

**CITRUS COUNTY CENTRAL LANDFILL
COMPLIANCE MONITORING REPORT
SECOND SEMIANNUAL 2017 ADDENDUM**

FDEP Permit No. 21375-018-SO/01

WACS Facility ID: 39859

FDEP Due Date: October 24, 2017

Prepared by:

JONES EDMUNDS & ASSOCIATES, INC.

730 NE Waldo Road

Gainesville, Florida 32641

Professional Engineering Certificate of Authorization #1841

Professional Geology Certificate of Authorization #133

September 2017



Troy D. Hays, PG

Florida License # 2679



September 26, 2017

Mr. Steve Tafuni
Florida Department of Environmental Protection – Southwest District
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926

RE: Citrus County Central Landfill
Compliance Monitoring Report – Second Semiannual 2017 Addendum (17S2A)
Permit No. 21375-025-SO-01
WACS Facility ID: 39859
Jones Edmunds Project No.: 03860-056-01

Dear Mr. Tafuni,


This is an addendum to the Second Semiannual 2017 Compliance Monitoring Report previously submitted to FDEP on September 25, 2017. On July 19, 2017 during the original Second Semiannual 2017 sampling event, assessment well MW-19 was reported as damaged (leak in the dedicated sample tubing) and was not sampled. The well was repaired on August 10, 2017 and was sampled on August 17, 2017. Analytical results for MW-19 were received from the laboratory on August 31, 2017.

Benzene, Vinyl Chloride, and pH were reported outside groundwater standards. A summary table of those results is included in Attachment 1. Attachment 2 presents a summary table of all groundwater parameters reported at or above the laboratory detection limit during this sampling event and a 5-year all-data summary table. Results for MW-19 are consistent with historical data. Trend analysis for MW-19 was included in the Second Semiannual 2017 Compliance Report.

Parameter Monitoring Report forms are presented in Attachment 3. The original Laboratory Data including Chain of Custody forms and the Field Data Sheets are included in Attachments 4 and 5, respectively.

If you have any questions regarding this report, please contact me at (352) 377-5821.

Sincerely,


Elizabeth D Kennelley
Project Manager

M:\EnvDocs\Citrus County\2017\17S2 Addendum\17S2A_LET.doc

Attachment 1: Analysis Results Compared To Groundwater Standards
Attachment 2: Groundwater Parameters At or Above the Laboratory Detection Limit
Attachment 3: Parameter Monitoring Report Forms
Attachment 4: Original Laboratory Data Including Chain-Of-Custody Forms
Attachment 5: Field Data Sheets

xc: Henry Norris, Citrus County
Ray Oates, PG, Citrus County



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(31), F.A.C.

Form Title: Water Quality Monitoring Certification

Effective Date: January 6, 2010

Incorporated in Rule 62-701.510(9), F.A.C.

WATER QUALITY MONITORING CERTIFICATION

PART I GENERAL INFORMATION

(1) Facility Name Citrus County Central Landfill
Address 230 W Gulf to Lake Hwy
City Lecanto, FL Zip 34461 County Citrus
Telephone Number (352) 527-7679
(2) WACS Facility ID 39859
(3) DEP Permit Number 21375-025-SO-01
(4) Authorized Representative's Name Troy D. Hays, PG Title Senior Manager
Address 730 N.E. Waldo Road
City Gainesville, FL Zip 32641-5699 County Alachua
Telephone Number (352) 377-5821
Email address (if available) thays@jonesedmunds.com

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

9/25/17 (Date) [Signature] (Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Jones Edmunds and Associates, Inc.
Analytical Lab NELAC / HRS Certification # E83182
Lab Name Environmental Conservation Laboratories, Inc.
Address 10775 Central Port Drive, Orlando, FL 32824
Phone Number (407) 826-5314 (David Camacho, Project Manager)
Email address (if available) dcamacho@encolabs.com

ATTACHMENT 1

ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS

**ANALYSIS RESULTS COMPARED TO GROUNDWATER
STANDARDS AND/OR GUIDANCE CONCENTRATIONS
CITRUS COUNTY CENTRAL LANDFILL
2017 SECOND SEMIANNUAL ADDENDUM**

PARAMETER		pH (FIELD)	BENZENE	VINYL CHLORIDE
STANDARD		6.5-8.5 S.U.**	1 µg/L*	1 µg/L*
Assessment				
MW-19	8/17/2017	5.17	1.8	2.1

LEGEND

* =Primary Drinking Water Standard
 ** =Secondary Drinking Water Standard
 *** =Chapter 62-777 Groundwater Cleanup Target Levels (GCTL)
 @ =Analysis Result is at Groundwater Standard
 - =Analysis Result is not at or outside Groundwater Standard
 NS =Not Sampled
 NM =Not Measured

Note:

This table displays analysis results which were reported at or outside Groundwater Standards.
 Analysis results notated with "@" indicate that the analysis result was reported at the Groundwater Standard.
 Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Groundwater Standard are not displayed in this table.

