Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Jefferson County Wastewater Treatment Plants

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

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Cahaba River WWTP

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JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
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716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Cahaba River Wastewater Treatment Facility, NPDES Permit No. AL0023027. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Gary Nelson, Cahaba River WWTP

2013

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Cahaba River WWTP NPDES #: AL0023027

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325-5979 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Gary Nelson
Name

Telephone #: (205) 987-0648 Fax #: (205) 402-7427

Date: May 9, 2013

Email Address: nelsong@jccal.org

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: (205) 214-8610 Fax #: (205) 325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year 2012 (due **May 31, 2013**).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for 2011.
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year.

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year (2011) minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to this treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner what actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and resolution must be submitted by May 31, 2013 to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Cahaba River WWTP

Part 1: Influent Loading/Flows:

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year (2012).

Month	Col. 1 Average Monthly Flowrate (MGD)	Col. 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Col. 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	9.8	101.0	8213
February	10.2	88.9	7432
March	10.5	84.0	7207
April	9.2	131.7	9850
May	11.0	145.4	13060
June	10.7	159.0	14261
July	9.9	157.9	12865
August	12.3	99.8	9873
September	11.5	103.8	9990
October	10.6	109.5	9887
November	8.4	150.8	10222
December	10.2	121.4	9790
Annual Avg.	**10.4**	**121.1**	**10221**

**As reported on NPDES Discharge Monitoring Reports (DMR'S) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for your facility in the blanks below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Avg. Design Flow	Avg. Design BOD_5 Loading (lbs/day)
Design Criteria:	12.0	19912
90% of the Design Criteria:	10.8	17921

C. How many times did the monthly flow (Col. 1) to the WWTP exceed 90% of design flow? 3 (Circle the appropriate number)

[0-4 = 0 points]; 5 or more = 5 points

D. How many times did the monthly flow (Col. 1) to the WWTP exceed the design flow? 1 (Circle the appropriate number)

0 = 0 points; [1-2 = 5 points]; 3-4 = 10 points; 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Col. 3) to the WWTP exceed 90% of the design loading? 3 (Circle the appropriate number)

0-1 = 0 points; [2-4 = 5 points]; 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day)(Col. 3) to the WWTP exceed the design loading? 1 (Circle the appropriate number)

0 = 0 points; [1 = 10 points]; 2 = 20 points; 3 = 30 points; 4 = 40 points; 5 or more = 50 points

G. Add together each point value you circled for C through F and place this sum in the blank below.

C points = 0

D points = 5

E points = 5

F points = 10

TOTAL POINTS VALUE OR PART 1 20
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Cahaba River WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by your facility during the last calendar year (2011).

(1) NPDES Permit Concentration

	Months	BOD_5 (or $CBOD_5$) (mg/l)	TSS(mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	Dec.-April	10.0	30.0	2.0	4.0
	May-Nov	4.0	30.0	1.0	2.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$)(mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.7	0.1	0.0	0.4
	February	0.5	0.0	0.0	0.3
	March	0.5	0.1	0.0	0.3
2	April	0.7	0.1	0.0	0.3
	May	0.6	0.1	0.0	0.3
	June	0.9	0.0	0.0	0.3
3	July	0.4	0.5	0.0	0.3
	August	0.3	0.1	0.0	0.2
	September	0.3	0.0	0.0	0.3
4	October	0.5	0.2	0.0	0.2
	November	0.5	0.4	0.0	0.4
	December	0.5	0.3	0.01	0.4
	Annual Average:	**0.54**	**0.16**	**0.0**	**0.32**

B. List the monthly average permit limit and DMR loadings below:

(1) NPDES Permit Loading

Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day	TKN(lbs/day)
Permit Limit: May-Nov	400	3002	100	200
Dec-April	1000	3002	200	400

(2) DMR Loading

Qtr	Month	BOD_5 (or $CBOD_5$)(lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	55	11	0	32
	February	39	0	0	27
	March	40	4	0	23
2	April	55	7	0.3	26
	May	60	6	0	28
	June	82	0	0	27
3	July	35	43	0	24
	August	37	11	0	20
	September	29	0	0	32
4	October	42	19	0	22
	November	37	28	0.1	29
	December	45	18	0.9	29
	Annual Average:	**46.2**	**12.3**	**0.12**	**26.5**

C. During the past year did either the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters.
(Circle the appropriate response.)

No = 0 points; yes = 121 points

D. During the past year did either the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters. (Circle the appropriate response.)

No = 0 points; yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day), exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters. (Circle the appropriate response.)

No = 0 points; yes = 121 points

F. During the past year did either the TSS concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters. (Circle the appropriate response.)

No = 0 points; yes = 121 points

G. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters. (Circle the appropriate response.)

No = 0 points; yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters. (Circle the appropriate response.)

No = 0 points; yes = 121 points

I. Enter each point value circled for C through H in the blanks below:

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 3: Age of the Wastewater Treatment Facilities

A. What year was the wastewater treatment plant constructed or last reconstructed? 2005

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A.)

Age 7 = (2012) - (2005)

Enter Age in Part C., below.

B. Check the type of treatment facility that is employed:

	Factor
X Mechanical Treatment Plant	2.0
_____Aerated Lagoon	1.5
_____Stabilization Pond	1.0
_____Other (Specify	1.0

C. Multiply the factor listed next to the type of the facility your community employees by the age of your facility to determine the total point above value for Part 3:

TOTAL POINT VALUE FOR = 2.0 (factor) X 7 (Age) = 14 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 1

C. How many of the bypass or overflow events listed in Parts A and B above have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 1

D. Add together Answers A and B and subtract Answer C from that total.
A + B - C= 0 (Circle the appropriate point total.)

[0 = 0 points]; 1 = 5 points; 2 = 10 points; 3 = 15 points; 4 = 20 points; 5 = 25 points; 6 = 30 points; 7 = 35 points; 8 = 40 points; 9 = 45 points; 10 = 50 points; 11 or more = 100 points.

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure (Note: This includes clogged/broken lines or manholes)? 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP. (Note: This includes clogged/broken lines or manholes)? 11

G. How many of the bypass or overflow events listed in Parts E and F above have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 11

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Circle the appropriate point total.)

[0 = 0 points]; 1 = 5 points; 2 = 10 points; 3 = 15 points; 4 = 20 points; 5 = 25 points; 6 = 30 points; 7 = 35 points; 8 = 40 points; 9 = 45 points; 10 = 50 points; 11 or more = 100 points.

I. Add point values circled in D and H and enter the total in the blank below:

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Cahaba River WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning your sludge quantity, characteristics and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does your wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can your facility operate without land spreading or disposing of sludge?)

4 months

(Circle the appropriate point total.)

Greater than or equal to 4 months	= 0 points
Less than 4 months, but greater than or equal to 3 months	= 10 points
Less than 3 months, but greater than or equal to 2 months	= 20 points
Less than 2 months, but greater than or equal to 1 month	= 30 points
Less than one month	= 50 points

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Circle the appropriate point total.)

36 or more months	= 0 points
24-35 months	= 10 points
12-23 months	= 20 points
6-11 months	= 30 points
Less than 6 months	= 50 points

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years, such that either flow or BOD_5 loadings to the sewerage system could significantly increase? Estimate additional loading below:

Design Population:_____ Equivalent (PE)

Design Flow:_____MGD

Design BOD_5:_____lbs/day

List Industry and/or residential Developments:

No major new development planned

Will the additional loading overload the plant? (Circle the appropriate point total.)

No = 0 points; Yes = 121 points

Place the point number in the blank below.

TOTAL POINT VALUE FOR PART 7 ___0___(highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Circle the appropriate point total.)

Yes = 0 points No = 121 points

TOTAL POINT VALUE FOR PART 8 ___0___(highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes. User charge rates are based on a uniform volume charge per 100 cubic feet of 85% of metered water consumption for single family residential. User Charge Rate ending December 31, 2010 was $7.40/100ft^3

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ ***50.45*** (ending 12/31/2012)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility:

The current physical and structural conditions are good.

B. Describe the general condition of the sewer system: (sewer lines, manholes, lift stations)

The general condition of the sewer system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer rehabilitation within Cahaba River collection system resulting from condition assessment work. Cahaba River WWTP Phase I and Phase II TMDL Improvements. Cahaba River WWTP to Valley Creek WWTP sludge transfer force main. Replacement of the current SCADA software with Citect. Pump and motor repairs at Al Seier pump station. Hydraulic gate repairs in the influent pump station, collection system pump station upgrades.

D. What was the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

See attachment

F. Is the community presently involved in formal planning for treatment facility upgrading?

No

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 5

H. Does your plant have a written plan for preventative maintenance on major equipment items? If yes, describe.

Yes – WWTP has O & M Manuals for all major equipment.

Preventive Maintenance schedules are kept and followed for plant equipment

INFOR Maintenance

Cahaba WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

Part 10.E

In calendar year 2012, one SSO in the Cahaba system (M04117, MH 4010-066B) was categorized as wet-weather related with a reported volume of 421,500 gallons. The SSO was preceded the week prior by a grease blockage in the downstream sewer line. Only four homes connect to the sewer lines upstream of MH066B. In the course of reviewing the data for the MWPP report, it was discovered that the photos taken of the overflow are of 4010-066A. The overflowing manhole was inaccurately reported as 4010-066B when it should have been identified as 4010-066A which is immediately downstream and located along a ditch at the base of the hill. The sewer service request #1042831 also states that the manhole number was 4010-066A.

The manhole 4010-066A has a small contributing service area and could only have produced a sizable overflow if there was blockage in the downstream sewer and the sewer received an extreme amount of I/I during the storm event. From an engineering analysis, the sewer lines are adequately sized for the service area. There are only 57 homes (6,568' of sewer) contributing flow to 066A with an expected flow of 14,250 gallons per day.

The overflow was reported as 1,500 gpm and lasting for 281 minutes. The picture taken of the overflow showed the manhole cover in place and an estimated height of discharge of no more than 4 or 5 inches. Using the Tables for Estimated SSO Flow out of Manholes with Cover in Place for a 24" cover from the Sanitary Sewer Overflow Response and Reporting Plan adopted July 2012, the overflow rate was actually in the range of 100 to 166 gpm. Using the 166 gpm rate, the overflow volume calculates to 46,646 gallons.

Television inspection of the area was performed on the upstream and downstream segments. The downstream manhole 4010-066 was found to have a heavy amount of manhole rehabilitation product overspray restricting flow which was removed by the crew. A piece of broken pipe was found in the segment between 066 and 066A that was also restricting flow and was removed. The investigation upstream from 066A revealed 4 possible infiltration sources, 2 at manholes, and 2 at service connections. These infiltration defects will be addressed through the County's Asset Management program.

Based on the review of all the available information, it is believed that the structural pipe restriction likely contributed to the grease blockage and the wet-weather SSO. The removal of the flow restrictions is expected to prevent the recurrence of an overflow under similar conditions.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication and other preventative maintenance tasks necessary for each piece of equipment? **Yes**

J. Are these preventative maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? **Yes**

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

UV Rebuild (2 Banks) $115,000; Pump Station Programming $13,000;

Al Seier #1 Check Valve Rebuild $48,000; Al Seier Expansion Joint Replace $9,000;

VFD #2 Pump Al Seier, $1,153; Influent Pump #4 Rebuild, $1,617;

Replace Gear Drive Assembly Dewatering Press $2,333;

Al Seier Generator Repair, $68,542

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program (Program). The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Cahaba River WWTP

Part 11: Summary Sheet

1. Enter the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total that the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 20 points	80 points
Part 2 0 points	121 points
Part 3 14 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 34 points	783 points

2. Circle the facility type that best describes your plant's treatment and disposal of wastewater.

Mechanical plant with surface water discharge
Aerated Lagoon or stabilization pond with surface water discharge
Mechanical plant using land disposal of liquid wastes
Aerated Lagoon or stabilization pond using land disposal of Liquid wastes

3. Circle the range that describes the action needed to address problems identified in the report.

0 - 70 pts.	Actions as Appropriate*
71 – 120 pts.	Departmental Recommendation Range*
121 – 783 pts.	Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. In Question 1, do any or the actual point values in the left column equal the maximum possible points in the right column? (Circle the appropriate response) Yes [No]

If yes, provide a written explanation for this situation in the space below.

Cahaba River Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Cahaba River

January 01, 2012 through December 31, 2012

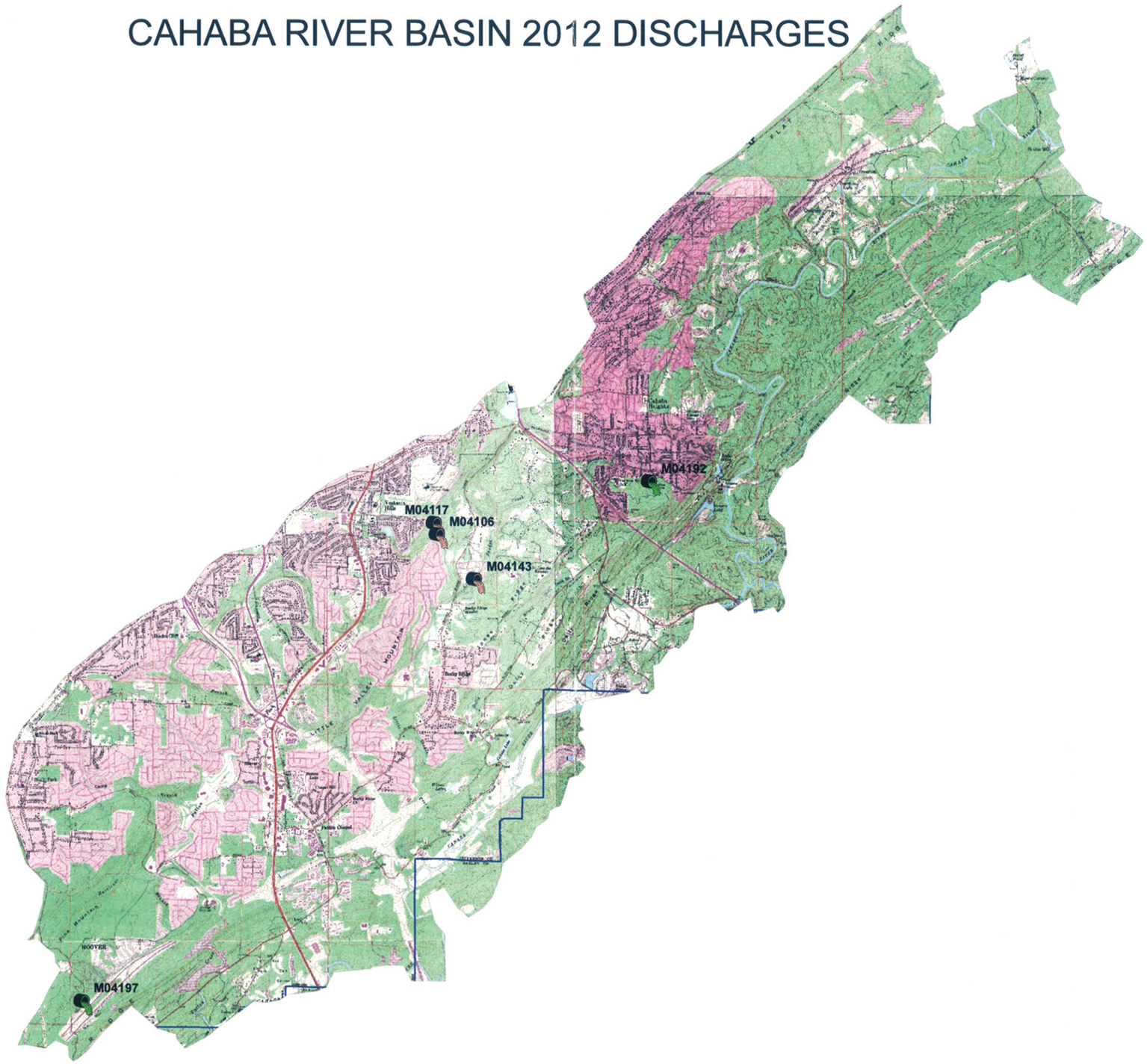
NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
C01019	8/22/12	1562 Pumphouse Court	Cahaba	Ground Absorbed/ Storm Drain	166	Air Release Valve	Air Release Valve Bleed Off Malfunction	No Rain	Air Release Valve Repaired	Ken Bennett	WWTP Manager
	Notes:										
M04097	1/11/12	700 Running Brook Rd	Cahaba	Ground Absorbed	6,974	Cleanout	Roots/ Debris	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04106	1/20/12	409 Vesclub Lane	Cahaba	Drainage Ditch	34,800	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04117	1/26/12	413 Vesclub Lane	Cahaba	Little Shades	421,500	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04138	2/11/12	2111 Montreat Way	Cahaba	Patton Creek	4,050	Manhole	Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04143	2/19/12	2729 Countrywood Way	Cahaba	Little Shades Creek	326,250	Manhole	Grease/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Bypass pumps also setup.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04156	3/8/12	2414 Chapel Road	Cahaba	Ground Absorbed	500	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04185	4/19/12	John Hawkins Parkway & Paradise Parkway	Cahaba	Storm Drain	7,000	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04191	5/2/12	3428 Country Brook Lane	Cahaba	Drainage Ditch	9,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04192	5/3/12	Intersection of Summit Pl & Summit.Blvd	Cahaba	Storm Drain	150,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04197	5/11/12	4901 Sulphur Springs Road	Cahaba	Ground Absorbed	11,820	Pipe	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04223	7/28/12	732 Sanders Road	Cahaba	Ground Absorbed	6,000	Manhole	Roots	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

CAHABA RIVER BASIN 2012 DISCHARGES



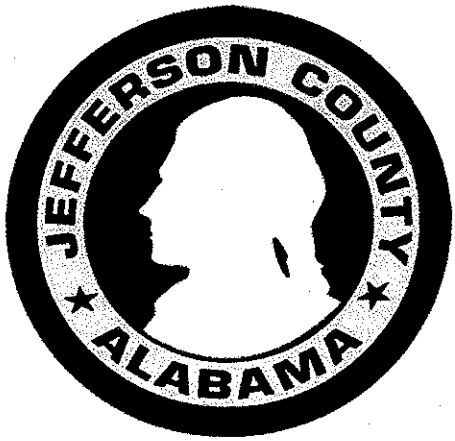
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-13-13

Cahaba River Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



2013 MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: AL0023027

Name: Cahaba River Wastewater Treatment Plant

Street Address: 3900 Veona Daniels Road

County: Jefferson

2. Facility Contact

Name: Gary Nelson

Title: Plant Manager

Telephone: (205) 987-0648

Permittee Name: Jefferson County Commission

Mailing Address: Suite A-300, 716 Richard Arrington, Jr. Blvd. N.
Birmingham, AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2012: 10.4 MGD

Facility Design Capacity: 12.0 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: N/A gallons per month

Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

☐ Mixed with Influent Wastewater for Treatment

☐ Mixed with Sewage Sludge

☒ N/A

4. Estimated Percentage Contributing Wastewater Flow

Residential: 90 %

Industrial: %

Other: 10 % Describe: Commercial

5. List type of wastewater treatment process(es) utilized at this facility:

Screening, Grit Removal, 5-Stage BNR Process, Clarification, Sand Filtration, UV Disinfection

6. Estimated sewage sludge wasting rate at this facility: lb/day dry weight

or 99,884 gallons per day

7. Estimated untreated sludge received from off site: N/A lb/day dry weight

or gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 1.0 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Thickening	
Aerobic Digestion	
Mechanical Dewatering (Belt Filter Press)	

10. Estimate the total volume of sludge generated: 1,336 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Current Practices Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. [x] Land Application, Bulk Shipped			1,336		
[x] Agriculture	x				
[ ] Forest					
[ ] Public Contact					
[ ] Lawn/Home Garden					
b. [ ] Land Application, Bagged/Other Container					
[ ] Agriculture					
[ ] Forest					
[ ] Public Contact					
[ ] Lawn/Home Garden					
c. [ ] Incineration					
d. [ ] Subtitle D Landfill (Disposal Only)					
e. [ ] Lined Treatment Lagoon or Stabilization Pond					
f. [ ] Unlined Lagoon or Stabilization Pond					
g. [ ] Other (Please Describe)					

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations:

1A. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.
Flat Top/Bessie Mines Land Reclamation Site

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis (PQL), mg/kg
Arsenic	<PQL	GRAB	*	11.0
Cadmium	<PQL	GRAB	*	8.0
Chromium	18.0	GRAB	*	8.0
Copper	483.0	GRAB	*	8.0
Lead	16.0	GRAB	*	15.0
Mercury	2.4	GRAB	*	0.6
Molybdenum	7.6	GRAB	*	5.0
Nickel	18.0	GRAB	*	6.0
Selenium	<PQL	GRAB	*	15.0
Zinc	875.0	GRAB	*	18.0
Ammonium-Nitrogen	N/A	N/A	*	N/A
Nitrate-Nitrogen	N/A	N/A	*	N/A
Total Kjeldahl Nitrogen	45,000	GRAB	*	1.8

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 12 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

- [ ] Class A
  - [ ] Alternative A1 - Time and Temperature
  - [ ] Alternative A2 - Alkaline Treatment
  - [ ] Alternative A3 - Analysis and Operation
  - [ ] Alternative A4 - Analysis Only
  - [ ] Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
    - [ ] Heat Drying
    - [ ] Pasteurization
    - [ ] Composting
    - [ ] Thermophilic Aerobic Digestion
    - [ ] Gamma Ray Irradiation
    - [ ] Heat Treatment
    - [ ] Beta Ray Irradiation
  - [ ] Alternative A6 - PFRP Equivalent _____
- [x] Class B
  - [x] Alternative B1 - Fecal Coliform Count
  - [x] Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
    - [x] Aerobic Digestion
    - [ ] Composting
    - [ ] Air Drying
    - [ ] Lime Stabilization
    - [ ] Anaerobic Digestion
  - [ ] Alternative B3 - PSRP Equivalent _____
- [ ] Neither or Unknown

Vector Attraction Control

- [ ] Option 1 - Minimum 38% Reduction in Volatile Solids
- [ ] Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- [ ] Option 5 - Aerobic Processes plus Elevated Temperature
- [ ] Option 6 - Raised pH to 12 and Retained at 11.5
- [ ] Option 7 - 75% Solids with no Unstabilized Solids
- [ ] Option 8 - 90% Solids with Unstabilized Solids
- [ ] Option 9 - Injection Below Land Surface
- [x] Option 10 - Incorporation into Soil within 6 or 8 Hours
- [ ] Option 11 Covering Active Sewage Sludge Unit Daily
- [ ] None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- [ ] Yes
- [x] No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600 lb/acre/year (Reclamation Site)

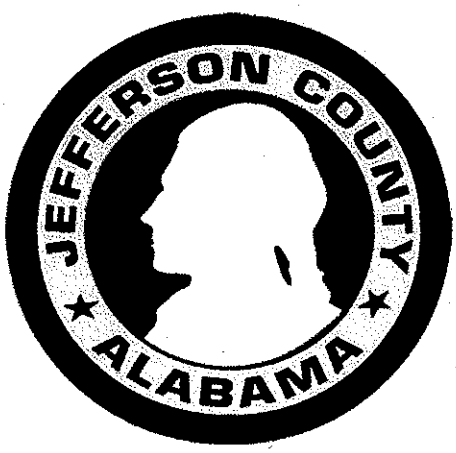
3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

None

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Cahaba River Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Cahaba River WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023027

PLANT SUPERINTENDENT: Gary Nelson TEL. # (205) 987-0648

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1. Gary Nelson	IV	C003933	2/28/2016
2. Jeremy Creel	IV	C001691	11/30/2015
3. Derrick Brooks	IV	C001433	8/31/2013
4. Tommy Carney	IV	C004047	9/30/2013
5. Zada Nygren	IV	C003372	6/30/2015
6. Bill Morrow	IV	C003750	12/31/2014
7. Andrew Hudson	IV	C000779	11/30/2015
8. Joe Willoughby	IV	C002615	9/30/2015
9. Tommie Bradford	IV	C001269	8/31/2015
10 Jonathan Gardner	IV	C007020	3/31/2015

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	80	2
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	320	8
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE	80	2
OTHER PLANT WORKERS	200	5

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	9	START TIME	700
2ND	4		1500
3RD	4		2300

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

ADEM FORM 441 8/02

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Cahaba River WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023027

PLANT SUPERINTENDENT: Gary Nelson TEL. # (205) 987-0648

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Eddie Crumley	TRAINEE STATUS		
2.	Rodney Franklin	TRAINEE STATUS		
3.	Richard Hall	TRAINEE STATUS		
4.	Willie McClain	TRAINEE STATUS		
5.	Ernest Minniefield	TRAINEE STATUS		
6.	William Sanders	TRAINEE STATUS		
7.	George Mendiola	TRAINEE STATUS		
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST		START TIME	
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: Brian Champion TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Brian Rohling	I (c)	C005418	6/30/2015
4.	Lavon Evans	I (c)	C004631	12/31/2014
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Five Mile Creek
WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Five Mile Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Five Mile Creek Wastewater Treatment Facility, NPDES Permit No. AL0026913. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Lynn Jones, Five Mile Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Five Mile Creek WWTP NPDES #: AL0026913

MUNICIPALITY: Jefferson County Commission COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325 - 5979 Fax #: (205) 325 - 5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Lynn D. Jones
Name

Telephone #: (205) 841 - 5939 Fax #: (205) 841 - 7698

Email Address: jonesly@jccal.org

Date: May 13, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: (205) 214 - 8610 Fax #: (205) 325 - 5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Five Mile Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	17	68	8770
February	16	73	9358
March	16	78	9843
April	10	108	9212
May	11	96	8351
June	9	104	8035
July	8	112	7352
August	10.9	75	6816
September	11	91	8219
October	9.7	100	7697
November	8.3	119	8325
December	14	82	8922
Annual Avg.	11.7	92.3	8408

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	30	50,040
90% of the Design Criteria	27	31,525

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Five Mile Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May - Nov.	6.0	30.0	2.0	4.0
	Dec. - April	7.0	30.0	2.5	5.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.8	0.1	0	0.5
	February	0.8	0	0.04	0.5
	March	0.7	0	0	0.5
2	April	1.4	0.8	0	0.7
	May	1.8	2.2	0.01	0.7
	June	1.8	1.2	0.01	0.7
3	July	2.2	0.9	0.01	0.6
	August	1.5	0.8	0.01	0.5
	September	0.8	0.1	0.1	0.6
4	October	0.6	0.1	0.04	0.5
	November	0.8	0.3	0.02	0.7
	December	1.1	0.2	0.06	0.6
	Annual Avg.	1.19	0.56	0.023	0.59

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May - Nov.	1501	7506	500	1000
	April - Dec.	1751	7506	625	1251

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	114	10	0	67
	February	108	0	6.1	61
	March	89	0	0	55
2	April	125	71	0	61
	May	158	209	0.9	65
	June	136	92	0.7	59
3	July	140	63	0.6	41
	August	141	80	0.7	46
	September	83	15	10.2	66
4	October	51	3.9	2.8	40
	November	57	25	1.0	48
	December	126	22	6.8	68
	Annual Avg.	110.7	49.3	2.5	56.4

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2008

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 4 = (2012) - (2008)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 4 (Age) = 8.0 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 2

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 1

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 1 (Check the appropriate point total.)

☐ 0 = 0 points ☑ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 36

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 36

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 5
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Five Mile Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE): _____

Design Flow: _____ MGD

Design BOD_5: _____ lbs/day

List industrial and/or residential developments.

No major new development planned

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

yes. user charge rates are based on a uniform volume charge per 100 cubic feet of 85% metered water consumption for single family resident. User charge rate ending December 31, 2008 was $7.40 / 100cu.ft.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ $50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The physical and structural conditions of the wastewater facility are good.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The general condition of the sewer system (sewer lines, manholes, lift stations) is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

In the next 5 years the WWTP will have improvements in automation and SCADA controls. Sewer condition assessment and sewer line repair, replacement and renewal projects are ongoing activities. Improvements to Newfound, Cunningham and Penefield pump stations.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attached additional sheet.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

See attached additional sheet.

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 10

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. The shop supervisor has a written plan for preventive maintenance supported by our INFOR maintenance program. A written service schedule is provided for each piece of equipment and has been implemented in our INFOR maintenance program as well.

