



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DB Hydro Station Name: G-3061		DB Hydro Site Name: HIAFAS		Date of Field Work: 15-jun-17	
Party Chief: Hudson		Field Book: Misc 7C		Page(s) 26 & 47	
Site Benchmark: HIAFAS		Benchmark Elevation (NAVD88) 7.889		Corpscon 6.0.1 Conversion Factor (NAVD88 to NGVD29) +1.552	
Reference Elevation(s) (NAVD88): El. 10.61		Existing Tag Elevation (Datum): None		Calibration Port Elevation(s) (NAVD88): El. 10.625	
Ground Elevation (NAVD88): El. 6.8 NW corner El. 7.0 NE corner El. 6.9 SE corner El. 6.8 SW corner			Pad Elevation (NAVD88): El. 7.86 NW corner El. 7.88 NE corner El. 7.92 SE corner El. 7.84 SW corner		
Latitude: 25°49'42.324"			Longitude: 80°17'15.973" (OPUS taken on benchmark)		

Notes:

OPUS – Online Positioning User Service (a National Geodetic Survey Product)

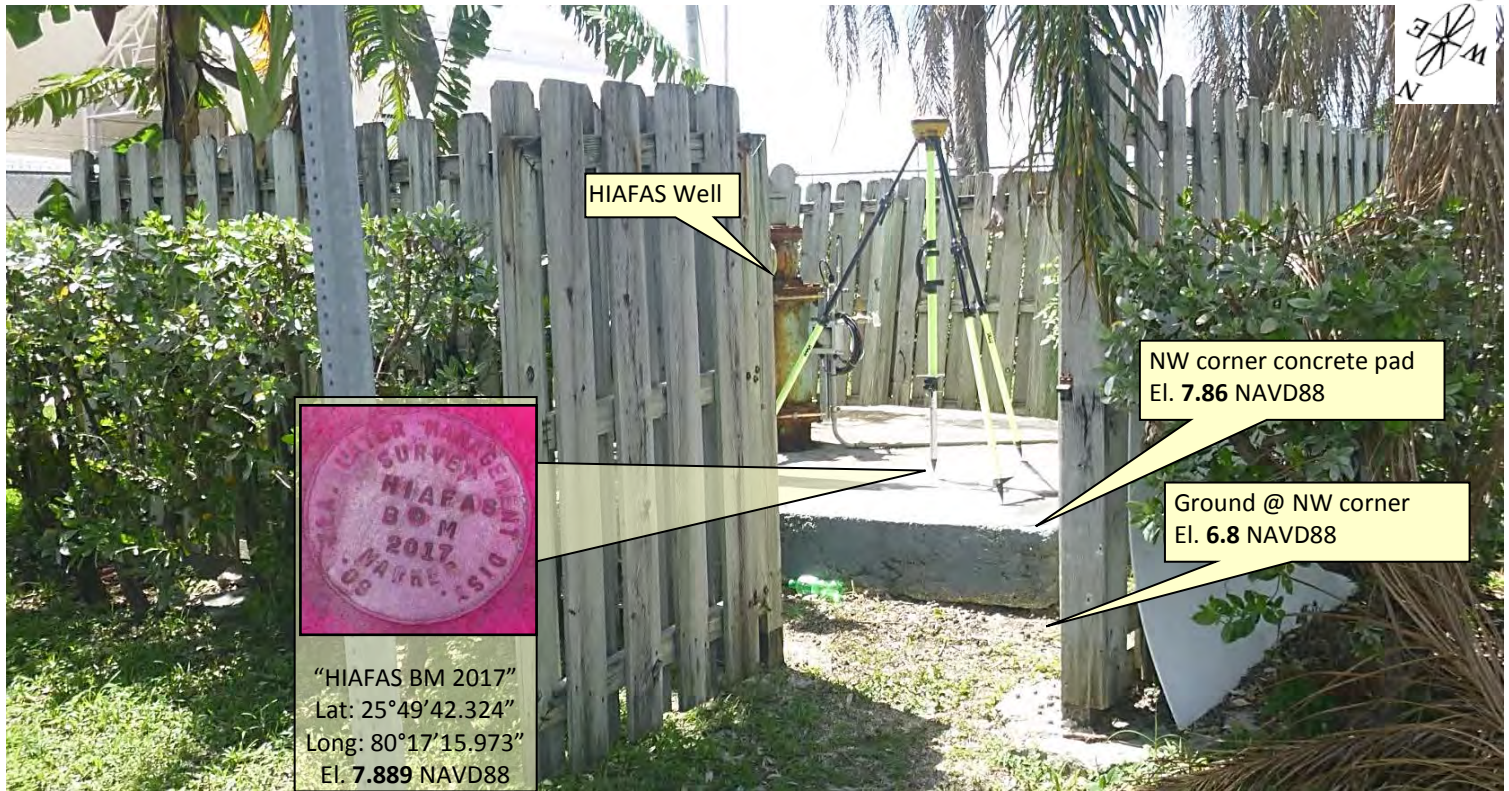
NAVD88 – North American Vertical Datum of 1988

NGVD29- National Geodetic Vertical Datum of 1929

Corpscon 6.0.1 - A U.S. Army Corps of Engineers Engineering Research and Development Center Topographic Engineering Center Alexandria, Virginia Windows-based program to convert coordinates and elevations between datum's using vertcon05.txt and vertcon05.05 files supplied by the U.S. Army Corps of Engineers South Atlantic Division, Jacksonville FL.

PICTURES

Overall Well Site



"HIAFAS BM 2017"
Lat: 25°49'42.324"
Long: 80°17'15.973"
El. 7.889 NAVD88

Looking Southeasterly (Not to scale) (15-jun-17)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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HIAFAS Well Pictures



Looking Easterly (Not to scale) (15-jun-17)

HIAFAS Well Pictures



Looking Southerly (Not to scale) (15-jun-17)

Reference and Verification Port Measuring Points



Reference Point
El. 10.61

Verification Port
(Calibration Point)
El. 10.625



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

Brass Tag Close-Up





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DESIGNATION: HIAFAS	PROJECT: HIAFAS Well Site
ESTABLISHED BY: SOUTH FLORIDA WATER MANAGEMENT DISTRICT	SURVEYOR: Hudson
RECOVERED BY:	DATE: 15-jun-17

GEOGRAPHIC POSITION

SECTION 18	TOWNSHIP 53 SOUTH	RANGE 41 EAST
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COUNTY: Miami-Dade	NAME OF QUADRANGLE: Hialeah
	GEOGRAPHIC INDEX OF QUAD: 1503

HORIZONTAL DATUM: 1927 **(1983)** Other ____ (circle one) ZONE **E** or W

VERTICAL DATUM: MSL 1929 **(1988)** Other ____ (circle one)

VERTICAL ACCURACY: 1 2 **(3)**

STATE PLANE COORDINATE	(N) Y= 543965.215	(E) X= 890441.175	NAVD 88 EL. 7.889 NGVD 29 EL.
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CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): **+1.552**

LATITUDE: **25°49'42.324"** LONGITUDE: **80°17'15.973"** (OPUS solution) OPUS – Online Positioning User Service (a National Geodetic Survey Product)

RECOVERY DATA

Stamping: **HIAFAS BM 2017**

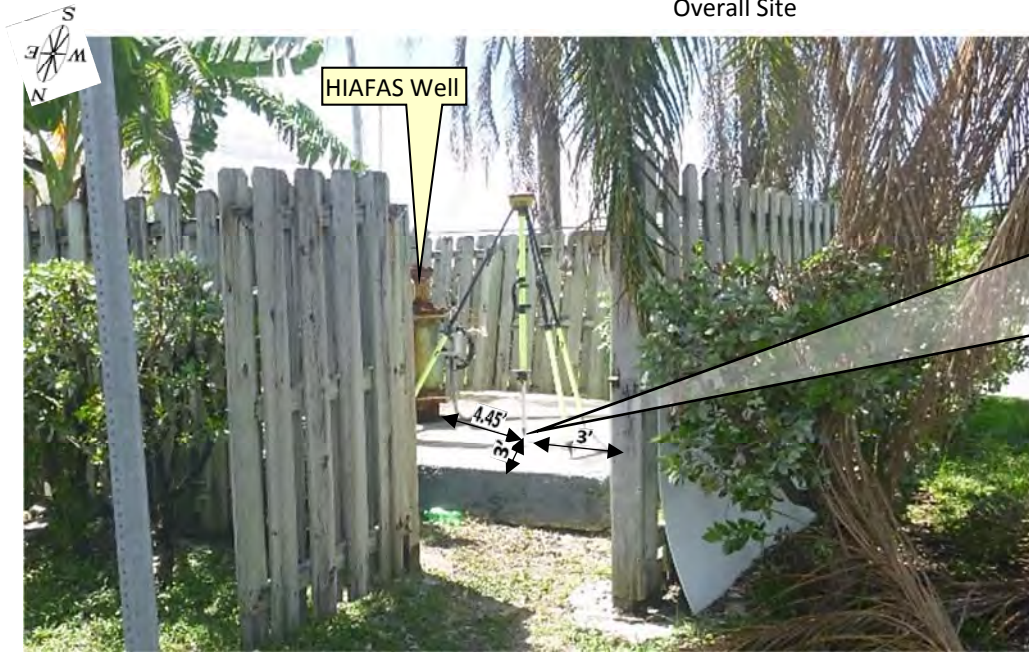
To Reach: From the intersection of U.S. Highway 27 (South Okeechobee Road) and State Road 826 (Palmetto Expressway) go southeast on U.S. Highway 27 for 2.6 miles to West 9th Street on the left; turn left (East) onto West 9th Street and go 0.14 of a mile to West 3rd Avenue; turn right (South) and go 430 feet to the entrance to the water plant on the right; turn right and enter the parking lot of the water plant and the station location on the left inside the wooden fenced area of the HIAFAS well. The station is located on the concrete well pad 3 feet south of and 3 feet east of the northwest corner of the well pad and 4.45' northwest of the well. The station is a South Florida Water Management District aluminum disk set in the well pad and stamped "HIAFAS BM 2017."

