

**DOWN  
Construction  
Preliminary Data  
Snook Road**

**Aquifer System Monitor Wells:  
IntermediateV-0814  
Floridan V-0810**

**SJRWMD Program No. 31-58200**



**Division of Ground Water Programs  
Department of Resource Management  
St. Johns River Water Management District  
Palatka, Florida**

**December 5, 2000**

*All data, figures, tables and information are provisional and generated for the Division of Ground Water Program's use*

## **TABLE OF CONTENTS**

General Information

Site Location

Asbuilts

Groundwater Levels

Drilling Data

Water Quality

Grout Table

Lithologic Description

Geophysical Logs

## **General Information**

**Site:** Snook Rd.

**Service Request:** Brian McGurk Division of Ground Water Programs

**Purpose:** Ground water model data for Division of Needs And Sources

**Work:**

**Monitor Well Construction**

Huss Drilling Inc.  
SJRWMD

**Geophysical Logging:**

SJRWMD  
Southern Resources  
CenTech Utility Corp. (set turbine pump for flow meter log)

**Report:** Robert Brooks and John Segó

**Notes:**

6/10/96, Miscellaneous tools and materials stolen from site over weekend. Incident reported to Volusia Co. Sheriff Dept.

**V-0814** (Intermediate)

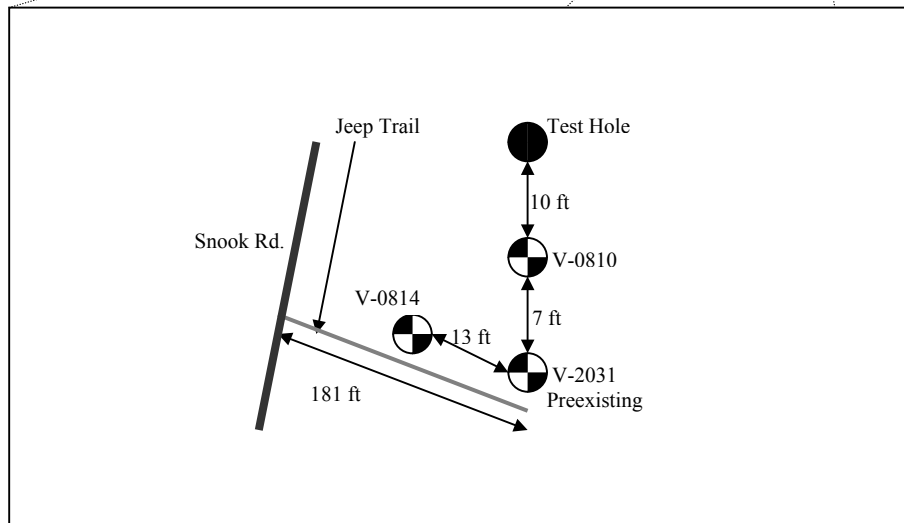
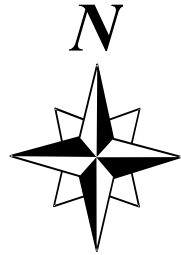
8/08/96, Construction completed using mud rotary drilling methods.

**V-0810** (Floridan)

7/10/96, Construction completed using mud rotary and reverse air drilling methods.

**V-2031** (Floridan)

Preexisting well located at site.



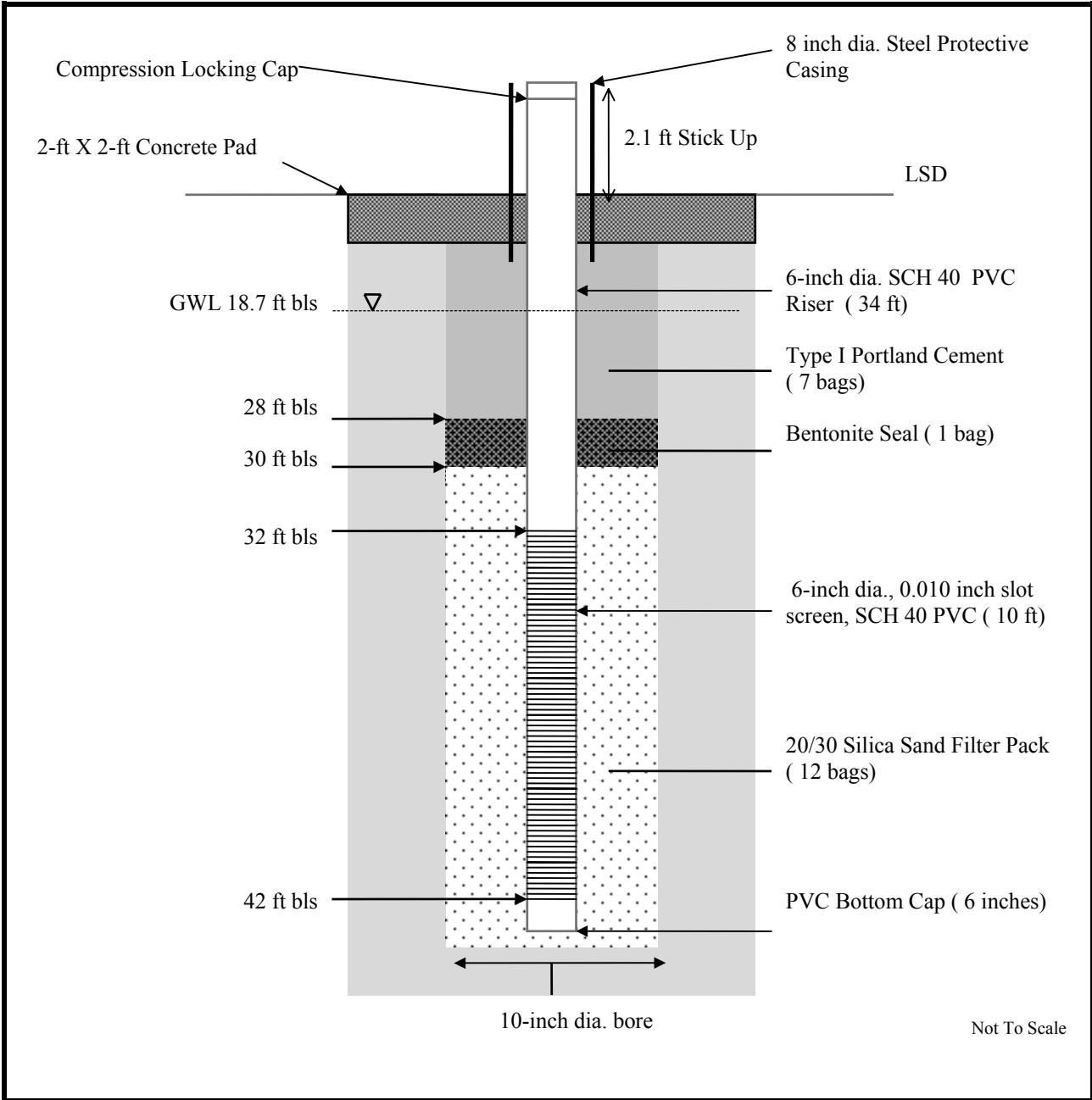
Not To Scale

**Site:** Snook Road  
**Lat/Long:** 285211/811316  
**TRS:** 193104  
**Topo:** Osteen  
**Site Elevation:** ~ 35 ft NGVD

