

February 11, 2011

Ms. Jennifer Stirk  
Volusia County Solid Waste Management  
1990 Tomoka Farms Road  
Port Orange, FL 32128

RE: Project: Tomoka Remediation  
Pace Project No.: 3525947

Dear Ms. Stirk:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeff Baylor

jeff.baylor@pacelabs.com  
Project Manager

Enclosures

cc: Ms. Lynne McDaniel, HDR Engineering, Inc.  
Ms. Katherine Weitz, HDR Engineering, Inc.

**REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: Tomoka Remediation

Pace Project No.: 3525947

### Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174

Alabama Certification #: 41320

Arizona Certification #: AZ0735

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH 0216

Florida Certification #: E83079

Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity

Hawaii Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Kentucky Certification #: 90050

Louisiana Certification #: LA090012

Louisiana Environmental Certificate #: 05007

Maine Certification #: FL1264

Massachusetts Certification #: M-FL1264

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Montana Certification #: Cert 0074

Nevada Certification: FL NELAC Reciprocity

New Hampshire Certification #: 2958

New Jersey Certification #: FL765

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710

Pennsylvania Certification #: 68-547

Puerto Rico Certification #: FL01264

Tennessee Certification #: TN02974

Texas Certification: FL NELAC Reciprocity

Virginia Certification #: 00432

Wyoming Certification: FL NELAC Reciprocity

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Tomoka Remediation  
Pace Project No.: 3525947

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3525947001	EQ Blank	Water	02/04/11 13:30	02/04/11 15:45
3525947002	B62-1R	Water	02/04/11 14:14	02/04/11 15:45
3525947003	B62-2R	Water	02/04/11 14:36	02/04/11 15:45
3525947004	B61	Water	02/04/11 15:10	02/04/11 15:45

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Tomoka Remediation

Pace Project No.: 3525947

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3525947001	EQ Blank	EPA 350.1	AMD	1	PASI-O
3525947002	B62-1R		JSB	6	PASI-O
		EPA 350.1	AMD	1	PASI-O
3525947003	B62-2R		JSB	6	PASI-O
		EPA 350.1	AMD	1	PASI-O
3525947004	B61		JSB	6	PASI-O
		EPA 350.1	AMD	1	PASI-O

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Tomoka Remediation

Pace Project No.: 3525947

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**Method:**

**Description:** Field Data

**Client:** Volusia County Solid Waste Management

**Date:** February 11, 2011

**General Information:**

3 samples were analyzed for . All samples were received in acceptable condition with any exceptions noted below.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Tomoka Remediation  
Pace Project No.: 3525947

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**Method:** EPA 350.1  
**Description:** 350.1 Ammonia  
**Client:** Volusia County Solid Waste Management  
**Date:** February 11, 2011

**General Information:**

4 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Tomoka Remediation

Pace Project No.: 3525947

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**Sample: EQ Blank**      **Lab ID: 3525947001**      Collected: 02/04/11 13:30      Received: 02/04/11 15:45      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	<b>0.028</b>	mg/L	0.050	0.020	1		02/11/11 10:44	7664-41-7	

## ANALYTICAL RESULTS

Project: Tomoka Remediation

Pace Project No.: 3525947

**Sample: B62-1R**      **Lab ID: 3525947002**      Collected: 02/04/11 14:14      Received: 02/04/11 15:45      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Field pH	<b>6.72</b>	Std. Units			1		02/04/11 16:43		
Field Temperature	<b>23.96</b>	deg C			1		02/04/11 16:43		
Field Specific Conductance	<b>3095</b>	umhos/cm			1		02/04/11 16:43		
Oxygen, Dissolved	<b>0.11</b>	mg/L			1		02/04/11 16:43	7782-44-7	
REDOX	<b>-127.3</b>	mV			1		02/04/11 16:43		
Turbidity	<b>12</b>	NTU			1		02/04/11 16:43		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1							
Nitrogen, Ammonia	<b>122</b>	mg/L	0.50	0.20	10		02/11/11 13:05	7664-41-7	



