets as necessary)						

6.30 Other Limiting Pollutants for Land Application Rates. Specify any other pollutants that are most limiting for determining land application rates. Include any additional significant pollutants from Section 4 that is not already listed in Section 6.00. Attach extra sheets as necessary.

Pollutant	Concentration (mg/kg dry weight)			Design LBS/ Acre/Year	Type of Samples	Number Samples	Sample Location	Sample Period
	Minimum	Maximum	Average					

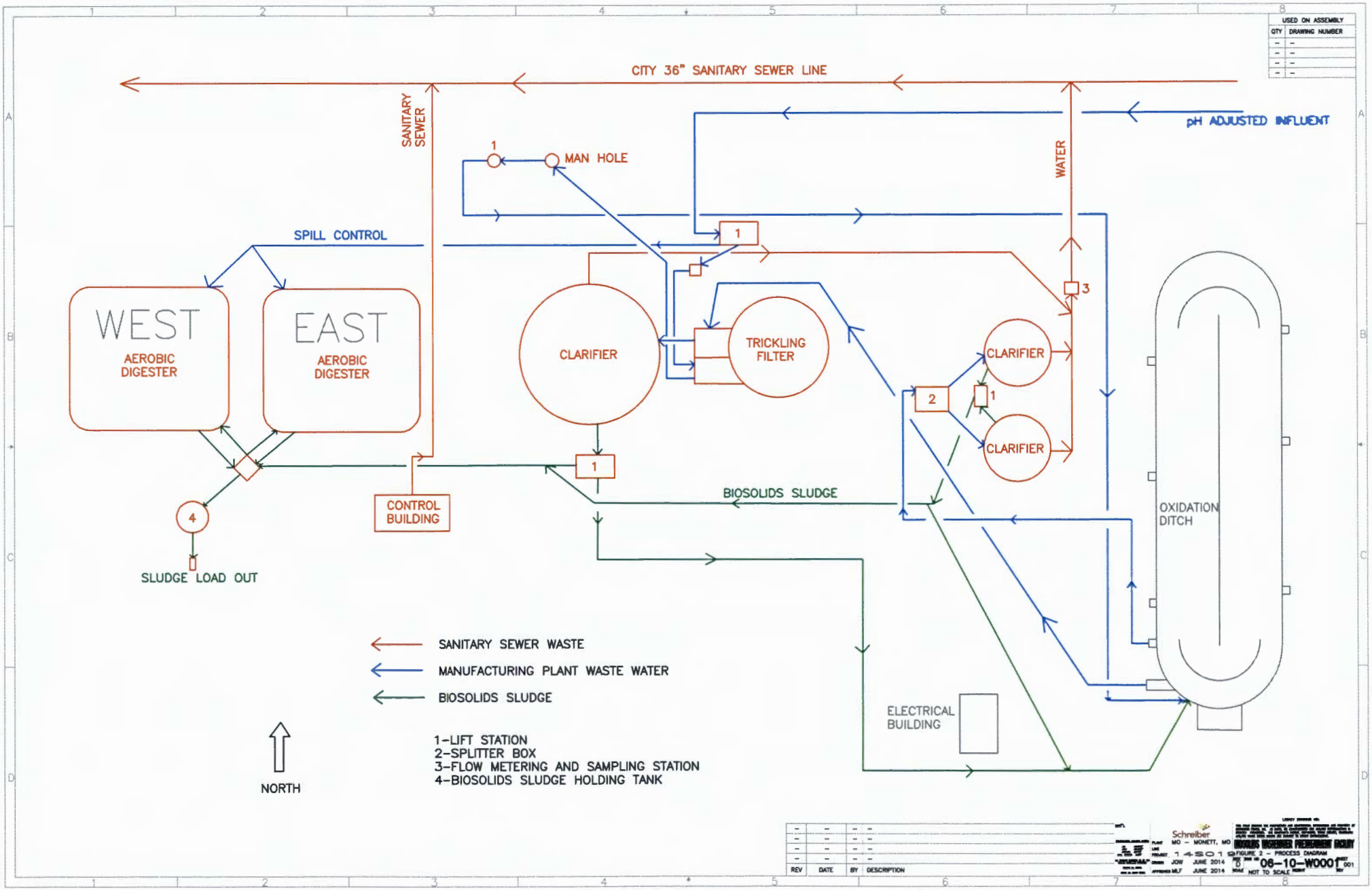
6.40 Requirements for Public Use Sites. Complete this if land application onto public use or public access sites or if material will be distributed for general public use. Fecal Coliform, Salmonella and Entric Virus must be tested if the biosolids include waste material from humans, animals, vegetables or organic matter.

Pollutant		Concentration (mg/kg dry weight)			Type of Samples	Number Samples	Sample Location	Sample Period
		Minimum	Maximum	Average				
Total Dioxin TEQ*		NA						
* Required Only for public access sites. TEQ = Toxicity Equivalents for CDD and CDF isomers per EPA Publication EPA/625/3-89/016 and EPA method 1613. Detection limits must be less than 1.0 ppt.								
Fecal Coliform		NA						
Salmonella		NA						
Enteric Virus		NA						
Other (specify)								

7.00 CERTIFICATION

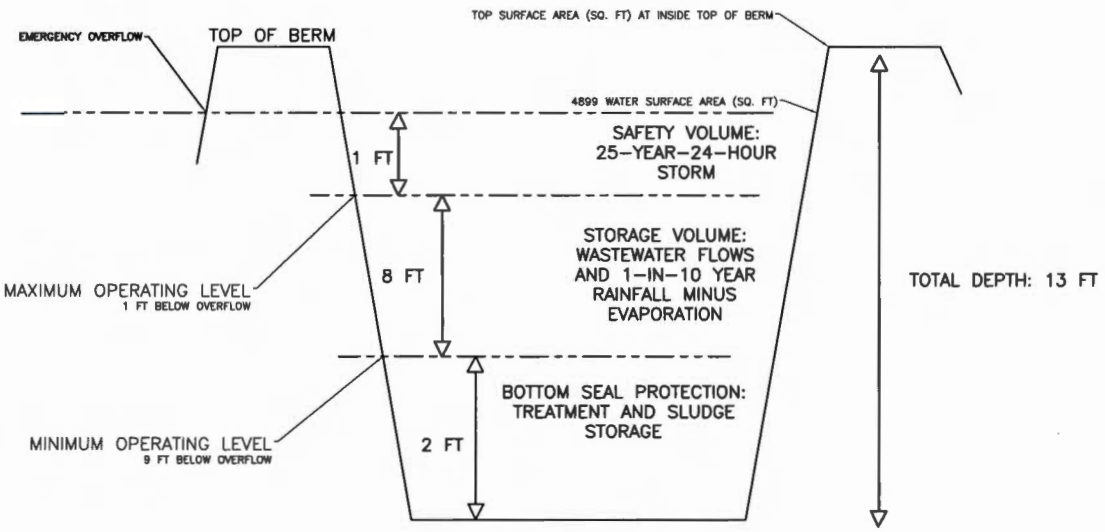
I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THIS INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE OR IMPRISSONMENT.

CONSULTING ENGINEER – Name, Official Title and Engineering Firm (TYPE OR PRINT)	TELEPHONE NUMBER (area code and number)
SIGNATURE	DATE SIGNED
OWNER OR AUTHORIZED REPRESENTATIVE – Name and Official Title (TYPE OR PRINT) Danny Swearingen - Plant Manager	TELEPHONE NUMBER (area code and number) 417-235-6061
SIGNATURE	DATE SIGNED 10/10/17


CITY 36" SANITARY SEWER LINE
SANITARY SEWER
MAN HOLE
pH ADJUSTED INFLUENT
WATER
SPILL CONTROL
WEST
AEROBIC DIGESTER
EAST
AEROBIC DIGESTER
CLARIFIER
TRICKLING FILTER
CLARIFIER
CLARIFIER
OXIDATION DITCH
CONTROL BUILDING
BIOSOLIDS SLUDGE
SLUDGE LOAD OUT
ELECTRICAL BUILDING
SANITARY SEWER WASTE
MANUFACTURING PLANT WASTE WATER
BIOSOLIDS SLUDGE
NORTH
1-LIFT STATION
2-SPLITTER BOX
3-FLOW METERING AND SAMPLING STATION
4-BIOSOLIDS SLUDGE HOLDING TANK
USED ON ASSEMBLY
QTY
DRAWING NUMBER
REV
DATE
BY
DESCRIPTION
Schreiber
MO - MONETT, MO
FIGURE 2 - PROCESS DIAGRAM
JOW
JUNE 2014
JUNE 2014
NOT TO SCALE
06-10-W0001

EAST AND WEST DIGESTER

LAGOON OR STORAGE BASIN
PROFILE SKETCH



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

A. FREEBOARD IS DEPTH FROM TOP OF BERM TO EMERGENCY SPILLWAY (MINIMUM OF 1 FOOT);
B. SAFETY VOLUME IS DEPTH FOR 25-YEAR, 24-HOUR STORM (MINIMUM OF 1 FOOT);
C. MAXIMUM OPERATING LEVEL IS AT BOTTOM OF THE SAFETY VOLUME (MINIMUM OF 2 FEET BELOW TOP OF BERM).
D. MINIMUM OPERATING LEVEL IS 2 FEET ABOVE BOTTOM OF LAGOON FOR SEAL PROTECTION PER 10 CSR 20-8. THE MINIMUM OPERATING LEVEL MAY BE GREATER THAN 2 FEET WHEN ADDITIONAL TREATMENT VOLUME IS INCLUDED.
E. STORAGE VOLUME AND DAYS STORAGE ARE BASED ON THE VOLUME BETWEEN MINIMUM AND MAXIMUM OPERATING LEVELS.
F. TOTAL DEPTH IS FROM TOP OF BERM TO BOTTOM OF BASIN INCLUDING FREEBOARD.

REV	DATE	BY	DESCRIPTION

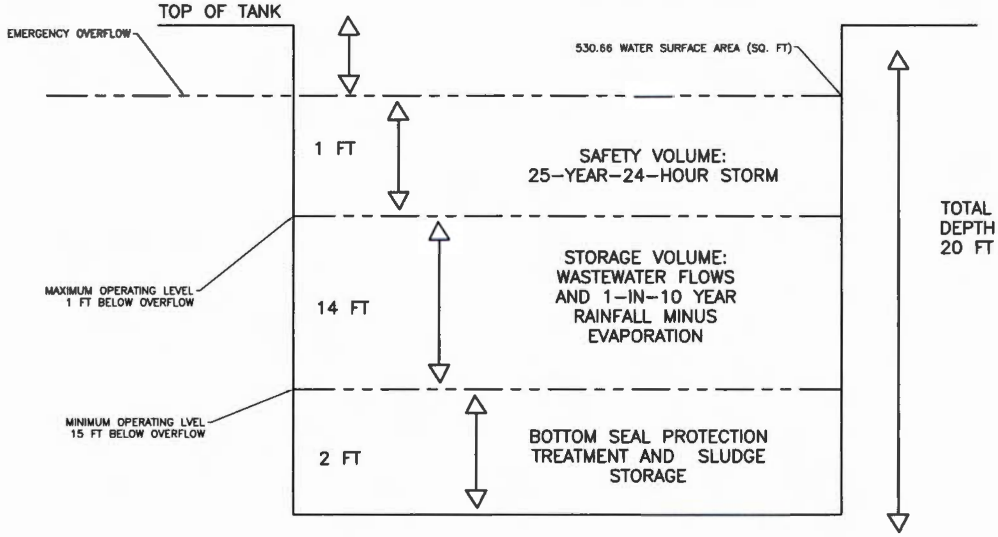
Schreiber
PLANT MO - MONETT, MO
LINE
PROJECT
DRAWN JOW JUNE 2014
APPROVED MFL JUNE 2014

LEGACY DRAWING NO:

BIOSOLIDS WASTEWATER PRETREATMENT FACILITY
FIGURE 3 - EAST AND WEST DIGESTER
SIZE D DWG NO 06-10-W0002 SHEET 001 REV
SCALE NOT TO SCALE WEIGHT

HOLDING TANK

LAGOON OR STORAGE BASIN
PROFILE SKETCH



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

G. FREEBOARD IS DEPTH FROM TOP OF BERM TO EMERGENCY SPILLWAY (MINIMUM OF 1 FOOT);
H. SAFETY VOLUME IS DEPTH FOR 25-YEAR, 24-HOUR STORM (MINIMUM OF 1 FOOT);
I. MAXIMUM OPERATING LEVEL IS AT BOTTOM OF THE SAFETY VOLUME (MINIMUM OF 2 FEET BELOW TOP OF BERM).
J. MINIMUM OPERATING LEVEL IS 2 FEET ABOVE BOTTOM OF LAGOON FOR SEAL PROTECTION PER 10 CSR 20-8. THE MINIMUM OPERATING LEVEL MAY BE GREATER THAN 2 FEET WHEN ADDITIONAL TREATMENT VOLUME IS INCLUDED.
K. STORAGE VOLUME AND DAYS STORAGE ARE BASED ON THE VOLUME BETWEEN MINIMUM AND MAXIMUM OPERATING LEVELS.
L. TOTAL DEPTH IS FROM TOP OF BERM TO BOTTOM OF BASIN INCLUDING FREEBOARD.

REV	DATE	BY	DESCRIPTION

LEGACY DRAWING NO:
MAT'L
Schreiber
PLANT MO - MONETT, MO
LINE
PROJECT
DRAWN JOW JUNE 2014
APPROVED MLF JUNE 2014
BIOSOLIDS WASTEWATER PRETREATMENT FACILITY
FIGURE 4 - HOLDING TANK
SIZE D DWG NO 06-10-W0003 SHEET 001
SCALE NOT TO SCALE WEIGHT REV

SFI Biosolids Pretreatment Facility Process Description

The wastewater from the Schreiber Wastewater Facility is pH adjusted with caustic before it enters the wastewater facility. The wastewater is directed to an Extended Aeration Activated Sludge Oxidation Ditch. From the Oxidation Ditch, the wastewater goes through one of the two final clarifiers and then is measured for flow and sampled by an automatic sampler before being discharged to the City of Monett's collection system. The wastewater is further treated by the City of Monett.

Biosolids from the Oxidation Ditch are pumped to an Aerobic Digester. From there the biosolids are pumped to a sludge Holding Tank, where decanting is done before being pumped to sludge trucks and land applied on local farmland.

Trickling Filter: 16 ft high, 55 ft diameter, flow rate: 450,000 gpd (currently not used)

Oxidation Ditch: 1.3 MG, flow rate: 450,000 gpd, Retention time: ~?? days

Final Clarifiers: 440,000 gallons total: 450,000 gpd, Retention time: ?? days

Aerobic Digesters: 231,000 gallons each (one currently not used), Flow rate: ?? gpd, Retention time: ?? days

Sludge Holding Tank; 66,000 gallons, Flow: 25,000 gpd, Retention time: ?? days

Form R Supplement Document

2.20 Storage Basin Dimensions

	Length	Width	Depth	Freeboard	Berm Width	% Slope
East Digester	79 ft	79 ft	11 ft	2 ft	4 ft	1:2
West Digester	79 ft	79 ft	11 ft	2 ft	4 ft	1:2

	Diameter	Height	Freeboard
Holding Tank	26 ft	20 ft	3 ft

2.21 Storage Basin Volumes

	Permanent Volume	Storage	Total Volume
East Digester	18,326 gal	212,674 gal	231,000 gal
West Digester	18,326 gal	212,674 gal	231,000 gal
Holding Tank	0 gal	66,000 gal	66,000 gal

2.30 Storage Basin Operating Levels

	Max Water Level	Min Water Level
East Digester	10 ft	2 ft
West Digester	10 ft	2 ft
Holding Tank	17 ft	2 ft

2.50 NA
2.60 NA
2.70 NA

032	135	11/13/2015	28	Wildlife Food Plot	4.9	330.0	510.0	1880.0	208.00	2.3	11.2	0 lbs/A
033	138	11/13/2015	14	Wheat	5.6	640.0	612.0	3450.0	299.00	4.4	14.7	15 T/A
034	151	11/13/2015	10	Alfalfa-Grass Hay	6.4	643.0	716.0	4020.0	254.00	4.4	13.5	5 T/A
035	159		*									
036	163	11/13/2015	10	Soybeans	6.4	267.0	489.0	4270.0	399.00	3.6	14.0	60 bu/A
037	178	11/13/2015	20	Cool Season Grass Pasture	5.1	297.0	657.0	2310.0	278.00	5.8	13.8	150 CD/A
040	182		*									
041	188	11/13/2015	75	Cool Season Grass Pasture	5.0	171.0	319.0	3110.0	299.00	4.5	14.9	150 CD/A
042	191		*									
044	196	11/13/2015	20	Cool Season Grass Pasture	5.6	1201.0	305.0	3660.0	270.00	4.5	14.7	150 CD/A
046	197		*									
047	198	11/13/2015	40	Cool Season Grass Pasture	6.1	101.0	121.0	3410.0	170.00	3.2	10.9	150 CD/A
048	199		*									
049	200	11/13/2015	118	Corn(Silage)	4.5	36.0	275.0	1190.0	156.00	3.0	11.0	20 T/A
050	201		*									
051	202		*									
052	203		*									
053	204		*									
054	205		*									
055	206		*									
056	207	11/13/2015	120	Wildlife Food Plot	6.0	32.0	883.0	3410.0	350.00	3.5	13.6	15 T/A
057	208		*									

* Sludge not applied during this reporting period.

