

John E. Manning District One

June 1, 2017

Cecil L Pendergrass District Two

Larry Kiker District Three

Brian Hamman District Four

Frank Mann District Five

Roger Desjarlais County Manager

Richard Wm. Wesch County Attorney

Donna Marie Collins Hearing Examiner

Ms. Renée J. Kwiat, CHMM

**Environmental Consultant** 

Florida Department of Environmental Protection, South District

P.O. Box 2549

Fort Myers, FL 33902-2549

Lee County Resource Recovery Facility, PA90-30H Re:

Construction & Demolition Debris Recycling Facility

**WACS ID No. 93715** 

First Semi-Annual 2017 Water Quality Monitoring Report

Dear Ms. Kwiat:

Enclosed please find the First Semi-Annual 2017 Water Quality Monitoring (WQM) Report for the Lee County Resource Recovery Facility (RRF) and the Construction & Demolition Debris Recycling Facility (CDDRF). Chemical Laboratories, Inc. (FCL) sampled the RRF's six (6) shallow monitoring wells, or WTE-1S, WTE-2S, WTE-3SR, WTE-4S, WTE-5S and WTE-6S, which include the CDDRF's three (3) monitoring wells or WTE-2S, WTE-3SR and WTE-4S, on February 6, 2017.

Sampling was performed in accordance with the Facility's Ground Water Monitoring Plan (GWMP) dated August 2010 and approved by the Department on October 19, 2010. The laboratory analytical results from this WQM event were compared to the Department's water quality standards or maximum contaminant levels (MCL) established in Chapter 62-550, F.A.C., and are summarized below.

### **Ground Water Monitoring Data Discussion**

Ground water from five (5) of the six (6) shallow monitoring wells sampled, i.e., all but WTE-6S, exceeded the secondary drinking water standard for Iron which is 0.3 milligrams per liter (mg/L) as established by Rule 62-550, F.A.C. Ground water from two (2) of the six (6) shallow wells sampled, i.e., WTE-2S and WTE-5S, exceeded the secondary drinking water standard for Total Dissolved Solids (TDS) which is 500 mg/L as established by Rule 62-550, F.A.C. concentrations of Iron and TDS in the wells that exceeded the standards as noted

Ms. Renée Kwiat June 1, 2017 Page 2 of 3

above are reported in Table 1. Note that the Iron and TDS concentrations reported are consistent with background and historical monitoring results and the ground water quality in this region.

In addition, ground water from monitoring well WTE-4S exceeded the Ground Water Clean-Up Target Level (GCTL) for Ammonia which is 2.8 mg/L as established in Chapter 62-777, F.A.C. The Ammonia concentration at WTE-4S was reported to be 4.24 mg/L which is consistent with the Ammonia results from the last 2 sample events including the March 2016 resample event which was scheduled after the February 2016 sampling results reported an Ammonia level of 19 mg/L in WTE-4S. The March 2016 resample event reported Ammonia at 4.0 mg/L and the August 2016 routine sampling event reported Ammonia at 4.4 mg/L.

Given the Ammonia concentrations from three consecutive sampling events are significantly lower than the concentration reported in February 2016 and have remained steady, along with the Department Memorandum SWM-13.10, Monitoring and Evaluation Ammonia in Ground Water at Solid Waste Management Facilities, dated December 3, 2012, no additional sampling will be performed. However, Ammonia will continue to be monitored according to the approved ground water monitoring plan.

Table 1 - Results which Exceeded Standards in Chapter 62-550, F.A.C.

Parameter (units)	WTE-1S	WTE-2S	WTE- 3SR	WTE-4S	WTE-5S	WTE-6S
Iron (mg/L)	8.21	0.323	3.86	2.09	0.322	BS
TDS (mg/L)	BS	568	BS	BS	512	BS

Water Quality Standards: Iron- 0.3 mg/L; TDS- 500 mg/L; BS-Below Standard

### **Electronic Data Files**

As required, this WQM Report includes the field and laboratory ADaPT files which are provided as separate electronic files prepared in the Department specified format.

### **Ground Water Elevations**

The ground water elevations at the six (6) shallow (water table aquifer) and six (6) deep (sandstone aquifer) monitoring wells are provided in Table 2 below. The elevations were determined in accordance with the DEP-SOP-001/01, and specifically, FS2200, Ground Water Sampling. The data used to determine the ground water elevations is provided in the Attachments to this WQM Report.

Table 2 – Ground Water Elevations (ft., NGVD) Measured February 6, 2017

WELL ID	Elevation (ft., NGVD)	WELL ID	Elevation (ft., NGVD)
WTE-1S	16.7	WTE-1D	6.11
WTE-2S	16.07	WTE-2D	14.40
WTE-3SR	15.01	WTE-3DR	13.71
WTE-4S	13.47	WTE-4D	12.14
WTE-5S	15.89	WTE-5D	14.15
WTE-6S	12.94	WTE-6D	11.58

Note: WTE-2S, WTE-3SR and WTE-4S comprise the monitoring well network for the CDDRF

### Field Documentation and Report Certification

The attachments to this WQM Report include DEP Form #62-701.900(31), F.A.C., Water Quality Monitoring Certification, DEP Form FD 9000-24, Ground Water Sampling Log for each well sampled, field data sheets and sample chain of custody.

### Recommendations/Conclusions

The monitoring results reported herein are consistent with prior monitoring results and background data for the RRF and the CDDRF and are typical for ground water in this geographical region with the exception of the ammonia concentration reported in WTE-4S. Given the substantial decrease in ammonia indicated by the resample and subsequent routine monitoring results along with the Department Memorandum SWM-13.10, no additional ammonia monitoring is recommended at this time. The RRF and CDDRF will continue to implement the approved ground water monitoring plan and will report the results to the Department as required.

Please call me at (239) 533-8930 in Wollhow, any questions pertaining to this Water Quality Monitoring Report.

