Jenkins, Ray (DEQ)

From: Ellinghaus, Matthew B. [mbellinghaus@hanovercounty.gov]
Sent: Thursday, June 21, 2012 2:20 PM
To: Jenkins, Ray (DEQ)
Subject: FW: 060612-061412 - HAN_TO_Metals
Attachments: 20120621124753492.pdf

Ray -

Attached is our additional zinc and hardness data. The results are as expected and should show that no limit is needed at both 7 and 10 mgd.

Let me know if you have any questions.

matt

Matthew Ellinghaus
Assistant Chief of Operations & Maintenance Hanover County Public Utilities
(804) 365-6701 (office)
(804) 365-6705 (fax)

NOTE: New email address effective May 16, 2012: mbellinghaus@hanovercounty.gov

-----Original Message-----
From: Reno, Cindi [mailto:CRENO@HRSD.COM]
Sent: Thursday, June 21, 2012 12:56 PM
To: Greene, Perry; Ellinghaus, Matthew B.
Subject: 060612-061412 - HAN_TO_Metals

HRSD is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services. We have modified our Data Package report to meet the requirements of the VELAP/NELAC standard.

Please do not hesitate to call Danny Barker, TSD Environmental Scientist at (757) 460-4247 or Robin Parnell, CEL Laboratory Manager at (757)
460-4203 if you have any questions.

HRSD
Cleaning wastewater every day for a better Bay.
1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

06/06/12 - 06/14/12 - Hanover County - Totopotomoy Metals

This analytical report contains 11 pages

Perry Greene - Hanover County
Utility Supervisor
9015 Pole Green Park Lane
Mechanicsville, VA 23116
pdgreene@co.hanover.va.us

Matt Ellinghaus
mbellinghaus@co.hanover.va.us

Date Sent: 06/21/12

HRSD CEL, Central Environmental Laboratory is VELAP/NELAC accredited by DCLS, the Division of Consolidated Laboratory Services.

VA Laboratory ID#: 460011
Effective Date: June 15, 2012
Expiration Date: June 14, 2013
Certificate # 1612

Analytical test results meet all requirements of VELAP/NELAC unless otherwise noted under the analysis.

Test results relate only to the sample tested. Clients should be aware that a critical step in chemical or microbiological analysis is the collection of the sample.

This report may not be reproduced, except in full, without written approval from HRSD.

If you have any questions concerning this report, please do not hesitate to contact
Danny Barker, TSD Environmental Scientist at (757) 460-4247
dbarker@hrsd.com
Robin Parnell, CEL Laboratory Manager at (757) 460-4203.
rparnell@hrsd.com
Cindi Reno, CEL Administrative Assistant at (757) 460-4205.
creno@hrsd.com

HRSD
Cleaning wastewater every day for a better Bay.
1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Hanover County - Totopotomoy WWTP
Customer Sample ID: Field Blank
Project Code: HAN_TO
Sample Point: FB

Analyte	Method	Sample Date	Unit	Result	Report Limit	Analyst	Analysis Date	Analysis Time
Dissolved Zinc	EPA 200.8	06/06/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:33
Dissolved Zinc	EPA 200.8	06/07/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:29
Dissolved Zinc	EPA 200.8	06/08/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:25
Dissolved Zinc	EPA 200.8	06/11/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12;21
Dissolved Zinc	EPA 200.8	06/12/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:16
Dissolved Zinc	EPA 200.8	06/13/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:12
Dissolved Zinc	EPA 200.8	06/14/12	ug/L	<1.0	1.0	KWILLI	06/19/12	12:08

Notes

Report Limit is lowest concentration at which quantitation is demonstrated.

Authorization: Robin Parnell **Date:** 6/21/12
Lab Manager / QA Manager

HRSD
Cleaning wastewater every day for a better Bay.
1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Project: Hanover County - Totopotomoy WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_TO
Sample Point: FNE