NGS SOURCE BENCHMARK: **W421 (AB7784) El. 11.309 NAVD88**

FIELD BOOK: **MISC 7C PAGES: 46 & 47**

PICTURES

Overall Site



Aluminum cap stamped "HIAFAS BM 2017" El. 7.889 NAVD88

Looking Southeasterly (Not to scale) (15-jun-17)

The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

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PROGRAM = datasheet95, VERSION = 8.12
1      National Geodetic Survey,  Retrieval Date = MARCH 17, 2017
AB7784 *****
AB7784 DESIGNATION - W 421
AB7784 PID - AB7784
AB7784 STATE/COUNTY- FL/MIAMI-DADE
AB7784 COUNTRY - US
AB7784 USGS QUAD - HIALEAH (1994)
AB7784
AB7784 *CURRENT SURVEY CONTROL
AB7784
AB7784* NAD 83(1986) POSITION- 25 49 46. (N) 080 17 22. (W) SCALED
AB7784* NAVD 88 ORTHO HEIGHT - 3.447 (meters) 11.31 (feet) ADJUSTED
AB7784
AB7784 GEOID HEIGHT - -25.148 (meters) GEOID12B
AB7784 DYNAMIC HEIGHT - 3.441 (meters) 11.29 (feet) COMP
AB7784 MODELED GRAVITY - 979,040.6 (mgal) NAVD 88
AB7784
AB7784 VERT ORDER - FIRST CLASS II
AB7784
AB7784.The horizontal coordinates were scaled from a topographic map and have
AB7784.an estimated accuracy of +/- 6 seconds.
AB7784.
AB7784.The orthometric height was determined by differential leveling and
AB7784.adjusted by the NATIONAL GEODETIC SURVEY
AB7784.in March 1997.
AB7784
AB7784.Significant digits in the geoid height do not necessarily reflect accuracy.
AB7784.GEOID12B height accuracy estimate available here.
AB7784
AB7784.The dynamic height is computed by dividing the NAVD 88
AB7784.geopotential number by the normal gravity value computed on the
AB7784.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AB7784.degrees latitude (g = 980.6199 gals.).
AB7784
AB7784.The modeled gravity was interpolated from observed gravity values.
AB7784
AB7784; North East Units Estimated Accuracy
AB7784;SPC FL E - 165,910. 271,240. MT (+/- 180 meters Scaled)
AB7784
AB7784_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ712569(NAD 83)
AB7784
AB7784 SUPERSEDED SURVEY CONTROL
AB7784
AB7784.No superseded survey control is available for this station.
AB7784
AB7784_MARKER: DV = VERTICAL CONTROL DISK
AB7784_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE
AB7784_SP_SET: PEDESTRIAN OVERPASS
AB7784_STAMPING: W 421 1993
AB7784_MARK LOGO: NGS

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AB7784_MAGNETIC: N = NO MAGNETIC MATERIAL
 AB7784_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 AB7784_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
 AB7784+SATELLITE: SATELLITE OBSERVATIONS - 1993