ATTACHMENT 2

**GROUNDWATER PARAMETERS AT OR ABOVE
THE LABORATORY DETECTION LIMIT**

5-YEAR ALL DATA TABLE

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
CITRUS COUNTY CENTRAL LANDFILL
2017 SECOND SEMIANNUAL ADDENDUM

PARAMETER		CONDUCTIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	GROUND- WATER ELEVATION	pH (FIELD)	REDOX POTENTIAL	TEMPER- ATURE (FIELD)	TURBIDITY (FIELD)	CHLORIDE	BENZENE	DICHLORO- METHANE	VINYL CHLORIDE
STANDARD UNITS		(1) uS/cm	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) mV	(1) deg C	(1) NTU	250 mg/L** mg/L	1 µg/L* µg/L	5 µg/L* µg/L	1 µg/L* µg/L
Assessment												
MW-19	8/17/2017	133	0.20	5.86	5.17	45.2	22.6	2.60	5.4	1.8	3.4 I	2.1
QAQC												
TRIP	8/17/2017	-	-	-	-	-	-	-	-	<0.71	<2.0	<0.71

LEGEND		
*	=Primary Drinking Water Standard	I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J = Estimated value
***	=Chapter 62-777 Groundwater Cleanup Target Levels (GCTL)	V = Analyte found in associated method blank
(1)	=No Standard	Q = Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed	

ALL DATA
CITRUS COUNTY CENTRAL LANDFILL
JANUARY 2013 THROUGH AUGUST 2017

PARAMETER		CONDUCTIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	GROUND- WATER ELEVATION	pH (FIELD)	REDOX POTENTIAL	TEMPER- ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	TOTAL DISSOLVED SOLIDS	IRON	SODIUM	BENZENE	DICHLORO- METHANE
STANDARD UNITS		(1) uS/cm	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) mV	(1) deg C	(1) NTU	2.8 mg/L*** mg/L	250 mg/L** mg/L	500 mg/L** mg/L	300 µg/L** µg/L	160 mg/L* mg/L	1 µg/L* µg/L	5 µg/L* µg/L
Assessment															
MW-19	01/23/2013	71	0.55	7.54	5.69	-	23	3.45	-	-	-	-	-	<0.5	<4
MW-19	07/17/2013	69	1.41	6.7	5.76	-	23.9	3.52	-	-	-	-	-	<0.5	<4
MW-19	01/22/2014	74	0.81	6.69	6.11	-	22.7	1.91	-	-	-	-	-	<0.5	<4
MW-19	07/22/2014	67	0.53	6.62	5.59	-	23.8	3.9	-	-	-	-	-	0.65 I	4.2 I
MW-19	01/21/2015	67	0.82	7.26	5.54	-	23.3	2.12	-	-	-	-	-	1	7.3
MW-19	02/17/2015	73	0.6	7.37	5.42	-	22.9	0.78	-	-	-	-	-	-	8.7
MW-19	07/23/2015	100	0.38	6.18	5.63	-	23.8	3.83	-	-	-	-	-	0.74 I	<4
MW-19	03/23/2016	84	0.66	7.29	5.40	25.3	23.1	2.96	-	-	-	-	-	2.2	7.1
MW-19	07/26/2016	123	0.37	6.41	5.44	40	24.1	4.43	-	-	-	-	-	2.2	<5
MW-19	08/17/2016	104	0.15	6.64	5.27	52.7	24.3	3.8	6.6	5.5	40	1100	3.4	-	-
MW-19	01/25/2017	118	0.33	6.52	5.74	120.6	23.0	5.99	<0.0073	4.9 I	-	-	-	2.1	2.8 I
MW-19	08/17/2017	133	0.20	5.86	5.17	45.2	22.6	2.60	<0.0073	5.4	-	-	-	1.8	3.4 I

LEGEND		
*	=Primary Drinking Water Standard	I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J = Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V = Analyte found in associated method blank
(1)	=No Standard	Q = Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed	

ALL DATA
CITRUS COUNTY CENTRAL LANDFILL
JANUARY 2013 THROUGH AUGUST 2017

PARAMETER		VINYL CHLORIDE
STANDARD		1 µg/L*
UNITS		µg/L
Assessment		
MW-19	01/23/2013	0.61 I
MW-19	07/17/2013	<0.5
MW-19	01/22/2014	<0.5
MW-19	07/22/2014	0.65 I
MW-19	01/21/2015	1.2
MW-19	02/17/2015	-
MW-19	07/23/2015	<0.5
MW-19	03/23/2016	1.9
MW-19	07/26/2016	2.2
MW-19	08/17/2016	-
MW-19	01/25/2017	2.0
MW-19	08/17/2017	2.1

LEGEND		
*	=Primary Drinking Water Standard	I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J = Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V = Analyte found in associated method blank
(1)	=No Standard	Q = Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed	