Analyte	Method	Sample Date	Unit	Result	Report Limit	Analyst	Analysis Date	Analysis Time
Dissolved Zinc	EPA 200.8	06/06/12	ug/L	32.3	1.0	KWILLI	06/19/12	13:26
Dissolved Zinc	EPA 200.8	06/07/12	ug/L	32.9	1.0	KWILLI	06/19/12	13:22
Dissolved Zinc	EPA 200.8	06/08/12	ug/L	32.3	1.0	KWILLI	06/19/12	13:10
Dissolved Zinc	EPA 200.8	06/11/12	ug/L	30.2	1.0	KWILLI	06/19/12	13:06
Dissolved Zinc	EPA 200.8	06/12/12	ug/L	27.8	1.0	KWILLI	06/19/12	13:02
Dissolved Zinc	EPA 200.8	06/13/12	ug/L	32.7	1.0	KWILLI	06/19/12	12:57
Dissolved Zinc	EPA 200.8	06/14/12	ug/L	30.2	1.0	KWILLI	06/19/12	12:37
Hardness (as $CaCO_3$)	SM2340B	06/06/12	mg eq $CaCO_3$/L	83.8	1.2	SWILLI	06/20/12	14:03
Hardness (as $CaCO_3$)	SM2340B	06/07/12	mg eq $CaCO_3$/L	76.7	1.2	SWILLI	06/20/12	14:06
Hardness (as $CaCO_3$)	SM2340B	06/08/12	mg eq $CaCO_3$/L	77.9	1.2	SWILLI	06/20/12	14:09
Hardness (as $CaCO_3$)	SM2340B	06/11/12	mg eq $CaCO_3$/L	80.7	1.2	SWILLI	06/20/12	14:12
Hardness (as $CaCO_3$)	SM2340B	06/12/12	mg eq $CaCO_3$/L	83.7	1.2	SWILLI	06/20/12	14:21
Hardness (as $CaCO_3$)	SM2340B	06/13/12	mg eq $CaCO_3$/L	86.8	1.2	SWILLI	06/20/12	14:24
Hardness (as $CaCO_3$)	SM2340B	06/14/12	mg eq $CaCO_3$/L	85.8	1.2	SWILLI	06/20/12	14:27

Notes
Report Limit is lowest concentration at which quantitation is demonstrated.

Authorization: Robin Parnell **Date:** 6/21/12
Lab Manager / QA Manager

HRSD
Cleaning wastewater every day for a better Bay.
1432 Air Rail Avenue, Virginia Beach, VA 23455-3002 • 757.460.4205 • Fax: 757.460.6586 • www.hrsd.com

CENTRAL ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REPORT
Level 1

Project:	**Hanover County - Totopotomoy WWTP**
Project Code:	**HAN_TO**
Sample Point:	**FB; FNE**
Sample Date:	**Various June 2012**

Analytical Run Information	**Zn**
Method	**200.8**
Units	**ug/L**
Limit of Detection (LOD)	0.24
Limit of Quantitation (LOQ)	1.0
Method Blank (MB)	<0.24

Dissolved Metals	**Zn**
Sample ID: 061412 HAN_TO FNE	
Matrix Spike Conc.	100.0
MS Percent Recovery	94%
MSD Percent Recovery	90%
MS/MSD RPD	3
Sample ID: 060812 HAN_TO FNE	
Matrix Spike Conc.	100.0
MS Percent Recovery	94%
MSD Percent Recovery	96%
MS/MSD RPD	2

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference

Validated By: Lidsey

Date: 6/21/12

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project In Lims? Yes ____ No ✓

CUSTOMER SAMPLE ID	HRSD Use Only PROJECT CODE	HRSD Use Only SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One MATRIX	Circle One SAMPLE TYPE	TOTAL METALS (6)	DISSOLVED METALS (6)									HRSD Use Only Presv'd Checked	HRSD Use Only CONT. COUNT
	HAN_TO	FB	6/6/12	11:49	LG	L	C		1 ✓									✓	1
	HAN_TO	FNE	6/6/12	11:49	LG	L	C	1 ✓	1 ✓									✓	2

COMMENTS: relinquished to cooler 6/6/12 LG

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature	Lauren Turner	Date/Time 6/6/12 @ 1554
Received by / Signature	Lauren Turner	Date/Time 06/06/12 @ 1554
Relinquished by / Signature	Lauren Turner	Date/Time 06/07/12 @ 1000
Received by / Signature	[illegible]	Date/Time 6/7/12 1002
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time
Relinquished by / Signature		Date/Time
Received by / Signature		Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int (G)

*Preservatives

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int [illegible]

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6588

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes X No

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (6)	DISSOLVED METALS (56)									HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
	HAN_TO	FB	6/7/12	1216	JR	L	C		1 ✓										
	HAN_TO	FNE	6/7/12	1216	JR	L	C	1 ✓	1 ✓									✓	1 2

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature	Date/Time 6/8/12 @0900	
Received by / Signature	Date/Time 6/8/12 0900	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

Temp. Requirement
Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.
Yes N/A No
Int JR

*Preservatives
- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (Vi) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int GH