3.70 Included in O&M Manual
3.90 Included in O&M Manual
3.91 Included in O&M Manual
3.92 Included in O&M Manual

4.00 Industrial Process Information

4.10 The wastewater from the Schreiber wastewater facility goes through a shaker screen and then is pH adjusted with caustic before it flows to the wastewater facility. The wastewater had been routed to a high rate trickling filter when it arrived at the pretreatment facility, but this was discontinued in 2014 due to a large decrease in effluent coming from Schreiber's production facility (the trickling filter could go back into use if the effluent from production increases). The wastewater is directed to an extended aeration

2017 Permitted Feature	Site #		Supplement to Form R, 3.60
001	15	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
002	17	Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
003	18	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
006	46	Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
007	49	Soil Series Name	51 B-Tonti-Scholten complex

		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
017	97	Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
018	98	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.06 - 2.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
019	104	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft

023	117	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
024	118	Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
025	119	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft

030	126	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
031	129	Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
032	135	Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
033	138	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
034	151	Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0

		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
056	207	Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
		Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	21 B-Claiborne silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	0.6 - 2.0
057	208	Soil Series Name	15 C-Scholten gravelly silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	2.0 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	51 B-Tonti-Scholten complex
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	1.5 - 2.5 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 6.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0
		In/hr for 24 - 60 inch soil depth	<0.06 - 6.0
		Soil Series Name	92 A-Secesh silt loam
		Depth to Bedrock (Ft)	>5 ft
		Depth to Water Table (Ft)	>6.0 ft
		In/hr for 0 - 12 inch soil depth	0.6 - 2.0
		In/hr for 12 - 24 inch soil depth	0.6 - 2.0

40.078
CONSULTING
CANALYTICAL
20
28.085
SERVICES
SINTERNATIONAL
14

3378 S. SCENIC AVE., SUITE A
SPRINGFIELD, MO 65807
TEL (417) 882-1017
FAX (855) 715-0820
info@casilab.com

CERTIFICATE OF ANALYSIS

SCHREIBER FOODS, INC.
Re: CaSi File/Case/Log: 1208/172545/4022
Samples Received: 09-06-17, 12:15

September 19, 2017

CONTROL NUMBER		172545	FLAG	UNITS DRY WEIGHT	ANALYSIS DATE	ANALYSIS TIME
SAMPLE DESCRIPTION		SLUDGE 09-06-17 11:00				
PARAMETER	METHOD					
TOTAL SUSPENDED SOLIDS	SM 2540 F	20,000		mg/kg	09-08-17	10:18
CHLORIDE	SW-846 Method 9056 A	1058		mg/kg	09-14-17	16:47
SODIUM	EPA 200.7	1170		mg/kg	09-12-17	10:47
CHEMICAL OXYGEN DEMAND	SM 5220 D	14,000		mg/kg	09-12-17	13:05
OIL AND GREASE	SM 5220 E	1200		mg/kg	09-15-17	13:42
TOTAL PETROLUEM HYDROCARBONS	SM 5220 E	<1200		mg/kg	09-15-17	13:42

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. 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.

Tara Ruff
VP/General Manager

CERTIFICATE OF ANALYSIS

SCHREIBER FOODS, INC.
Re: CaSi File/Case/Log: 1208/172088/4004
Samples Received: 07-19-17, 10:16

August 2, 2017

CONTROL NUMBER		SLUDGE 07-19-17, 08:00		FLAG	UNITS	ANALYSIS DATE	ANALYSIS TIME
SAMPLE DESCRIPTION		WET WEIGHT	DRY WEIGHT				
PARAMETER	METHOD						
AMMONIA as NITROGEN	SM 4500-NH_3 B	362	14800		mg/kg	07-25-17	11:34
NITRATE/NITRITE as NITROGEN	SW-846 Method 9056A	2.1	85.7		mg/kg	07-27-17	14:49
ORGANIC NITROGEN	Calculation	1380	56200		mg/kg	07-27-17	14:49
BORON	EPA 200.7	1.28	52.2		mg/kg	07-20-17	13:35
pH	EPA 150.1	7.14			S.U.	07-19-17	11:28
PERCENT SOLIDS	SM 2540 B	2.45	100		Percent	07-25-17	10:07
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	1740	71000		mg/kg	07-24-17	15:53
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	1.740	71.0		g/l	07-24-17	15:53
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.174	7.10		Percent	07-24-17	15:53
TOTAL PHOSPHORUS as P	EPA 365.3	518	21100		mg/kg	08-01-17	10:54
TOTAL PHOSPHORUS as P	EPA 365.3	0.518	21.1		g/l	08-01-17	10:54
TOTAL PHOSPHORUS as P	EPA 365.3	0.052	2.11		Percent	08-01-17	10:54

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. 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.

Tara Ruff
VP/General Manager

CERTIFICATE OF ANALYSIS

SCHREIBER FOODS, INC.
Re: CaSi File/Case/Log: 1208/171450/3979
Samples Received: 05-17-17, 13:20

June 8, 2017

CONTROL NUMBER		SLUDGE 05-17-17, 08:00		FLAG	UNITS	ANALYSIS DATE	ANALYSIS TIME
SAMPLE DESCRIPTION		WET WEIGHT	DRY WEIGHT				
PARAMETER	METHOD						
AMMONIA as NITROGEN	EPA 350.2	104	3740		mg/kg	05-23-17	14:22
NITRATE/NITRITE as NITROGEN	SW-846 Method 9056A	2.1	75.5		mg/kg	06-07-17	13:09
ORGANIC NITROGEN	Calculation	1970	70700		mg/kg	06-06-17	15:31
BORON	EPA 200.7	1.6	57.6		mg/kg	05-25-17	10:45
pH	EPA 150.1	7.22			S.U.	05-17-17	14:01
PERCENT SOLIDS	SM 2540 B	2.78	100		Percent	05-24-17	10:17
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	2070	74500		mg/kg	06-06-17	15:31
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	2.07	74.5		g/l	06-06-17	15:31
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.207	7.45		Percent	06-06-17	15:31
TOTAL PHOSPHORUS as P	EPA 365.3	513	18500		mg/kg	06-01-17	15:05
TOTAL PHOSPHORUS as P	EPA 365.3	0.513	18.5		g/l	06-01-17	15:05
TOTAL PHOSPHORUS as P	EPA 365.3	0.051	1.85		Percent	06-01-17	15:05

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. 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.

Tara Ruff
VP/General Manager

CERTIFICATE OF ANALYSIS

SCHREIBER FOODS, INC.
Re: CaSi File/Case/Log: 1208/170631/3946
Samples Received: 03-08-17, 11:15

March 15, 2017

CONTROL NUMBER		SLUDGE 03-08-17, 09:00		FLAG	UNITS	ANALYSIS DATE	ANALYSIS TIME
SAMPLE DESCRIPTION		WET WEIGHT	DRY WEIGHT				
PARAMETER	METHOD						
AMMONIA as NITROGEN	EPA 350.2	19.5	1330		mg/kg	03-14-17	12:03
NITRATE/NITRITE as NITROGEN	SW-846 Method 9056A	14.7	1000		mg/kg	03-09-17	17:25
ORGANIC NITROGEN	Calculation	854	58100		mg/kg	03-14-17	12:03
BORON	EPA 200.7	3.2	218		mg/kg	03-14-17	15:58
pH	EPA 150.1	8.19			S.U.	03-08-17	12:56
PERCENT SOLIDS	SM 2540 B	1.47	100		Percent	03-13-17	11:33
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	873	59400		mg/kg	03-10-17	16:11
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.873	59.4		g/l	03-10-17	16:11
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.087	5.94		Percent	03-10-17	16:11
TOTAL PHOSPHORUS as P	EPA 365.3	267	18200		mg/kg	03-09-17	13:52
TOTAL PHOSPHORUS as P	EPA 365.3	0.267	18.2		g/l	03-09-17	13:52
TOTAL PHOSPHORUS as P	EPA 365.3	0.027	1.82		Percent	03-09-17	13:52

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. 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.

Tara Ruff
VP/General Manager

SCHREIBER FOODS, INC.
Re: CaSi File/Case/Log: 1208/163979/3913
Samples Received: 12-13-16, 10:39

December 22, 2016

CONTROL NUMBER		SLUDGE 12-13-16, 07:00		FLAG	UNITS	ANALYSIS DATE	ANALYSIS TIME
SAMPLE DESCRIPTION		WET WEIGHT	DRY WEIGHT				
PARAMETER	METHOD						
AMMONIA as NITROGEN	EPA 350.2	125	8450		mg/kg	12-20-16	09:28
NITRATE/NITRITE as NITROGEN	SW-846 Method 9056A	<1	<67.6		mg/kg	12-19-16	17:21
ORGANIC NITROGEN	Calculation	651	44000		mg/kg	12-20-16	09:28
BORON	EPA 200.7	3.16	214		mg/kg	12-21-16	10:54
pH	EPA 150.1	7.50			S.U.	12-13-16	10:53
PERCENT SOLIDS	SM 2540 B	1.48	100		Percent	12-19-16	14:00
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	776	52400		mg/kg	12-13-16	16:13
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.776	52.4		g/l	12-13-16	16:13
TOTAL KJELDAHL NITROGEN	SM 4500 N org C EPA 350.2	0.078	5.24		Percent	12-13-16	16:13
TOTAL PHOSPHORUS as P	EPA 365.3	241	16300		mg/kg	12-19-16	16:08
TOTAL PHOSPHORUS as P	EPA 365.3	0.241	16.3		g/l	12-19-16	16:08
TOTAL PHOSPHORUS as P	EPA 365.3	0.024	1.63		Percent	12-19-16	16:08

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. 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.

Tara Ruff
VP/General Manager

Report

Land Application
Operation and Maintenance Manual

Project I.D.: 14S019.00 (revised by SFI 2017)

Schreiber Foods Inc.
Monett, Missouri

August 2014 (revised)

September 2017

Land Application
Operation and Maintenance Manual

Project ID: 14S019.00 (revised by SFI 2017)

Prepared for
Schreiber Foods Inc.
49 North Eisenhower
Monett, MO 65708

Prepared by
Foth Infrastructure & Environment, LLC

August 2014 (revised)
September 2017

2121 Innovation Court, Ste. 300 • PO Box 5126 • De Pere, WI 54115-5126 • (920) 497-2500 • Fax: (920) 497-8516 • www.foth.com

List of Abbreviations, Acronyms, and Symbols

ASTM	ASTM International
BOD_5	Biochemical Oxygen Demand$_5$
CFR	Code of Federal Regulations
CSR	Missouri Code of State Regulations
Foth	Foth Infrastructure & Environment, LLC
gpd	gallons per day
MDNR	Missouri Department of Natural Resources
mgd	million gallons per day
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliter
LEPD	Barry/Lawrence Local Emergency Planning District
NRC	National Response Center
NRCS	National Resources Conservation Service
O&M Manual	*Land Application Operations & Maintenance Manual*
P	Phosphorus
PAN	Plant Available Nitrogen
RQ	Reportable Quantity
Schreiber	Schreiber Foods Inc.
SEMA	State Emergency Management Agency
sq. ft.	square feet
SU	standard units
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
WWTF	Wastewater Treatment Facility

Spill Response Assistance Contacts:

Sunbelt Environmental Services	(800) 333-5052
Mid-America Environmental	(800) 736-3590
Heritage-Crystal Clean – Brian Comegys	Office Branch: (417) 865-4811 Office HQ: 877-938-7948 Cell: (913) 233-2651

Emergency Assistance Contacts:

Emergency (Fire Department, Ambulance, Police)	911
Monett Fire Department	(417) 235-3131
Monett Police Department	(417) 235-3335
Highway Patrol Emergency	(800) 525-5555
Cox – Monett Hospital (Monett, MO)	(417) 235-3144
Mercy Hospital (Aurora, MO)	(417) 678-2122
Cox Medical Center South (Springfield, MO)	(417) 269-6000
Mercy Hospital (Springfield, MO)	(417) 820-2000
Monett Wastewater Treatment Plant	(417) 235-7455
City of Monett (Transformers)	(417) 235-3300 (business hours) (417) 235-4241 (after hours)

Tables

Figures

Appendices

2 Source and Description of Liquid Waste

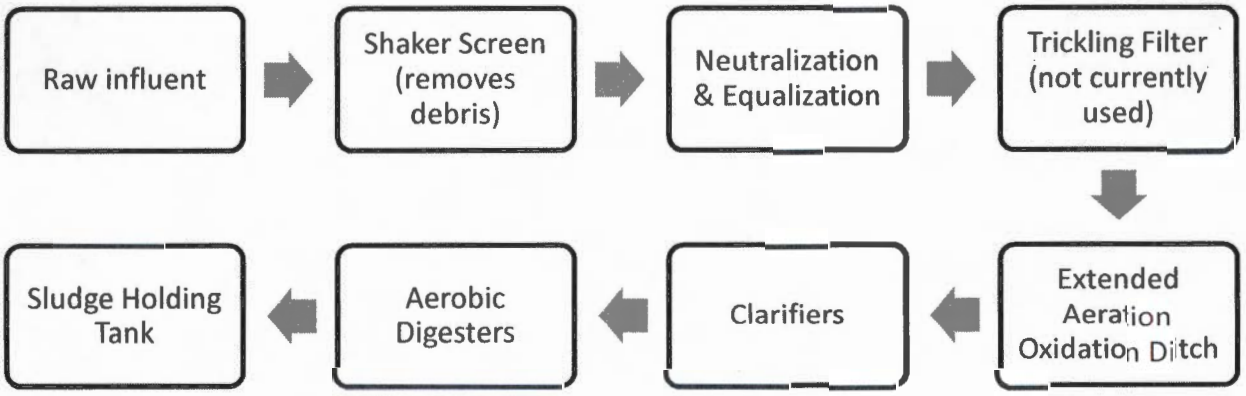
The dairy production facility is the source of all wastewater that is subject to pretreatment. Below is an overview of pretreatment operations, including a description of how sludge is generated from the process.

2.1 Summary of Operations

The production facility generates a maximum of ~50,000 gallons per day (gpd) of wastewater. After an expansion project that will be completed in the spring of 2018, the total maximum wastewater will increase. The results of that is a maximum of 40,000 gallons per month of sludge. Biological treatment is utilized to reduce the wastewater loads to meet city of Monett pretreatment limits. No human pathogens in treated wastewater are anticipated because sanitary wastes from the Schreiber facility are not processed through the onsite pretreatment plant. Sanitary wastes are discharged to the municipal Wastewater Treatment Facility (WWTF) separately from processing wastes.

The pretreatment system consists of an oxidation ditch, clarifiers, and aerobic digesters. A high-rate trickling filter still located onsite is currently not used. The flow diagram below provides a brief overview of the process. Figure 2 provides a more detailed schematic of the pretreatment process.

Sludge Pretreatment Facility Process



2.2 Treatment Process

Raw influent from the production facility is passed through a shaker screen to remove debris and then is pH adjusted in two EQ tanks located at the dairy production facility. After the influent is neutralized and flow equalized it is directed to the wastewater pretreatment plant. The wastewater flows to a collection basin located near the trickling filter (trickling filter not currently used) and then transferred to the oxidation ditch. The wastewater remains in the oxidation ditch for a period of time, after which it is transferred to the clarifiers. From the clarifiers, 40,000 to 50,000 gpd is discharged to the City of Monett sanitary system, while sludge goes to the aerobic digesters as needed. Following the aerobic digesters, the sludge goes to the

3 Management of Sludge

Land application is the preferred method for use of sludge generated from the pretreatment plant. It may also be considered for liquid products or ingredients that become unfit for consumption as a result of events such as trucking accidents, or other circumstances. Hazardous waste will not generated or be land applied.

Sludge will be surface applied with a tank truck to land being used as grassland, hay fields, or row crops. Factors to consider prior to grassland or hay field application include soil moisture, the growth stage of grasses, and current usage. Sludge may be applied whenever soil is being tilled for a new seeding.

3.1 Permitted Sites

Application will only occur at sites that have been public noticed and listed in the Facility Description of the Operating Permit (Appendix A). No application of sludge will occur in areas with public access. Schreiber will follow the Permit modification procedures and obtain MDNR approval before sludge is land applied at sites not listed in the Permit. Revised copies of Application Forms A and R will be submitted to MDNR if additional sites are needed. The Forms will include the names and mailing addresses for the landowners and the adjacent property owners for each proposed application site, topographic maps of each site, and other relevant information.

3.2 No-Discharge Requirements

Sludge will be stored and land applied during suitable conditions to prevent the discharge of process wastes from the Schreiber facility or land application sites. Suitable conditions for land application of sludge are described more fully in Section 4.3 of this *O&M Manual.* Uncontaminated storm water runoff from land application sites may be discharged as long as land application was done in accordance with permit requirements. Schreiber will comply with the state Water Quality Standards rules for general criteria and specific criteria (10 Code of Federal Regulations [CSR] 20-7.031) during application at approved sites. Any unauthorized discharge from the pretreatment facility, or land application sites will be reported to MDNR as soon as possible but always within 24 hours.

3.3 Sludge Characteristics

All sludge to be land applied will meet the characteristics listed in Form R of the Permit application, including the range for pollutants listed in Section 6.20 of this application form. Sludge will not contain any other pollutants other than those listed in the Permit application. Schreiber will notify MDNR within 30 days and a revised Permit application will be submitted if new pollutants are identified or if sludge characteristics or pollutant levels are found to be significantly higher than Permit application values. MDNR notification and submittal of a revised application will occur prior to any further sludge application. Sludge that is being land applied will be tested and monitored at least once per quarter to provide updated information.

be checked periodically in accordance with manufacturers' requirements and serviced to ensure proper operation and flow.

Based on requirements in the Operating Permit, Special Condition C.12.d, the holding tank needs to have an inspection performed at least once per month. The inspection shall check for structural integrity and visible leaks. The freeboard shall be measured weekly. The Holding Tank Inspection form used for recording this information is included in Appendix B.

3.5.3 Emergency Discharges

Emergency discharges from wastewater storage structures may only occur if rainfall exceeds the 1 in 10-year (determined using data from the Missouri Climate Atlas) or the 24-hour, 25-year rainfall events. The 1 in 10-year event can be determined using data from the Missouri Climate Atlas and the 24-hour, 25-year event can be calculated using data from the National Resources Conservation Service (NRCS) Urban Hydrology for Small Watersheds. Monitoring of these discharges will occur daily while discharging.

Discharge for any other reason from the storage structures or from land application sites is a permit violation and must be reported to MDNR within 24 hours from the time when Schreiber becomes aware of the circumstances. A written submission will also be provided to MDNR within five business days of the time when circumstances are known. The written submission should include:

- A description of the discharge and its cause;
- The duration of the discharge, including exact dates and times, and if the discharge 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 discharge.

3.5.4 Spill Response

In the event of a spill or unauthorized emergency discharge, the following measures will be initiated:

- Alert personnel in the area of the situation.
- Initiate notification of the Emergency Response Coordinator or his/her alternate. The Emergency Response Coordinator and/or his/her designee will evaluate the need for activating the emergency procedures. At any time, if an individual feels the need to call the local emergency personnel (911), they should do so.

must be provided orally or via electronic method approved by the MDNR within 24 hours from the time the permittee becomes aware of the circumstances. The following information shall be included with the oral report:

- Any unanticipated bypass which exceeds any effluent limitation in the permit.
- Any upset which exceeds any effluent limitation in the permit.
- Violation of a maximum daily discharge limitation for any of the pollutants listed by the MDNR in the permit required to be reported within 24 hours.

While a written report may also be required, the MDNR may waive the need for a written report on a case-by-case basis if the oral report has been received within 24 hours.

yield. The sludge application rate is the amount of sludge needed to meet the agronomic rate. The following requirements will be followed during land application:

- An onsite visual examination of the field's soil moisture condition will be done prior to application to determine whether land application can occur. Moisture conditions should be such that if sludge is applied, it will not flow off the site due to excessive moisture due to rainfall, etc.