Five Mile Creek WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structure = 50 –age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

Part 10.E

Fully saturated antecedent ground conditions coupled with 2.34 inches of rainfall on January 26, 2012 caused two I/I related SSOs in the Five Mile Creek collection system. The day's rainfall was not unusual with hourly totals approaching 1-year 2-hour and 1-year 6-hour return period frequencies, but the impact to the sewer system and resulting SSOs was much more severe than from significantly higher intensity and many times higher total precipitation storms encountered prior to and following this event. Prolonged weather patterns producing saturated ground conditions prior to a storm have been identified as the primary cause of most I/I related SSOs observed in the last few years. Three mini-system areas that contribute excessive I/I have been included in a SSES project that includes television inspection (TVI), manhole inspections, and smoke testing of all sewers. The SSES project commenced on February 21, 2013 and will be complete August 21, 2013. Defects and/or deficiencies identified will be remedied. Engineering capacity analysis of the sewers will also be performed.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

BUSWAY replacement cost: $57, 723.13

Lightning struck the No. 3 generator through it's exhaust stack on the roof. Ground wiring had to be reconfigured and rewired to prevent damage from future lightning strikes. Repair Cost for reconfigured ground wiring: $9, 645.00. Repair of No. 3 generator: $5,713.34(Incomplete and ongoing)

UV Repairs $3,864.13

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program. The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Five Mile Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 8 points	40 points
Part 4 5 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 13 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Five Mile Creek

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C00998	1/26/12	3410 Happy Hollow Lane	Five Mile - Downstream of Barton Branch (Remainder of System)	Five Mile Creek	89,333	Manhole/ Junction Box	WWTP operator error	Heavy Rain	Influent Gate Raised	Brian Champion	Sewer Maintenance Supervisor
	Notes: Following a power outage, WWTP operator failed to manually set influent gate at correct position to hand peak flows caused by heavy rains.										
C00999	1/26/12	1908 & 1919 East Lawson Dr	Five Mile - Upstream of Barton Branch	Five Mile Creek	157,700	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
C01000	1/26/12	1220 Sweet Water Cir	Five Mile - Upstream of Barton Branch	Five Mile Creek	134,050	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
C01005	3/6/12	Wright Street & Laburnum Drive	Five Mile - Upstream of Barton Branch	Storm Drain	9,300	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01007	4/17/12	1495 Center Point Parkway	Five Mile - Upstream of Barton Branch	Feeder to Five Mile Creek	10,700	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01009	5/9/12	1832 Brewster Road	Five Mile - Upstream of Barton Branch	Drainage Ditch	2,050	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01011	6/12/12	2213 Pentland Drive	Five Mile - Upstream of Barton Branch	Storm Drain	2,850	Manhole	Grease/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01012	6/15/12	1651 Viking Drive	Five Mile - Upstream of Barton Branch	Drainage Ditch	11,000	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01013	6/25/12	205 21st Ave NE	Five Mile - Upstream of Barton Branch	Ground Absorbed	24,000	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01016	8/11/12	1105 Spring Villa Circle	Five Mile - Upstream of Barton Branch	Drainage Ditch/ Five Mile Creek	61,050	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01017	8/14/12	1848 Centerpoint Parkway	Five Mile - Upstream of Barton Branch	Storm Drain	3,750	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01020	8/27/12	1 Tammera Trail	Five Mile - Upstream of Barton Branch	Storm Drain	8,400	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01022	9/27/12	1 Trafalgar Square	Five Mile - Upstream of Barton Branch	Five Mile Creek	22,446	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01024	10/26/12	110 & 200 20th Ave NW	Five Mile - Upstream of Barton Branch	Drainage Ditch	123	Manhole	Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01025	11/4/12	317 Wink Circle	Five Mile - Upstream of Barton Branch	Storm Drain	169	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
C01026	11/6/12	1805 Lyle Drive	Five Mile - Upstream of Barton Branch	Drainage Ditch	86	Manhole	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
C01028	11/29/12	4150 Pinson Valley Parkway	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed	70	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04096	1/10/12	1401 Carson Road N	Five Mile - Upstream of Barton Branch	Ground Absorbed/ Drainage Ditch	6,100	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04125	1/27/12	9832 Red Mill Rd	Five Mile - Upstream of Barton Branch	Storm Drain/ Five Mile Creek	62,700	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04126	1/27/12	4141 Pinson Valley Parkway	Five Mile - Upstream of Barton Branch	Ground Absorbed	1,500	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04128	1/31/12	627 Earline Cir	Five Mile - Upstream of Barton Branch	Storm Drain	3,050	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04130	1/31/12	181 Goodrich Drive (Goodrich PS)	Five Mile - Upstream of Barton Branch	Ground Absorbed	300	Pump Station	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes: Pump controller failed causing the pumps to not operate manually or automatically.										
M04133	2/3/12	1020 Pinson Valley Parkway	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed	6,100	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04152	3/2/12	1800 Indian Summer Drive	Five Mile - Upstream of Barton Branch	Ground Absorbed	159,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04181	4/11/12	900 Winchester Circle	Five Mile - Upstream of Barton Branch	Storm Drain	6,500	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04195	5/8/12	213 13th Ave NW	Five Mile - Upstream of Barton Branch	Drainage Ditch	1,500	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04212	6/18/12	9849 Airport Road	Five Mile - Upstream of Barton Branch	Ground Absorbed	5,550	Manhole	Grease/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
M04215	6/28/12	2801 Pinson Valley Parkway	Five Mile - Upstream of Barton Branch	Ground Absorbed	4,500	Manhole	Grease/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										

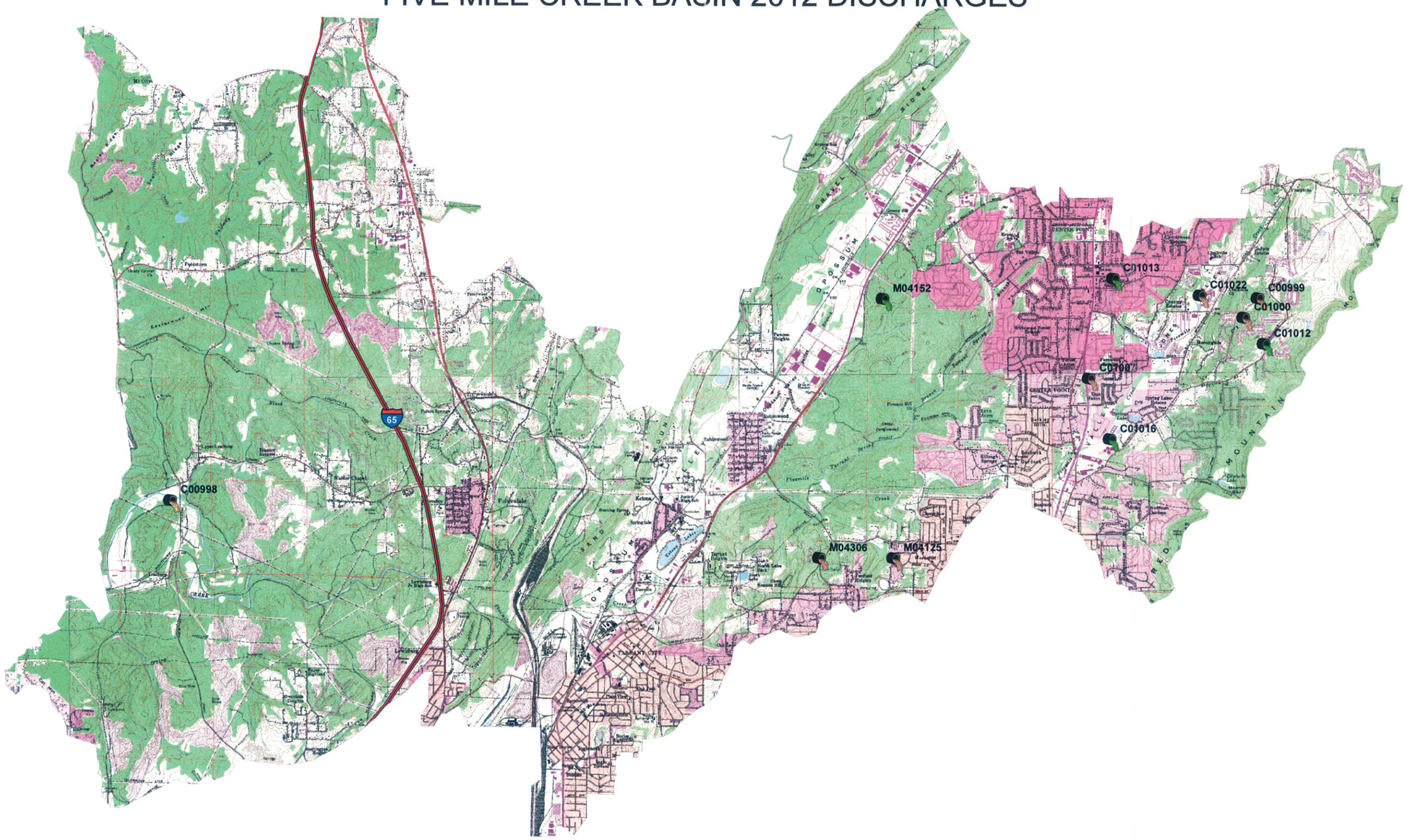
NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04231	8/13/12	1800 Indian Summer Drive	Five Mile - Upstream of Barton Branch	Ground Absorbed	4,000	Manhole	Grease/ Debris	Light Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
M04240	8/28/12	1401 Tarrant Huffman Road	Five Mile - Downstream of Barton Branch (Remainder of System)	Drainage Ditch/ Dolcito Quarry	8,976	Pipe	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Line was repaired when camera was removed.										
M04241	9/2/12	112 Lawson Road	Five Mile - Upstream of Barton Branch	Drainage Ditch	783	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04264	10/15/12	504 Winterpark Cir	Five Mile - Upstream of Barton Branch	Drainage Ditch	107	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04269	10/22/12	1321 7th PL NW	Five Mile - Upstream of Barton Branch	Ground Absorbed/ Drainage Ditch	987	Manhole	Grease/ Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04271	10/24/12	1313 Five Mile Road	Five Mile - Upstream of Barton Branch	Ground Absorbed	9,930	Manhole	Grease/ Roots/ Debris/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04281	11/16/12	1400 Wharton Ave	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed	98	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04294	12/9/12	1315 2nd St. NW	Five Mile - Upstream of Barton Branch	Drainage Ditch	1,287	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04296	12/12/12	921 Village Mill Rd	Five Mile - Upstream of Barton Branch	Ground Absorbed	174	Manhole	Grease/Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04306	12/26/12	Pape Ave & Airport Rd	Five Mile - Upstream of Barton Branch	Drainage Ditch/Five Mile Creek	15,504	Manhole	Grease/Debris	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

FIVE MILE CREEK BASIN 2012 DISCHARGES



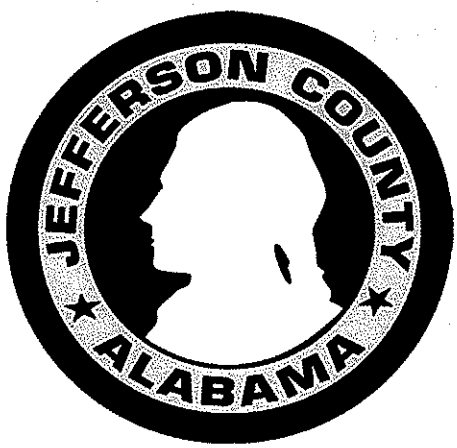
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-14-13

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: AL0026913

Name: FIVE MILE CREEK WWTP

Street Address: 3410 HAPPY HOLLOW LANE FULTONDALE, AL 35068

County: JEFFERSON

2. Facility Contact

Name: LYNN D. JONES

Title: PLANT MANAGER

Telephone: 205-841-5939

Permittee Name: JEFFERSON COUNTY COMMISSION

Mailing Address: SUITE A-300 716 RICHARD ARRINGTON BLVD N.
BIRMINGHAM, AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2012: 11.76 MGD

Facility Design Capacity: 30 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: N/A gallons per month

Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

☐ Mixed with Influent Wastewater for Treatment

☐ Mixed with Sewage Sludge

☐ N/A

4. Estimated Percentage Contributing Wastewater Flow

Residential: 93 %

Industrial: 2 %

Other: 5 % Describe: COMMERCIAL

5. List type of wastewater treatment process(es) utilized at this facility:

Screening, grit removal, aeration with activated sludge, clarification, sandfiltration, UV disnfection

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

or 32,254.00 gallons per day

7. Estimated untreated sludge received from off site: _____ lb/day dry weight

or N/A gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 3.7 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	
Thickening	
Drying Beds (air drying)	

10. Estimate the total volume of sludge generated: 1522 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. ■ Land Application, Bulk Shipped			1522		
■ Agriculture	☐	☐		■	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date*	Detection Level of Analysis(mg/kg)
Arsenic	<PQL	Grab	*	11.0
Cadmium	<PQL	Grab	*	8.0
Chromium	84	Grab	*	8.0
Copper	368	Grab	*	8.0
Lead	33	Grab	*	15.0
Mercury	2.0	Grab	*	0.6
Molybdenum	<PQL	Grab	*	5.0
Nickel	65	Grab	*	6.0
Selenium	<PQL	Grab	*	15.0
Zinc	1,933	Grab	*	18.0
Ammonium-Nitrogen	----------	N/A	N/A	
Nitrate-Nitrogen	----------	N/A	N/A	
Total Kjeldahl Nitrogen	29,667	Grab	*	1.8

Yearly Average** **PQL= Practical Quantitative Limit

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 87 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

■ Class B
- ■ Alternative B1 - Fecal Coliform Count
- ■ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ■ Aerobic Digestion ■ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ■ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes
■ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, and Rye Grass.

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lbs/acre/year

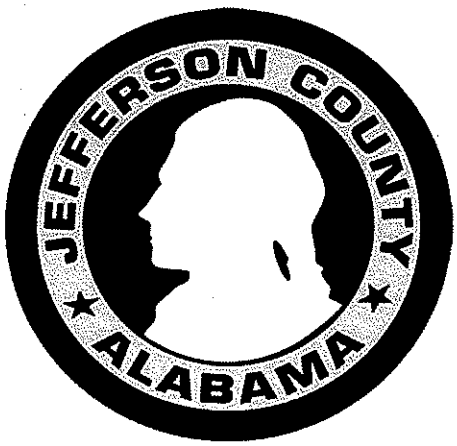
3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

2012

FACILITY NAME: Five Mile Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT MANAGER: Lynn Jones TEL. # (205) 841-5939

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME		GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1	PMgr	Lynn Jones	Grade IV	C003327	9/30/2014
2	PSpv	Charles King	Grade IV	C003272	8/31/2014
3	SSpv	Wayne Hawkins	Grade IV	C005284	6/30/2013
4	SSpv	Terry Joe MaHaffey	Grade IV	C003135	8/31/2013
5	SSpv	Randy Maxwell	Grade IV	C003076	11/30/2015
6	SSpv	Tony Sutton	Grade IV	C002294	11/30/2015
7	SSpv	Robert Tyler	Grade IV	C003008	11/30/2015
8	Op II	Mark Cruce	Grade IV	C001682	3/31/2015
9	Op II	Adam Smith	Grade IV	C002236	4/30/2013
10	Op II	Daniel Tesseneer	Grade IV	C006050	6/30/2014
11	Op I	Ellis Brown	Trainee		
12	Op I	Johnny McDonough	Trainee		
13	Op I	Sam Shears	Trainee		
14	Op I	Todd Smitherman	Trainee		
15	Op I	Michael Wright	Trainee		

	MAN HRS./\	NUMBER
MANAGEMENT/SUPER\ GRADE IV	40	7
OPERATOR(S): GRADE IV	40	3
NON-CERTIFIED OPER. (TRAINEES)	40	5

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	5	7:00 a.m.
2ND	2	3:00 p.m.
3RD	2	11:00p.m.

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

SUN	MON	TUES	WED	THURS	FRI	SAT
X	X	X	X	X	X	X
X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

ADEM FORM 441 8/02

Revised 2/25/2013

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

Continued

FACILITY NAME: Five Mile Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT SUPERINTENDENT: Lynn Jones TEL. # (205) 841-5939

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
15	Garren Hubbert	Trainee		
16	Johnny McDonough	Trainee		
17	Billy Joe Poe	Trainee		
18	Samuel Shears	Trainee		
19	Todd Smitherman	Trainee		
20	Daniel Tesseneer	Trainee		
21	Michael Wright	Trainee		

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?

YES	NO

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

2012

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER: AL 0056120

PLANT SUPERINTENDENT: Brian Champion TEL. # (205) 238-3785

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C003094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
5.	Lavon Evans	I (c)	C004631	12/31/2014
6.	Brian Rohling	I (c)	C005418	6/30/2015
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST		START TIME	
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Leeds WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Leeds Wastewater Treatment Facility, NPDES Permit No. AL0067067. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown of Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
David Willoughby, Leeds WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Leeds (Norman R. Skinner) WWTP NPDES #: AL0067067

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325-5979 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: David Willoughby
Name

Telephone #: (205) 699-8495 Fax #: (205) 699-0640

Email Address: willoughbyd@jccal.org

Date: May 9, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: 205-214-2610 Fax #: 205-325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	1.51	83	978
February	1.26	119	1121
March	1.39	94	916
April	0.85	118	803
May	0.84	104	674
June	0.48	140	512
July	0.38	122	330
August	0.75	114	721
September	0.91	92	678
October	0.68	104	615
November	0.55	144	649
December	1.21	115	969
Annual Avg.	0.90	112	747

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	5.0	8340
90% of the Design Criteria	4.5	7506

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov	4.0	24	2.0	4.0
	Dec-Apr	10.0	24	3.0	8.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.41	0.00	0.71	1.48
	February	0.33	0.00	0.00	0.42
	March	0.31	0.00	0.00	0.31
2	April	0.94	0.20	0.01	0.41
	May	0.70	0.15	0.00	0.36
	June	0.82	0.35	0.15	0.58
3	July	0.37	0.16	0.00	0.20
	August	0.21	0.35	0.01	0.31
	September	0.19	0.00	0.00	0.44
4	October	0.19	0.40	0.00	0.43
	November	0.62	0.00	0.55	1.29
	December	0.35	0.13	0.01	0.50
	Annual Avg.	0.45	0.15	0.12	0.56

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	66.7	400	33.3	66.7
	Dec-Apr	166	400	50.0	133

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	6.0	0.0	7.20	16.6
	February	3.5	0.0	0.05	4.4
	March	3.1	0.0	0.00	3.1
2	April	7.7	1.5	0.06	3.0
	May	5.7	0.8	0.00	2.7
	June	3.0	1.1	1.04	2.9
3	July	1.0	0.5	0.00	0.5
	August	3.6	1.9	0.05	2.0
	September	2.1	0.0	0.00	3.7
4	October	1.0	1.8	0.00	2.3
	November	2.7	0.0	2.33	5.7
	December	2.6	0.6	0.02	4.9
	Annual Avg.	3.5	0.7	0.90	4.3

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 1995

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 17 = (2012) - (1995)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
	Aerated Lagoon	1.5
	Stabilization Pond	1.0
	Other (Specify:)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 17 (Age) = 34 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 8

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 8

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE): _____

Design Flow: _____ MGD

Design BOD_5: _____ lbs/day

List industrial and/or residential developments.

The Environmental Services Department has not received any applicable sewer availability requests that would significantly impact the sewer system, but the department is aware of long-term development concepts that could affect the collection system and potentially the WWTP in the next 5 to 10 years.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes. User rates are based on a uniform volume charge per 100 cubic feet of 85% of metered water consumption.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Physical and structural condition are very good.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The general condition of the sewer system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

See attachment

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None.

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 0

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. Maintenance schedules and records or repairs are maintained at the plant.

Leeds WWTP (MWPP 2012)

Part 10.C

Sewer line repairs and replacement are continual activities planned for the collection systems. UV system will likely be replaced in the next 4 to 5 years. The Coosa Ave. pump station, force main and gravity sewer will likely require a capacity expansion in the next 5-10 years. Replacement of the current SCADA with Citect and improvements to the Parkway pump station.

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Replaced #2 influent pump rotating assemble at a approximate cost of $30,000.

Replaced one rotating assembly for RAS pump #3 at a approximate cost of $6,000.

Replaced one backwash pump on sand filter #2 at a approximate cost of $3,000.

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program (Program). The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Leeds (Norman R. Skinner) WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

	Actual Values	Maximum Possible
Part 1	0 points	80 points
Part 2	0 points	121 points
Part 3	34 points	40 points
Part 4	0 points	200 points
Part 5	0 points	50 points
Part 6	0 points	50 points
Part 7	0 points	121 points
Part 8	0 points	121 points
Total	34 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form,* ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Leeds Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Leeds

January 01, 2012 through December 31, 2012

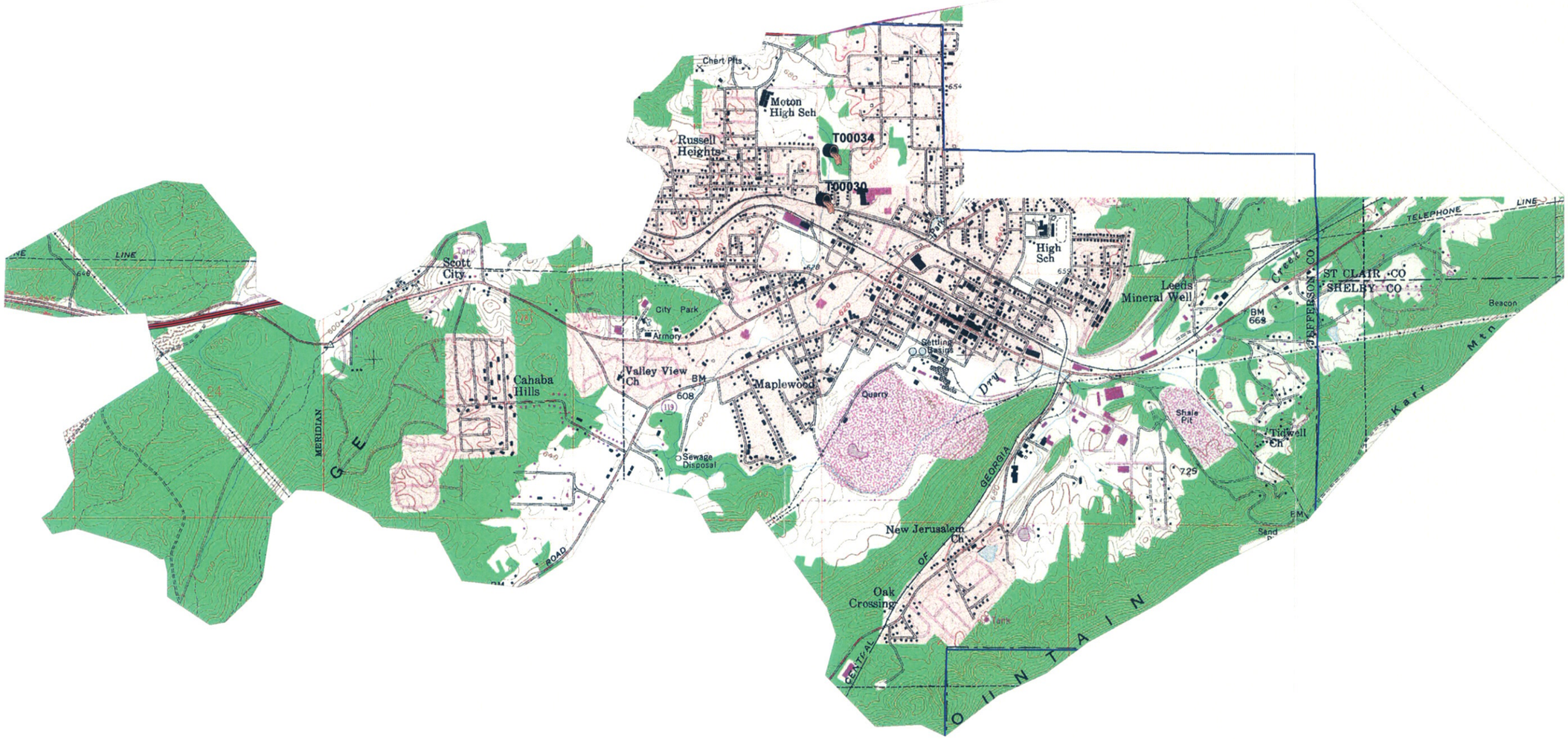
NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
M04148	2/28/12	7317 Friar Lane	Leeds	Ground Absorbed	135	Manhole	Unknown	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Blockage relieved itself before crew arrival.										
T00028	6/5/12	1111 Ashville Road	Leeds	Ground Absorbed	240	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00030	8/15/12	8100 Franklin Ave/ 8101 Ware Ave	Leeds	Drainage Ditch/ Little Cahaba River	95,400	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
T00033	10/10/12	990 Montevallo Road	Leeds	Ground Absorbed	150	Cleanout	Gravity Main Break	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00034	10/24/12	1915 Capitol St	Leeds	Feeder Creek to Little Cahaba	43,658	Manhole	Grease/ Roots/ Debris/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00036	10/26/12	1915 Capitol St	Leeds	Ground Absorbed	3,240	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
T00037	11/5/12	7501 Parkway Drive	Leeds	Ground Absorbed	729	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00038	11/5/12	1424 Ashville Rd	Leeds	Ground Absorbed	369	Manhole	Car Grease/ Debris/ Rocks/ Grass Clippings	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

LEEDS BASIN 2012 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-11-13

Leeds Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: AL0067067

Name: LEEDS (NORMAN R. SKINNER) WWTP

Street Address: 800 HELEN STREET

County: JEFFERSON

2. Facility Contact

Name: David Willoughby

Title: PLANT SUPERINTENDENT

Telephone: (205) 699-8495

Permittee Name: JEFFERSON COUNTY COMMISSION (Leeds WWTP)

Mailing Address: SUITE A-300, 716 RICHARD ARRINGTON, JR. BLVD. N.

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2012: 0.9 MGD

Facility Design Capacity: 5.0 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: N/A gallons per month

Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

[ ] Mixed with Influent Wastewater for Treatment

[ ] Mixed with Sewage Sludge

[X] N/A

4. Estimated Percentage Contributing Wastewater Flow

Residential: 92 %

Industrial: 3 %

Other: 5 % Describe: COMMERCIAL

5. List type of wastewater treatment process(es) utilized at this facility:

COMMINUTOR, GRIT REMOVAL, EXTENDED AERATION WITH ACTIVATED sludge, sand filtration, UV Disinfection

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

or 13,652 gallons per day

7. Estimated untreated sludge received from off site: N/A lb/day dry weight

or N/A gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 2.1 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	---
Drying Beds(Air Drying)	---

10. Estimate the total volume of sludge generated: 255 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Current Practices Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. X Land Application, Bulk Shipped			255		
X Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: _____ feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	GRAB	*	11.0
Cadmium	<PQL	GRAB	*	8.0
Chromium	60	GRAB	*	8.0
Copper	858	GRAB	*	8.0
Lead	27	GRAB	*	15.0
Mercury	2.0	GRAB	*	0.6
Molybdenum	18.00	GRAB	*	5.0
Nickel	44	GRAB	*	6.0
Selenium	<PQL	GRAB	*	15.0
Zinc	815	GRAB	*	18.0
Ammonium-Nitrogen	N/A	N/A	*	N/A
Nitrate-Nitrogen	N/A	N/A	*	N/A
Total Kjeldahl Nitrogen	27,250	GRAB	*	1.8

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 84 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

X Class B
- **X** Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

☐ Option 1 - Minimum 38% Reduction in Volatile Solids
☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
☐ Option 5 - Aerobic Processes plus Elevated Temperature
☐ Option 6 - Raised pH to 12 and Retained at 11.5
☐ Option 7 - 75% Solids with no Unstabilized Solids
☐ Option 8 - 90% Solids with Unstabilized Solids
☐ Option 9 - Injection Below Land Surface
X Option 10 - Incorporation into Soil within 6 or 8 Hours
☐ Option 11 Covering Active Sewage Sludge Unit Daily
☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes
X No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600 lb/acre/year(Reclamation)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

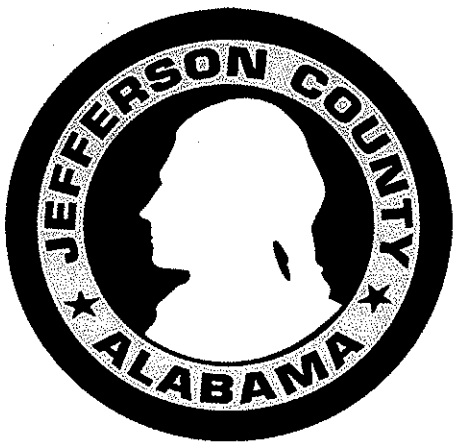
No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Leeds Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Leeds (Norman R. Skinner) WWTP PLANT GRADE: III

PERMIT NUMBER: AL0067067

PLANT SUPERINTENDENT: David Willoughby TEL. # (205) 699-8495

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Ben Cato	IV	C001942	11/30/2015
2.	Doris Gill	IV	C000444	11/30/2015
3.	David Willoughby	IV	C002616	11/30/2015
4.	Wanda June McCarty	IV	C003209	7/31/2015
5.	Hermon Ramsey	IV	C003658	8/31/2015
6.	Anthony Weldon	IV	C002650	11/30/2013
7.	Willie G. Harmon			
8.	Eric T. Lawler			
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	40	1
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	200	5
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS	80	2

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	5	START TIME	700
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	x	x	x	x	x	x	x
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Prudes Creek WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Prudes Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Prudes Creek Wastewater Treatment Facility, NPDES Permit No. AL0056120. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Lynn Jones, Prudes Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Prudes Creek WWTP NPDES #: AL0056120

MUNICIPALITY: Jefferson County Commission COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325 - 5979 Fax #: (205) 325 - 5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Lynn D. Jones
Name

Telephone #: (205) 841 - 5939 Fax #: (205) 841 - 7698

Email Address: jonesly@jccal.org

Date: May 10, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: (205) 214 - 8610 Fax #: (205) 325 - 5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Prudes Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	0.52	40	162
February	0.46	49	168
March	0.45	39	119
April	0.19	57	85
May	0.25	97	183
June	0.24	104	203
July	0.20	85	151
August	0.32	31	78
September	0.36	14	40
October	0.24	50	77
November	0.14	72	99
December	0.46	45	138
Annual Avg.	0.32	57	125

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	0.9	2144
90% of the Design Criteria	0.81	1930

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Prudes Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April-October	8.0	30.0	2.5	5.0
	Nov. - May	25.0	30.0	10.0	20.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.7	0.5	0.1	0.5
	February	0.4	0.0	0.1	0.3
	March	0.6	0.0	0.0	0.2
2	April	0.6	0.3	0.0	0.2
	May	0.6	0.1	0.0	0.2
	June	1.3	0.6	0.0	0.3
3	July	0.5	0.6	0.0	0.2
	August	0.3	0.3	0.0	0.3
	September	0.4	0.2	0.1	0.4
4	October	0.8	1.2	0.1	0.6
	November	0.7	0.0	0.0	0.3
	December	1.0	1.7	0.1	0.5
	Annual Avg.	0.7	0.45	0.04	0.34

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April-October	60.0	225	18.7	37.5
	Nov. - May	187	225	75.0	150

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	3.4	5.2	1.0	3.0
	February	1.5	0.0	0.2	1.1
	March	2.0	0.0	0.0	0.8
2	April	0.9	0.5	0.0	0.4
	May	1.2	0.2	0.0	0.5
	June	2.9	1.5	0.0	0.6
3	July	1.1	1.4	0.0	0.4
	August	0.7	1.0	0.1	0.9
	September	1.3	0.4	0.4	1.5
4	October	1.4	2.3	0.2	1.0
	November	1.0	0.0	0.0	0.4
	December	4.7	10.7	0.4	2.2
	Annual Avg.	1.8	1.9	0.2	1.1

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2006

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 6 = (2012) - (2006)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 6.0 (Age) = 12 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 1

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 1

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 5

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 5

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Prudes Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE):_____ Design Flow:_____MGD Design BOD_5:_____lbs/day

List industrial and/or residential developments.

None

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes. User charge rates are based on a uniform volume charge per 100cu.ft. of 85% metered water consumption for single family residents. User charge rate ending Dec. 31, 2012 was $7.40/100cu.ft. and is still in effect.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ $50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The physical and structural conditions are good.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The general condition of the sewer system (sewer lines, manholes, lift stations) is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Improvements to Adamsville pumps.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

At least two of the six SSO events were from ROW maintenance crews damaging force main clean outs.

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 0

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. The shop supervisor has a written plan for preventive maintenance supported by our INFOR maintenance program. A written service schedule is provided for each piece of equipment and has been implemented in our INFOR maintenance program as well.