AB7784

AB7784	HISTORY	- Date	Condition	Report By
AB7784	HISTORY	- 1993	MONUMENTED	FLDEP

AB7784

AB7784 STATION DESCRIPTION

AB7784

AB7784'DESCRIBED BY FL DEPT OF ENV PRO 1993 (LGB)
 AB7784'THE MARK IS IN MIAMI SPRINGS, ABOUT 1.2 MI (1.9 KM) SOUTHEAST OF THE
 AB7784'JUNCTION OF STATE ROAD 934 AND U.S. HIGHWAY 27, IN SECTION 18,
 AB7784'TOWNSHIP 53 SOUTH, RANGE 41 EAST. TO REACH THE MARK FROM THE
 AB7784'INTERSECTION OF U.S. HIGHWAY 27 AND STATE ROAD 826 (PALMETTO
 AB7784'EXPRESSWAY) GO SOUTHEAST ON U.S. HIGHWAY 27 FOR 2.6 MI (4.2 KM) TO THE
 AB7784'JUNCTION OF U.S. HIGHWAY 27 AND NORTHWEST 57TH AVENUE (RED ROAD) AND
 AB7784'THE MARK ON THE LEFT, SET VERTICALLY IN THE SOUTHEAST FACE OF A
 AB7784'PEDESTRIAN OVERPASS, 5.0 FT (1.5 M) ABOVE THE LEVEL OF THE GROUND,
 AB7784'19.5 FT (5.9 M) SOUTH OF A METAL TRAFFIC BOX, 14.0 FT (4.3 M)
 AB7784'NORTHWEST OF A WOODEN POWER POLE AND 5.5 FT (1.7 M) NORTHEAST OF THE
 AB7784'NORTHEAST EDGE OF THE CURB AND GUTTER.

*** retrieval complete.
 Elapsed Time = 00:00:01



SEC.	13	TWP	53	R6E	41
		HIAFAS			
	ESTABLISH Horiz / Vert Control @ G.W. Well Site				
	Levels for W421 SE to Well				
SFA	+	HC	-	ELEV	Bm
Bm					11.31 [11.309]
SP	0.28	11.59			
			5.94	5.65	
	5.00	10.65			
TBM			4.87	5.78	5.775 [5.779]
		RETURNS	LEVELS		
	4.79	10.57			
TP			4.90	5.67	
	0.14	11.83			
Bm			0.51	11.32	11.31
	END LEVELS TO SITE				
	TRANSFER ELEV TO SITE Bm & OBTAIN REF ELEV				
	5.35	11.125			5.775 [ADJ]
REF			0.52	10.605	
VER			0.50	10.625	
NE COR			3.25	7.88	
SE COR			3.21	7.92	
SW COR			3.29	7.84	
NW COR			3.27	7.86	
NW BEND			4.3	6.8	
NE "			4.1	7.0	
SE "			4.2	6.9	
SW "			4.3	6.8	
Bm			3.24	7.885	7.889
		RETURN	LEVELS		
	2.98	10.865			
			5.09	5.775	5.775
	END LEVELS				
	CONTD Pg. 42				

EQUIP. DICE TINI & BOLL CODE ROD

NOTES 1. Vert Bm Was Too High To USE DIGITAL; USED LEVEL & NUMBER SIDE OF ROD.
 2. USED TOWNMAN & BLADE & VERT Bm TO ENSURE ACCURACY.

Comments Bm W421 RECOVERED IN GOOD COND PER DESL.

RE DAILY; DISK FOUND CONC BENEATH ON WEST SIDE OF 8' CH FENCE, ACCESS FROM WELL

Bm ABOVE; ERROR 0.01'

TBM ABOVE

X BRAND ON S TOP OF ELBOW @ SENSOR
 " " " " " " " @ PULG
 CONC PAD
 " "
 " "
 " "
 GEND ELEV
 " "
 " "
 " "

SFUMD ALONG LAP SET IN NW COR OF CONC PAD; 3' E. AND 3' SOUTH OF NW COR OF PAD STAMPED "HIAFAS Bm 2017"

TBM ABOVE; ERROR 0.001'