- No application will occur during frozen, snow covered, or saturated soil conditions, or if a precipitation event that could create runoff is likely to occur within 24 hours of a planned application.

- No sludge will be placed in locations where it is reasonably certain to cause surface water pollution during storm water runoff. Set-backs are identified for each Site Location to aid in this effort.

- Land application will only occur during daylight hours.

- Nutrients will be applied as close to crop use as possible to maximize nutrient uptake and reduce potential losses.

4.3.1 Slope Limitations

The permit specifies certain slope limitations for application of sludge. Slope limitations include the following:

- No application for slopes exceeding 20%.

- For slopes exceeding 10% and less than 20%, the hourly application rate will be less than one-half (1/2) the design sustained permeability and will not exceed one-half (1/2) inch per hour.

4.3.2 Setback Distance Requirements

Land application will not be done near environmentally sensitive areas. Table 4-1 summarizes the setback distances required for the protection of these areas.

crop growth and also nutrients removed from the field with various crop harvests. A copy of this guide is also provided in Appendix F. This information should be used as part of the nutrient management process when determining proper land application rates of sludge.

Agronomic rates can also be determined by the University of Missouri fertilizer recommendations (http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx)

4.4.1 Annual Nitrogen Application

Annual nitrogen application from sludge should not exceed the recommended nitrogen application rate for non-legume crops and the nitrogen removal capacity of legume crops. The recommended nitrogen application rate for non-legume crops should be based on nitrogen recommendations. The nitrogen recommendation must be adjusted using nitrogen credits for a preceding legume crop, residual fertilizer nitrogen value of applications from the previous year and, when appropriate, excessive residual inorganic nitrogen. The nitrogen removal capacity of legume crops should be based on the estimated nitrogen content of the harvested crop. The estimated nitrogen content of the crop must be adjusted using nitrogen credits for residual fertilizer nitrogen value of applications from the previous year and, when appropriate, excessive residual inorganic nitrogen in the soil profile.

The nitrogen contribution of sludge should be based on a calculation of PAN. PAN is calculated using the following formula in milligrams per kilogram (mg/kg):

Plant-available nitrogen (PAN) = [Ammonia nitrogen * 0.6] + [organic nitrogen * 0.4] + [nitrate nitrogen]

4.4.2 Phosphorus-Based Application

When phosphorus-based management is necessary, sludge applications cannot exceed the annual planned phosphate removal capacity of the crop. The application rate must comply with the following conditions:

- Rates shall not exceed the recommended nitrogen application rate during the year of application, or estimated nitrogen removal capacity in the harvested crop during the year of application;
- The amount of phosphorus banked in the soil will not exceed four years of crop removal for the planned rotation based on agronomic recommendations; and
- The actual application rate shall not exceed the planned multi-year application rate.

No additional sludge will be applied on an application site until the applied phosphorus has been removed from the site by crop removal or harvest.

4.4.3 Tabulation of Land Application Data

The facility uses a detailed Microsoft® Excel spreadsheet to keep track of gallons applied at each site on a given day. Input data include the number of gallons of sludge, the analysis of organic

5 Monitoring Procedures

Testing of sludge generated from the pretreatment process and soil from land application sites is required for compliance with the Operating Permit (Appendix A). All emergency discharges from the pretreatment plant will be tested if they occur. The following sections describe how monitoring will occur.

5.1 Sludge Testing

Sludge will be sampled and analyzed on a quarterly frequency. A grab sample will be collected from the holding tank or the application truck. The sample should be iced and submitted to Consulting Analytical Services, Inc. or other appropriate laboratory for analysis. The address for Consulting Analytical Services, Inc. is as follows:

Consulting Analytical Services, Inc.
2804 East Battlefield
Springfield, MO 65804

Sludge analysis will use methods that conform to the reference methods listed in 10 CSR 20-7.015 (9) (A) 2. Methods may include those available in:

- *Standard Methods for the Examination of Waters and Wastewaters* (14, 15, 16, 17, 18, 19, 20, and 21st Editions, Water Environment Foundation);
- *Water Testing Standards* (Volumes 11.01 and 11.02, ASTM);
- *Methods for Chemical Analysis of Water and Wastes* (USEPA); and
- *NPDES Compliance Sampling Inspection Manual* (USEPA).

Table 5-1 summarizes the parameters for analysis of each sludge sample.

Table 5-1 – Sludge Analysis Parameters

Sample Type	Parameter	Units
One grab sample per quarter	pH – Units	Standard Units (SU)
	Total Kjeldahl Nitrogen as N	mg/kg
	Nitrate/Nitrite as N	mg/kg
	Ammonia Nitrogen as N	mg/kg
	Total Phosphorus as P	mg/kg
	Percent Solids	%
	Total Boron	mg/kg

Prepared by: TSB
Checked by: CED1

Table 5-2 – Soil Testing Parameters

Parameter	Units	Frequency
Ammonia as N	mg/kg	Once every 5 years
Chlorides	mg/kg	Once every 5 years
Nitrate/Nitrite as N	mg/kg	Once every 5 years
pH – Units	Standard Units (SU)	Once every 5 years
Available Phosphorus as P (Bray 1-P method)	mg/kg	Once every 5 years
Total Sodium	mg/kg	Once every 5 years
Exchangeable Sodium	%	Once every 5 years

Prepared by: TSB
Checked by: CED1

5.3 Emergency Discharge Testing

In the event of an emergency discharge from wastewater storage structures, all discharges will be sampled and analyzed once per day while discharging. Per the Operating Permit, an emergency discharge is allowed if rainfall exceeds either the one in 10-year or the 24-hour, 25-year for rainfall events. Discharge from the storage structures for any other reason is considered to be a permit violation and needs to be reported in accordance with Standards Conditions Part 1, Section B.2.b included with the Operating Permit.

Emergency discharges will be analyzed using methods that conform to the reference methods listed in 10 CSR 20-7.015 (9) (A) 2. Methods may include those available in:

- *Standard Methods for the Examination of Waters and Wastewaters* (14, 15, 16, 17, 18, 19, 20, and 21st Editions, Water Environment Foundation);
- *Water Testing Standards* (Volumes 11.01 and 11.02, ASTM);
- *Methods for Chemical Analysis of Water and Wastes* (USEPA); and
- *NPDES Compliance Sampling Inspection Manual* (USEPA).

Table 5-3 summarizes the parameters which will be tested for each emergency discharge.

6 Recordkeeping

This section describes the recordkeeping requirements for the application of sludge. All records will be maintained by Schreiber representatives. Copies of all records described in the following sections must be retained for at least five years and will be made available to MDNR upon request.

6.1 Precipitation Measurement

Daily precipitation will be recorded or obtained from the nearest National Weather Service location. Monthly, quarterly, and annual precipitation will be compiled for reporting purposes.

6.2 Daily Land Application Logs

Daily land application logs will be prepared and kept on file for each application site. The logs should include:

- Date of sludge application;
- Weather conditions (e.g., sunny, overcast, raining, below freezing);
- Soil moisture conditions;
- Application method;
- Application rate (lbs./acre);
- Amount of nutrients applied (lbs./acre); and
- Total amount of sludge applied per acre.

The Land Application Control Parameters Worksheet, included in Appendix D, will assist in documenting some of this information.

6.3 Site Information Sheets

Information sheets should be prepared and updated annually for each application site listed in the Operating Permit. The sheets should include:

- Land owner's name;
- Land owner's address;
- Land owner's telephone number;
- Site acreage;
- Identification of sensitive features and setback distances;
- Results of the most recent sludge test; and
- Planned application rates for the year.

To assist in this process, the list of all current land owners associated with land application sites is included in Appendix H. Specific Site Information Sheets are provided for each land application site. The Site Information Sheets provide general site information such as facility name, landowner, location, data regarding crop and site information, setbacks, buffers, and geological restrictions. Site Information Sheets for all 44 locations are provided in Appendix H.

7 Reporting

Monitoring reports will be prepared and submitted to MDNR at the frequencies specified in the Operating Permit.

7.1 Quarterly Reporting

A report will be prepared and submitted for sludge applications which occur during each quarter. This report will provide information about sludge composition, the volume of sludge applied, and any emergency discharges of sludge at the pretreatment plant, or land application sites occurring during the quarter. The quarterly report will include the following information:

- Sludge testing data including pH, Total Kjeldahl Nitrogen as N, Nitrate/Nitrite as N, Ammonia Nitrogen as N, Total Phosphorus as P, Percent Solids, and Total Boron.
- Land application data including the volume of sludge applied, application area (in acres), and application rate for each application area.

The reporting deadline for each quarter is April 28th, July 28th, October 28th, and January 28th.

7.2 Annual Report on Land Application

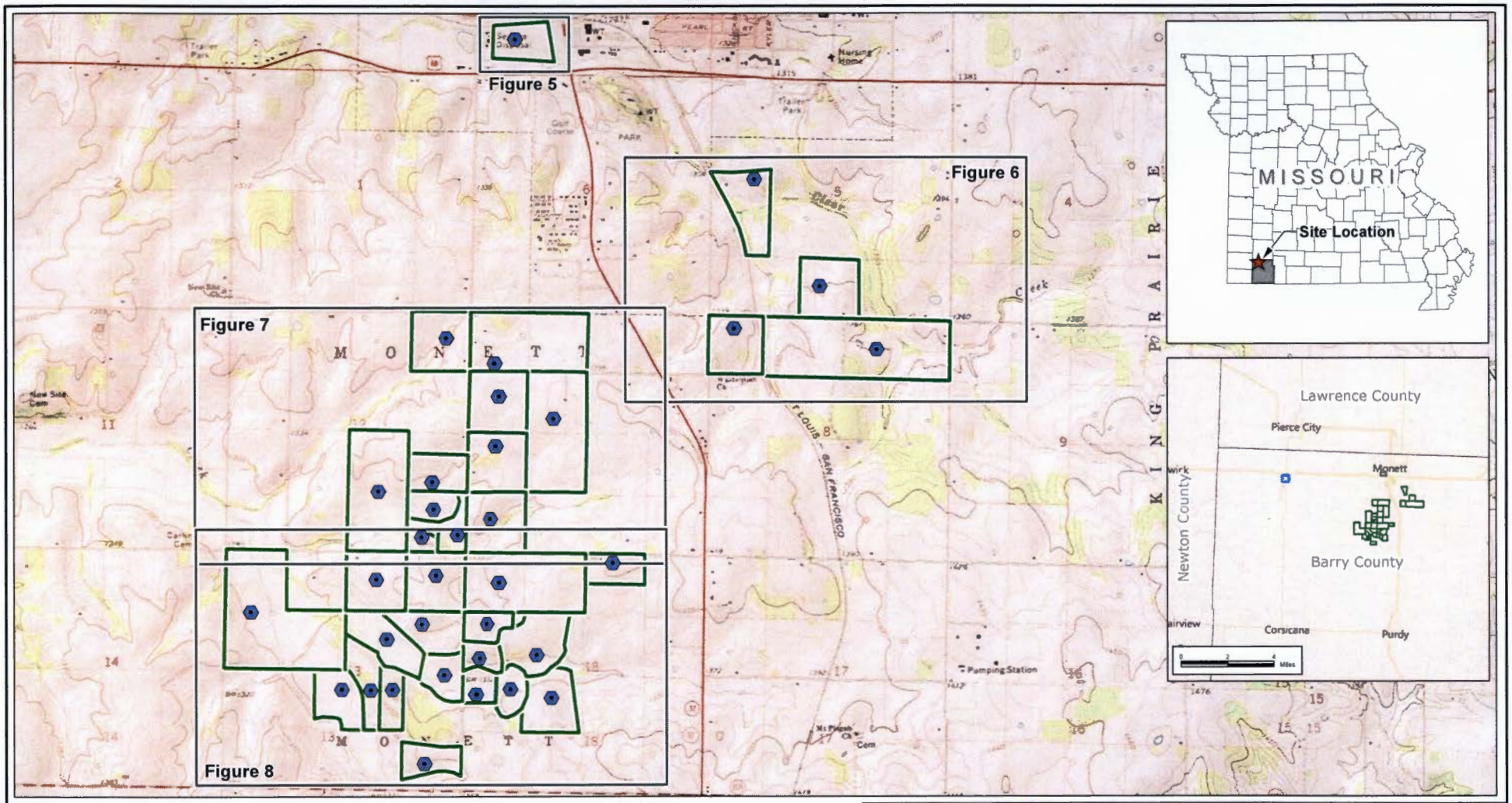
An annual report will be prepared and submitted to the MDNR – Southwest Regional Office by January 28th of each year for the previous calendar year. The report will include a summary of the following:

- Record of maintenance and repairs during the year, average number of times per month the pretreatment plant is checked to see if it is operating properly, and descriptions of any unusual operating conditions encountered during the year.
- Number of days the sludge storage tank discharged during the year, the discharge flow, the reason for each discharge, and testing results for each discharge.
- A summary for each land application site showing the number of acres used, planned crop and yield, actual crop and yield, crop nutrient recommendation (lbs./acre), actual amount of nutrient applied (lbs./acre), and total amount of sludge applied (gallons or tons/acre).
- PAN calculations documenting that applied nitrogen will be utilized for fields where the total nitrogen application exceeds 150 lbs./acre.
- Summary of problems or deficiencies identified, permit violations, corrective action taken and improvements planned.

8 Training

All personnel, including pretreatment plant personnel and contract haulers, involved in the execution of this *O&M Manual* will receive annual training on the contents of the manual. Documentation of each training event will be maintained for at least five years and will be readily available for MDNR review upon request. Suggested training topics and a form that can be used to document training is included in Appendix I.

Figures



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location
- Site Outline
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

SITE LOCATION MAP

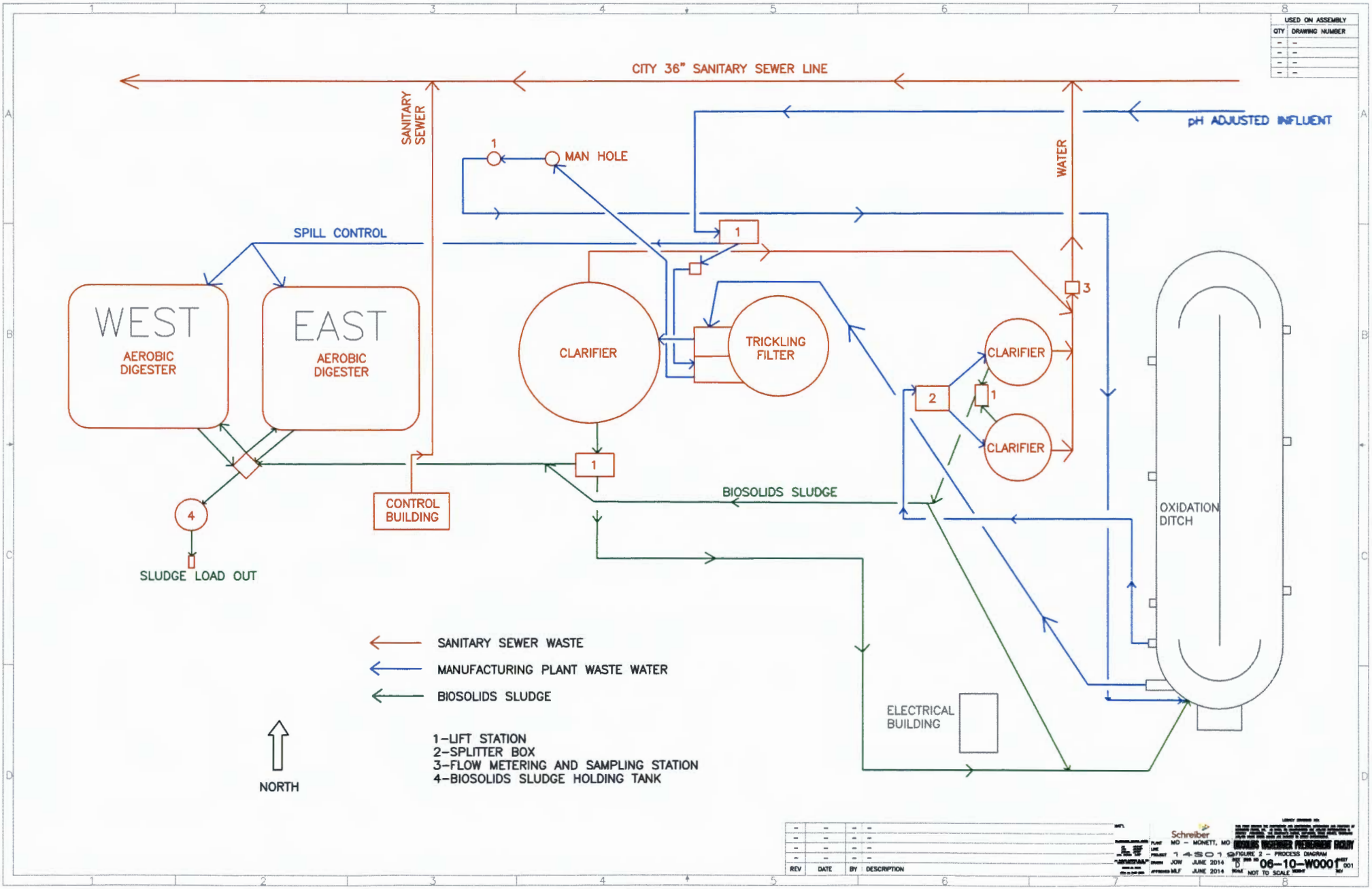
WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 1	1

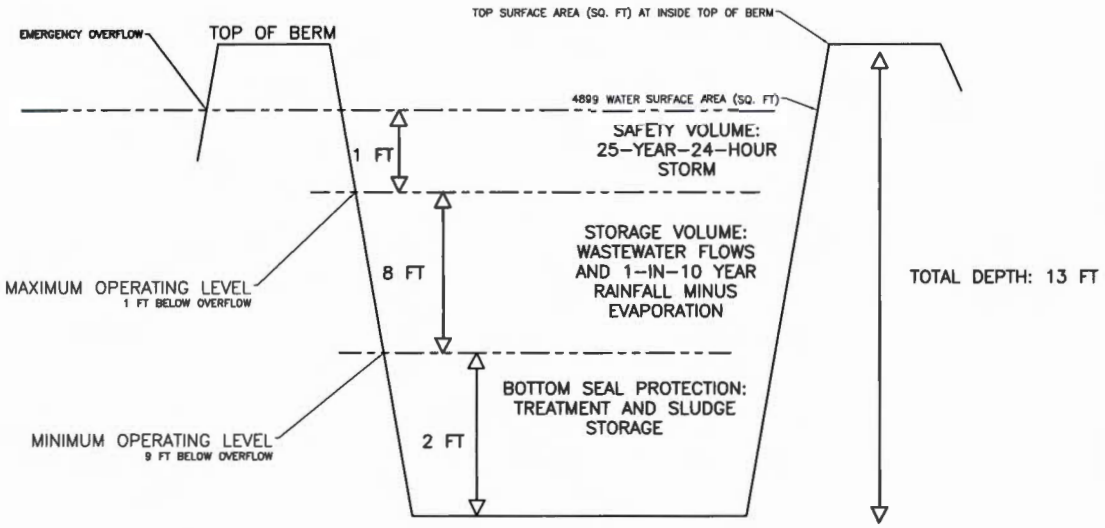
SCALE 0 1,000 2,000 Feet | WEIGHT | REV

Path: X:\FOTHWE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 1 - Site Location Map.mxd Date: 9/11/2017