ATTACHMENT 3

PARAMETER MONITORING REPORT FORMS

Citrus County Central Landfill Parameter Monitoring Report

PART III Analytical Results

Facility WACS #: SWD/09/39859

Test Site ID #: 22710

Well Name: MW-19

Classification of Ground Water: GII

Ground Water Elevation (NGVD): 5.86

Sampling Date/Time: 8/17/2017 12:06:00 PM

Report Period: 2017 SECOND SEMIANNUAL ADD

Well Purged: Yes

Well Type: ☐ Background ☐ Intermediate
☐ Compliance ☐ Water Supply
☐ Detection ☐ Piezometer
☒ Assessment ☐ Leachate
☐ Other ☐ Surface Water

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	DETECTION LIMIT/UNITS
082545	GROUNDWATER ELEVATION	BP	No	DEP-SOP	8/17/2017 12:06:00 PM	5.86	ft, NGVD	ft, NGVD
000094	CONDUCTIVITY (FIELD)	BP	No	EPA 120.1	8/17/2017 12:06:00 PM	133	µmhos/cm	0µmhos/cm
000406	pH (FIELD)	BP	No	EPA 150.1	8/17/2017 12:06:00 PM	5.17	pH Units	pH Units
000010	TEMPERATURE (FIELD)	BP	No	EPA 170.1	8/17/2017 12:06:00 PM	22.6	°C	0°C
082078	TURBIDITY (FIELD)	BP	No	EPA 180.1	8/17/2017 12:06:00 PM	2.60	NTU	0NTU
000940	CHLORIDE	BP	No	EPA 300.0	8/24/2017 4:10:00 AM	5.4	mg/L	0.29mg/L
000610	AMMONIA NITROGEN	BP	No	EPA 350.1	8/25/2017 12:38:00 PM	<0.0073	mg/L	0.0073mg/L
000299	DISSOLVED OXYGEN (FIELD)	BP	No	EPA 360.1	8/17/2017 12:06:00 PM	0.20	mg/L	0mg/L
034030	BENZENE	BP	No	EPA 8260B	8/24/2017 10:10:00 PM	1.8	µg/L	0.71µg/L
034423	DICHLOROMETHANE	BP	No	EPA 8260B	8/24/2017 10:10:00 PM	3.4 I	µg/L	2.0µg/L
039175	VINYL CHLORIDE	BP	No	EPA 8260B	8/24/2017 10:10:00 PM	2.1	µg/L	0.71µg/L
046480	REDOX POTENTIAL (FIELD)	BP	No	SM2580B	8/17/2017 12:06:00 PM	45.2	mV	-999mV

Citrus County Central Landfill Parameter Monitoring Report

PART III Analytical Results

Facility WACS #: SWD/09/39859

Test Site ID #:

Well Name: **TRIP** (AA06059-02)

Classification of Ground Water:

Ground Water Elevation (NGVD):

Sampling Date/Time: 8/17/2017

Report Period: 2017 SECOND SEMIANNUAL ADD

Well Purged:

Well Type: ☐ Background ☐ Intermediate
☐ Compliance ☐ Water Supply
☐ Detection ☐ Piezometer
☐ Assessment ☐ Leachate
☒ Other ☐ Surface Water

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	DETECTION LIMIT/UNITS
034030	BENZENE		No	EPA 8260B	8/24/2017 4:07:00 PM	<0.71	µg/L	0.71µg/L
034423	DICHLOROMETHANE		No	EPA 8260B	8/24/2017 4:07:00 PM	<2.0	µg/L	2.0µg/L
039175	VINYL CHLORIDE		No	EPA 8260B	8/24/2017 4:07:00 PM	<0.71	µg/L	0.71µg/L

ATTACHMENT 4

ORIGINAL LABORATORY DATA INCLUDING CHAIN-OF-CUSTODY FORMS



ENCO Laboratories

Accurate.

Timely.

Responsive.

Innovative.

10775 Central Port Drive

Orlando FL, 32824

Phone: 407.826.5314 FAX: 407.850.6945

Monday, August 28, 2017

Jones Edmunds & Associates, Inc. (JO006)

Attn: Elizabeth Kennelley

730 N.E.Waldo Road Bldg.A

Gainesville, FL 32641

RE: Laboratory Results for

Project Number: 03860-056-01-6402, Project Name/Desc: Citrus Co. LF

ENCO Workorder(s): AA06059

Dear Elizabeth Kennelley,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, August 18, 2017.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Carlene S Pasipanki For David Camacho

Project Manager

Enclosure(s)

LAB #		AA06059-01	AA06059-02	-	-	-	-
MATRIX	Minimum	Ground Water	Water	-	-	-	-
SAMPLE ID	Reporting Limit	MW-19	TRIP BLANK	-	-	-	-

Volatile Organic Compounds by GCMS (Water)