Prudes Creek WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structure = 50 –age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

In our automation efforts at Prudes Creek WWTP we have replaced the manual valves on our R.A.S. telescopic valves with actuators. The cost was $17,240.00

UV Repairs $11,594.60

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program. The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Prudes Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 12 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 12 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

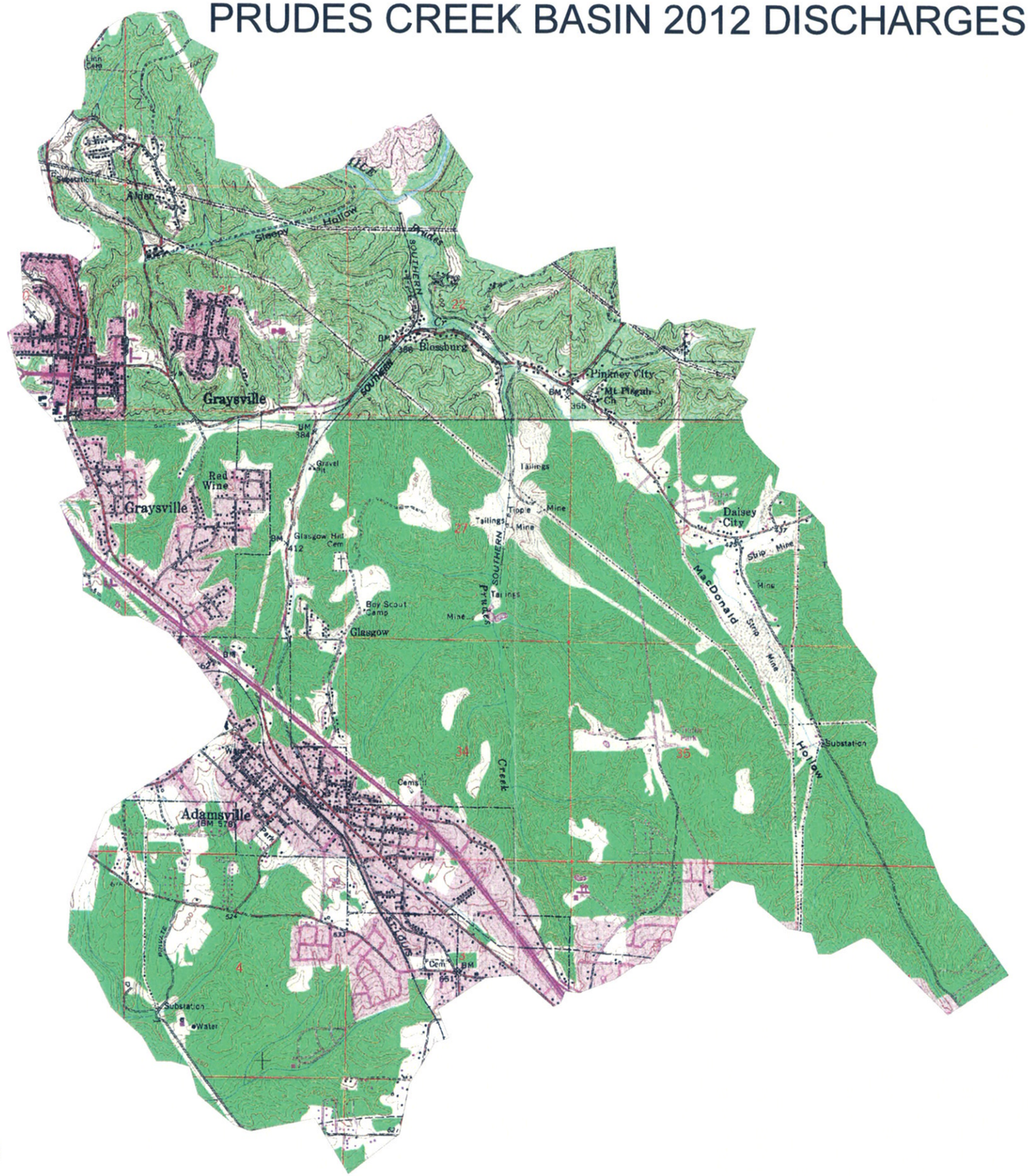
Summary of Unpermitted Discharges - Prudes Creek

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
T00024	3/9/12	212 2nd Ave NW	Prudes Creek	Ground Absorbed	600	Manhole	Surcharge from Rain	Moderate Rain	Vacuum Truck Utilized	Ken Bennett	WWTP Manager
	Notes:										
T00027	5/11/12	Tilson Ave & Hazelwood Road	Prudes Creek	Venison Branch	4,625	Pipe	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
T00029	7/24/12	Adams Ave & Ross St	Prudes Creek	Ground Absorbed	2,250	Cleanout	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes: Grass cutting crew damaged the cleanout cap. Cleanout cap was replaced.										
T00031	8/27/12	5004 Hazelwood Road	Prudes Creek	Ground Absorbed	405	Force Main Cleanout	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes: Crews cutting right of way damaged the force main cleanout.										
T00032	9/4/12	4204 Basswood Circle	Prudes Creek	Ground Absorbed	180	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00039	11/17/12	4600 Hazelwood Rd	Prudes Creek	Venison Creek		Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										

PRUDES CREEK BASIN 2012 DISCHARGES



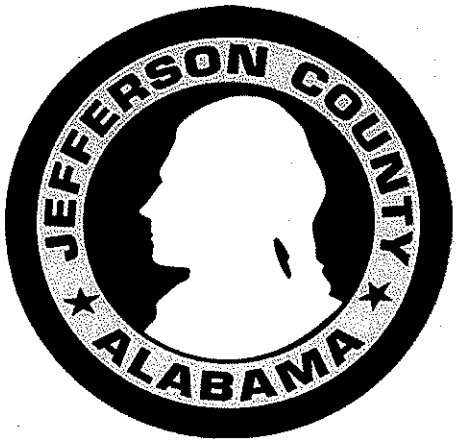
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS
NONE REPORTED IN PRUDES CREEK BASIN

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-11-13

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0056120

   Name: PRUDES CREEK WWTP

   Street Address: 500 WATER TRAIL GRAYSVILLE, AL 35073

   County: JEFFERSON

2. Facility Contact

   Name: LYNN D. JONES

   Title: ACTING PLANT MANAGER

   Telephone: 205-841-5939

   Permittee Name: JEFFERSON COUNTY COMMISSION

   Mailing Address: SUITE A-300 716 RICHARD ARRINGTON BLVD N.
   BIRMINGHAM, AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

   Avg. Daily Flow for 2012: 0.32 MGD

   Facility Design Capacity: 0.9 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

   Average Domestic Septage: N/A gallons per month

   Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

   ☐ Mixed with Influent Wastewater for Treatment

   ☐ Mixed with Sewage Sludge

   ■ N/A

4. Estimated Percentage Contributing Wastewater Flow

   Residential: 98 %

   Industrial: %

   Other: 2 % Describe: COMMERCIAL

5. List type of wastewater treatment process(es) utilized at this facility:

   Screening, grit removal, aeration with activated sludge, clarification, sandfiltration, UV disinfection

6. Estimated sewage sludge wasting rate at this facility: lb/day dry weight
   or 57.07 gallons per day

7. Estimated untreated sludge received from off site: lb/day dry weight
   or N/A gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 2.3 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Thickening	
Drying Beds (air drying)	

10. Estimate the total volume of sludge generated: 0 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices: Approved by ADEM Yes	Current Practices: Approved by ADEM No	Current Practices: Quantity (dry U.S. tons/year)	Proposed Practices: Approved by ADEM Yes	Proposed Practices: Approved by ADEM No
a. ■ Land Application, Bulk Shipped			0		
■ Agriculture	☐	☐		■	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis (mg/kg)
Arsenic	<PQL	Grab	*	11.0
Cadmium	<PQL	Grab	*	8.0
Chromium	37	Grab	*	8.0
Copper	210	Grab	*	8.0
Lead	41	Grab	*	15.0
Mercury	5.7	Grab	*	0.6
Molybdenum	<PQL	Grab	*	5.0
Nickel	25	Grab	*	6.0
Selenium	<PQL	Grab	*	15.0
Zinc	1,150	Grab	*	18.0
Ammonium-Nitrogen	----------	N/A	N/A	N/A
Nitrate-Nitrogen	----------	N/A	N/A	N/A
Total Kjeldahl Nitrogen	29,150.00	Grab	*	1.8

= Yearly Average ***PQL= Practical Quantitative Limit***

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 54 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

■ Class B
- ■ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ■ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ■ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- ☐ Yes
- ■ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, and Rye Grass.

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

The nitrogen requirement is 600lbs/acre/year.

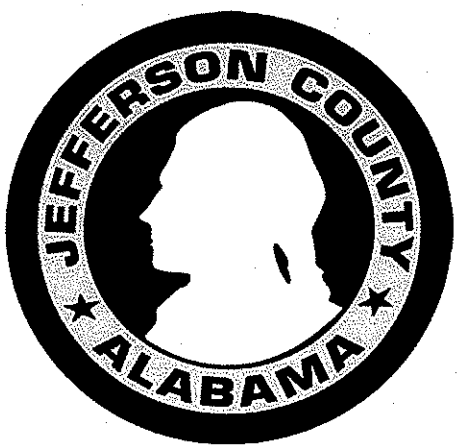
3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Prudes Creek WWTP PLANT GRADE: II

PERMIT NUMBER: AL0056120

PLANT MANAGER: Lynn Jones TEL. # (205) 841-5939

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME		GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1	PMgr	Lynn Jones	Grade IV	C003327	9/30/2014
2	PSpv	Charles King	Grade IV	C003272	3/31/2014
3	SSpv	Wayne Hawkins	Grade IV	C005284	6/30/2013
4	SSpv	Terry Joe MaHaffey	Grade IV	C003135	8/31/2013
5	SSpv	Randy Maxwell	Grade IV	C003076	11/30/2015
6	SSpv	Robert Tyler	Grade IV	C003008	11/30/2015
7	SSpv	Tony Sutton	Grade IV	C002294	11/30/2015
8	Op II	Mark Cruce	Grade IV	C001682	3/31/2015
9	Op II	Adam Smith	Grade IV	C002236	4/30/2013
10	Op II	Daniel Tesseneer	Grade IV	C006050	6/30/2014
11	Op I	Ellis Brown	Trainee		
12	Op I	Johnny McDonough	Trainee		
13	Op I	Sam Shears	Trainee		
14	Op I	Todd Smitherman	Trainee		
15	Op I	Michael Wright	Trainee		

OPERATOR(S):	MAN HRS./\	NUMBER
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	40	1
NONCERTIFIED OPERATOR I:	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	1	7:00a.m.
2ND	0	3:00p.m.
3RD	0	11:00p.m.

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

SUN	MON	TUES	WED	THURS	FRI	SAT
X	X	X	X	X	X	X

ADEM USE ONLY	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

ADEM FORM 441 8/02

Revised 2/25/2013

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

Continued

FACILITY NAME: Prudes WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT SUPERINTENDENT: Lynn Jones TEL. #: (205) 841-5939

SYSTEM MANAGER: David Denard TEL. #: (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
15	Garren Hubbert	Trainee		
16	Johnny McDonough	Trainee		
17	Billy Joe Poe	Trainee		
18	Samuel Shears	Trainee		
19	Todd Smitherman	Trainee		
20	Daniel Tesseneer	Trainee		
21	Michael Wright	Trainee		

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?

YES	NO

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance
PERMIT NUMBER:
PLANT GRADE: IV
PLANT SUPERINTENDENT:
SYSTEM MANAGER: David Denard
TEL. # (205) 540-7585
TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I(c)	C002094	6/30/2015
2.	Don Goodwin	I(c)	C005423	6/30/2015
3.	Lavon Evans	I(c)	C004631	12/31/2014
4.	Brian Rohling	I(c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

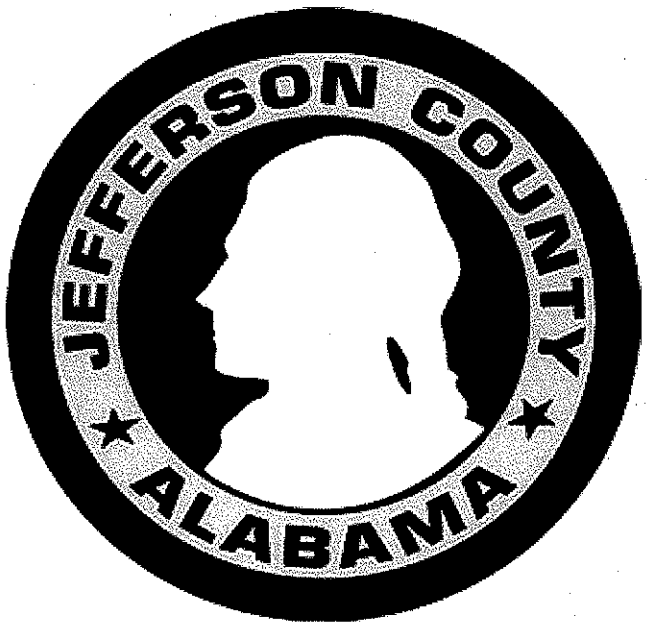
	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Trussville WWTP

as required by the
Alabama Department of Environmental Management NPDES Program



Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Trussville Wastewater Treatment Facility, NPDES Permit No. AL0022934. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
David Willoughby, Trussville WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Trussville WWTP NPDES #: AL 0022934

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325-5979 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: David Willoughby
Name

Telephone #: (205) 655-3617 Fax #: (205) 655-9240

Email Address: willoughbyd@jccal.org

Date: May 9, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: 205-214-8610 Fax #: 205-325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Trussville WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	2.70	98	2101
February	2.48	100	2073
March	2.45	101	1942
April	1.64	138	1845
May	1.68	148	2063
June	1.47	143	1696
July	1.42	139	1549
August	1.99	92	1461
September	2.17	94	1595
October	1.67	123	1683
November	1.41	141	1653
December	2.18	140	2463
Annual Avg.	1.94	120.4	1831.8

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	4.0	10014
90% of the Design Criteria	3.6	9012

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Trussville WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov	3.0	30.0	1.0	2.0
	Dec-Apr	10.0	30.0	1.0	3.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.8	0.95	0.08	0.55
	February	0.6	0.35	0.03	0.58
	March	0.5	0.19	0.00	0.37
2	April	0.7	0.54	0.00	0.53
	May	0.8	0.62	0.23	0.70
	June	0.9	0.28	0.00	0.39
3	July	0.3	0.45	0.03	0.45
	August	0.3	0.00	0.02	0.29
	September	0.3	0.13	0.01	0.29
4	October	0.3	0.07	0.00	0.25
	November	0.5	0.00	0.00	0.30
	December	0.3	0.32	0.00	0.23
	Annual Avg.	0.52	0.32	0.03	0.41

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	100.0	1000.0	33.3	66.7
	Dec-Apr	333.0	1000.0	33.3	100.0

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	28.6	43.4	4.45	16.9
	February	13.0	7.1	0.80	12.3
	March	9.9	4.1	0.00	7.1
2	April	9.2	6.6	0.00	7.1
	May	11.3	6.6	3.06	9.9
	June	10.2	3.2	0.00	4.6
3	July	3.9	5.8	0.47	5.3
	August	5.4	0.0	0.40	4.8
	September	5.6	3.3	0.38	5.4
4	October	3.6	0.9	0.00	3.4
	November	5.3	0.0	0.00	3.6
	December	5.8	5.9	0.00	3.9
	Annual Avg.	9.3	7.2	0.80	7.0

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 1998

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 14 = (2012) - (1998)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
	Aerated Lagoon	1.5
	Stabilization Pond	1.0
	Other (Specify:)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 14 (Age) = 28 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 3

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 3

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Trussville WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE):_____ Design Flow:_____MGD Design BOD_5:_____lbs/day

List industrial and/or residential developments.

No major new development

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes. User charge rates are based on a uniform volume charge per 100 cubic feet of 85% of metered water consumption. Charge rate was $7.40/100 ft3 ending 12/31/2012.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

All structures are physically sound and in good working condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The general condition of the system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Collection system repairs and replacement are continual activities. Trussville WWTP Phase I and II

TMDL improvements; replacement of the current SCADA software with Citect. Improvements to

Wisteria trace pump station and vfd improvements at Cedar Creek town homes.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 0

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. O&M manuals are on site.

Trussville WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Three new mixers were replaced in the aeration basins at a cost of about $70,000.00

Replaced grit hopper, classifier and pump assembly at a cost of $18,000.00

Replace three RAS pump assemblies at a cost of $17,000.00

Repaired digester gear box and replace coupling at a cost of $13,000.00

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program (Program). The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Trussville WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 28 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 28 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Trussville Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

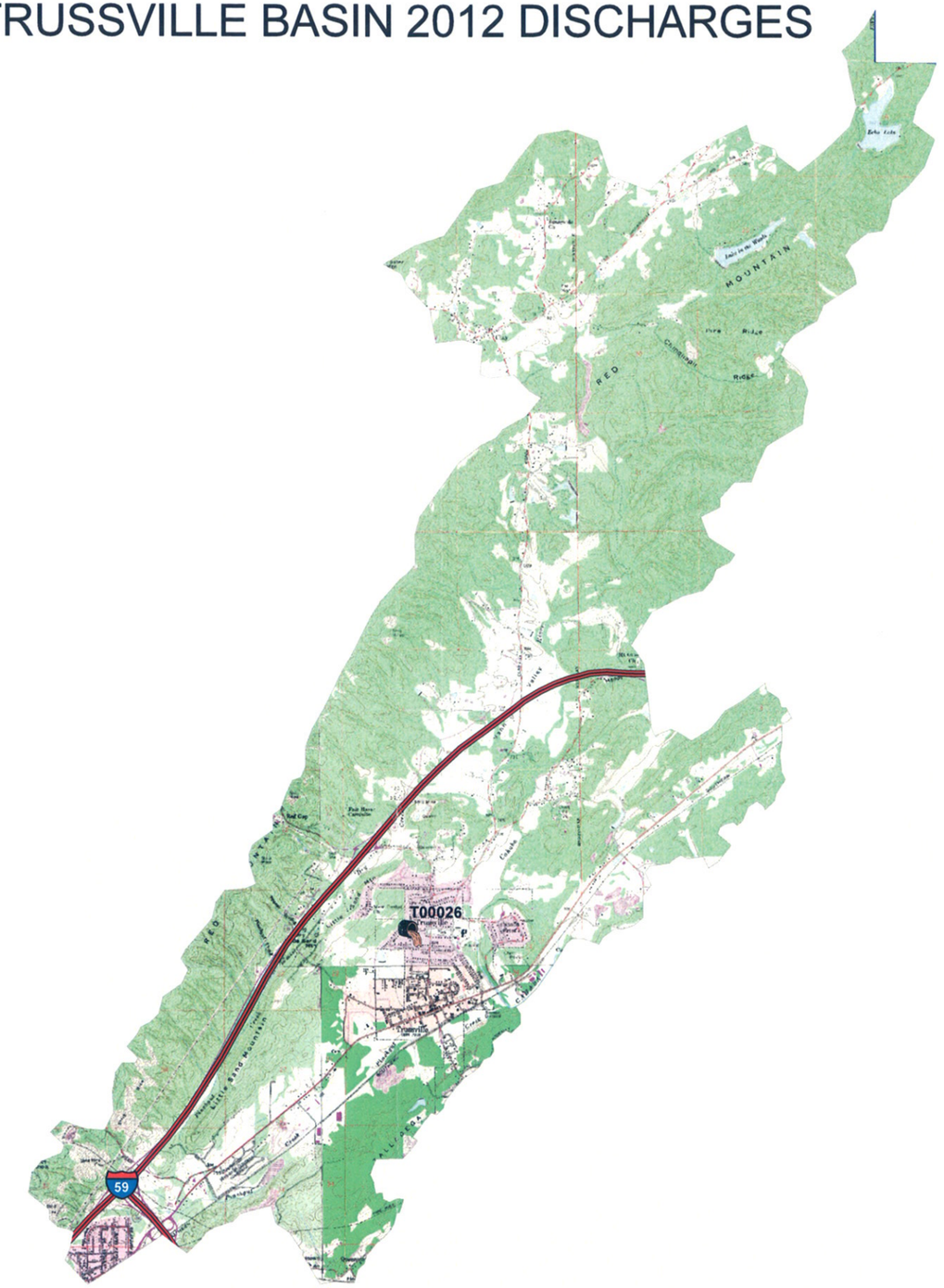
Summary of Unpermitted Discharges - Trussville

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04104	1/17/12	315 Main St	Trussville	Storm Drain	48	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
T00026	5/5/12	301 Brentwood Ave	Trussville	Ground Absorbed	10,032	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
T00040	12/17/12	303 Mountain Dr	Trussville	Ground Absorbed	5	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

TRUSSVILLE BASIN 2012 DISCHARGES



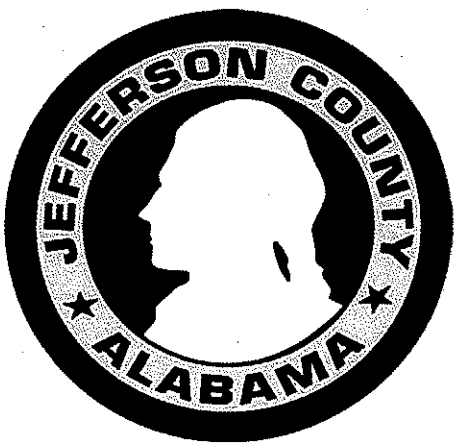
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-11-13

Trussville Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: **AL0022934**

   Name: **Trussville WWTP**

   Street Address: **325 City Hall Drive**

   County: **Jefferson**

2. Facility Contact

   Name: **David Willoughby**

   Title: **Plant Superintendent**

   Telephone: **(205) 655-3617**

   Permittee Name: **Jefferson County Commission- Trussville WWTP**

   Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**
   Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

   Avg. Daily Flow for 2012: **1.9** MGD

   Facility Design Capacity: **4.0** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

   Average Domestic Septage: **N/A** gallons per month

   Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing

   ☐ Mixed with Influent Wastewater for Treatment

   ☐ Mixed with Sewage Sludge

   ☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow

   Residential: **90** %

   Industrial: **2** %

   Other: **8** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:

   Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight
   or **21,178** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight
   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **2.1** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	
Thicker	
Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **531** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. [X] Land Application, Bulk Shipped			**531**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	*	**11.0**
Cadmium	**<PQL**	**Grab**	*	**8.0**
Chromium	**266**	**Grab**	*	**8.0**
Copper	**1,370**	**Grab**	*	**8.0**
Lead	**24**	**Grab**	*	**15.0**
Mercury	**2**	**Grab**	*	**0.6**
Molybdenum	**19**	**Grab**	*	**5.0**
Nickel	**126**	**Grab**	*	**6.0**
Selenium	**<PQL**	**Grab**	*	**15.0**
Zinc	**1,270**	**Grab**	*	**18.0**
Ammonium-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Nitrate-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Total Kjeldahl Nitrogen	**25,000**	**Grab**	*	**1.8**

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **58** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☒ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☒ Aerobic Digestion ☒ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ☒ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- ☐ Yes
- ☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

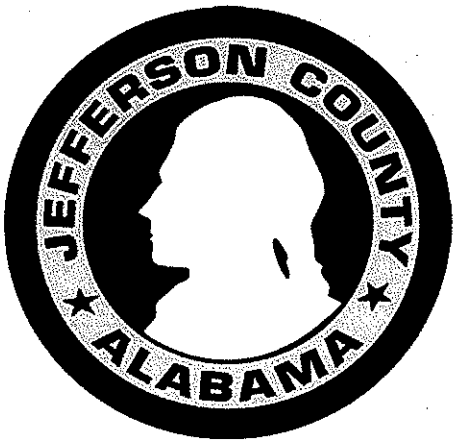
3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Trussville Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Trussville WWTP PLANT GRADE: III

PERMIT NUMBER: AL0022934

PLANT SUPERINTENDENT: David Willoughby TEL. # (205) 655-3617

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	David Willoughby	IV	C002616	11/30/2015
2.	Brian Key	IV	C003285	1/1/2014
3.	Ladonna Coalburn	IV	C002043	12/31/2014
4.	Rosemary Sparks	IV	C002168	12/31/2014
5.	Ronald Johnson	II	C005501	2/28/2014
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	120	3
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II	40	1
GRADE III		
GRADE IV	40	1
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	3	START TIME	700
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	x	x	x	x	x	x	x
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance

PERMIT NUMBER:

PLANT GRADE: IV

PLANT SUPERINTENDENT:

SYSTEM MANAGER: David Denard

TEL. # (205) 540-7585

TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I(c)	C002094	6/30/2015
2.	Don Goodwin	I(c)	C005423	6/30/2015
3.	Lavon Evans	I(c)	C004631	12/31/2014
4.	Brian Rohling	I(c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Turkey Creek WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Turkey Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Turkey Creek Wastewater Treatment Facility, NPDES Permit No. AL0022926. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Chad Quick, Turkey Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Turkey Creek WWTP NPDES #: AL 0022926

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205)325-5806 Fax #: (205)325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Chad Quick
Name

Telephone #: (205)681-7971 Fax #: (205)680-8139

Email Address: quickc@jccal.org

Date: May 10, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: (205) 214-8610 Fax #: (205) 325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Turkey Creek

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	5.9	51.4	2421
February	5.4	40.6	1744
March	5.3	48.7	2045
April	4.1	68.9	2420
May	4.3	63.1	2160
June	3.5	69.3	2103
July	3.7	102.1	3202
August	4.2	61.6	2158
September	4.6	58.8	2252
October	3.6	80.4	2318
November	3.5	77.5	2299
December	5.3	49.1	2231
Annual Avg.	4.44	64.3	2279

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	5.0	7506
90% of the Design Criteria	4.5	6755

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 5 (Check the appropriate point total)

☐ 0 - 4 = 0 points ☑ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 10 (Check the appropriate point total)

☐ 0 = 0 points ☐ 1 - 2 = 5 points ☑ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 5

D points = 10

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 15
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Turkey Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April-Oct.	20.0	24.0	2.5	Report
	Nov-March	20.0	24.0	5.0	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	1.45	8.2	0.0	0.61
	February	1.07	5.5	0.0	0.38
	March	0.85	4.2	0.0	0.30
2	April	1.14	4.2	0.0	0.79
	May	1.33	6.6	0.0	0.69
	June	1.35	6.8	0.0	0.65
3	July	1.34	5.8	0.0	0.45
	August	1.19	5.2	0.0	0.00
	September	0.82	6.3	0.0	0.50
4	October	0.92	5.5	0.0	0.42
	November	0.69	5.9	0.0	0.48
	December	1.08	7.7	0.0	0.48
	Annual Avg.	1.10	5.97	0.0	0.48

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April-Oct	834	1000	104	Report
	Nov-March	834	1000	208	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	71.5	391	0.0	25
	February	47.7	240	0.0	14
	March	37.4	181	0.0	10
2	April	40.9	149	0.0	37
	May	46.0	235	0.0	31
	June	40.3	205	0.0	18
3	July	41.9	182	0.0	14
	August	43.2	202	0.18	0
	September	37.4	289	0.0	31
4	October	27.0	170	0.0	11
	November	20.7	180	0.23	16
	December	50.6	370	0.0	22
	Annual Avg.	42.1	232.9	0.03	19.2

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2004

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 8 = (2012) - (2004)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 8.0 (Age) = 16 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 3

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 3

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Turkey Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE): _____

Design Flow: _____ MGD

Design BOD_5: _____ lbs/day

List industrial and/or residential developments.

No new developments are planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes, user charge rates are based on a uniform volume charge per 100 cubic feet of 85% of meter consumption for single family residence.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The physical and structural conditions at the plant are in excellent shape.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

Sewer lines are good.

Manholes are good

Lift stations are good

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer line repair and replacement are continued activities planned for the collection system.

Replacement of the current SCADA software with Citect.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 1

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes, O&M manuals for all equipment are on site. We record lubrication and repairs on all equipment into the plants computer maintenance program.