CITY 36" SANITARY SEWER LINE
SANITARY SEWER
pH ADJUSTED INFLUENT
WATER
MAN HOLE
SPILL CONTROL
WEST
AEROBIC DIGESTER
EAST
AEROBIC DIGESTER
CLARIFIER
TRICKLING FILTER
CLARIFIER
CLARIFIER
OXIDATION DITCH
CONTROL BUILDING
BIOSOLIDS SLUDGE
SLUDGE LOAD OUT
ELECTRICAL BUILDING
SANITARY SEWER WASTE
MANUFACTURING PLANT WASTE WATER
BIOSOLIDS SLUDGE
NORTH
1-LIFT STATION
2-SPLITTER BOX
3-FLOW METERING AND SAMPLING STATION
4-BIOSOLIDS SLUDGE HOLDING TANK
USED ON ASSEMBLY
QTY
DRAWING NUMBER
REV
DATE
BY
DESCRIPTION
Schreiber
MO - MONETT, MO
FIGURE 2 - PROCESS DIAGRAM
JOW
JUNE 2014
MLF
JUNE 2014
NOT TO SCALE
06-10-W0001

EAST AND WEST DIGESTER

LAGOON OR STORAGE BASIN
PROFILE SKETCH



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

A. FREEBOARD IS DEPTH FROM TOP OF BERM TO EMERGENCY SPILLWAY (MINIMUM OF 1 FOOT);
B. SAFETY VOLUME IS DEPTH FOR 25-YEAR, 24-HOUR STORM (MINIMUM OF 1 FOOT);
C. MAXIMUM OPERATING LEVEL IS AT BOTTOM OF THE SAFETY VOLUME (MINIMUM OF 2 FEET BELOW TOP OF BERM).
D. MINIMUM OPERATING LEVEL IS 2 FEET ABOVE BOTTOM OF LAGOON FOR SEAL PROTECTION PER 10 CSR 20-8. THE MINIMUM OPERATING LEVEL MAY BE GREATER THAN 2 FEET WHEN ADDITIONAL TREATMENT VOLUME IS INCLUDED.
E. STORAGE VOLUME AND DAYS STORAGE ARE BASED ON THE VOLUME BETWEEN MINIMUM AND MAXIMUM OPERATING LEVELS.
F. TOTAL DEPTH IS FROM TOP OF BERM TO BOTTOM OF BASIN INCLUDING FREEBOARD.

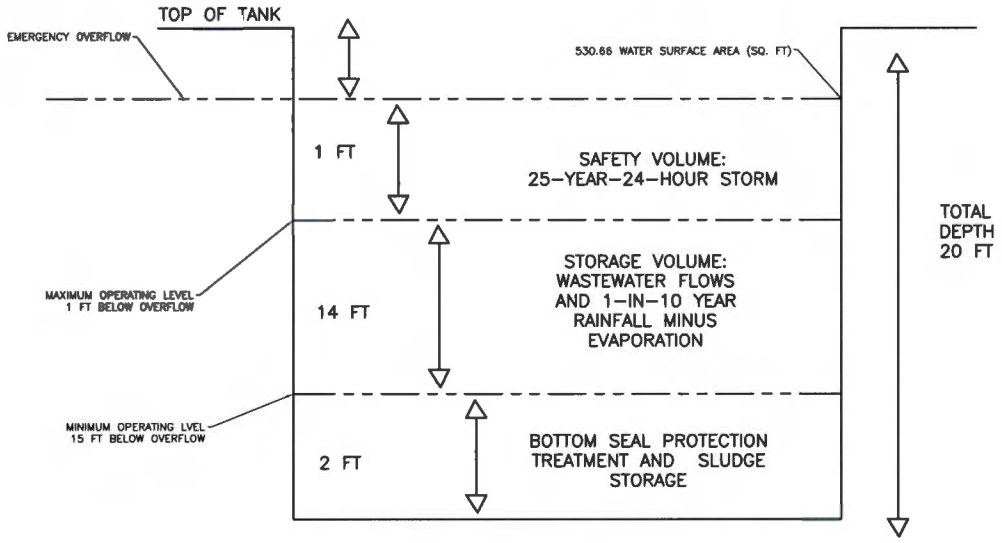
REV	DATE	BY	DESCRIPTION

Schreiber
PLANT MO - MONETT, MO
LINE
PROJECT
DRAWN JOW JUNE 2014
APPROVED MFL JUNE 2014

BIOSOLIDS WASTEWATER PRETREATMENT FACILITY
FIGURE 3 - EAST AND WEST DIGESTER
SIZE D DWG NO 06-10-W0002 SHEET 001
SCALE NOT TO SCALE WEIGHT REV

HOLDING TANK

LAGOON OR STORAGE BASIN
PROFILE SKETCH



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

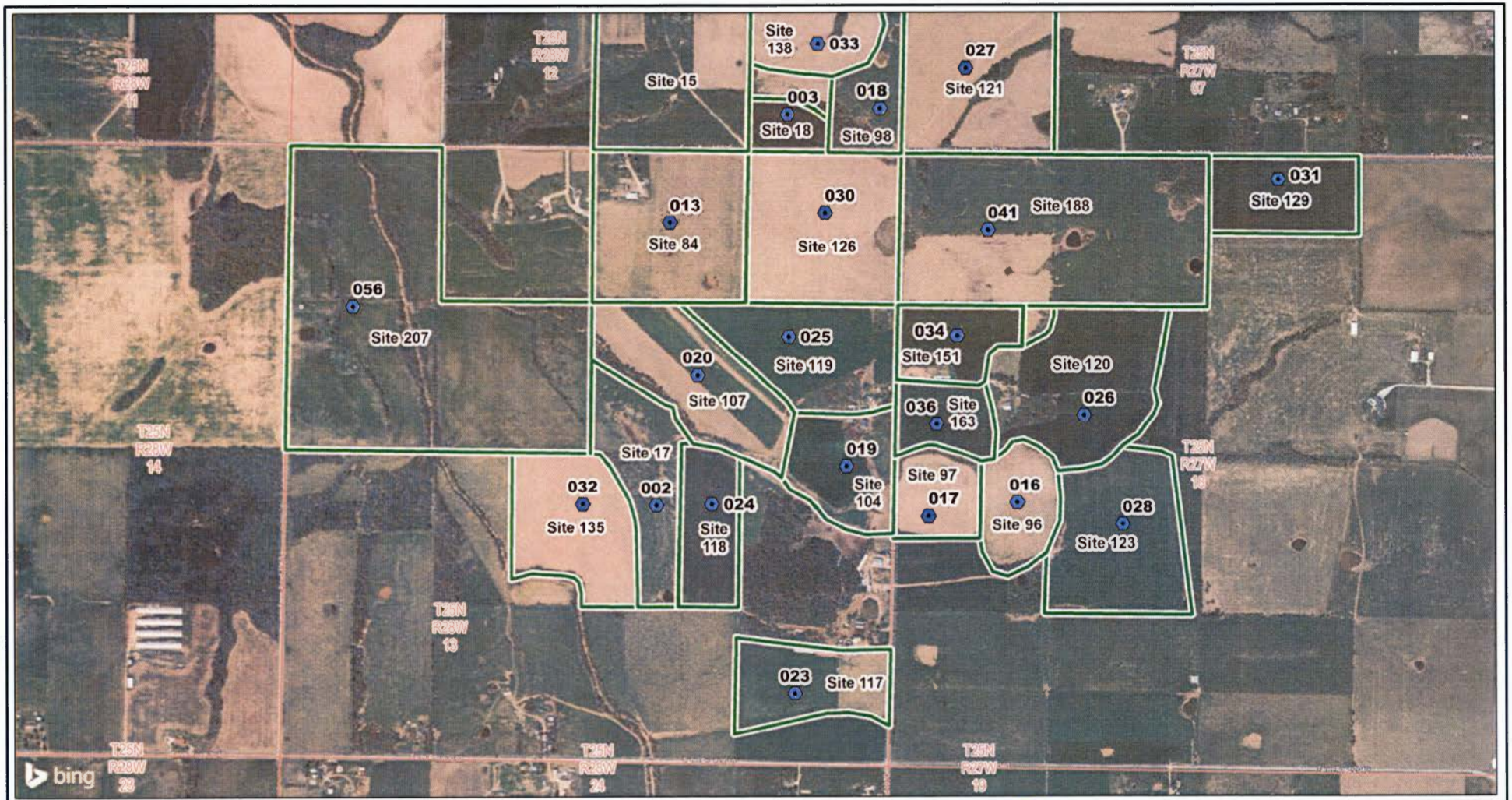
G. FREEBOARD IS DEPTH FROM TOP OF BERM TO EMERGENCY SPILLWAY (MINIMUM OF 1 FOOT);
H. SAFETY VOLUME IS DEPTH FOR 25-YEAR, 24-HOUR STORM (MINIMUM OF 1 FOOT);
I. MAXIMUM OPERATING LEVEL IS AT BOTTOM OF THE SAFETY VOLUME (MINIMUM OF 2 FEET BELOW TOP OF BERM).
J. MINIMUM OPERATING LEVEL IS 2 FEET ABOVE BOTTOM OF LAGOON FOR SEAL PROTECTION PER 10 CSR 20-8. THE MINIMUM OPERATING LEVEL MAY BE GREATER THAN 2 FEET WHEN ADDITIONAL TREATMENT VOLUME IS INCLUDED.
K. STORAGE VOLUME AND DAYS STORAGE ARE BASED ON THE VOLUME BETWEEN MINIMUM AND MAXIMUM OPERATING LEVELS.
L. TOTAL DEPTH IS FROM TOP OF BERM TO BOTTOM OF BASIN INCLUDING FREEBOARD.

REV	DATE	BY	DESCRIPTION

Schreiber
MO – MONETT, MO

BIOSOLIDS WASTEWATER PRETREATMENT FACILITY
FIGURE 4 – HOLDING TANK
SIZE D DWG NO 06-10-W0003 SHEET 001
SCALE NOT TO SCALE WEIGHT REV

DRAWN JOW JUNE 2014
APPROVED MLF JUNE 2014



NOTES:
1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND
- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 6/26/17
APPROVED	SAS1 6/26/17

LAND APPLICATION FIELDS
WASTEWATER NUTRIENT PLAN
10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 5	1

SCALE 0 400 800 Feet | WEIGHT | REV

Path: X:\...\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Figure 5 - Land Application Fields 3 - Site Layout Map.mxd Date: 6/26/2017

NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT	10 DAIRY STREET
LINE	
PROJECT	15S050
DRAWN	BJW1 9/11/17
APPROVED	SAS1 9/11/17

LAND APPLICATION FIELDS

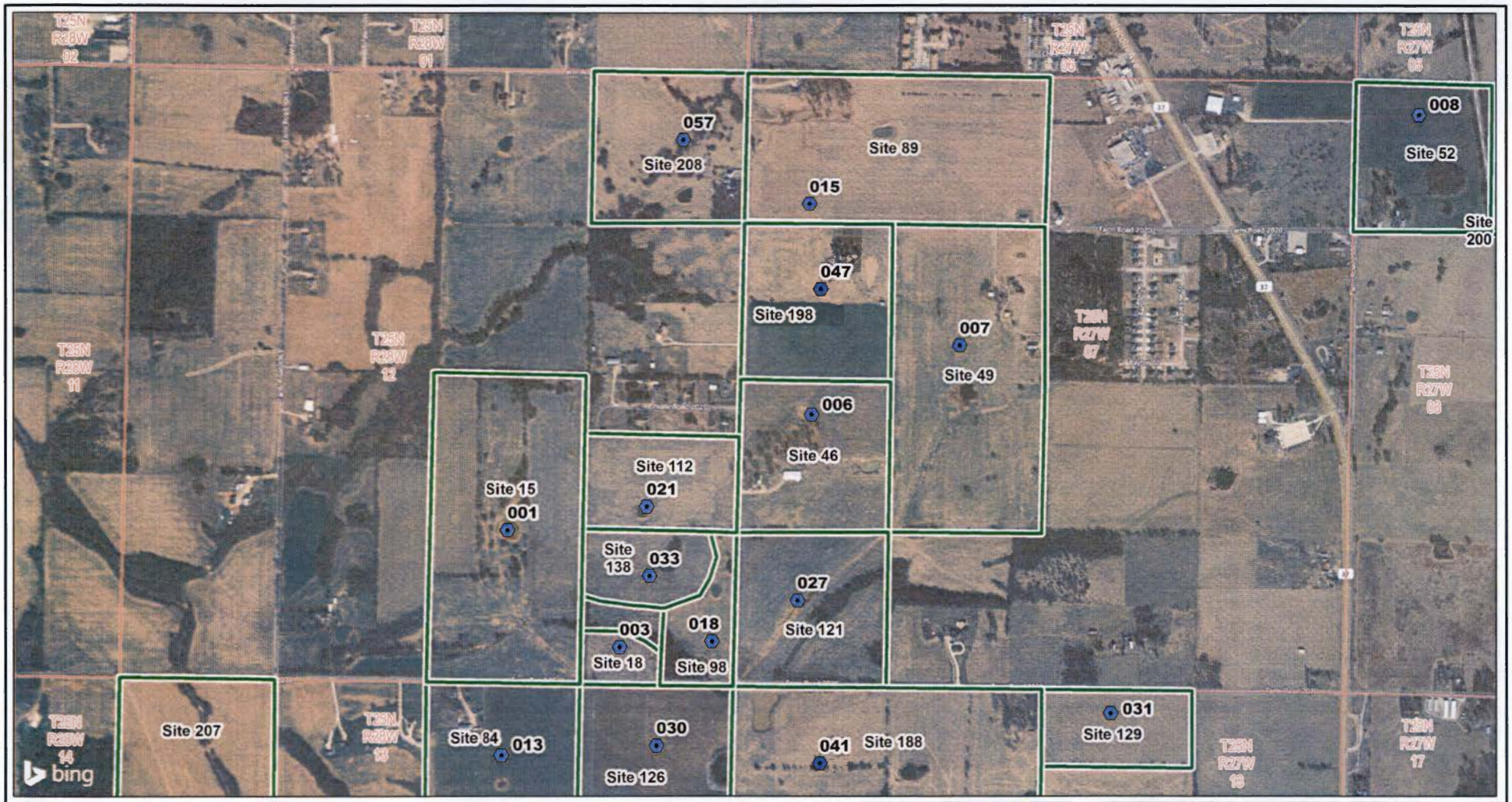
WASTEWATER NUTRIENT PLAN

10 DAIRY ST, MONETT, MO 65708

SIZE	DWG NO	SHEET
B	FIGURE 6	1

SCALE 0 300 600 Feet | WEIGHT | REV

Path: X:\FOTH\IE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 6 - Land Application Fields 1 - Site Layout Map.mxd Date: 9/11/2017



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

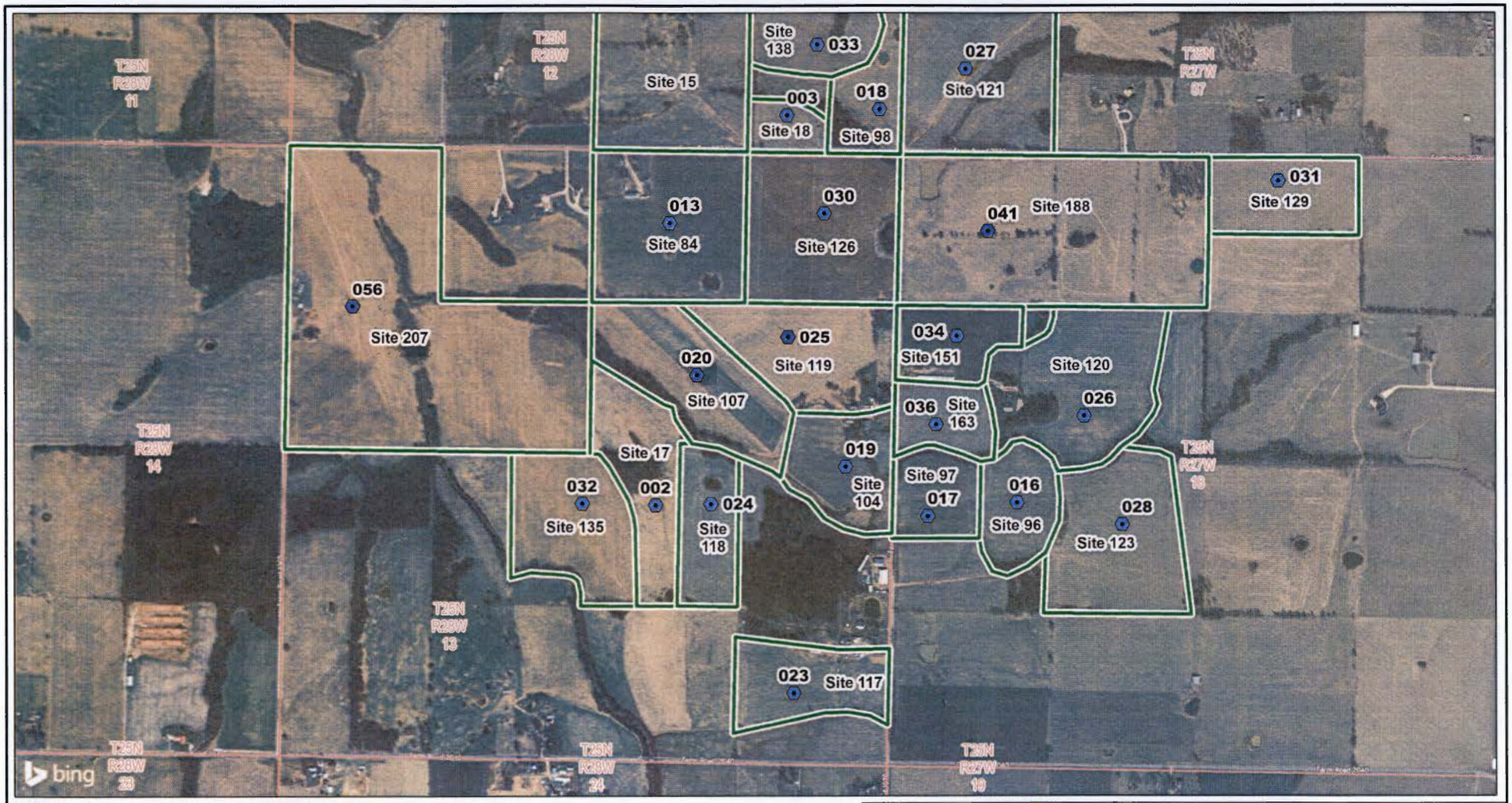
LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber	
PLANT 10 DAIRY STREET LINE PROJECT 15S050	LAND APPLICATION FIELDS WASTEWATER NUTRIENT PLAN 10 DAIRY ST, MONETT, MO 65708
DRAWN BJW1 9/11/17 APPROVED SAS1 9/11/17	SIZE B · DWG NO FIGURE 7 · SHEET 1 SCALE 0 400 800 Feet · WEIGHT · REV