**Project No:** 31-58200

**SJRWMD**

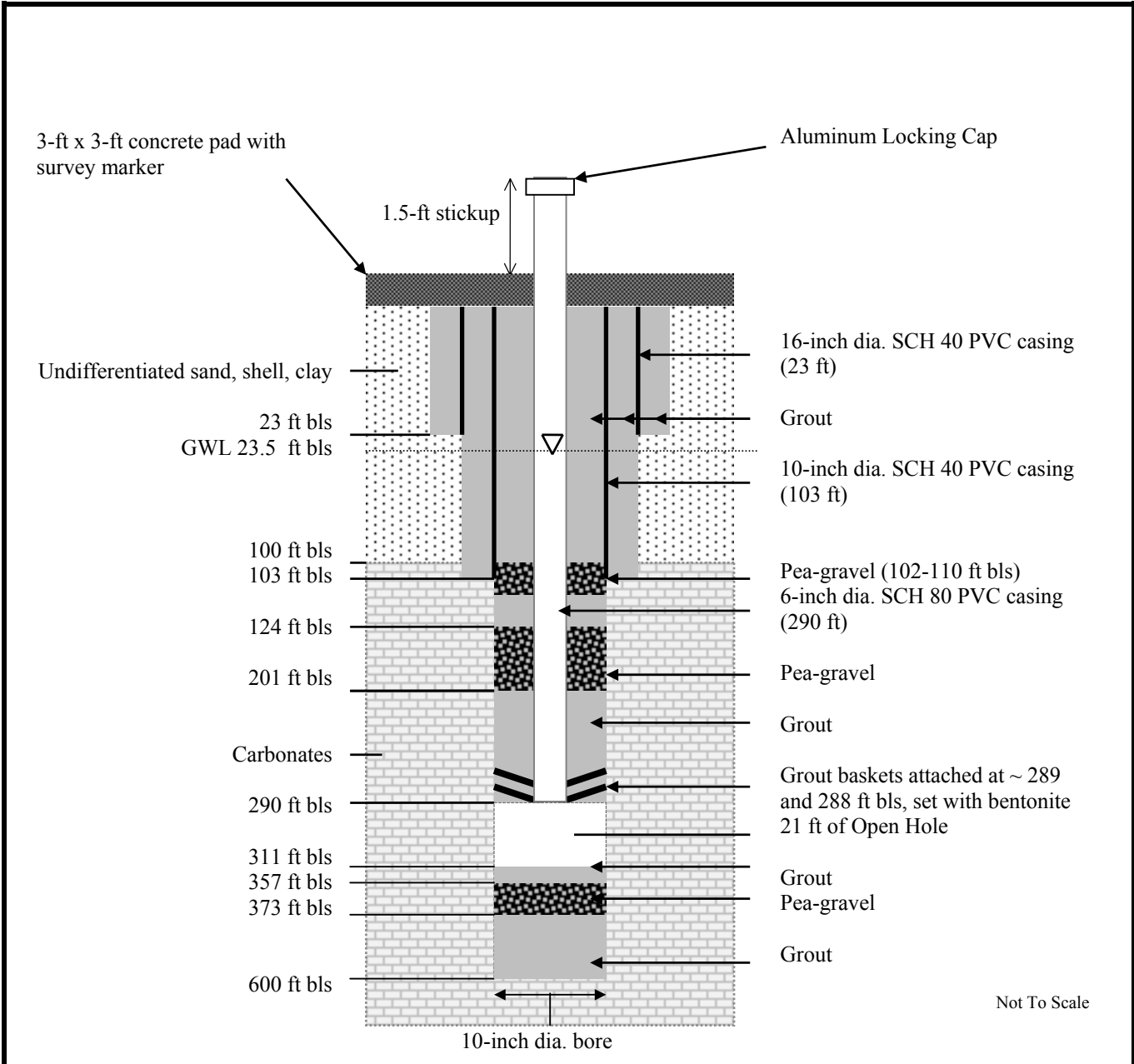
**Figure 1. Site Map**



<b>Site:</b>	Snook Road
<b>Driller:</b>	Huss Drilling, Inc.
<b>Well Completed:</b>	August 9, 1996

**SJRWMD**

**Figure 2.** Intermediate Monitor Well V-0814



**Site:** Snook Rd.  
**Driller:** SJRWMD  
**Well Completed:** July 10, 1996



**Figure 3.** Floridan Monitor Well V-0810

Table 1.