Turkey Creek WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Mechanical seal for the peak flow pump, cost = $ 8512.06

UV repairs at a cost of $ 12965.32

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012for the development of a comprehensive Collection System Asset Management Program. The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Turkey Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 15 points	80 points
Part 2 0 points	121 points
Part 3 16 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 31 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

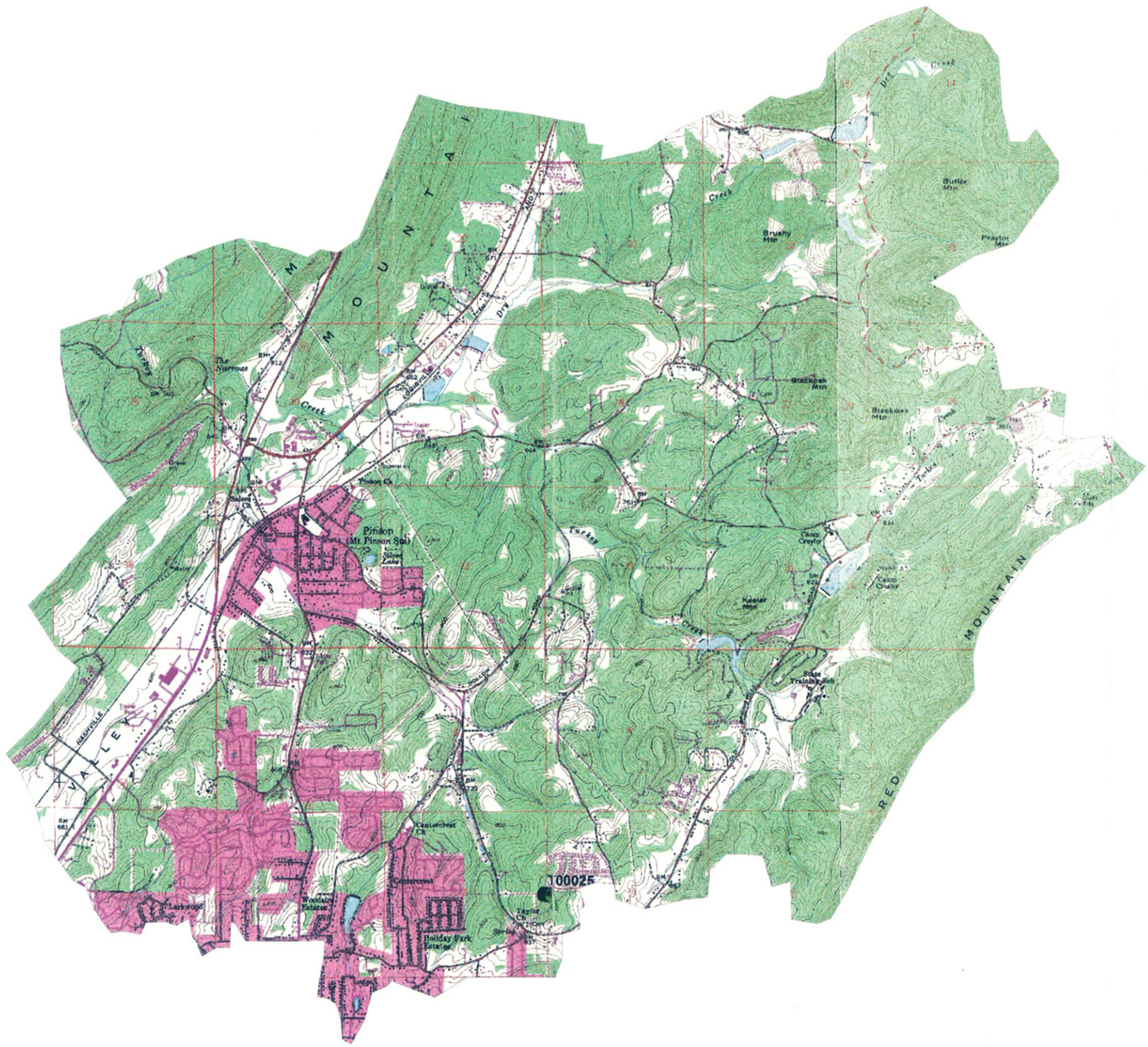
Summary of Unpermitted Discharges - Turkey Creek

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
T00023	2/27/12	101 Westchester Dr	Turkey Creek	Storm Drain	3,450	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00025	4/3/12	4555 Sterling Glen Lane	Turkey Creek	Drainage Ditch	20,500	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00035	10/25/12	800 Farrington Dr	Turkey Creek	Storm Drain	83	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

TURKEY CREEK BASIN 2012 DISCHARGES



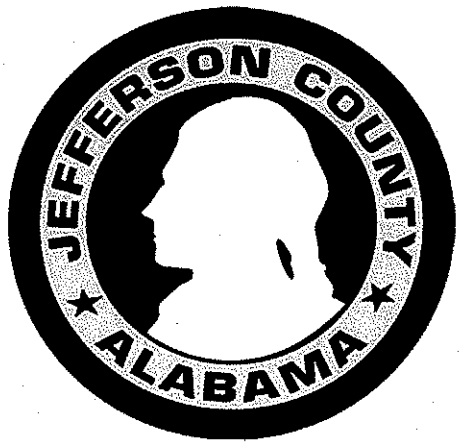
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-11-13

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: **AL0022926**
   - Name: **Turkey Creek WWTP**
   - Street Address: **7137 Disposal Plant Road**
   - County: **Jefferson**

2. Facility Contact
   - Name: **Chad Quick**
   - Title: **Plant Supervisor**
   - Telephone: **(205) 681-7971**
   - Permittee Name: **Jefferson County Commission- Turkey Creek WWTP**
   - Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**
     Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2012: **4.44** MGD
   - Facility Design Capacity: **5.0** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: **N/A** gallons per month
   - Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing
   - ☐ Mixed with Influent Wastewater for Treatment
   - ☐ Mixed with Sewage Sludge
   - ☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow
   - Residential: **95** %
   - Industrial: **0** %
   - Other: **5** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:
   Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight
   or **4995** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight
   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **2.2** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion, Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **219.4** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. [X] Land Application, Bulk Shipped			**219.4**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	Grab	*	11.0
Cadmium	<PQL	Grab	*	8.0
Chromium	61	Grab	*	8.0
Copper	342	Grab	*	8.0
Lead	15	Grab	*	15.0
Mercury	2	Grab	*	0.6
Molybdenum	<PQL	Grab	*	5.0
Nickel	30	Grab	*	6.0
Selenium	<PQL	Grab	*	15.0
Zinc	892	Grab	*	18.0
Ammonium-Nitrogen	,,,,,,,,,,,,,,,,	N/A	N/A	N/A
Nitrate-Nitrogen	,,,,,,,,,,,,,,,,	N/A	N/A	N/A
Total Kjeldahl Nitrogen	25,167	Grab	*	1.8

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 87.5 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

- ☐ Class A
  - ☐ Alternative A1 - Time and Temperature
  - ☐ Alternative A2 - Alkaline Treatment
  - ☐ Alternative A3 - Analysis and Operation
  - ☐ Alternative A4 - Analysis Only
  - ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
    - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
    - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
    - ☐ Composting ☐ ☐
  - ☐ Alternative A6 - PFRP Equivalent _____

- ☒ Class B
  - ☒ Alternative B1 - Fecal Coliform Count
  - ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
    - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
    - ☐ Composting ☐ Lime Stabilization
  - ☐ Alternative B3 - PSRP Equivalent _____

- ☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ☒ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- ☐ Yes
- ☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: **Turkey Creek WWTP** PLANT GRADE: **III**

PERMIT NUMBER: **AL 0022926**

PLANT SUPERINTENDENT: **Chad Quick** TEL. # **(205)681-7971**

SYSTEM MANAGER: **David Denard** TEL. # **(205)326-8232**

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	**Eric Pond**	**IV**	**C003706**	**2/28/2016**
2.	**Mark Lee**	**IV**	**C000389**	**8/31/2013**
3.	**Chad Quick**	**IV**	**C003616**	**2/28/2015**
4.	**Pat McCarty**	**IV**	**C003224**	**8/31/2014**
5.	**Jefferey Gillian**	**IV**	**C000447**	**11/30/2015**
6.	**Adam Moore**	**IV**	**C006513**	**11/1/2014**
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	**120**	**3**
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	**120**	**3**
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	**1**
2ND	
3RD	

START TIME **7:00 AM**

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?	X	
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance
PERMIT NUMBER:
PLANT GRADE: IV
PLANT SUPERINTENDENT:
SYSTEM MANAGER: David Denard
TEL. # (205) 540-7585
TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I(c)	C002094	6/30/2015
2.	Don Goodwin	I(c)	C005423	6/30/2015
3.	Lavon Evans	I(c)	C004631	12/31/2014
4.	Brian Rohling	I(c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Valley Creek WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Valley Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Valley Creek Wastewater Treatment Facility, NPDES Permit No. AL0023655. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Robby Bennett, Valley Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Valley Creek WWTP NPDES #: AL0023655

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 327-8232 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Robby Bennett
Name

Telephone #: (205) 428-2614 Fax #: (205) 426-3274

Email Address: bennettr@jccal.org

Date: May 9, 2013

REVIEWED BY: Daniel A. White, P.E., ESD Engineer
Consulting Engineer

Telephone #: 205-214-8610 Fax #: 205-325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Valley Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	54.6	74.0	30,614.4
February	47.1	70.5	26,315.8
March	45.8	74.5	26,169.7
April	33.6	103.1	28,017.3
May	28.5	111.0	26,623.0
June	25.2	137.4	29,387.8
July	21.7	136.2	25,467.2
August	36.1	81.7	22,596.6
September	32.1	88.9	24,337.9
October	33.6	80.8	21,899.2
November	22.0	128.9	24,230.9
December	52.1	79.2	28,218.4
Annual Avg.	36.0	97.2	26,157.0

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	85.0	141,780
90% of the Design Criteria	76.5	127,602

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Valley Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May - Nov	8.0	24.0	1.0	3.0
	Dec - Apr	8.0	24.0	1.0	4.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	1.6	3.3	0.0	0.9
	February	1.4	3.2	0.1	0.8
	March	1.4	2.9	0.0	0.8
2	April	1.4	3.5	0.0	1.0
	May	1.9	4.4	0.0	1.1
	June	1.4	6.5	0.0	1.0
3	July	1.2	3.2	0.1	0.9
	August	1.0	3.0	0.1	0.8
	September	1.4	4.5	0.1	1.1
4	October	1.7	5.5	0.1	1.1
	November	1.7	4.5	0.1	1.2
	December	2.3	6.4	0.3	1.4
	Annual Avg.	1.53	4.2	0.08	0.99

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May - Nov	5671	17013	708	2126
	Dec - Apr	5671	17013	708	2835

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	762.3	1570.6	4.0	406.4
	February	540.9	1277.6	21.3	317.9
	March	526.0	1088.1	12.2	285.1
2	April	415.8	981.5	4.4	271.3
	May	485.9	1122.7	4.1	279.3
	June	314.3	1531.3	7.3	210.5
3	July	219.9	606.2	26.2	174.5
	August	308.9	954.5	16.4	219.2
	September	448.0	1378.5	28.2	300.0
4	October	490.5	1614.7	31.9	318.0
	November	328.0	863.6	11.4	220.8
	December	966.0	2952.9	73.1	490.0
	Annual Avg.	483.87	1329	20	291

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2005

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 2012 = (2005) - (7)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify: _____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 7 (Age) = 14 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 19

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 6

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 13 (Check the appropriate point total.)

☐ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☑ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 140

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 140

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 100
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Valley Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE):_____ Design Flow:_____MGD Design BOD_5:_____lbs/day

List industrial and/or residential developments.

The Environmental Services Department has not received any applicable sewer availability requests that would significantly impact the sewer system.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes. User rates are based on a uniform volume charge per 100 cubic feet of 85% of metered water consumption.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Mostly new or recently renovated and in good condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

Assets are generally considered to be in good to fair condition.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

See attachment

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

See attachment

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 24

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. We have a comprehensive maintenance plan that schedules all preventive maintenance per manufacturers recommendations or better.

Valley Creek WWTP (MWPP 2012)

Part 10.C

Dewatering control improvements, Digester mixing system replacement, headworks screen refurbishment, multiple pump station improvements and sewer line repairs and replacement are continual activities planned for the collection system. Valley Trunk to Glenn Oaks sewer repairs and replacements, Tin Mill Road sewer improvements, collection system condition assessment and repair, replacement and renewal projects, Valley Creek WWTP energy and process optimization improvements. Cahaba River WWTP to Valley solids transfer force main; replacement of the current SCADA software with Citect, improvements to 15 pump stations, Eastern Valley Road force main elimination, Valley Creek collection system hydraulic model.

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

Part 10.E

Fully saturated antecedent ground conditions coupled with 2.34 inches of rainfall on January 26, 2012 caused twelve I/I related SSOs in the Valley Creek collection system. The day's rainfall was not unusual with hourly totals approaching 1-year 2-hour and 1-year 6-hour return period frequencies, but the impact to the sewer system and resulting SSOs was much more severe than from significantly higher intensity and many times higher total precipitation storms encountered prior to and following this event. Prolonged weather patterns producing saturated ground conditions prior to a storm have been identified as the primary cause of most I/I related SSOs observed in the last few years. The mini-system areas that have repeat overflows attributed to excessive I/I have been included in a SSES project that includes television inspection (TVI), manhole inspections, and smoke testing of all sewers. The SSES project commenced on February 21, 2013 and will be complete August 21, 2013. Defects and/or deficiencies identified will be remedied. Several collapsed sections of sewer discovered through the TVI have already been repaired. Engineering capacity analysis of the sewers will also be performed.

While very small in volume, the Eastern Valley Road force main broke six times in 2012 contributing to six separate SSO events. The department has an engineering design plan prepared to eliminate the deteriorated portion of sewer and is acquiring Right-of-Way to complete the construction effort. The Right-of-Way acquisition is expected to be complete by July 1, 2013, and the construction work is scheduled to be complete by December 1, 2013.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Netzsch Pump Rebuilds - $33,020

Polymer Flow Meter Replacements - $20,400

Rebuild Flygt Pump - $17,108

UV PLC Parts - $14,509

Anaerobic digester clean-out project - $924,240

Final clarifier rebuild - $ 654,000

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program (Program). The goal of the Program is to develop and provide tools, technologies and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Valley Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 14 points	40 points
Part 4 100 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 114 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [ ] 0 - 70 pts. Actions as Appropriate*
- [✓] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Valley Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Valley Creek

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
C00990	1/4/12	5000 Eastern Valley Road	Valley	Ground Absorbed	250	Pipe	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
C00992	1/13/12	3696 Hilltop Road (Morgan Greenwood #2 PS)	Valley	Ground Absorbed/ Drainage Ditch	550	Pump Station	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes: The pump motor failed on #2 pump set causing the breakers to trip both pump sets. The breaker was reset to bring station back on line.										
C00993	1/21/12	306 4th Ave SW	Valley	Drainage Ditch/ Feeder to Valley Creek	12	Manhole	Surcharge from Rain	Heavy Rain	Blockage Removed/ Debris Cleaned up	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole was not overflowing upon crew arrival but there was evidence of an overflow.										
C00994	1/22/12	3696 Hilltop Road (Morgan Greenwood #2 PS)	Valley	Ground Absorbed	100	Pump Station	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes: The air release valve line that drains back to the wetwell broke, causing sewage to discharge from the pump building.										
C00995	1/26/12	306 4th Ave SW	Valley	Storm Drain/ Valley Creek	6,246,800	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
C00996	1/26/12	601 Crumpton Dr SW	Valley	Drainage Ditch/ Valley Creek	64,600	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
C00997	1/26/12	1923 21st Ave S	Valley	Ground Absorbed	55,500	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01001	1/27/12	5054 Eastern Valley Road	Valley	Ground Absorbed	625	Pipe	Force Main Break	Moderate Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
C01002	2/17/12	2115 Long 12th Street N	Valley	Ground Absorbed	600	Cleanout	Cleanout on Forcemain	No Rain	Cleanout Repaired	Ken Bennett	WWTP Manager
	Notes: Cleanout was damaged by grounds crew.										
C01003	3/1/12	614 Brookwood Village	Valley	Storm Drain	1,672	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01004	3/3/12	5005 Eastern Valley Road	Valley	Ground Absorbed	1,275	Pipe	Force Main Break	Heavy Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
C01006	4/7/12	2155 Woods Trace	Valley	Storm Drain	980	Manhole	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes: Control cable was damaged in the wetwell causing the pumps not to operate in Auto.										
C01008	4/18/12	3339 Country Club Road	Valley	Ground Absorbed/ Drainage Ditch	17,617	Manhole/ Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01010	5/21/12	5034 Eastern Valley Road	Valley	Ground Absorbed	1,225	Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01014	7/16/12	400 Asbury Howard St	Valley	Ground Absorbed	6,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01015	8/11/12	306 4th Ave SW	Valley	Ground Absorbed/ Drainage Ditch/ Valley Creek	26,000	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01018	8/14/12	5000 Eastern Valley Road	Valley	Ground Absorbed	580	Pipe	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
C01021	9/6/12	115 4th Ave S	Valley	Storm Drain	400	Manhole	Grease/ Rags/ Rocks/ Plumbers Tape	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01023	10/16/12	G&H Road & Eastern Valley Road	Valley	Ground Absorbed	2,088	Pipe	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes:										
C01027	11/8/12	250 Homewood Park W	Valley	Feeder Creek to Shades Creek		Pipe	Construction Damage	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Line was damaged by construction crew performing work for the City of Homewood. Volume was not determinable as pipe break was below water level.										
C01030	12/10/12	2485 John Hawkins Parkway	Valley	Shades Creek	16,660	Pump Station	P.S. Power Outage	Light Rain	Power Restored	Ken Bennett	WWTP Manager
	Notes:										
C01031	12/22/12	3696 Hill Top Rd	Valley	Ground Absorbed	2,440	Pump Station	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes:										
C01032	12/27/12	5050 Eastern Valley Rd	Valley	Ground Absorbed	2,600	Pipe	Force Main Break	No Rain	Line Repaired	Ken Bennett	WWTP Manager
	Notes: Line was repaired on 12-27-2012										
M04093	1/5/12	228 Beech Circle	Valley	Ground Absorbed	1	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04094	1/6/12	1700 Oxmoor Road	Valley	Storm Drain	5,250	Manhole	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04095	1/9/12	800 Montclair Road	Valley	Storm Drain	291,000	Manhole	Grease	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04098	1/11/12	1628 17th St SW	Valley	Storm Drain/ Valley Creek	14,550	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04099	1/11/12	2119 Fulton Ave SW	Valley	Storm Drain/ Valley Creek	8,550	Manhole	Surcharge form Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04100	1/11/12	3386 Clarendon Ave	Valley	Valley Creek	29,200	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04101	1/11/12	St. Charles Ave & 21st Street	Valley	Storm Drain/ Valley Creek	7	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes: Manhole not overflowing upon crew arrival, but there was evidence on the pavement.											
M04102	1/12/12	Howard Ave & Jaybird Road	Valley	Drainage Ditch	300	Manhole	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
Notes: The level control failed at the pump station causing the pumps not to operate.											
M04103	1/13/12	202 Hardy St	Valley	Storm Drain	3,812	Cleanout	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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M04107	1/21/12	530 Brewer Dr	Valley	Drainage Ditch	2,160	Cleanout	Grease/ Debris	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04108	1/23/12	400 12th St SW	Valley	Ground Absorbed	2,700	Manhole	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04110	1/25/12	7th Ave & Oregon St	Valley	Drainage Ditch/ Feeder to Village Creek	7,500	Manhole	Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04111	1/26/12	2200 Fulton Ave & 22nd St SW	Valley	Storm Drain/ Valley Creek	2,716,515	Manhole/ Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes: Flooding from rain in overflow area.											
M04112	1/26/12	St. Charles Ave & 21st St SW	Valley	Valley Creek	6,111,000	Manhole	Surcharge form Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes: Flooding from rain in overflow area.											
M04113	1/26/12	210 4th Ave N	Valley	Drainage Ditch	81,500	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes: Flooding from rain in overflow area.											
M04114	1/26/12	1920 Grant Ave SW	Valley	Drainage Ditch/ Valley Creek	51,000	Manhole	Grease	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes: Flooding from rain in overflow area.											
M04115	1/26/12	432 21st St SW	Valley	Storm Drain/ Valley Creek	420,750	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes: Flooding from rain in overflow area.											

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M04116	1/26/12	1844 Princeton Ave	Valley	Storm Drain/ Valley Creek	506,250	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04118	1/26/12	1009 17th PL SW	Valley	Ground Absorbed	9,950	Manhole	Vandalism	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04119	1/26/12	11th Ave SW & Goldwire St	Valley	Ground Absorbed	13,900	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04120	1/26/12	306 Columbiana Road	Valley	Ground Absorbed	920	Cleanout	Grease/ Debris	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04121	1/26/12	25th St & Dartmouth Ave	Valley	Storm Drain/ Valley Creek	48,800	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04122	1/26/12	231 Dexter Court	Valley	Ground Absorbed/ Feeder to Valley Creek	45,500	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04123	1/26/12	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder to Valley Creek	107,444	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area.										
M04124	1/27/12	500 19th St S	Valley	Storm Drain	72,000	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04127	1/31/12	2001 Winnsboro Rd	Valley	Ground Absorbed	360	Manhole	Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04131	2/2/12	2727 Jefferson Ave SW	Valley	Ground Absorbed	4,100	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04132	2/2/12	6144 Owens St	Valley	Ground Absorbed	2,300	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04134	2/6/12	1300 Moss Lane (Moss Lane PS)	Valley	Ground Absorbed	900	Pump Station	P.S. Equipment Failure	No Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
Notes: PS had a motor failure. A replacement pump was installed.											
M04135	2/7/12	5024 Scenic View Dr	Valley	Ground Absorbed	5,602	Cleanout	Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04137	2/8/12	104 Bessemer Super Highway	Valley	Ground Absorbed	2	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04139	2/12/12	915 Valley Ridge Dr	Valley	Storm Drain	3,750	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04140	2/12/12	915 Valley Ridge Dr	Valley	Storm Drain	4,250	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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M04141	2/13/12	1001 17th St S	Valley	Ground Absorbed	3,000	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04144	2/19/12	Howard Ave & Jaybird Road	Valley	Drainage Ditch	630	Manhole	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
Notes: Level control failure caused the pumps not to operate in Auto.											
M04145	2/20/12	5916 Ave M	Valley	Ground Absorbed	11	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04147	2/22/12	490 Robert Jemison Rd	Valley	Drainage Ditch	21,950	Pipe	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04149	2/28/12	1012 Tuscaloosa Ave	Valley	Ground Absorbed	6,800	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04150	2/29/12	813 Green Springs Hwy	Valley	Storm Drain	4,200	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04153	3/6/12	4205 Stone River Circle	Valley	Ground Absorbed/ Drainage Ditch	55,712	Manhole/ Cleanout	Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04154	3/6/12	1222 13th Ave N	Valley	Drainage Ditch	3,000	Manhole	Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes: Manhole is a concrete vault located on the sewer line.											

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M04155	3/6/12	1449 Spaulding Ishkooda Road	Valley	Ground Absorbed	12,707	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04157	3/8/12	1109 Graymont Ave W	Valley	Storm Drain	9,226	Manhole/ Cleanout	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04159	3/8/12	3548 Douglas Road	Valley	Ground Absorbed		Pipe	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04160	3/9/12	Howard Ave and Jaybird Road	Valley	Drainage Ditch	600	Manhole	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
	Notes: Breakers tripped at station. Breakers reset.										
M04161	3/11/12	700 Valley Ave	Valley	Storm Drain	24,500	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04162	3/12/12	532 35th Street	Valley	Ground Absorbed	15,300	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04163	3/12/12	2724 Cherokee Drive	Valley	Ground Absorbed/ Drainage Ditch	8,000	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04164	3/14/12	330 11th Street S	Valley	Ground Absorbed	4,489	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04165	3/15/12	4800 Montevallo Road	Valley	Storm Drain	5,700	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04166	3/15/12	915 Valley Ridge Dr	Valley	Ground Absorbed	3,050	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04168	3/20/12	3924 Forest Glen Drive	Valley	Drainage Ditch/ Shades Creek	77,000	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04169	3/20/12	1501 Arthur Shores Drive SW	Valley	Ground Absorbed		Pipe	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:		*Contractor build retaining wall on top of sewer line. Volume was not determinable.*									
M04170	3/20/12	4801 Sharpsburg Drive	Valley	Storm Drain	14,300	Manhole	Grease/ Rags/ Piece of Pipe	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04172	3/24/12	2655 Montevallo Road	Valley	Drainage Ditch/ Storm Drain/ Watkins Branch	60,000	Manhole	Grease/ Roots/ Debris/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04173	3/27/12	1444 Mat Leonard Drive	Valley	Ground Absorbed	3,600	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04174	3/29/12	324 11th Street	Valley	Ground Absorbed	3	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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M04175	4/5/12	3817 Montevallo Road	Valley	Ground Absorbed	10	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04177	4/6/12	1631 Cresthill Road	Valley	Ground Absorbed/ Storm Drain	29,010	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04178	4/9/12	2300 Montevallo Road	Valley	Drainage Ditch/ Storm Drain/ Shades Creek	14,300	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04180	4/11/12	215 West Valley Ave	Valley	Storm Drain	3,500	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04182	4/11/12	808 Cobb Street	Valley	Drainage Ditch/ Storm Drain		Pipe	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:		*Volume was not determinable.*									
M04184	4/17/12	3429 Bessemer Super Hwy	Valley	Ground Absorbed/ Valley Creek	6,933	Manhole	Grease/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04186	4/22/12	1501 Montclair Road	Valley	Storm Drain	29,959	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04187	4/22/12	1116 Iredell Cir	Valley	Storm Drain	5,400	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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M04188	4/23/12	124 Vail Ave	Valley	Lick Creek	17,500	Manhole	Grease/ Debris/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04189	4/30/12	4490 Bessemer Super Highway	Valley	Ground Absorbed	11,537	Cleanout	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04190	5/2/12	1836, 1849 Jefferson Ave & 1848 Alemeda Ave SW	Valley	Drainage Ditch/ Storm Drain	1,796	Pipe	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04193	5/5/12	5116 Janet Lane	Valley	Feeder Creek to Shades Creek	25,375	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04194	5/7/12	2321 1st St S	Valley	Ground Absorbed	1,523	Pipe/ Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04198	5/14/12	1725 7th Ave N	Valley	Ground Absorbed	90	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04199	5/14/12	6500 Cherokee Drive	Valley	Ground Absorbed	35,280	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04201	5/16/12	915 Valley Ridge Drive	Valley	Ground Absorbed	4,500	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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M04202	5/17/12	517 Lakeridge Drive	Valley	Ground Absorbed	4,900	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04203	5/20/12	414 Broadway Street	Valley	Shades Creek		Pipe	Construction Damage	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Alagasco bored through and damaged sanitary sewer line. Line was repaired by their contractor. Volume was not determinable.										
M04207	5/25/12	500 Robert Jemison Road	Valley	Ground Absorbed	27,776	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04209	6/4/12	546 Selma Road	Valley	Ground Absorbed	4,650	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04211	6/18/12	1612 Elm Street	Valley	Ground Absorbed	10,200	Manhole	Grease/ Roots	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
M04218	7/9/12	601 Valley Ave	Valley	Storm Drain	14,000	Manhole	Grease/ Debris/ Rags/ Paper Solids	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04219	7/11/12	2316 Highland Crest	Valley	Storm Drain	11,100	Manhole	Grease/ Debris	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04220	7/14/12	202 Morris Blvd	Valley	Storm Drain	2,850	Manhole	Roots/ Rags/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04221	7/15/12	5008 5th Ave N	Valley	Ground Absorbed	9,250	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04222	7/24/12	2700 Dartmouth Ave	Valley	Ground Absorbed	21	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04225	7/31/12	5401 8th Avenue (Wylam PS)	Valley	Drainage Ditch	15,810	Pump Station	P.S. Equipment Failure	Heavy Rain	Pump Station Repaired	Ken Bennett	WWTP Manager
Notes:		*The pump station dry well filled with water and damaged the electrical components when one of the pumps malfunctioned. This caused both pumps to fail. Vacuum trucks were utilized to pump wetwell while pumps were being repaired.*									
M04227	8/2/12	1501 Arthur Shores Drive SW	Valley	Storm Drain	9,200	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04228	8/5/12	736 30th PL SW	Valley	Ground Absorbed	3,336	Cleanout	Grease/ Debris/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04229	8/5/12	1791 51st St S	Valley	Ground Absorbed	37,400	Pipe	Greaase/ Debris/ Gravity Main Break Caused By Tree	Light Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04230	8/6/12	709 Oak Street	Valley	Ground Absorbed	10,032	Cleanout	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04232	8/15/12	2917 Tempest Drive SW	Valley	Ground Absorbed	5,150	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04233	8/15/12	5710 Monte Sano Road	Valley	Ground Absorbed	3,000	Manhole	Grease/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04234	8/16/12	400 Green Springs Highway	Valley	Storm Drain	2,800	Manhole	Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04235	8/16/12	1128 West Rue Maison	Valley	Ground Absorbed	4,400	Manhole	Grease/ Rags	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04236	8/20/12	104 Woodmont Drive	Valley	Griffin Branch Creek	95,450	Manhole	Grease/ Roots	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04242	9/3/12	2122 Fulton Ave	Valley	Storm Drain/ Valley Creek	138	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04244	9/4/12	2732 Cherokee Court	Valley	Storm Drain/ Feeder to Shades Creek	69	Manhole	Grease/ Roots	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04248	9/13/12	3509 Old Leeds Court	Valley	Storm Drain		Manhole	Grease/ Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes: Manhole was not overflowing upon crew arrival. There was only evidence in the street and the volume was not able to be determined.											
M04249	9/14/12	402 Palisades Blvd	Valley	Storm Drain	5,814	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04250	9/15/12	321 South Park Rd SW	Valley	Ground Absorbed/ Storm Drain	18	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04251	9/21/12	3364 Smyer Road	Valley	Shades Creek		Manhole	Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole was not overflowing upon crew arrival. There was only evidence in the street and the volume was not able to be determined. Due to evidence and the proximity to Shades Creek, an assumption was made that the discharge reached the creek.										
M04255	10/1/12	2405 Berkley Ave	Valley	Storm Drain/ Valley Creek	494	Manhole	Grease	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04256	10/2/12	1401 24th PL SW	Valley	Ground Absorbed/ Valley Creek	350	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04257	10/3/12	208 17th Ave SW	Valley	Storm Drain	76	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04258	10/11/12	2905 Carlisle Road	Valley	Storm Drain/ Shades Creek		Manhole	Broken Manhole Invert	No Rain	Project Planned to Replace/Repair Line	Brian Champion	Sewer Maintenance Supervisor
	Notes: The invert was repaired and the leak stopped. Volume was not determinable.										
M04259	10/11/12	1512 Bessemer Road	Valley	Ground Absorbed	4	Floor Drain of Business	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04260	10/11/12	2230 Highland Ave S	Valley	Ground Absorbed		Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable. Manhole not overflowing upon crew arrival, but there was evidence on the pavement.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04261	10/12/12	2728 Cherokee Drive	Valley	Ground Absorbed	3,840	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04262	10/12/12	11th Ave N & 23rd St N	Valley	Storm Drain	3,952	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04263	10/15/12	616 30th St S	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	2,125	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04267	10/22/12	2230 Highland Ave S	Valley	Ground Absorbed	180	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04270	10/24/12	2205 5th Terrace S	Valley	Ground Absorbed	935	Bypass Pump	Crew Setting a New Manhole	No Rain	Manhole was Set	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04272	10/30/12	6702 Forest Dr	Valley	Storm Drain	1,575	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04273	11/2/12	1449 Spaulding-Ishkooda Road	Valley	Drainage Ditch	2,156	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04274	11/3/12	Montclair Rd & 52nd St	Valley	Storm Drain	461	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04275	11/8/12	2830 19th St N	Valley	Ground Absorbed	624	Cleanout	Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04276	11/9/12	2045 Medical Center Dr	Valley	Storm Drain		Pipe	Construction Damage/ Rags	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: AT&T bored through the pipe with a fiber optic line creating a rag blockage. Volume was not determinable.										
M04278	11/14/12	Goldwire St & 1st Ave	Valley	Storm Drain	240	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Overflowing manholes were private, blockage that caused the overflow was in a County main.										
M04279	11/15/12	713 27th St S	Valley	Storm Drain	25,300	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04280	11/16/12	175 Old Montgomery Hwy	Valley	Ground Absorbed	216	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04282	11/17/12	1801 Montclair Rd	Valley	Ground Absorbed		Cleanout	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable. Manhole not overflowing upon crew arrival, but there was evidence on the ground.										
M04283	11/18/12	7205 Pine Tree Lane	Valley	Ground Absorbed	474	Cleanout	Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04284	11/18/12	1924 Fulton Ave	Valley	Storm Drain		Could Not Determine	Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable as discharge source could not be located. Once blockage was removed discharge stopped.										