Path: X:\FGTH\IE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 7 - Land Application Fields 2 - Site Layout Map.mxd Date: 9/11/2017



NOTES:

1. Imagery from Esri. Courtesy of the Microsoft Corporation and its data suppliers.

LEGEND

- Permit Feature Location and Number
- Site Outline and Number
- Section Boundary

N

Schreiber

PLANT 10 DAIRY STREET
LINE
PROJECT 15S050

DRAWN BJW1 9/11/17
APPROVED SAS1 9/11/17

LAND APPLICATION FIELDS
WASTEWATER NUTRIENT PLAN
10 DAIRY ST, MONETT, MO 65708

SIZE B | DWG NO FIGURE 8 | SHEET 1
SCALE 0 400 800 Feet | WEIGHT | REV

Path: X:\FOTH\IE\Schreiber Foods\15S050\GIS\mxd\Monett MO WW Permit\Manual\Figure 8 - Land Application Fields 3 - Site Layout Map.mxd Date: 9/11/2017

Appendix A

Missouri State Operating Permit No. M-0128241

Appendix B

Holding Tank Inspection Form

Sludge Storage Structure Freeboard Measurements and Monthly Visual Inspections

Inspected by: _____ Month: _____

Name of Storage Structure: _____

Sludge Storage Structure - Freeboard Measurements	
Date	**Freeboard (Feet from Top of Structure)**

Sludge Storage Structure – Visual Inspection	**Yes**	**No**
Does area appear clean, no spills/leaks evident?	☐	☐
Is there evidence that overflow has occurred?	☐	☐
Does storage unit appear to be structurally sound?	☐	☐
When tank is empty, does the liner appear to be structurally sound with no evidence of tears or leaks?	☐	☐
Note comments and recommendations:		
Are all previous recommendations and action items resolved?	☐	☐

Appendix C

Spill & Leak Documentation Worksheet Form

Schreiber

Spill & Leak Documentation Worksheet

I. Contact Options

Paul Bytheway	Work	920-455-6109	Cell	920-371-9208	Home	920-371-9208
Colleen Geurts	Work	920-455-6771	Cell	920-857-7223	Home	920-983-0627
Kim Braegger	Work	435-563-9340	Cell	435-757-4819	Home	435-258-4339

II. Gather Information about the Spill

A. Facility Address

B. Person Filling Out the Form

C. When did you first learn of the potential for the spill or leak to enter the environment ?

Date / Time

D. When did the spill or leak occur, if known ?

Date / Time

E. What substance was spilled ? Quantity?

Substance | Amount in pounds or gallons

F. What caused the spill ?

Cause or Unknown if not known.

G. Were there any injuries caused by the spill? Is evacuation required?

Describe | Describe

H. Did the spill or leak enter the "environment" ?

No
Yes

I. Where did the spill or leak enter the "environment" ? If Answer to H is no, enter NA and explain why (i.e. contained in secondary containment, parking lot, etc.)

Ground	Describe further
Water	Describe further
Air	Describe further
Sanitary Sewer	Describe further

J. If the spill or leak entered the sanitary sewer, does the leak or spill meet the definition of a "slug load" per your wastewater permit ?

No
Yes — Call your Publically Owned Treatment Works (POTW).
Not applicable

K. If the spill or leak was a petroleum or vegetable oil, did the spill leave a oil sheen (visible oil slick) on the surface of a navigable waterway ?

No
Yes — Call the National Response Center @ (800)424-8802 and SERC.
Not applicable

L. If the spill or leak was a petroleum or vegetable oil, was there a release to soil of more than the state reportable quantity?

AZ: (NA), CA: Any amount, MO: 50 gal, PA: 5 gal, TX: 25 gal, UT: 25 gal, WI: 5gal oil or 1 gal gasoline

No
Yes — Call the SERC.
Not applicable

M. If the spill or leak was a hazardous waste, is there an imminent or actual emergency situation that threatens human health or the environment despite RQ?

No
Yes — Call the National Response Center @ (800)424-8802 and SERC.
Not applicable

N. If the release was a vapor, how many pounds entered the environment ?

Pounds Released	Section 304 EHS RQ (in GA the RQ is 100 lbs or RQ whichever is less)	CERCLA RQ (including Hazardous Waste)

O. If the spill was a liquid or solid, fill in the table below.

No
Yes

Quantity (Gallons) Released	Hazardous Chemicals Present	% Present in	Specific Gravity	Pounds Released	Section 304 EHS RQ (in GA the RQ is 100 lbs or RQ whichever is less)	CERCLA RQ (including Hazardous Waste)
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		
0		0%	1	0.0		

If the percentages of the hazardous constituents shown on the MSDS sheet are by VOLUME, enter the specific gravity of the individual hazardous constituent here. If the percentages of the hazardous constituents shown on the MSDS sheet are by WEIGHT, enter the specific gravity of the entire chemical.

P. Look in the List of Lists to determine if the hazardous constituent has reporting thresholds

Click below for a "List of Lists" hyperlink to determine Federal, State and Local Reporting thresholds

http://yosemite.epa.gov/oswer/lol.nsf/homepage

Enter the value listed in the column "Section 304 EHS RQ"

If the amount of the calculated pounds of the hazardous constituent exceeds Section 304 EHS RQ in a 24 hour period, reporting to the SERC (State Emergency Response Commission) LEPC (Local Emergency Planning Committee), and National Response Center ((800) 424-8802) is required.

Enter the value listed in the column "Cercla RQ"

If the amount of the calculated pounds of the hazardous constituent exceeds CERCLA RQ in a 24 hour period, reporting to the SERC (State Emergency Response Commission) LEPC (Local Emergency Planning Committee), and National Response Center ((800) 424-8802) is required.

E.6 Release Event:

- Gas release
- Liquid spills/evaporation
- Fire
- Explosion
- Uncontrolled/runaway reaction

E.7 Release Source

- Storage vessel
- Piping
- Process vessel
- Transfer hose
- Valve
- Pump
- Joint
- Other (specify)

E.8 Weather Conditions at Time of Event

- Wind speed / units
- Wind direction
- Temperature (°F)
- Atmospheric stability class
- Precipitation present
- Unknown weather conditions (check if all above are all unknown)

E.9 On-Site Impacts (enter numbers only)

	Employees or Contractors	Public Responders	Public
# Deaths:			
# Injuries:			

Property damage ($)

E.10 Known Off-Site Impacts

- Deaths
- Hospitalizations
- Other medical treatments
- Evacuated
- Sheltered-in-place
- Property damage ($)

E.10 Environmental Damage

- Fish or animal kills
- Tree, lawn, shrub or crop damage
- Water contamination
- Soil contamination
- Other (specify)

E.11 Initiating Event:

- Equipment failure
- Human error
- Natural (weather conditions, earthquake)
- Unknown

Appendix D

Land Application Operational Control Parameters Worksheet

Facility Name	Schreiber Foods Monett Pretreatment Plant	Page 1 of 1	
Permit Number	MO-0128241	Month (1 to 12)	10
County	Barry	Year (4-digit)	2017

LAND APPLICATION OPERATIONAL CONTROL PARAMETERS

Outfall #002	Volume Applied	Rainfall	Application Area	Application Rate	Site 17
DATE	Gallons Daily	Inches Daily	Acres Daily	Inches/acre Daily	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

Appendix E

Spreading Equipment Inspection Form

Land Spreading Equipment and Site Inspection Form

Truck Identification Number: _____

Date	Site Number	Equipment Malfunction or Leaks Observed? (Yes/No)	Site Perimeter Check – Unusual Conditions Observed? (Yes/No)	Excessive Water Observed? (Yes/No)	Observations and Corrective Action (If Required)	Initials of Inspector
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Date of Last Calibration Check of Spreading Equipment: _____

Appendix F

Nutrient Management Tools

ENVIRONMENTAL QUALITY

MU Guide

PUBLISHED BY MU EXTENSION, UNIVERSITY OF MISSOURI-COLUMBIA muextension.missouri.edu/xplor/

Land Application Considerations for Animal Manure

Charles D. Fulhage
Department of Biological and Agricultural Engineering

Manure should always be spread or irrigated uniformly on fields with consideration given to the proper application rate. Nutrient losses, pollution potential and odor are reduced if manure is incorporated into the soil as soon as possible after spreading. In the case of irrigated lagoon effluent, incorporation occurs if the soil is dry enough for the liquid to soak in and the application rate does not exceed the infiltration rate of the soil.

When manure is applied to pasture or hay land at proper rates and soil conditions, erosion and runoff are not usually a problem. However, it is important that cultivated land on which manure is applied not be subject to excessive erosion because erosion is an effective mechanism for moving manure nutrients off a field and into a stream. To the extent possible, consideration should be given to the probability of a runoff-causing rainfall event when manure is being land applied.

Application timing

The longer manure is in the soil before plants take up its nutrients, the more those nutrients, especially nitrogen, can be lost through mineralization, volatilization, denitrification, leaching and erosion. Therefore, proper application timing is essential to efficient use of nutrients and pollution prevention.

Spring application is best for conserving nutrients. Manure applied during the spring will release nutrients through mineralization during the growing season of most crops.

Summer application is also acceptable and is most suited to hay and pasture areas rather than row crop or small grains. Application equipment such as tank wagons and injectors cannot be used on row crops or small grains during most of the growing season. Irrigation equipment such as traveling guns or center pivots can generally be used during the growing season of row crops and small grains. Legumes can use manure nitrogen. However, experience has shown that applying manure to legumes tends to stimulate broadleaf weed and grass growth in legume stands. Grasses such as fescue or reed canarygrass, which can use high rates of nitrogen application while tolerating relatively wet soil conditions, are excellent choices for manure utilization areas. Warm-season grasses such as bluestem and switchgrass are also good choices, but they may not uptake as much nitrogen as the cool-season grasses. Grasses or pasture also generally offer the greatest flexibility in terms of crop scheduling and land application operations.

Applying manure in the fall generally results in greater nutrient loss than does spring application, especially if the manure is not incorporated. If the manure is incorporated and soil temperatures are below 50 degrees Fahrenheit, some of the nutrients will be immobilized and tend to remain in the soil until the following spring.

Sometimes fall application is necessary to free up manure storage volume so that manure can be accumulated during the wet months of the year. In these cases, it is best to apply manure to fields that will be planted in winter grains or cover crops. If no winter crops are available, then the next choice should be fields with the most vegetation or crop residue, such as grass or sod.

Winter application is the least desirable because nutrients cannot soak into frozen soil. Manure accumulated on the surface of frozen soil or snow can easily be carried off the field during snow melt or other runoff events. Manure should not be applied to frozen soil, or on top of a snow cover because these conditions are likely to result in runoff of nutrients.

Surface application

Manure spread on the surface and not worked into the soil may lose most of the volatile nitrogen compounds as ammonia gas to the atmosphere. This lost nitrogen is not available for plant growth, and has been identified as a possible air quality contaminant contributing to acid rain.

Manure solids spread on frozen or snow-covered soil have a high potential for runoff and resulting pollution. If manure is surface-spread on long slopes or areas

with high erosion potential, strip cropping, diversions and other conservation practices can reduce runoff, nutrient loss and pollution. Manure should not be surface applied to soil near wells, springs, sinkholes, terrace tile inlets, wetlands, or on slopes adjacent to streams, rivers or lakes.

In Missouri, cool-season grasses such as fescue are commonly used as manure utilization areas. Manure is usually surface-applied without incorporation. While this practice does not necessarily maximize nutrient conservation because of volatilization, pollution potential is no greater than with practices involving incorporation as long as manure is applied at the proper rate and soil conditions. However, runoff from a rainfall event immediately following surface application can transport nutrients from the field into surface waters.

Subsurface application

Water pollution potential can be decreased, and the amount of manure nitrogen available to plants can be increased, by working manure into the soil either by tillage or by subsurface injection. A soaking rain with no runoff has approximately the same effect as incorporating manure. Similarly, irrigation of lagoon effluent with no runoff is equivalent to incorporation. When a tillage operation is used to incorporate manure, it should be completed as soon as possible after the spreading operation to reduce nutrient loss from runoff should a heavy rain occur.

Subsurface injection is probably the best incorporation method because it occurs immediately as manure is spread and only minimally disturbs the soil surface. This makes it attractive for reduced till and no-till cropping systems. For injection to be effective, the furrows made by the injector knives must close over the manure following application. Hence soil moisture conditions should be suitable for a tillage operation when injection is used in applying manure.

Disadvantages of injection include equipment cost and maintenance; high power requirements; and time, labor and management involved in the operation. Additionally, injection is not as well suited to pasture and grass programs and areas of the state with shallow, rocky soils. However, equipment manufacturers are developing injection equipment more suited to hay and pasture areas.

Application rate

Manure should be applied to fields at a rate compatible with the nutrient needs of the crop being grown. Supplying an excess of nutrients is a waste of resources, may result in ground or surface water pollution, and may eventually depress crop yields. Determining the rate at which manure nutrients should be applied requires consideration of crop requirements and nutrients already present in the soil.

Manure nutrients, especially nitrogen, are used more efficiently by grain crops than by legumes. However, the use of manure to supply the nitrogen needs of continuous grain crops will result in phosphorus and potassium buildup in the soil. Forage crops (hay), or whole-plant crops (silage) in rotation with grain crops, will help reduce this effect.

The nutrient needs of a crop are determined by crop type and expected yield. Realistic yield goals should be based on previous yield data, yield potential of the soil (type and depth), and management level available. Table 1 provides estimates of the amount of nutrients required for crop growth, and the nutrients removed with various crops.

Because the rate at which manure should be applied depends on the amount of nutrients already in the soil, soil tests should be conducted to determine the amounts of residual available nutrients. In determining the application rate, consideration should be given to all sources of nitrogen. Manure organic nitrogen mineralized in the current growing season from previous years' applications should be estimated. If manure is continuously applied to the same field year-after-year (at approximately the same rate), 45 to 75 percent of the applied organic nitrogen will be available the current year, depending on manure type and soil and weather conditions. See the Missouri Department of Natural Resources (DNR) "Plant-Available Nitrogen Approach" for details on mineralization of organic nitrogen. If a legume crop is plowed down, followed by grain or another crop, credit should be given to the nitrogen made available from the legume crop. Table 2 gives estimates of the amount of nitrogen available following various legume crops. For production facilities with a Missouri DNR permit or letter of approval, the manure application rate is determined from either the conservative approach (100 lb applied nitrogen per acre), or the "Plant-Available Nitrogen Approach." The latter is a detailed procedure accounting for such factors as manure type, crop uptake characteristics, soil type, field losses, and method of application.

Responsible management of manure nutrients requires that consideration be given to nitrogen, phosphorus, and potassium in a "whole farm" approach. Imported nutrients in the form of feed and fertilizer, as well as exported nutrients in the form of meat, milk, eggs, or manure solids should be considered in developing a total nutrient management plan. Phosphorus is increasingly a nutrient of concern where long-term application of manure has resulted in high levels of soil test phosphorus.

The following MU publications provide information on phosphorus in Missouri soils, and the use of manure as a source of phosphorus:

- G9182, *Managing Manure Phosphorus to Protect Water Quality*
- G9181, *Agricultural Phosphorus and Water Quality*
- G9180, *Phosphorus in Missouri Soils*

Table 1. Estimates of nutrients required for crop growth, and nutrients removed from the field with various crops. For example, a corn crop requires more nitrogen than is removed from the field in the grain because some nitrogen is required for growth of the plant itself.

		Required for growth			Removed from field		
Crop	Yield unit	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Corn, grain	bu	1.34–1.96	0.55–0.70	1.23–1.48	0.90	0.36–0.45	0.27–0.30
Soybeans, grain	bu	4.84–6.32	1.06–1.44	2.14–2.79	3.75–4.84	0.87–1.06	1.37–2.14
Wheat, grain	bu	1.62–2.05	0.75–0.96	1.24–1.70	1.25–1.26	0.60–0.84	0.30–0.37
Barley, grain	bu	1.17–1.32	0.47–0.52	0.85–1.23	0.87–1.18	0.34–0.37	0.25–0.34
Rye, grain	bu	1.48–1.66	0.60	1.16	1.16–1.18	0.33–0.34	0.33–0.34
Sorghum, grain	bu	1.38–2.01	0.63–0.80	1.40–1.85	0.78–0.93	0.34–0.46	0.28–0.52
Corn, silage	ton	7.19–9.00	2.66–4.00	7.02–9.20	7.19–9.00	2.66–4.00	7.02–9.20
Sorghum, silage	ton	8.64–13.0	2.58–4.60	7.34–10.0	8.64–13.0	2.58–4.60	7.34–10.0
Alfalfa, hay	ton	45.0–50.6	10.0	44.9–52.5	45.0–50.6	10.0	44.9–52.5
Cool–season grass, hay	ton	32.6–40.0	9.00–15.5	34.0–57.2	32.6–40.0	9.00–15.5	34.0–57.2
Warm–season grass, hay	ton	21.2–24.0	2.00–38.6	14.6–37.8	21.2–24.0	2.00–38.6	14.6–37.8
Sudan, hay	ton	39.9–40.0	6.90–15.3	19.0–58.4	39.9–40.0	6.90–15.3	19.0–58.4
Cool-season pasture	cd	0.60	0.13	0.51	0.6	0.05	0.17
Warm-season pasture	cd	0.36	0.03	0.22	0.36	0.01	0.07
Sudan pasture	cd	0.60	0.1	0.29	0.60	0.03	0.09

Note: cd = cow-days

Data sources:

- MWPS-18. *Livestock Waste Facilities Handbook*, 2nd ed. 1997. Midwest Plan Service, Iowa State University, Ames.
- *Agricultural Waste Management Field Handbook*. Natural Resources Conservation Service, United States Department of Agriculture.
- *Soil Test Interpretations and Recommendations Handbook*, rev. 12/92. Department of Agronomy, University of Missouri.