## Groundwater Levels and Drilling Data

Site: Snook RoadWell ID: V-0810

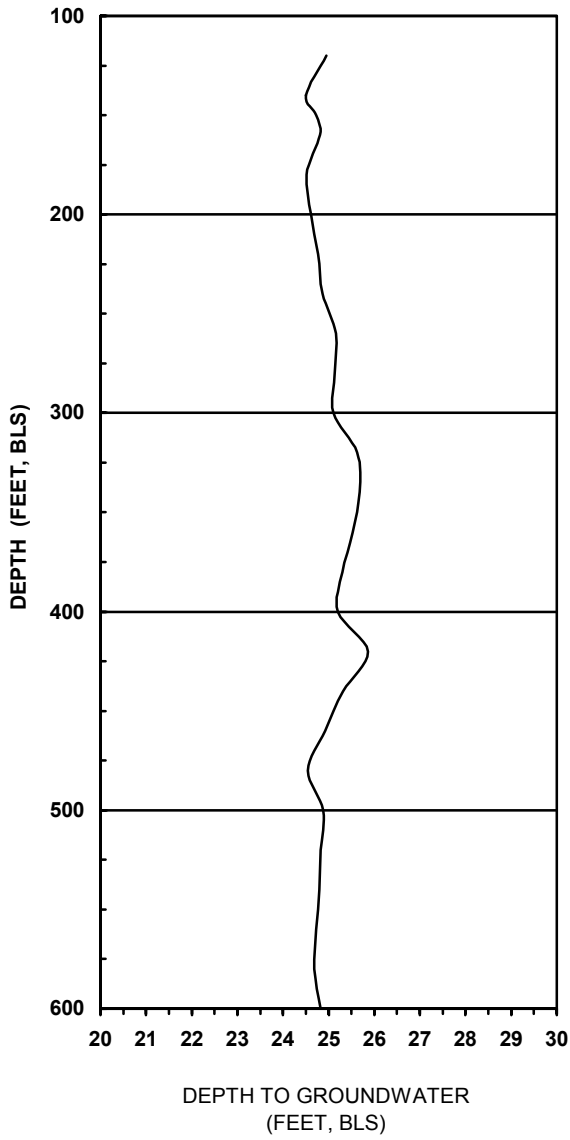
Water Levels				Borehole		Drilling Data				
Static ✓	Date/Time (yymmdd/hhmm)	Casing (ft, bls)	Rod (ft, bls)	Total Depth (ft, bls)	Open Hole (ft)	Method Mud/RA	Bit Size (inch)	From (ft, bls)	To (ft, bls)	Rate (ft/hr)
	960522-1203	-	-	111	9	Mud	9 <sup>7/8</sup>	102	111	36
✓	960522-1223	24.95	28.65	120	19	RA	9 <sup>7/8</sup>	111	120	36
	960522-1542	-	-	140	39	RA	9 <sup>7/8</sup>	120	140	32
✓	960528-1235	24.5	28.25	140	39	RA	9 <sup>7/8</sup>	-	-	
	960528-1530	-	-	150	49	RA	9 <sup>7/8</sup>	140	150	40
✓	960529-0700	24.73	28.7	150	49	RA	9 <sup>7/8</sup>	-	-	
	960529-0715	24.81	28.76	160	59	RA	9 <sup>7/8</sup>	150	160	60
	960529-0830	24.52	28.57	180	79	RA	9 <sup>7/8</sup>	160	180	60
	960529-1050	24.62	28.54	200	99	RA	9 <sup>7/8</sup>	180	200	17
	960529-1233	-	-	220	119	RA	9 <sup>7/8</sup>	200	220	41
✓	960530-0915	24.77	28.72	220	119	RA	9 <sup>7/8</sup>	-	-	
	960530-0945	24.87	28.82	240	139	RA	9 <sup>7/8</sup>	220	240	80
	960530-1035	-	-	260	159	RA	9 <sup>7/8</sup>	240	260	60
✓	960604-1056	25.16	28.99	260	159	RA	9 <sup>7/8</sup>	-	-	
	960604-1240	25.14	29.5	280	179	RA	9 <sup>7/8</sup>	260	280	18
	960604-1445	25.1	29.01	300	199	RA	9 <sup>7/8</sup>	280	300	12
	960604-1626	-	-	320	219	RA	9 <sup>7/8</sup>	300	320	13
✓	960605-0645	25.63	28.55	320	219	RA	9 <sup>7/8</sup>	-	-	
	960605-0830	25.68	29.91	340	239	RA	9 <sup>7/8</sup>	320	340	24
	960605-0948	25.52	29.48	360	259	RA	9 <sup>7/8</sup>	340	360	35
	960605-1218	25.3	29.3	380	279	RA	9 <sup>7/8</sup>	360	380	11
	960605-1400	25.2	29.11	400	299	RA	9 <sup>7/8</sup>	380	400	21
	960605-1500	-	-	420	319	RA	9 <sup>7/8</sup>	400	420	22
✓	960606-0700	25.86	29.1	420	319	RA	9 <sup>7/8</sup>	-	-	
	960606-0856	25.51	29.65	440	339	RA	9 <sup>7/8</sup>	420	440	11
	960606-1059	-	-	460	359	RA	9 <sup>7/8</sup>	440	460	31
✓	960610-1330	24.92	28.78	460	359	RA	9 <sup>7/8</sup>	-	-	
	960610-1545	24.55	28.89	480	379	RA	9 <sup>7/8</sup>	460	480	32
✓	960611-0720	24.90	-	490	389	RA	9 <sup>7/8</sup>	-	-	
	960611-0810	24.88	28.89	500	399	RA	9 <sup>7/8</sup>	480	500	40
	960611-1042	24.82	28.86	520	419	RA	9 <sup>7/8</sup>	500	520	48
	960611-1215	24.79	28.83	540	439	RA	9 <sup>7/8</sup>	520	540	44
	960611-1325	24.72	28.79	560	459	RA	9 <sup>7/8</sup>	540	560	50
	960611-1434	24.68	28.71	580	479	RA	9 <sup>7/8</sup>	560	580	24