No. 50138

Engineering Manager Solid Waste Division

Attachments

Cc: Bureau of Solid and Hazardous Waste, FDEP

Siting Coordination Office, FDEP

Keith Howard, SWD Mike Duff, Covanta Tyler Huffman, Covanta

File II E107

Attachment A-Ground Water Monitoring Report Certification, DEP Form # 62-701.900(31)



PART I GENERAL INFORMATION

# 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

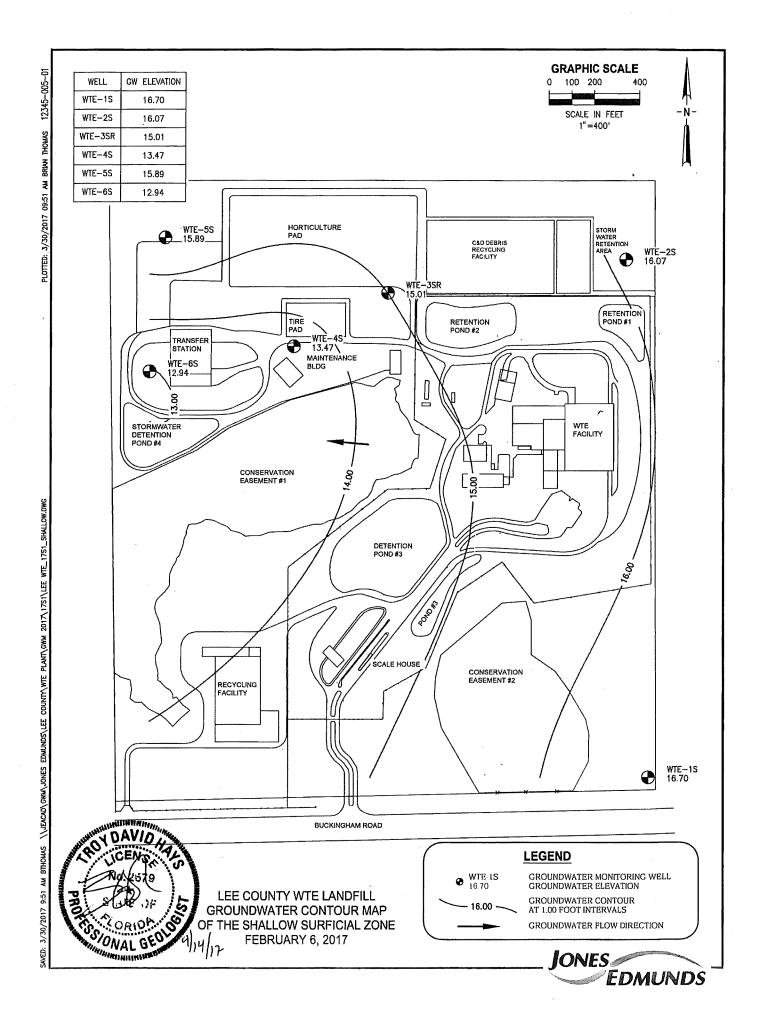
Effective Date: January 6, 2010

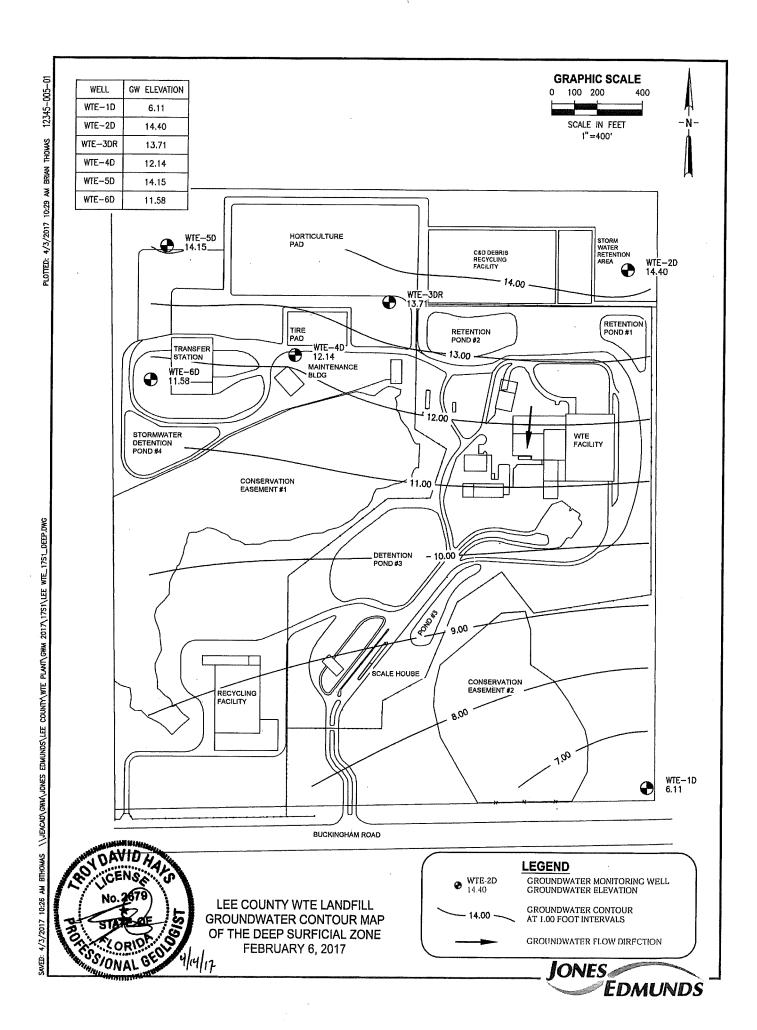
Incorporated in Rule 62-701.510(9), F.A.C.

### WATER QUALITY MONITORING CERTIFICATION

(1) Facility Name Lee County Solid Waste Resource Re-	covery Facility	
Address 10500 Buckingham Road		
City Fort Myers	Zip <u>33905</u>	_ County Lee
Telephone Number (239 ) 533-8000		
(2) WACS Facility ID 93715		
(3) DEP Permit NumberPA90-30H		
(4) Authorized Representative's Name Keith Howard	Title	Director
Address 10500 Buckingham Road		
City Fort Myers	Zip <u>33907</u>	County Lee
Telephone Number (239 ) 533-8000		
Email address (if available) khoward@leegov.com		
I certify under penalty of law that I have personally exposured and all attachments and that, based on my inthe information, I believe that the information is true, penalties for submission of false information including the	inquiry of those individuals imme accurate, and complete. I am e possibility of fine and imprisonn	ediately responsible for obtaining aware that there are significant pent.
/ (Daté) (Own	er or Authorized Representative's	s Signature)
PART II QUALITY ASSURANCE REQUIREMENTS		
Sampling Organization Flowers Chemical Laboratories	s, Inc.	
Analytical Lab NELAC / HRS Certification # E83018		
Lab Name Flowers Chemical Laboratories, Inc		
Address P.O. Box 150597, Altamonte Springs, FL 32715	-0597	
Phone Number (407 ) 339-5984	Market Control of the	
Email address (if available)		