For further information

MWPS-18. *Livestock Waste Facilities Handbook*, 2nd ed. 1997. Midwest Plan Service, Iowa State University, Ames.

Agricultural Waste Management Field Handbook. Natural Resources Conservation Service, U.S. Department of Agriculture.

Plant-Available Nitrogen Procedure, 4/10/2000. Water Pollution Control Program, Missouri Department of Natural Resources, Jefferson City, Mo.

Soil Test Interpretations and Recommendations Handbook, rev. 12/92. Department of Agronomy, University of Missouri.

Table 2. Nitrogen supplied by legumes for a succeeding crop (optimum).

Legume crop	Nitrogen added (lb/acre)
Alfalfa	
80–100% stand	120–140
50–80% stand	40–60
less than 50%	0–20
Sweet clover (green manure)	100–120
Red clover (pure stand)	40–60
Soybeans	50–60

Source: MU publication G9174, *Nitrogen in Missouri Soils*

Published with partial support from the Missouri Department of Natural Resources and the Environmental Protection Agency, Region VII. To learn more about water quality and other natural resource issues, contact the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102. Toll free 1-800-334-6946.

OUTREACH & EXTENSION
UNIVERSITY OF MISSOURI
COLUMBIA

■ Issued in furtherance of Cooperative Extension Work Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. Ronald J. Turner, Director, Cooperative Extension, University of Missouri and Lincoln University, Columbia, MO 65211. ■ University Outreach and Extension does not discriminate on the basis of race, color, national origin, sex, religion, age, disability or status as a Vietnam era veteran in employment or programs. ■ If you have special needs as addressed by the Americans with Disabilities Act and need this publication in an alternative format, write ADA Officer, Extension and Agricultural Information, 1-98 Agriculture Building, Columbia, MO 65211, or call (573) 882-7216. Reasonable efforts will be made to accommodate your special needs.

Phosphorus Index Worksheet

Version 0.2 April 20, 2005

	Field 1	Field 2	Field 3	Field 4
County	Lawrence	Saline	Barry	Boone
Soil test P level	**140**	**45**	**100**	**44**
Units	lbs/acre	lbs/acre	lbs/acre	lbs/acre
Extraction Procedure	Bray-I	Bray-I	Bray-I	Bray-I
Sampling depth	6 to 8 inches	6 to 8 inches	2 inches	6 to 8 inches
Tillage	Notill or Forage	Notill or Forage	Notill or Forage	Tilled
RUSLE value - average annual (tons/ac)	**1**	**4**	**2**	**15**
Land cover	Hay ground	Hay ground	Hay ground	Row crop - straight row
Hydrologic soil group	B	D	B	D
Hydrologic condition	Good	Good	Good	Good
Distance from center of field to water feature	100	100	100	250
Particulate P value	1.1	4.3	2.0	13.9
Soluble P value	1.4	1.0	1.1	0.5
Total P value	2.5	5.3	3.0	14.4
P index rating	MEDIUM	MEDIUM	MEDIUM	VERY HIGH
Agronomic P rating (Opt.= 45 lbs/a)	VERY HIGH	MEDIUM	Non-agronomic sampling depth	MEDIUM
Sensitivity value	0.9	2.7	1.2	7.0

Appendix G

Soil Sampling Guidelines

Soil Sampling Guidelines

Before collecting samples in a field, the person collecting the samples should develop a sampling strategy. The sampling strategy should divide the field into areas that one would expect to have similar characteristics or likely to be managed similarly. One should consider the following aspects when setting up a sampling program:

- Differences in crop histories and fertilization patterns. Old or existing fence lines can be a good indicator of variation.
- Natural features such as changes in soil type and topography are typically less important sources of soil test variation except in low-testing and unfertilized fields.
- The best time to collect soil samples is when the field is idle and enough time is available to plan fertilizer and lime applications for the next crop.
- Sampling after harvest in the fall and winter usually works best for forages and spring-seeded crops. For winter wheat and fall-seeded crops, sampling while the field is idle in the summer works well.

In developing the composite sample, the objective will be to collect a series of cores across the area to be sampled. More cores are needed when one expects more variation within the field. As required by the Operating Permit, the sampling depth should be 6 to 8 inches. Equipment needed for collecting the core samples includes the following:

- Core sampling device;
- Clean plastic bucket for mixing cores;
- Small box or bag for final sample;
- Map of the field with sampling plan and labels.

Soil cores should be placed in the bucket and thoroughly mixed. Approximately 1.5 cups of the mixed soil should be placed into the sample box or bag, with the remainder of the collected soil discarded. If the soil is too wet to mix, it can be placed on a bench and allowed to air dry before mixing.

Label the sample with field number and site owner. The field number must correspond to the identity of the field as listed in the Operating Permit. Soil samples should be submitted for analysis to a University of Missouri Extension Center or an approved private laboratory. All soil samples will need to be analyzed for the parameters listed in the Operating Permit.

Additional details on collecting a representative soil sample can be found the University of Missouri Guides included in this appendix.

AGRICULTURAL
MU Guide
PUBLISHED BY MU EXTENSION, UNIVERSITY OF MISSOURI-COLUMBIA muextension.missouri.edu

Soil Sampling Pastures

John Lory and Steve Cromley
Division of Plant Sciences and Commercial Agriculture Program

Collecting a representative soil sample is an important step in developing a nutrient plan for your farm. The goals of your soil sampling plan should be to

- Identify manageable sized fields with similar characteristics.
- Accurately and cost-effectively determine the nutrient status of those fields.

Highly variable soil fertility levels across a field can make it difficult to collect a good soil sample. With planning, representative soil samples can be obtained from your pasture. Careful, comprehensive soil sampling pays dividends in smarter management decisions and efficient use of fertilizer nutrients.

How should I divide my pastures?

When creating a soil-sampling plan for fields and farms, the objective is to divide fields into areas that you expect to have similar characteristics or that you are likely to manage differently than other parts of the pasture. Typically sampling areas should not exceed 20 acres and can be much smaller. In management-intensive grazing systems, frequently the best strategy is to sample each paddock separately.

Pastures have many sources of variability:

- Animal activities and habits are a huge source of variation in pastures.
  - Areas around winter feeders, shade trees and water sources have higher soil test levels.
  - Manure piles and urine spots have elevated nutrients.
- Natural features such as soil type and topography are important sources in variability, particularly in low-testing and unfertilized fields.
- Human activities can overwhelm natural sources of variability in a field.
  - Nutrient hot spots are often found near old feeding areas and homesteads.
  - Differences in fertilizer patterns can create differences in soil test levels. An indicator of different fertilizer histories can be old or existing fence lines.

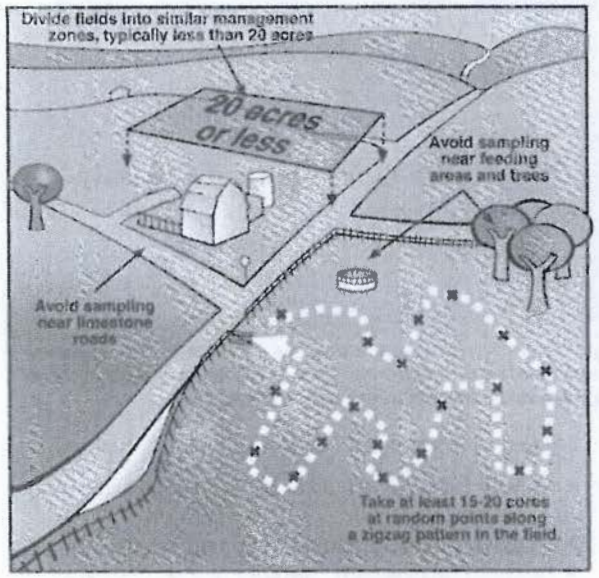


Figure 1. Obtaining a quality soil sample.

  - There is often a band of elevated pH within 150 feet of a gravel road caused by drifting dust from the crushed limestone road surface.

When sampling a paddock or field, avoid sampling in areas that are unrepresentative of the field (Figure 1). Avoid taking cores near shade trees, water sources and winter feeding areas. If you want to know soil test levels in these areas, sample them separately.

How to collect a soil sample

Your objective is to collect 15 to 20 cores from the area to be sampled (Figure 1). You need to collect more cores per field in a pasture than in a row-crop field because there typically is much more variation in a pasture from manure piles and urine spots.

The best approach is to travel across the entire area to be sampled in a zigzag pattern, randomly selecting spots to take a core (Figure 1). Sampling depth is 6 to 7 inches for most objectives in pastures (Figure 2). Do not take too shallow a sample as this will overestimate the soil fertility level in your pasture.

AGRICULTURAL
MU Guide
PUBLISHED BY MU EXTENSION, UNIVERSITY OF MISSOURI-COLUMBIA muextension.missouri.edu

Soil Sampling Hayfields and Row Crops

John Lory and Steve Cromley
Division of Plant Sciences and Commercial Agriculture Program

Collecting a representative soil sample is an important step in developing a nutrient plan for you farm. The goals of your soil-sampling plan should be to

- Identify manageable sized fields with similar characteristics.
- Accurately and cost-effectively determine the nutrient status of those fields.

With careful planning and execution, representative soil samples can be obtained from your fields. Careful, comprehensive soil sampling pays dividends in smarter management decisions and efficient use of fertilizer nutrients.

This guide focuses on soil-sampling strategies for hayfields and row crops. See G9215, *Soil Sampling Pastures*, for unique soil sampling issues in pastures.

How should I divide my fields?

The key to collecting a good soil sample is to identify variability within a field and sample accordingly.

- Human activities are the most important source of variation in soil test levels in most hay and row crop fields.
  - Differences in crop histories and fertilization patterns can have a large impact on soil fertility levels. Old or existing fence lines can be a good indicator of variation. Look at an older aerial photo of the farm for other hints about past management.
  - Nutrient hot spots are often found near old homesteads.

Should I grid sample my field? Grid soil sampling is a method of intensively sampling your field, typically obtaining a sample for every 2.5 acres or less. This method of sampling is typically used when a farmer uses variable rate technology to apply fertilizers or lime. Grid sampling is most justified on high value and high yielding soils, particularly when you anticipate significant variations in soil test levels including low testing areas within a field. It can also be useful the first time you sample the soil in a field with an unknown history.

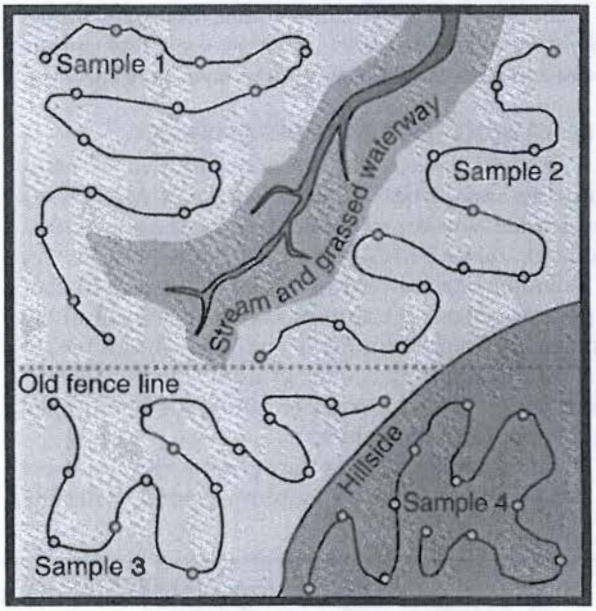


Figure 1. Soil sampling strategy for an 80-acre field.

- Natural features such as changes in soil type and topography are typically less important sources of soil test variation except in low-testing and unfertilized fields.

When creating a soil-sampling plan for fields and farms, the objective is to divide fields into areas that you expect to have similar characteristics or you are likely to manage similarly. Typical sampling areas should not exceed 20 acres.

When should I sample?

- The best time to collect soil samples is when the field is idle and enough time is available to plan fertilizer and lime applications for the next crop. Sampling after harvest in the fall and winter usually works best for forages and spring-seeded crops.
- For winter wheat and fall-seeded crops, sampling while the field is idle in the summer works well.

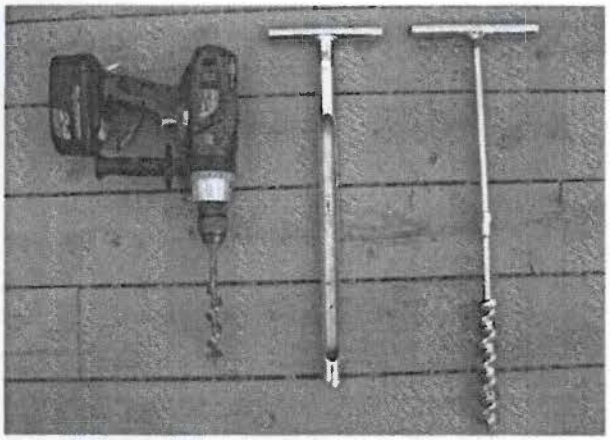


Figure 3. Coring devices are the best for soil sampling. Augers are recommended on rocky soils. Hand samplers at least 3 feet long are desirable because they reduce back strain.

Figure 4. A power drill can facilitate sampling in rocky or dry soils. A plastic container with a hole in the middle will facilitate collecting the soil as the auger pulls it out of the ground. Empty the soil out of the plastic container into the soil sample bucket after each successful attempt to get a 6-inch core.

a power drill with an auger can be very efficient. A shovel or spade can be used if a coring device is not available. Always use clean equipment when collecting soil samples. A plastic bucket should be used for collecting and mixing samples. Metal buckets or containers can contaminate the soil with micronutrients.

Submitting your soil samples

Break up the soil cores and thoroughly mix the sample soils. Place approximately 1.5 cups of the mixed soil into a soil sample box or plastic bag and discard the excess soil. If the soil is too wet to mix thoroughly, the sample can be set out on a bench and allowed to air dry before mixing.

Label the sample with field and subfield names. Soil sample boxes and soil information forms can be obtained from private soil testing labs or your local University of Missouri Extension center or by contacting Extension Soil and Plant Testing Services at the University:

Soil and Plant Testing Services
Department of Agronomy
23 Mumford Hall
University of Missouri
Columbia, MO 65211
(573) 882-3250 or (573) 882-0623
http://soilplantlab.missouri.edu

Soil samples can also be submitted to your local extension center or directly to a University or private soil testing lab. Be sure to use a lab that has been accredited by Missouri Soil Testing Association (MSTA). A list of accredited labs is available on the Web at http://soilplantlab.missouri.edu/mstacertified.htm.

Appendix H

Site Information Sheets

2017 Monett Land Owners

1. Bill Allen
   2229 Farm Road 1055
   Monett, MO 65708
   Phone:

2. Larry Morris
   8081 Morris Lane
   Monett, MO 65708
   Phone: 417-489-8890

3. Jim Arnaud
   3417 Farm Road 1070
   Monett, MO 65708
   Phone: 417-235-8547

4. Greg Severs
   2318 Farm Road 1090
   Monett, MO 65708
   Phone: 417-235-4103

5. George Patton
   8551 Farm Road 2020
   Monett, MO 65708
   Phone: 417-235-7115

6. Loren Pearce
   5541 Farm Road 2020
   Monett, MO 65708
   Phone: 417-235-6016

7. Kevin Burnside
   4175 Farm Road 2020
   Monett, MO 65708
   Phone: 417-489-1544

8. Benny Henderson
   2147 Farm Road 1070
   Monett, MO 65708
   Phone: 417-235-3719

Biosolids Land Application Summary

Facility Name : Schreiber Foods Monett Pretreatment Facility Date: Jan-14

Landowner : Jim Arnaud Field # 15

Location : W 1/2, SE 1/4, Sec. 12, T25N, R28W, Barry County

CROP & SITE INFORMATION

Previous Crop:
Future Crop:
Slope:
Buffer: Feet From: fence
Buffer: 75 Feet From: wet weather stream
Buffer: Feet From:
Cattle Grazing: 30 Days after Application
Geological Restrictions:

BIOSOLIDS ANALYSIS

_____ Total Nitrogen lbs / ton
_____ Ammonia Nitrogen lbs / ton
_____ Organic nitrogen lbs / ton
_____ Nitrate / Nitrite Nitrogen lbs / ton
_____ Phosphorus lbs / ton
_____ Potassium lbs / ton
_____ Percent Solids
Pathogen Reduction Method: Anerobic Digestion
Vector Attraction Reduction Method: 38% V.S. Reduction
Application Rate: 2 Dry Tons Per Acre Per Year
_____ LBS Per Dry Ton P.A.N. (Nitrate + Nitrite) + (Organic x 0.2) + (Ammonia x 0.7)

SOIL ANALYSIS

_____ pH
_____ E.N.M.
_____ C.E.C.

Appendix I

Training Documentation

Training Topics

Personnel training will focus on operations and maintenance of equipment associated with the aerobic digesters and sludge holding tank, loading and unloading sludge into tanker trucks, emergency spill reporting, proper land application of sludge, conducting inspections, and sludge and soil sampling. It will include, at a minimum, a thorough review of the items in this plan. This training must take place once per year.

The training will be conducted annually or as needed due to any changes in the operation and will be documented in each employee's file. This training will be the responsibility of the Pretreatment Facility Coordinator and will include the following topics:

- *Biosolids Management Operation and Maintenance Manual* contents - general
- Operations of the Pretreatment Facility:
    1. Proper operation of facility, with focus on aerobic digesters and holding tanks;
    2. What to do in the event of a spill;
    3. Loading and unloading sludge into tanker trucks, including inspections of sludge handling equipment and tanker trucks.
    4. Proper land application of sludge, including nutrient management procedures.
    5. Sludge and soil sampling procedures.
    6. Reporting and recordkeeping requirements.