**Table 1.****Groundwater Levels and Drilling Data**Site: Snook RoadWell ID: V-0810

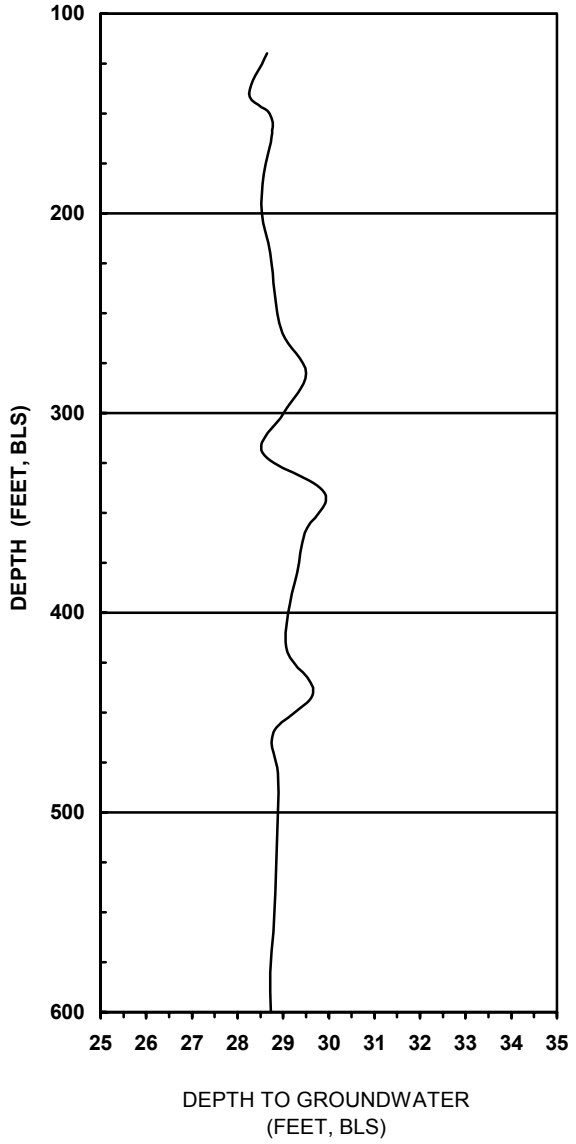
Water Levels				Borehole		Drilling Data				
Static ✓	Date/Time (yymmdd/hhmm)	Casing (ft, bls)	Rod (ft, bls)	Total Depth (ft, bls)	Open Hole (ft)	Method Mud/RA	Bit Size (inch)	From (ft, bls)	To (ft, bls)	Rate (ft/hr)
	960611-1606	NR	NR	600	499	RA	9 <sup>7/8</sup>	580	600	24
✓	960612-0650	24.82	28.73	600	499	-	-	-	-	-



Depth to Groundwater (Casing)



Depth to Groundwater (Rod)



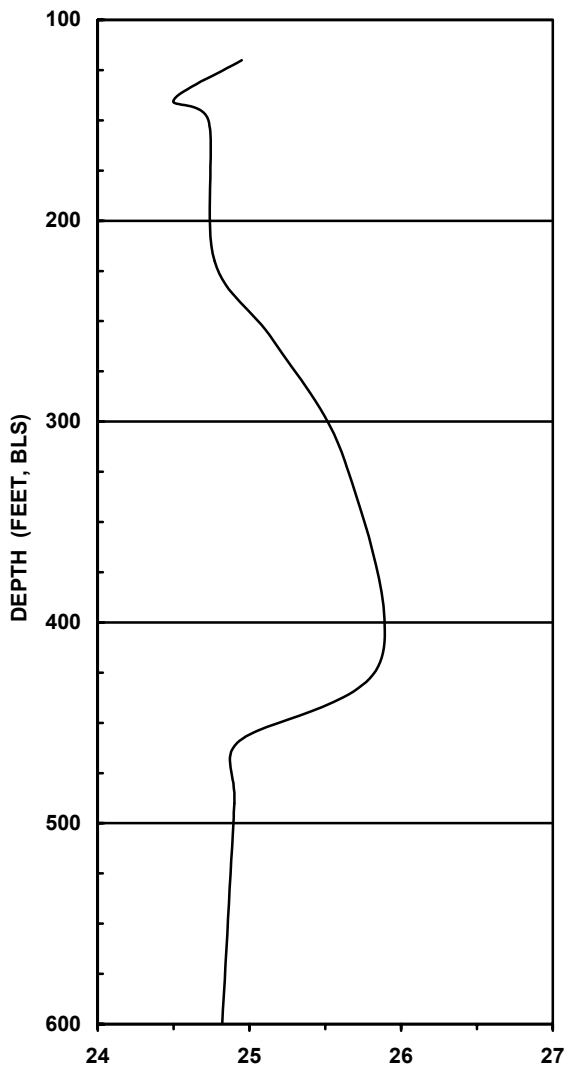
Site: Snook Road

Project No: 31-51000

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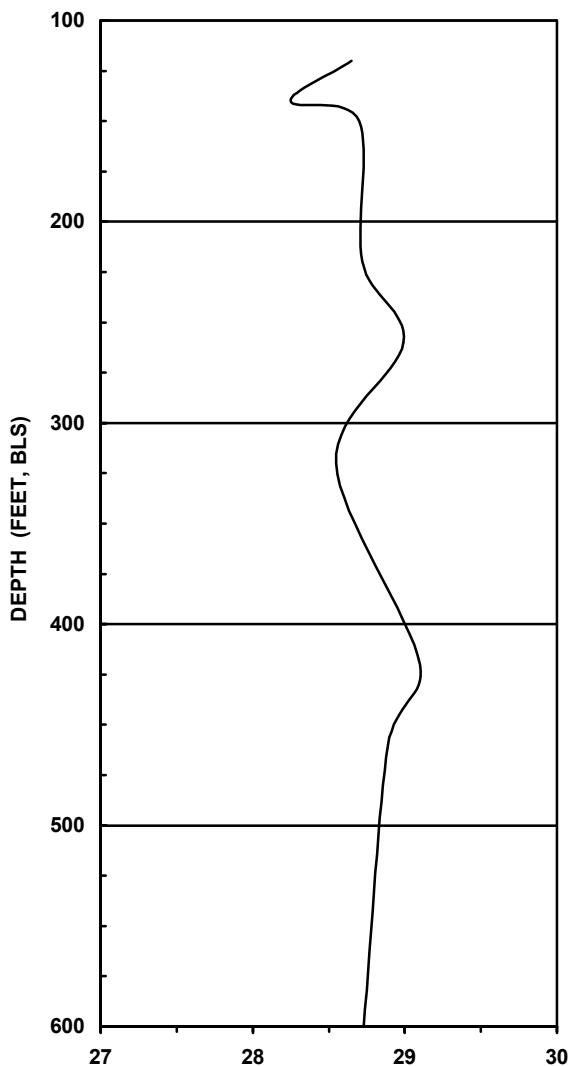
Figure 4. Groundwater Levels Monitor Well V-0810

Depth to Groundwater (Casing)



DEPTH TO GROUNDWATER (FEET, BLS)

Depth to Groundwater (Rod)