## ANALYTICAL RESULTS

Project: Tomoka Remediation

Pace Project No.: 3525947

**Sample: B62-2R**      **Lab ID: 3525947003**      Collected: 02/04/11 14:36      Received: 02/04/11 15:45      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Field pH	<b>6.66</b>	Std. Units			1		02/04/11 16:44		
Field Temperature	<b>22.56</b>	deg C			1		02/04/11 16:44		
Field Specific Conductance	<b>1748</b>	umhos/cm			1		02/04/11 16:44		
Oxygen, Dissolved	<b>0.21</b>	mg/L			1		02/04/11 16:44	7782-44-7	
REDOX	<b>-115.8</b>	mV			1		02/04/11 16:44		
Turbidity	<b>11</b>	NTU			1		02/04/11 16:44		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1							
Nitrogen, Ammonia	<b>41.7</b>	mg/L	0.25	0.10	5		02/11/11 13:06	7664-41-7	

## ANALYTICAL RESULTS

Project: Tomoka Remediation

Pace Project No.: 3525947

**Sample: B61**      **Lab ID: 3525947004**      Collected: 02/04/11 15:10      Received: 02/04/11 15:45      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Field pH	<b>6.59</b>	Std. Units			1		02/04/11 16:45		
Field Temperature	<b>23.70</b>	deg C			1		02/04/11 16:45		
Field Specific Conductance	<b>1091</b>	umhos/cm			1		02/04/11 16:45		
Oxygen, Dissolved	<b>0.20</b>	mg/L			1		02/04/11 16:45	7782-44-7	
REDOX	<b>-75.0</b>	mV			1		02/04/11 16:45		
Turbidity	<b>3.8</b>	NTU			1		02/04/11 16:45		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1							
Nitrogen, Ammonia	<b>12.1</b>	mg/L	0.050	0.020	1		02/11/11 10:48	7664-41-7	

### QUALITY CONTROL DATA

Project: Tomoka Remediation  
Pace Project No.: 3525947

QC Batch: WETA/8621 Analysis Method: EPA 350.1  
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia  
Associated Lab Samples: 3525947001, 3525947002, 3525947003, 3525947004

METHOD BLANK: 170052 Matrix: Water  
Associated Lab Samples: 3525947001, 3525947002, 3525947003, 3525947004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	0.020U	0.050	02/11/11 10:14	

LABORATORY CONTROL SAMPLE: 170053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	104	90-110	

MATRIX SPIKE SAMPLE: 170055

Parameter	Units	3525989001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.50	1	1.5	97	90-110	

SAMPLE DUPLICATE: 170054

Parameter	Units	3525989001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.50	0.50	.8	20	

## QUALIFIERS

Project: Tomoka Remediation

Pace Project No.: 3525947

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

### LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

### ANALYTE QUALIFIERS

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Tomoka Remediation

Pace Project No.: 3525947

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3525947002	B62-1R		FLD/		
3525947003	B62-2R		FLD/		
3525947004	B61		FLD/		
3525947001	EQ Blank	EPA 350.1	WETA/8621		
3525947002	B62-1R	EPA 350.1	WETA/8621		
3525947003	B62-2R	EPA 350.1	WETA/8621		
3525947004	B61	EPA 350.1	WETA/8621		



# CHAIN-OF-CUSTODY / Analytical Request Document

3525947

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A  
 Required Client Information:  
 Company: **Volusia County**  
 Address: **1990 Tomoka Farms Rd., Daytona Beach, FL 32024**  
 Email To: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Requested Due Date/TAT: \_\_\_\_\_

Section B  
 Required Project Information:  
 Report To: **Jennifer Shirk**  
 Copy To: \_\_\_\_\_  
 Purchase Order No.: \_\_\_\_\_  
 Project Name: **Tomoka Remediation**  
 Project Number: \_\_\_\_\_

Section C  
 Invoice Information:  
 Attention: \_\_\_\_\_  
 Company Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Pace Quote Reference: \_\_\_\_\_  
 Pace Project Manager: \_\_\_\_\_  
 Pace Profile #: \_\_\_\_\_

REGULATORY AGENCY  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER \_\_\_\_\_

Site Location  
 STATE: **FL**

Page: **1** of **1**  
**1421804**

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE Drinking Water DW Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE ENDIGRAB						
	MATRIX CODE (see valid codes to left)		DATE	TIME	DATE	TIME				
1	EQ		2/4/11	1330		1				
2	B102-1R			1414		1				
3	B102-2R			1430		1				
4	B101			1510		1				
5										
6										
7										
8										
9										
10										
11										
12										