COND FB Pg. 46

GPS STATION SELECTION @ SUR BOW HIAFAS

BM HIAFAS

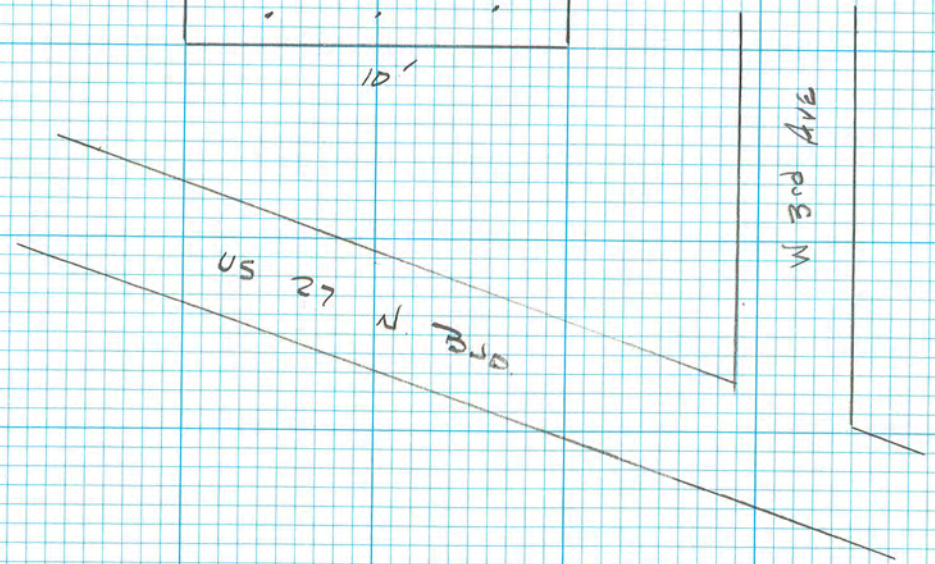
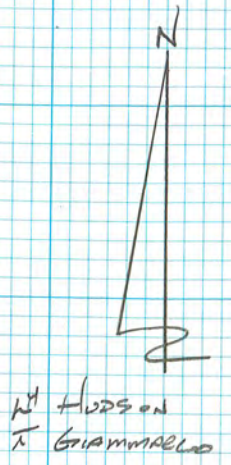
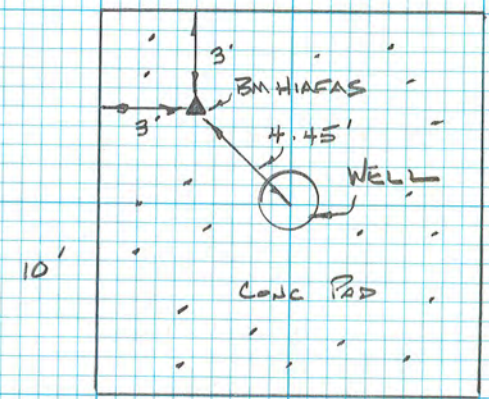
RECEIVER: S410
 START: 10:55
 END: 1:30
 ADJ. HT: 1.5 m

Photos

- 1 RTU Box
- 2-3 OVERALL SITE; LOOKING EAST THEN SOUTH
- 4 WELL; LOOKING SOUTH
- 5 " " EAST
- 6 " " NORTH
- 7 REC & SUR PT. LOOKING NE
- 8 " " " OVERHEAD
- 9-10 FB PL/DISK SUR "
- 11-13 W421 LOOKING NW
- 14-15 BM HIAFAS
- 16-17 TAG.

END Survey

HIAFAS WELL



From: opus
To: Ehmke, Howard
Subject: OPUS solution : HIAFAS.tps OP1497981445397
Date: Tuesday, June 20, 2017 1:58:31 PM

FILE: HIAFAS.tps OP1497981445397

1009 WARNING! No antenna type was selected. No antenna offsets or
1009 pattern will be applied. Coordinates with reduced accuracy
1009 will be returned for the antenna phase center.
1009

NGS OPUS SOLUTION REPORT
=====

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <https://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: hehmke@sfwmd.gov DATE: June 20, 2017
RINEX FILE: hiaf166o.17o TIME: 17:58:12 UTC

SOFTWARE: page5 1603.24 master57.pl 160321 START: 2017/06/15 14:55:00
EPHEMERIS: igr19534.eph [rapid] STOP: 2017/06/15 17:30:00
NAV FILE: brdc1660.17n OBS USED: 4527 / 6403 : 71%
ANT NAME: NONE NONE # FIXED AMB: 58 / 83 : 70%
ARP HEIGHT: 1.5 OVERALL RMS: 0.026(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2017.4539)

X: 969114.291(m) 0.151(m) 969113.503(m) 0.151(m)
Y: -5662274.688(m) 0.099(m) -5662273.087(m) 0.099(m)
Z: 2761955.052(m) 0.021(m) 2761954.879(m) 0.021(m)