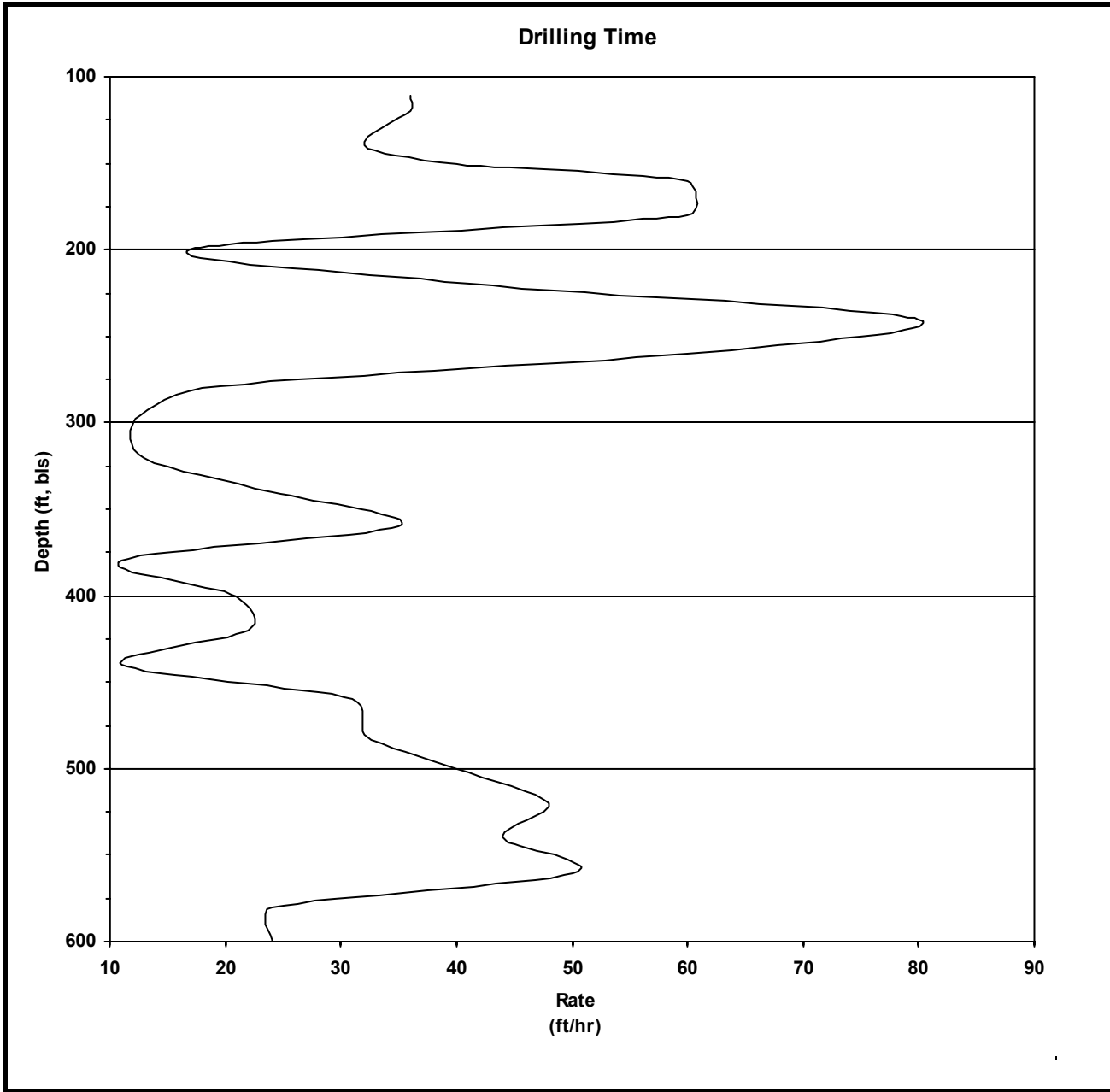
DEPTH TO GROUNDWATER (FEET, BLS)

Site: Snook Road

Project No: 31-51000

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**Figure 5. Initial Daily Groundwater Levels  
Monitor Well V-0810**



Site: Snook Road

Project No: 31-51000

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Figure 6. Drilling Time Data Monitor  
Well V-0810

**Table 2. Groundwater Quality And Development**

Site: Snook Road.

Well IB: V-0814

Hydrologist: R. Brooks

L A B ✓	Date (yyymmdd/hhmm)	Rate (gpm)	Pumping GWL (ft bls)	Σ Vol (gal)	Temp (Deg C)	pH	Chloride (mg/L)	Specific Conductivity (us/cm)
✓	990808/1040	5	32.5	1050	23.0	7.4	-	509

Comments: 1. Well drilled with mud rotary.  
2. Barifos added prior to development.

**Table 3. Down Hole Sample Groundwater Quality**

Site: Snook Road

Well Number: V-0810

Hydrologist: A. Story

LAB ✓	Date/Time (yy:mm:dd/hh:mm)	Sample Depth (ft, bls)	Open Hole (ft)	Temp (Deg C)	Chlorides (mg/L)	Conductivity (us/cm)
	960612-1200	320	219	27	32.1	376
	960612-1215	345	244	24	34.2	398
	960612-1235	475	374	24	91.2	608
✓	960612-1300	590	489	25	127.6	768

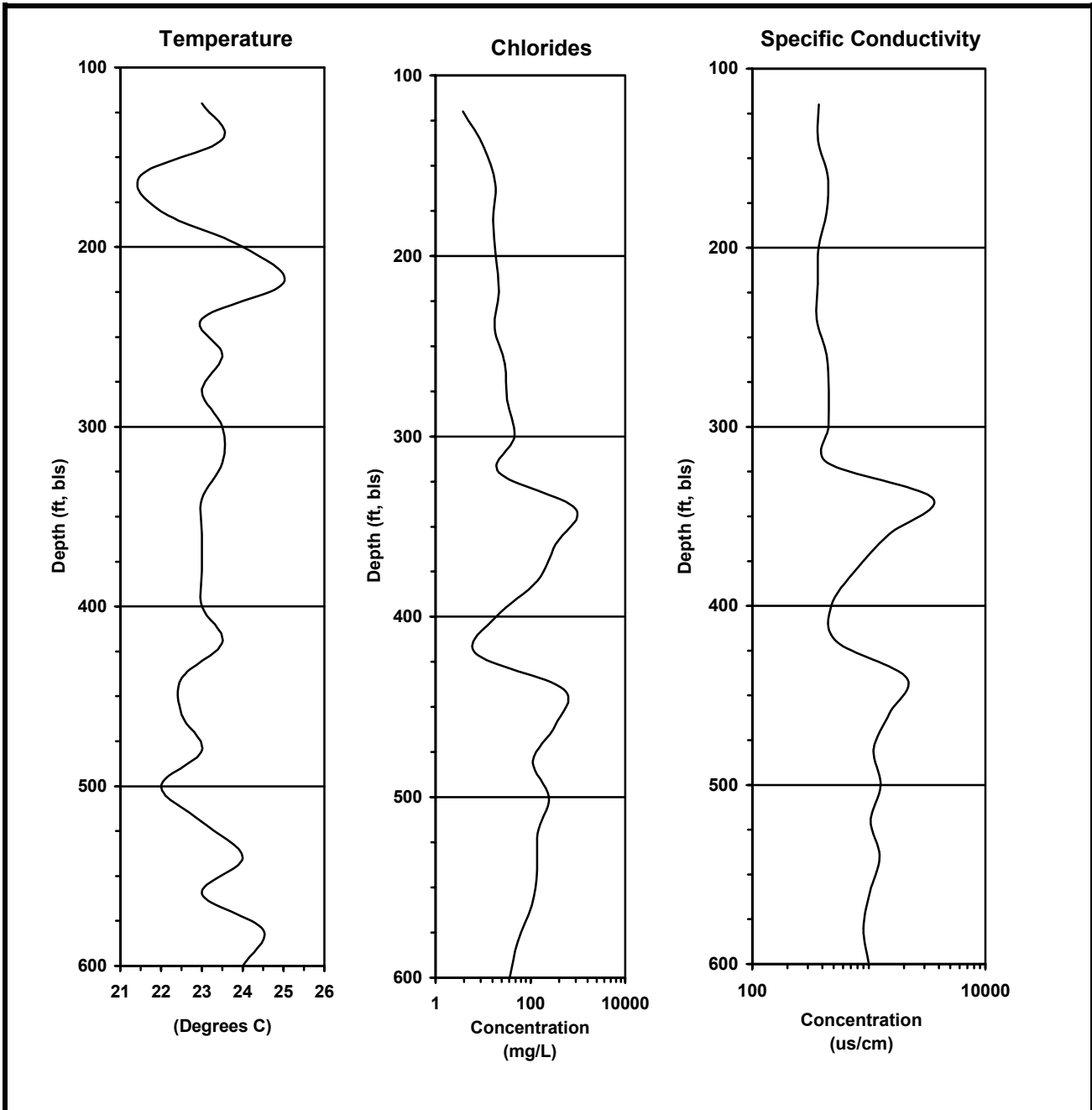
**Table 4. Groundwater Quality**

Site: Snook Road

Well Number: V-0810

Hydrologist: A. Story

<b>LAB ✓</b>	<b>Date/Time (yy:mm:dd/hh:mm)</b>	<b>Sample Depth (ft, bls)</b>	<b>Open Hole (ft)</b>	<b>Temp (Deg C)</b>	<b>Chlorides (mg/L)</b>	<b>Conductivity (us/cm)</b>
✓	960522-1325	120	19	23	3.8	373
	960522-1612	140	39	23.5	10.6	366
	960529-0740	160	59	21.5	18.2	443
	960529-0855	180	79	22	16.1	434
	960529-1115	200	99	24	18.6	371
	960529-1258	220	119	25	21.5	364
	960530-1000	240	139	23	17.8	357
	960530-1043	260	159	23.5	29.1	435
	960604-1228	280	179	23	32	454
	960604-1436	300	199	23.5	46	451
	960604-1641	320	219	23.5	22	440
✓	960605-0810	340	239	23	888	3540
	960605-0930	360	259	23	337	1485
	960605-1205	380	279	23	143	773
	960605-1345	400	299	23	19	475
	960605-1515	420	319	23.5	6.9	530
	960606-0937	440	339	22.5	504	2100
	960606-1134	460	359	22.5	337	1506
	960610-1507	480	379	23	112	480
	960611-0810	500	399	22	248	1263
	960611-1102	520	419	23	143	1040
	960611-1235	540	439	24	137	1236
	960611-1325	560	459	23	108	1019
	960611-1454	580	479	24.5	54	898
	960611-1626	600	499	24	37	999



Project: Snook Road

Project No: 31-51000

**SJRWMD**

Figure 7. Groundwater Quality Data  
Monitor Well V-0810

**Table 5.****Groundwater Quality Laboratory Results**Site: Snook RoadWell ID: V-0810

<b>Date/Time</b> (yy.mm.dd/hh.mm)	<b>Sample Depth</b> (ft, bls)	<b>Open Hole</b> (ft)	<b>Alk</b> (mg/L)	<b>Cl</b> (mg/L)	<b>F</b> (mg/L)	<b>SO<sub>4</sub></b> (mg/L)	<b>Si-T</b> (mg/L)	<b>TDS</b> (mg/L)	<b>Ba-T</b> (ug/L)	<b>Ca-T</b> (mg/L)	<b>Fe-T</b> (ug/L)	<b>K-T</b> (ug/L)	<b>Mg-T</b> (ug/L)	<b>Na-T</b> (mg/L)	<b>Sr-T</b> (ug/L)
960522-1325	120	19	247	19	0.21	-6.0	6	214	51.3	554	11000	2.8	12.9	13	1400
960605-0810	340	239	188	909	0.1	125	1	1810	55	155	831	12.2	54.4	478	4180
960606-1002	440	339	154	490	0.1	57	5	1110	75	105	846	5.7	32.8	241	3540
960612-1300	590	459	NA	77	NA	10	NA	300	NA	NA	NA	NA	NA	NA	768

**Table 6.****Grout Data**Site: Snook RoadWell Number: V-0810

DATE	TAG DEPTH (ft bls)	ANNULUS/BORE (inch dia.)	VOLUME (yds/bags)	GROUT/MATERIAL	COMMENTS
05/20/96	23	22-A	17 bags	Grout	Set 23-ft of 16-inch dia. PVC casing; grout through tremie pipe
05/21/96	103	15-A	31 bags	Grout	Set 103-ft of 10-inch dia. PVC casing; grout through tremie pipe
05/22/96	16	15-A	6 bags	Grout	Grout through tremie pipe to surface
06/25/96	290	10-A	2-5 gal buckets	Bentonite Pellets	Set 290-ft of 6-inch dia. PVC casing with grout baskets attached at 289 and 288 ft
06/26/96	270	10-A	11 bags	Grout	Grout through tremie pipe
06/27/96	263.5	10-A	3.25 yds	Grout	Grout through tremie pipe
7/01/96	201	10-A	3.25 yds	Grout	Grout through tremie pipe
7/02/96	599	10-B	4.3 yds	Grout	Backplug
7/03/96	394	10-B	-	-	Tag only
7/03/96	201	10-A	2 yds	Pea-gravel	Gravel used to fill voids
7/03/96	124	10-A	15 bags	Grout	Grout through tremie pipe
7/08/96	114	10-A	16 bags	Grout	Grout through tremie pipe
7/08/96	394	10-B	30 bags	Grout	Backplug
7/9/96	373	10-B	1 yds	Pea-gravel	Gravel used to fill voids
7/9/96	357	10-B	10 bags	Grout	Backplug
7/9/96	110	10-A	0.25 yds	Pea-gravel	Gravel used to fill voids
7/9/96	102	10-A	15 bags	Grout	Grout through tremie pipe
7/10/96	19	10-A	4 bags	Grout	Grout through tremie pipe to surface
7/10/96	311	10-B	-	-	Tag only
7/15/96	3	22-A	2 bags	Grout	Grout to surface



