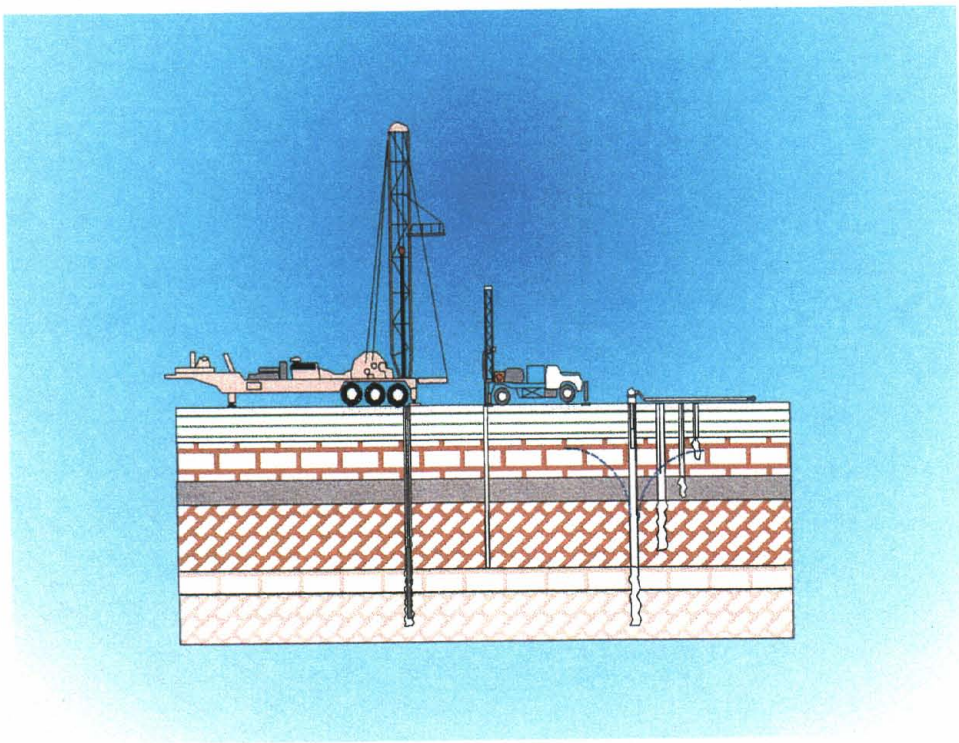
COASTAL SPRINGS PROJECT
DRILLING AND TESTING REPORT
FRESHWATER COASTAL MONITOR-WELLSITES
PASCO, HERNANDO AND CITRUS COUNTIES
FLORIDA



Geohydrologic Data Section
Resource Data Department
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

1998

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By R. A. Lee

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The geological evaluations and interpretations contained in the *Coastal Springs Project, Drilling and Testing Report* have been prepared by or approved by a certified Professional Geologist in the State of Florida, in accordance with Chapter 492, Florida Statues.

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Professional Geologist
License No. PG 0000956

Date: 11/30/98

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1.0 INTRODUCTION

The central west coast of Florida (Pasco to Citrus) contains many springs that generally surface several miles to the east of the coast and flow west to the Gulf of Mexico. There are three first-order magnitude springs and as many as 23 smaller springs that discharge into the estuaries and marshes that make up the west coast. These estuaries are important for many fish species as breeding and nursery grounds, while also an area of food supply for many other off-shore fish. In addition, the springs and their estuaries are important recreational attractions.

The springs and rivers they discharge into have long been thought of as a potential source of freshwater (Sinclair, 1978). As local development increases and more wellfields are created, the potentiometric surface of the Upper Floridan aquifer is lowered. The lowered potentiometric surface results in lower spring discharge. It has been noted in previous studies (Yobbi, 1992; Yobbi and Knochenmus, 1989a; Yobbi and Knochenmus, 1989b) that water quality changes with spring flow rates. As the discharge rate in the springs decrease there is a corresponding increase in chloride concentrations at the spring vents. In addition, as spring discharge decreases, the lower flow allows migration of saltwater further upstream in the estuary.

This study is a joint cooperative between the U.S. Geological Survey (USGS) and the Southwest Florida Water Management District (District), designed to study the relationship between the Upper Floridan aquifer potentiometric levels and spring discharge rates and water quality. To accomplish these goals, an inventory of Upper Floridan aquifer monitor wells landward (east) of the major spring vents was undertaken. Areas without acceptable monitor wells had a new monitor well constructed in an area designated by the project managers. These wells will allow potentiometric water levels to be taken and compared to discharge rates at the spring vents to the west of each well. This report describes the well drilling and characteristics of each of the new wells.

The District contracted Burnett Contracting and Drilling Company, Inc. to construct the monitor wells for this project.

2.0 SITE LOCATIONS

The wells in this project are located along the west coast of Citrus, Hernando and Pasco Counties in conjunction with the major springs (Figure 1). The six project wellsites generally consist of a Upper Floridan and a surficial well. Two of the wellsites (CSPR-1 and CSPR-4) have only Upper Floridan monitor wells. Surficial monitor wells were not installed at these locations.

CSPR-1 (Homosassa Springs Attraction), is located just south of the Homosassa Springs Attraction parking lot and west of US 19 (Figure 2). The new CSPR-2 wellsite (Withlacoochee State Forest) is located along the western boundary of the Withlacoochee State Forest-Citrus Wildlife Management Area on CR 491 (Lecanto Highway) (Figure 3) and is the most landward site. An Upper Floridan and a surficial monitor was installed at the CSPR-2 site. The CSPR-3 wellsite (Chassahowitzka) had two new wells installed, a surficial and an Upper Floridan. The wellsite is located west of US 19 and north of Miss Maggie Road, approximately 1.6 miles along the dirt road, West Lykes Trail Road (Figure 4). Only one well was drilled at the CSPR-4 (Nature's Resort Campground) wellsite, which is located approximately two miles west of US 19 along SR 490A (Halls River Road) at Nature's Resort Campground entrance (Figure 5). The two new wells at CSPR-6 (Jenkins Creek) are located at Hernando County Beach Park. The park is west of US 19 and east of Shoal Line Boulevard and across from Jenkins Creek Park (Figure 6). The two new wells drilled at CSPR-7 (Aripeka) are approximately 0.25 mile west of US 19 along the south side of CR 595 in Pasco County (Figure 7).

3.0 DATA COLLECTION METHODS

3.1 LITHOLOGIC SAMPLING

Initial samples were collected with a four-inch, two-foot long prospect barrel, which was drilled through the unconsolidated sediments, until limestone was encountered. Samples were placed in core boxes and described by the on-site geologist. When consolidated limestone was encountered, the drill crew switched over to rotary drilling with water. Limestone cuttings collected from the drilling discharge were bagged, labeled and described with depth.