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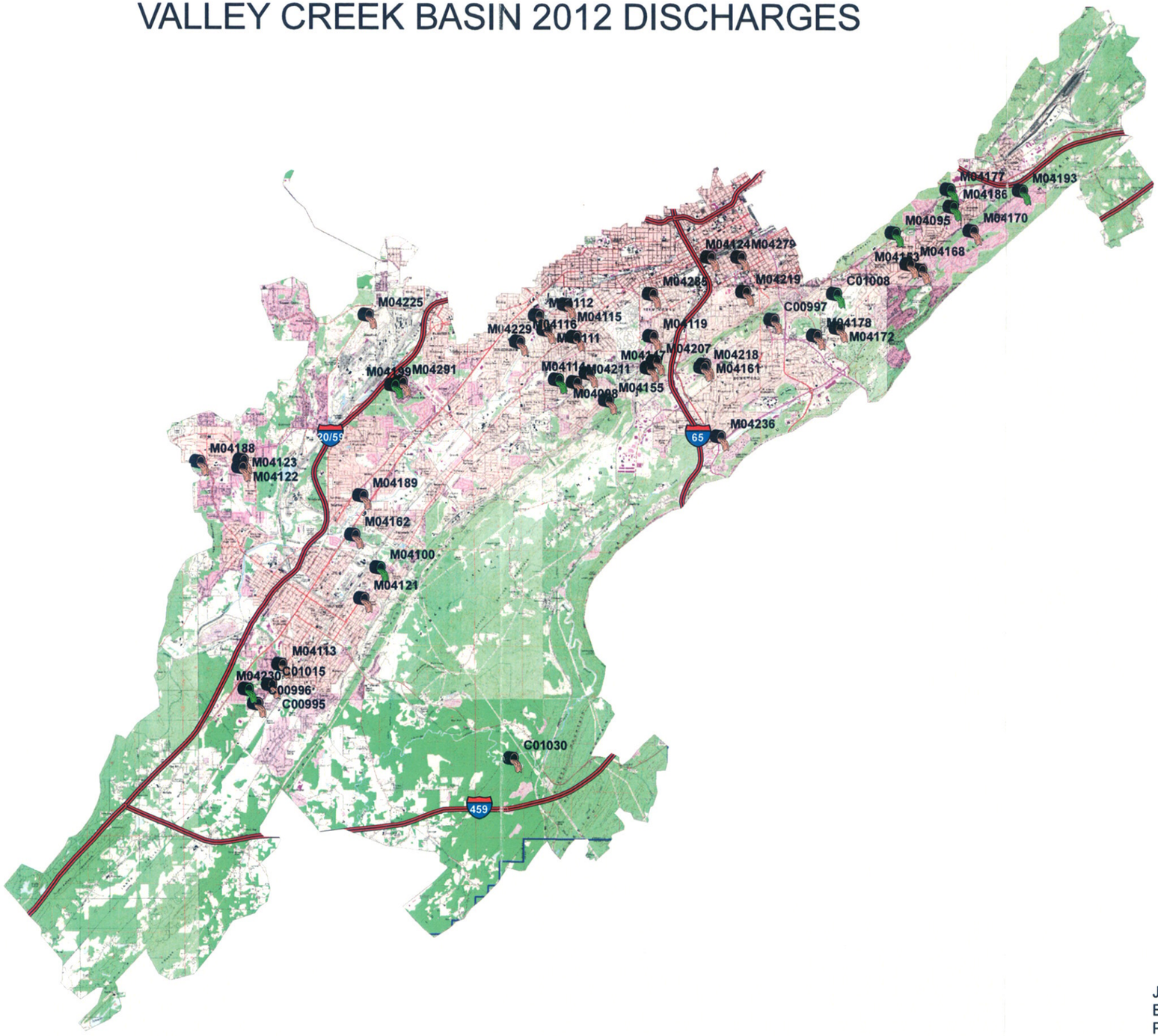
Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04285	11/18/12	Goldwire St & 1st Ast SW	Valley	Storm Drain	12,958	Manhole	Grease/ Debris/ Rags/ Vandalism	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Crew reported that manhole had sticks in the manhole that contributed to the blockage.										
M04286	11/20/12	42nd St & Debardeleben Ave	Valley	Storm Drain		Pipe	Grease/ Debris/ Plastic	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable. Sanitary sewer line was running through a storm manhole. Contractor separated the connection.										
M04287	11/22/12	Intersection of 34th St & Ave S	Valley	Storm Drain	610	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04289	11/26/12	Intersection of 34th St & Ave S	Valley	Storm Drain	51	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04290	11/27/12	42nd St & Debardeleben Ave	Valley	Storm Drain		Pipe	Other	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable. Sanitary sewer line was running through a storm manhole. Contractor separated the connection.										
M04291	11/30/12	Forest Dr & Grasselli Rd	Valley	Storm Drain	11,100	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04292	12/3/12	3821 South Cove Dr.	Valley	Storm Drain	202	Manhole	Gravity Main Break	No Rain	Blockage Removed/Project Planned to Replace/Repair Line	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04295	12/10/12	400 Wickstead Rd	Valley	Drainage Ditch/Valley Creek	2,484	Manhole	Surcharge from Rain/Grease	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Flooding from rain in overflow area										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04297	12/12/12	2901F Wilson Rd	Valley	Ground Absorbed	4	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04298	12/13/12	26 Shade St	Valley	Ground Absorbed	183	Manhole	Grease/Debris/Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04300	12/17/12	516 16th Way SW	Valley	Ground Absorbed	110	Manhole	Grease/Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04301	12/19/12	615 1st St N	Valley	Storm Drain	113	Manhole	Grease/Debris/Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04302	12/19/12	1625 6th Ave N	Valley	Ground Absorbed	1	Pipe	Grease/Debris/Rags/Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04303	12/20/12	516 14th St N	Valley	Feeder Creek to Valley Creek	1,500	Manhole	Grease/Debris	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04308	12/28/12	3822 South Cove Dr	Valley	Ground Absorbed	60	Manhole	Debris/Mud	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

VALLEY CREEK BASIN 2012 DISCHARGES



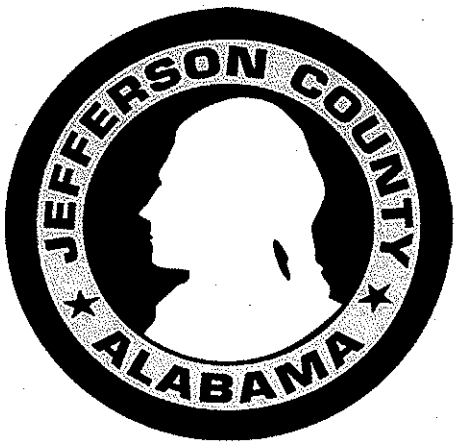
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-13-13

Valley Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: **AL0023655**

   Name: **Valley Creek WWTP**

   Street Address: **3923 Clear Water Drive Bessemer, AL 35023**

   County: **Jefferson**

2. Facility Contact

   Name: **Robby Bennett**

   Title: **Plant Manager**

   Telephone: **205-428-2614**

   Permittee Name: **Jefferson County Commission**

   Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**
   Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

   Avg. Daily Flow for 2012: **36.0** MGD

   Facility Design Capacity: **85.0** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

   Average Domestic Septage: **347,917** gallons per month

   Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing

   ☐ Mixed with Influent Wastewater for Treatment

   ☐ Mixed with Sewage Sludge

   ☒ **Mixed with influent wastewater for treatment**

4. Estimated Percentage Contributing Wastewater Flow

   Residential: **85** %

   Industrial: **7** %

   Other: **8** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:

   Screening, Grit Removal, Settling, Aeration with Activated Sludge,
   Clarification & UV Disinfection

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

   or **139,363** gallons per day

7. Estimated untreated sludge received from off site: _____ lb/day dry weight

   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **0.1** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Thickening	
Anerobic Digestion	
Mechanical Dewatering (Belt Filter Presses)	
Lime Stabilization	

10. Estimate the total volume of sludge generated: **4196** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. [X] Land Application, Bulk Shipped			**4196**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	**yearly average**	**11.0**
Cadmium	**<PQL**	**Grab**	**yearly average**	**8.0**
Chromium	**31**	**Grab**	**yearly average**	**8.0**
Copper	**330**	**Grab**	**yearly average**	**8.0**
Lead	**23**	**Grab**	**yearly average**	**15.0**
Mercury	**1.2**	**Grab**	**yearly average**	**0.6**
Molybdenum	**9.1**	**Grab**	**yearly average**	**5.0**
Nickel	**25**	**Grab**	**yearly average**	**6.0**
Selenium	**<PQL**	**Grab**	**yearly average**	**15.0**
Zinc	**996**	**Grab**	**yearly average**	**18.0**
Ammonium-Nitrogen				
Nitrate-Nitrogen				
Total Kjeldahl Nitrogen	**21,308**	**Grab**		

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **24.4** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☒ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☒ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☒ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☒ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ☐ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes
☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Valley Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Robby Bennett	IV	C001594	9/30/2015
2.	David Humphryes	IV	C000819	12/31/2014
3.	Luelliot Maneice	IV	C000819	8/31/2015
4.	Kevin Waters	IV	C002962	11/30/2015
5.	Warren Gooden	IV	C000519	3/31/2015
6.	Glenda Waldrop	IV	C003017	11/30/2015
7.	Brigitte Akins	IV	C001557	11/30/2015
8.	Jason Bates	IV	C006032	11/30/2014
9.	Warren Burns	IV	C006163	5/31/2014
10.	Larry Cleckler	IV	C002038	11/30/2015

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	4	0
2ND	27	800
3RD	5	1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	William Doss	IV	C005868	5/30/2013
2.	Michael Gaines	IV	C000725	11/30/2015
3.	Mary Hardisty	IV	C000374	8/31/2013
4.	Heath Hinch	IV	C001149	8/31/2013
5.	Robert Myers	IV	C005721	9/30/2014
6.	Neal Poole	IV	C006958	7/31/2014
7.	James Rogers	IV	C002364	11/30/2015
8.	Joel Waldrop	IV	C003020	11/30/2015
9.	Mike Bauer	Trainee		
10.	Kenneth Bush	Trainee		

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	4	0
2ND	27	800
3RD	5	1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

ADEM FORM 441 8/02

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Doug Carter	Trainee		
2.	Ed Crumley	Trainee		
3.	John Ellard	Trainee		
4.	Keith Frederick	Trainee		
5.	Malcolm Glass	Trainee		
6.	Earl Harper	Trainee		
7.	Jeff Hill	Trainee		
8.	Danny Hill	Trainee		
9.	Joshua Hughes	Trainee		
10.	Donald Kelly	Trainee		

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	4	0
2ND	27	800
3RD	5	1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Vince Leroy	Trainee		
2.	Herman McClain	Trainee		
3.	Percy Mims	Trainee		
4.	Emma Pleasant	Trainee		
5.	John Rockett	Trainee		
6.	Belinda Sexton	Trainee		
7.	Jason Sims	Trainee		
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	4
2ND	27
3RD	5

START TIME
0
800
1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

ADEM FORM 441 8/02

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance
PERMIT NUMBER:
PLANT GRADE: IV
PLANT SUPERINTENDENT:
SYSTEM MANAGER: David Denard
TEL. # (205) 540-7585
TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Village Creek WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Village Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Village Creek Wastewater Treatment Facility, NPDES Permit No. AL0023647. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Greg James, Village Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Village Creek WWTP NPDES #: AL0023647

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director, Environmental Services Department
Title

Telephone #: 205-327-8232 Fax #: 205-325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Greg James
Name

Telephone #: 205-791-6405 Fax #: 205-791-3030

Email Address: jamesgr@jccal.org

Date: May 10, 2013

REVIEWED BY: Daniel A. White, P.E.
Consulting Engineer

Telephone #: 205-214-8610 Fax #: 205-325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Village Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate 001 (MGD) 002		Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration 001 (mg/l) 002		Column 3 Average Loading BOD_5 ($CBOD_5$) 001 (lbs/day**) 002	
January	28.1	25.6	60	35.7	13489	6669
February	27.7	19.1	54	33	12142	5259
March	25.4	20.3	64.9	42.9	12687	6566
April	13.4	17.0	65.4	53.4	7543	7665
May	15.3	19.0	90.9	70.6	11977	11134
June	18.1	11.3	110.5	63.2	17782	6123
July	18.6	8.1	87.9	59.4	13385	4259
August	29.0	14.2	55.4	37.5	12361	4598
September	29.1	11.9	69.3	21.5	16638	3198
October	20.8	15.5	77.4	44.3	12962	5737
November	15.1	12.2	106.9	75.1	12863	7815
December	22.2	17.8	67.4	57.9	11336	9066
Annual Avg.	21.9	16.0	75.8	49.6	12930	6507

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow		Average Design BOD_5 Loading (lbs/day)	
Design Criteria	60.0	60.0	70056	70056
90% of the Design Criteria	54.0	54.0	63050	63050

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Village Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov	4	24.0	1.0	Report
	Dec-Apr	6	24.0	1.0	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) 001 (mg/l) 002		TSS 001 (mg/l) 002		NH_3-N 001 (mg/l) 002		TKN 001 (mg/l) 002	
1	January	0.82	0.64	1.3	0.20	0.01	0.00	0.45	0.37
	February	0.65	0.85	1.7	0.00	0.00	0.00	0.52	0.27
	March	0.66	0.63	0.7	0.10	0.04	0.04	0.71	0.30
2	April	1.00	0.75	1.2	0.1	0.02	0.16	1.50	0.71
	May	0.88	0.61	1.9	0.1	0.01	0.00	0.62	0.19
	June	1.13	0.75	2.9	0.1	0.01	0.02	0.44	0.57
3	July	0.75	0.60	2.4	0.60	0.00	0.00	0.29	0.49
	August	0.63	0.39	1.9	0.3	0.02	0.00	0.45	0.73
	September	0.68	0.45	1.6	0.1	0.02	0.02	0.77	0.61
4	October	0.64	0..40	1.6	0.10	0.00	0.01	0.61	0..28
	November	0.76	0.58	1.0	0.00	0.03	0.00	0.75	0.54
	December	0.93	0.63	1.4	0.3	0.02	0.03	0.75	0.40
	Annual Avg.	0.79	0.61	1.64	0.16	0.015	0.024	0.66	0.46

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	2001	12009	500	Report
	Dec-Apr	3002	12009	500	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	335	369	2.1	184
	February	305	414	0.0	124
	March	229	160	17.3	141
2	April	234	149	26.2	377
	May	215	286	1.1	188
	June	244	443	2.4	118
3	July	160	424	0.7	71
	August	268	531	4.6	189
	September	265	435	9.8	420
4	October	177	343	1.2	130
	November	154	137	3.8	144
	December	288	362	9.9	182
	Annual Avg.	239	337	6.6	189

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2004

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 8 = (2012) - (2004)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 8 (Age) = 16 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 49

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 49

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Village Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) >4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE): _____

Design Flow: _____ MGD

Design BOD_5: _____ lbs/day

List industrial and/or residential developments.

n/a

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes,user charge rates are based on a uniform volume charge/100 cubic ft of 85% of metered water consumed for single family. User rate ending 12/31/2012 is $6.87/100 cubic ft of 85% of metered water consumption.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Physical and structural conditions are acceptable.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

General condition of the sewer system is fair.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

See attachment

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

The primary cause of SSOs was blockages from grease. These occurred in residential areas.

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 7

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

We use Infor asset management system for preventive maintenance and regular maintenance.

Village Creek WWTP (MWPP 2012)

Part 10.C

Collection system condition assessment and repair, replacement and renewal projects. Village Creek WWTP waste gas energy recovery and process optimization. Replacement of the current SCADA software with Citect. Village Creek WWTP immediate needs: Fairmont and Harrimon pump station improvements. Collegeville pump station pump and vfd replacements. Minor Parkway pump station vfd replacement.

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

De-watering centrifuge rebuild $108,000

Replaced four (4) Primary sludge pumps $160,000

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012 for the development of a comprehensive Collection System Asset Management Program (Program). The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed Program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name: Village Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 14 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 14 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Village Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Village Creek

January 01, 2012 through December 31, 2012

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
C00991	1/9/12	1325 Miami Trail	Village - East of WWTP	Village Creek	15,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
C01029	12/10/12	2057 Melinda Dr & 712 Lois Ln	Village - West of WWTP (Remainder of System)	Ground Absorbed/Storm Drain	8,855	Cleanout/Manhole	Grease	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04092	1/4/12	135 Finley Ave	Village - East of WWTP	Ground Absorbed/ Village Creek	33,000	Manhole	Vandalism/ Construction Damage/ Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04105	1/18/12	3050 44th Ave N	Village - East of WWTP	Ground Absorbed	4,431	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04109	1/25/12	Gadsden Hwy & Medical Park Dr	Village - East of WWTP	Storm Drain	750	Manhole	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04129	1/31/12	4317 41st Ave N	Village - East of WWTP	Ground Absorbed	6,082	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04136	2/8/12	1200 10th St W	Village - East of WWTP	Storm Drain/ Village Creek	142,943	Pipe	Gravity Main Break	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04142	2/19/12	601 West Blvd	Village - East of WWTP	Drainage Ditch	7,300	Manhole	Debris/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04146	2/22/12	3040 44th Ave N	Village - East of WWTP	Manhole	10,050	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04151	3/1/12	190 Pratt Hwy	Village - West of WWTP (Remainder of System)	Storm Drain	3,000	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04158	3/8/12	26 Pratt Hwy	Village - East of WWTP	Drainage Ditch	7,106	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04167	3/16/12	3000 29th Ave N	Village - East of WWTP	Storm Drain	3,900	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04171	3/21/12	332 Dalton Drive	Village - East of WWTP	Drainage Ditch	5,350	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04176	4/5/12	9225 Brookhurst Drive	Village - East of WWTP	Ground Absorbed	8	Manhole	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04179	4/9/12	1624 Bradford Street	Village - West of WWTP (Remainder of System)	Ground Absorbed	4,400	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04183	4/15/12	1605 28th St Ensley	Village - West of WWTP (Remainder of System)	Ground Absorbed/ Under House	21,720	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04196	5/10/12	709 85th St S	Village - East of WWTP	Ground Absorbed	12	Cleanout	Grease/ Roots/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04200	5/15/12	13 Ave W (Apt. #1)	Village - West of WWTP (Remainder of System)	Ground Absorbed	15	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04204	5/23/12	4607 5th Ave S	Village - East of WWTP	Ground Absorbed	2,400	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04205	5/24/12	4404 5th Ave S	Village - East of WWTP	Ground Absorbed		Manhole/ Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes: Volume was not determinable.											
M04206	5/24/12	1221 20th Ave N	Village - East of WWTP	Village Creek	51,250	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04208	5/31/12	9225 Brookhurst Drive	Village - East of WWTP	Ground Absorbed	3,850	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04210	6/12/12	1313 6th Place	Village - East of WWTP	Storm Drain	1,950	Manhole	Grease	Heavy Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04213	6/23/12	1100 Green Crest Road	Village - East of WWTP	Storm Drain	13,500	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04214	6/25/12	1537 Pike Road	Village - West of WWTP (Remainder of System)	Storm Drain	1,800	Manhole	Grease	No Rain	Blockage Removed	Don Goodwin	Sewer Video Operations Supervisor
Notes:											
M04216	7/3/12	16th Ave W & 1st St W	Village - East of WWTP	Storm Drain	2,050	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04217	7/6/12	4600 Roscoe Ave N	Village - East of WWTP	Ground Absorbed/ Storm Drain	17,600	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04224	7/30/12	8319 12th Ave S	Village - East of WWTP	Storm Drain	750	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04226	8/1/12	7528 6th Ave S	Village - East of WWTP	Drainage Ditch	9,550	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04237	8/22/12	4652 Messer Airport Hwy	Village - East of WWTP	Ground Absorbed	15,673	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04238	8/27/12	8505 9th Court S	Village - East of WWTP	Storm Drain	65	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04239	8/28/12	327 Bishop Lane	Village - East of WWTP	Ground Absorbed	86	Manhole	Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04243	9/4/12	6705 Glasgow Ave S	Village - East of WWTP	Ground Absorbed	2	Cleanout	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04245	9/5/12	2605 Bush Blvd	Village - East of WWTP	Ground Absorbed/ Storm Drain	561	Service Line	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04246	9/8/12	26 Pratt Hwy	Village - West of WWTP (Remainder of System)	Grouind Absorbed/ Storm Drain	6,264	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04247	9/11/12	332 Dalton Drive	Village - East of WWTP	Drainage Ditch	106	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04252	9/26/12	5018 18th Court N	Village - East of WWTP	Ground Absorbed	9	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04253	9/27/12	400 Sunset Drive	Village - East of WWTP	Ground Absorbed	11,500	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

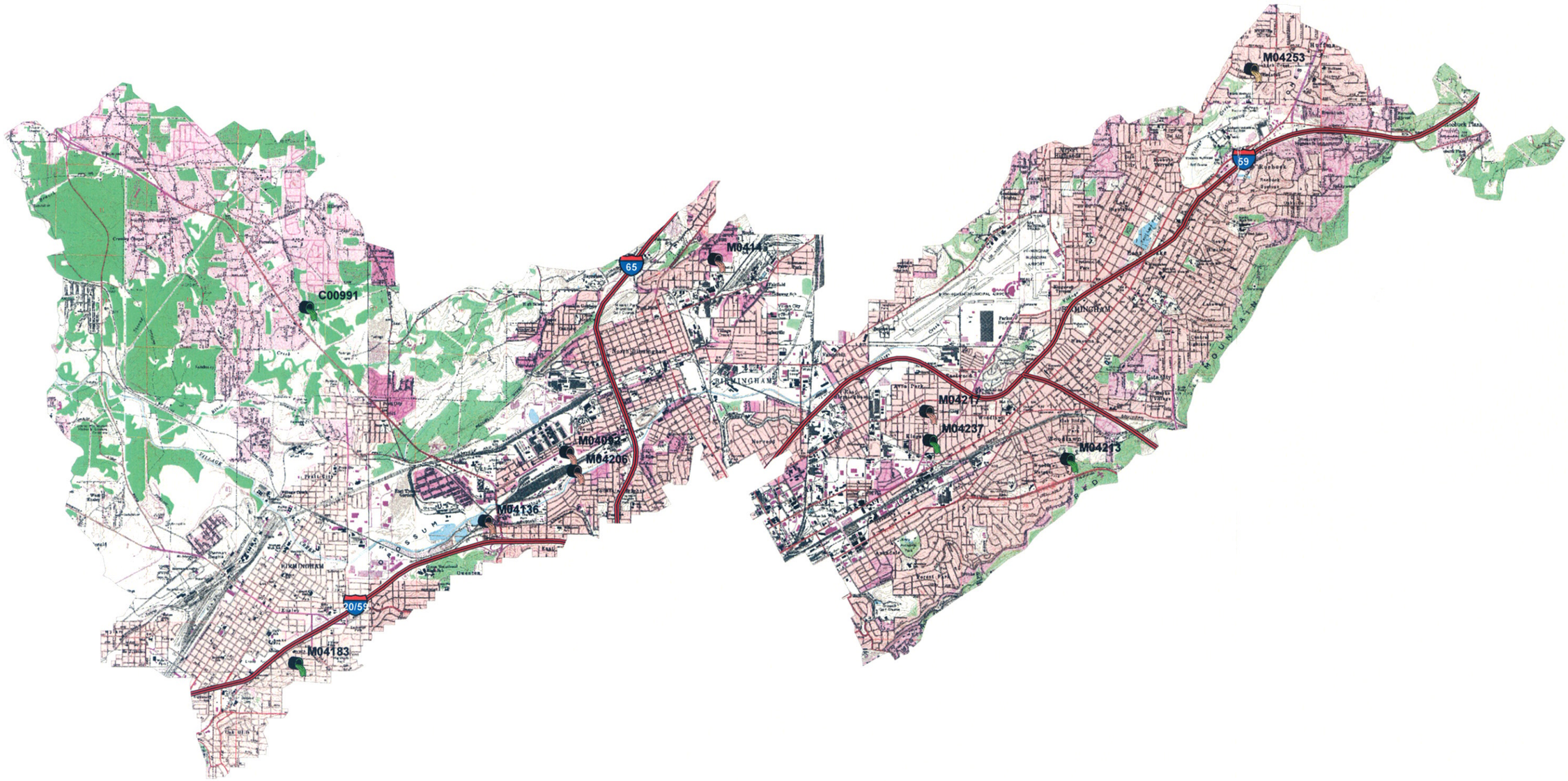
NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04254	9/27/12	5901 Crestwood Blvd	Village - East of WWTP	Drainage Ditch	506	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04265	10/18/12	3000 30th Ave N	Village - East of WWTP	Ground Absorbed	57	Manhole	Vandalism/ Grease/ Debris/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04266	10/19/12	5104 16th Ave N	Village - East of WWTP	Ground Absorbed	5,400	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04268	10/22/12	929 Five Mile Road	Village - East of WWTP	Ground Absorbed	480	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04277	11/13/12	400 Meehan Ave	Village - West of WWTP (Remainder of System)	Storm Drain	45	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04288	11/23/12	332 Dalton Drive	Village - East of WWTP	Drainage Ditch	3,927	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04293	12/9/12	2300 21st Ave N.	Village - East of WWTP	Ground Absorbed	513	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04299	12/15/12	5712 2nd Ave N	Village - East of WWTP	Storm Drain		Pipe	Grease/Debris/Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes: Volume was not determinable. Sewer Main had liner in it. Seweage exited the system through a cracked service line.											

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04304	12/22/12	Alley Between Joppa Ave & Joppa Crt	Village - East of WWTP	Ground Absorbed	60	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04305	12/22/12	6502 Joppa Ave S	Village - East of WWTP	Ground Absorbed	144	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04307	12/26/12	3168 30th Crt N	Village - East of WWTP	Storm Drain	486	Manhole	Grease/Debris/Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

VILLAGE CREEK BASIN 2012 DISCHARGES



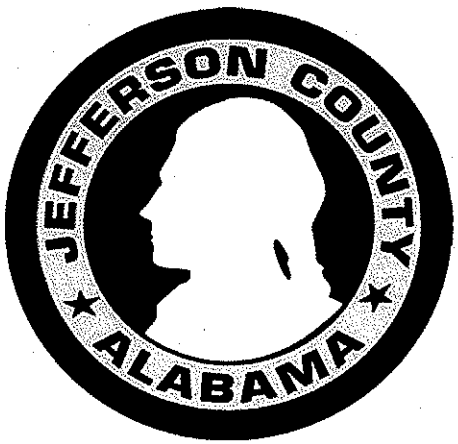
NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-14-13

Village Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY



MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0023647

Name:	Village Creek WWTP
Street Address:	1440 Pleasant Hill Road
County:	Jefferson

2. Facility Contact

Name:	Greg James
Title:	Plant Manager
Telephone:	205-791-6405
Permittee Name:	Jefferson County Commission
Mailing Address:	Suite A-300 716 Richard Arrington Jr. Blvd N.
	Birmingham, Al 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2000:	001-21.9 / 002-16.0	MGD
Facility Design Capacity:	001-60/002-60 /Peak, Both-400	MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage:	214905	gallons per month
Average Commercial Septage:	390869	gallons per month (GREASE)

3. Method of Septage Processing
   - X Mixed with Influent Wastewater for Treatment
   - ☐ Mixed with Sewage Sludge
   - ☐ _____

4. Estimated Percentage Contributing Wastewater Flow

Residential:	87	%		
Industrial:	8	%		
Other:	5	%	Describe:	Commercial

5. List type of wastewater treatment process(es) utilized at this facility:
   Screening, Grit Removal, Activated Sludge, Clarification
   Chlorination, Dechlorination, Sand filtration, Uv Disinfection

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight
   or 144000 gallons per day

7. Estimated untreated sludge received from off site: N/A lb/day dry weight
   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 3 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Gravity Thickening	
Mesophyllic Anaerobic Digestion	
Mechanical Dewatering (Centrifuge) and Lime Stabilization	

10. Estimate the total volume of sludge generated: 3268 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. X Land Application, Bulk Shipped			3268		
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	Grab	Yearly Average	11
Cadmium	<PQL	Grab	Yearly Average	8
Chromium	48	Grab	Yearly Average	8
Copper	430	Grab	Yearly Average	8
Lead	65	Grab	Yearly Average	15
Mercury	2.0	Grab	Yearly Average	0.6
Molybdenum	11	Grab	Yearly Average	5
Nickel	38	Grab	Yearly Average	6
Selenium	<PQL	Grab	Yearly Average	15
Zinc	1,069	Grab	Yearly Average	18
Ammonium-Nitrogen	N/A	N/A	N/A	N/A
Nitrate-Nitrogen	N/A	N/A	N/A	N/A
Total Kjeldahl Nitrogen	21,200	N/A	N/A	1.8

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 28 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☐ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

☐ Option 1 - Minimum 38% Reduction in Volatile Solids

☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
☐ Option 5 - Aerobic Processes plus Elevated Temperature
X Option 6 - Raised pH to 12 and Retained at 11.5
☐ Option 7 - 75% Solids with no Unstabilized Solids
☐ Option 8 - 90% Solids with Unstabilized Solids
☐ Option 9 - Injection Below Land Surface
☐ Option 10 - Incorporation into Soil within 6 or 8 Hours
☐ Option 11 Covering Active Sewage Sludge Unit Daily
☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes (If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)
X No

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600 lbs/acre/year (Reclamation Site)

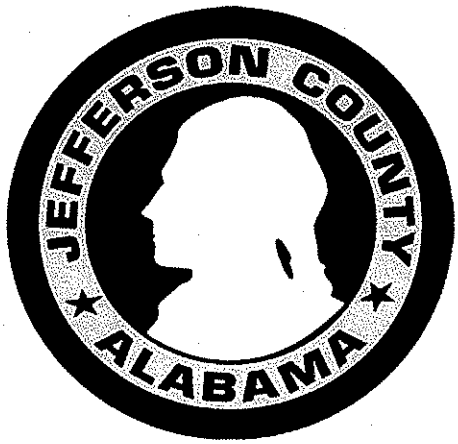
3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

None

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Village Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory



PLANT PERSONNEL INVENTORY

ACILITY NAME	Village Creek WWTP	PLANT GRADE	IV
PERMIT NUMBER	AL0023647		
PLANT MANAGER	Greg James	TEL #	205-791-6405
DEPARTMENT DIRECTOR	David Denard	TEL #	205-327-8232
PLANT OPERATORS:			

	NAME	GRADE	OPERATOR NO.	EXP. DATE
1	Gregory James	IV	C000989	3/31/2015
2	Terrence Lane	IV	C003437	3/31/2015
3	Frederick Deamues	IV	C001885	3/31/2015
4	Paul Hardisty	IV	C001001	2/28/2015
5	Linda Jackson	IV	C000952	12/31/2014
6	Ryan Tyler	IV	C002923	6/30/2015
7	Tim Gilliland	IV	C004866	9/30/2014
8	Corey Bates	IV	C001583	2/28/2013
9	Rickie Hogeland	IV	C000855	11/30/2015
10	Orlando Walker	IV	C000536	11/30/2015
11	Brenda Scott	IV	C002569	6/30/2015
12	Fred Cooper	IV	C001744	11/30/2015
13	Kim Hudson	IV	C005368	8/31/2013

COLLECTION SYSTEM OPERATORS:			

	MAN HRS/WK	NUMBER
MANAGEMENT/SUPERVISOR	320	8
OPERATORS:		
GRADE IV	200	5
MAINTENANCE	200	5
OTHER PLANT WORKERS	960	24

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	31	8:00 AM
2ND	4	4:00 PM
3RD	4	12:00 AM
4th	4	12:00 AM
5gh	4	12:00 PM

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

Shift	Hours	Mon	Tues	Wed	Thu	Fri	Sat	Sun
1st	12 am to 8 am	X	X	X	X	X		
2nd	8 am to 4 pm	X	X	X	X	X		
3rd	4 pm to 12 am	X	X	X	X	X		
4th	12 am to 12 pm						X	X
5th	12 pm to 12 am						X	X

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance
PERMIT NUMBER:
PLANT GRADE: IV
PLANT SUPERINTENDENT:
SYSTEM MANAGER: David Denard
TEL. # (205) 540-7585
TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I(c)	C002094	6/30/2015
2.	Don Goodwin	I(c)	C005423	6/30/2015
3.	Lavon Evans	I(c)	C004631	12/31/2014
4.	Brian Rohling	I(c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Warrior WWTP

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2012

For the

Warrior WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2013

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN – PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A. "JIMMIE" STEPHENS

TONY PETELOS –
CHIEF EXECUTIVE OFFICER

ENVIRONMENTAL SERVICES

Office of

DAVID A. DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5979
Fax (205) 325-5981

May 31, 2013

Mr. Nick Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2012

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Warrior Wastewater Treatment Facility, NPDES Permit No. AL0050881. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Chad Quick, Warrior WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Warrior WWTP NPDES #: AL0050881

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205)325-5806 Fax #: (205)325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Chad Quick
Name

Telephone #: (205)681-7971 Fax #: (205)680-8139

Email Address: quickc@jccal.org

Date: May 10, 2013

REVIEWED BY: Daniel White, P.E., ESD Engineer
Consulting Engineer

Telephone #: (205)214-8610 Fax #: (205)325-5981

Date: May 8, 2013

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2012 (due **May 31,** 2013).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Warrior WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	0.11	230.0	211
February	0.11	173.8	156
March	0.12	230.0	200
April	0.09	260.0	220
May	0.09	313.0	232
June	0.08	358.8	225
July	0.06	367.8	196
August	0.09	272.2	213
September	0.09	282.5	233
October	0.07	236.4	144
November	0.06	308.8	170
December	0.09	220.6	189
Annual Avg.	0.09	271.2	199.1

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	.20	475.0
90% of the Design Criteria	.18	427.5

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? 0 (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? 0 (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? 0 (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Warrior WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April-Oct	18	24	1.2	Report
	Nov-March	25	24	2.1	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	1.37	0.0	0.0	n/a
	February	1.50	0.0	0.0	n/a
	March	3.14	0.5	0.03	n/a
2	April	1.53	0.0	0.0	0.77
	May	2.44	0.3	0.02	0.54
	June	1.75	0.7	0.01	0.74
3	July	1.10	1.2	0.01	0.76
	August	1.10	1.8	0.0	0.13
	September	1.21	3.1	0.02	0.90
4	October	0.42	0.5	0.02	0.95
	November	0.59	0.2	0.0	n/a
	December	0.63	1.1	0.0	n/a
	Annual Avg.	1.40	0.78	.01	0.68

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April-Oct	15	20	1.0	Report
	Nov-March	20.8	20	1.7	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	1.3	0.0	0.00	n/a
	February	1.3	0.0	0.00	n/a
	March	2.7	0.4	0.02	n/a
2	April	1.3	0.0	0.00	0.86
	May	1.8	0.2	0.01	0.43
	June	1.2	0.7	0.00	0.50
3	July	0.7	0.7	0.00	0.34
	August	0.9	1.8	0.00	0.08
	September	1.3	3.5	0.02	0.59
4	October	0.3	0.4	0.01	0.70
	November	0.3	0.1	0.00	n/a
	December	0.6	1.2	0.00	n/a
	Annual Avg.	1.15	0.76	0.01	0.50

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2006

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 6 = (2012) - (2006)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 6.0 (Age) = 12 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 0

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 0

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = 0 (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Warrior WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☑
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☐
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 0
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE):_____

Design Flow:_____MGD

Design BOD_5:_____lbs/day

List industrial and/or residential developments.