Attachment B – Ground Water Contour Maps (Shallow and Sandstone Wells) and Supporting Data





Lee County Resource Recovery Facility Ground Water Elevations for Feb. 6, 2017

	GW Elevation		GW Elevation (ft,
Mell ID	(ff, NGVD)	Well ID	NGVD)
WTE-1S	16.7	WTE-1D	6.11
WTE-2S	16.07	WTE-2D	14.4
WTE-3SR	15.01	WTE-3DR	13.71
WTE-4S	13.47	WTE-4D	12.14
WTE-5S	15.89	WTE-5D	14.15
WTE-6S	12.94	WTE-6D	11.58

All deep wells are 4 inch diameter and all shallow well are 2 inches diameter

21.91     5.21       22.96     16.85       24.18     8.11       23.52     9.12
23.98 8.97
23.91   10.20
22.48 9.01
23.81   11.67
23.81 7.92
24.5   10.35
23.66   10.72
22.91 11.33

Attachment C – Ground Water Monitoring Well Inspection and Water Level Measurement Form (Shallow and Sandstone Wells)

Ground Water Monitoring Well Inspections & Water Level Measurements

Date: 2-6-17 Inspector Name: Dustin Rayburn
Site and/or Well Network Name: WTE Plant

Well ID	Well TOC, ft., NGVD	Time*	Distance to Water, ft.	Elevation, ft., NGVD	Well in Good Condition (Y/N)? **
WTE-1S	21.91	11:19	5.21		1
WTE-1D	22.96	11:18	16.85		. <b>y</b>
WTE-2S	24.18	7:49	8.11		Ý
WTE-2D	23.52	7:48	9.12		У
WTE-3SR	23.98	8:29	8.97		ý
WTE-3DR	23.91	8:28	10.20		V
WTE-4S	22.48	9:024	9.01		Ý
WTE-4D	23.81	9:03	11.67		Y
WTE-5S	23.81	9:44	7.92		ý
WTE-5D	24.5	9:43	10.35		ÿ
WTE-6S	23.66	10:29	10.72		ý
WTE-6D	22.91	10:58	11.33		ý

<sup>\*</sup>Enter date too if different than noted above.

Inspector Signature:

Revised 3/19/15

<sup>\*\*</sup> If 'N' entered, explain below. Attach additional sheets if needed

Enter Comments Below As	Need	led.	. Ensure well ID is clearly noted for each comment.
***************************************			
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		$\dashv \dashv$	
,		+	
	1		
	-		
Additional Pages Attached (Y/N)?		_	
	//	1	

# Attachment D – Sampling Documentation (Shallow Wells Only)

- Ground Water (GW) Sampling Logs, FD 9000-24
- Field Sheets
  - o Calibration Sheet
  - o Field Data Sheet
  - o Chain of Custody

Ground Water (GW) Sampling Logs, FD 9000-24

SITE NAME: LEE COUNTY-SWERF-WTE WELLS-S/A LOCATION:WTE															
WELL NO:	WTE-1S	F-VVIE	WELLS-SIA		SAMPL	E ID: 322668G		-		DA	ATE:	2/6	/2017		
WALLE 14O.	WIL-10				TOTAVI L	PURGING									
WELL		TUI	BING			ELL SCREEN IN PTH: fee	ITERVAL		ATIC PTH(fe	5	3.21 P	JRGE PL	JMP TYPE	RFPP	
DIAMETER (i			METER (inch					тос	C (feet	): 2		R BAILEI	R:		
	ME PURGE: 1	WELL \	VOLUME = (	OTAL	WELL DEPTI	H - STATICE	EPTH TO W	ATER)	X W	ELL CAP	ACITY				
(only fill out if	applicable) = (	14,60	) feet –	3	.21 fe	et) X 0.16	gallons/	foot =	1	.50 gal	lons				
EQUIPMENT	VOLUME PUR											LOW CE	LL VOLUM	E	
(only fill out if															
		gallons			ns/foot X	feet) +		allons =		gallons PURGIN					
INITIAL PUMP OR	TUBING ELL (feet):10.0		FINAL PUMP		ig . (feet):10.0		PURG	ing IATED A	T-11-2		iG D 11:3		TOTAL VOLUM		40
DEP ID IN W	LLL (leet). 10.0	сим			DEPTH	pН	TEMP.	CON		DISSOLVED		TURBIDITY		LOR	ODOR
		VOLU			TO	(standard units)	(°C)	(circle u		OXYGEN		(NTUs)	1	cribe)	(describe)
		PURG	1	- 1	WATER		, ,	µmhos/		(circle units)					
	VOLUME PURGED	(gallo	ens)		(feet)			<u>or</u> μS/	cm cm	mg/L or					
TIME	(gallons)									% caturation					LIGHTH .
11:30	1.50	1.5				6.91	23.3	577.		0.49		18.45		NE	NONE
11:33	0.45	1.9		5 5.24		6.91	23.3	577.		0.49	17.86			NE	NONE
11:36	0.45	2.4	0.1	5	5.24	6.91	23.3 57		.0	0.48	17.54		17.54 NO		NONE
						ļ									
						1									
WELL CAPACITY	(Gallons Per Foot): 0.3	75" = 0.02:	1" = 0.04: 1.2	5" = 0.06	2" = 0.16: 3"	'=037: 4"=065:	5" = 1.02; 6"	= 1.47; 1	2" = 5.81				1	1	
	A. CAPACITY (Gal./Ft						= 0.006; 1/2" =		'B" = 0.01						
	ENT CODES: B=				P = Electric Subme	rsible Pump; PP =	Peristaltic Pump;	O = Othe	er (Specit	ý)					
						SAMPLING		a. <del>-</del>		15.445			104445	. 11.10	
	(PRINT) / AFF	LIATIO	N:	SAM	PLER(S) SIG	NATURE(S):	(4)	fyl-			LING	T:11:37	SAMP		14.44
Dustin Raybu PUMP OR TU				TUBI	NG				FIFI	D-FILTER		No.	FILTER		
	ELL (feet):10.0				ERIAL CODE	: P:E				tion Equip			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	O12	
	NTAMINATION:	Р	UMP No			ING Repl	aced				ICATE		No		
SA	MPLE CONTAINER S	PECIFICAT	ION			SAMPLE PRES	ERVATION			INITE	NDED			SAMPL	E PUMP / RATE (Gal /
					PRESERVATIVE	-	TOTAL VOL		FINAL	ANA	LYSIS			FLOW	Min)
SAMPLE ID CODE	#CONTAINERS	MATERIAL	VOLUME		USED	ADDE	D IN FIELD (mL)		pН		D/OR HOD		SEQUIPMENT CODE		
I S GOLL		0000	***************************************				,		6.91		COC		FPP		0.15
		<b></b>													
				1										T	
REMARKS:															
															ļ
MATERIAL CODES		62	- Ol Ol P	2 - D-L -	1. J	-hd 0 0.7	laner ToT.d.	. 0-05	ar/Cnc-						
	S: AG = Amber Gl					olypropylene; S = Sil r Pump; ESP = Ele			ei (opeci	l VV					
						Tubing Gravity Drain);									