Training Log

Attendees

Date	Name	Signature	Initials of Trainer

Field Info													Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Argronomic P Rate					Agronomic N Rate									
Outfall #	Field	Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
					lb/acre								lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
050	201	George Patton	30	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
051	202	Greg Severs	137	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
052	203	Greg Severs	138	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014															0			0.00	0.00	0.00	0.00	0.00	150
053	204	Greg Severs	168	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
054	205	Greg Severs	200	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
055	206	Greg Severs		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
056	207	Jim Arnaud		2016	49	11/13/2015	No	medium	yes	8 Wildlife Food Plot			2.7		1.90	1.90	0.80					4.23	1.78	1.78	-1.78	4.23	150
				2015	32	11/18/2014	No	medium	yes	104 Corn Silage	15 T/A		2.4		0.00	0.00	2.40					2.06	0.84	0.84	-0.84	2.06	150
				2014																		2.06	1.78	1.78	-1.78	4.23	150
057	208	B. Henderson		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150

Prepared by: SAS1
Checked by: CED1

Monett Soil Nutrient Tracking Report

							Field Info					Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?			Argronomic P Rate					Agronomic N Rate									
Outfall #	Field	Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
					lb/acre							lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
001	15	Jim Arnaud	80	2016	336	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A	11.1		0.00	0.00	11.10					0.00	0.00	0.00	0.00	0.00	150
				2015	567	11/18/2014	yes	very high	no	Soybeans	50 bu/A	37.6		0.00	0.00	37.60					0.00	0.00	0.00	0.00	0.00	150
				2014	324	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A	19.5		6.90	6.90	12.60					10.24	4.12	4.12	-4.12	10.24	150
002	17	Jim Arnaud	20	2016	171	11/13/2015	Yes	medium	yes	19 Cool Season Gr Past	150 CD/A	4.9		0.00	0.00	4.90					0.00	0.00	0.00	0.00	0.00	150
				2015	479	11/18/2014	yes	very high	no	119 wheat	80 BU/A	16.7		0.00	0.00	16.70					0.00	0.00	0.00	0.00	0.00	150
				2014	363	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A	19.5		25.34	25.34	-5.84					31.61	12.72	12.72	-12.72	31.61	150
003	18	Jim Arnaud	6	2016	333	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	396	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	19.3		0.00	0.00	19.30					0.00	0.00	0.00	0.00	0.00	150
				2014	410	11/19/2013	yes	very high	no												0.00	0.00	0.00	0.00	0.00	150
006	46	Kevin Burnside	40	2016	471	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A	11.4		0.00	0.00	11.40					0.00	0.00	0.00	0.00	0.00	150
				2015	377	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A	9.1		0.00	0.00	9.10					0.00	0.00	0.00	0.00	0.00	150
				2014	339	11/19/2013	Yes			Alfalfa	5 T/A										0.00	0.00	0.00	0.00	0.00	150
007	49	Jim Arnaud	60	2016	384	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	13.2		0.00	0.00	13.20					0.00	0.00	0.00	0.00	0.00	150
				2015	224	11/18/2014	Yes	high	no	Wheat	80 bu/A	9.2		0.00	0.00	9.20					0.00	0.00	0.00	0.00	0.00	150
				2014	327	11/19/13	Yes		no	Wheat	80 bu/A										0.00	0.00	0.00	0.00	0.00	150
008	52	Jim Arnaud	24	2016	107	11/13/2015	no	very high	no	115 Soybeans	50 bu/A	15.1		0.00	0.00	15.10					0.00	0.00	0.00	0.00	0.00	150
				2015	321	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	33.3		0.00	0.00	33.30					0.00	0.00	0.00	0.00	0.00	150
				2014	230	11/19/2013	Yes			Corn											0.00	0.00	0.00	0.00	0.00	150
013	84	Jim Arnaud	40	2016	299	11/13/2015	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A	16.9		0.00	0.00	16.90					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A	18.8		0.00	0.00	18.80					0.00	0.00	0.00	0.00	0.00	150
				2014	120	11/19/2013	No			10 Alfalfa-Gr Hay	5 T/A										0.00	0.00	0.00	0.00	0.00	150
015	89	Jim Arnaud	55	2016	417	11/13/2015	Yes	very high	no	104 Corn (Silage)	20 T/A	76.5		0.00	0.00	76.50					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	36.7		0.00	0.00	36.70					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	Wheat	80 bu/A							0			0.00	0.00	0.00	0.00	0.00	150
016	96	Jim Arnaud	14	2016	431	11/13/2015	Yes	very high	no	115 Soybeans	60 bu/A	26.4		0.00	0.00	26.40					0.00	0.00	0.00	0.00	0.00	150
				2015	412	11/18/2014	Yes	very high	no	104 Corn (Silage)	15 T/A	41.7		0.00	0.00	41.70					0.00	0.00	0.00	0.00	0.00	150
				2014	268	11/19/2013	Yes	very high	no	104 Corn (Silage)	15 T/A							0			0.00	0.00	0.00	0.00	0.00	150
017	97	Jim Arnaud	12	2016	426	11/13/2015	Yes	very high	no	115 Soybean	60 bu/A	19.2		0.00	0.00	19.20					0.00	0.00	0.00	0.00	0.00	150
				2015	423	11/18/2014	Yes	very high	no	104 Corn (Silage)	10 T/A	39.2		0.00	0.00	39.20					0.00	0.00	0.00	0.00	0.00	150
				2014	310	11/19/2013	Yes	very high	no	104 Corn (Silage)	10 T/A							0			0.00	0.00	0.00	0.00	0.00	150
018	98	Jim Arnaud	7	2016	191	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A	2.4		0.00	0.00	2.40					0.00	0.00	0.00	0.00	0.00	150
				2015	467	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A	5.9		0.00	0.00	5.90					0.00	0.00	0.00	0.00	0.00	150
				2014	574	11/19/2013				19 Cool Season Gr Past	150 CD/A							0			0.00	0.00	0.00	0.00	0.00	150
019	104	Jim Arnaud	7	2016	152	11/13/2015	Yes	high	no	115 Soybeans	60 bu/A	6.8		0.00	0.00	6.80					0.00	0.00	0.00	0.00	0.00	150
				2015	379	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	23.1		0.00	0.00	23.10					0.00	0.00	0.00	0.00	0.00	150
				2014	690	11/19/2013	Yes		no	104 Corn Silage	15 T/A										0.00	0.00	0.00	0.00	0.00	150

Monett Soil Nutrient Tracking Report

Field Info													Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Argronomic P Rate					Agronomic N Rate									
		Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
Outfall #	Field				lb/acre								or MU 202 or other lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	or MU 202 or other lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
001	15	Jim Arnaud	80	2016	336	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A		11.1		0.00	0.00	11.10					0.00	0.00	0.00	0.00	0.00	150
				2015	567	11/18/2014	yes	very high	no	Soybeans	50 bu/A		37.6		0.00	0.00	37.60					0.00	0.00	0.00	0.00	0.00	150
				2014	324	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A		19.5		6.90	6.90	12.60					10.24	4.12	4.12	-4.12	10.24	150
002	17	Jim Arnaud	20	2016	171	11/13/2015	Yes	medium	yes	19 Cool Season Gr Past	150 CD/A		4.9		0.00	0.00	4.90					0.00	0.00	0.00	0.00	0.00	150
				2015	479	11/18/2014	yes	very high	no	119 wheat	80 BU/A		16.7		0.00	0.00	16.70					0.00	0.00	0.00	0.00	0.00	150
				2014	363	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A		19.5		25.34	25.34	-5.84					31.61	12.72	12.72	-12.72	31.61	150
003	18	Jim Arnaud	6	2016	333	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A		16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	396	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		19.3		0.00	0.00	19.30					0.00	0.00	0.00	0.00	0.00	150
				2014	410	11/19/2013	yes	very high	no													0.00	0.00	0.00	0.00	0.00	150
006	46	Kevin Burnside	40	2016	471	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A		11.4		0.00	0.00	11.40					0.00	0.00	0.00	0.00	0.00	150
				2015	377	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A		9.1		0.00	0.00	9.10					0.00	0.00	0.00	0.00	0.00	150
				2014	339	11/19/2013	Yes			Alfalfa	5 T/A											0.00	0.00	0.00	0.00	0.00	150
007	49	Jim Arnaud	60	2016	384	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A		13.2		0.00	0.00	13.20					0.00	0.00	0.00	0.00	0.00	150
				2015	224	11/18/2014	Yes	high	no	Wheat	80 bu/A		9.2		0.00	0.00	9.20					0.00	0.00	0.00	0.00	0.00	150
				2014	327	11/19/13	Yes		no	Wheat	80 bu/A											0.00	0.00	0.00	0.00	0.00	150
008	52	Jim Arnaud	24	2016	107	11/13/2015	no	very high	no	115 Soybeans	50 bu/A		15.1		0.00	0.00	15.10					0.00	0.00	0.00	0.00	0.00	150
				2015	321	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		33.3		0.00	0.00	33.30					0.00	0.00	0.00	0.00	0.00	150
				2014	230	11/19/2013	Yes			Corn												0.00	0.00	0.00	0.00	0.00	150
013	84	Jim Arnaud	40	2016	299	11/13/2015	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A		16.9		0.00	0.00	16.90					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A		18.8		0.00	0.00	18.80					0.00	0.00	0.00	0.00	0.00	150
				2014	120	11/19/2013	No			10 Alfalfa-Gr Hay	5 T/A											0.00	0.00	0.00	0.00	0.00	150
015	89	Jim Arnaud	55	2016	417	11/13/2015	Yes	very high	no	104 Corn (Silage)	20 T/A		76.5		0.00	0.00	76.50					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		36.7		0.00	0.00	36.70					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	Wheat	80 bu/A								0			0.00	0.00	0.00	0.00	0.00	150
016	96	Jim Arnaud	14	2016	431	11/13/2015	Yes	very high	no	115 Soybeans	60 bu/A		26.4		0.00	0.00	26.40					0.00	0.00	0.00	0.00	0.00	150
				2015	412	11/18/2014	Yes	very high	no	104 Corn (Silage)	15 T/A		41.7		0.00	0.00	41.70					0.00	0.00	0.00	0.00	0.00	150
				2014	268	11/19/2013	Yes	very high	no	104 Corn (Silage)	15 T/A								0			0.00	0.00	0.00	0.00	0.00	150
017	97	Jim Arnaud	12	2016	426	11/13/2015	Yes	very high	no	115 Soybean	60 bu/A		19.2		0.00	0.00	19.20					0.00	0.00	0.00	0.00	0.00	150
				2015	423	11/18/2014	Yes	very high	no	104 Corn (Silage)	10 T/A		39.2		0.00	0.00	39.20					0.00	0.00	0.00	0.00	0.00	150
				2014	310	11/19/2013	Yes	very high	no	104 Corn (Silage)	10 T/A								0			0.00	0.00	0.00	0.00	0.00	150
018	98	Jim Arnaud	7	2016	191	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A		2.4		0.00	0.00	2.40					0.00	0.00	0.00	0.00	0.00	150
				2015	467	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A		5.9		0.00	0.00	5.90					0.00	0.00	0.00	0.00	0.00	150
				2014	574	11/19/2013				19 Cool Season Gr Past	150 CD/A								0			0.00	0.00	0.00	0.00	0.00	150
019	104	Jim Arnaud	7	2016	152	11/13/2015	Yes	high	no	115 Soybeans	60 bu/A		6.8		0.00	0.00	6.80					0.00	0.00	0.00	0.00	0.00	150
				2015	379	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		23.1		0.00	0.00	23.10					0.00	0.00	0.00	0.00	0.00	150
				2014	690	11/19/2013	Yes		no	104 Corn Silage	15 T/A											0.00	0.00	0.00	0.00	0.00	150

Field Info													Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Argronomic P Rate					Agronomic N Rate									
		Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
Outfall #	Field				lb/acre								lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
020	107	Jim Arnaud	24	2016	210	11/13/2015	Yes	high	no	119 Wheat	80 bu/A		6.2		0.00	0.00	6.20					0.00	0.00	0.00	0.00	0.00	150
				2015	411	11/18/2014	Yes	very high	no	119 Wheat	80 bu/A		11.7		0.00	0.00	11.70					0.00	0.00	0.00	0.00	0.00	150
				2014	354	11/19/2013				119 Wheat	80 bu/A								0			0.00	0.00	0.00	0.00	0.00	150
021	112	Jim Arnaud	20	2016	440	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A		16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	385	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		65.1		0.00	0.00	65.10					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	104 Corn Silage	15 T/A											0.00	0.00	0.00	0.00	0.00	150
023	117	Jim Arnaud	11	2016	386	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A		11.3		0.00	0.00	11.30					0.00	0.00	0.00	0.00	0.00	150
				2015	359	11/18/2014	Yes	very high	no	19 Cool Season Past	150 CD/A		10.2		0.00	0.00	10.20					0.00	0.00	0.00	0.00	0.00	150
				2014	319	11/19/2013				119 Wheat	80 bu/A								50			0.00	0.00	0.00	-50.00	0.00	150
024	118	Jim Arnaud	14	2016	613	11/13/2015	Yes	very high	no	104 Corn Silage	20 T/A		66.2		0.00	0.00	66.20					0.00	0.00	0.00	0.00	0.00	150
				2015	381	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		55.9		29.35	29.35	26.55					68.56	27.59	27.59	-27.59	68.56	150
				2014															90			0.00	0.00	0.00	0.00	0.00	150
025	119	Jim Arnaud	15	2016	571	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A		25.5		0.00	0.00	25.50					0.00	0.00	0.00	0.00	0.00	150
				2015	323	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		54.6		0.00	0.00	54.60					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
026	120	Jim Arnaud	32	2016	306	11/13/2015	Yes	high	no	119 Wheat	80 bu/A		9.8		0.00	0.00	9.80					0.00	0.00	0.00	0.00	0.00	150
				2015	303	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		46.6		0.00	0.00	46.60					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
027	121	Jim Arnaud	30	2016	378	11/13/2015	Yes	very high	no	104 Corn Silage	20 T/A		52.2		0.00	0.00	52.20					0.00	0.00	0.00	0.00	0.00	150
				2015	570	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		37.4		0.00	0.00	37.40					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
028	123	Jim Arnaud	32	2016	379	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A		11.6		0.00	0.00	11.60					0.00	0.00	0.00	0.00	0.00	150
				2015	519	11/18/2014	Yes	very high	no	19 Cool Season Gr Past	150 CD/A		12.6		0.00	0.00	12.60					0.00	0.00	0.00	0.00	0.00	150
				2014	516	11/19/2013	Yes			19 Cool Season Gr Past	150 CD/A											0.00	0.00	0.00	0.00	0.00	150
030	126	Jim Arnaud	40	2016	428	11/13/2015	Yes	very high	no	8 wildlife food plot			14.2		0.00	0.00	14.20					0.00	0.00	0.00	0.00	0.00	150
				2015	502	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		102.1		0.00	0.00	102.10					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
031	129	Jim Arnaud	20	2016	267	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A		6.5		0.00	0.00	6.50					0.00	0.00	0.00	0.00	0.00	150
				2015	319	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A		7.7		0.00	0.00	7.70					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
032	135	Jim Arnaud	28	2016	330	11/13/2015	Yes	very high	no	8 wildlife food plot			23.4		0.00	0.00	23.40					0.00	0.00	0.00	0.00	0.00	150
				2015	535	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		39.7		0.00	0.00	39.70					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
033	138	Jim Arnaud	14	2016	640	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A		37.3		0.00	0.00	37.30					0.00	0.00	0.00	0.00	0.00	150
				2015	278	11/18/2014	Yes	very high	no	104 Corn Silage	15 t/A		57.4		0.00	0.00	57.40					0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150

Monett Soil Nutrient Tracking Report

							Field Info						Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Agronomic P Rate					Agronomic N Rate									
		Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
Outfall #	Field				lb/acre								lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
001	15	Jim Arnaud	80	2016	336	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A		11.1		0.00	0.00	11.10					0.00	0.00	0.00	0.00	0.00	150
				2015	567	11/18/2014	yes	very high	no	Soybeans	50 bu/A		37.6		0.00	0.00	37.60					0.00	0.00	0.00	0.00	0.00	150
				2014	324	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A		19.5		6.90	6.90	12.60					10.24	4.12	4.12	-4.12	10.24	150
002	17	Jim Arnaud	20	2016	171	11/13/2015	Yes	medium	yes	19 Cool Season Gr Past	150 CD/A		4.9		0.00	0.00	4.90					0.00	0.00	0.00	0.00	0.00	150
				2015	479	11/18/2014	yes	very high	no	119 wheat	80 BU/A		16.7		0.00	0.00	16.70					0.00	0.00	0.00	0.00	0.00	150
				2014	363	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A		19.5		25.34	25.34	-5.84					31.61	12.72	12.72	-12.72	31.61	150
003	18	Jim Arnaud	6	2016	333	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A		16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	396	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		19.3		0.00	0.00	19.30					0.00	0.00	0.00	0.00	0.00	150
				2014	410	11/19/2013	yes	very high	no													0.00	0.00	0.00	0.00	0.00	150
006	46	Kevin Burnside	40	2016	471	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A		11.4		0.00	0.00	11.40					0.00	0.00	0.00	0.00	0.00	150
				2015	377	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A		9.1		0.00	0.00	9.10					0.00	0.00	0.00	0.00	0.00	150
				2014	339	11/19/2013	Yes			Alfalfa	5 T/A											0.00	0.00	0.00	0.00	0.00	150
007	49	Jim Arnaud	60	2016	384	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A		13.2		0.00	0.00	13.20					0.00	0.00	0.00	0.00	0.00	150
				2015	224	11/18/2014	Yes	high	no	Wheat	80 bu/A		9.2		0.00	0.00	9.20					0.00	0.00	0.00	0.00	0.00	150
				2014	327	11/19/13	Yes		no	Wheat	80 bu/A											0.00	0.00	0.00	0.00	0.00	150
008	52	Jim Arnaud	24	2016	107	11/13/2015	no	very high	no	115 Soybeans	50 bu/A		15.1		0.00	0.00	15.10					0.00	0.00	0.00	0.00	0.00	150
				2015	321	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		33.3		0.00	0.00	33.30					0.00	0.00	0.00	0.00	0.00	150
				2014	230	11/19/2013	Yes			Corn												0.00	0.00	0.00	0.00	0.00	150
013	84	Jim Arnaud	40	2016	299	11/13/2015	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A		16.9		0.00	0.00	16.90					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A		18.8		0.00	0.00	18.80					0.00	0.00	0.00	0.00	0.00	150
				2014	120	11/19/2013	No			10 Alfalfa-Gr Hay	5 T/A											0.00	0.00	0.00	0.00	0.00	150
015	89	Jim Arnaud	55	2016	417	11/13/2015	Yes	very high	no	104 Corn (Silage)	20 T/A		76.5		0.00	0.00	76.50					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A		36.7		0.00	0.00	36.70					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	Wheat	80 bu/A								0			0.00	0.00	0.00	0.00	0.00	150
016	96	Jim Arnaud	14	2016	431	11/13/2015	Yes	very high	no	115 Soybeans	60 bu/A		26.4		0.00	0.00	26.40					0.00	0.00	0.00	0.00	0.00	150
				2015	412	11/18/2014	Yes	very high	no	104 Corn (Silage)	15 T/A		41.7		0.00	0.00	41.70					0.00	0.00	0.00	0.00	0.00	150
				2014	268	11/19/2013	Yes	very high	no	104 Corn (Silage)	15 T/A								0			0.00	0.00	0.00	0.00	0.00	150
017	97	Jim Arnaud	12	2016	426	11/13/2015	Yes	very high	no	115 Soybean	60 bu/A		19.2		0.00	0.00	19.20					0.00	0.00	0.00	0.00	0.00	150
				2015	423	11/18/2014	Yes	very high	no	104 Corn (Silage)	10 T/A		39.2		0.00	0.00	39.20					0.00	0.00	0.00	0.00	0.00	150
				2014	310	11/19/2013	Yes	very high	no	104 Corn (Silage)	10 T/A								0			0.00	0.00	0.00	0.00	0.00	150
018	98	Jim Arnaud	7	2016	191	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A		2.4		0.00	0.00	2.40					0.00	0.00	0.00	0.00	0.00	150
				2015	467	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A		5.9		0.00	0.00	5.90					0.00	0.00	0.00	0.00	0.00	150
				2014	574	11/19/2013				19 Cool Season Gr Past	150 CD/A								0			0.00	0.00	0.00	0.00	0.00	150
019	104	Jim Arnaud	7	2016	152	11/13/2015	Yes	high	no	115 Soybeans	60 bu/A		6.8		0.00	0.00	6.80					0.00	0.00	0.00	0.00	0.00	150
				2015	379	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A		23.1		0.00	0.00	23.10					0.00	0.00	0.00	0.00	0.00	150
				2014	690	11/19/2013	Yes		no	104 Corn Silage	15 T/A											0.00	0.00	0.00	0.00	0.00	150