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes ____ No X

CUSTOMER SAMPLE ID	HRSD Use Only PROJECT CODE	HRSD Use Only SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One MATRIX	Circle One SAMPLE TYPE	TOTAL METALS (6)	DISSOLVED METALS (6)									HRSD Use Only Presv'd Checked	HRSD Use Only CONT. COUNT
	HAN_TO	FB	6/8/12	1332	JR	L	C		1									✓	1
	HAN_TO	FNE	6/8/12	1332	JR	L	C	1	1									✓	2

COMMENTS: 4 Stored in staging area over the weekend - JR

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature	Date/Time 6/11/12 @ 0736	
Received by / Signature	Date/Time 6/11/12 0736	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

Temp. Requirement: Where required, submitted samples were transported in coolers maintained at ≤ 6 °C. Yes N/A No____ Int JR

*Preservatives
- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN⁻ (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_2S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No____ Int ____

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes X No

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (5)	DISSOLVED METALS (5F)									HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
	HAN_TO	FB	6/11/12	1000	JR	L	C		1									✓	✓
	HAN_TO	FNE	6/11/12	1000	JR	L	C	1	1									✓	✓

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature: Jennifer Roth	Date/Time: 6/11/12 @1345
Received by / Signature: [signature]	Date/Time: 6/11/12 1345
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes N/A No ____

Int JC

*Preservatives

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_2S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int [signature]

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project In Lims? Yes X No

CUSTOMER SAMPLE ID	HRSD Use Only PROJECT CODE	HRSD Use Only SAMPLE POINT	DATE	TIME	SAMPLED BY	MATRIX (Circle One)	SAMPLE TYPE (Circle One)	TOTAL METALS (6)	DISSOLVED METALS (6S)									HRSD Use Only Presv'd Checked	HRSD Use Only CONT. COUNT
	HAN_TO	FB	6/12/12	1107	JR	L	C		1									✓	1
	HAN_TO	FNE	6/12/12	1107	JR	L	C	1	1									✓	2

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature: Jennifer Scott	Date/Time 6/12/12 1450
Received by / Signature: [signature]	Date/Time 6/12/12 1450
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time

Temp. Requirement
Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.
Yes N/A No ____
Int JR

*Preservatives
*Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
*O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
CN^- (pH>12 - NaOH) & store ≤ 6 °C
*Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
*Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
*COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
*TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
*BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
*NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
*Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int [illegible]

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project In Lims? Yes ____ No ____

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	TOTAL METALS (6)	DISSOLVED METALS (5)									HRSD Use Only: Presv'd Checked	HRSD Use Only: CONT. COUNT
	HAN_TO	FB	061312	1153	MW	L	C		1 ✓									✓	1
	HAN_TO	FNE	061312	1153	MW	L	C	1 ✓	✓									✓	2

COMMENTS:

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature	Date/Time 061312 1530
Received by / Signature	Date/Time 6/13/12 1530
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time
Relinquished by / Signature	Date/Time
Received by / Signature	Date/Time

Temp. Requirement

Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.

Yes ✓ No ____

Int MW

***Preservatives**

- *Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
- *O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
- CN^- (pH>12 - NaOH) & store ≤ 6 °C
- *Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
- *Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
- *COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
- *TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
- *BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
- *NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
- *Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ____ Int GM

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

HRSD
Cleaning wastewater every day for a better Bay.

CENTRAL ENVIRONMENTAL LABORATORY
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover County_Totopotomoy

ANALYSES REQUESTED, CGN & NUMBER OF CONTAINERS

Project in Lims? Yes ___ No X

CUSTOMER SAMPLE ID	HRSD Use Only PROJECT CODE	HRSD Use Only SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One MATRIX	Circle One SAMPLE TYPE	TOTAL METALS (6)	DISSOLVED METALS (56)									HRSD Use Only Presv'd Checked	HRSD Use Only CONT. COUNT
	HAN_TO	FB	6/14/12	1213	JR	L	C		1									✓	1
	HAN_TO	FNE	6/14/12	1213	JR	L	C	1	1									✓	2

COMMENTS: * Stored in TSD staging area - JR

For Ground Water Use Only
Temp. Blank 1 - °C
Temp. Blank 2 - °C

Relinquished by / Signature	Date/Time 6/14/12 1213	
Received by / Signature	Date/Time 6/15/12 1332	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

Temp. Requirement
Where required, submitted samples were transported in coolers maintained at ≤ 6 °C.
Yes N/A No ___
Int JR