2, 2009

NOTES:1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. 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: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2);
optionally, + 0.2 mg/L. or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SITE	NAME; LEE COUNTY-SWERF-WTE WELLS-S/A LOCATION:WTE													
			WTE W	ELLS-	S/A	TO A MIDLE			TE	IDAT	E. 2	/6/2017		
WELL I	NO:	WTE-28				JSAMPLE	ID: 322668G PURGING			IDAI	E	10/2017		
WELL			TU	BING		lwe	LL SCREEN IN		ISTATIC	8.	11 PURGE PL	JMP TYPE: F	REPP	****
1				5,,,0			PTH: fee		DEPTH(fe	et):				
DIAME	TER (inc	nes): 2.0	DIA	METE	R (inches):	1/4" feet	·		TOC (feet)	): 24.	18 OR BAILE	R:		
		PURGE: 1 W	ELL VO	DLUME	E = (TOTA	L WELL DEPTI	- STATIC	DEPTH TO	WATER)	X WELL C	APACITY			
(only fil	I out if ap		40.0	•			V 0.40	11	alfaat m	0.62 ga	allons			
FOUR	MENT	= ( DLUME PURGE	12.0		feet - 8				s/foot = Y X		NGTH) + FLO	W CELL VOL	JME	
	out if ap			OJF WIL	ANT VOL.	- I OWN VOLO	ML · (TOBING	, 0,11 , 101.	, ,	TODING EL	,			
(0)	, out it up		llons +	(	gall	ons/foot X	feet) +		gallons	= ga	lons			
INITIAL P	UMP OR TU	BING			IAL PUMP OR T			PURG		PURGING		TOTAL VOLUME		
DEPTH	I IN WEL	L (feet): 10.0				ELL (feet): 10.0			IATED AT: 7		AT:8:03	PURGED (g	al):1.84 LOR	ODOR
			CUN		PURGE RATE	DEPTH TO	pH (standard units)	TEMP.	COND. (circle units)	DISSOLVED	TURBIDIT (NTUs)		cribe)	(describe)
			VOLU		(gpm)	WATER	(standard units)	(-0)	umhos/em	(circle units)	(14105)	(000	icitody	(deconos)
		VOLUME PURGED	(gallo		(gpan)	(feet)			or μS/cm	mg/L or		İ		
T	IME	(gallons)	10	,		, ,				% caturation				w
7	:57	1.00	1,0	00	0.14	8.15	7,07	21.6	701.0	1.25	6.43		ONE	NONE
8	:00	0.42	1.4		0.14	8.15	7.07	21.6	701.0	1.25	6.09		ONE	NONE
8	:03	0.42	1.8	34	0.14	8.15	7.07	21.6	701.0	1.24	6.01	NC NC	ONE	NONE
										1				
								<u> </u>						
ļ					<del></del>									
					<del></del>									
-										<u> </u>				
WELL CA	PACITY (Ga	llons Per Foot): 0.75"	= 0.02:	1" = 0.0	4: 1.25" = 0.	06: 2" = 0.16: 3	" = 0.37: 4" = 0.6!	5: 5" = 1.02:	6" = 1.47; 1:	2" = 5.88	L			
		CAPACITY (Gal./FL):					5/16" = 0,004; 3/8			8" = 0.016				
PURGING	EQUIPMEN	TCODES: B=Ba	iller; B	P = Blado	der Pump; E	SP = Electric Subme		= Peristaltic Pu	mp; <b>0</b> ≃ Othe	et (Specify)				
						DAMES EDVO	SAMPLING			SAMPL	INC	ISAMPLIN	IG.	
	LED BY ( Rayburn	PRINT) / AFFILI	AHON			SAMPLER(S)	SIGNATURE(S	); ( L)v	t <i>#</i> }_	1		ENDED /		
	OR TUB					TUBING				INITIAT FIELD-FILTE	RED: No			
		NG L. (feet): 10,0				MATERIAL CO	DE: P:E		1.		ipment Type:	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, OILL.	111113
		AMINATION:	PU	MP	No			placed		DUPLI		No		*****
		MPLE CONTAINER SE	ECIFICA	TION			SAMPLE PRE	SERVATION					SAMPLE	PUMP
						PRESERVATIV	r= TO	TAL VOL	FINAL	INTEN	DED 'SIS		FLOW	RATE (Gal/Min)
SAMPLE			MATERIAL			USED	1	IN FIELD (mL)	pH	AND/ METH		NG EQUIPMENT CODE		
ID CODE	#	CONTAINERS	CODE	<u>v</u>	OLUME	OSED	ADDED	IN FIELD (ML)	7.07	SEE C		REPP		0.14
$\vdash$	w								1 117					
-													<u> </u>	
+							-						<u> </u>	
								JAHRUT					Ì	
REMARK	S:													
1														
<u></u>								Cillana, T	Cadani C C''	or (Consider				
	L CODES:	AG = Amber Glass NT CODES: APP				yethylene; PP = P aller; BP = Bladde				ei (opecily)				
SAMPLIN	O EQUIPME					SM = Straw Method	• • •							