Vinyl chloride	1.0 ug/L	2.1	<0.71 [12]	-	-	-	-
Methylene chloride	5.0 ug/L	3.4 [3]	<2.0 [12]	-	-	-	-
Benzene	1.0 ug/L	1.8	<0.71 [12]	-	-	-	-
Dibromofluoromethane	53-146	103%	118%	-	-	-	-
Toluene-d8	41-146	108%	112%	-	-	-	-
4-Bromofluorobenzene	41-142	91%	125%	-	-	-	-

Classical Chemistry Parameters (Water)

Ammonia as N	0.020 mg/L	<0.0073 [12]	-	-	-	-	-
Chloride	5.0 mg/L	5.4 [7]	-	-	-	-	-

Field Parameters (Water)

Specific Conductance (EC)	0 umhos/cm	133	-	-	-	-	-
Dissolved Oxygen	0 mg/L	0.20	-	-	-	-	-
pH	pH Units	5.17	-	-	-	-	-
Oxidation/Reduction Potential	-999 mV	45.2	-	-	-	-	-
Temperature	0 °C	22.6	-	-	-	-	-
Turbidity	0 NTU	2.60	-	-	-	-	-
Depth to Water	Ft	107.54	-	-	-	-	-

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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Volatiles Organic Compounds by GCMS - Quality Control

Batch 7H24016 - EPA 5030B_MS

Blank (7H24016-BLK1)

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 14:00

Benzene	0.71 U	1.0	ug/L							U
Methylene chloride	2.0 U	5.0	ug/L							U
Vinyl chloride	0.71 U	1.0	ug/L							U

Surrogate: 4-Bromofluorobenzene

69

ug/L

50.0

138

41-142

Surrogate: Dibromofluoromethane

60

ug/L

50.0

120

53-146

Surrogate: Toluene-d8

58

ug/L

50.0

115

41-146

LCS (7H24016-BS1)

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 12:32

Benzene	17	1.0	ug/L	20.0		86	56-136			
Methylene chloride	18	5.0	ug/L	20.0		90	43-142			
Vinyl chloride	19	1.0	ug/L	20.0		93	20-167			

Surrogate: 4-Bromofluorobenzene

65

ug/L

50.0

130

41-142

Surrogate: Dibromofluoromethane

56

ug/L

50.0

113

53-146

Surrogate: Toluene-d8

59

ug/L

50.0

117

41-146

Matrix Spike (7H24016-MS1)

Source: AA06049-10

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 17:06

Benzene	18	1.0	ug/L	20.0	0.71 U	91	56-136			
Methylene chloride	20	5.0	ug/L	20.0	2.0 U	99	43-142			
Vinyl chloride	21	1.0	ug/L	20.0	0.71 U	106	20-167			

Surrogate: 4-Bromofluorobenzene

68

ug/L

50.0

135

41-142

Surrogate: Dibromofluoromethane

60

ug/L

50.0

120

53-146

Surrogate: Toluene-d8

59

ug/L

50.0

119

41-146

Matrix Spike Dup (7H24016-MSD1)

Source: AA06049-10

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 17:35

Benzene	17	1.0	ug/L	20.0	0.71 U	84	56-136	8	14	
Methylene chloride	19	5.0	ug/L	20.0	2.0 U	96	43-142	2	23	
Vinyl chloride	20	1.0	ug/L	20.0	0.71 U	102	20-167	4	24	

Surrogate: 4-Bromofluorobenzene

67

ug/L

50.0

134

41-142

Surrogate: Dibromofluoromethane

58

ug/L

50.0

116

53-146

Surrogate: Toluene-d8

57

ug/L

50.0

114

41-146

Batch 7H24036 - EPA 5030B_MS

Blank (7H24036-BLK1)

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 21:40

Benzene	0.71 U	1.0	ug/L							U
Methylene chloride	2.0 U	5.0	ug/L							U
Vinyl chloride	0.71 U	1.0	ug/L							U

Surrogate: 4-Bromofluorobenzene

49

ug/L

50.0

98

41-142

Surrogate: Dibromofluoromethane

52

ug/L

50.0

103

53-146

Surrogate: Toluene-d8

51

ug/L

50.0

103

41-146

LCS (7H24036-BS1)

Prepared: 08/24/2017 00:00 Analyzed: 08/24/2017 20:40

Benzene	18	1.0	ug/L	20.0		91	56-136			
Methylene chloride	18	5.0	ug/L	20.0		90	43-142			
Vinyl chloride	18	1.0	ug/L	20.0		91	20-167			

Surrogate: 4-Bromofluorobenzene

47

ug/L

50.0

93

41-142

Surrogate: Dibromofluoromethane

49

ug/L

50.0

98

53-146

Surrogate: Toluene-d8

51

ug/L

50.0

103

41-146

QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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Volatiles Organic Compounds by GCMS - Quality Control