LAT: 25 49 42.32413 0.026(m) 25 49 42.34332 0.026(m)
E LON: 279 42 44.02660 0.152(m) 279 42 44.00842 0.152(m)
W LON: 80 17 15.97340 0.152(m) 80 17 15.99158 0.152(m)
EL HGT: -22.499(m) 0.083(m) -24.114(m) 0.083(m)
ORTHO HGT: 2.654(m) 0.141(m) [NAVD88 (Computed using GEOID12B)] **8.2447**

UTM COORDINATES STATE PLANE COORDINATES

	UTM (Zone 17)	SPC (0901 FL E)	
Northing (Y) [meters]	2856876.341	165800.929	Y= 543965.21456083333
Easting (X) [meters]	571382.650	271407.013	X= 890441.1751508332
Convergence [degrees]	0.31031570	0.31031570	
Point Scale	0.99966292	1.00000411	
Combined Factor	0.99966645	1.00000764	

US NATIONAL GRID DESIGNATOR: 17RNJ7138256876(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DF9225	ZMA1 MIAMI WAAS 1 CORS ARP	N254928.585	W0801909.066	3178.0
DG9798	PBCH WEST PALM CORS ARP	N265046.638	W0801309.299	112978.0

DF7050 MTNT MIAMI TNT CORS ARP N255156.760 W0805425.186 62212.8

NEAREST NGS PUBLISHED CONTROL POINT

AB7784 W 421 N254946. W0801722. 202.4

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Office

Project

20 June 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

HIAFAS

1/1

Northing/Y: 543965.214560833333

Easting/X: 890441.1751508332

Elevation/Z: 0

Convergence: 0 18 37.13653

Scale Factor: 1.000004114

Combined Factor: 1.000008057

Latitude: 25 49 42.32412

Longitude: 80 17 15.97342

Elevation/Z: 1.552

Remark:

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

DBHYDRO | by station

STATION INFORMATION

Station	G-3061
Site	HIAFAS
Type	WELL
Latitude (ddmmss.sss)	254942.534
Longitude (ddmmss.sss)	801715.984
X Coord (ft) NAD83	890440.093
Y Coord (ft) NAD83	543986.399
County	Miami-Dade
Basin	C-6
Section	18
Township	53
Range	41
Show Map	Google Map
Well Info	Info
Description	G-3061 USGS WELL HIALEAH ASR#1
Notes	
Nearby Stations	Nearby Stations
Attachments	Show Attachments

Query returned 1 station record(s).

Get Sample Data

Get Time Series Data

REGISTRATION WORKSHEET - HIAFAS Addendum

Site Name: **HIAFAS** Today's Date: **6/21/2017** Type Recorder: **CR1000**
 Activity: **Addendum** Effective Date: _____ Start Date of Data : _____
 Customer: **Steve Krupa** Bus. Area: **5720** Agency: **SFWMD** Internal Order: _____
 Project Manager: **Howard Ehmke** Bus. Area: **Survey & Mapping** Agency: **SFWMD** Fund: _____
 Contract #: _____
 Project Name: _____ Legal Mandate: _____

Short Common Name / Description: _____

Proj. Mgr. Notes: This addendum was performed to add NAVD 88 surveying data for the reference elevation. To convert to NGVD 29 add +1.552 ft.

Site Directions: From the intersection of U.S. Highway 27 (South Okeechobee Road) and State Road 826 (Palmetto Expressway) go southeast on U.S. Highway 27 for 2.6 miles to West 9th Street on the left; turn left (East) onto West 9th Street and go 0.14 of a mile to West 3rd Avenue; turn right (South) and go 430 feet to the entrance to the water plant on the right; turn right and enter the parking lot of the water plant and the station location on the left inside the wooden fenced area of the

Site Address (if any): _____

Transportation: _____ Lock type or combination: **Abloy S** # _____

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

Array ID Configuration table attached **NO**

SURVEY INFORMATION

B.M. Elevation: **7.889** Date: **6/15/2017** Stamp: **HIAFAS BM 2017**
 Agency: **SFWMD** Type: **ALUM** Datum: **NAVD 88**

Benchmark Location/ Description: The station is located on the concrete well pad 3 feet south of and 3 feet east of the northwest corner of the well pad and 4.45' northwest of the well. The station is a South Florida Water Management District aluminum disk set in the well pad and stamped "HIAFAS BM 2017."

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	HIAFAS	10.61	6/15/2017	10.61		6.9	7.889	NAVD 88	top of 90° elbow below the transducer

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 49 42.32	80 17 15.97			18	53	41	Hialeah		Miami-Dade	