3.2 GROUND-WATER SAMPLING

Each finished Upper Floridan well was developed and pumped for a specific capacity test. Specific capacity testing entailed pumping the well with a 2" x 2" centrifugal pump and dividing the rate (gpm) by the drawdown (static water level - stable pumping water level). The resulting value is an indication of the potential yield of the well. Generally, higher specific capacity values are preferred, implying a better connection with the spring vents. Water samples were collected at the end of the specific capacity test in three-500 ml bottles (one acidified) and sent to the District's Environmental Chemistry Laboratory for standard complete analysis.

3.3 GEOPHYSICAL LOGGING

Borehole geophysical logs were collected from each well in the project. Borehole geophysical logs are useful in determining subsurface geologic and groundwater characteristics. This is accomplished by lowering a geophysical tool into each monitor well and measuring the response of the formations to a variety of tests. Caliper, Gamma, Resistivity (Fluid, Lateral, Single Point, 16N, and 64N), Temperature and Specific Conductance logs, run in all wells, are presented in Figures 8 - 13. The Caliper log measures borehole diameter and indicates the competency of the casing. Gamma radiation is emitted by radioactive isotopes in certain types of disintegrating geologic materials. Low permeable clay units tend to trap ions, such as potassium isotopes, as they migrate with groundwater. Measurement of gamma radiation, therefore can be used qualitatively as an indicator of lithology.

4.0 GEOLOGY

The geology at each wellsite is fairly similar in that each has undifferentiated surficial sands and clay on top of semi-confined/unconfined Upper Floridan limestones. The first limestone encountered at the northern wellsites (CSPR-2, 3 and 4) is the Ocala Limestone. At the more southern sites (CSPR-6 and 7) the Suwannee Limestone was present, overlying the Ocala Limestone. The varying amounts of clay or presence of nearby solution features (sinkholes) determines the degree of confinement of the limestones. Appendix A presents the lithologic detail for each wellsite.

4.1 CSPR-1 GEOLOGY

The CSPR-1 well at the Homosassa State Park entrance is an existing well. The wellsite lithology is unknown, however, the geology is considered similar to the other coastal wells, with undifferentiated sands and clays overlying the Ocala Limestone. Figure 14 is a graphic representation of the construction of the well.

4.2 CSPR-2 GEOLOGY

The CSPR-2 wellsite is the most landward site and has the highest elevation of the new sites. Surficial sands extend to 26 feet below land surface (ft bls) and overlie 22 feet of clay. The underlying Ocala Limestone is heavily weathered and chalky. Graphic representation of the lithology is included in Figures 15 and 16.

4.3 CSPR-3 GEOLOGY

The surficial sands at CSPR-3 extend from land surface (LS) to a depth of 12 ft bls. Three feet of clay overlie one foot of clayey sand, which overlies nine feet of soft, friable limestone (Ocala Limestone). Figures 17 and 18 detail the lithology and the well construction as-builts.

4.4 CSPR-4 GEOLOGY

At the CSPR-4 site, the surficial sediments consisted largely of clays, indicates some degree of confinement of the Upper Floridan limestones. The top layer of sand had approximately 25% clay and abundant organics. Clay extended from the sand ten feet to the top of limestone, which was weathered and highly fossiliferous (Ocala Limestone). Figure 19 details the lithology and well construction as-built of the only well (Upper Floridan) installed on-site.

4.5 CSPR-6 GEOLOGY

The surficial sediments at CSPR-6 largely consisted of sand and a small amount of silt. Directly below the nine feet of sand three feet of friable, sandy, weathered limestone overlies

harder more consolidated limestone (Suwannee Limestone). Even though the geology does not suggest confinement of the Upper Floridan aquifer, two distinct water levels were measured during drilling. Consequently, both a surficial and Upper Floridan monitor were installed on-site. Details of the lithology and well construction as-builts are presented in Figures 20 and 21.

4.6 CSPR-7 GEOLOGY

The surficial deposits at CSPR-7 appear to be reworked overburden from the nearby limestone mine. The top 32 feet consists of fine sand and minor clay. Underlying the fine sand is 28 feet of clayey sand with small inclusions of limestone. At a depth of 60 ft bls, weathered, fossiliferous, Suwannee Limestone is encountered. Figures 22 and 23 graphically describe the on-site lithology and well construction as-builts.

5.0 HYDROLOGY

The surficial deposits at each wellsite varied in sand and clay content and thickness. Therefore, confinement of the Upper Floridan aquifer at each site also varied with differing amounts of low-permeable overburden. In addition, the proximity of local springs generally lowers the confinement potential. A field specific capacity test was performed on the Upper Floridan monitor wells at each wellsite.

5.1 CSPR-1 HYDROLOGY

The existing well at the Homosassa Springs Attraction (CSPR-1) had a static water level of 4.45 ft bls, and when pumped produced 32.9 gallons per minute per foot of drawdown (gpm/ft).

5.2 CSPR-2 HYDROLOGY

Surficial sediments at the CSPR-2 (Withlacoochee State Forest) wellsite, consisted of 26 feet of sand overlying 20 feet of clay, creating the potential for a surficial aquifer and confined Upper Floridan aquifer. A surficial monitor well installed on-site will facilitate collection of water

quality samples and water levels in the surficial aquifer. The top of the Upper Floridan aquifer at CSPR-2 began approximately 50 ft bls and is considered confined even though the static water level was 52.5 ft bls at the time of well construction. The specific capacity test indicated the Upper Floridan well produced 28 gpm/ft.

5.3 CSPR-3 HYDROLOGY

The CSPR-3 (Chassahowitzka) wellsite consisted of quartz sand and clay from land surface to 12 ft bls and clay from 12 to 15 ft bls. A surficial monitor well installed at the site, will allow comparison between water quality and water levels in the surficial aquifer and Upper Floridan aquifer. The top of the Upper Floridan aquifer (Ocala Limestone) at CSPR-3 began at 16 ft bls and is considered semi-confined to confined. The depth to static water in the surficial aquifer was 3.5 ft bls, while the Upper Floridan water level was 4.3 ft bls. Specific capacity testing of the Upper Floridan well indicated the borehole produced 58 gpm/ft.

5.4 CSPR-4 HYDROLOGY

A viable surficial aquifer does not exist at the CSPR-4 (Nature's Resort Campground) wellsite since surficial sands only extend from land surface to four ft bls. Underlying sediments consisted largely of clay above the first encountered carbonates. The top of the Upper Floridan aquifer (Ocala Limestone) is located 14 ft bls. The potentiometric surface measured in the well is two ft bls indicating a confined Upper Floridan aquifer. Spring vents are located just upstream in the Homosassa River from this wellsite. A specific capacity test indicated a high rate of 625 gpm/ft.