Section D  
 ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: **Stacey Smith** DATE: **2/4/11** TIME: **1545**

ACCEPTED BY / AFFILIATION: **Paula Smith** DATE: **2/4-11** TIME: **1545**

Temp In °C \_\_\_\_\_ Received on Ice (Y/N) \_\_\_\_\_ Custody Sealed Cooler (Y/N) \_\_\_\_\_ Samples Intact (Y/N) \_\_\_\_\_

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: **Stacey Smith**  
 SIGNATURE of SAMPLER: *Stacey Smith* DATE Signed (MM/DD/YYYY): **2/4/11**

ORIGINAL

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.  
 F-ALL-Q-020rev.07, 15-May-2007



# Pace Analytical Field Sampling Log

Site Name: Tomokal Landfill Remediation Project	Site Location: Volusia County, FL
Well #: <b>B02-1R</b>	Sample ID: _____ Date: <b>2/4/11</b>

## PURGING DATA

YSI: **02606/2697**

Well Diameter: 2"	Tubing Diameter: 3/8"	Well Screen Interval Depth: _____ Feet to _____	Static Depth to Water: <b>14.77</b>	Sampling Device: <b>PP</b>
Well Volume Purge: (Total Well Depth - Static Depth to Water) X Well Capacity = Well Volume $(17 - 14.77) \times 0.16 = 3.64$ Gallons				
Equipment Volume Purge: Pump Volume + (Tubing Capacity X Tubing Length) + Flow Cell Volume = Equipment Volume = _____ Gallons				
Initial Pump or Tubing Depth in Well (Feet): <b>17</b>	Final Pump or Tubing Depth in Well: <b>17</b>	Purging Initiated At: <b>1342</b>	Purging Ended At: <b>1413</b>	Total Volume Purged (Gallons): <b>7.75</b>

Time	Volume Purged (Gal)	CUMUL Volume Purged (Gal)	Purge Rate (gpm)	Depth to Water (Feet)	pH (Standard Units)	Temp. (°C)	Conductivity (µmhos/cm or S/cm)	Dissolved Oxygen (circle mg/L or % saturation)	Turbidity (NTUs)	Color (Describe)	Odor (Describe)	ORP
	<b>3.75</b>											
<b>1357</b>	<b>4.00</b>	<b>3.75</b>	<b>0.25</b>	<b>15.39</b>	<b>6.74</b>	<b>24.06</b>	<b>3034</b>	<b>0.17</b>	<b>31</b>	<b>yellow</b>	<b>sulfur</b>	<b>-128.1</b>
<b>1401</b>	<b>1.00</b>	<b>4.75</b>	↓	↓	<b>6.73</b>	<b>24.11</b>	<b>3056</b>	<b>0.14</b>	<b>26</b>	↓	↓	<b>-127.8</b>
<b>1405</b>	<b>1.00</b>	<b>5.75</b>	↓	↓	<b>6.73</b>	<b>24.05</b>	<b>3071</b>	<b>0.13</b>	<b>20</b>	↓	↓	<b>-127.3</b>
<b>1409</b>	<b>1.00</b>	<b>6.75</b>	↓	↓	<b>6.72</b>	<b>23.99</b>	<b>3083</b>	<b>0.12</b>	<b>16</b>	↓	↓	<b>-127.7</b>
<b>1413</b>	<b>1.00</b>	<b>7.75</b>	↓	↓	<b>6.72</b>	<b>23.96</b>	<b>3095</b>	<b>0.11</b>	<b>12</b>	↓	↓	<b>-127.3</b>

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

## SAMPLING DATA

Sampled By (Print): <b>Stacey Smith</b>		Sampler(s) Signature: <i>Stacey Smith</i>		Sampling Initiated At: <b>1414</b>	Sampling Ended At: <b>1415</b>			
Pump or Tubing Depth in Well (Feet): <b>17</b>	Sample Pump Flow Rate (mL per minute): <b>100-200ml</b>	Tubing Material Code: <b>PE</b>	Field Decontamination: <input checked="" type="checkbox"/> [Yes] <input type="checkbox"/> [No]	Field-Filtered: <input checked="" type="checkbox"/> [Yes] <input type="checkbox"/> [No]	Duplicate: <input checked="" type="checkbox"/> [Yes] <input type="checkbox"/> [No]			
Sample ID Code	# Containers	Material Code	Volume	Preservative Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code
	<b>1</b>	<b>PE</b>	<b>250 ml</b>				<b>Anions</b>	<b>PP</b>

**Weather Conditions**  
 Sunny  
 Partly Cloudy  
 Cloudy  
 Temperature: **77**  
 Rain:  [Yes]  [No]  
 Wind Speed: **570**  
 Wind Direction: **N**

<input type="checkbox"/> Surface Water	Taken From:	<input type="checkbox"/> Waste Water: Start Time _____ Finish Time _____
Total Depth: _____	<input type="checkbox"/> Shore <input type="checkbox"/> Surface	Sampling Point: _____ Volume: _____
Type: <input type="checkbox"/> Lake <input type="checkbox"/> Stream	<input type="checkbox"/> Boat <input type="checkbox"/> Mid-Depth	<input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> River <input type="checkbox"/> Other _____	<input type="checkbox"/> Bridge <input type="checkbox"/> Bottom	mL per: [ ] Hour [ ] ½ Hour [ ]
	<input type="checkbox"/> Wading <input type="checkbox"/> Other	
<input type="checkbox"/> Soils/Sediment	Sampling Point: _____	Sample Depth: _____ <input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> Drum Waste	Type: _____	Layers [Yes] [No] <input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> Other:	Sampling Point: _____	Sample Depth: _____ <input type="checkbox"/> Composite <input type="checkbox"/> Grab
Field Notes: <b>discharged to ground</b>		
On Ice @ <b>1416</b> Bottles Preserved <2pH		

See Work Order/Bottle Order



# Pace Analytical Field Sampling Log

Site Name: Tomokal Landfill Remediation Project	Site Location: Volusia County, FL
Well #: <b>B62-2R</b>	Sample ID: _____ Date: <b>2/4/11</b>

## PURGING DATA

YSI: **02606/2697**

Well Diameter: 2"	Tubing Diameter: 3/8"	Well Screen Interval Depth: _____ Feet to _____	Static Depth to Water: <b>14.95</b>	Sampling Device: <b>PP</b>								
Well Volume Purge: (Total Well Depth - Static Depth to Water) X Well Capacity = Well Volume ( <b>22.00 - 14.95</b> ) X 0.16 Gallons/Foot = <b>1.13</b> Gallons												
Equipment Volume Purge: Pump Volume + (Tubing Capacity X Tubing Length) + Flow Cell Volume = Equipment Volume + ( _____ X _____ ) + _____ = Gallons												
Initial Pump or Tubing Depth in Well (Feet): <b>17</b>	Final Pump or Tubing Depth in Well: <b>17</b>	Purging Initiated At: <b>1426</b>	Purging Ended At: <b>1435</b>	Total Volume Purged (Gallons): <b>2.25</b>								
Time	Volume Purged (Gal)	CUMUL Volume Purged (Gal)	Purge Rate (gpm)	Depth to Water (Feet)	pH (Standard Units)	Temp. (°C)	Conductivity (µmhos/cm or µS/cm)	Dissolved Oxygen (circle mg/L or % saturation)	Turbidity (NTUs)	Color (Describe)	Odor (Describe)	ORP
<b>1431</b>	<b>1.15</b>	<b>1.25</b>	<b>0.25</b>	<b>16.11</b>	<b>6.67</b>	<b>22.49</b>	<b>1789</b>	<b>0.25</b>	<b>16</b>	<b>yellow</b>	<b>Sulfur</b>	<b>-111.0</b>
<b>1433</b>	<b>0.50</b>	<b>1.75</b>	<b>↓</b>	<b>16.22</b>	<b>6.67</b>	<b>22.49</b>	<b>1748</b>	<b>0.25</b>	<b>15</b>	<b>↓</b>	<b>↓</b>	<b>-114.0</b>
<b>1435</b>	<b>0.50</b>	<b>2.25</b>	<b>↓</b>	<b>↓</b>	<b>6.66</b>	<b>22.56</b>	<b>1748</b>	<b>0.21</b>	<b>11</b>	<b>↓</b>	<b>↓</b>	<b>-115.8</b>
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												