No new developments are planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Yes, user charge rates are based on a uniform volume charge per 100 cubic feet of 85% of meter consumption for single family residence.

Residential Minimum $2.00 Plus rate $9.89 /1,000 gal.

Industrial Minimum $2.00 Plus rate $9.89 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 50.45

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

Approximately $20,300,000 is currently available to fund capital improvements.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The physical and structural conditions at the Warrior Plant are in excellent condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The general condition of the sewer system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer line repair and replacement are continued activities planned for the collection system.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None.

F. Is the community presently involved in formal planning for treatment facility upgrading?

Yes

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 0

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes, O&M manuals for all equipment are on site. We record all lubrication and repairs in the plants computer program for future reference and log.

Warrior WWTP (MWPP 2012)

Part 10.D

EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report estimates the useful life of treatment plant and pump station structures at 50 years and associated mechanical and electrical process equipment between 15 and 25 years. Calculated remaining useful life of the structures = 50 – age of facility. Calculated remaining useful life of the equipment = 25 – age of equipment.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

none

L. List any additional comments. (Attach additional sheets if necessary.)

The County entered into an agreement with Hazen and Sawyer, P.C. on February 14, 2012for the development of a comprehensive Collection System Asset Management Program. The goal of the Program is to develop and provide tools, technologies, and procedures that will empower and enable the County to better manage the sanitary sewer collection system. The developed program will establish a comprehensive asset management system with processes and procedures to identify and prioritize future collection system capital and operating replacement and maintenance requirements. The Program is an extension and improvement to the current MOM. The Program's objectives are focused on achieving the MOM goals of continual refinement and continuous performance improvement.

Facility Name:_____

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 12 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 0 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 12 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

Warrior Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

Summary of Unpermitted Discharges - Warrior

January 01, 2012 through December 31, 2012

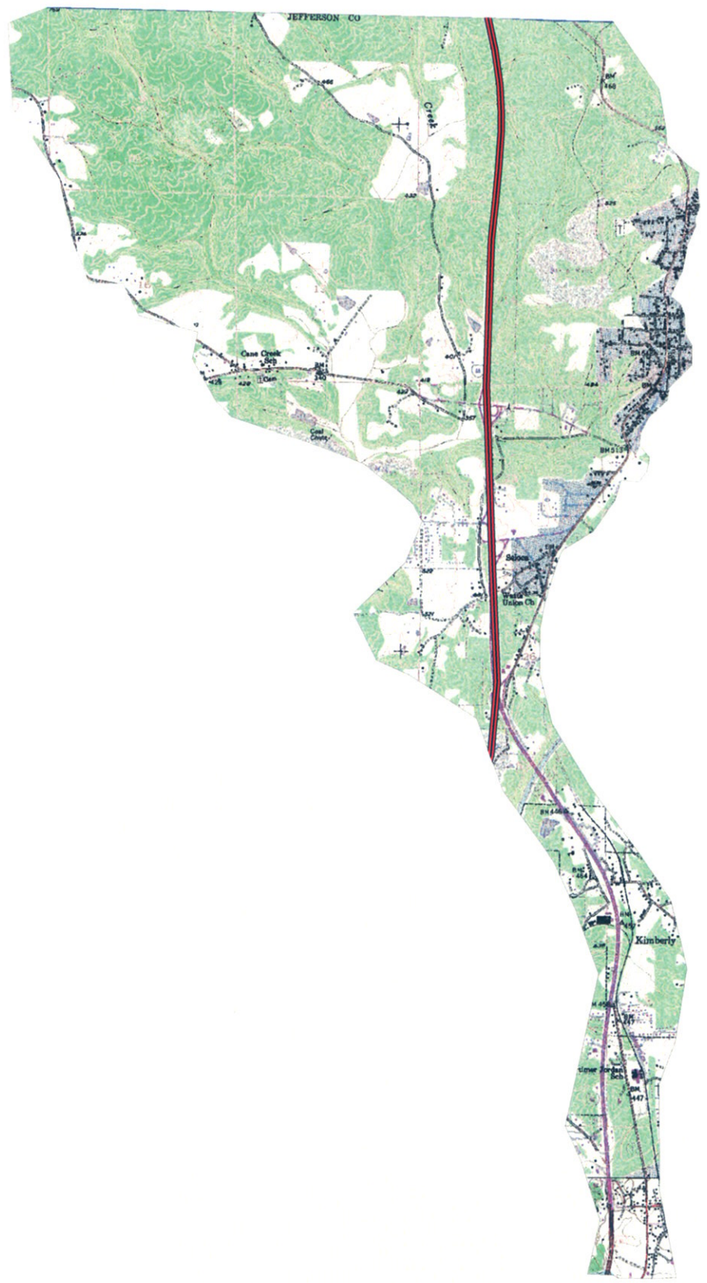
NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*

Notes:

No Unpermitted Discharges for 2012

WARRIOR BASIN 2012 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS
NONE REPORTED FOR WARRIOR BASIN.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 3-11-13

Warrior Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: **AL0050881**
   - Name: **Warrior WWTP**
   - Street Address: **700 Blackburn Drive**
   - County: **Jefferson**

2. Facility Contact
   - Name: **Chad Quick**
   - Title: **Plant Supervisor**
   - Telephone: **(205) 681-7971**
   - Permittee Name: **Jefferson County Commission- Turkey Creek WWTP**
   - Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**
     Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2012: **0.09** MGD
   - Facility Design Capacity: **0.2** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: **N/A** gallons per month
   - Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing
   - ☐ Mixed with Influent Wastewater for Treatment
   - ☐ Mixed with Sewage Sludge
   - ☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow
   - Residential: **95** %
   - Industrial: **0** %
   - Other: **5** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:
   Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, Traveling Bridge Sand Filtration, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight
   or **1509** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight
   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **1.8** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion, Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **13.2** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. [X] Land Application, Bulk Shipped			**13.2**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	*	**11.0**
Cadmium	**<PQL**	**Grab**	*	**8.0**
Chromium	**76**	**Grab**	*	**8.0**
Copper	**413**	**Grab**	*	**8.0**
Lead	**21**	**Grab**	*	**15.0**
Mercury	**3**	**Grab**	*	**0.6**
Molybdenum	**4.8**	**Grab**	*	**5.0**
Nickel	**41**	**Grab**	*	**6.0**
Selenium	**<PQL**	**Grab**	*	**15.0**
Zinc	**688**	**Grab**	*	**18.0**
Ammonium-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Nitrate-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Total Kjeldahl Nitrogen	**28,100**	**Grab**	*	**1.8**

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **77** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

- ☐ Class A
  - ☐ Alternative A1 - Time and Temperature
  - ☐ Alternative A2 - Alkaline Treatment
  - ☐ Alternative A3 - Analysis and Operation
  - ☐ Alternative A4 - Analysis Only
  - ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
    - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
    - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
    - ☐ Composting ☐ ☐
  - ☐ Alternative A6 - PFRP Equivalent _____

- ☒ Class B
  - ☒ Alternative B1 - Fecal Coliform Count
  - ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
    - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
    - ☐ Composting ☐ Lime Stabilization
  - ☐ Alternative B3 - PSRP Equivalent _____

- ☐ Neither or Unknown

Vector Attraction Control

- [ ] Option 1 - Minimum 38% Reduction in Volatile Solids
- [ ] Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- [ ] Option 5 - Aerobic Processes plus Elevated Temperature
- [ ] Option 6 - Raised pH to 12 and Retained at 11.5
- [ ] Option 7 - 75% Solids with no Unstabilized Solids
- [ ] Option 8 - 90% Solids with Unstabilized Solids
- [ ] Option 9 - Injection Below Land Surface
- [x] Option 10 - Incorporation into Soil within 6 or 8 Hours
- [ ] Option 11 Covering Active Sewage Sludge Unit Daily
- [ ] None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- [ ] Yes
- [x] No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

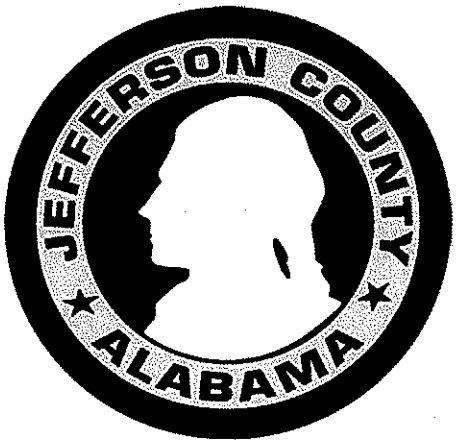
No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Warrior Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory



PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: **Warrior WWTP** PLANT GRADE: **II**

PERMIT NUMBER: **AL0050881**

PLANT SUPERINTENDENT: **Chad Quick** TEL. # **(205)681-7971**

SYSTEM MANAGER: **David Denard** TEL. # **(205)326-8232**

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	**Eric Pond**	**IV**	**C003706**	**2/28/2016**
2.	**Mark Lee**	**IV**	**C000389**	**8/31/2013**
3.	**Chad Quick**	**IV**	**C003616**	**2/28/2015**
4.	**Pat McCarty**	**IV**	**C003224**	**8/31/2014**
5.	**Jefferey Gillian**	**IV**	**C000447**	**11/30/2015**
6.	**Adam Moore**	**IV**	**C006513**	**11/1/2014**
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	**120**	**3**
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	**120**	**4**
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	**1**
2ND	
3RD	

START TIME **7:00 AM**

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?	X	
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance
PERMIT NUMBER:
PLANT GRADE: IV
PLANT SUPERINTENDENT:
SYSTEM MANAGER: David Denard
TEL. # (205) 540-7585
TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I(c)	C002094	6/30/2015
2.	Don Goodwin	I(c)	C005423	6/30/2015
3.	Lavon Evans	I(c)	C004631	12/31/2014
4.	Brian Rohling	I(c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

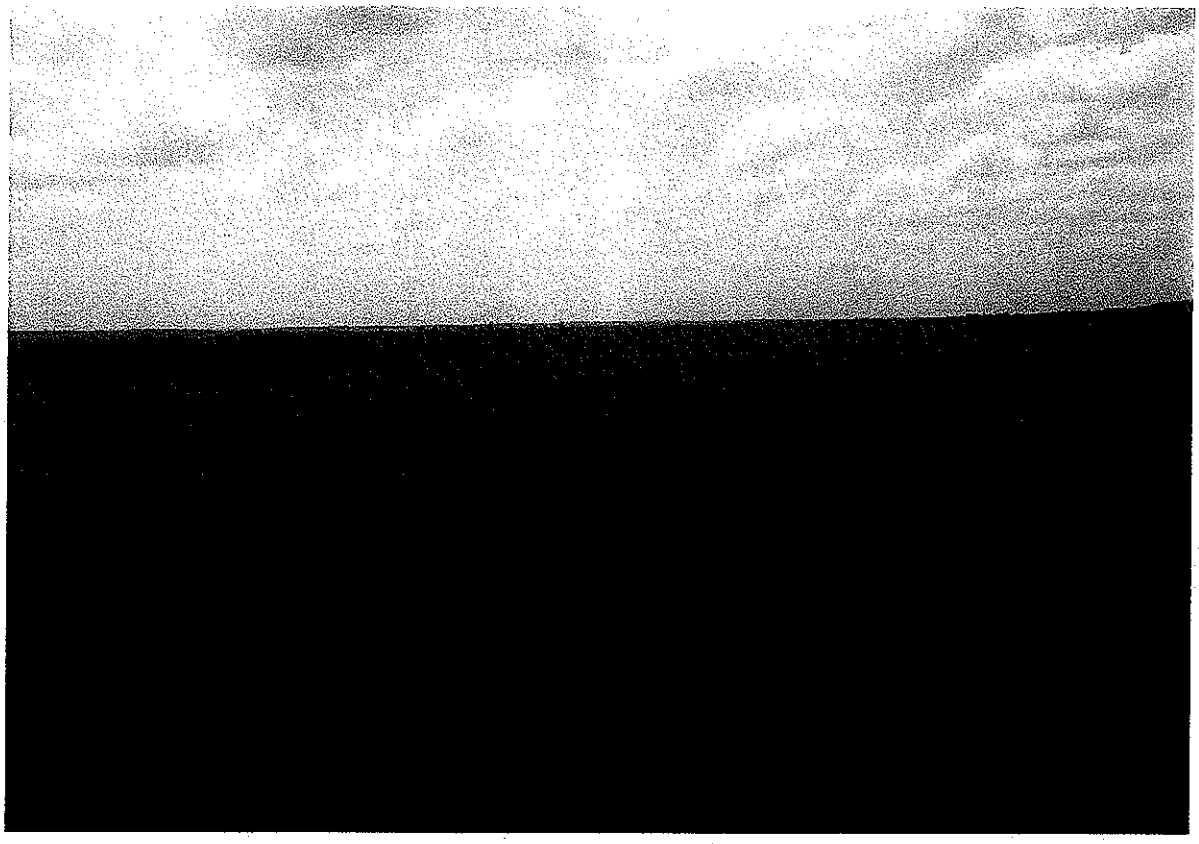
2012 ANNUAL BIOSOLIDS REPORT

JEFFERSON COUNTY COMMISSION
ENVIRONMENTAL SERVICES DEPARTMENT

JEFFERSON COUNTY, ALABAMA

BIOSOLIDS MANAGEMENT PROGRAM

Jefferson County Land Reclamation Program



REPORT PREPARED BY:

JEFFERSON COUNTY ENVIRONMENTAL SERVICES DEPARTMENT

2012 Annual Biosolids Report

2012 EPA ANNUAL BIOSOLIDS REPORT

JEFFERSON COUNTY ENVIRONMENTAL SERVICES DEPARTMENT
BIRMINGHAM, ALABAMA

Enclosed is the 2012 Annual Biosolids Monitoring Report for the Jefferson County Environmental Services' **Biosolids Land Reclamation Program**. This report is respectfully submitted to the Environmental Protection Agency (EPA) Region IV in accordance with the requirements of 40 CFR Part 503.

Information provided in this report includes:

1. Certification Statement for management practices, site restrictions, pathogen requirement, and vector attraction reduction requirements.

2. Executive Summary.

3. Project information for the Biosolids Management Program, including Jefferson County Wastewater Treatment Facility information and land application site data.

4. Biosolids testing methodology and analysis results, including sample collection forms.

5. Agronomic calculations, rate justification letter and sample worksheet for calculating agronomic rates.

6. Vector Attraction Reduction Statistics.

7. Land application site maps.

SECTION 1

CERTIFICATION STATEMENT

CERTIFICATION STATEMENT FOR THE *PREPARER* and *APPLIER* OF BULK SEWAGE BIOSOLIDS

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32 (b)(5), the Class B pathogen requirements in §503.32(b), and the vector attraction reduction requirements in §503.33(b)(6) or (10)(i) was prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

_____ _____

Signature Date

David Denard – Director, Jefferson County Environmental Services Department
Printed Name and Position

SECTION 2

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Jefferson County Environmental Services Department utilizes land application as the method of disposal for the biosolids currently produced by its wastewater treatment facilities. There are currently nine (9) wastewater treatment facilities operated by the Environmental Services Department. During 2012, these facilities treated an average daily flow of 104 MGD of wastewater and produced 11,340 dry tons of biosolids that were sent for land application. Seven (7) of the County's wastewater treatment facilities are Class I Publicly-Owned Treatment Works (POTWs), and therefore subject to the 40 CFR Part 503 reporting regulations.

Throughout 2012, the biosolids produced by Jefferson County's wastewater treatment facilities were land applied at two (2) former strip mine sites. Jefferson County is assisting the property owner, the United Land Corporation, in the reclamation of both sites through the land application of biosolids.

The Flat Top/Bessie Mines Land Reclamation Site (Flat Top) is located in northwestern Jefferson County and is approximately 4,670 acres total in size, with approximately 2,700 acres being disturbed through previous mining activities. Biosolids from eight (8) wastewater treatment facilities were applied at this site during 2012.

The Beltona Land Reclamation Site, located in northern Jefferson County, is approximately 1,000 acres in size, with about one-third of the site being previously disturbed through mining activities. Biosolids from two (2) wastewater treatment facilities were applied at Beltona during 2012.

Applicable site restrictions, general requirements, and management practices have been met at both Land Reclamation Sites. Biosolids were applied to both sites using the "Pollutant Concentration" (PC) option. Pathogen and vector attraction reduction requirements and all required site restrictions for Class "B" biosolids were also met.

SECTION 3

PROJECT INFORMATION

JEFFERSON COUNTY

WASTEWATER TREATMENT FACILITIES

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Summary:

The Jefferson County Environmental Services Department currently operates nine (9) wastewater treatment facilities. During 2012, these facilities treated an average daily flow of 104 MGD of wastewater and produced 11,340 dry (English) tons of biosolids that were land applied. Seven (7) of the County's wastewater treatment facilities are Class I POTWs, and therefore subject to the 40 CFR Part 503 reporting regulations.

Class I POTWs:		**Dry Tons of Biosolids Land Applied**
1.	Cahaba River Wastewater Treatment Plant NPDES Permit No. AL0023027	1,336
2.	Five Mile Creek Wastewater Treatment Plant NPDES Permit No. AL0026913	1,522
3.	Leeds Wastewater Treatment Plant NPDES Permit No. AL0022297	255
4.	Trussville Wastewater Treatment Plant NPDES Permit No. AL0022934	531
5.	Turkey Creek Wastewater Treatment Plant NPDES Permit No. AL0022936	219
6.	Valley Creek Wastewater Treatment Plant NPDES Permit No. AL0023655	4,196
7.	Village Creek Wastewater Treatment Plant NPDES Permit No. AL0023647	3,268
Non-Class I POTWs (<1.0 MGD):		
1.	Prudes Creek Wastewater Treatment Plant NPDES Permit No. AL0056120	0
2.	Warrior Wastewater Treatment Plant NPDES Permit No. AL0050881	13
		TOTAL: 11,340 Dry Tons

Reporting Requirements:

Based on the quantity of biosolids land applied during 2012, the required frequency of monitoring was six (6) times per year. However, Jefferson County typically performs biosolids monitoring on a monthly basis (twelve times per year).

Pathogen Requirements:

Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see Biosolids Analysis Results).

Vector Attraction Reduction Summary:

The Valley Creek and Village Creek wastewater treatment facilities primarily utilize lime stabilization for vector attraction reduction of their biosolids. During 2012, approximately 57% of the County's land applied biosolids were stabilized as described in Option 6: Addition of Alkaline Material [503.33(b)(6)]. When biosolids from these treatment facilities are land applied at the Flat Top/Bessie Mines application site, they are incorporated into the soil within six (6) hours of application.

The biosolids from the remaining wastewater treatment facilities are land applied and incorporated into the soil within six (6) hours of application as described in Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]. This method of vector attraction reduction applied to approximately 43% of the County's total biosolids during 2012.

FLAT TOP/BESSIE MINES
LAND RECLAMATION SITE

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Reporting Period:
January 1, 2012 to December 31, 2012

Site Address:
5201 Flat Top Road, Graysville, AL 35073

Site Description:
The Flat Top Land Reclamation Site is a former strip mine site, 4,670 acres total in size, with approximately 2,700 acres being previously disturbed through mining activities. Jefferson County is assisting the property owner in the reclamation of this site through the land application of biosolids.

There is currently no significant soil mass present at this site for growing vegetation and, in order to build soil mass, biosolids are being applied at a rate of 600 lb Nitrogen/Ac/year. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

Source of Biosolids:
During 2012, biosolids from eight wastewater treatment facilities were land applied at this site with no biosolids being hauled from the Prudes wastewater treatment facility.

Quantity:
A total of 8,319 dry (English) tons of biosolids were applied at the Flat Top Land Reclamation Site during 2012. Biosolids were applied to Plot 3 of the site (see Figure 2). Of the 8,319 total dry tons applied, 4,855 tons were not lime stabilized.

Pollutant Limits:
Biosolids were applied to this site using the "Pollutant Concentration" (PC) option (see 2012 Biosolids Analysis Results). In order to be representative of in-situ conditions, monthly biosolids samples were taken from each treatment facility and then blended according to each facility's disposal ratio. Biosolids testing was then performed on this "blended" sample.

Pathogen Requirements:
Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform

density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results).

Vector Attraction Reduction Requirements:

Throughout 2012, the Valley Creek and Village Creek wastewater treatment facilities utilized lime stabilization for vector attraction reduction in the majority of their biosolids, as described in Option 6: Addition of Alkaline Material [503.33(b)(6)]. To satisfy the requirements of Option 6, sufficient lime was added to the biosolids to raise the pH to at least 12 for 2 hours and at least 11.5 for an additional 22 hours, without the addition of more lime. When biosolids from these treatment facilities are land applied at the Flat Top/Bessie Mines Reclamation Site, they are typically incorporated into the soil within six (6) hours of application as well.

For biosolids received at the Land Reclamation Site from the remaining treatment plants and the portion of biosolids from Valley and Village wastewater treatment facilities that did not receive lime stabilization, the method of vector attraction reduction used was Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]. These biosolids were land applied and incorporated into the soil within six (6) hours of application on the land.

Management Practices and Site Restrictions:

All applicable management practices stated in 503.14 were met at the site, including a minimum 100 ft. buffer zone around waters of the United States.

All applicable site restrictions stated in 503.32(b)(5) for Class "B" biosolids were also met. The Flat Top/Bessie Mines Land Reclamation site is in a remote area of Jefferson County and is located on private property; therefore there is no public access to the site.

BELTONA LAND RECLAMATION SITE

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Reporting Period:
January 1, 2012 to December 31, 2012

Site Address:
401-B Beltona Road, Warrior, AL 35180

Site Description:
The Beltona Land Reclamation Site, which is approximately 1,000 acres in size, is a former strip mine site located in northern Jefferson County. About one-third of the site has been utilized for biosolids land application, with plot sizes ranging from 3.0 acres to 20 acres. Jefferson County is assisting the property owner in the reclamation of this site through the land application of biosolids. Presently, Tifton Bermuda and Winter Rye grasses are grown at Beltona and are harvested several times a year as hay.

Source of Biosolids:
During 2012, biosolids from the Valley Creek and Village Creek wastewater treatment facilities were land applied at this site.

Quantity:
3,021 dry (English) tons of biosolids were land applied at the Beltona Land Reclamation Site during 2012.

Pollutant Limits:
Biosolids from two (2) of the County's wastewater treatment facilities were applied to this site using the "Pollutant Concentration" (PC) option. Biosolids testing was performed on samples from these facilities at a frequency that meets or exceeds the minimum monitoring frequency requirement for each facility (see 2012 Biosolids Analysis Results).

Pathogen Requirements:
Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results).

Vector Attraction Reduction Requirements:

Throughout 2012, the Valley Creek and Village Creek wastewater treatment facilities utilized lime stabilization for vector attraction reduction of their biosolids, as described in Option 6: Addition of Alkaline Material [503.33(b)(6)]. To satisfy the requirements of Option 6, sufficient lime was added to the biosolids to raise the pH to at least 12 for 2 hours and at least 11.5 for an additional 22 hours, without the addition of more lime. Lime stabilized biosolids were then surface-applied at the Beltona Land Reclamation Site.

Management Practices and Site Restrictions:

All applicable management practices stated in 503.14 were met at the site, including a minimum 100 ft. buffer zone around waters of the United States.

All applicable site restrictions stated in 503.32(b)(5) for Class "B" biosolids were also met. The Beltona Land Reclamation Site is in a remote area of Jefferson County and is located on private property; therefore there is no public access to the site.

SECTION 4

BIOSOLIDS ANALYSIS

TEST METHODS FOR BIOSOLIDS ANALYSIS

Based on the quantity of biosolids land applied at the Flat Top/Bessie Mine Land Reclamation Site during 2012, the required frequency of monitoring was six (6) times per year; however, Jefferson County typically performs biosolids monitoring on a monthly basis (see 2012 Biosolids Analysis Results). Each month, samples were collected from each treatment facility and blended according to each facility's disposal ratio in order to be representative of in-situ conditions. Biosolids testing was then performed on this "blended" sample.

For the Beltona Land Reclamation Site, biosolids samples from the two (2) contributing treatment facilities were collected at a frequency that meets or exceeds the minimum monitoring frequency requirement for each facility (see 2012 Biosolids Analysis Results).

METALS ANALYSIS:
Following is a list of the biosolids sample preparation and test methods used when performing metals testing:

METHODS FOR EVALUATING SOLID WASTE, SW846 METHODS:

Arsenic	3050B, 7060A
Cadmium	3050B, 7130
Chromium	3050B, 7190
Copper	3050B, 7210
Lead	3050B, 7420
Mercury	7471B
Molybdenum	3050B, 7481
Nickel	3050B, 7520
Selenium	3050B, 7740
Zinc	3050B, 7950

FECAL COLIFORM TESTING:

For each sampling event, seven (7) samples were collected and tested according to the procedure outlined in Part 9222D, *Standard Methods for the Examination of Water and Wastewater,* and Appendix F of EPA's *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge.* The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results). Serial dilutions were prepared in the range of 10^1 through 10^6, and on some occasions 10^7, thus enabling coliform colony counts of greater than 20 million.

2012 BIOSOLIDS ANALYSIS RESULTS
FLAT TOP/BESSIE MINES LAND RECLAMATION SITE
(Blended sample from all facilities)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/24/2012	<PQL	<PQL	57	470	37	1.5	<PQL	40	<PQL	1,600	60%	0
2/21/2012	<PQL	<PQL	36	360	37	1.4	<PQL	23	<PQL	820	65%	0
3/6/2012	<PQL	<PQL	51	390	33	1.1	<PQL	39	<PQL	1,400	51%	0
4/3/2012	<PQL	<PQL	34	1,200	24	1.2	9	19	<PQL	1,100	52%	30
5/8/2012	<PQL	<PQL	100	1,700	43	1.8	17	60	17	2,100	58%	2,200
6/5/2012	<PQL	<PQL	87	990	47	1.5	15	57	12	2,100	54%	0
7/10/2012	<PQL	<PQL	84	980	54	1.3	18	62	<PQL	2,400	58%	0
8/7/2012	<PQL	<PQL	70	840	42	1.6	14	52	<PQL	2,000	54%	150
9/11/2012	<PQL	<PQL	76	890	50	1.7	16	63	<PQL	2,300	55%	5
10/2/2012	<PQL	<PQL	64	1,000	38	1.6	16	48	<PQL	2,000	55%	5
11/6/2012	<PQL	<PQL	97	1,200	65	2.1	17	74	16	2,800	64%	25,000
12/4/2012	<PQL	<PQL	69	990	57	1.6	13	57	<PQL	2,400	53%	0
Average	<PQL	<PQL	**69**	**920**	**44**	**1.5**	**11**	**50**	<PQL	**1,900**		
Maximum	<PQL	<PQL	**100**	**1,700**	**65**	**2.1**	**18**	**74**	**17**	**2,800**		
PQL	11	8.0	8.0	8.0	15	0.6	5.0	6.0	15	18		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

2012 BIOSOLIDS ANALYSIS RESULTS
BELTONA LAND RECLAMATION SITE
(Valley Creek WWTP)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/24/2012	<PQL	<PQL	46	320	28	1.6	<PQL	21	<PQL	970	79%	7
2/21/2012	<PQL	<PQL	34	270	18	1.0	<PQL	24	<PQL	780	77%	0
3/6/2012	<PQL	<PQL	26	220	20	<PQL	<PQL	19	<PQL	640	72%	0
4/3/2012	<PQL	<PQL	30	270	21	1.4	5.6	21	<PQL	720	72%	0
5/8/2012	<PQL	<PQL	27	300	17	1.2	7.4	24	<PQL	890	76%	0
6/5/2012	<PQL	<PQL	39	410	28	1.0	13	35	<PQL	1,200	78%	0
7/10/2012	<PQL	<PQL	23	280	19	0.90	13	19	<PQL	840	70%	0
8/7/2012	<PQL	<PQL	22	310	19	1.0	16	20	<PQL	990	69%	0
9/11/2012	<PQL	<PQL	27	370	27	0.97	19	23	<PQL	1,200	69%	0
10/2/2012	<PQL	<PQL	21	290	15	0.73	12	20	<PQL	960	66%	0
11/6/2012	<PQL	<PQL	59	620	43	2.5	16	49	<PQL	1,900	81%	0
12/4/2012	<PQL	<PQL	20	300	19	0.99	7.3	22	<PQL	860	70%	120,000
Average	<PQL	<PQL	**31**	**330**	**23**	**1.1**	**9.1**	**25**	<PQL	**996**		
Maximum	<PQL	<PQL	**59**	**620**	**45**	**2.5**	**19**	**49**	<PQL	**1,900**		
PQL	11	8.0	8.0	8.0	15	0.6	5.0	6.0	15	18		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

2012 BIOSOLIDS ANALYSIS RESULTS
BELTONA LAND RECLAMATION SITE
(Village Creek WWTP)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/24/2012	<PQL	<PQL	67	490	81	1.7	17	42	<PQL	1,400	65%	5
2/21/2012	<PQL	<PQL	45	390	58	<PQL	<PQL	28	<PQL	980	70%	3
3/6/2012	<PQL	<PQL	52	450	65	1.5	13	33	<PQL	1,100	70%	7,900
4/3/2012	<PQL	<PQL	38	310	49	4.5	9.0	23	<PQL	740	70%	4
5/8/2012	<PQL	<PQL	54	470	69	2.4	13	39	<PQL	1,100	74%	1,600,000
6/5/2012	<PQL	<PQL	43	390	58	1.6	13	37	<PQL	960	72%	8
7/10/2012	<PQL	<PQL	41	380	60	1.8	11	39	<PQL	950	72%	0
8/7/2012	<PQL	<PQL	47	450	71	1.9	12	47	<PQL	1,100	76%	7,400
9/11/2012	<PQL	<PQL	50	500	71	2.2	16	55	<PQL	1,200	74%	58,000
10/2/2012	<PQL	<PQL	51	490	67	1.7	14	54	<PQL	1,200	73%	120,000
11/6/2012	<PQL	<PQL	44	430	66	2.2	10	49	<PQL	1,100	73%	68
12/4/2012	<PQL	<PQL	40	410	60	1.6	9.4	45	<PQL	1,000	72%	0
Average	<PQL	<PQL	**48**	**430**	**65**	**1.9**	**11**	**41**	<PQL	**1,070**		
Maximum	<PQL	<PQL	**67**	**500**	**81**	**4.5**	**17**	**55**	**<PQL**	**1,400**		
PQL	11	8.0	8.0	8.0	15	0.6	5.0	6.0	15	18		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID:	Prudes Creek "Biosolids"	Primary Measuring Device:	
Sample Set-up Date:	Time:	Sampler Type:	
First/Start Sample Date:	Time:	Flow Meter Type:	
Last Sample Date:	Time:	Sample Interval:	
Collection Date:	12-13-11 Time: 0813	Sample Type:	Grab Composite ☐
Sample Split?	Yes ☐ No		{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
Received by	12/13/11	848	Relinquished by	12/13/11	0915
Received by	12/13/11	0915	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	1.80×10^3	Col/100mL		R. Clayton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4° C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-Cl G.