NOTES 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. <u>Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section.3)</u>
pH:± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen:all readings ≤ 20% saturation (see Table FS 2200-2);
optionally, + 0.2 mg/L. or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)
2, 2009

SITE	SITE SITE LEE COUNTY-SWERF-WTE WELLS-S/A LOCATION:WTE														
WELL N		WTE-3SR	WIE	VVELLE	5-5/A	matr.	SAMPLI	EID: 322668G		15		DATE	2/6/2	017	**********
I V VILLE I I		VILOUN					107 tivil Et	PURGING D				1-7,1-		~	
WELL			TU	BING			W	LL SCREEN IN	ITERVAL D		STATIC		PURGE PI	JMP TYPE	: RFPP
DIAMET	reb (inc	hor\: 2 0	lor.	A & A C T C	R (inches	\· 1/4"	fee	t to feet			DEPTH(fe TOC		OR BAILE	D.	
		hes): 2.0 EPURGE: 1 W					ELL DEPTH	- STATIC D	EPTH TO V		X WELL				
		plicable)			(10			. 0,,,,,,,							
<u> </u>	•			feet-			feet) X		gallons/fool						
		OLUME PURGE	: 1 E	QUIPN	MENT VO	L. = P	UMP VOLU	ME + (TUBING (	CAPACITY	Х	TUBING L	ENGTH) +	FLOW CEL	L VOLUMI	=
only fill	out if ap	plicable) = gailon	<b>α</b> ±/		gallons/f	ant V	60	et) + gall	ons =	gallons					
INITIAL PU	MP OP TH		S T (	EIN	AL PUMP OF			er) + gair		RGING		PURGING		TOTAL VOLUM	F
		L (feet): 10,0					feet): 10.0			ITIATED 8	:30	ENDED 8		PURGED (	
			CU	MUL	PURG	E	DEPTH	pH	TEMP.	COND.	DISSOLV	ÆD .	TURBIDITY	COLC	R ODOR
			VO	LUME	RATE		то	(standard units)	(°C)	(circle units)	OXYGE	N	(NTUs)	(descri	be) (describe)
			PUF	RGED	(gpm)		WATER			μmhoc/cm-	(circle un	nits)			
VOLUME PURGED (gallons) TIME (gallons)							(feet)			or µS/cm	mg/L. ⊴	1			
8:3		(gallons) 1.00	1	.00	0.14		8,99	6.97	25.8	634.0	<del>% satura</del> 1.07		31,12	NON	IE NONE
8:4		0.42		42	0.14		8.99	6.97	25.8	634.0	1.07		28.45	NON	
8:4		0.42		.84	0.14	_	8.99	6.97	25.8	634.0	1.06		27.90	NON	
										ļ					
									I	27 4/2 4	2" = 5.88				L
		illons Per Foot): 0.75° CAPACITY (Gal./FL):									2" = 5.88 8" = 0.016				
		T CODES; B = B			dder Pump;		Electric Submer		Peristaltic Pum		er (Specify)	***************************************			
								SAMPLING I	DATA						
		PRINT) / AFFILI	IATIO	N:		SAMP	LER(S) SIG	NATURE(S):	( l)	t 196-		SAMPLIN		SAMP	LING D AT:8:48
Dustin F						TUBIN	G			<i></i>	FIELD-FIL	INITIATE	No No	FILTER S	
		L (feet): 10.0					RIAL CODE	: P:E			Filtration E			1 121210	12
		FAMINATION:	Р	UMP	No	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TUB		aced			DUPLICA		No	
	SAM	PLE CONTAINER SPE	CIFICA	TION				SAMPLE PRE	SERVATION			INTENDED			SAMPLE PUMP FLOW RATE (Gal /
			MATERI			۽	RESERVATIVE		TOTAL VOL		FINAL	ANALYSIS		1	Min)
SAMPLE ID CODE	41	CONTAINERS	AL	l vo	LUME		USED	Δ.	DED IN FIELD	(ml.)	рH	AND/OR METHOD	SAMPLING E		
100002		ONTARCING	CODE	, , , ,	LOME		0020		JOED III / IEED	(11,2)	6.97	SEE	RFI		0.15
	,														
															,
REMARKS:	REMARKS:HEAVY TRAFFIC AREA														
MATERIAL	CODES:	AG = Amber Glas	s;_CG	= Clear G	Blass; PE	= Polyethy	lene; PP = Po	lypropylene; S = Sil	icone; <b>T</b> = Tef	ion; O = Oth	er (Specify)				
				Peristaltic	Pump; B	= Baller;	BP = Bladde	Pump; ESP = Ele	ctric Submersibl	e Pump;				-	
ı		DEDE	Ravare	a Flow Pa	ristaltic Pumi	Y SM =	Straw Method (	Fubing Gravity Drain):	Q = Other (S	necify)					

NOTES 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

<sup>2,</sup> 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: ± 5% Dissolved Oxygen:all readings≤ 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

<sup>2, 2009</sup> 

SITE							SITI		_						
	COUNTY-SWER	F-WIE	WELLS-S/A		LOAMO	LEID: 3		CATION:WTE		IDAT	rE.	2/6/20	17		
WELL NO:	WTE-4S				JSAIVIP		RGING D			IDAI	I E.	2/0/20	17	,	
WELL		TU	BING		IX.	VELL SCI			ISTATIC	9.	01 PUR	RGE PUM	P TYPE	REPP	
YVELL		'0	ычо			DEPTH:	feet						. , , ,		
DIAMETER (	inches): 2 0	DIA	AMETER (inc	es): 1/			,,,,,		TOC (fee		48 OR	BAILER:			
WELL VOLU	ME PURGE: 1	WELL.	VOLUME =	TOTAL	WELL DEP	TH - S	TATIC D	EPTH TO W							
(only fill out if								_, ,,,,,	,						
()		= (	13.40	feet	9.01	feet)	Х	0.16 gallo	ns/foot =	0.70	gallons	;			
EQUIPMENT	VOLUME PUR	3E: 1 E								NG LENGT	H) + FL	OW CEL	L VOLUI	ИE	
(only fill out if	applicable)					•									
	=	ga	allons + (	gall	ons/foot X		feet) +	gall	lons =	gallons					
INITIAL PUMP OR	TUBING		FINAL PUM	OR TUBI	NG			PURG	SING	PURGING	ì		OTAL VOLU		
DEPTH IN W	ELL (feet): 10.0		DEPTH	NELI	L (feet): 10.0			INIT	TATED AT:9:05	ENDE	9:18	F	URGED	(gal):1	.84
		CUN	AUL PL	RGE	DEPTH		pН	TEMP.	COND.	DISSOLVED	τυ	RBIDITY	co	LOR	ODOR
		VOL	UME R	TE	то	(stand	lard units)	(°C)	(circle units)	OXYGEN	(	(aUTM)	(des	cribe)	(describe)
		PUR	GED (g	om)	WATER				<del>µmhos/cm</del> −	(circle units)					
	VOLUME PURGED	ons)		(feet)				or μS/cm	mg/L ot			1			
TIME	(gallons)									%-caturation					
9:12	1.00	1.0		14	9,03		.89	27.3	585.0	1.04		5.49		NE	NONE
9:15	0.42	1.4	42 0	14	9,03		.89	27.3	585.0	1.04		4.34		NE	NONE
9:18	0,42	1.8	84   0	14	9.03	6	.89	27.3	585.0	1.03	2	4.01	NC.	NE	NONE
			i												
	1								*****						
			<u> </u>						<del> </del>						
<b></b>		<del> </del>													
	(Gallons Per Foot): 0.1	1 - 0 00	. 4" - 004	0F# 0 0	27 - 0 40:	27 = 0.27	4" = 0 65:	Eff = 4.00; 61	" = 1,47; 12" = 5.8		I				
	IA. CAPACITY (Gal./Ft														
	MENT CODES: B=				SP = Electric Sub			Peristaltic Pump;							
i ottolice caon ii	ELLI CODECT	Buildit	21 2,000,10	<u> </u>			PLING					.,			
SAMPLED B	Y (PRINT) / AFF	ILIATIO	N:	SAN	IPLER(S) SI				),ı	SAMPL	ING		SAMI	LING	
Dustin Raybu					, ,			_(4) st./		TAITINI		:9:19		ED AT:	
PUMP OR TU	JBING			TUB	ING			_		.D-FILTERE		No	FILTER	SIZE:	mm
DEPTH IN W	ELL (feet): 10,0			MA1	FERIAL COL				Filtr	ation Equipr		pe:			
FIELD DECO	NTAMINATION:	F	PUMP N		TL	JBING	Repl			DUPLI	CATE:		No	····	
S/	AMPLE CONTAINER S	PECIFICA	TION			SA	MPLE PRES	ERVATION		INTEN	DED			SAMPLE	PUMP
1 .		!			PRESERVATI	Jre	1	TOTAL VOL	FINAL	ANALY	'SIS			FI OW R	ATE (Gal / Min)
SAMPLE ID CODE	#CONTAINERS	MATERIAL CODE	VOLUME		USED	YE		D IN FIELD (mL)	pH	AND/O METH		AMPLING EC			(12 (00,7 11.11)
ID GODE	# CONTINUE TO	CODE	YOLDINE		0020			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	6.89	SEEC		RFP		1	0.14
ļ											-		·		
ļ															
		<u> </u>		+										<u> </u>	
											-+				
														<u> </u>	
REMARKS:HEAVY	IRAFFIC AREA														
						5.1		* - * *							
MATERIAL CODE	S: AG=AmberG PMENT CODES: AI		i = Clear Glass;							иіу)					
SAMPLING EQUIP			Penstanic Pump; se Flow Peristaltic I												

NOTES 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2, 2009

<sup>2. &</sup>lt;u>Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)</u>
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen:all readings ≤ 20% saturation (see Table FS 2200-2);
optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SITE							SIT									
WELL NO:	COUNTY-SWER WTE-5S	F-WTE	WELLS-S/A		IGAMD.	I E ID:	322668G	CATION: SW	ERF		DAT	E.	2/6/2	017		
WELL NO.	VV1E-33				JOHNIE		JRGING I				JD/(I	<u> </u>	2/0/2	017		
WELL		TU	JBING		V		REENIN		ST	ATIC	7.	92 PUI	RGE PL	JMP TYPE	RFPP	
					- 1	DEPTH:	feet	to fe		EPTH(fe						
DIAMETER	(inches): 2,0	DI/	AMETER (inch	es): 1/4'	<u> </u>					C (feet			BAILEF	₹:		
	UME PURGE: 1	WELL	VOLUME = (	OTAL	WELL DEP	1H - 3	STATIC	EPIHIOW	AIER)	x w	ELL CAPAC	ΉΥ				
(only fill out	if applicable) = (	17.4	41 feet -	7	.92 fe	eet) X	0,16	gallons/f	foot =	1.5	2 gallor	ns				
EQUIPMEN	IT VOLUME PUR										NG LENGTI		OW CE	LL VOLU	ME	
	if applicable)															
	=	gallo	ns + (		lons/foot X		feet) +		lons =		gallons					
INITIAL PUMP O			FINAL PUMP		в (feet): 10.0			PURG	IATED ,	ΔΤ·Ο·Λ5	PURGING ENDED			TAL VOLUME JRGED (0		;
DEPININ	WELL (feet): 10.0	CUI	MUL PUR		DEPTH	-T	pН	TEMP.	CO		DISSOLVED		JRBIDITY		LOR	ODOR
		ı	UME RA		TO	(stan	dard units)	(°C)		units)	OXYGEN		(NTUs)	1	cribe)	(describe)
		PUR	IGED (gp	n)	WATER				μmho	os/em-	(circle units)				.	
	VOLUME PURGED	(gall	ions)		(feet)	1			<u>οτ</u> μ	S/cm	mg/L or					
TIME	(gallons)				7.00	_		05.0	70		% caturation		0.45	N/C	NE	NONE
9:57	1.75		75 0.1		7.98		6,98	25.6	70		1.07		8.45		NE	NONE
10:00	0,45		20 0,		7,98		6.98	25,6	70		1.07					
10:03	0.45	2.0	65 0.	5	7.98		6.98	25,6	70	5,0	1.06	7.07		IAC	ONE	NONE
									<b> </b>							
						_		***	-							
						-			<del> </del>							
<u> </u>																
<del></del>						+										
WELL CAPACIT	TY (Gallons Per Foot): 0.	75" = 0.02	i; 1" = 0.04; 1.7	5" = 0.06;	2" = 0,16;											
-	E DIA. CAPACITY (Gal./Ft							= 0.006; 1/2" =								
PURGING EQUI	PMENT CODES: B=	Bailer;	BP = Bladder Pum	; ESF	= Electric Subr		MPLING	Peristaltic Pump;	0=0	ther (Speci	fy)					
SAMPLED.	BY (PRINT) / AFF	LIATIC	)N:	SAMI	PLER(S) SI			Guth	, —		SAMPL	ING		SAMP	ING	****
Dustin Rayl								الإلبانيات			INITIAT				AT:10	
PUMP OR				TUBI							D-FILTERE		No	FILTE	R SIZE:	mm
	WELL (feet):10.0			MATE	ERIAL COD					Filtra	ation Equipm		/pe:	No		
	CONTAMINATION: SAMPLE CONTAINER S		PUMP No	1	<u> </u>	JBING	Kepi MPLE PRES	aced			DUPLIC			INO	SAMPLE	DIMP
	SAMPLE CONTAINER S	PECIFICA	IION	+			1				INTENE ANALY					
SAMPLE		MATERIAL			PRESERVATIV	VΕ	l .	TOTAL VOL		FINAL	AND/O METH	or s		EQUIPMENT	FLOWR	ATE (Gal / Min)
ID CODE	#CONTAINERS	CODE	VOLUME	+	USED		AUDE	D IN FIELD (mL)		рН 6,98	SEE C			PP		0.15
				+								+				
				+				····				$\overline{}$				
				1												
-																
REMARKS:											-					
1117777111	DEO. 40 1 -		3 Olass Cl	E = P-1- *	hudanas no	Dalur '	ana: 6 - 6"	leans: TaTed-	n: 0~0	ther (Car-	16.0					
MATERIAL COI			3 = Clear Glass; F Peristaltic Pump;	E = Polyet B = Baile				lcone; T = Teflo ectric Submersible		ratel (obec	07/				•	
Community Edit	-, VODEO, PA	, -,,,,,,,,,			•			O = Other (See	• • •							