## SAMPLING DATA

Sampled By (Print): <b>Stacey Smith</b>				Sampler(s) Signatures: <i>Stacey Smith</i>				Sampling Initiated At: <b>1436</b>	Sampling Ended At: <b>1437</b>
Pump or Tubing Depth in Well (Feet): <b>17</b>		Sample Pump Flow Rate (mL per minute): <b>100-200ml</b>		Tubing Material Code: <b>PE</b>		Field Decontamination: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Field-Filtered: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Duplicate: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample ID Code	# Containers	Material Code	Volume	Preservative Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	
	<b>1</b>	<b>PE</b>	<b>250 ml</b>				<b>Anions</b>	<b>PP</b>	

**Weather Conditions**  
 Sunny  
 Partly Cloudy  
 Cloudy  
 Temperature: **77**  
 Rain:  Yes  No  
 Wind Speed: **5-10**  
 Wind Direction: **N**

<input type="checkbox"/> Surface Water	Taken From: <input type="checkbox"/> Shore <input type="checkbox"/> Surface	<input type="checkbox"/> Waste Water: Start Time _____ Finish Time _____
Total Depth: _____	<input type="checkbox"/> Boat <input type="checkbox"/> Mid-Depth	Sampling Point: _____ Volume: _____
Type: <input type="checkbox"/> Lake <input type="checkbox"/> Stream	<input type="checkbox"/> Bridge <input type="checkbox"/> Bottom	<input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> River <input type="checkbox"/> Other _____	<input type="checkbox"/> Wading <input type="checkbox"/> Other	mL per: <input type="checkbox"/> Hour <input type="checkbox"/> ½ Hour <input type="checkbox"/>
<input type="checkbox"/> Soils/Sediment	Sampling Point: _____	Sample Depth: _____
<input type="checkbox"/> Drum Waste	Type: _____	Layers <input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Other:	Sampling Point: _____	Sample Depth: _____

Field Notes: **discharged to ground**

On Ice @ **1438**      Bottles Preserved <2pH

See Work Order/Bottle Order

# Pace Analytical Field Sampling Log

Site Name: Tomokal Landfill Remediation Project	Site Location: Volusia County, FL
Well #: <b>B601</b>	Sample ID: _____ Date: <b>2/4/11</b>

## PURGING DATA

YSI: **02606/2697**

Well Diameter: 2"	Tubing Diameter: 3/8"	Well Screen Interval Depth: Feet to _____	Static Depth to Water: <b>14.41</b>	Sampling Device: <b>PP</b>
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Well Volume Purge: (Total Well Depth - Static Depth to Water) X Well Capacity = Well Volume  
 ( **28.75 - 14.41** ) X 0.16 Gallons/Foot = **2.30** Gallons

Equipment Volume Purge: Pump Volume + (Tubing Capacity X Tubing Length) + Flow Cell Volume = Equipment Volume  
 + ( \_\_\_\_\_ X \_\_\_\_\_ ) + \_\_\_\_\_ = Gallons

Initial Pump or Tubing Depth in Well (Feet): <b>17</b>	Final Pump or Tubing Depth in Well: <b>18.5</b>	Purging Initiated At: <b>1453</b>	Purging Ended At: <b>1509</b>	Total Volume Purged (Gallons): <b>4.0</b>
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Time	Volume Purged (Gal)	CUMUL Volume Purged (Gal)	Purge Rate (gpm)	Depth to Water (Feet)	pH (Standard Units)	Temp. (°C)	Conductivity (µmhos/cm or µS/cm)	Dissolved Oxygen (circle mg/L or % saturation)	Turbidity (NTUs)	Color (Describe)	Odor (Describe)	ORP
1503	2.50	2.50	0.25	18.20	6.60	23.70	1095	0.29	14	14. tan	sulfur	-74.5
1506	0.75	3.25	↓	18.25	6.60	23.61	1092	0.24	10	↓	↓	-74.7
1509	0.75	4.00	↓	18.32	6.59	23.70	1091	0.20	3.8	↓	↓	-75.0