*Preservatives
*Hg, Metals (pH<2 - HNO3) (Clean metals check in section)
*O&G (pH<2 - HCl, check in section) & store ≤ 6 °C
CN^- (pH>12 - NaOH) & store ≤ 6 °C
*Sulfide (pH>9 - NaOH+ZnAc) & store ≤ 6 °C
*Micro ($Na_3S_2O_3$ + EDTA) & store < 10 °C
*COD, NUT, Phenols (pH<2 - H_2SO_4) & store ≤ 6 °C
*TOC (pH<2 - H_3PO_4) & store ≤ 6 °C
*BOD, TSS, TVSS, Turbidity, Surfactant, Sulfate store ≤ 6 °C
*NUT Non Acidified, Conductivity, Organics store ≤ 6 °C
*Cr (VI) (pH 9.3 - 9.7 - $(NH_4)_2SO_4$) & store ≤ 6 °C

All sample(s) met proper *preservation requirements. Yes ✓ No ___ Int JR

Sample Type: C=Composite, G=Grab Matrix: L= Liquid , S = Solid CGN: Container Group Number

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

FIELD RECORD (S)

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / (N)

   If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.525 MGD
   B. Expected Plant flow for the next 24 hours: 2.5 MGD

3. List the last three days of Final Effluent TSS with the most recent last: 2.2 5/27, 4.8 5/20, 2.0 5/13 (mg/L)

4. Contact Closure: (Expected Flow / 1000 / 40) 62 Pulses per sample.

5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired Volume/40) (6000)
   Final Effluent Start Time / Date: 1149 @ 6/5/12
   FB Start Time / Date: 1149 @ 6/5/12

The above information has been completed prior to the beginning of the sampling event. Int. JL

Sampling personnel: J. Reitz, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 2.4 mg/L 6/4/12
3. Plant flow for the sampling period 2.5 mg/L
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 42
   FB: 42
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 11:49 @ 6/6/12
   FB End Time / Date: 11:49 @ 6/6/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A
   FNE VOA: N/A
   Cyanide: ✓
   Phenol: ✓
   Oil & Grease: _____

Sampling personnel: L Grimmer, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Samples split in Toto Laboratory (G)

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / (N)

   If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.5 MGD
   B. Expected Plant flow for the next 24 hours: 2.5 MGD

3. List the last three days of Final Effluent TSS with the most recent last: 2.4 once/week on Mondays 2.3 week prior (mg/L)

4. Contact Closure: (Expected Flow / 1000 /40) 62 Pulses per sample.

5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/40) 6000
   Final Effluent Start Time / Date: 12:16 @ 6/6/12
   FB Start Time / Date: 12:16 @ 6/6/12

The above information has been completed prior to the beginning of the sampling event. Int. (LG)

Sampling personnel: L Grimmer, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: N/A
3. Plant flow for the sampling period ~~2.443~~ ~~2.343~~ 2.443 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 43
   FB: 43
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1216 - 6/7/12
   FB End Time / Date: 1216 - 6/7/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A
   FNE VOA: N/A
   Cyanide: ↓
   Phenol: ↓
   Oil & Grease: ↓

Sampling personnel: J Reitz, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Used clean metal trailer to pour off samples - JR

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / N

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.520 MGD
   B. Expected Plant flow for the next 24 hours: 2.5 MGD
3. List the last three days of Final Effluent TSS with the most recent last: 2.4 6/4 (mg/L)
4. Contact Closure: (Expected Flow / 1000 / 40) 62 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/)
   Final Effluent Start Time / Date: 1332 @ 6/7/12
   FB Start Time / Date: 1332 @ 6/7/12

The above information has been completed prior to the beginning of the sampling event. Int: JR

Sampling personnel: J. Reitz, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? Y / N
2. Final Effluent TSS for the sampling period: N/A
3. Plant flow for the sampling period ~~2.443~~ JR 2.343 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 41
   FB: 41
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1332 6/8/12
   FB End Time / Date: 1332 6/8/12
6. Is Temperature in collection container at the end of sampling <6° C? Y / N
7. Are sample volumes equal in all composite containers? Y / N
8. Grab times and dates:
   FB VOA: N/A
   Cyanide: N/A
   Oil & Grease: N/A
   FNE VOA: N/A
   Phenol: N/A

Sampling personnel: J. Reitz, C. White, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / N