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<sup>2.</sup> 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: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2);

optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SITE							SIT									
	COUNTY-SWER	F-WTE	WELLS-S	Ά	Joanne	N F 15.		CATION:WTE	Ξ	·	ID AT		0/0/0047			
WELL NO:	WTE-6S				JSAMP	LEID:	RGING D				DATI	<del>=;</del>	2/6/2017			
WELL		TIL	BING			WELL SC			15	STATIC	10	72 PI	JRGE PUMP	TYPE-RE	:PP	
******		''	DINO		1	DEPTH:	feet			DEPTH(fe		۲۲ ۱	JAGE 1 OWI	I II Lax	• •	
DIAMETER (in	nches): 2.0	DIA	METER (	nches):		· · · · ·				FOC (feet)		66 OF	R BAILER:			
	ME PURGE: 1	WELL \	VOLUME	= (TOT/	AL WELL DEP	TH - S	TATIC D	EPTH TO W	ATER	) X W	ELL CAPACI	TY				
(only fill out if																
FOLUDIATION	= (	19,98		et -	10.72	feet)		0.16 gallo				ions	OW/OFIL M	N. 1 18 APT		
(only fill out if	VOLUME PURG	3E: 1 E	QUIPMEN	II VOL.	= PUMP VOL	LUME + (	OBING	CAPACITY	Х	LOBIL	NG LENGIH	) + rL	OW CELL VO	JLUME		
(Orny ini out ii		lons + (	gallor	s/foot X	feet)	+		gallons =	ď	allons						
INITIAL PUMP OR		0110 . (		JMP OR TU		·		PURG		Juliono	PURGING		TOTAL V	OLUME		***************************************
DEPTH IN W	ELL (feet):12.0		DEPT	IN WE	LL (feet):12.0			INIT	IATED	O AT:10:30		0:46	1	ED (Gal ):	2.40	
		CUM		PURGE	DEPTH		pН	TEMP.	<del></del>	OND.	DISSOLVED		TURBIDITY	COLOR		ODOR
		VOLU	JME	RATE	то	1	lard units)	(°C)	(circ	de units)	OXYGEN		(NTUs)	(describe	(de	escribe)
		PURG	GED	(gpm)	WATER				μm	hos/sm-	(drde units)					
	VOLUME PURGED	(gallo	ons)		(feet)				현	μS/cm	mg/L ot				- 1	
10:40	(gallons)	1.	-	0.15	40.75	<del>-  </del> -		07.0		05.0	% caturation		44.05	NONE		ONE
	1.50	1,5			10.75		.22	27.8		95.0	0.51		11,85	NONE		ONE
10:43	0.45	1.9		0.15	10.75		.22	27.8		95.0	0.51		10.92	NONE		ONE
10:46	0.45	2.4	10	0.15	10.75	7	.22	27.8	4	95.0	0.50		10.45	NONE	N	ONE
		ļ							ļ						_	
	<u> </u>					_										
															-	
	<del> </del>	<del> </del>														
	<del> </del>	<b>_</b>				_			<del> </del>						- -	
	<del> </del>	├──			_			direction of the second								
WELL CARACITY	Gallons Per Foot): 0.7	75" = 0.02:	4" = 0.04:	4 25" = 0	1001 27 - 0.101	3" = 0 27:	4" 0 65.	E1 = 1 00; C5	4 47	12" = 5.88					1	
1	A. CAPACITY (Gal./Ft.							= 0,006; 1/2" =								
PURGING EQUIPM			BP = Bladder		ESP = Electric Subr			Peristalfic Pump;		Other (Specify						
						SAN	PLING	DATA								
	(PRINT) / AFFI	ILIATIO	N:	SA	MPLER(S) SI	GNATUR	E(S):	( Wat	fift.		SAMPLIN			MPLING		
Dustin Raybur					151110				17-	leres :	INITIATE			DED AT:		
PUMP OR TU	BING ELL (feet):12.0				JBING ATERIAL COD	e Die					D-FILTERED			TER SIZ	=: m	m
	NTAMINATION:		UMP	No		JBING	Repla	hane		Fillia	DUPLICA		pe; N			
	MPLE CONTAINER S			T			PLE PRESE				DOI LION	<u> </u>		<del></del>	IPLE PU	JMP
					PRESERVATIV			FOTAL VOL			INTENDE			FL	OW RAT	E (Gal /
SAMPLE ID CODE	CONTAINERS	MATERIAL CODE	VOLUMI	.	USED	VE		D IN FIELD (mL)		FINAL pH	ANALYSIS AN METHO		SAMPLING EQUIF CODE	MENT	Min	,
I D SOUL I	CONTRBLETO	CODE	VOLOM		COLD	1	ADDL	D H41 (LED (HE)		7.22	SEE CO		RFPP	<del></del>	0.1	5
		<del>  -</del>	······································					*******	$\dashv$		30	+				-
		<del>                                     </del>									1			_		
		$\vdash$		$\neg +$		+			-+							
								************	$\dashv$		+	_				
				$\neg$				***************************************	$\neg$			-				$\neg \neg$
REMARKS:																
	•															
MATERIAL CODES					lyethylene; PP =					Other (Specif	y)					
SAMPLING EQUIP			'eristaltic Pum; e Flow Peristal	,	lailer, BP = Blad SM = Straw Metho											

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- Field Sheets
  - o Calibration Sheet
  - o Field Data Sheet
  - o Chain of Custody

Calibration Sheet

# **FCL Field**

## **Calibration Sheet**

Sampler:

Dustin Rayburn

Project:

LEE COUNTY-SWERF-S/A MW'S

Date:

02/06/17

Sample Site I.D.'s

Equipment Used:

RFPP

Weather conditions:

SUNNY/HOT

Starting Calibration Values:

07:20:00 AM

	Unit	Standard	Reading	Standard	Reading	Standard	Reading
pН	pН	4.00	4.00	7.00	7.00	10.00	10.00
Conductivity	us	1413	1413	25000			
Turbidity	NTU	1.00		10.00	10.00		
DO%			1.00			'	

**Ending Calibration Values:** 

06:00:00 PM

	Unit	Standard	Reading
рН	pН	7.00	7.00
Conductivity	us	1413	1413
Turbidity	NTU	10.00	10.05
D0%			99.20

Field Data Sheet

Field 3OP2.08 Determination of Field INST. Field

Date: 02-06-17

DCR

Time:

Analyst: Employee#:

Field Temp. Field Condt Field pH Field Turbi Field Elevation Field Water ITOC	Field Temp. Field Condt Field pH Field Turbi Field Elevation Field Water ITOC	Imhos/cm pH NTU ft ft ft	701.0 7.07 6.01 16.07 8.11 24.18 WTE-2S	634.0 6.97 27.90 15.01 8.97 23.98 WTE-3SR	585.0 6.89 24.01 13.47 9.01 22.48 WTE-4S	705.0 6.98 7.07 15.89 7.92 23.81 WTE-5S	495.0 7.22 10.45 12.94 10.72 23.66 WTE-6S	577.0 6.91 17.54 18.70 35.24 21.91 WTE-1S	
d Temp. Field Condt Field <sub>I</sub>	d Temp. Field Condt Field p	oC umhos/cm pH							
Field DO Field Te	Field DO Field Te	mg/L oC	1.24 21.6	1.06 25.8	1.03 27.3	1.06 25.6	0.50 27.8	0.48 23.3	
	Sample#	Unit	322668GW1	322668GW2	322668GW3	322668GW4	322668GW5	322668GW6	

Chain of Custody

1

# Check Box That Applies To Your Location

Laboratories, Inc. | Flowers Chemical

Altamonte Springs, FL 32701 Bus: 407-339-5984 Fax: 407-260-6110 481 Newburyport Ave.

Flowers Chemical Labs-North Flowers Chemical

upnos-sqei

812 S.W. Harvey Greene Dr. Madison, FL 32340 Bus: 850-973-6878 Fax: 850-973-6878 West Park Industrial Plaza 571 N.W. Mercantile PI., Ste. 111 Port St. Lucie, FL 34986 Bus: 772-343-8006 Fax: 772-343-8089

Flowers Chemical Labs-Keys

3980 Overseas Highway, Ste. 103 Marathon, FL 33050 Bus: 305-743-8598 Fax: 305-743-8598



DOWNLOAD REPORTS, INVOICES AND CHAINS	TS, INVOICES	AND CHA	NS OF CUSTO	OF CUSTODY www.flowerslabs.com	abs.com		
Client Lee County	Solid Waste	ste		Project Name SWERF - WTE	WTE Wells - 5/A	P.O.# **UKP Quicklist:	
Address						3	. :
				FCL Project Manager		E-MAIL	
Phone				Requested Due Date 10 Day Standard OR		Rush Charges May Apply	. \
Sampled By (PRINT):	Robins	2-6-	21-9	Pick-Up \$	Vehicle Surcharge \$	Sampling \$ < & C	
Sampler Signature	The total of the same of the s	Date Sampled	And an article of the state of	PRESERVATIVES	ANALYSES STATES TO THE REQUEST	COMMENTS	-
GW - ground water SW - surface water	DW- drinking water SO - soil/solid S	ater WW - wastewater SL - sludge HW - v	stewater HW - waste	60	DESCA A STORY OF STORY	# Contain	
ITEM SAMPLE ID	DATE T	TIME MATRIX	(LAB USE ONLY) LAB NO.	N <sup>BS</sup> HCI HAC HAC NOI	13/14/10/V		:
1 WTE-25	8 1-9-2	8:04 GW	322668GWI	X X X	х х х х	<u>M</u>	1
2 WIE-3SR	8	J hh:8	2				
3 WIE-4S	6	6.19					
4 WTE-58	2	10:04	3				
5 WE-65	0	2/h:Ql	12				
8 - 3TW 8		11:37	٩	-> -> -> ->	\$ \$ \$	<b>→</b>	
7 Trip Blank	8		2	-1	**	2	
80							
<b>o</b>							
10							
Relinguished By / Affiliation	Date Time	Accepted By / Affiliation	iliation Date	Time Relinquished By / Affiliation	liation Date Time	Accepted By / Affiliation Date Time	A
STAL	56.17 14 to		An 3/6	410 Mm Va	Ups 2/6 1530		
	•		عاد ا			2 ch/(7 1032	1

FINANCE CHARGES APPLIED TO PAST DUE INVOICES

• WHITE - Lab Copy - To Be Scanned

YELLOW - Client Copy