

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

Jeff Baylor

**Enclosures** 

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





Pace Analytical Services, Inc.

8 East Tower Circle Ormond Beach, FL 32174 (386)672-5668

### **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







## **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





## **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







### **PROJECT NARRATIVE**

Project: Tomoka Remediation

Pace Project No.: 3525947

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:





### **PROJECT NARRATIVE**

Project: Tomoka Remediation

Pace Project No.: 3525947

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.







## **ANALYTICAL RESULTS**

Project: Tomoka Remediation

Pace Project No.: 3525947

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 CAS No. Prepared Analyzed Qual Analytical Method: EPA 350.1 350.1 Ammonia

0.028 I mg/L Nitrogen, Ammonia

0.050 0.020 02/11/11 10:44 7664-41-7

Date: 02/11/2011 04:49 PM

**REPORT OF LABORATORY ANALYSIS** 

Page 7 of 13





## **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
Field Data	Analytical	Method:							
Field pH	6.72	Std. Units			1		02/04/11 16:43		
Field Temperature	<b>23.96</b> d	leg C			1		02/04/11 16:43		
Field Specific Conductance	<b>3095</b> ເ	imhos/cm			1		02/04/11 16:43		
Oxygen, Dissolved	<b>0.11</b> r	ng/L			1		02/04/11 16:43	7782-44-7	
REDOX	<b>-127.3</b> r	nV			1		02/04/11 16:43		
Turbidity	12 1	NTU			1		02/04/11 16:43		
350.1 Ammonia	Analytical	Method: EPA	350.1						
Nitrogen, Ammonia	<b>122</b> r	ng/L	0.50	0.20	10		02/11/11 13:05	7664-41-7	

Date: 02/11/2011 04:49 PM

**REPORT OF LABORATORY ANALYSIS** 

Page 8 of 13





## **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
Field Data	Analytical	Method:							
Field pH	6.66	Std. Units			1		02/04/11 16:44		
Field Temperature	<b>22.56</b> d	leg C			1		02/04/11 16:44		
Field Specific Conductance	<b>1748</b> ւ	imhos/cm			1		02/04/11 16:44		
Oxygen, Dissolved	<b>0.21</b> r	ng/L			1		02/04/11 16:44	7782-44-7	
REDOX	<b>-115.8</b> r	nV			1		02/04/11 16:44		
Turbidity	11 1	NTU			1		02/04/11 16:44		
350.1 Ammonia	Analytical	Method: EPA	350.1						
Nitrogen, Ammonia	<b>41.7</b> r	ng/L	0.25	0.10	5		02/11/11 13:06	7664-41-7	

Date: 02/11/2011 04:49 PM

**REPORT OF LABORATORY ANALYSIS** 

Page 9 of 13



02/11/11 10:48 7664-41-7



## **ANALYTICAL RESULTS**

Project: Tomoka Remediation

Pace Project No.: 3525947

Nitrogen, Ammonia

Sample: B61	Lab ID: 3525	<b>5947004</b> Coll	ected: 02/04/1	11 15:10	Received: 02	/04/11 15:45 Ma	atrix: Water	
Parameters	Results U	Jnits PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Meth	nod:						
Field pH	6.59 Std. U	Inits		1		02/04/11 16:45		
Field Temperature	23.70 deg C			1		02/04/11 16:45		
Field Specific Conductance	<b>1091</b> umhos	s/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	3.8 NTU			1		02/04/11 16:45		
350.1 Ammonia	Analytical Meth	nod: EPA 350.1						

0.020 1

0.050

**12.1** mg/L

Date: 02/11/2011 04:49 PM

**REPORT OF LABORATORY ANALYSIS** 

Page 10 of 13





### **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

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Nitrogen, Ammonia mg/L 0.020U 0.050 02/11/11 10:14

LABORATORY CONTROL SAMPLE: 170053

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

MATRIX SPIKE SAMPLE: 170055

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

SAMPLE DUPLICATE: 170054

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

Date: 02/11/2011 04:49 PM







### **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**

Date: 02/11/2011 04:49 PM

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		

Date: 02/11/2011 04:49 PM **REPORT OF LABORATORY ANALYSIS** 



CHAIN-OF-CUSTODY / Analytical Request Document

Face Analytical www.pacelabs.com

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

3525947

₽

Page:

Pace Project No./ Lab I.D. DRINKING WATER SAMPLE CONDITIONS 1421804 OTHER GROUND WATER Residual Chlorine (Y/N) 1545 马 REGULATORY AGENCY RCRA Requested Analysis Filtered (Y/N) 24-11 STATE Site Location DATE NPDES UST ACCEPTED BY / AFFILIATION SHN t has Test N/A Other Methanol Preservatives <sub>E</sub>O<sub>s</sub>S<sub>s</sub>bN HOBN HCI Invoice Information: еОИН Company Name: <sup>⊅</sup>OS<sup>Z</sup>H 1545 Pace Quote
Reference:
Pace Project
Manager:
Pace Profile #: Section C TIME Unpreserved Attention: ddress: # OF CONTAINERS SAMPLE TEMP AT COLLECTION त्रवात DATE 1430 (330 <u> 2</u> アデ TIME COMPOSITE END/GRAB Vennediation DATE 간대표 COLLECTED RELINQUISHED BY / AFFILIATION TIME Hackerth Shrk COMPOSITE START DATE Project Name To Maka Report To: Lanife Section B Required Project Information: ഗ (G=GRAB C=COMP) 3AMPLE TYPE urchase Order No.: Ę Project Number: (see valid codes to left) MATRIX CODE Copy To: Matrix Codes MATRIX / CODE Drinking Water Waster Water Waste Water Product Soil/Soild Oil Wilpe Air Tissue Other TOMOKA FRUMSRA 32124 ADDITIONAL COMMENTS Dauhana Peh, Fic (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE Sompany: Volusia County Fax: SAMPLE ID Required Client Information Section A Required Client Information: Requested Due Date/TAT: 990) Puz-24 3102 - 1K 3 Section D Address: Email To: Phone: 10 11 # WILL 9 7 ∞| 6

F-ALL-Q-020rev.07, 15-May-2007

(N/Y)

esimples intact

(N/A) Custody Sealed Cooler

Ice (Y/N)

Received on

J° ni qmaT

DATE Signed (MM/DD/YY): 2 4 [ [

ዕ

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.

PRINT Name of SAMPLER: STOCKEY SMITH

SAMPLER NAME AND SIGNATURE

ORIGINAL

SIGNATURE OF SAMPLER: HOLLSWAN

			okal Landfill Remediation Project Site Location: Volusia County, FL															
Well #	# EQ				<u> </u>		S	ampl	e ID:					· D	ate: 2	2/4	/11	· · · · · · · · · · · · · · · · · · ·
L	<i>P</i> G							P	URGI	NG D	ATA		YSI:	: 02606	5/2/69	<del>)</del>		
Well Diamet	ter 2"		ubing Diameter:	3/8"		Well Scr nterval l			Feet to	)	Stat	tic Depth Water:	<del>7</del> -	Samplin Device:		PP	,	<del>-</del>
	olume Pu				- 1			th – S	tatic De	pth to Wat	er) X W	ell Capacity= Wel	l Volume	Device.		1.1		
					•	-37.	57	<u>_</u> _		477	حد X	ટોવી() 0.16	Gallons/Fo	ot =				Gallons
Equipm	nent Volu	me Pur	ge:	Pump '	Volume	+ (Tubi	ng Capa	acity	X Tubi	ng Length)	+ Flow	Cell Volume=Eq						
		•	क्षे येष	in		+(			X		)+		Gallons					
Initial F Depth i	Pump or 1 in Well (F	eet):				Depth	Pump or in Well	l:	ing			ging iated At:	Purging Ended At	t:		l Volu ed (Ga	me Illons):	
Time	Volume Purged (Gal)	l Vo	JMUL olume urged Gal)	Purg Rate (gpm	i) V	epth to vater eet)	pH (Stand Unit	lard	Temp. (°C)	(բուն	ctivity os/cm i/cm)	Dissolved Oxygen (circle mg/L or % saturation)	Turbidit (NTUs)			Od (Desc		ÖRP
1330			•															
					$\perp$		···				<del></del>							
		+																
		-																
Sample	ed By (Pr	int)	, Capacit	y (Gal.	**********	8" = 0.01 Pace	006;	SA	MPL	ING I	ATA	7	3/8" = 0.	006; 1/2 Sampling At: 133		ed :	Samplin	0.016 ng Ended
Pump ( (Feet):	or Tubing	Depth	in Well		Sample (mL pe	r minute		te	Tubin	g Material PE	Code:	Field Deconta		F	ield-Fil [Yes] [ Size:	MOD	m	Duplicate: [Yes] [Note: 1]
Sample Code		# Contair		fateria Code		100 2		Volun		Preservativ Used	A	otal Volume	Final pH	Intended and/or M	Analys	is	Samı Equi	pling pment
		1			PE			250	ml		1	mL)	<del> </del>	Anions		_	Code	PP
																	<u> </u>	
Ueath Weath Conditi Sunny Partly	ons ⁄	lv	Total D Type: [] Rive	Surface Water														
Cloud		· [	[] Soils/Sediment Sampling Point: Sample Depth: [] Composite [] Grab															
empera	ture:70		[] Drur		e		pe:	D.			s [Yes]		] Composite					
ain: [Yo ind Spo ind Dir	eed: 5	10	[] Othe Field N		dis		d to			Samp	le Dept	tn: [	] Composite	e []Grab				
			On Ice (	<u>@</u>			Bottles	Prese	erved <2	рН								
ield\Field :	See Work Order/Bottle Order														···			

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)   Sampling Initiated   Sampling Ended   At:	Site Name: Tomokal Landfill Remediation Project Site Location: Volusia County, FL																			
Well Volume Purge:   Tubing   State   Depth	Well #	#: Blod	-12					Samp	le ID:		Date: 2/4/11									
Well Volume Purge:   Tobing   Diamoter   3/8   Well Screen   Interval Depth   Feet to   State Depth   Owder   14.77   Device   PP							L	P	URO	ING	G DATA YSI: 02606/2697)							_		
Veli Volume Purge		. 011			"							Stati	c Depth		Sampli	ng			<del></del>	_
Carlo   Carl			F	ter: 3/8											Device		PP			_
Equipment Volume Furget   Pump Volume + (Tubing Capacity X Tubing Length) + Flow Cell Volume: Equipment Volume   Equipment			<del>5-</del> .	8	Line											211	1		٠.,	
Third Pump or Tubing   Purgel   Purge	Equipn	nent Volur	ne Purge:							bing Le	ength) + F	low (	0.16 Cell Volume= Eq			<u> </u>	<u> </u>		Gallons	_
Initial Pump or Tubing   Capacity   Capaci	and and a							y					_	-						
Depth   Welf   Capacity   Callors   Feet   Foot    D78" = 0.02   1" = 0.04   1.25" = 0.05   2" = 0.16   1.25"   1.25	Initial I	Pump or T	ubing				al Pum	or Tu			)+ 	Purg	inσ	Purging						_
Time   Volume   ClMUI   Puge   Depth   Pil   Tump   Conductivity   Disorded   Conductivity   Color				-								Initia	ated At: 1342	Ended At	1412	Pur	ged (Ga	illons):	7.75	
	Time		4				(64	pH	Tem		Conductiv	ity	Dissolved						ORP	
3,35   26   1   1   1   1   1   1   1   1   1			(	1		•			(	"			(circle/mg/Lor	(INTOS)	(De	scribe)	(Desc	1100)		
1857   1600   3, 3   5   5, 39   6, 74   2404   30 24   0, 17   31   11000   54 1   127.8     1401   1,00   4,35   6,37   24.11   30510   0,14   32   127.8     1403   1,00   6,35   1,00   6,37   24.9   30 37   0,13   20   127.3     1404   1,00   6,35   1,00   6,37   1,00   1,30   1,20   1,20   1,20   1,20   1,20     1415   1,00   1,25   1,00   1,30   1,20   1,20   1,20   1,20   1,20   1,20   1,20     1417   1,00   1,25   1,00   1,25   1,00   1,25   1,00   1,20   1,20   1,20   1,20   1,20     1417   1,00   1,25   1,00   1,25   1,00   1,20   1,20   1,20   1,20   1,20   1,20   1,20   1,20     1417   1,00   1,25   1,00   1,20   1,20   1,20   1,20   1,20   1,20   1,20   1,20   1,20     1417   1,00   1,2		275				(Feet)							% saturation)							
	1257		•	5 0.7	5	15.39	10	ul	240	10	3021		017	31	. 10	حيماا	SI V		-128 1	_
		-				1									- ye	1	)			_
																				_
Weather									_	_		3								_
Weather						1						_			4	/	4		127.3	_
Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Pace   Sampler(s) Signature   Sampler(s) Signatur		,,,,							1											~-
Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Stacey Smith   Pace   Sampled By (Print)   Sampled By (Print)   Pace																			_	
Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Statesy Smith   Pace   Sampled By (Print)   Sampled By (Print)   Pace																				
Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Sampled By (Print)   Stacey Smith   Pace   Sampled By (Print)   Sampled By (Print)   Pace																				
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) Stacey Smith  Pace  Sampler(s) Significates and Code: Field Decontamination: Field-Filtered: (mL per minute): PE														1						
Sampled By (Print)   Sampled By (Print)   Stacey Smith   Pace   Sampler(s) Significance   Sampling Initiated   S																				
Sampled By (Print) Stacey Smith  /Pace  Sampler(s) Signifures  Stacey Smith  /Pace  Sampler(s) Signifures  At:  U U   At:															<del>`</del>	•	<u> </u>			-
Stacey Smith		<del></del>											·							
Pump or Tubing Depth in Well   Sample Pump Flow Rate (mL per minute):   Tubing Material Code:   Field Decontamination:   Field-Filtered:   Tyes]   Total Volume   Preservative   Total Volume   Added in Field   PH   Intended Analysis   Sampling   Equipment   Todal Code   Containers   Code	-					, Pac		Sa	ampler(			Tor	th	-						1
Code				/ell	Sar			Rate	Tut			-	•	mination:		'' '			Duplicate:	+
Sample ID Code Containers Code Volume Preservative Used Added in Field pH and/or Method Equipment Code  1 PE 250 ml Anions PP  Weather conditions Sunny Partly Cloudy Clou			•		(ml	L per mi	iute):			_					****				[Yes]	
Code	Sampl		#	Materi	al		JU-2000		ıme			То	tal Volume	Final						$\dashv$
Weather onditions Sunny Partly Cloudy Cloudy mperature: 71 in: [Yes] [Not] ind Speed: 570 ind Direction: N    I			Containers	Code								5		pН				Equ	ipment	
Total Depth:		<del></del>	1	1		PE		25	0 ml			(m	11.)		Anions			Coa		
Total Depth: [] Shore [] Surface Sampling Point: Volume: Volume: Volume:				<del> </del>								<u> </u>		1				+	_,	-
Total Depth:	<u> </u>		· · · · · · · · · · · · · · · · · · ·	-								$\vdash$						+		+
Total Depth:		<del> </del>		<del> </del>							•	<u> </u>	<del> </del>					+		_
Total Depth:				<del> </del>								H						+		1
Total Depth:	Weath		[]:	Surface V	Vate	r		<del>'</del>	Taken I	rom:		-	[] Waste Wate	r: Start Tim	ie	Fin	ísh Tim	e	·	=
Sunny Partly Cloudy Cloudy I gride [] Other			Tot	al Depth:	olea	[] Strac										Vol			<del></del>	
Cloudy emperature: 77 min: [Yes] [No] ind Speed: 570 ind Direction: N  [] Soils/Sediment   Sampling Point:   Sample Depth:   ] Composite   ] Grab  [] Drum Waste   Type:   Layers [Yes] [No]   [] Composite   ] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   ] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   ] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   ] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   ] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sampling Point:   Sample Depth:   [] Composite   [] Grab  [] Other:   Sample Depth:   [] Composite   [] Grab  [] Oth	Sunny	y						]	] Bridg	ge [						JOIAU	½ Ho	ur []		
emperature: 71 Ain: [Yes] [No] ind Speed: 570 ind Direction: N  On Ice @ IYIO Bottles Preserved < 2pH  [] Drum Waste Type: Layers [Yes] [No] [] Composite [] Grab  [] Other: Sample Depth: [] Composite [] Grab  [] Other: Sample Depth: [] Composite [] Grab  [] On Ice @ IYIO Bottles Preserved < 2pH	Partly	/ Cloud	у 🗔	Soile/Sedi	meni	<del></del>	Sampl			<del></del>		anth	<u></u>	1 Composite	11Gr	ah				_
ind Speed: 570 ind Direction: No  On Ice @ 1410  Bottles Preserved <2pH		•	[1]					ing ron												
ind Speed: 570 ind Direction: N  On Ice @ 1410  Bottles Preserved < 2pH	-		1 12		510			ine Doi:											<del></del>	_
ind Direction: N  On Ice @ ILIO Bottles Preserved <2pH	-		'J Fiel			مأدداء		<u> </u>			Sample I	λυμα	<u>[</u>	_1 Composite	C I Ota					_
On Ice @ 1410 Bottles Preserved <2pH			ן סו		(	wsang	ngeo	40	givi	MO										
	ınd Di	rection	· 1																	
			On	lce @  \	flo	)	Bot	tles Pre	served ·	<2pH										
eld\Field Sheets See Work Order/Rottle Order						•														
Dec 11 dix of dell'house of del	eld\Field	Sheets	Se	<u>ee W</u>	or	k O	<u>rde</u> i	<u>/B</u> o	ttle	01	der									