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

## SAMPLING DATA

Sampled By (Print): <b>Stacey Smith</b>				Sampler(s) Signatures: <i>Stacey Smith</i>				Sampling Initiated At: <b>1510</b>	Sampling Ended At: <b>1511</b>
Pump or Tubing Depth in Well (Feet): <b>18.5</b>		Sample Pump Flow Rate (mL per minute): <b>100-200ml</b>		Tubing Material Code: <b>PE</b>		Field Decontamination: <input checked="" type="checkbox"/> Yes [No]		Field-Filtered: [Yes] <input checked="" type="checkbox"/> No	Duplicate: [Yes] <input checked="" type="checkbox"/> No
Sample ID Code	# Containers	Material Code	Volume	Preservative Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	
	1	PE	250 ml				Anions	PP	

### Weather Conditions

Sunny  
 Partly Cloudy  
 Cloudy  
 Temperature: **80**  
 Rain: [Yes] [No]  
 Wind Speed: **5-10**  
 Wind Direction: **N**

<input type="checkbox"/> Surface Water	Taken From:	<input type="checkbox"/> Waste Water: Start Time _____ Finish Time _____
Total Depth: _____	<input type="checkbox"/> Shore <input type="checkbox"/> Surface	Sampling Point: _____ Volume: _____
Type: <input type="checkbox"/> Lake <input type="checkbox"/> Stream	<input type="checkbox"/> Boat <input type="checkbox"/> Mid-Depth	<input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> River <input type="checkbox"/> Other _____	<input type="checkbox"/> Bridge <input type="checkbox"/> Bottom	mL per: [ ] Hour [ ] ½ Hour [ ]
<input type="checkbox"/> Soils/Sediment	Sampling Point: _____	Sample Depth: _____
<input type="checkbox"/> Drum Waste	Type: _____	Layers [Yes] [No] <input type="checkbox"/> Composite <input type="checkbox"/> Grab
<input type="checkbox"/> Other: _____	Sampling Point: _____	Sample Depth: _____
<input type="checkbox"/> Composite <input type="checkbox"/> Grab		

Field Notes: **discharged to ground**

On Ice @ **1512**      Bottles Preserved <2pH

See Work Order/Bottle Order

**Sample Condition Upon Receipt Form (SCUR)**

Table Number: \_\_\_\_\_



Client Name: Volusia Project # 3525947

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  B&B  Other \_\_\_\_\_

Tracking # \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 39 Type of Ice:  Wet  Blue  None

Cooler Temperature 1.4 (Actual) (Temp should be above freezing to 6°C)

Receipt of samples satisfactory:  Yes  No

Date and Initials of person examining contents: 2-2-11  
Secondary Review Initials: \_\_\_\_\_

Rush TAT requested on COC:

If yes, then all conditions below were met: \_\_\_\_\_ If no, then mark box & describe issue (use comments area if necessary): \_\_\_\_\_

Chain of Custody Present	<input type="checkbox"/>
Chain of Custody Filled Out	<input type="checkbox"/>
Relinquished Signature & Sampler Name COC	<input type="checkbox"/>
Samples Arrived within Hold Time	<input type="checkbox"/>
Sufficient Volume	<input type="checkbox"/>
Correct Containers Used	<input type="checkbox"/>
Containers Intact	<input type="checkbox"/>
Sample Labels match COC (sample IDs & date/time of collection)	<input type="checkbox"/>
	No Labels: <input type="checkbox"/> No Time/Date on Labels: <input type="checkbox"/>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/>
No Headspace in VOA Vials (>6mm):	<input type="checkbox"/>

**Client Notification/ Resolution:**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution (use back for additional comments):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: [Signature] Date: 2/4/11

**Finished Product Information Only**

F.P. Sample ID: \_\_\_\_\_  
Production Code: \_\_\_\_\_  
Date/Time Opened: \_\_\_\_\_  
Number of Unopened Bottles Remaining: \_\_\_\_\_  
Extra Sample in Shed: Yes No

- Size & Qty of Bottles Received**
- \_\_\_\_\_ x 5 Gal
  - \_\_\_\_\_ x 2.5 Gal
  - \_\_\_\_\_ x 1 Gal
  - \_\_\_\_\_ x 1 Liter
  - \_\_\_\_\_ x 500 mL
  - \_\_\_\_\_ x 250 mL
  - \_\_\_\_\_ x Other: \_\_\_\_\_