5.5 CSPR-6 HYDROLOGY

The CSPR-6 (Jenkins Creek) wellsite had very little clay in the undifferentiated surficial sediments, yet a distinct difference in water levels was measured in the surficial and Upper Floridan wells. Nine feet of surficial sands overly three feet of weathered limestone, which may act as an aquitard. The difference in water levels in the wells indicates some confinement of the Upper Floridan aquifer. The surficial water level was 4.5 ft bls and the Upper Floridan

water level was two feet lower at 6.5 ft bls. The specific capacity test of the Upper Floridan well indicated a low yield of 1.7 gpm/ft

5.6 CSPR-7 HYDROLOGY

At CSPR-7 (Aripeka) the area appears to have been mined, however a search of old aerial photographs shows mining nearby but not at the wellsite. The undifferentiated surficial sediments are also suspect. The first 32 feet are fine sands, overlying 28 feet of clayey sand, which is similar to reclaimed mined areas. There was not any competent clay separating the surficial deposits from the underlying limestones (Suwannee Limestone). A surficial well was installed in the upper sands to measure water levels and allow water sample collection. The water level in the newly constructed Upper Floridan well was essentially the same as in the surficial well (two ft bls). The Upper Floridan potentiometric water level at CSPR-7 appears to be artesian yet unconfined. The initial specific capacity test (25-foot open hole) yielded only 0.2 gpm/ft. The well was deepened 25 feet to 110 ft bls and yielded six gpm/ft.

6.0 GROUND-WATER QUALITY

The goal of well construction, was to place the monitored interval within the freshwater to better correlate the wells with spring discharge. As a result, all of the new wells monitor groundwater with chloride values less than 1,000 mg/L. The highest chloride reading came from the CSPR-4 wellsite, which had a reading of 784 mg/L from the 43-foot deep well. The CSPR-6 Upper Floridan well had a chloride reading of 137 mg/L from the 95-foot deep well. The CSPR-7 Upper Floridan well had the lowest concentration of chlorides with six mg/L and the deepest open hole interval at 110 ft bls. Laboratory analyses of each of the finished Upper Floridan wells is presented in Table 1.

7.0 WELL CONSTRUCTION

The Contractor constructed the wells using a Failing 1250 rotary drilling rig. Mud-rotary drilling was used to install the casing and enhance removal of limestone cuttings from the bore hole. Open hole intervals were drilled with water to prevent contamination with drilling muds. Most

Upper Floridan monitor wells were constructed with one string of six-inch, schedule 40, PVC casing, set in a ten-inch borehole, with six-inch nominal open hole below. Ten-inch schedule 40 PVC surface casing was installed into the thick unconsolidated surface sediments at CSPR-2 and CSPR-7, while constructing the Upper Floridan monitor wells.

At the onset of the project, the monitor wells were designed with a 50-foot open hole interval to insure proper response to water levels in the springs. Two Upper Floridan wells (CSPR-3 and CSPR-6) were originally drilled with the 50-foot open hole. As the wellsites were located so close to the coast, it was later decided that water quality should also be considered and chlorides should remain low. Field specific capacity testing indicated the wells were fairly transmissive and a shorter open-hole interval (25 feet) was deemed sufficient. The CSPR-4 Upper Floridan well was drilled next, with a 25-foot open hole interval. This well produced the most water of all the new wells, but also had the highest chloride concentration. The CSPR-4 Upper Floridan monitor well was also the only well that was constructed with 25 feet of open hole. The last two Upper Floridan wells drilled (CSPR-7 and CSPR-2), required larger open-hole intervals to produce an acceptable yield. The CSPR-2 wellsite is the farthest inland, and has 40 feet of open hole. The CSPR-7 wellsite was drilled in an area that may have been disturbed by local mining. The ten-inch surface casing extends the deepest (45 feet), and it is believed that the open-hole interval of 50 feet makes just enough water to be responsive to local spring discharge.

The surficial wells were constructed of four-inch, schedule 40, 0.010 slot, PVC screen, set in an eight-inch borehole. The screened intervals were packed with 20/30 silica sand and topped with bentonite and cement. All wells constructed have been covered with steel protective casing, cemented into the concrete pads surrounding the wells (Figures 14 - 23).

8.0 SUMMARY

In a cooperative project with the USGS, the District contracted well drilling services to install paired Upper Floridan and surficial monitor wells, near coastal springs in Pasco, Hernando and Citrus Counties. Five new Upper Floridan and four surficial wells were drilled at five new wellsites. One existing Upper Floridan monitor well was also incorporated into the program.

Each well is shallow enough not to penetrate the freshwater/saltwater interface and monitors freshwater. The Upper Floridan wells will be used to correlate local spring discharge to potentiometric water levels. The Upper Floridan wells were tested for specific capacity, which ranged from 1.7 gpm/ft at CSPR-6 to 625 gpm/ft at CSPR-4.

9.0 REFERENCES

Fretwell, J. D., 1983, Ground-Water Resources of Coastal Citrus, Hernando and Southwest Levy Counties, Florida: U.S. Geological Survey: Water-Resources Investigations Report 83-4079.

Sinclair, W. C., 1978, Preliminary Evaluation of the Water-Supply Potential of the Spring-River System in the Weeki Wachee Area and the Lower Withlacoochee River, West-Central Florida: U.S. Geological Survey: Water-Resources Investigations 78-74.

Yobbi, D. K., 1992, Effects of Tidal Stage and Ground-Water Levels on the Discharge and Water Quality of Springs in Coastal Citrus and Hernando Counties, Florida: U.S. Geological Survey: Water-Resources Investigations Report 92-4069.

Yobbi, D. K., and Knochenmus, L. A., 1989a, Salinity and Flow Relations and Effects of Reduced Flow in the Chassahowitzka River and Homosassa River Estuaries, Southwest Florida: U.S. Geological Survey: Water-Resources Investigations Report 88-4044.

_____ 1989b, Effects of River Discharge and High-Tide Stage on Salinity Intrusion in the Weeki Wachee, Crystal, and Withlacoochee River Estuaries, Southwest Florida: U.S. Geological Survey: Water-Resources Investigations Report 88-4116.