Site N	Site Name: Tomokal Landfill Remediation Project Site Loc												tion: Volusia	County, F	L				
Well	#: B6	2-2	R				1	Sampl	le ID:		,I					Date:		f/11	
								P	URG	ING	DAT			YSI:		606/2	<u>(97)                                    </u>		
Well Diamet	ter: 7"		Fubing Diameter	. 3/8'	,	Well Scr Interval			Feet t	0	ł	Statio to Wa	Depth 14.95	5	Sam Devi	pling ice:	PP		
	olume Pu			. 576		5	•						Il Capacity= Well		Don	100.			•
						( 22	.00	_	10	1.95	- ' }	X [0	116	Gallons/Fo	ot =	۱, ا	3		Gallons
Equipn	nent Volu	me Pui	rge:	Pump	Volu							low C	Cell Volume= Equ			_			
						+(			х		)+		= (	Gallons					
	Pump or T in Well (F		17				Pump in We					Purgi Initia	ing ited At: 1426	Purging Ended At	:143		otal Vo urged (	lume Gallons):	2.25
Time	Volum		UMUL 'olume	Purg Rat		Depth to		H idard	Temp (°C)		onductiv µmhos/c	ity	Dissolved Oxygen	Turbidit (NTUs)		Color Describe		Odor escribe)	ORP
	Purged (Gal)	F	urged	(gpr	- 1	Water	, `	its)	( 0)		μπιοs/cm	_	(circle mg/Ler % saturation)	(1410s)		J¢3¢1100	,, (2.	2304100)	
			(Gal)			(Feet)							% Saturation)	İ					
431	1.05	1,	15	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											111.0				
433	0.50	Ìŧ	75			6.22	6.4	7	22.4	9 1	748		0.25	15	U	1_			-1140
435	0.50		.25	レ		1	6.6	$\varphi$	22.51	0 1	748		0.21	11		<u>+</u>		<u> </u>	-115.8
_		_	····						<u> </u>						<u>.</u>				
		ļ.		ļ	_				<u> </u>			_		<u> </u>	$\perp$		_		
					_				<del> </del>			-		<del> </del> -	+				<del> </del>
	<del> </del>	_													_		_		-
		+																	
	<del> </del>	+												-					1
						<b>5"</b> = 0.02;	1" =	0.04;	1.25"	= 0.06;	2" =	0.16;	3" = 0.37; 4		5" <b>=</b> 1		5" = 1.47		= 5.88
Т	ubing Ins	ide DIA	\. Capaci	ity (Gal	./Ft.):	1/8" = 0.0	1006;		' = 0.001	<u> </u>	/4" = 0.0		5/16" = 0.004;	3/8" = 0.	006;	1/2" =	0.010;	5/8" =	0.016
								S.F	AMP	LINU	G DA	IA							
	led By (Pr			<del></del>		_		Sa	ımpler(s	) Signa	tures	-	> Jl			pling In			ing Ended
	ey Smit		1 117-11		C	/ Pace	FI F	1	1 7		X100	<u>48</u>	Field Deconta	mination:	7.1.	143C	l-Filtere	1	937 Duplicate:
(Feet):	or Tubing	z Depu	n in weii			npie Pump _ per minut		cate	100	-	terial Co	ue.	[Yes] [N			[Ye	:s] [170		[Yes]
	<u> </u>	<u> </u>		Materi	1.	100-	200ml	Volu			PE vative	T T.	otal Volume	Final		Filter Sinded Ar		_μm I San	npling
Sample Code	ie ID	# Conta	. 1	Code	aı			voiu	me	Used	vanve		ided in Field	pH		or Meth		Equ	ripment
		1				PE		250	) ml			(m	ıL)		Ani	ons		Cod	de PP
								230	,			<u> </u>						<del></del>	
												<del> </del>							
														<del> </del>				<u> </u>	·
												-		-					
Veatl	——∟ her		[] Sur	face V	Vate	f			Taken F	rom;		1	[] Waste Wate		ne		Finish T		<del></del>
ondit			Total I		nlea .	[] Stream			] Shore   Boat		Surface Mid-Dep		Sampling Po	oint: ] Composit	·	. \ []Gr	/olume: ah		<del></del>
Sunn	У					[] Sireani 		Ī	] Bridge	e []	Botton		mL per:		Hour			Hour []	
•	y Cloud	ly	[]Soi	ls/Sedi	ment	: S	amplir		] Wadir at:	<del></del>	Other Sample I	Denth	: · · · · ·	] Composit	e []	Grab			
Cloud	-	_	[] Dru				ype:				Layers [`			] Composit					
	ature: <b>7</b>		[]Oth				amplir	ıg Poir	nt:		Sample			] Composi					
_	/es] [N beed: 5	-	Field 1			discha				runc	1		· · · · · · · · · · · · · · · · · · ·	<del></del>					
	irection				(	سابات المدر	yes	-71	9	your (	•								
		/~	On Ice	ைய	2 2		Roffl	ec Dre	served <	2nU									
			On Ice	₩{ <b>५</b>	50		וווטם	va FIC	oci yeu <	-Հիլ-լ									
				**		1 🔿	. Y .	/D	T	^	J.								
ield\Field	1 Sheets		See	See Work Order/Bottle Order															

Site Name: Tomokal Landfill Remediation Project Site Location: Volusia County, FL																	
Well#	#: BU	٥١			,,- ·	Sa	ample	ID:	1				Date	: 2/	<b>P</b> / 11		
		<del></del>				<u> </u>	PU	RGIN	G DAT	A		YSI:	02606/2	(97)			
Well			Tubing	4 (0)	Well So			_			Depth nter:	ľ	Sampling				
Diamet	er: 2" olume P		Diameter	: 3/8"	Interval	•		Feet to		to Wa	nter:   기. Ч l Capacity= Well		Device:	PP			
MCH A	olanic r	uige.				_		-					0 1				
	77.1			D 11		3.75				X 0	.16	Gallons/Foot	= 7.3	5 <i>U</i>		Gallons	
Equipm	nent Vol	ume Pu	rge:	Pump Vo	lume + (Tut	ung Capa	acity X	. Tubing	; Length) + F	low C	Cell Volume= Equ	iipment Volui	me				
				+( X )+ = Gallons Final Pump or Tubing Purging Purging Total Volume													
Initial F	omp or n Well (	Tubing Feet):			Final Dept	l Pump of h in Well	r Tubin I- 10	g g		Purgi: Initial	ng ted At: いしとつ	Purging Ended At			olume Gallons):	4.0	
			UMUL	Purge		h in Well					ted At: 1453	Ended At: Turbidity	Color		Odor	ORP	
Time	Volun Purge		/olume	Rate	Depth to	pH (Stand		Temp. (°C)	Conductiv (µmhos/cr		Dissolved Oxygen	(NTUs)	(Descrit	1	escribe)	ORP	
	(Gal)		Purged	(gpm)	Water	Unit		` '	OF ASSICTA	}	(circle mg/Dor	` ′	`		,		
		- 1	(Gal)		(Feet)						% saturation)						
503	2,50	1 2	,50	015	18.20	6.60	2	3.70	1095	-	0.29	14	It.ta	1 5	uhr	-H.5	
50 b	0.79		15	1	13.25	(0.60		3.6e	1092		2,24	10	1	·	LIACA	74.7-	
1509	0.7		.00	18.32 6.59 23.70 1091 0.20 3.8 -75.0													
ועלו	0.9	- 14	· & (/		10.32	1 ( , 0	- 1	3.10	10 //	$\dashv$	<u> </u>	7.0				75.5	
	-			<del> </del>													
		<del> </del>															
			<del></del>														
		$\perp$	-														
											<del></del>			07. 4.45			
					.75" = 0.02; ): 1/8" = 0.			<b>1.25</b> " = 0 0.0014;			3" = 0.37; 4 5/16" = 0.004;	" = 0.65; 5' 3/8" = 0.00		6" = 1,47 = 0.010;		≂ 5.88 : 0.016	
					<u> </u>		SAI	MPLI	NG DA	ΓĀ							
							·~										
_	ed By (P				, D		Sam	pler(s) S –	ignatures	$\supset$	W_		Sampling I		Sampli At:	ing Ended	
	y Smit		ı in Well	1 0	/ Pace		<u> </u>	Tubida	Material Co.	<u> </u>	H Field Decontar		At: 1510	d-Filtere	ļ	Duplicate:	
(Feet):	or ruom	g Depu	II ILI VY CIL	(n	unpie Pump L per minu	te):	ne	ruomg	Material Col	ıe;	rieid Decoillai	i i		es] No		[Yes]	
(,-	13.5					-200ml			PE				Filter S	ize;	μm	<b>8</b> (0)	
Sample	e ID	# Conta		Material Code		'	Volume		reservative sed		tal Volume ded in Field		Intended A and/or Met		Sam	npling ripment	
Code		Conta	meis	Couc		1		١٠	scu	(ml		pm	anuroi ivice	110 <b>u</b>	Cod		
		1			PE		250 n	nl					Anions			PP	
					• • •												
										<u> </u>							
										<del>                                     </del>					$\neg$		
Veath	er		[] Sur	face Wat	er		Ta	ken Fron	n.	<u> </u>	[] Waste Wate	r: Start Time		Finish T	ime		
nditi			Total I	Depth:	<u> </u>		[]5	Shore	[] Surface		Sampling Po	int:	·	Volume:_			
Sunny			Type:	[] Lake	[] Stream	l	[]B	oat Bridge	[] Mid-Dep [] Bottom		mL per:	] Composite	[]G our[]		Hour []		
	, Clou	dτ	LIKW	ci []Oii				Nading -	[] Other		mit per.	[] []	տու է յ	/21	ioui [ ]		
Cloud		uy	[] Soil	s/Sedimer	it S	Sampling	Point:		Sample D	epth:	[	] Composite	[] Grab				
mpera	-	እጋ	[]Dru	m Waste	1	Гуре:			Layers [Y	es] [	No] [	] Composite	[] Grab				
in: [Y			[] Oth			Sampling	Point:		Sample I	epth	: [	] Composite	[] Grab				
nd Sp			Field N	lotes:	darcha	ا ادر	to a	hound			ı				-		
nd Di					discha	year	,- 7	In	•		•						
		•••		0 :			_		• •								
			On Ice	@ 1512		Bottles	Preser	ved <2p	н								
eld\Field	Sheets		See	Wor	rk Or	der/l	Bot	tle C	)rder								
			·													<del></del>	

Pace Analytical Client Name: Volubi	a Project # 356 3525947
Courier: Fed Ex UPS USPS Client Commercial	Pace B&B Other
Tracking #	<u> </u>
Custody Seal on Cooler/Box Present: yes no Seals	intact:  yes  no  Date and Initials of person examining
Packing Material: Bubble Wrap Bubble Bags None	Other contents: 2-2/-/, 0/-
Thermometer Used 39 Type of Ice: (Wet	Blue None Secondary Review
Cooler Temperature (Actual) (Temp should be abo	ove freezing to 6°C)
Receipt of samples satisfactory:	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	О
Chain of Custody Filled Out	
Relinquished Signature & Sampler Name COC	0
Samples Arrived within Hold Time	
Sufficient Volume	
Correct Containers Used	
Containers Intact	
Sample Labels match COC (sample IDs & date/time of collection)	
	No Labels: No Time/Date on Labels:
All containers needing preservation are found to be in compliance with EPA recommendation.	
No Headspace in VOA Vials ( >6mm):	
Client Notification/ Resolution:	
Person Contacted: Date/	Time:
Comments/ Resolution (use back for additional comments):	
	<del></del>
Project Manager Review:	Date: 2/4///
1 Toject Manager (cortes).	
Finished Product Ir	nformation Only
F.P. Sample ID:	Size & Qty of Bottles Received
Production Code:	x 5 Gal x 2.5 Gal
r rouncuon coue.	x 1Gal
Date/Time Opened:	x 1 Liter
·	x 500 mL
Number of Unopened Bottles Remaining:	x 250 mL
Extra Sample in Shed: Yes No	x Other:

Sample Condition Upon Receipt Form (SCUR)

\_Table Number:\_