Field Info													Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Argronomic P Rate					Agronomic N Rate									
Outfall #	Field	Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
					lb/acre								lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
050	201	George Patton	30	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
051	202	Greg Severs	137	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
052	203	Greg Severs	138	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014															0			0.00	0.00	0.00	0.00	0.00	150
053	204	Greg Severs	168	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
054	205	Greg Severs	200	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
055	206	Greg Severs		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
056	207	Jim Arnaud		2016	49	11/13/2015	No	medium	yes	8 Wildlife Food Plot		2.7		1.90	1.90	0.80						4.23	1.78	1.78	-1.78	4.23	150
				2015	32	11/18/2014	No	medium	yes	104 Corn Silage	15 T/A	2.4		0.00	0.00	2.40						2.06	0.84	0.84	-0.84	2.06	150
				2014																		2.06	1.78	1.78	-1.78	4.23	150
057	208	B. Henderson		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150

Field Info													Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?				Argronomic P Rate					Agronomic N Rate									
Outfall #	Field	Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal		http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
					lb/acre								lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
050	201	George Patton	30	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
051	202	Greg Severs	137	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
052	203	Greg Severs	138	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014															0			0.00	0.00	0.00	0.00	0.00	150
053	204	Greg Severs	168	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
054	205	Greg Severs	200	2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
055	206	Greg Severs		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150
056	207	Jim Arnaud		2016	49	11/13/2015	No	medium	yes	8 Wildlife Food Plot			2.7		1.90	1.90	0.80					4.23	1.78	1.78	-1.78	4.23	150
				2015	32	11/18/2014	No	medium	yes	104 Corn Silage	15 T/A		2.4		0.00	0.00	2.40					2.06	0.84	0.84	-0.84	2.06	150
				2014																		2.06	1.78	1.78	-1.78	4.23	150
057	208	B. Henderson		2016											0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																		0.00	0.00	0.00	0.00	0.00	150
				2014																		0.00	0.00	0.00	0.00	0.00	150

Prepared by: SAS1
Checked by: CED1

Field Info												Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?			Argronomic P Rate					Agronomic N Rate									
		Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
Outfall #	Field				lb/acre							or MU 202 or other lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	or MU 202 or other lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
034	151	Jim Arnaud	10	2016	643	11/13/2015	Yes	very high	no	10 Alfalfa Gr Hay	5 T/A	32		0.00	0.00	32.00					0.00	0.00	0.00	0.00	0.00	150
				2015	460	11/18/2014	Yes	very high	no	10 Alfalfa Gr Hay	5 T/A	23.9		0.00	0.00	23.90					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
035	159	Bill Allen	9	2016										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																	0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
036	163	Jim Arnaud	10	2016	267	11/13/2015	Yes	very high	no	115 Soybeans	60 bu/A	15.6		0.00	0.00	15.60					0.00	0.00	0.00	0.00	0.00	150
				2015	478	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	26.6		0.00	0.00	26.60					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
037	178	Larry Morris	20	2016	297	11/13/2015	Yes	high	no	119 Cool Season Gr Past	150 CD/A	7.2		0.00	0.00	7.20					0.00	0.00	0.00	0.00	0.00	150
				2015	800	11/18/2014	Yes	very high		119 Cool Season Gr Past	150 CD/A	19.4		0.00	0.00	19.40					0.00	0.00	0.00	0.00	0.00	150
				2014	870	11/19/2013				119 Cool Season Gr Past	150 CD/A	19.5		3.51	3.51	15.99	90	0			8.19	3.30	3.30	86.70	8.19	150
040	182	Larry Morris	12	2016										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2014										25.06	25.06	-25.06	90	0			58.53	23.55	23.55	66.45	58.53	150
041	188	Jim Arnaud	75	2016	171	11/13/2015	Yes	medium	yes	19 Cool Season Gr Past	150 CD/A	4.1		0.00	0.00	4.10					0.00	0.00	0.00	0.00	0.00	150
				2015	455	11/18/2014	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	11		0.00	0.00	11.00					0.00	0.00	0.00	0.00	0.00	150
				2014	470	11/19/2013				19 Cool Season Gr Past	150 CD/A							0			0.00	0.00	0.00	0.00	0.00	150
042	191	Colista Belim	160	2016										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																	0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
044	196	Larry Morris	20	2016	1201	11/13/2015	Yes	very high	No	19 Cool Season Gr Past	150 CD/A	29.1		0.00	0.00	29.10					0.00	0.00	0.00	0.00	0.00	150
				2015	113	11/18/2014	No	medium	Yes	19 Cool Season Gr Past	150 CD/A	2.7		0.00	0.00	2.70		0			0.00	0.00	0.00	0.00	0.00	150
				2014	296	11/19/2013				26 Warm Season Grass Hay	3 T/A			27.06	27.06	-27.06		0			63.21	25.43	25.43	-25.43	63.21	150
046	197	Nola Gray	90	2016										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																	0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
047	198	Kevin Burnside	40	2016	101	11/13/2015	No	medium	Yes	19 Cool Season Gr Past	150 CD/A	1.3		2.03	2.03	-0.73					3.76	1.55	1.55	-1.55	3.76	150
				2015	33	11/18/2014	No	low	Yes	19 Cool Season Gr Past	150 CD/A	0.4		14.55	14.55	-14.15					21.28	9.09	9.09	-9.09	21.28	150
				2014	58	11/19/2013	No			19 Cool Season Gr Past	150 CD/A	19.5		0.00	0.00	19.50	90	0			27.50	11.21	11.21	78.79	27.50	150
048	199	Larry Morris	40	2016										0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	150
				2015																	0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
049	200	George Patton	118	2016	36	11/13/2015	No	medium	Yes	104 Corn Silage	15 T/A	1.2		6.77	6.77	-5.57					19.87	8.73	8.73	-8.73	19.87	150
				2015	99	11/18/2014	No	medium	Yes	104 Corn Silage	15 T/A	3.3		0.00	0.00	3.30					23.20	9.77	9.77	-9.77	23.20	150
				2014	12	11/19/2013	No		Yes	104 Corn Silage	15 T/A							0			0.00	0.00	0.00	0.00	0.00	150

Field Info												Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?			Argronomic P Rate					Agronomic N Rate									
Outfall #	Field	Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
					lb/acre							lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
020	107	Jim Arnaud	24	2016	210	11/13/2015	Yes	high	no	119 Wheat	80 bu/A	6.2		0.00	0.00	6.20					0.00	0.00	0.00	0.00	0.00	150
				2015	411	11/18/2014	Yes	very high	no	119 Wheat	80 bu/A	11.7		0.00	0.00	11.70					0.00	0.00	0.00	0.00	0.00	150
				2014	354	11/19/2013				119 Wheat	80 bu/A							0			0.00	0.00	0.00	0.00	0.00	150
021	112	Jim Arnaud	20	2016	440	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A	16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	385	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	65.1		0.00	0.00	65.10					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	104 Corn Silage	15 T/A										0.00	0.00	0.00	0.00	0.00	150
023	117	Jim Arnaud	11	2016	386	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A	11.3		0.00	0.00	11.30					0.00	0.00	0.00	0.00	0.00	150
				2015	359	11/18/2014	Yes	very high	no	19 Cool Season Past	150 CD/A	10.2		0.00	0.00	10.20					0.00	0.00	0.00	0.00	0.00	150
				2014	319	11/19/2013				119 Wheat	80 bu/A							50			0.00	0.00	0.00	-50.00	0.00	150
024	118	Jim Arnaud	14	2016	613	11/13/2015	Yes	very high	no	104 Corn Silage	20 T/A	66.2		0.00	0.00	66.20					0.00	0.00	0.00	0.00	0.00	150
				2015	381	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	55.9		29.35	29.35	26.55					68.56	27.59	27.59	-27.59	68.56	150
				2014													90				0.00	0.00	0.00	0.00	0.00	150
025	119	Jim Arnaud	15	2016	571	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A	25.5		0.00	0.00	25.50					0.00	0.00	0.00	0.00	0.00	150
				2015	323	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	54.6		0.00	0.00	54.60					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
026	120	Jim Arnaud	32	2016	306	11/13/2015	Yes	high	no	119 Wheat	80 bu/A	9.8		0.00	0.00	9.80					0.00	0.00	0.00	0.00	0.00	150
				2015	303	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	46.6		0.00	0.00	46.60					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
027	121	Jim Arnaud	30	2016	378	11/13/2015	Yes	very high	no	104 Corn Silage	20 T/A	52.2		0.00	0.00	52.20					0.00	0.00	0.00	0.00	0.00	150
				2015	570	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	37.4		0.00	0.00	37.40					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
028	123	Jim Arnaud	32	2016	379	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A	11.6		0.00	0.00	11.60					0.00	0.00	0.00	0.00	0.00	150
				2015	519	11/18/2014	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	12.6		0.00	0.00	12.60					0.00	0.00	0.00	0.00	0.00	150
				2014	516	11/19/2013	Yes			19 Cool Season Gr Past	150 CD/A										0.00	0.00	0.00	0.00	0.00	150
030	126	Jim Arnaud	40	2016	428	11/13/2015	Yes	very high	no	8 wildlife food plot		14.2		0.00	0.00	14.20					0.00	0.00	0.00	0.00	0.00	150
				2015	502	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	102.1		0.00	0.00	102.10					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
031	129	Jim Arnaud	20	2016	267	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A	6.5		0.00	0.00	6.50					0.00	0.00	0.00	0.00	0.00	150
				2015	319	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A	7.7		0.00	0.00	7.70					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
032	135	Jim Arnaud	28	2016	330	11/13/2015	Yes	very high	no	8 wildlife food plot		23.4		0.00	0.00	23.40					0.00	0.00	0.00	0.00	0.00	150
				2015	535	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	39.7		0.00	0.00	39.70					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150
033	138	Jim Arnaud	14	2016	640	11/13/2015	Yes	very high	no	119 Wheat	80 bu/A	37.3		0.00	0.00	37.30					0.00	0.00	0.00	0.00	0.00	150
				2015	278	11/18/2014	Yes	very high	no	104 Corn Silage	15 t/A	57.4		0.00	0.00	57.40					0.00	0.00	0.00	0.00	0.00	150
				2014																	0.00	0.00	0.00	0.00	0.00	150

Monett Soil Nutrient Tracking Report

							Field Info					Phosphorus Management					Nitrogen Management									
							>120 lb/acre?	P-Index Rating	Can field be used?			Argronomic P Rate					Agronomic N Rate									
		Owner	Acres	Crop Year	Soil Phosphorus (Bray P-1)	Soil Test Date	(If yes, to go P-Index. If no, go to nitrogen management)	http://www.nmplanner.missouri.edu/tools/pindex.asp	(P-index=very high, cannot be used; P-index=low or med, go to nitrogen management)	Crop	Yield Goal	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Other Sources of P Application	Sludge P Application	Total P Application (Max 4 yr crop removal	Phosphorus Balance	http://soilplantlab.missouri.edu/soil/scripts/manualentry.aspx or MU 202 or other	Previous Year Legume N Credit	Nitrogen N from Other Sources	PAN from Other Sources	Sludge Total N Application	Sludge PAN Application	Total PAN Application	Total PAN Balance	Total N Applied	Total Nitrogen Report Threshold
Outfall #	Field				lb/acre							lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
001	15	Jim Arnaud	80	2016	336	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A	11.1		0.00	0.00	11.10					0.00	0.00	0.00	0.00	0.00	150
				2015	567	11/18/2014	yes	very high	no	Soybeans	50 bu/A	37.6		0.00	0.00	37.60					0.00	0.00	0.00	0.00	0.00	150
				2014	324	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A	19.5		6.90	6.90	12.60					10.24	4.12	4.12	-4.12	10.24	150
002	17	Jim Arnaud	20	2016	171	11/13/2015	Yes	medium	yes	19 Cool Season Gr Past	150 CD/A	4.9		0.00	0.00	4.90					0.00	0.00	0.00	0.00	0.00	150
				2015	479	11/18/2014	yes	very high	no	119 wheat	80 BU/A	16.7		0.00	0.00	16.70					0.00	0.00	0.00	0.00	0.00	150
				2014	363	11/19/2013	yes	very high	no	19 Cool Season Gr Past	150 CD/A	19.5		25.34	25.34	-5.84					31.61	12.72	12.72	-12.72	31.61	150
003	18	Jim Arnaud	6	2016	333	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	16.5		0.00	0.00	16.50					0.00	0.00	0.00	0.00	0.00	150
				2015	396	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	19.3		0.00	0.00	19.30					0.00	0.00	0.00	0.00	0.00	150
				2014	410	11/19/2013	yes	very high	no												0.00	0.00	0.00	0.00	0.00	150
006	46	Kevin Burnside	40	2016	471	11/13/2015	yes	very high	no	19 Cool Season Gr Past	150 CD/A	11.4		0.00	0.00	11.40					0.00	0.00	0.00	0.00	0.00	150
				2015	377	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A	9.1		0.00	0.00	9.10					0.00	0.00	0.00	0.00	0.00	150
				2014	339	11/19/2013	Yes			Alfalfa	5 T/A										0.00	0.00	0.00	0.00	0.00	150
007	49	Jim Arnaud	60	2016	384	11/13/2015	Yes	very high	no	19 Cool Season Gr Past	150 CD/A	13.2		0.00	0.00	13.20					0.00	0.00	0.00	0.00	0.00	150
				2015	224	11/18/2014	Yes	high	no	Wheat	80 bu/A	9.2		0.00	0.00	9.20					0.00	0.00	0.00	0.00	0.00	150
				2014	327	11/19/13	Yes		no	Wheat	80 bu/A										0.00	0.00	0.00	0.00	0.00	150
008	52	Jim Arnaud	24	2016	107	11/13/2015	no	very high	no	115 Soybeans	50 bu/A	15.1		0.00	0.00	15.10					0.00	0.00	0.00	0.00	0.00	150
				2015	321	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	33.3		0.00	0.00	33.30					0.00	0.00	0.00	0.00	0.00	150
				2014	230	11/19/2013	Yes			Corn											0.00	0.00	0.00	0.00	0.00	150
013	84	Jim Arnaud	40	2016	299	11/13/2015	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A	16.9		0.00	0.00	16.90					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	10 Alfalfa-Gr Hay	5 T/A	18.8		0.00	0.00	18.80					0.00	0.00	0.00	0.00	0.00	150
				2014	120	11/19/2013	No			10 Alfalfa-Gr Hay	5 T/A										0.00	0.00	0.00	0.00	0.00	150
015	89	Jim Arnaud	55	2016	417	11/13/2015	Yes	very high	no	104 Corn (Silage)	20 T/A	76.5		0.00	0.00	76.50					0.00	0.00	0.00	0.00	0.00	150
				2015	341	11/18/2014	Yes	very high	no	115 Soybeans	50 bu/A	36.7		0.00	0.00	36.70					0.00	0.00	0.00	0.00	0.00	150
				2014	340	11/19/2013	Yes	very high	no	Wheat	80 bu/A							0			0.00	0.00	0.00	0.00	0.00	150
016	96	Jim Arnaud	14	2016	431	11/13/2015	Yes	very high	no	115 Soybeans	60 bu/A	26.4		0.00	0.00	26.40					0.00	0.00	0.00	0.00	0.00	150
				2015	412	11/18/2014	Yes	very high	no	104 Corn (Silage)	15 T/A	41.7		0.00	0.00	41.70					0.00	0.00	0.00	0.00	0.00	150
				2014	268	11/19/2013	Yes	very high	no	104 Corn (Silage)	15 T/A							0			0.00	0.00	0.00	0.00	0.00	150
017	97	Jim Arnaud	12	2016	426	11/13/2015	Yes	very high	no	115 Soybean	60 bu/A	19.2		0.00	0.00	19.20					0.00	0.00	0.00	0.00	0.00	150
				2015	423	11/18/2014	Yes	very high	no	104 Corn (Silage)	10 T/A	39.2		0.00	0.00	39.20					0.00	0.00	0.00	0.00	0.00	150
				2014	310	11/19/2013	Yes	very high	no	104 Corn (Silage)	10 T/A							0			0.00	0.00	0.00	0.00	0.00	150
018	98	Jim Arnaud	7	2016	191	11/13/2015	Yes	high	no	19 Cool Season Gr Past	150 CD/A	2.4		0.00	0.00	2.40					0.00	0.00	0.00	0.00	0.00	150
				2015	467	11/18/2014	Yes	high	no	19 Cool Season Gr Past	150 CD/A	5.9		0.00	0.00	5.90					0.00	0.00	0.00	0.00	0.00	150
				2014	574	11/19/2013				19 Cool Season Gr Past	150 CD/A							0			0.00	0.00	0.00	0.00	0.00	150
019	104	Jim Arnaud	7	2016	152	11/13/2015	Yes	high	no	115 Soybeans	60 bu/A	6.8		0.00	0.00	6.80					0.00	0.00	0.00	0.00	0.00	150
				2015	379	11/18/2014	Yes	very high	no	104 Corn Silage	15 T/A	23.1		0.00	0.00	23.10					0.00	0.00	0.00	0.00	0.00	150
				2014	690	11/19/2013	Yes		no	104 Corn Silage	15 T/A										0.00	0.00	0.00	0.00	0.00	150