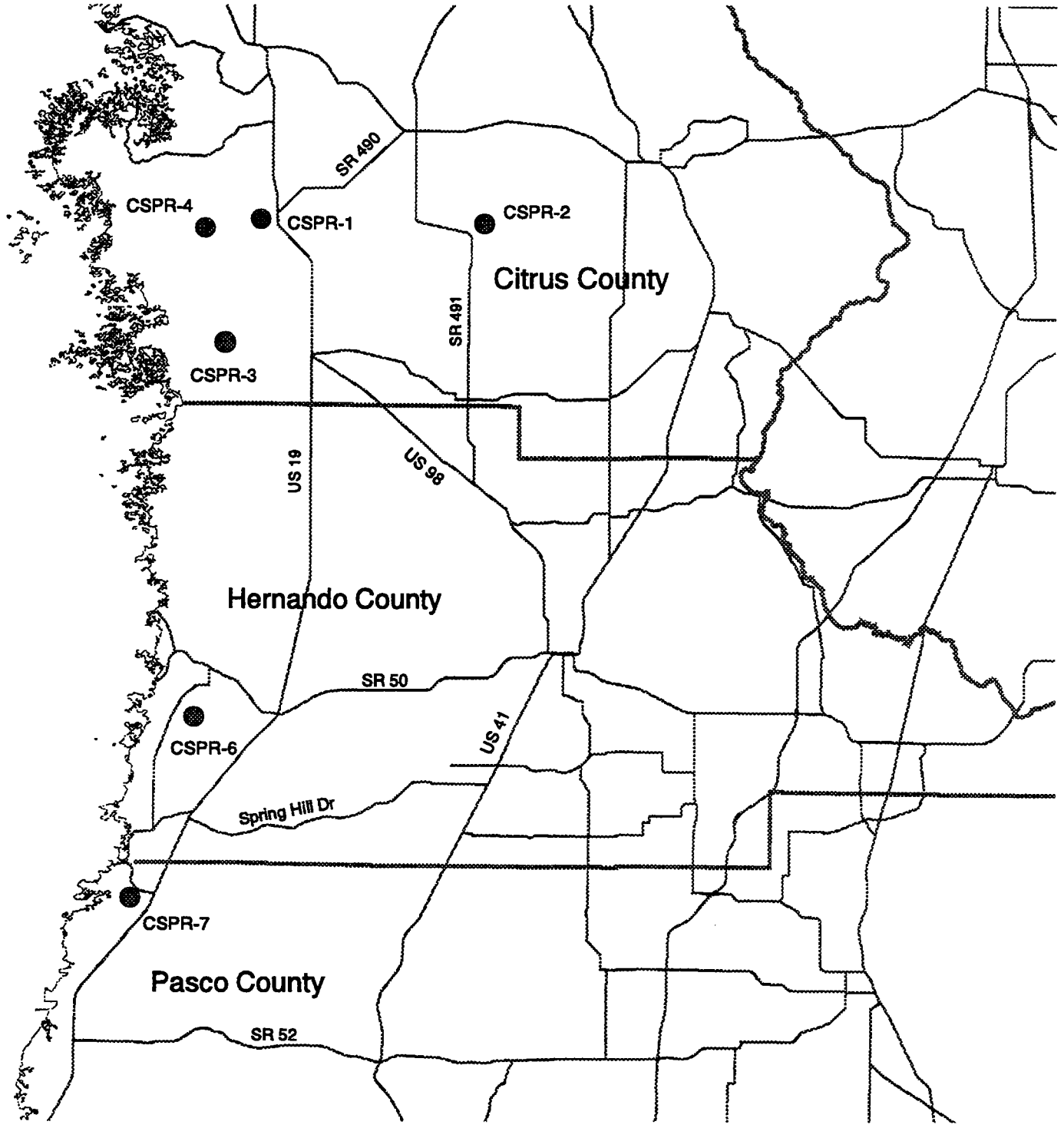
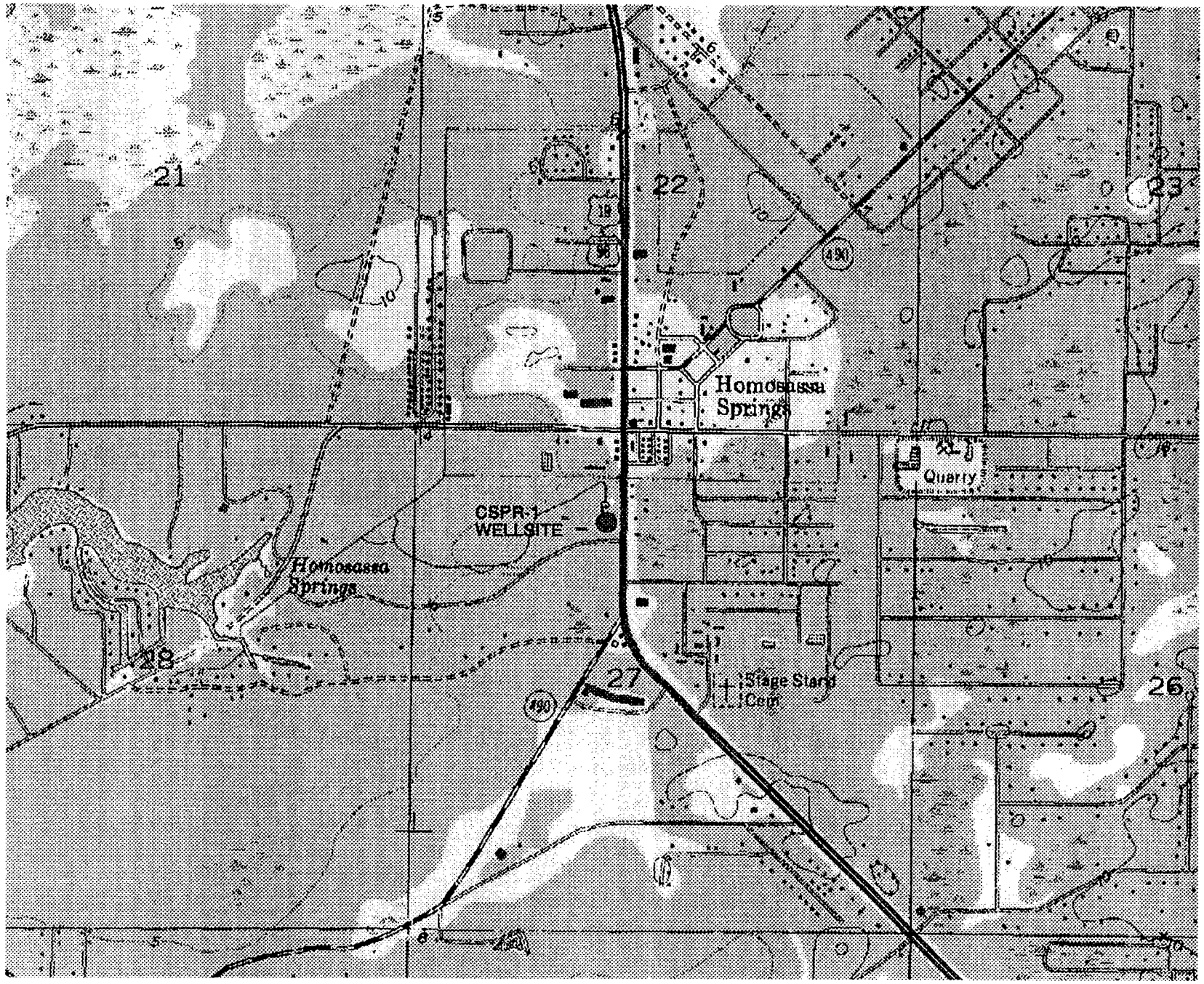