2

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First/Start Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-13-11 Time: 0813	Sample Type: Grab Composite ☐
Sample Split? Yes ☐ No	{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
Received by	12/13/11	848	Relinquished by	12/13/11	0905
Received by	12/13/11	0915	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho- P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	2.07×10^4	Col/100mL		R. Claughton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4° C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-*O* C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN^- E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-CIG.

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"		Primary Measuring Device:	
Sample Set-up Date:	Time:	Sampler Type:	
First/Start Sample Date:	Time:	Flow Meter Type:	
Last Sample Date:	Time:	Sample Interval:	
Collection Date: 12-13-11	Time: 0813	Sample Type: Grab	Composite ☐
Sample Split? Yes ☐ No		{TVVC / TCVC / TCVV}	

CHAIN OF CUSTODY

	Date	Time		Date	Time
Sample Collected by: Ben Cito	12-13-11	0813	Relinquished by: Ben Cito	12-13-11	0848
Received by: [signature]	12/13/11	848	Relinquished by: [signature]	12/13/11	0915
Received by: [signature]	12/13/11	09:15	Relinquished by		
Received by			Relinquished by		

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name	
	DO		mg/L			Lab ☐ Field ☐
	Conductivity		µmhos			Lab ☐ Field ☐
	pH		S.U.			Lab ☐ Field ☐
	BOD_5		mg/L			
	$CBOD_5$		mg/L			
	TSS		mg/L			
	COD		mg/L			
	TKN		mg/L			
	NH_3-N		mg/L			
	Total-P		mg/L			
	ortho-P		mg/L			
	TOC		mg/L			
	Nitrate+ Nitrite		mg/L			
	Turbidity		N.T.U.			
	Hardness		mg/L			
	Oil & Grease		mg/L			
X	Fecal Coliform		Col/100mL		R. Claughton	
	E. Coli		Col/100mL			

PM = PRESERVATION METHOD:
A –Iced, 4° C.
B –H_2SO_4 to pH<2
C –HNO_3 to pH<2
D –NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed*. or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+ -B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN^- E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-Cl G.

20111213-010

20110502 AH, H:\Barton Forms\Sample Collection, Chain of Custody

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First/Start Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-13-11 Time: 0813	Sample Type: Grab Composite ☐
Sample Split? Yes ☐ No	{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
Received by	12/13/11	848	Relinquished by	12/13/11	0915
Received by	12/13/11	0915	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	1.14×10^3	Col/100mL		R. Claughton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4°C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: *R2=EPA-600/4-79-020; R3=EPA Method 1664; BR4=EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-CIG.

5

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First/Start Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-13-11 Time: 0813	Sample Type: Grab Composite ☐
Sample Split? Yes ☐ No	{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
[signature]	12/13/11	848	[signature]	12/13/11	0925
Received by	Date	Time	Relinquished by	Date	Time
[signature]	12/13/11	09:5			
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

20111213 0710

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	5.22×10^3	Col/100mL		R. Claughton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4° C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, *1664*; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-ClG.

6

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First/Start Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-13-11 Time: 0813	Sample Type: Grab Composite ☐
Sample Split? Yes ☐ No	{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
Received by	12/13/11	848	Relinquished by	12/13/11	0925
Received by	12/13/11	0915	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	9.74x10³	Col/100mL		R. Clayton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4° C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-Cl G.

7

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID:	Prudes Creek "Biosolids"	Primary Measuring Device:	
Sample Set-up Date:	Time:	Sampler Type:	
First/Start Sample Date:	Time:	Flow Meter Type:	
Last Sample Date:	Time:	Sample Interval:	
Collection Date:	12-13-11 Time: 0813	Sample Type:	Grab Composite ☐
Sample Split?	Yes ☐ No		{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
[signature]	12/13/11	848	[signature]	12/13/11	0915
Received by	Date	Time	Relinquished by	Date	Time
[signature]	12/13/11	0915			
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 0813

20110213

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
	DO		mg/L		Lab ☐ Field ☐
	Conductivity		µmhos		Lab ☐ Field ☐
	pH		S.U.		Lab ☐ Field ☐
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN		mg/L		
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
X	Fecal Coliform	5,870	Col/100mL		R. Clayton
	E. Coli		Col/100mL		

PM = PRESERVATION METHOD:
A – Iced, 4° C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Mercury				
	Molybdenum				
	Nickel				
	Selenium				
	Silver				
	Zinc				
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020*; R3=*EPA Method 1664*; BR4=*EPA SW846*; all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-ClG.

Prudes Creek WWTP

Jefferson County Commission Environmental Services Department–Barton Laboratory

Sample Collection / Chain of Custody / Request for Analysis

Sample ID: Prudes Creek "Biosolids"	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First/Start Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-13-11 Time: 0813	Sample Type: Grab Composite ☐
Sample Split? Yes ☐ No	{TVVC / TCVC / TCVV}

CHAIN OF CUSTODY

Ben Cate	12-13-11	0813	Ben Cate	12-13-11	0848
Sample Collected by	Date	Time	Relinquished by	Date	Time
Received by	12/13/11	848	Relinquished by	12/13/11	0905
Received by	12/13/11	0905	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time
Received by	Date	Time	Relinquished by	Date	Time

MUST BE COMPLETED! Preservation Method: A ☐ B ☐ C ☐ D ☐ by WWTP X / by Barton Lab ☐ Time: 083

REQUEST FOR ANALYSIS

☒	Analyte	Value	Units	PM	Analyst Name
X	~~Dup of Influent~~	38	~~%~~ mg/L		R. Claughton
	Conductivity		µmhos		
	pH		S.U.		
	BOD_5		mg/L		
	$CBOD_5$		mg/L		
	TSS		mg/L		
	COD		mg/L		
	TKN	33000	~~mg/L~~ mg/kg		Turner
	NH_3-N		mg/L		
	Total-P		mg/L		
	ortho-P		mg/L		
	TOC		mg/L		
	Nitrate+ Nitrite		mg/L		
	Turbidity		N.T.U.		
	Hardness		mg/L		
	Oil & Grease		mg/L		
G.M. X	Fecal Coliform	7800	~~Col/100mL~~ mg/kg		R. Claughton
	E. Coli		Col/100mL		

Lab ☐ Field ☐
Lab ☐ Field ☐
Lab ☐ Field ☐

PM = PRESERVATION METHOD:
A – Iced, 4°C.
B – H_2SO_4 to pH<2
C – HNO_3 to pH<2
D – NaOH to pH>11

☒	Analyte	Value	Units	PM	Analyst Name
	Arsenic	0	mg/kg		Jamie
	Cadmium	0			
	Chromium	35			
	Copper	230			
	Lead	25			
	Mercury	0			Emerson
	Molybdenum	0			Jamie
	Nickel	25			
	Selenium	0			
	Silver				
	Zinc	1200			
	Cyanide				
	Sulfate				
	TRC		mg/L		

ANALYTICAL METHODS: R2=*EPA-600/4-79-020;* R3=*EPA Method 1664;* BR4=*EPA SW846;* all others ref. *Standard Methods, 21st Ed.* or later. DO, 4500-O C; Conductivity, 2510-B; pH, 4500-H^+-B; BOD_5, 5210-B; $CBOD_5$, 5210-B; TSS, 2540-D; COD, 5220-D; TKN, *R2* 351.2; NH_3-N, 4500-NH_3-G; Total-P, 4500-P F; *ortho*-P, 4500-P F; TOC, 5310 B; Nitrate, 4500-NO3 H; Nitrite, 4500-NO_2 H; Turbidity, 2130 B; Hardness, 2340 C; Oil & Grease, *R3*, 1664; Arsenic, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7060 A); Cadmium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7130); Chromium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7190); Copper, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7210); Lead, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7420); Mercury, 3112,B (BR4 7471 B); Molybdenum, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7481); Nickel, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7520); Selenium, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7740); Silver, 3030,E, 3111,B, 3113 B; Zinc, 3030,E, 3111,B, 3113 B (BR4 3050 B, 7950); Cyanide 4500-CN E; Volatile Organics, 6210 D; Semi-Volatile Organics, 6410 B; Sulfate, 4500-SO_4^{2-} E; FC, 9222 D; TRC, 4500-Cl G.

12/13/11 Prides

Barton Laboratory

BIOSOLIDS BACTERIAL ANALYSIS

Analysis Date: 12/13/11

Sample ID: Prides

Date / Time In: 12/13 / 1200

Sample Date / Time: 12/13/11 / 0813

Date / Time Read: 12/14 / 1245

Lab Analyst: CS/SM

TEST(S) PERFORMED:

Fecal Coliform [X]

Total Coliform [ ]

Fecal Strep [ ]

Other [ ]

Summary of Geometric Mean Calculations:

G.M.= 7,800 colonies per gram of dry solids.

	Dilution Used or mL of Sample	Colonies Counted	% Dry Solids	pH	Colonies Counted X 100 / mL Sample X % Dry Solid	Geometric Mean $\sqrt[N]{(X_1)(X_2)\dots(X_N)}$ or Log
①	.0111	11	55		$\frac{1100}{.0111 \times 55} = 1.80 \times 10^3$	3.26
②	.0011	15	66		$\frac{1500}{.0011 \times 66} = 2.07 \times 10^4$	4.32
③	.0011	9	64		$\frac{900}{.0011 \times 64} = 1.28 \times 10^4$	4.11
④	.0111	8	63		$\frac{800}{.0111 \times 63} = 1.14 \times 10^3$	3.06
⑤	.01	35	67		$\frac{3500}{.01 \times 67} = 5.22 \times 10^3$	3.72
⑥	.0011	6	56		$\frac{600}{.0011 \times 56} = 9.74 \times 10^3$	3.99
⑦	.001	37	63		$\frac{3700}{.001 \times 63} = 5.87 \times 10^4$	4.77
8						$\bar{x} = 3.89$
9	Avg%	Solids:	62%			
10	Avg%	Moisture	38%			
Blank	.01	0				G.M.= 7800 colonies per gram of dry solids.

Barton Laboratory

BIOSOLIDS

Coliform Colonies Counted

Sample ID: Rudes

Sample Date / Time: 12/13/11 1 0813

Date / Time Counted: 12/14 1245

Lab Analyst: CS/SW

COLIFORM COLONIES COUNTED

% Solids	Sample Number	0.01 mL Filtration	0.001 mL Filtration	0.0001 mL Filtration	0.00001 mL Filtration	0.000001 mL Filtration
	1	10	1	0		
	2	TNTC	17	2		
	3	TNTC	8	1		
	4	8	0	0		
	5	35 ✓	5	2		
	6	TNTC ~~168~~ R2	5	1		
	7	TNTC	37 ✓	4		
	8					
	9					
	10					
	Blank	0				

SECTION 5

AGRONOMIC RATE INFORMATION AND CALCULATIONS

AGRONOMIC RATE
BELTONA LAND RECLAMATION SITE

Summary:
The Beltona Land Reclamation Site is a former strip mine site located in northwestern Jefferson County. The Environmental Services Department is assisting the property owner in the reclamation of this site through the land application of biosolids. In the areas that have not received any biosolids applications, no vegetation other than "scrub" vegetation is present and growing. In the areas that have received biosolids applications, Tifton Bermuda and Rye grass has been planted for nitrogen uptake.

The local Agricultural Cooperative Extension Service has recommended a fertilizer rate of 600 lb Nitrogen/Ac/year for the mine reclamation site. These calculations are based on six cuttings of hay each year (four harvests of Bermuda grass and two harvests of Rye grass each year), with 100 lb Nitrogen per acre needed for each cutting.

Agronomic Rate Considerations:

1) The Agronomic Calculations presented in this report are based on an extension bulletin worksheet entitled "Calculating Biosolids Application Rates in Agriculture" (1998), developed by Craig Cogger and Dan Sullivan for the Pacific Northwest. This bulletin uses widely accepted procedures for nitrogen budgeting which are applicable across the United States.

2) During analysis, NH_4^+ -N is often converted to NH_3-N and analytical results are then reported as NH_3-N. Both forms are plant available and this combined analysis does not diminish the quality of the result.

3) There is no additional nitrogen applied to the reclamation site by Jefferson County (no fertilizer or irrigation water).

4) Biosolids from the Valley and Village WWTP's are applied to each plot on an annual basis throughout the winter months. These biosolids are anaerobically digested, mechanically dewatered, and lime stabilized, and are not incorporated into the soil following land application.

5) Biosolids are applied at a rate of 21 dry tons/acre.

AGRONOMIC RATE CALCULATIONS – BELTONA LAND RECLAMATION SITE

FORMULA:

Plant Available Nitrogen (PAN) = Available Organic Nitrogen + Inorganic Nitrogen
= [(Organic Nitrogen)(Organic Mineralization Rate)] + [(NH_4)(%NH_4 Retained) + Nitrate]

GIVEN:

- During analysis, NH_4^+ -N is converted to NH_3-N and analytical results are then reported as NH_3-N. This combined analysis does not diminish the quality of the result.
- The TKN, NH_3 and NO_3 results are averages of data available during 2012. All results are reported on a dry-weight basis.

  $TKN_{(average)}$ = 32,417 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 64.8 lb/dry ton
  $NH_{3(average)}$ = 1,076 mg/Kg x 0.002 = 2.2 lb/dry ton
  $NO_{3(average)}$ = 160 mg/Kg x 0.002 = 0.3 lb/dry ton

  Organic Nitrogen = TKN - NH_3 - NO_3 = 64.8 – 2.2 – 0.3 = 62.3 lb N/dry ton

- Calculations for the Beltona site are performed considering anaerobically digested, dewatered, and lime stabilized biosolids.

NITROGEN CREDITS FOR PREVIOUS BIOSOLIDS APPLICATIONS:

- Biosolids that were applied from 2008 through 2011 had an average Organic Nitrogen content of 30,095 mg/kg. These biosolids were applied at an average rate of 22 dry tons per acre. Using Table 1 of the Worksheet:

  Nitrogen Credit for 30,095 mg/kg:
  = 7.8 lb PAN per dry ton (years 2-5) x 22 dry tons per acre
  = 172 lb PAN per acre Nitrogen credit

- Tifton Bermuda/Rye grass nitrogen requirements = 600 lb N/Ac/Yr (based on Agricultural Cooperative Extension Service recommendation of six cuttings of hay each year with 100 lb N/Ac needed for each cutting). **With a Nitrogen Credit of 172 lb/acre, approximately 428 lb N/Ac/year is needed from the current applications of biosolids.**

AGRONOMIC RATE CALCULATIONS – BELTONA LAND RECLAMATION SITE

CALCULATIONS:

Anaerobically Digested, Dewatered, Lime Stabilized, Not Incorporated

$TKN_{(average)}$ = 32,417 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 64.8 lb/dry ton
$NH_{3(average)}$ = 1,076 mg/Kg x 0.002 = 2.2 lb/dry ton
$NO_{3(average)}$ = 160 mg/Kg x 0.002 = 0.3 lb/dry ton

Organic Nitrogen = TKN - NH_3 - NO_3 = 64.8 – 2.2 – 0.3 = 62.3 lb N/dry ton

Organic Nitrogen:
Mineralization Rate (Worksheet, Table 3): Anaerobic Digestion, Dewatered = 20% – 40%

Percent of Organic N available in the first year = 30% (average)

Total Organic Nitrogen available in the first year = 62.3 x 30% = 18.7 lb/dry ton

Ammonium Nitrogen:
% NH_4 Retained (Worksheet, Table 2): Not Incorporated, Lime Stabilized = 10%

Percent of Ammonia retained after application = 10%

Ammonium Nitrogen retained after application = 2.2 lb/dry ton x 10% = 0.2 lb /dry ton

Estimated Plant Available Nitrogen (PAN):
PAN = Available Organic Nitrogen + Inorganic Nitrogen = 18.7 + 0.2 + 0.3 = 19.2 lb N/dt

Agronomic Rate:
428 lb N/Ac/year ÷ 19.2 lb N/dry ton = **22 dry tons/Acre/year**

Biosolids were applied at the Beltona site throughout 2012 at a rate of 21 dry tons per acre. As can be seen from the above calculations, and as required by the 40 CFR Part 503 regulations, the anaerobically digested biosolids are being applied at a rate equal to or less than the agronomic rate for the crops grown.

AGRONOMIC RATE
FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

Summary:
The Flat Top/Bessie Mines Land Reclamation Site is also a former strip mine site located in northwestern Jefferson County. The Environmental Services Department is assisting the property owner in the reclamation of this site through the land application of biosolids. At this site there is currently no soil mass present for growing vegetation, and in order to build soil mass, biosolids are being applied at a rate of 600 lb Nitrogen/Ac/year. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

Agronomic Rate Considerations:

1) There is no additional nitrogen applied to the reclamation site by Jefferson County (no fertilizer or irrigation water) and there is very little to no plant available nitrogen currently present at the site.

2) Approximately 50% of the land applied biosolids are anaerobically digested, followed by either mechanical dewatering or drying beds. The remaining biosolids are aerobically digested, followed by either mechanical dewatering or drying beds. Calculations will be performed considering both biosolids scenarios.

3) Typically, the anaerobically digested biosolids are lime stabilized.

4) Biosolids from all plants are incorporated into the soil within six (6) hours of application.

5) Biosolids applications currently occur on a year-round basis at a rate of 28 dry tons/acre.

AGRONOMIC RATE CALCULATIONS – FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

FORMULA:

Plant Available Nitrogen (PAN) = Available Organic Nitrogen + Inorganic Nitrogen
= [(Organic Nitrogen)(Organic Mineralization Rate)] + [(NH_4)(%NH_4 Retained) + Nitrate]

GIVEN:

- During analysis, NH_4^+ -N is converted to NH_3-N and analytical results are then reported as NH_3-N. This combined analysis does not diminish the quality of the result.

- The TKN, NH_3 and NO_3 results are averages of data available during 2012. All results are reported on a dry-weight basis.

  $TKN_{(average)}$ = 32,417 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 64.8 lb/dry ton
  $NH_{3(average)}$ = 1,076 mg/Kg x 0.002 = 2.2 lb/dry ton
  $NO_{3(average)}$ = 160 mg/Kg x 0.002 = 0.3 lb/dry ton

  Organic Nitrogen = TKN - NH_3 - NO_3 = 64.8 – 2.2 – 0.3 = 62.3 lb N/dry ton

- Being a reclamation site, biosolids are applied at a rate of 600 lb N/Ac/Yr to build soil mass. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

- Calculations will be performed considering both biosolids scenarios: (1) anaerobically digested, dewatered, and lime stabilized, and (2) aerobically digested, mechanically dewatered or drying beds, and incorporated into the soil within six hours of application.

AGRONOMIC RATE CALCULATIONS – FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

CALCULATIONS:

Anaerobically Digested, Dewatered, Lime Stabilized, Incorporated within Six Hours

-and-

Aerobically Digested, Mechanically Dewatered or Drying Beds, Incorporated within Six Hours

$TKN_{(average)}$ = 32,417 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 64.8 lb/dry ton
$NH_{3(average)}$ = 1,076 mg/Kg x 0.002 = 2.2 lb/dry ton
$NO_{3(average)}$ = 160 mg/Kg x 0.002 = 0.3 lb/dry ton

Organic Nitrogen = TKN - NH_3 - NO_3 = 64.8 – 2.2 – 0.3 = 62.3 lb N/dry ton

Organic Nitrogen:
Mineralization Rate (Worksheet, Table 3): Anaerobic Digestion, Dewatered = 20%-40%
Aerobic Digestion = 30% – 45%
Drying Beds = 15%-30%

Percent of Organic N available in the first year = 30% (average)

Total Organic Nitrogen available in the first year = 62.3 x 30% = 18.7 lb/dry ton

Ammonium Nitrogen:
% NH_4 Retained (Worksheet, Table 2): Incorporated (0-2 Days), Dewatered = 60%, Incorporated (0-2 Days), Drying Bed = 100%

Percent of Ammonia retained after application = 100% (worst case)

Ammonium Nitrogen retained after application = 2.2 lb/dry ton x 100% = 2.2 lb /dry ton

Estimated Plant Available Nitrogen (PAN):
PAN = Available Organic Nitrogen + Inorganic Nitrogen = 18.7 + 2.2 + 0.3 = 21.2 lb N/dt

Agronomic Rate:
600 lb N/Ac/year ÷ 21.2 lb N/dry ton = **28 dry tons/Acre/year**

As can be seen from the above calculations, **the current biosolids application rate of 28 dry tons per acre is equal to the calculated Agronomic Rate for the anaerobically digested biosolids.** Therefore, as required by the 40 CFR Part 503 regulations, the anaerobically digested biosolids are being applied at a rate equal to or less than the agronomic rate for the crops grown.

APPENDIX A

AGRONOMIC RATE SUPPORTING DOCUMENTATION

ALABAMA COOPERATIVE **Extension** SYSTEM

Your Experts for Life

Jefferson County Extension Office
2121 Building, Suite 1700
2121 8th Avenue North
Birmingham, AL 35203-2387
Telephone: (205) 325-5342
FAX: (205) 325-5690

November 19, 2003

Mr. David Denard
A-300 Courthouse Annex
716 Richard Arrington Jr. Blvd.
Birmingham, Al 35203

David:

Enclosed is a fact sheet that we based our 600lb/N/ACRE recommendation related to the county's hay production/Bio-solid project.

The reasoning behind the high rate of nitrogen is to maximize forage tonnage which in turn will increase sludge uptake and breakdown.

The yearly fertilization schedule is based on six cuttings using 100lb/N/ac/cutting. The extra cuttings comes from over seeding the Bermudagrass with ryegrass in the fall. The ryegrass can be cut twice, while Bermudagrass is normally cut four times each year.

If you have questions or comments related to this schedule, feel free to give me a call.

Sincerely,

David Hubbard
County Extension Agent

DH/fb

PNW511

Worksheet for Calculating Biosolids Application Rates in Agriculture

By Craig Cogger, Extension Soil Scientist, WSU-Puyallup
and Dan Sullivan, Extension Soil Scientist, Oregon State University

Overview

This bulletin will walk you through the calculations that yield the biosolids agronomic rate. This rate is based on biosolids quality (determined by analytical results), site and crop nitrogen requirements, and regulatory limits for trace element application. In almost all cases, nitrogen controls the biosolids application rate. By calculating the agronomic rate, managers can match the plant-available N supplied by biosolids to crop N needs.

The calculations consist of 6 steps:

1. Collect information on the site and crop, including crop N requirement.
2. Estimate the plant-available N needed from the biosolids application.
3. Collect biosolids nutrient data.
4. Estimate plant-available N per dry ton of biosolids.
5. Calculate the agronomic biosolids application rate on a dry ton basis.
6. Convert the application rate to an "as is" basis.

This bulletin consists of:

- A worksheet with instructions for completing the application rate calculations.
- The same calculations in equation form for those who prefer using equations.
- Tables for calculating trace element loading.

To learn more about the use and management of biosolids as a fertilizer, refer to *Fertilizing with Biosolids*, PNW508, which is the companion to this bulletin.

A Pacific Northwest Extension Publication
Washington • Idaho • Oregon

Worksheet

Step 1. Collect Site Information.

Soil and crop information:

Line No.		Your Information	Example
1.1	Soil series and texture (NRCS soil survey)		Puyallup sandy loam
1.2	Yield goal (grower, agronomist) (units/acre*)		5 tons/acre/yr
1.3	Crop rotation (grower; e.g., wheat/fallow/wheat)		perennial grass
1.4	Plant-available N needed to produce yield goal (fertilizer guide; agronomist) (lb N/acre/yr)		200

Plant-available N provided by other sources:

Line No.		Your Calculation	Example	Units
	Pre-application testing			
1.5	Nitrate-N applied in irrigation water		10	lb N/acre
1.6	Preplant nitrate-N in root zone (east of Cascades)**		—	lb N/acre
	Adjustments to typical soil N mineralization			
1.7	Plowdown of cover or green manure crop**		—	lb N/acre
1.8	Previous biosolids applications (Table 1)		30	lb N/acre
1.9	Previous manure applications		—	lb N/acre
	Grower information			
1.10	N applied at seeding (starter fertilizer)		—	lb N/acre
1.11	**Total plant-available N from other sources** (sum of lines 1.5 through 1.10)		40	lb N/acre

*Yield goals may be expressed as a weight (tons, lb, etc.) or as a volume (bushels).

**Do not list here if these N sources were accounted for in the nitrogen fertilizer recommendation from a university fertilizer guide.

Step 2. Estimate the Amount of Plant-Available N Needed from Biosolids.

Line No.		Your Calculation	Example	Units
2.1	Plant-available N needed to produce yield goal (from line 1.4)		200	lb N/acre
2.2	Plant-available N from other sources (from line 1.11)		40	lb N/acre
2.3	Amount of plant-available N needed from biosolids (line 2.1 – line 2.2)		160	lb N/acre

Step 3. Collect Biosolids Data.

Application Information:

Line No.		Your Information	Example
3.1	Moisture content of biosolids (liquid or solid; see Table 3, pg. 8)		liquid
3.2	Biosolids processing method (see Table 3, pg. 8)		anaerobic
3.3	Method of application (surface or injected)		surface
3.4	Number of days to incorporation of biosolids		no incorporation
3.5	Expected application season		Mar.-Sept.

Laboratory Biosolids Analysis (dry weight basis):

If your biosolids analysis is on an "as is" or wet weight basis, you will need to divide your analysis by the percent solids (line 3.10) and multiply the result by 100 to convert to a dry weight basis.

Line No.		Your Calculation	Example	Units
3.6	Total Kjeldahl N (TKN)*		50,000	mg/kg
3.7	Ammonium N*		10,000	mg/kg
3.8	Nitrate N *, **		not analyzed	mg/kg
3.9	Organic N*** (line 3.6 – line 3.7)		40,000	mg/kg
3.10	Total solids		2.5	percent

*If your analysis is in percent, multiply by 10,000 to convert to mg/kg.

**Nitrate-N analysis required for composted or aerobically-digested biosolids, but not for anaerobically-digested biosolids.

***Organic N = total Kjeldahl N - ammonium N.

Step 4. Estimate Plant-Available N Per Dry Ton of Biosolids.

Convert biosolids N analysis to lb per dry ton:

Line No.		Your Calculation	Example	Units
4.1	Total Kjeldahl N (TKN) (line 3.6 x 0.002)		100	lb N/dry ton
4.2	Ammonium N (line 3.7 x 0.002)		20	lb N/dry ton
4.3	Nitrate N (line 3.8 x 0.002)		not analyzed	lb N/dry ton
4.4	Organic N (line 4.1 – 4.2)		80	lb N/dry ton

Estimate Inorganic N Retained:

4.5	Percent of ammonium-N retained after application (Table 2, pg. 7)		60	percent
4.6	Ammonium-N retained after application (line 4.2 x line 4.5/100)		12	lb N/dry ton
4.7	Calculate biosolids inorganic N retained (line 4.3 + line 4.6)		12	lb N/dry ton

Estimate Organic N Mineralized:

4.8	Percent of organic N that is plant-available in Year 1 (Table 3, pg. 8)		30	percent
4.9	First year plant-available organic N (line 4.4 x line 4.8/100)		24	lb N/dry ton

Plant-available N:

4.10	**Estimated plant-available N** Add available inorganic N and available organic N (line 4.7 + line 4.9)		36	lb N/dry ton

Step 5. Calculate the Agronomic Biosolids Application Rate.

Line No.		Your Calculation	Example	Units
5.1	Amount of plant-available N needed from biosolids (from line 2.3)		160	lb N/acre
5.2	Estimated plant-available N in biosolids (from line 4.10)		36	lb N/dry ton
5.3	Agronomic biosolids application rate (line 5.1/line 5.2)		4.4	dry ton/acre

Step 6. Convert to "As Is" Biosolids Basis.

Desired Units		Your Calculation	Example
Gallons per acre =	(line 5.3/line 3.10) x 24,000		42,240
Acre inches per acre =	(line 5.3/line 3.10) x 0.88		1.55
Wet tons per acre =	(line 5.3/line 3.10) x 100		176

How to Use the Worksheet

Step 1. Collect Site Information.

Soil Series and Surface Soil Texture (Line 1.1)

Find the location on the county NRCS soil survey. Record the series name and surface texture of the predominant soil.

Crop Yield Goal (Line 1.2)

Field records are the best source for crop yield estimates. You can find proven yields for most grain farms from the local Farm Service Agency office. For most other cropping systems, grower records are the only source available. Be sure to note whether the yield records are on an "as is" or dry matter basis. Where field records are not available, you can make first-year estimates for a project using NRCS soil surveys, county production averages, or other local data sources.

A site used repeatedly for biosolids application should have yield data collected each year. Use this accumulated data for determining crop nitrogen requirement. If crop yield data is not kept, you may need to conduct additional monitoring (e.g., post-harvest soil nitrate testing) to be sure biosolids are applied at an agronomic rate.

Yield data is typically not available for grazed pastures because grazing animals consume the crop directly in the field. In these cases omit the yield goal, and go directly to Line 1.4. Estimate plant nitrogen needs from the appropriate pasture fertilizer guide recommendation, based on the level of pasture management.

Crop Rotation (Line 1.3)

Consult with the grower and discuss the range of possible crop rotations. Rotations that include root crops or other crops with a long post-application waiting period are not suitable for Class B biosolids applications.

Plant-Available N Needed to Produce Yield Goal (Line 1.4)

You can estimate plant-available-N needs by referring to university fertilizer guides or consulting a qualified agronomist.

University Fertilizer Guides

Land grant universities (Washington State University, Oregon State University, University of Idaho) publish fertilizer guides that estimate crop nitrogen requirements. Use the fertilizer guide most appropriate for the site and crop. For major crops, guides may cover irrigated or rainfed (dryland) cropping and different geographic areas. Don't use guides produced for irrigated sites when evalu-

ating dryland sites. When appropriate guides do not exist, consult the local Cooperative Extension or Natural Resources Conservation Service office, or a qualified agronomist for assistance.