Batch 7H24036 - EPA 5030B_MS

Matrix Spike (7H24036-MS1)		Source: AA05448-01		Prepared: 08/24/2017 00:00 Analyzed: 08/25/2017 01:38						
Benzene	20	1.0	ug/L	20.0	0.71 U	98	56-136			
Methylene chloride	19	5.0	ug/L	20.0	2.0 U	97	43-142			
Vinyl chloride	20	1.0	ug/L	20.0	0.71 U	102	20-167			
Surrogate: 4-Bromofluorobenzene	44		ug/L	50.0		87	41-142			
Surrogate: Dibromofluoromethane	49		ug/L	50.0		97	53-146			
Surrogate: Toluene-d8	52		ug/L	50.0		104	41-146			
Matrix Spike Dup (7H24036-MSD1)		Source: AA05448-01		Prepared: 08/24/2017 00:00 Analyzed: 08/25/2017 02:08						
Benzene	19	1.0	ug/L	20.0	0.71 U	97	56-136	1	14	
Methylene chloride	20	5.0	ug/L	20.0	2.0 U	98	43-142	1	23	
Vinyl chloride	21	1.0	ug/L	20.0	0.71 U	104	20-167	1	24	
Surrogate: 4-Bromofluorobenzene	46		ug/L	50.0		92	41-142			
Surrogate: Dibromofluoromethane	52		ug/L	50.0		104	53-146			
Surrogate: Toluene-d8	52		ug/L	50.0		104	41-146			

Classical Chemistry Parameters - Quality Control

Batch 7H23030 - NO PREP

Blank (7H23030-BLK1)		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 03:11								
Chloride	0.29 U	5.0	mg/L							U
LCS (7H23030-BS1)		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 03:26								
Chloride	54	5.0	mg/L	50.0		107	90-110			
Matrix Spike (7H23030-MS1)		Source: AA06059-01		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 03:41						
Chloride	67	5.0	mg/L	50.0	5.4	123	90-110			QM-07
Matrix Spike (7H23030-MS2)		Source: AA06058-08		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 06:55						
Chloride	70	5.0	mg/L	50.0	17	106	90-110			
Matrix Spike Dup (7H23030-MSD1)		Source: AA06059-01		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 03:55						
Chloride	62	5.0	mg/L	50.0	5.4	114	90-110	7	10	QM-07
Matrix Spike Dup (7H23030-MSD2)		Source: AA06058-08		Prepared: 08/23/2017 16:18 Analyzed: 08/24/2017 07:11						
Chloride	71	5.0	mg/L	50.0	17	108	90-110	1	10	

Batch 7H25013 - NO PREP

Blank (7H25013-BLK1)		Prepared: 08/25/2017 10:32 Analyzed: 08/25/2017 11:57								
Ammonia as N	0.0073 U	0.020	mg/L							U
LCS (7H25013-BS1)		Prepared: 08/25/2017 10:32 Analyzed: 08/25/2017 11:58								
Ammonia as N	1.1	0.020	mg/L	1.00		108	90-110			
Matrix Spike (7H25013-MS1)		Source: AA06050-01		Prepared: 08/25/2017 10:32 Analyzed: 08/25/2017 12:42						
Ammonia as N	1.0	0.020	mg/L	1.00	0.0073 U	103	90-110			
Matrix Spike (7H25013-MS2)		Source: AA06057-01		Prepared: 08/25/2017 10:32 Analyzed: 08/25/2017 12:45						
Ammonia as N	1.0	0.020	mg/L	1.00	0.0073 U	103	90-110			
Matrix Spike Dup (7H25013-MSD1)		Source: AA06050-01		Prepared: 08/25/2017 10:32 Analyzed: 08/25/2017 12:43						
Ammonia as N	1.0	0.020	mg/L	1.00	0.0073 U	104	90-110	1	10	

Special Notes

PQL	PQL: Practical Quantitation Limit.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*	Not reported due to interference.
A-02	A-02 0.20
A-02a	A-02a 2.60
[3] I =	J = Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
[7] QM-0' =	QM-07 = The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
[12] U =	U = Analyte included in the analysis, but not detected

LABORATORY CERTIFICATION SUMMARY

Analysis	Matrix	Cert ID	Cert Number
8260B	Water	NELAC	E83182
Ammonia 350.1	Water	NELAC	E83182
Chloride 300	Water	NELAC	E83182