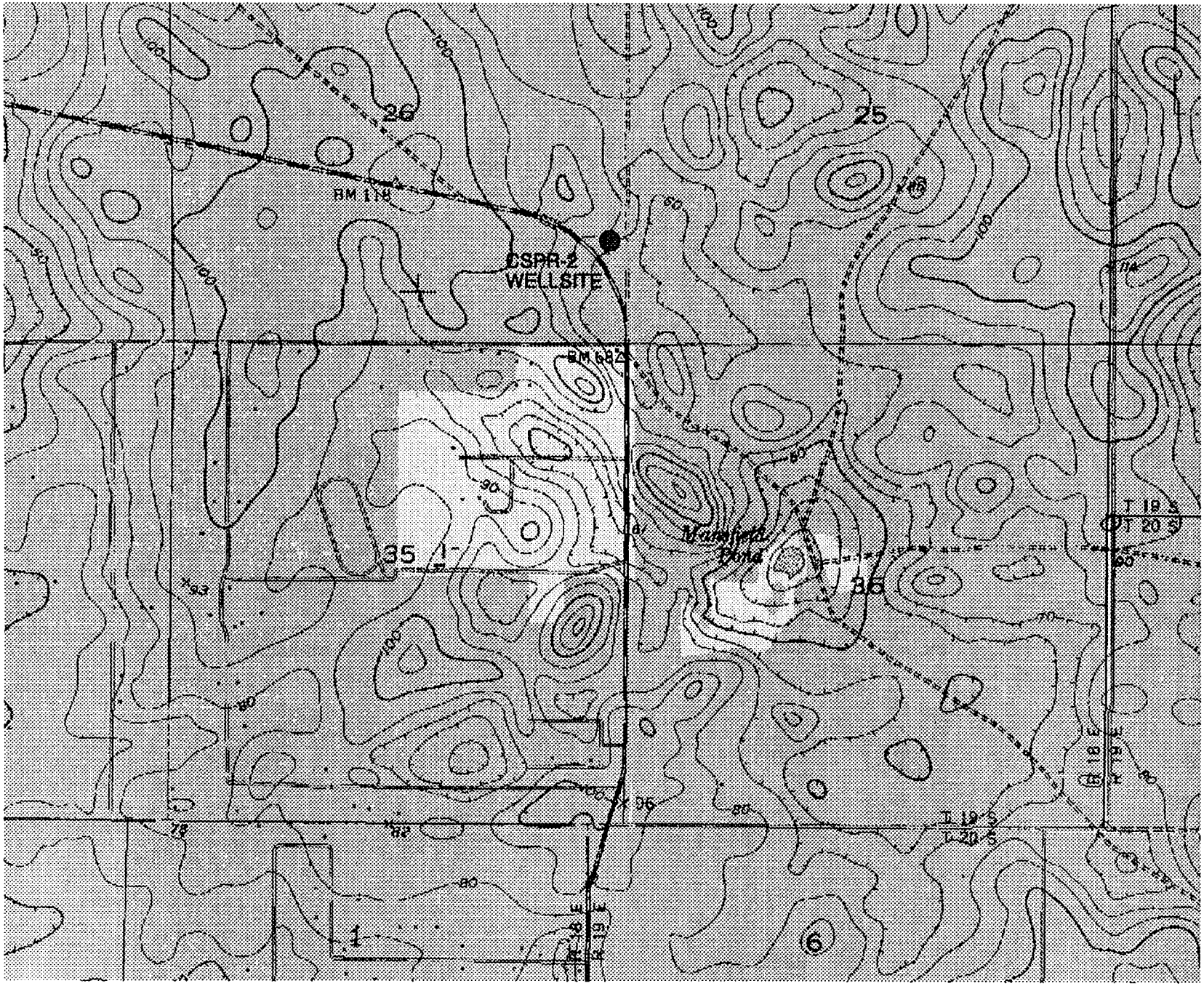
Figure 1: CSPR Wellsite Location Map



N
W E
S

0.5 0 0.5 Miles

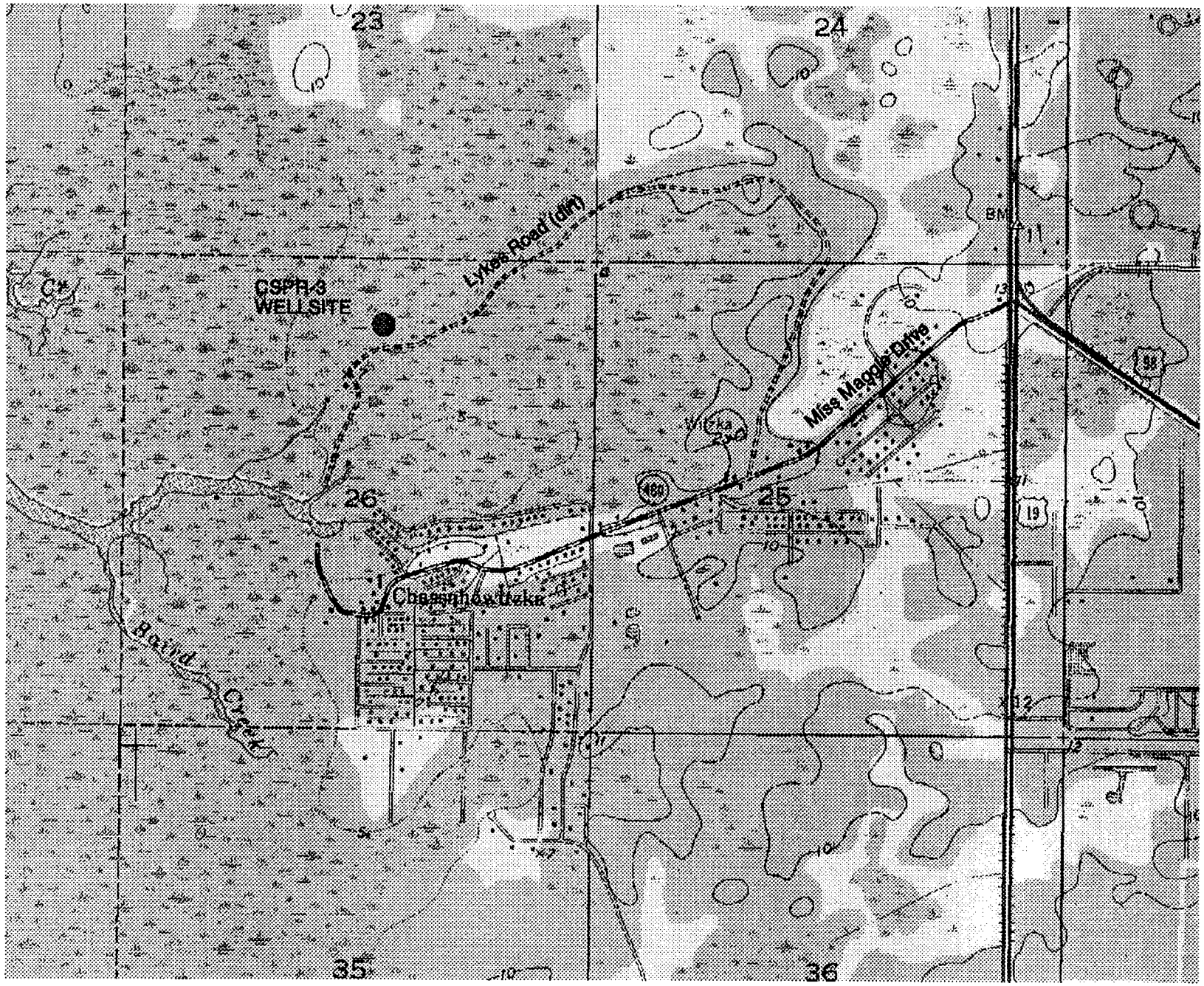
Figure 2: CSPR-1 (Homosassa Springs Attraction) Wellsite Location



N
W E
S

0.5 0 0.5 Miles

Figure 3: CSPR-2 (Withlacoochee State Forest) Wellsite Location



N
W E
S

0.5 0 0.5 Miles

Figure 4: CSPR-3 (Chassahowitzka) Wellsite Location

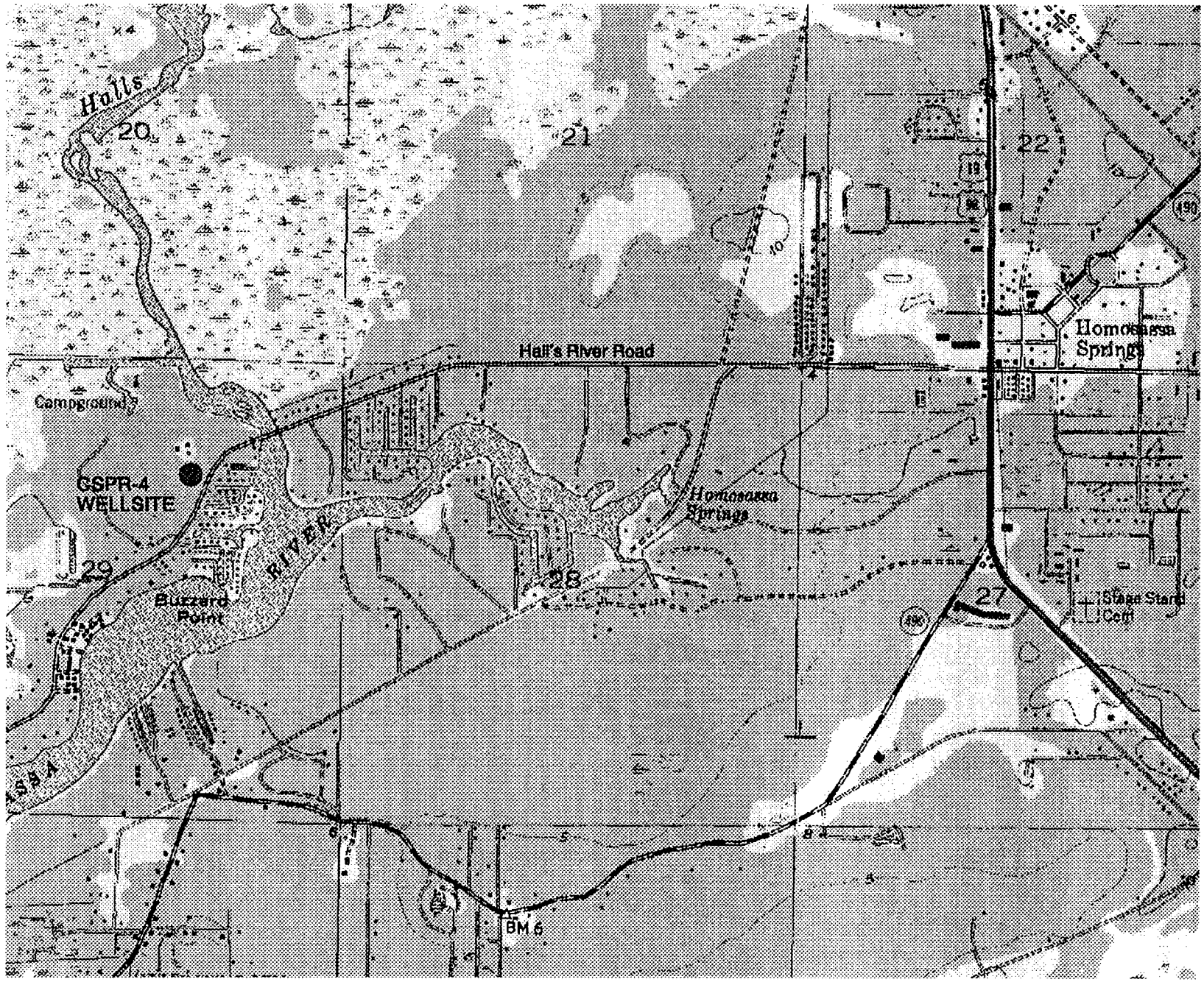


Figure 5: CSPR-4 (Nature's Resort Campground) Wellsite Location