## Lithologic Description

Site: Snook Road

Well ID: V-0814

Samples Described By: R. Brooks

From (ft)	To (ft)	Hammer Blow Counts	Lithology
4	6	5/6/7/13	Clay, grayish white, sandy
9	11	5/10/7/12	Clay, grayish white, sandy(9-10 ft); Sand, grayish white, very fine to fine
14	16	2/2/2/2	Clay, green and dark reddish brown, very stiff
19	21	8/8/8/8	Clay, green and dark reddish brown, very stiff (19-19.5 ft); Sand, yellow, silty to fine (dry)
24	26	2/3/2/4	Sand, yellowish gray, silty to fine, with very fine shell fragments, partially cemented to cemented
29	31	3/6/7/8	Sand and shell fragments, yellowish gray, fine, partially cemented to cemented
34	36	10/10/16/12	Sand and shell fragments, yellowish gray, fine, partially cemented to cemented
39	41	6/6/8/12	Sand, yellowish gray, fine with shell fragments, fine to coarse, fine phosphate specs
44	46	4/7/7/12	Clay, greenish gray, semi-stiff, sandy, minor shell fragments
49	51	12/16/18/25	Sand, light greenish gray, fine with minor medium shell fragments
54	56	12/12/26/27	Sand, light greenish gray, fine with minor medium shell fragments
59	61	12/10/8/13	Sand, silty to fine, minor shell fragments, light greenish gray

## Lithologic Description

Site: Snook Road

Well ID: V-0810

Samples Described By: J. Sego

From (ft)	To (ft)	Lithology
0	5	Sand, light brown
5	15	Clay, white, sandy
15	20	Clay, red, sandy with shell fragments
20	23	Clay, red, sandy with shell fragments and some sandstone
23	35	Sandstone and clay, blue with some shell fragments
35	40	Shell hash
40	60	Clay, blue with sandstone
60	80	Sandstone
80	100	Clay, green and sandstone, some limestone
100	103	Limestone, white
103	110	Limestone, light tan
110	140	Limestone, gray, silty
140	287	Limestone, pale orange, vuggy at 260 ft
287	294	Dolomite, brown-tan, hard/glassy, pin point porosity; with peat
294	312	Dolomitic limestone, tan-creme colored; with gray clay at 297 ft
312	314	Limestone, gray
314	324	Limestone, tan-creme colored, trends to tan-gray colored dolomite, glassy/hard
324	328	Dolomite, brown hard, fossiliferous ( <i>echinoids</i> ); with tan micritic limestone, gray clay at 326 ft
328	329	Clay, tan, trending to tan limestone
329	345	Limestone, tan-gray, then totally gray at 330 ft, trending to gray-tan marled dolomite (similar to 314 ft to 324 ft), fossiliferous ( <i>mollusk/brachiopod</i> ) at 333 ft
345	347	Limestone, tan, fossiliferous ( <i>Dictyoncus</i> ); with gray limestone, vuggy at 346 ft
347	355	Limestone, tan
355	390	Dolomite, brown to tan, hard, cherty; with tan limestone, peaty at 370 ft, pin point and vuggy porosity, gray silt at 376 ft
390	460	Dolomite, tan-gray; with gray silt, pin point porosity, peaty 405-417 ft, fossiliferous ( <i>Coral branch</i> )
460	470	Limestone, tan, soft
470	500	Limestone, tan, dolomitic, soft
500	530	Limestone, white, soft
530	540	Limestone, brown, dolomitic, hard
540	560	Dolomite, brown-black, hard
560	580	Limestone, tan, dolomitic, soft

## Lithologic Description

Site: Snook Road

Well ID: V-0810

Samples Described By: J. Segó

From (ft)	To (ft)	Lithology
580	592	Dolomite, tan, hard
592	596	Limestone, white, soft
596	600	Dolomite, brown-tan, hard