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.491 MGD
   B. Expected Plant flow for the next 24 hours: 2.4 MGD
3. List the last three days of Final Effluent TSS with the most recent last: 2.4 6/4 (mg/L) _____
4. Contact Closure: (Expected Flow / 1000 /40) 60 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/)
   Final Effluent Start Time / Date: 1000 @ 6/10/12
   FB Start Time / Date: 1000 @ 6/10/12

The above information has been completed prior to the beginning of the sampling event. Int. N/A

Sampling personnel: Jackie at Toto, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: 1.4 mg/L
3. Plant flow for the sampling period 2.320 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 42
   FB: 42
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1000 @ 6/11/12
   FB End Time / Date: 1000 @ 6/11/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A
   Cyanide: N/A
   Oil & Grease: _____
   FNE VOA: N/A
   Phenol: N/A

Sampling personnel: J. Reitz, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Jackie at Toto Dushed start on Sunday 6/10/12 @ 10:00 AM. All tubing, containers, etc. were changed on Friday 6/8/12 in preparation.

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / N

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.412 MGD
   B. Expected Plant flow for the next 24 hours: 2.4
3. List the last three days of Final Effluent TSS with the most recent last: 2.4 6/4 1.4 6/10 (mg/L)
4. Contact Closure: (Expected Flow / 1000 / 40) 60 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/)
   Final Effluent Start Time / Date: 1107 6/11/12
   FB Start Time / Date: 1107 6/11/12

The above information has been completed prior to the beginning of the sampling event. Int. JR

Sampling personnel: J. Reitz, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: N/A
3. Plant flow for the sampling period 2.435 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 43
   FB: 43
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1107 6/12/12
   FB End Time / Date: 1107 6/12/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A
   FNE VOA: N/A
   Cyanide: N/A
   Phenol: N/A
   Oil & Grease: N/A

Sampling personnel: J. Reitz, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y / N

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.402 MGD
   B. Expected Plant flow for the next 24 hours: 2.4 MGD
3. List the last three days of Final Effluent TSS with the most recent last: 2.4 ul4 1.4 ul10 (mg/L)
4. Contact Closure: (Expected Flow / 1000 / 40) 60 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/)
   Final Effluent Start Time / Date: 1153 6/12/12
   FB Start Time / Date: 1153 6/12/12

The above information has been completed prior to the beginning of the sampling event. Int. JR

Sampling personnel: J. Reitz, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: N/A
3. Plant flow for the sampling period 2.44 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 43
   FB: 43
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1153 / 06/13/12
   FB End Time / Date: 1153 / 06/13/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A FNE VOA: N/A
   Cyanide: N/A Phenol: N/A
   Oil & Grease: N/A

Sampling personnel: M. Wiggins, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results:

Totopotomoy Treatment Plant Field Sheet

Information To Be Checked Before The Start of Each Sampling Event

1. Does the Final Effluent have any abnormal characteristics (odor, color)? Y (N)

If the answer to the above questions is NO proceed to the next section. Please contact a supervisor if the answer is YES.

2. A. Average Plant flow for the last five days: 2.397 MGD
   B. Expected Plant flow for the next 24 hours: ~2.4 MGD
3. List the last three days of Final Effluent TSS with the most recent last: 1.4 ulto (mg/L)
4. Contact Closure: (Expected Flow / 1000 / 40) 60 Pulses per sample.
5. Samplers for Final Effluent & FB calibrated at 150 ml per sample. (Desired volume/ 40)
   Final Effluent Start Time / Date: 1213 / 061312
   FB Start Time / Date: 1213 / 061312

The above information has been completed prior to the beginning of the sampling event. Int. MW

Sampling personnel: M. Wiggins, _____, _____

Information Check At The End Of The Sampling Event

1. Are all lids, compression assemblies and caps secure? (Y) / N
2. Final Effluent TSS for the sampling period: N/A
3. Plant flow for the sampling period 2.339 MGD
4. Number of samples collected in each Final Effluent & FB composite container:
   Final Effluent: 42
   FB: 42
   TBT: N/A
5. Final Effluent & FB composite end time and date:
   Final Effluent End Time / Date: 1213 6/14/12
   FB End Time / Date: 1213 6/14/12
6. Is Temperature in collection container at the end of sampling <6° C? (Y) / N
7. Are sample volumes equal in all composite containers? (Y) / N
8. Grab times and dates:
   FB VOA: N/A
   FNE VOA: N/A
   Cyanide: N/A
   Phenol: N/A
   Oil & Grease: N/A

Sampling personnel: J. Reitz, _____, _____

Please contact project lead with any problems incurred during the sampling event.

Record any other information that could affect sample results: