





<b>Site Name</b> ANGL		<b>Date of Field Work</b> August 16, 2016
<b>Party Chief</b> Giammarco/Hudson	<b>Field Book Name/Number</b> MISC FB 6Z	<b>Page Number(s)</b> 37
<b>Site Benchmark Name</b> <del>ANGL1</del> <b>TBM ANGEL</b>	<b>Benchmark Elevation (NAVD88)</b> 5.03 ft	<b>Datum Offset to NGVD29</b> + 1.56 ft
<b>Reference Elevation (NAVD 88)</b> 7.58 ft		<b>Existing Tag Elevation (Datum)</b> 9.17 ft (Hand Written NGVD 29)
<b>Latitude</b> 25° 37' 21.38"		<b>Longitude</b> 80° 32' 30.21"

**Notes:**  
Corpscon v6.0.1 offset = +1.562 ft; Field offset = +1.59 ft

**Photographs**

<b>Overall Site</b>	<b>Benchmark Location</b>	<b>Benchmark Close Up</b>
		
<b>Brass Tag Close Up</b>	<b>Brass Tag + Reference Mark</b>	
		
<b>Staff Gauge (Front View)</b> N/A	<b>Staff Gauge (Side View)</b> N/A	

Section 21 Township 55 South, Range 38 East  
Miami-Dade County Florida

VDUP GW WELL ANGL  
SET BENCH FOR RECORDER ELEV  
FILE NAME ANSEL

PT#1

ELEV  
5.121

ADJ  
ELEV  
-

#9

~~5.995~~  
5.035

5.03

#17

5.122

5.121

-

DL 3065.77

DF 3084.08

ISM  
ANGL

5.55

~~11.55~~  
10.56

3.00

ELEV

~~6.00~~  
5.03

5.995

MARK ON  
RECORDER

3.03

~~11.58~~  
10.61

5.58

~~8.58~~  
7.58

ANGL

6.00

5.03

NAVD 88

TRIMBLE DINI

BAR CODED ROD

A GIAMMARCO  
R HUDSON

COMMENT

FD STAINLESS STEEL ROD IN P.VIC. COLLAR AT NORTHWEST CORNER OF  
FENCE FOR WELL "BM ~~LPG2~~"

Las Palmas G1

~~ANGL~~ FD S.F.W. MID ALUMN CAP SET IN PIPE 15' 1/2" SOUTH  
WELL

B.M. ~~LPG2~~ ELEV Coll 5.121

Las Palmas G1

MARK ON MONITOR WELL

## SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Survey Data Entry  
and Retrieval Application

## Survey Data Entry and Retrieval Application (SDERA) Print Output

## Control Point Search Results

## Derived Data - Denoted By:

\*\*

Designation	ANGEL	Record State	ACCEPTED
NGS PID			
Project Name	ANGEL WELL SITE	Date Entered/Updated	03/29/2017
Updated By	hehmke	Status	
Party Chief	CHARLTON, VERNON	Type	V
Monument Set By	SOUTH FLORIDA WATER MANAGEMENT DISTRICT	Date Established	01/01/1984
County	MIAMI-DADE COUNTY	Section	29
Township	55	Range	38
Quadrangle		Offset (29 to 88)	
NGS Source BM		CCR Link	
Ctrl Pt Source(s)			

<u>Horizontal</u>	<u>NAD 1927</u>	<u>NAD 1983</u>	<u>Vertical</u>	<u>NGVD 1929</u>	<u>NAVD 1988</u>
Latitude		25 37 23.0	Class		
Longitude		80 32 33.0	Order	3	3
Northing(Y)			Elevation	6.68	5.034
Easting(X)			Measurement Unit	Feet	Feet
Class					
Order					
NAD83 Adj Year					

## Field Book

31X

## Field Book Pages

3

## Stamping

TBM ANGEL

## How to Reach

\*\*\*\*\* Recovery Notes \*\*\*\*\*

8/16/16 Giammarco FB Misc 6Z page 37. Ran levels from Las Palmas G1 to establish NAVD88 elevation on benchmark.

\*\*\*\*\*

From the intersection of State Road 997 (Krome Avenue) and Richmond Drive go West on Richmond Drive 2.0 miles to South Florida Water Management District's (SFWMD's) Levee 31 North; continue West on Richmond Drive, 1.4 miles to SW 212th Avenue; turn right onto SW 212th Avenue and go North 1 mile to SW 152nd Street; turn left and go West on SW 152nd street, 0.4 of a mile to ANGEL well site on the right and station location:

Station is 383 feet East of SW 217th Avenue, 15 feet north of SW 152nd street and 15 feet south of the well. The station is a South Florida Water Management District aluminum disk stamped TBM ANGEL in the top of a 3/4-inch iron pipe.

**DISCLAIMER:**

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Survey Data Entry and Retrieval Application (SDERA) Print Output

Control Point Search Results

Derived Data - Denoted By:  
\*\*

Designation	LASPALMASG1	Record State	ACCEPTED
NGS PID			
Project Name	LPG2 WELL SITE	Date Entered/Updated	03/29/2017
Updated By	hehmke	Status	
Party Chief		Type	H/V
Monument Set By	U.S. ARMY CORPS OF ENGINEERS	Date Established	
County	MIAMI-DADE COUNTY	Section	21
Township	55	Range	38
Quadrangle		Offset (29 to 88)	
NGS Source BM		CCR Link	
Ctrl Pt Source(s)			

<u>Horizontal</u>	<u>NAD 1927</u>	<u>NAD 1983</u>	<u>Vertical</u>	<u>NGVD 1929</u>	<u>NAVD 1988</u>
Latitude		25 37 38.247 **	Class		
Longitude		80 32 16.962 **	Order		
Northing(Y)		470496.102	Elevation		5.121
Easting(X)		808372.405	Measurement Unit		Feet
Class					
Order					
NAD83 Adj Year					

Field Book

SCADA 11

Field Book Pages

11

Stamping

NO STAMPING

How to Reach

\*\*\*\*\* Recovery Note \*\*\*\*\*

8/16/16 Giammarco FB Misc 6Z page 37

\*\*\*\*\*

NOTE: THE ELEVATION IS GPS DERIVED.

THE 95% CONFIDENCE LEVEL FOR THE ELEVATION IS 0.095.

Description

STAINLESS STEEL ROD

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Survey Data Entry and Retrieval Application (SDERA) Print Output

Control Point Search Results

Derived Data - Denoted By:  
\*\*

<b>Designation</b>	ANGL1	<b>Record State</b>	ACCEPTED
<b>NGS PID</b>			
<b>Project Name</b>	ANGEL WELL SITE	<b>Date Entered/Updated</b>	03/29/2017
<b>Updated By</b>	hehmke	<b>Status</b>	
<b>Party Chief</b>	HOLLIN JR, ARTHUR	<b>Type</b>	V
<b>Monument Set By</b>	SOUTH FLORIDA WATER MANAGEMENT DISTRICT	<b>Date Established</b>	01/01/1993
<b>County</b>	MIAMI-DADE COUNTY	<b>Section</b>	21
<b>Township</b>	55	<b>Range</b>	38
<b>Quadrangle</b>		<b>Offset (29 to 88)</b>	
<b>NGS Source BM</b>		<b>CCR Link</b>	
<b>Ctrl Pt Source(s)</b>			

<u>Horizontal</u>	<u>NAD 1927</u>	<u>NAD 1983</u>	<u>Vertical</u>	<u>NGVD 1929</u>	<u>NAVD 1988</u>
<b>Latitude</b>		25 37 23.2	<b>Class</b>		
<b>Longitude</b>		80 32 32.0	<b>Order</b>	3	3
<b>Northing(Y)</b>			<b>Elevation</b>	7.39	5.817
<b>Easting(X)</b>			<b>Measurement Unit</b>	Feet	Feet
<b>Class</b>					
<b>Order</b>					
<b>NAD83 Adj Year</b>					

**Field Book**

DCS 1

**Field Book Pages**

65-71

**Stamping**

"X" Cut

**How to Reach**

\*\*\*\*\* Recovery Notes \*\*\*\*\*  
 Recovered by the Corps of Engineers, established NAVD88 elevation  
 \*\*\*\*\*  
 Benchmark is 0.9 mile North of S.W 168th Avenue and 210 feet West of the Center line of S.W.215th Street on the North side of the road.  
 Bench mark is set on the southwest corner of the pad on the monitoring gage ANGL.  
 Source Benchmark: Dade County J460. El. 6.67 NGVD29

**Description**

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# STRUCTURE POINT SURVEY RECORD

STRUCTURE NAME

Angles Well

**DESCRIPTION** X-Cut in Concrete

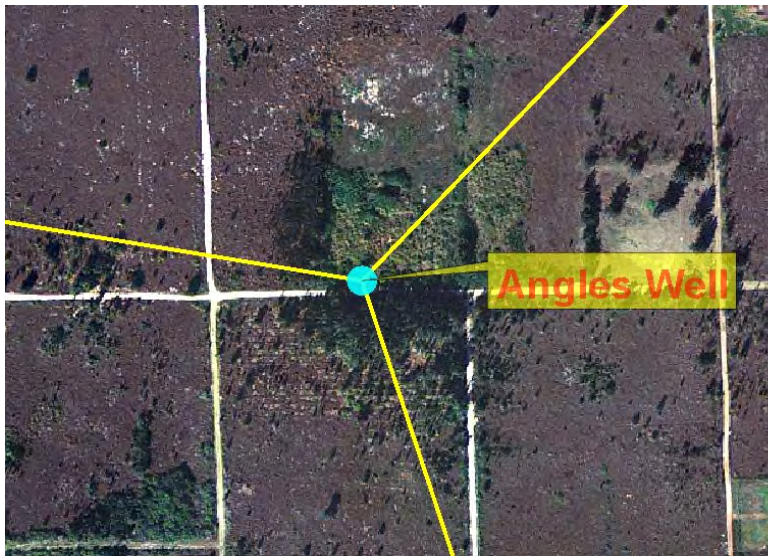
GEODETTIC DATUM **NAD83 (2007)** COORDINATE SYSTEM **FLORIDA EAST**

ELEVATION DATUM **NAVD 88** GEOID USED **Geoid 09**

UNITS USED **US Survey Foot**

SOURCE : [Least Squares Network Adjustment Report](#)

COORDINATES				Estimated Errors at 95% Confidence Level			
N	E	El. Ht	Elev.	N	E	El. Ht	Elev
468979.908	806940.299	-74.816	5.817	0.079	0.082	0.052	0.102



GPS Obs. Files

Occupation Records

Occupation Photos

# STRUCTURE POINT SURVEY RECORD

STRUCTURE NAME **Las Palmas G1**

DESCRIPTION **Stainless Steel Rod**

GEODETTIC DATUM **NAD83 (2007)** COORDINATE SYSTEM **FLORIDA EAST**

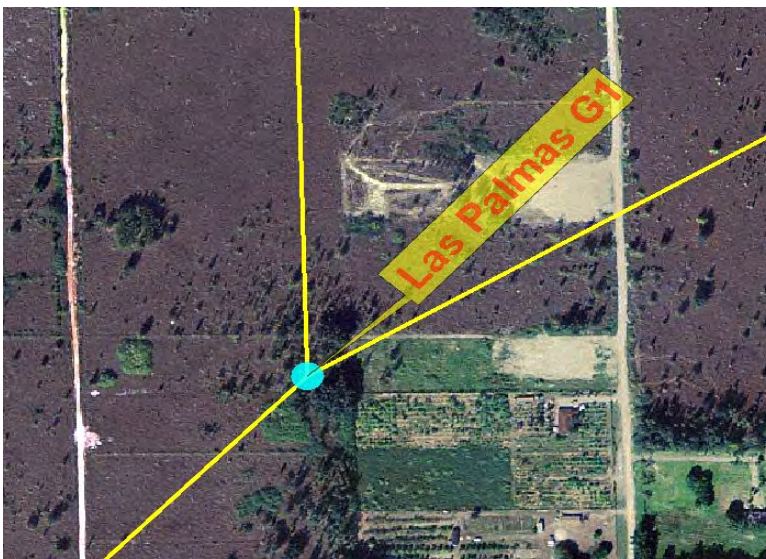
ELEVATION DATUM **NAVD 88** GEOID USED **Geoid 09**

UNITS USED **US Survey Foot**



SOURCE : [Least Squares Network Adjustment Report](#)

COORDINATES				Estimated Errors at 95% Confidence Level			
N	E	El. Ht	Elev.	N	E	El. Ht	Elev
470496.102	808372.405	-75.544	5.121	0.072	0.072	0.046	0.095



### GPS Obs. Files

5750774

### Occupation Records

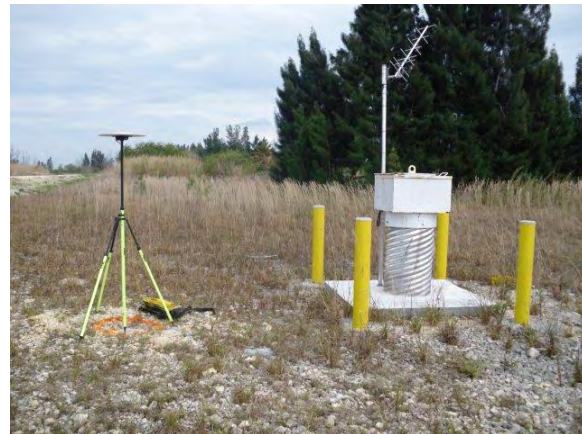
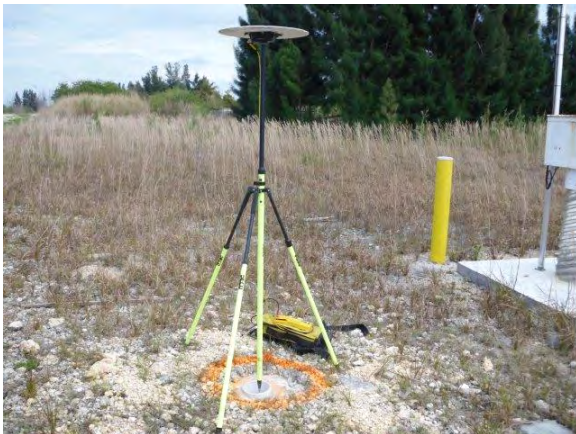
OR0341.pdf

### Occupation Photos

LASPALMASG1 03-18-10 M137

LASPALMASG1 03-18-10 I1375

LASPALMASG1 03-18-10 S1376



Project Information		Coordinate System	
Name:		Name:	Default
Size:		Datum:	WGS 1984
Modified:	2/15/2012 8:48:57 AM (UTC:-7)	Zone:	Default
Time zone:	Mountain Standard Time	Geoid:	
Reference number:		Vertical datum:	
Description:			

## Level Report

**Imported file:** [ANGEL.DAT](#)  
**Instrument:** DiNi  
**Standard error per kilometer of double leveling:** 0.00230 ft  
**Standard error per turn/station setup:** 0.00000 ft  
**Creation option:** Delta elevations  
**Description usage:** Feature codes

### Run - 1 Raw Observations

**Raw Misclosure:** 0.00200 ft  
**Σ BS Distances:** 3065.770 ft  
**Σ FS Distances:** 3084.070 ft  
**Run Length:** 6149.840 ft  
**Reduction:** Adjusted Values


Las Palmas G1

Create	Point ID	BS	IS	FS	Δ Elevation	Raw Elevation	Correction	Adj. Elevation	Type	Distance	Description
<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/> 8.93300 ft			0.00000 ft	5.121 ft	0.00000 ft	5.121 ft	Benchmark	54.070 ft	LPG2-3
<input type="checkbox"/>	2			<input checked="" type="checkbox"/> 4.90600 ft	4.02700 ft	9.148 ft	-0.00001 ft	9.148 ft	Computed	58.690 ft	3
	2	<input checked="" type="checkbox"/> 5.08000 ft								212.760 ft	3
<input type="checkbox"/>	3			<input checked="" type="checkbox"/> 5.21400 ft	-0.13400 ft	9.014 ft	-0.00017 ft	9.014 ft	Computed	257.350 ft	3
	3	<input checked="" type="checkbox"/> 5.33100 ft								259.580 ft	3
<input type="checkbox"/>	4			<input checked="" type="checkbox"/> 5.36300 ft	-0.03200 ft	8.982 ft	-0.00035 ft	8.982 ft	Computed	250.230 ft	3
	4	<input checked="" type="checkbox"/> 5.16200 ft								260.370 ft	3
<input type="checkbox"/>	5			<input checked="" type="checkbox"/> 7.73200 ft	-2.57000 ft	6.412 ft	-0.00053 ft	6.411 ft	Computed	230.180 ft	3
	5	<input checked="" type="checkbox"/> 7.73000 ft								230.310 ft	3
<input type="checkbox"/>	6					6.412 ft	-0.00068 ft	6.411 ft	Computed		3



			✓ 7.73000 ft	0.00000 ft						230.050 ft	
	6	✓ 4.12200 ft								273.920 ft	3
<input type="checkbox"/>	7		✓ 4.84700 ft	-0.72500 ft	5.687 ft	-0.00087 ft	5.686 ft	Computed		235.470 ft	3
	7	✓ 5.14700 ft								245.770 ft	3
<input type="checkbox"/>	8		✓ 5.03600 ft	0.11100 ft	5.798 ft	-0.00104 ft	5.797 ft	Computed		248.230 ft	3
	8	✓ 5.23200 ft								99.930 ft	3
<input type="checkbox"/>	9		✓ 5.99500 ft	-0.76300 ft	5.035 ft	-0.00107 ft	5.034 ft	Computed		104.300 ft	ANGEL 3
	9	✓ 5.90300 ft								104.490 ft	ANGEL 3
<input type="checkbox"/>	10		✓ 5.14100 ft	0.76200 ft	5.797 ft	-0.00110 ft	5.796 ft	Computed		99.670 ft	3
	10	✓ 4.88200 ft								245.500 ft	3
<input type="checkbox"/>	11		✓ 4.99400 ft	-0.11200 ft	5.685 ft	-0.00128 ft	5.684 ft	Computed		248.260 ft	3
	11	✓ 4.71400 ft								225.430 ft	3
<input type="checkbox"/>	12		✓ 3.98600 ft	0.72800 ft	6.413 ft	-0.00146 ft	6.412 ft	Computed		286.090 ft	3
	12	✓ 7.71500 ft								228.810 ft	3
<input type="checkbox"/>	13		✓ 5.14400 ft	2.57100 ft	8.984 ft	-0.00164 ft	8.982 ft	Computed		261.940 ft	3
	13	✓ 5.21300 ft								250.850 ft	3
<input type="checkbox"/>	14		✓ 5.18200 ft	0.03100 ft	9.015 ft	-0.00182 ft	9.013 ft	Computed		258.560 ft	3
	14	✓ 5.12700 ft								256.920 ft	3
<input type="checkbox"/>	15		✓ 4.99200 ft	0.13500 ft	9.150 ft	-0.00198 ft	9.148 ft	Computed		212.990 ft	3
	15	✓ 5.40000 ft								62.830 ft	3
<input type="checkbox"/>	16		✓ 5.62900 ft	-0.22900 ft	8.921 ft	-0.00199 ft	8.919 ft	Computed		58.690 ft	3
	16	✓ 5.15600 ft								54.230 ft	3
✓	17		✓ 8.95400 ft	-3.79800 ft	5.123 ft	-0.00200 ft	5.121 ft ▲	Benchmark		43.370 ft	LPG2 3

**Run - 1 (N2) Reduced Observations**

Observation	Status		Correction		Setups	Length			
-------------	--------	--	------------	--	--------	--------	--	--	--

		Raw $\Delta$ Elevation		Final $\Delta$ Elevation			$\Sigma$ BS Readings	$\Sigma$ FS Readings	Std. Error
 <a href="#">1-17 (E2)</a>	Enabled	0.00200 ft	-0.00200 ft	0.00000 ft	16	6149.840 ft	90.84700 ft	90.84500 ft	0.04353 ft

**Run - 1 (N2) Reduced Coordinates**

Point ID	Status	Elevation
 <a href="#">1</a>	Enabled	5.12100 ft
 <a href="#">17</a>	Enabled	5.12100 ft

Date: 8/18/2016 8:46:54 AM	Project:	Trimble Business Center
----------------------------	----------	-------------------------

# DBHYDRO | by station

## STATION INFORMATION

Station	ANGEL
Site	ANGEL
Type	WELL
Latitude (ddmmss.sss)	253721.38
Longitude (ddmmss.sss)	803230.207
X Coord (ft) NAD83	807166.113
Y Coord (ft) NAD83	468789.139
County	Miami-Dade
Basin	EVERGLADES NATIONAL PARK
Section	28
Township	55
Range	38
Show Map	<a href="#">Google Map</a>
Well Info	<a href="#">Info</a>
Description	ANGEL'S WELL, 152ND ST & SW 215TH AVE, HOMESTEAD
Notes	
Nearby Stations	<a href="#">Nearby Stations</a>
Attachments	None Available

Query returned 1 station record(s).

[Get Time Series Data](#)

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SFWMD Headquarters: 3301 Gun Club Road, West Palm Beach, Florida 33406  
561-686-8800 | 1-800-432-2045 (Florida Only)

# Office

## Project

29 March 2017

### INPUT

State Plane, flhpgn - Florida HPGN  
0901 - Florida East, U.S. Feet  
Vertical - NAVD88, U.S. Feet

### OUTPUT

Geographic, flhpgn - Florida HPGN  
Vertical - NGVD29 (Custom), U.S. Feet

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### LPG2

1/2

**Northing/Y:** 470496.102  
**Easting/X:** 808372.405  
**Elevation/Z:** 0  
**Convergence:** 0 11 59.30172  
**Scale Factor:** 0.999967743  
**Combined Factor:** 0.999971596

**Latitude:** 25 37 38.24608  
**Longitude:** 80 32 16.96305  
**Elevation/Z:** 1.562

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### ANGEL

2/2

**Northing/Y:** 468979.908  
**Easting/X:** 806940.299  
**Elevation/Z:** 0  
**Convergence:** 0 11 52.40120  
**Scale Factor:** 0.999967245  
**Combined Factor:** 0.999971097

**Latitude:** 25 37 23.27723  
**Longitude:** 80 32 32.66741  
**Elevation/Z:** 1.562

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Remark:

Corpscon v6.0.1, U.S. Army Corps of Engineers

## REGISTRATION WORKSHEET - ANGL Addendum

Site Name: **ANGL** Today's Date: **1/23/2017** Type Recorder: **CR10**  
 Activity: **Addendum** Effective Date: \_\_\_\_\_ Start Date of Data : \_\_\_\_\_  
 Customer: **Garnett Ritchie** Bus. Area: **SCADA** Agency: **SFWMD** Internal Order: \_\_\_\_\_  
 Project Manager: **Amelia Rodriguez-Alers** Bus. Area: **InfrStr. Mgt/Survey** Agency: **SFWMD** Fund: \_\_\_\_\_  
 Contract #: \_\_\_\_\_  
 Project Name: \_\_\_\_\_ Legal Mandate: \_\_\_\_\_

Short Common Name / Description: \_\_\_\_\_

Proj. Mgr. Notes: Addendum Added to Update Surveying Data for NAVD 88 Ref. Elev. Offset = +1.56' to convert to NGVD 29.

Site Directions: Angel's well is located on 152nd ST & SW 215th Ave, Homestead, FL.

Site Address (if any): \_\_\_\_\_

Transportation: **Std Vehicle** Lock type or combination: **Abloy S** # \_\_\_\_\_

Recorder Location/Purpose: **Stand-Alone Recorder (Non-Flow Site)** Structure Type: **Existing Structure**

Array ID Configuration table attached \_\_\_\_\_

### SURVEY INFORMATION

B.M. Elevation: **5.03 ft** Date: **8/16/2016** Stamp: **ANGL**  
 Agency: **SFWMD** Type: **ALUM** Datum: **NAVD 88**

Benchmark Location/ Description: Located 15ft plus/minus south of the well, set in pipe

### COMMUNICATIONS INFORMATION

Communications System: \_\_\_\_\_ Loggernet Server: \_\_\_\_\_ Loggernet IP Address: \_\_\_\_\_  
 Tower: \_\_\_\_\_ Communication Type: \_\_\_\_\_ R.F. Code/Modem Address: \_\_\_\_\_ R.F. Access Point: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 RTU Address: \_\_\_\_\_ Gateways: \_\_\_\_\_

### WELL INFORMATION

Sensor	Customer Ref	Ref Elev	Elev Date	Top of Well	Bottom of Well	Ground Elev	Benchmark Elev	Benchmark Datum	Ref Elevation Location
GW1		7.58 FT	8/16/2016				5.03ft	NAVD 88	Mark Top of Well Platform... denoted by Brass Tag..

Sensor	GW Sensor Location Offset	Meas Pt Elevation	GW Land Elevation	Depth of Well	Type of Well	Top of Monitored Interval	Base of Monitored Interval	Parameter Transmitted								
GW1																

### COORDINATE INFORMATION

Item/Parm	Lat	Long	X-Coord	Y-Coord	Sec	Township	Range	Quad	Basin	County	Description
GW1	25° 37' 21.38"	80° 32' 30.21"			28	55	38	ENP		Miami-Dade	