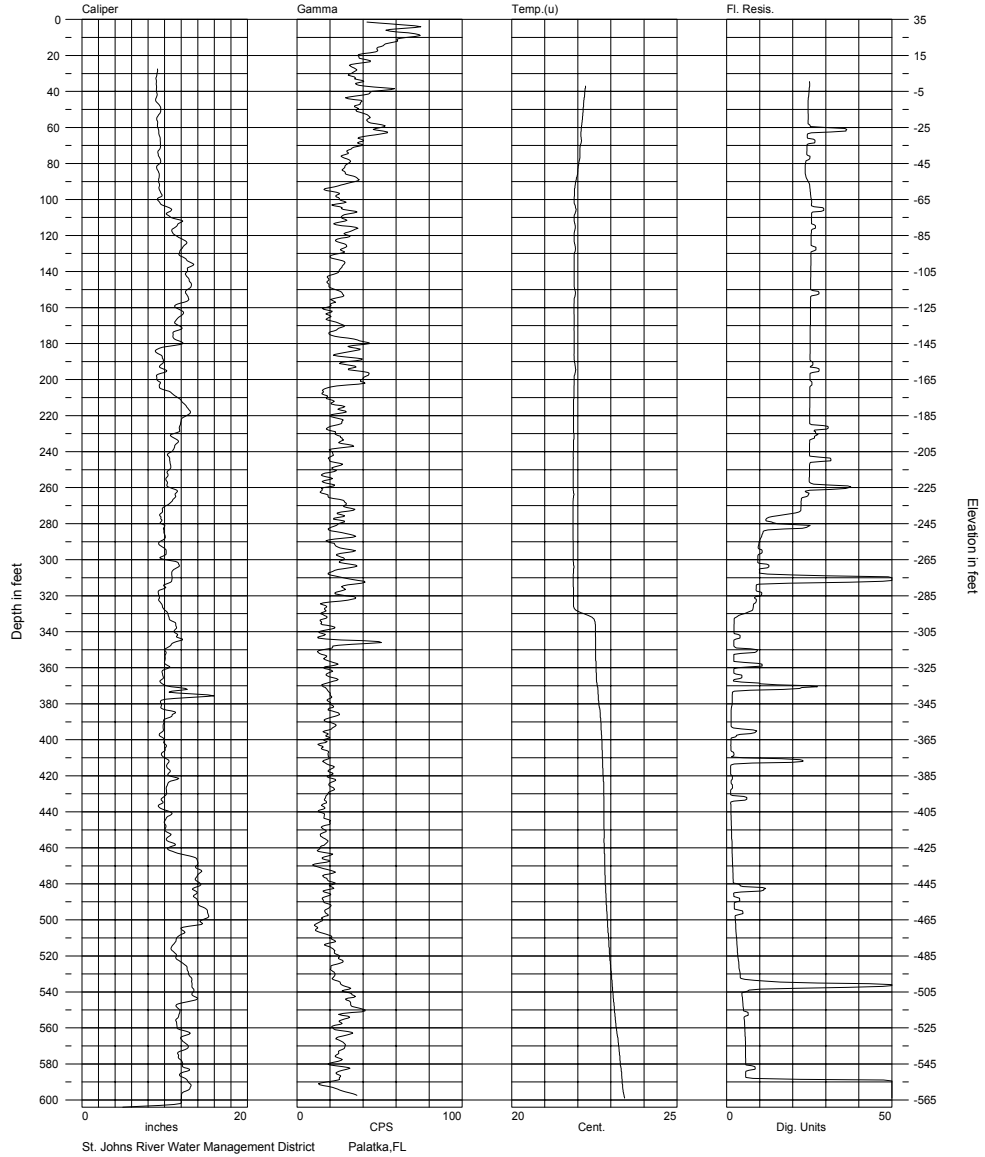
# Geophysical Logs

Site: Snook Road.

Well ID: V-0810

Logger: SJRWMD

Date: 6/12/96



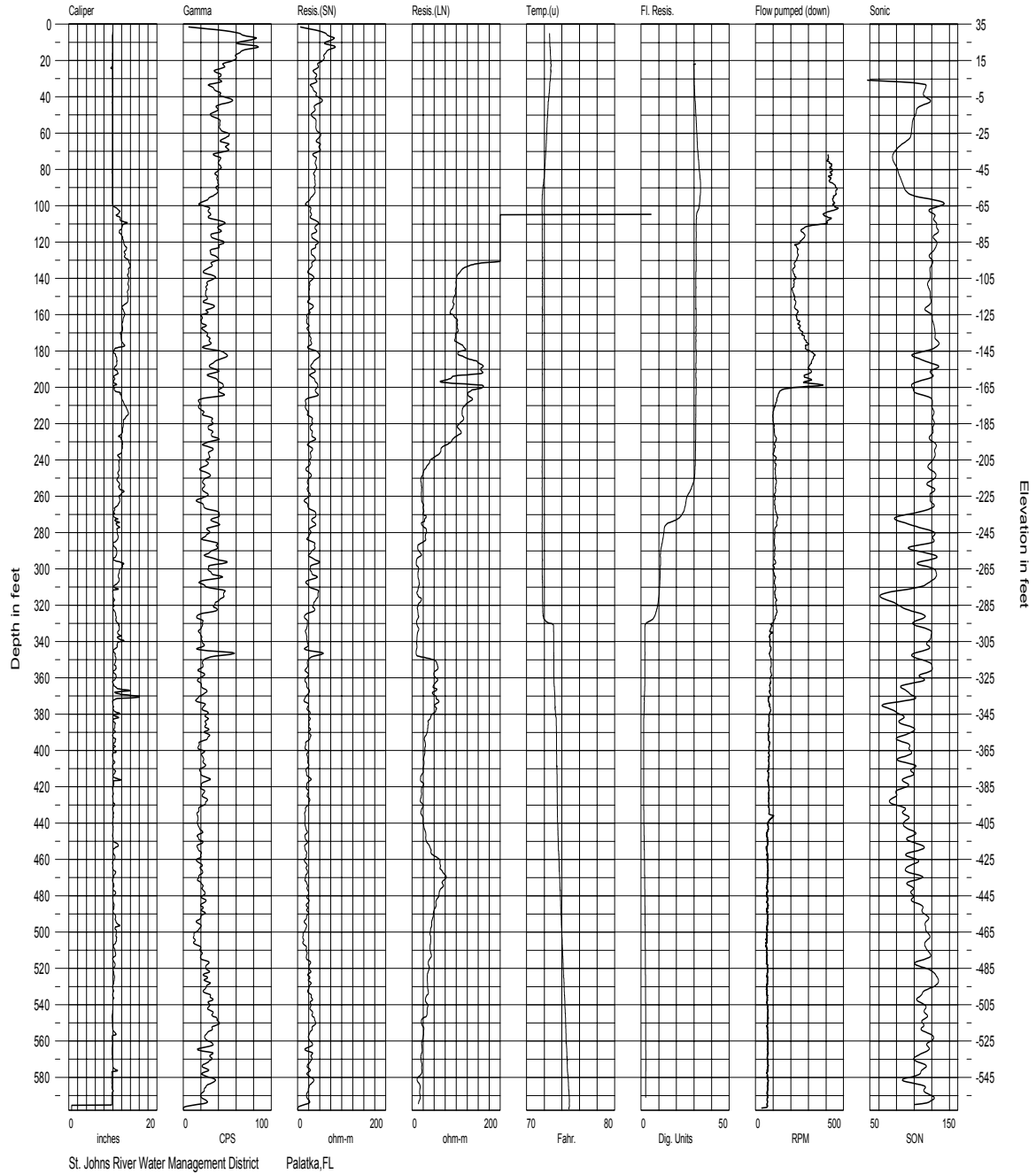
# Geophysical Logs

Site: Snook Road

Well ID: V-0810

Logger: Southern Resources

Date: 6/20/96



Comments: Well pumped at 900 gpm for flow meter log.

# Geophysical Logs

Site: Snook Road

Well ID: V-2031

Logger: Not Recorded

Date: 6/09/74