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AA06059

2201

Lab Tracking Number

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE <i>CITRUS Co. Central LF</i>		PROJECT NO. <i>03866-056-01-8402</i>		MATRIX TYPE		REQUIRED ANALYSIS		PAGE <i>1</i> OF <i>1</i>													
SAMPLER(S) NAME <i>Steve Messick</i>				<div style="writing-mode: vertical-rl; transform: rotate(180deg);">SURFACE WATER GROUND WATER WASTEWATER DRINKING WATER SOIL SOLID/SEDIMENT NONAQUEOUS LIQUID (oil/water etc.) AIR SLUDGE OTHER</div>		<div style="writing-mode: vertical-rl; transform: rotate(180deg);">See attached list</div>		<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY													
CLIENT NAME <i>Jones Edmunds & Assoc. Inc.</i>								<input type="checkbox"/> EXPEDITED REPORT REQUIRED													
LABORATORY NAME AND ADDRESS <i>ENCO Lab - Orlando, FL.</i>								Date Due: _____													
SAMPLE				FIELD IDENTIFICATION NUMBER		PRESERVATIVE		NUMBER OF CONTAINERS SUBMITTED		REMARKS											
STATION	DATE	TIME	GRAB	COMP																	
<i>1 MW-19</i>	<i>8/17/17</i>	<i>1206</i>	<i>✓</i>		<i>1752 CC-19</i>				<i>4</i>												
<i>TRIP 2/1/17</i>	<i>↓</i>	<i>—</i>	<i>—</i>		<i>17M8CC-TB1</i>				<i>2</i>		<i>QA/QC</i>										
<div style="writing-mode: vertical-rl; transform: rotate(180deg);">A. Messick</div>																					
INITIAL KITS RECEIVED BY <i>Steve Messick</i>				DATE <i>8/16/17</i>	TIME <i>1930</i>	RELINQUISHED BY: (SIGNATURE) <i>Steve Messick</i>		DATE <i>8/17/17</i>	TIME <i>1800</i>	RECEIVED BY: (SIGNATURE)		DATE	TIME								
RELINQUISHED BY: (SIGNATURE)				DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME								
SHIPPING METHOD <i>Greyhound Bus Priority</i>						SHIPMENT ORIGIN <i>Gainesville, FL.</i>				SHIPMENT DESTINATION <i>ENCO Lab - Orlando, FL.</i>											
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT <input type="checkbox"/> YES <input type="checkbox"/> NO		LAB LOG NO.		REMARKS <i>Original kits received from ENCO</i>												

Jones, Edmunds, and Associates, Inc.
Environmental Consultants
730 NE Waldo Road
Gainesville, Florida 32641
(352) 377-5821 Fax (352) 377-3166

Please return a copy of this form with original lab report.

Field Data Information Form

Project Name: Citrus County - Central Class I Landfill
Project Number: 03860-056-01-6402
Date: 8/17/17
Sampler: Steve Messick
Laboratory: ENCO Lab - Orlando, Florida

[illegible]

TO BE SUBMITTED TO LABORATORY WITH CHAIN-OF-CUSTODY

Collection Method:	Description:
BA	BAILER
BP	BLADDER PUMP
CP	CENTRIFUGAL PUMP
E	GRAB
M	METER READING
PP	PERISTALTIC PUMP
SP	SUBMERSIBLE OR IN-PLACE DEDICATED PUMP
Z	UNKNOWN

* Initial Depth to Water at Time of Sampling

ATTACHMENT 5

FIELD DATA SHEETS

GROUNDWATER SAMPLING LOG

SITE NAME: Citrus County Central Class I LF		SITE LOCATION: Lecanto, Florida	
WELL NO: MW-19 Flush Mount	WELL WACS NO: 22710	SAMPLE ID: 17S2CC-19	DATE: 8/12/17

PURGING DATA

WELL DIAMETER(in): 2" PVC	TUBING DIAMETER (in): 1/4"	SCREEN LENGTH: 10 ft From 129.95 ft to 139.95 ft**	STATIC DEPTH TO WATER (feet): 137.64	PURGE PUMP TYPE: Dedicated BP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY 1 WELL VOLUME = (139.95 feet - 137.64 feet) X gallons/foot = 5.2 gallons				Water Level measured with: N/A
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) N/A = 0 gallons + (0 gallons/foot X feet) + 0 gallons = gallons				PURGE METHOD: 2.3
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 138	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 138	PURGING INITIATED AT: 1134	PURGING ENDED AT: 1204	TOTAL VOLUME PURGED (gallons): 8.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR	ORP (mVolts)
1150	5.2	5.2	0.8	108.92	5.17	22.6	136	0.85	4.44	N/A	N/A	71.9
1157	1.4	6.6	↓	108.92	5.18	22.6	135	0.29	3.02	↓	↓	63.0
1204	1.4	8.0	↓	108.92	5.17	22.6	133	0.20	2.60	↓	↓	48.2

SAMPLING DATA

SAMPLED BY (Print) / AFFILIATION: Steve Messick / Jones Edmunds & Associates Inc.		SAMPLER(S) SIGNATURES: <i>Steve Messick</i>		SAMPLING INITIATED AT: 1208	SAMPLING ENDED AT: 1211
PUMP OR TUBING DEPTH IN WELL (feet): 138	SAMPLE PUMP VOC Sampling Rate 100-400 mL/min <input checked="" type="checkbox"/> FLOW RATE Other Samples Rate (mL / min): 250		TUBING MATERIAL CODE: PE	SAMPLING EQUIPMENT CODE: DBP	
FIELD DECONTAMINATION: Y <input checked="" type="checkbox"/> N	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N FILTER SIZE: 0.45 µm			DUPLICATE: Y <input checked="" type="checkbox"/> N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOL	PRES. USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL PH*	
17S2CC-19	2	CG	40 mL	HCl	-	N/A	8260 AP1 LOW
17S2CC-19	1	PE	250 mL	H2SO4	-	5.2	Ammonia Nitrogen
17S2CC-19	1	PE	250 ML	4°C	-	N/A	Chlorides, Nitrate, TDS