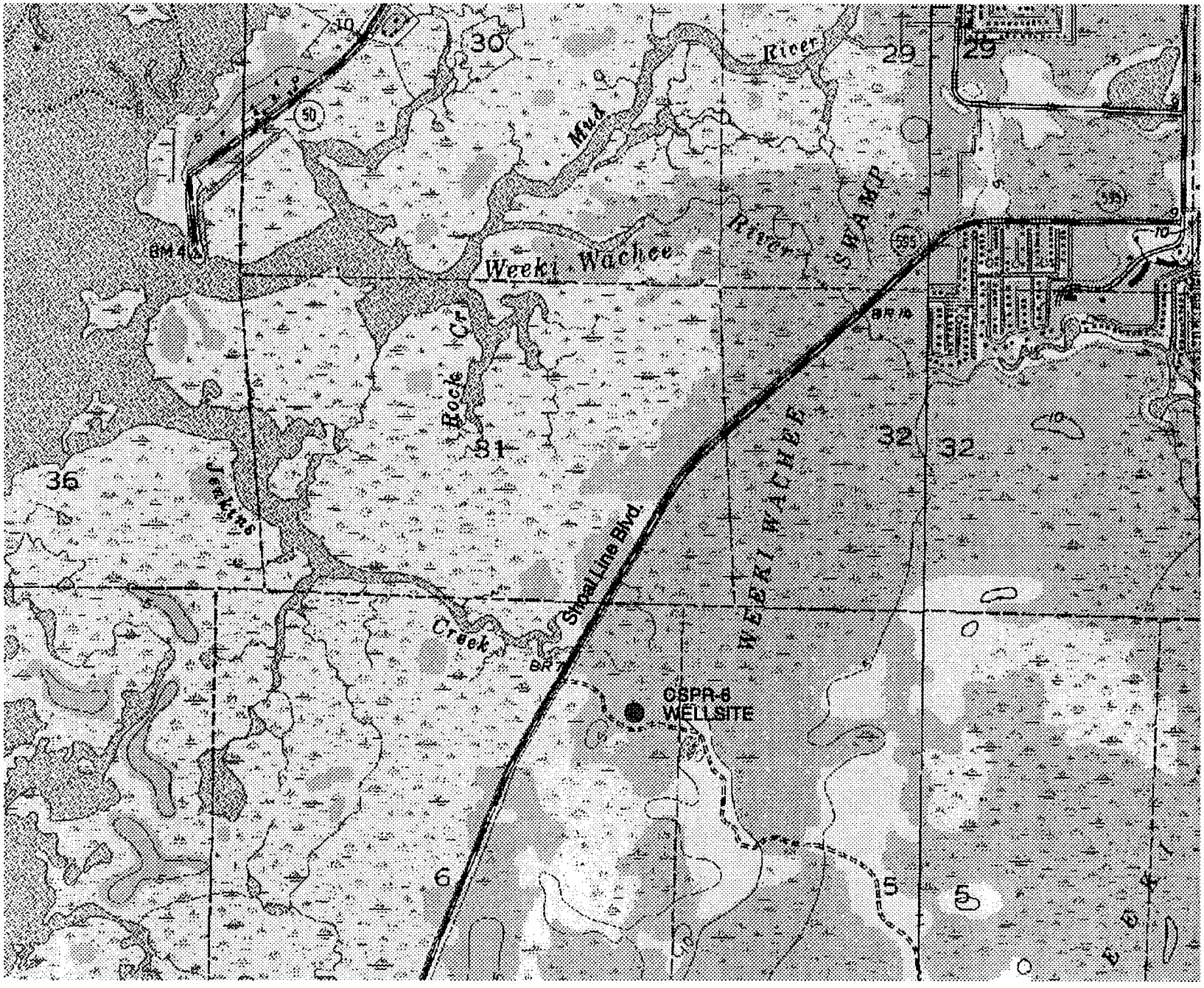


Figure 6: CSPR-6 (Jenkins Creek) Wellsite Location

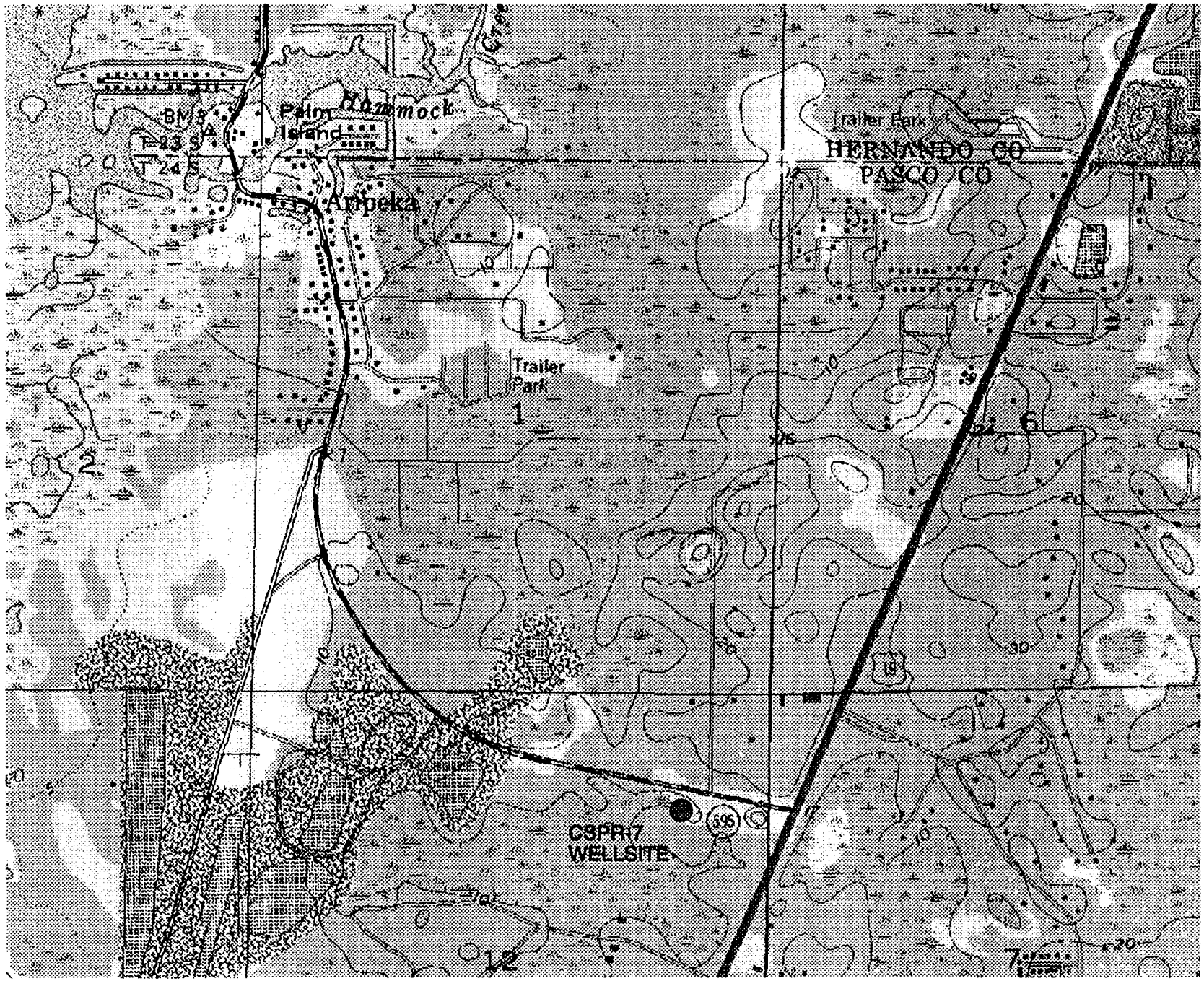


Figure 7: CSPR-7 (Aripeka) Wellsite Location

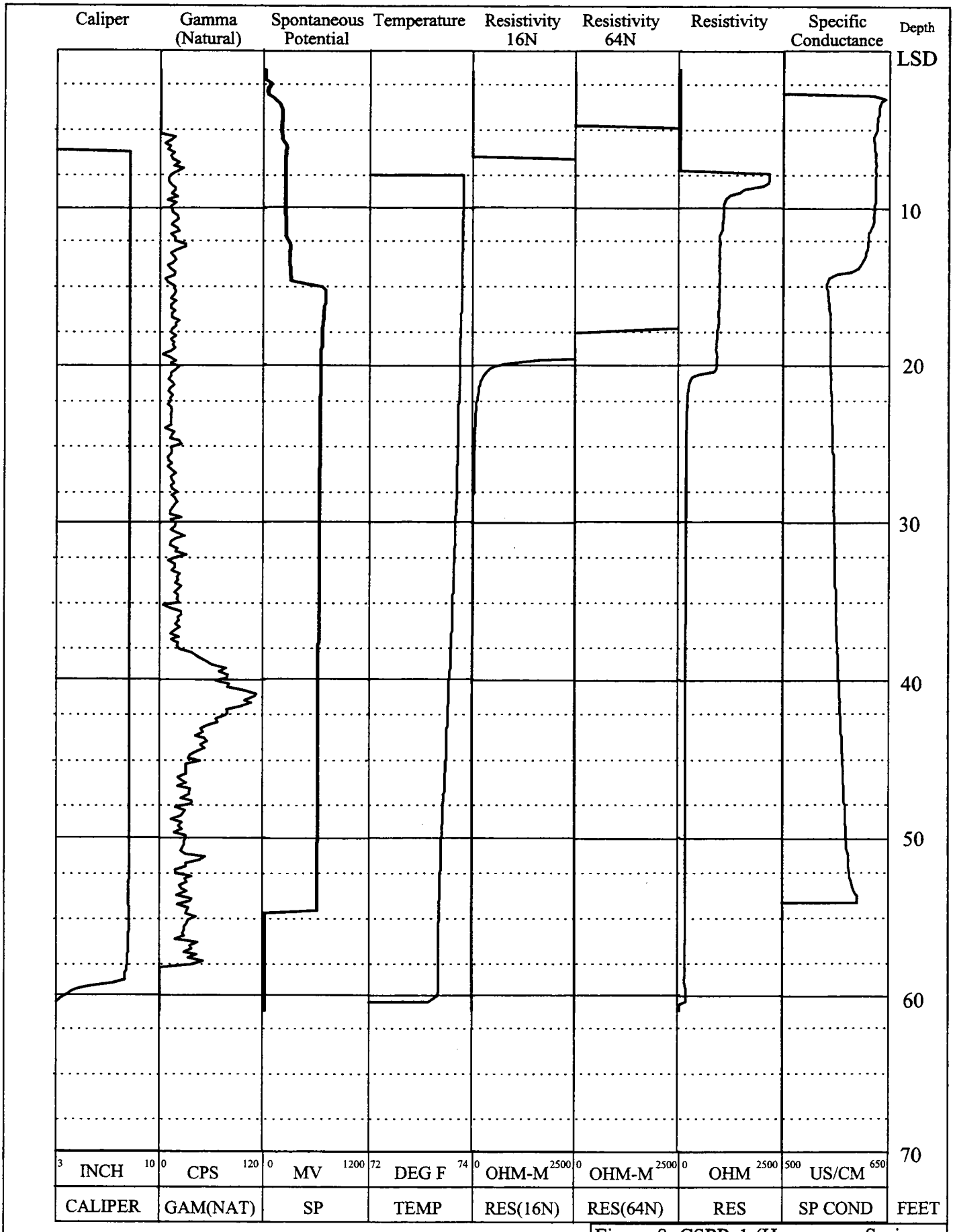