Nitrogen fertilizer application rates listed in the fertilizer guides are based on field growth trials under the specified climate and cultural conditions. Growth trial results are averaged over a variety of soil types and years. Note that fertilizer guide recommendations are not the same as crop uptake. This is because the fertilizer guides account for N available from mineralization of soil organic matter and the efficiency of N removal by the crop.

The N rate recommended in fertilizer guides assumes average yields, good management practices, and removal of N from the field through crop harvest or grazing. In terms of satisfying crop N needs, plant-available N from biosolids application is considered equal to fertilizer N.

Agronomist Calculations

Because of the general nature of university fertilizer guides, it may be worthwhile to have a qualified agronomist calculate how much plant-available N is needed for a specific field. Always use the same method to calculate the N requirements. You will need to document your reasons for using agronomist calculations instead of the university fertilizer guide.

Plant-available N provided by other sources (Lines 1.5-1.11)

To make sure there isn't too much nitrogen applied to a crop, you must determine how much nitrogen comes from sources other than biosolids and soil organic matter. These sources of N are grouped into three categories in the worksheet:

- Plant-available N estimated by pre-application testing
- Adjustments to typical soil organic N mineralization (usually obtained from an agronomist)
- Information supplied by the grower

N estimated by pre-application testing (Lines 1.5-1.6)

Irrigation Water
Since the amount of nitrate-N in irrigation water varies, it should be determined by water testing. Irrigation water containing 5 mg nitrate-N per liter will contribute 1.1 pounds of nitrogen per acre inch applied; irrigation water containing 10 mg nitrate-N per liter will contribute 2.3 pounds of N per acre inch.

Preplant Nitrate-N in the Root Zone (east of Cascades)
You can estimate the preplant nitrate-N in the root zone by testing the soil in early spring. Sample in one-foot increments to a depth of at least two feet. University of Idaho Cooperative Extension Service Bulletin No. 704, *Soil Sampling*, is a good reference for soil sampling procedures.

Some fertilizer guides use preplant soil nitrate-N when calculating N fertilizer application rates. If you use these guides, don't count soil test nitrate-N in our worksheet. It has already been accounted for in the recommended fertilizer N rate prescribed in the guide.

Adjustments to typical soil N mineralization (Lines 1.7-1.9)

Nitrogen mineralization is the release of nitrogen from organic forms to plant-available inorganic forms (ammonium and nitrate). Soil organic matter supplies plant-available N through mineralization, but this is accounted for in the fertilizer guides. Sites with a history of cover crops, biosolids applications, or manure applications supply more plant-available N than do sites without a history of these inputs, and biosolids recommendations must be adjusted based on this additional supply of N.

Plowdown of Cover or Green Manure Crops

Green manures and cover crops are not removed from the field, but are recycled back into the soil by tillage. You can get an estimate of the N contributed from this plowdown by referring to the university fertilizer guides, or by estimating the yield and nitrogen concentration of the cover crop. Recovery of green manure N by the next crop ranges from 10-50% of the total N added to the soil by the cover crop. Estimates of plant-available N contributed by green manure crops should be made by a qualified agronomist.

Previous Biosolids Applications

Previous biosolids applications contribute to plant-available nitrogen in the years after the initial application. In the worksheet, they are considered as "N from other sources." We estimate that 8, 3, 1 and 1 percent of the organic N originally applied mineralizes in Years 2, 3, 4 and 5 after application. After Year 5, biosolids N is considered part of stable soil organic matter and is not included in calculations.

Table 1. Estimated nitrogen credits for previous biosolids applications at a site.

	Years After Biosolids Application			
	Year 2	Year 3	Years 4 and 5	Cumulative Years 2, 3, 4 and 5
Biosolids Organic N as applied	Percent of Organic N Applied First Year			
	8	3	1	13
mg/kg (dry wt basis)	Plant-available N released, lb N per dry ton			
10000	1.6	0.6	0.2	2.6
20000	3.2	1.2	0.4	5.2
30000	4.8	1.8	0.6	7.8
40000	6.4	2.4	0.8	10.4
50000	8.0	3.0	1.0	13.0
60000	9.6	3.6	1.2	15.6

In using Table 1, consider the following example. Suppose:

- You applied biosolids with an average organic N content of 30,000 mg/kg
- Applications were made the previous 2 years
- The application rate was 4 dry tons per acre

Table 1 gives estimates of nitrogen credits *in terms of the organic N originally applied.* Look up 30,000 mg/kg under Year 2 and Year 3 columns in the table. The table estimates 4.8 lb plant-available N per dry ton for year 2, and 1.8 lb plant-available N for year 3 (two-year credit of 6.6 lb N per dry ton). To calculate the N credit in units of lb/acre, multiply your application rate (4 dry ton/acre) by the N credit per ton (6.6 lb N/dry ton). The N credit is 26.4 lb plant-available N per acre.

Previous Manure Applications
Previous manure applications contribute to plant-available nitrogen in a similar manner to previous biosolids applications. To estimate this contribution, consult an agronomist.

Information supplied by the grower (Line 1.10)

N Applied at Seeding
For best growth, some crops depend on starter fertilizers (N applied at seeding). These fertilizers usually supply N, P and S. Examples are 16-20-0, 10-34-0. Starters are usually applied at rates that supply 10-30 lb N per acre. Enter all of the N supplied by starter fertilizer on line 1.10 in the worksheet.

Step 2. Estimate Plant-Available N Needed from Biosolids.

Next you will estimate the amount of plant-available N the biosolids must provide. This is the difference between the total plant-available N needed to produce the yield goal (line 1.4) and the plant-available N from other sources (line 1.11).

Step 3. Collect Biosolids Data.

To make the calculation, managers will need the following analyses:

- Total Kjeldahl N (TKN)
- Ammonium-N (NH_4-N)
- Nitrate-N (NO_3-N; composted or aerobically digested biosolids only)
- Percent total solids

If your laboratory results are on an "as is" or wet weight basis, you must convert them to a dry weight basis. To convert from an "as-is" to a dry weight basis, divide your analysis by the percent solids in the biosolids and multiply the result by 100.

Total Kjeldahl N includes over 95% of the total nitrogen in biosolids. In using the worksheet, we will assume that total Kjeldahl N equals total N.

Ammonium-N usually makes up over 95% of the total inorganic N in most biosolids. Ammonium-N includes both ammonia (NH_3) and ammonium (NH_4^+). Depending on your laboratory, results for ammonium-N may be expressed as either ammonia-N or ammonium-N.

Nitrate-N analyses also include small amounts of nitrite. Nitrite concentrations are negligible in biosolids. There may be significant amounts of nitrate in aerobically-digested biosolids or in composts. There is little nitrate in anaerobically-digested biosolids; therefore, nitrate analysis is not needed for these materials.

Determine biosolids organic N by subtracting ammonium-N from total Kjeldahl N (line 3.6 - line 3.7). Percent total solids analyses are used to calculate application rates. Biosolids applications are calculated as the dry weight of solids applied per acre (e.g., dry tons per acre).

Step 4. Estimate Plant-Available N Per Dry Ton of Biosolids.

The estimate of plant-available N per dry ton of biosolids includes:

- Some of the ammonium-N
- All of the nitrate-N
- Some of the organic N

Inorganic N Retained (Lines 4.5-4.7)

Ammonium-N (Lines 4.5-4.6)

Under some conditions, ammonium is readily transformed to ammonia and lost as a gas. This gaseous ammonia loss reduces the amount of plant-available N supplied by biosolids. The following section explains the factors used to estimate ammonia-N retained in plant-available form after application.

Biosolids processing
Some types of biosolids processing cause most of the ammonia-N to be lost as ammonia gas or converted to organic forms before application:

- Drying beds
- Alkaline stabilization at pH 12
- Composting

Application method
Ammonia loss occurs only with surface application. Injecting liquid biosolids eliminates ammonia loss, since the injected liquid is not exposed to the air. Surface applications of liquid biosolids lose less ammonia than do dewatered biosolids. For liquid biosolids, the ammonia is less concentrated and is held as NH_4^+ on negatively-charged soil surfaces after the liquid contacts the soil.

Ammonia loss is fastest just after application to the field. As ammonia is lost, the remaining biosolids are acidified—that is, each molecule of NH_3 loss generates one molecule of H^+ (acidity). Acidification gradually slows ammonia loss. Biosolids that remain on the soil surface will eventu-

ally reach a pH near 7, and further ammonia losses will be small. Losses of ammonia after six days on the soil surface are very close to zero.

Days to soil incorporation
Tillage to cover biosolids can reduce ammonia loss by adsorption of ammonium-N onto soil particles.

Table 2 estimates the amount of ammonium-N retained after field application. To use this table, you will need information on biosolids stabilization processes, method of application (surface or injected), and the number of days to soil incorporation.

Table 2. Estimates of ammonium-N retained after biosolids application.

	Surface-applied				Injected
Days to incorporation by tillage	Liquid Biosolids	Dewatered Biosolids	Alkaline-stabilized Biosolids*	Composted or Drying Bed Biosolids	All Biosolids
	Ammonium-N retained, percent of applied				
0 to 2	80	60	10	100	100
3 to 6	70	50	10	100	100
over 6†	60	40	10	100	100

*For alkaline-stabilized biosolids analyzed for ammonium-N before lime addition.
†If biosolids will not be incorporated by tillage, use over 6 days to incorporation.

Nitrate-N (Line 4.3)

We assume 100% availability of biosolids nitrate-N.

Organic N Mineralized (Lines 4.8-4.9)

Biosolids organic N, which includes proteins, amino acids and other organic N compounds, is not available to plants at the time of application. Plant-available N is released from organic N through microbial activity in soil—called mineralization. Mineralization is more rapid in soils that are warm and moist, and is slower in soils that are cold or dry. Biosolids organic N mineralization rates in soil also depend on the treatment plant processes that produced the biosolids.

Use Table 3 to estimate biosolids mineralization rates based on processing. Use the middle of the range presented, unless you have information specific to the site or biosolids that justifies using higher or lower values within the range.

Table 3. First-year mineralization estimates for organic N in biosolids.

Processing	Moisture Content	First-year organic-N mineralization rate
		percent of organic N
Anaerobic digestion	liquid	20–40
Aerobic digestion	liquid	30–45
Aerobic or anaerobic digestion and storage in lagoon > 6 months	liquid	15–30
Anaerobic digestion and dewatering	semi-solid	20–40
Drying bed	solid	15–30
Heat-drying	solid	20–40
Composting	solid	0–20

Step 5. Calculate the Agronomic Biosolids Application Rate.

Perform this calculation using the results of the previous sections, as shown in lines 5.1 through 5.3.

Step 6. Convert Agronomic Biosolids Application Rate to "As Is" Basis.

Use the appropriate conversion factors (given in Table 6) to convert to gallons, acre-inches, or wet tons per acre.

Other considerations for calculations

- **Small acreage sites without a reliable yield history.** Some communities apply biosolids to small acreages managed by "hobby farmers." In many of these cases, there is no reliable yield history for the site, and the goal of management is not to make the highest economic returns. You can be sure of maintaining agronomic use of biosolids nitrogen on these sites by applying at a rate substantially below that estimated for maximum yield.

- **Equipment limitations at low application rates.** At some low-rainfall dryland cropping locations east of the Cascades, the agronomic rate calculated with the worksheet will be lower than can be spread with manure spreaders (usually about 3 dry tons per acre). At these locations, you may be able to apply the dewatered biosolids at the equipment limit, but check with your permitting agency for local requirements.

- **Unavailable soil nitrate (dryland cropping, east of Cascades).** Not all of the nitrate-N determined by testing dryland soils (line 1.6) is available to the crop because chemical extraction of nitrate is more efficient than plant root extraction. This difference becomes significant when soil nitrate concentrations are low (less than 10 mg nitrate N/kg soil) and sampling is done to greater than two feet.

  Recent research has shown that the amount of "unavailable nitrate-N" increases with soil clay content. Use the following formula if you estimate "unavailable nitrate-N" based on soil clay content.

  Unavailable nitrate-N (mg/kg) = percent clay x 0.1

- **Denitrification and immobilization.** Denitrification (the loss of nitrate as gaseous N_2 or N_2O) and immobilization (the loss of nitrate or ammonium by incorporation into organic compounds) can occur following biosolids application. At agricultural sites these losses usually are not included in biosolids loading rate calculations because university fertilizer guides account for average losses due to these processes. Check with your local permitting agency before including denitrification or immobilization losses in the loading rate calculations.

- **Site Specific Inputs.** Biosolids application rates can also be calculated using a more detailed N budget method found in Washington State Department of Ecology publication, *"Managing Nitrogen from Biosolids."* The N budget method allows for more site-specific inputs into the calculation. It will be most valuable when budget components are based on actual site monitoring data. If you do not have detailed site nitrogen data, use the worksheet presented above.

Cumulative Loading of Trace Elements

Under EPA regulations (40 CFR Part 503.13), managers must maintain records on cumulative loading of trace elements *only* when bulk biosolids do not meet EPA Exceptional Quality Standards for trace elements (Table 4).

When required, the steps in tracking trace metals are:

- Obtain biosolids trace element analyses from the wastewater treatment plant database.
- Compute pounds of element per dry ton of biosolids. Multiply mg/kg (dry weight basis) by 0.002.
- Keep records of the amount of biosolids applied to the site each year (in dry tons per acre).
- Compute pounds of element applied per acre. Multiply pounds of element per dry ton by dry tons applied.
- Compare cumulative pounds of element applied with the cumulative loading rate limit (Table 5).

Table 4. Biosolids concentration limits for land application. Source: EPA 40 CFR Part 503.

Element	Symbol	Concentration Limit	
		Exceptional Quality Standard (EPA Table 3)* *mg/kg*	Ceiling Limit (EPA Table 1) *mg/kg*
Arsenic	As	41	75
Cadmium	Cd	39	85
Copper	Cu	1500	4300
Lead	Pb	300	840
Mercury	Hg	17	57
Molybdenum	Mo	**	75
Nickel	Ni	420	420
Selenium	Se	100	100
Zinc	Zn	2800	7500

*EPA Table 3 and Table 1 refer to tables in EPA biosolids rule (40 CFR Part 503).
**Molybdenum Table 3 level is under review by the EPA.

Table 5. Cumulative loading rate limits for bulk biosolids that do not meet EPA-Table 3 criteria and are applied to agricultural land. Source: EPA 40 CFR Part 503.13.

Element	Cumulative Limit (lb/acre)
Arsenic	37
Cadmium	35
Copper	1340
Lead	268
Mercury	15
Molybdenum	*
Nickel	375
Selenium	89
Zinc	2500

*Molybdenum limit is under review by the EPA.

Table 6. Conversion Factors

1%	=	10,000 mg/kg or ppm
	=	20 lb/ton
1 mg/kg	=	1 ppm
		.0001%
		.002 lb/ton
1 wet ton	=	1 dry ton / (percent solids x 0.01)
1 dry ton	=	1 wet ton x (percent solids x 0.01)
1 acre-inch	=	27,000 gallons

The following equations summarize the calculations in the worksheet. You can use them in place of the worksheet. These equations do the same calculation as the worksheet, so you do not have to use both. These equations will give results in dry tons of biosolids per acre. You will still need an additional calculation (Step 6 in the worksheet) to convert to an "as is" basis.

Equations for Calculating Application Rates

$$B_{app} = (N_{need} - N_{other})/B_{pan} \quad [1]$$

$$B_{pan} = [(TN - AN) * M/100 + AN * R/100 + NN] * C \quad [2]$$

$$N_{other} = (0.225N_w * W) + \Sigma(N_{ppi} * 2.8 * D_i) + N_{gm} + N_{bs} + N_{man} + N_{start} \quad [3]$$

Where:

B_{app} is the biosolids application rate in dry tons/acre

N_{need} is the plant-available N needed to produce the crop yield goal in lb/acre

N_{other} is the plant-available N provided by other sources in lb/acre

B_{pan} is plant-available N in the biosolids in lb/dry ton

TN is biosolids total N in mg/kg or percent

AN is biosolids ammonium N in mg/kg or percent

NN is biosolids nitrate N in mg/kg or percent

M is the biosolids organic N mineralization rate in percent (Table 3)

R is the proportion of ammonium N retained in available form in percent (Table 2)

C is the conversion to lb/dry ton for biosolids N. For analyses in mg/kg, C = 0.002; for analyses in percent, C = 20.

N_w is the nitrogen content of irrigation water in mg/kg

W is the irrigation water applied in inches

N_{ppi} is preplant nitrogen in layer i in mg/kg. (Layers must be sampled in 12-inch increments)

D_i is soil bulk density in layer i in g/cm3

N_{gm} is nitrogen from the plowdown of a green manure or cover crop in lb/acre

N_{bs} is nitrogen released from previous biosolids applications in lb/acre (Table 1)

N_{man} is nitrogen released from previous manure applications in lb/acre

N_{start} is nitrogen supplied by starter fertilizer in lb/acre

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APPENDIX B

VECTOR ATTRACTION REDUCTION STATISTICS

VECTOR ATTRACTION REDUCTION STATISTICS

A summary of the total amount of biosolids land applied from each wastewater treatment plant (WWTP) and the typical vector attraction reduction method used for those biosolids is provided in Tables 1 and 2 below.

Table 1

Flat Top/Bessie Mines Land Reclamation Site
Summary of 2012 Vector Attraction Reduction (VAR) Methods

Jefferson County WWTP	**Amount of Biosolids Land Applied (dry tons)**	Vector Attraction Reduction Method
Cahaba River	1,336	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Five Mile Creek	1,522	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Leeds	255	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Trussville	531	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Turkey Creek	219	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Valley Creek	2,336	*Option 6: Addition of Alkaline Material [503.33(b)(6)]
Village Creek	2,108	*Option 6: Addition of Alkaline Material [503.33(b)(6)]
Prudes Creek	0	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Warrior	13	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Total Amount of Biosolids Applied at Flat Top:	8,320 dry tons	50.8% = Option 6, Lime Addition 49.2% = Option 10, Incorporation

* The biosolids from the Valley Creek and Village Creek WWTPs are typically incorporated into the soil after application to the land as well.

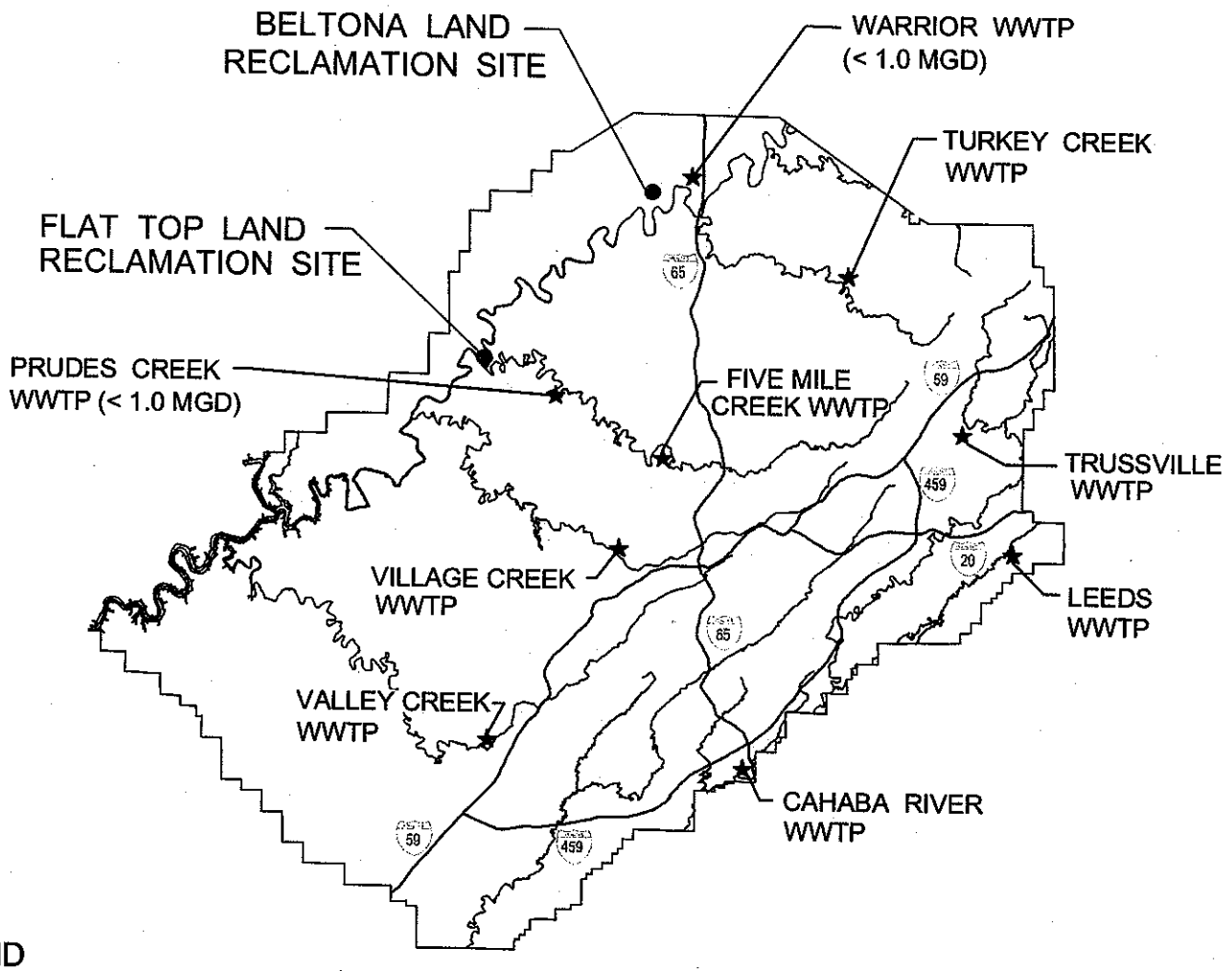
Table 2

Beltona Land Reclamation Site
Summary of 2012 Vector Attraction Reduction (VAR) Methods

Jefferson County WWTP	**Amount of Biosolids Land Applied (dry tons)**	Vector Attraction Reduction Method
Valley Creek	1,860	Option 6: Addition of Alkaline Material [503.33(b)(6)]
Village Creek	1,160	Option 6: Addition of Alkaline Material [503.33(b)(6)]
Total Amount of Biosolids Applied at Beltona:	3,020 dry tons	100% = Option 6, Lime Addition

APPENDIX C

SITE MAPS



LEGEND

★ JEFFERSON COUNTY WWTP

● LAND APPLICATION SITE

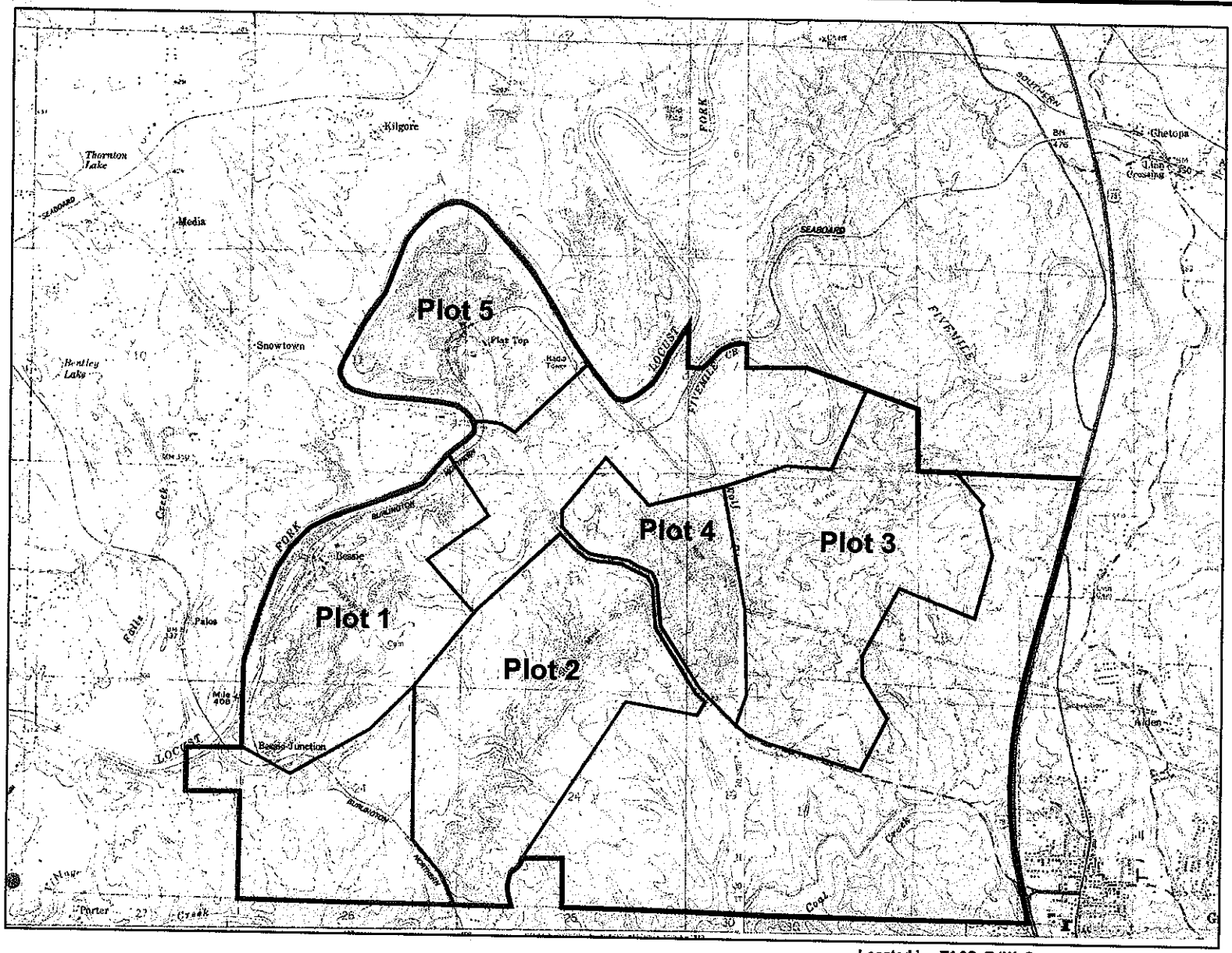
ENGINEERING SERVICE ASSOCIATES, INC.

esa INC

ENVIRONMENTAL SERVICES DEPARTMENT
JEFFERSON COUNTY, ALABAMA

BIOSOLIDS LAND RECLAMATION PROGRAM

FIGURE 1



Located in: T1 6S, R4W, Sec. 7, 17, 18, 19 and 20
T16S, R5W, Sec. 11, 12, 13, 14, 22 and 23

LEGEND

Project Area

Plot Areas

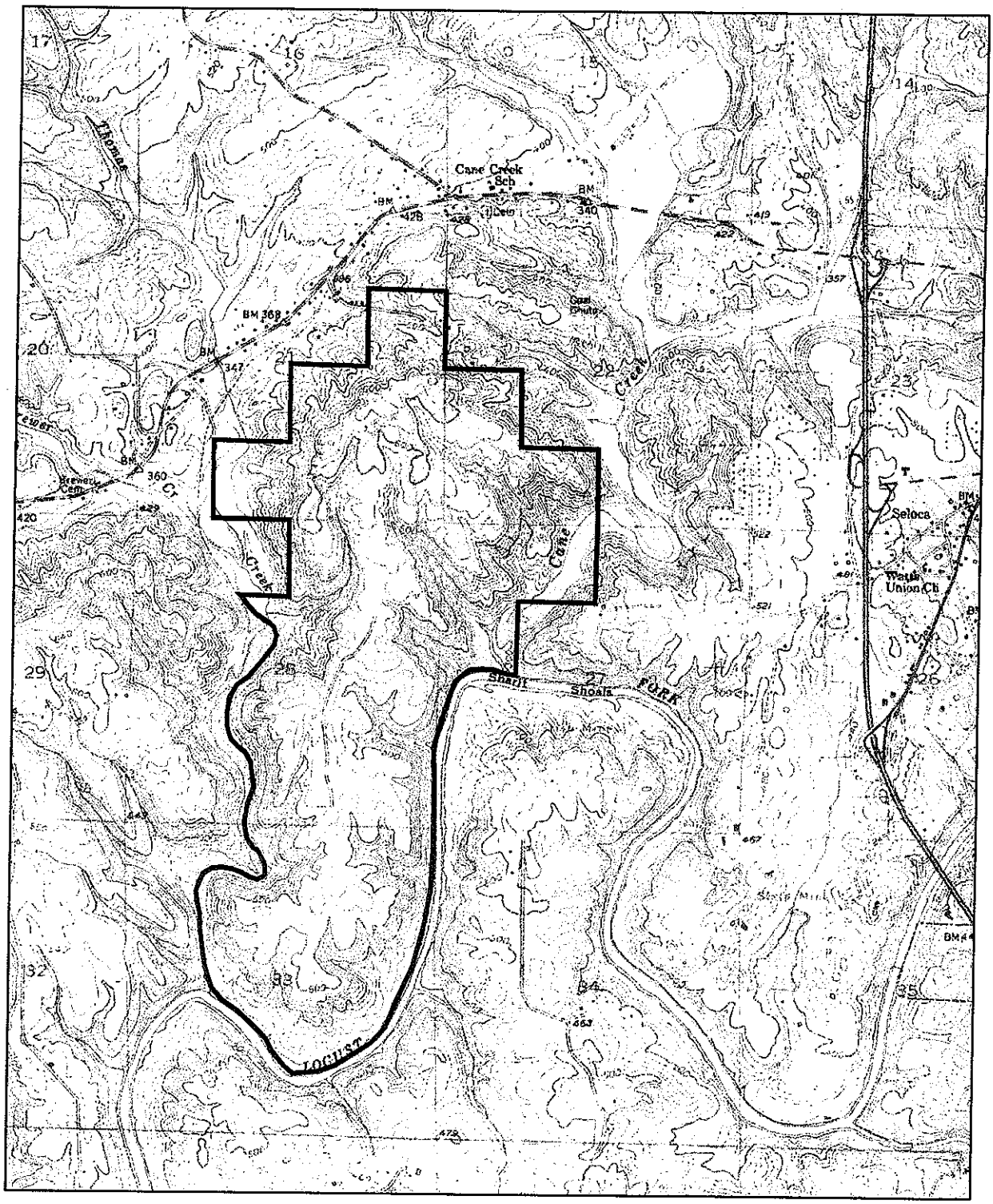
Plot 1 = 568 Acres
Plot 2 = 777 Acres
Plot 3 = 753 Acres
Plot 4 = 289 Acres
Plot 5 = 444 Acres

ENGINEERING SERVICE ASSOCIATES, INC.
esa INC

FLAT TOP BIOSOLIDS LAND RECLAMATION FACILITY

JEFFERSON COUNTY, ALABAMA

FIGURE 2



Located in: T14S, R3W
Sections 21, 22, 27, 28 and 33

LEGEND

Project Area

ENGINEERING SERVICE ASSOCIATES, INC.

esa INC.

BELTONA BIOSOLIDS LAND RECLAMATION FACILITY

JEFFERSON COUNTY, ALABAMA

FIGURE 3

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