REMARKS: *I repaired this well last week, so I could sample is for the 1752 EVENT.*

* Verified Sample pH as <2 or >12 (as applicable) at **MW-19**
 ** Screened interval referenced is depth below Top of Casing
 Sky Conditions: **Cloudy** Ambient Air Temperature: **35.0C**
 Approx. Wind Speed and Direction: **0-5 mph**

Grundfos Settings: **2** HZ Peristaltic Setting: **17/13** sec Pressure **70** PSI
 Bladder Pump: CPM **2** Refill/Discharge **17/13** sec Pressure **70** PSI
 Total Tubing Length: **17/13** feet (New Tubing)

COMMENTS: Total Well Depth = **138** by **Steve Messick** date **8/12/17**
 Flush mount well, vented > 15 Minutes before reading water level.



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2201

Lab Tracking Number

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE <i>CITRUS Co. Central LF</i>					PROJECT NO. <i>0380-00001-8400</i>					MATRIX TYPE					REQUIRED ANALYSIS					PAGE <i>1</i> OF <i>1</i>									
SAMPLER(s) NAME <i>Steve Messick</i>										<div><div><div>SURFACE WATER</div><div>GROUND WATER</div><div>WASTEWATER</div><div>DRINKING WATER</div><div>SOIL/SOLID/SEDIMENT</div><div>NONAQUEOUS LIQUID (oil solvent etc.)</div><div>AIR</div><div>SLUDGE</div><div>OTHER</div></div><div><i>See attached list</i></div></div>										<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY <input type="checkbox"/> EXPEDITED REPORT REQUIRED									
CLIENT NAME <i>Jones Edmunds + Assoc. Inc.</i>																													
LABORATORY NAME AND ADDRESS <i>ENCO Lab - Orlando, FL.</i>																													
SAMPLE										FIELD IDENTIFICATION NUMBER										PRESERVATIVE					Date Due: _____				
STATION	DATE	TIME	GRAB	COMP											NUMBER OF CONTAINERS SUBMITTED					REMARKS									
<i>mw-17</i>	<i>8/17/17</i>	<i>1206</i>	<i>✓</i>		<i>1752CC-17</i>					<i>✓</i>					<i>4</i>														
<i>2</i>	<i>8/17/17</i>	<i>—</i>	<i>—</i>		<i>17118CC-TE1</i>					<i>✓</i>					<i>2</i>					<i>QA/QC</i>									
3																													
4																													
5																													
6																													
7																				<i>Note</i>									
8																				<i>the computer</i>									
9																				<i>the 1752 sample</i>									
10																				<i>event.</i>									
11																				<i>Am</i>									
12																													
13																													
14																													
INITIAL KITS RECEIVED BY <i>Steve Messick</i>					DATE <i>8/17/17</i>		TIME <i>1730</i>		RELINQUISHED BY: (SIGNATURE) <i>Steve Messick</i>					DATE <i>8/17/17</i>		TIME <i>1200</i>		RECEIVED BY: (SIGNATURE)					DATE		TIME				
RELINQUISHED BY: (SIGNATURE)					DATE		TIME		RECEIVED BY: (SIGNATURE)					DATE		TIME		RELINQUISHED BY: (SIGNATURE)					DATE		TIME				
SHIPPING METHOD <i>Greyhound Bus Priority</i>					SHIPMENT ORIGIN <i>Gainesville, FL.</i>					SHIPMENT DESTINATION <i>ENCO Lab - Orlando, FL.</i>																			
RECEIVED FOR LABORATORY BY: (SIGNATURE)					DATE		TIME		CUSTODY INTACT <input type="checkbox"/> YES <input type="checkbox"/> NO		LAB LOG NO.		REMARKS <i>Original kits received from ENCO</i>																

[illegible]

SITE NAME Citrus County LF.

DATE 8/17/17

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS

INSTRUMENT # YSI - GNV - 03

Instrument Gain -5.274 **Date Determined** 8/17/17 (Acceptable Gain = Acceptable Slope)
(Range -5.597 to -4.579 acceptable) (Check Instrument Gain at the beginning of each week)

☐ TEMPERATURE

☐ CONDUCTIVITY

☐ SALINITY

X pH

☐ ORP☐ TURBIDITY☐ RESIDUAL CI☐ DO☐ OTHER

Standard A 7.00 SU Lot # 421 Expiration Date 10/2018

Standard B 4.01 SU Lot # 401 Expiration Date 12/2018

Standard C 10.00 SU Lot # UP1 Expiration Date 11/2018

Standard D 6.86 SU Lot # TQ1 Expiration Date 10/2017

[illegible]

SITE NAME Citrus County - LF DATE 8/17/17
INSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # YSI - GNV - 03
PARAMETER: *[check only one]*

☐ TEMPERATURE ☒ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL Cl ☐ DO ☐ OTHER

Standard A	1413 uS/cm	Lot #	UQ1	Expiration Date	10/2018
Standard B	447 uS/cm	Lot #	U51	Expiration Date	08/2018
Standard C	84 uS/cm	Lot #	U11	Expiration Date	11/2018
Standard D	uS/cm	Lot #		Expiration Date	

[illegible]

SITE NAME In House Comparison

DATE 1/05/16

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # YSI - GNV - 03

☒ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CI ☐ DO ☐ OTHER

Standard A NIST Thermometer 5.0 °C #2E4826 #94748 Cal Date: 9/21/15

Standard B NIST Thermometer 25.0 °C #2E4826 #94748 Exp. Date: 01/05/17

Standard C NIST Thermometer 40.0 °C #2E4826

[illegible]

REFERENCE FACTORS FOR FIELD SAMPLING DATA SHEETS

WELL CAPACITY (Gallons Per Foot):	0.75" = 0.02
	1" = 0.04
	1.25" = 0.06
	2" = 0.16
	3" = 0.37
	4" = 0.65
	5" = 1.02
	6" = 1.47
	12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.):	1/8" = 0.0006
	3/16" = 0.0014
	1/4" = 0.0026
	5/16" = 0.004
	3/8" = 0.006
	1/2" = 0.010
	5/8" = 0.016

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene;
PP = Polypropylene; S = Silicone; T = Teflon; O = Other

SAMPLING/PURGING APP = After Peristaltic Pump B = Bailer BP = Bladder Pump
ESP = Electric Submersible Pump PP = Peristaltic Pump

EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump O = Other (Specify)
SM = Straw Method (Tubing Gravity Drain) VT = Vacuum Trap

STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units

Temperature: ± 0.2 °C

Specific Conductance: $\pm 5\%$

Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 2200-2)
optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater)

Turbidity: all readings ≤ 20 NTU
optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

<u>gal/min</u>	=	<u>ml/min</u>	<u>gal/min</u>	=	<u>ml/min</u>	<u>gal/min</u>	=	<u>ml/min</u>
0.026		100	0.211		800	0.396		1500
0.053		200	0.238		900	0.423		1600
0.079		300	0.264		1000	0.449		1700
0.106		400	0.291		1100	0.476		1800
0.132		500	0.317		1200	0.502		1900
0.159		600	0.343		1300	0.528		2000
0.185		700	0.370		1400			

GENERAL SAMPLING NOTES AND CONVENTIONS

1. All sampling was performed according to the FDEP Standard Operating Procedures as listed in DEP-SOP-001/01 (Field Procedures) dated March 31, 2008 (Effective 12/3/08).
2. Field cleaning and decontamination has been done in accordance with DEP-SOP-001/01 (Field Procedures), FC-1000.
3. Tubing and filter cartridge lot numbers for all sampling points and wells are the same as those listed for that tubing type on the Equipment Blank data form(s) covering that equipment system.
4. Tubing suppliers/manufacturers are named in the following list:
 - HDPE disposable tubing US Plastics
 - Tygon tubing Cole Parmer
 - Norprene tubing Cole Parmer
 - Silicon tubing Cole Parmer
5. Field instrument calibrations were conducted in accordance with DEP-SOP-001/01 (Field Procedures), FT1000.
6. Calibration solution and gas suppliers are named in the following list:
 - pH calibration solutions Cole Parmer/Oakton
 - Conductivity calibration solutions Cole Parmer/Oakton
 - Dissolved Oxygen probe membranes YSI
 - ORP calibration solutions YSI
 - Turbidity calibration solutions/gel standards Hach
 - TVA calibration gas cylinders Praxair
 - Eagle RKI calibration gas cylinders Praxair
7. All samples collected were grab samples.
8. All sample containers requiring added preservative were supplied pre-preserved from the laboratory. No additional preservative was added in the field.
9. A combination of a front-bumper-mounted gasoline generator and an electric air compressor or compressed nitrogen are used to power the Grundfos electric submersible pump and bladder pump systems, as appropriate.
10. Screened intervals are assumed to be at the bottom of all monitoring wells sampled.
11. Well purge method indications on the field data sheets correspond to DEP-SOP-001/01 (Field Procedures), FS2000 sections as indicated below:

<u>Data Sheet Designation</u>	<u>SOP Designation</u>
2.3	FS 2212.2.3
2.4	FS 2212.2.4
2.5	FS 2212.2.5
2222 or 3.7.1	FS 2222 or 2212.3.7.1
Private	FS 2215.1 & 2215.2 (Jones Edmunds SOP for private well sampling)

Comments or Exceptions