Figure 8: CSPR-1 (Homosassa Springs Attraction) Geophysical Logs

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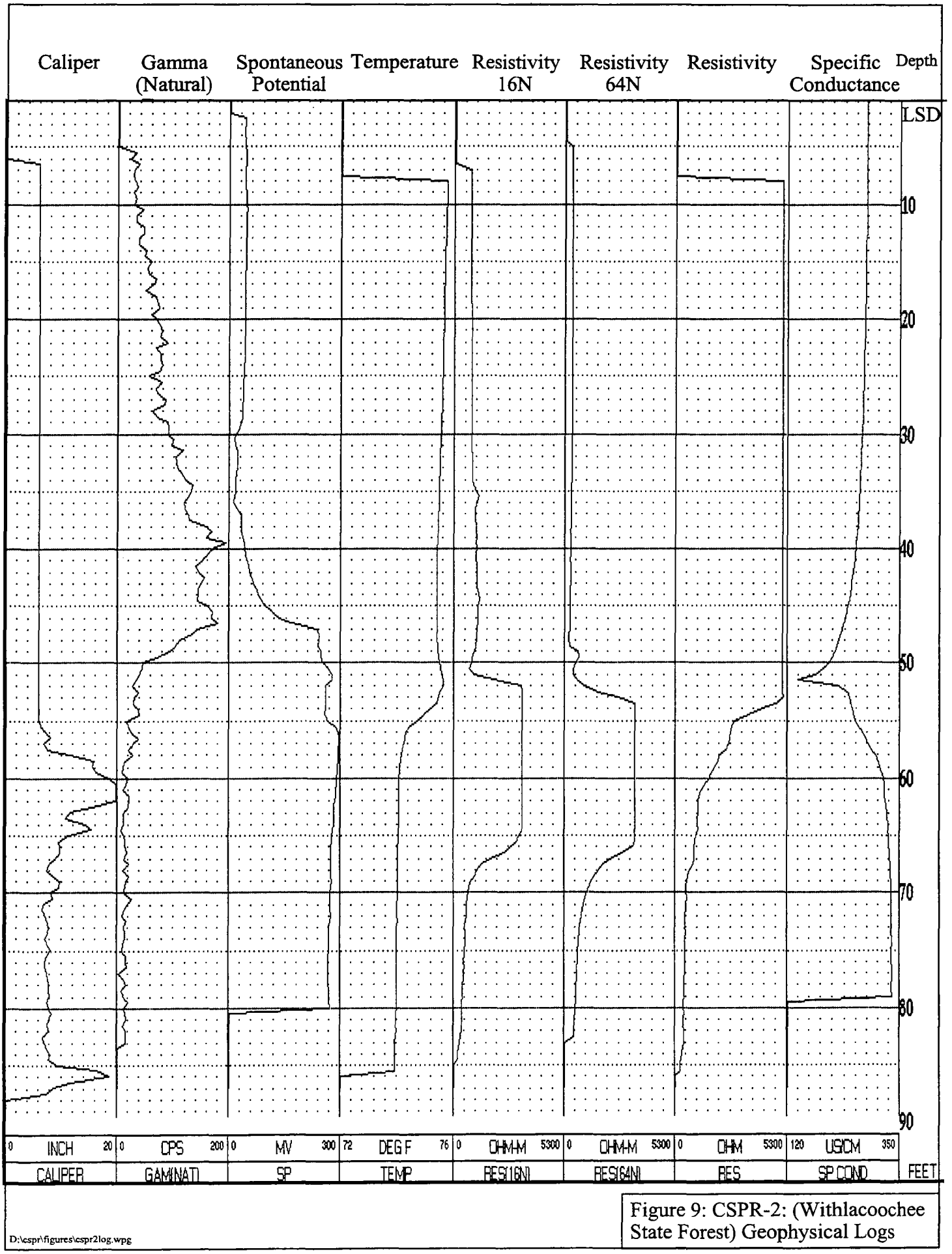

Figure 9: CSPR-2: (Withlacoochee State Forest) Geophysical Logs

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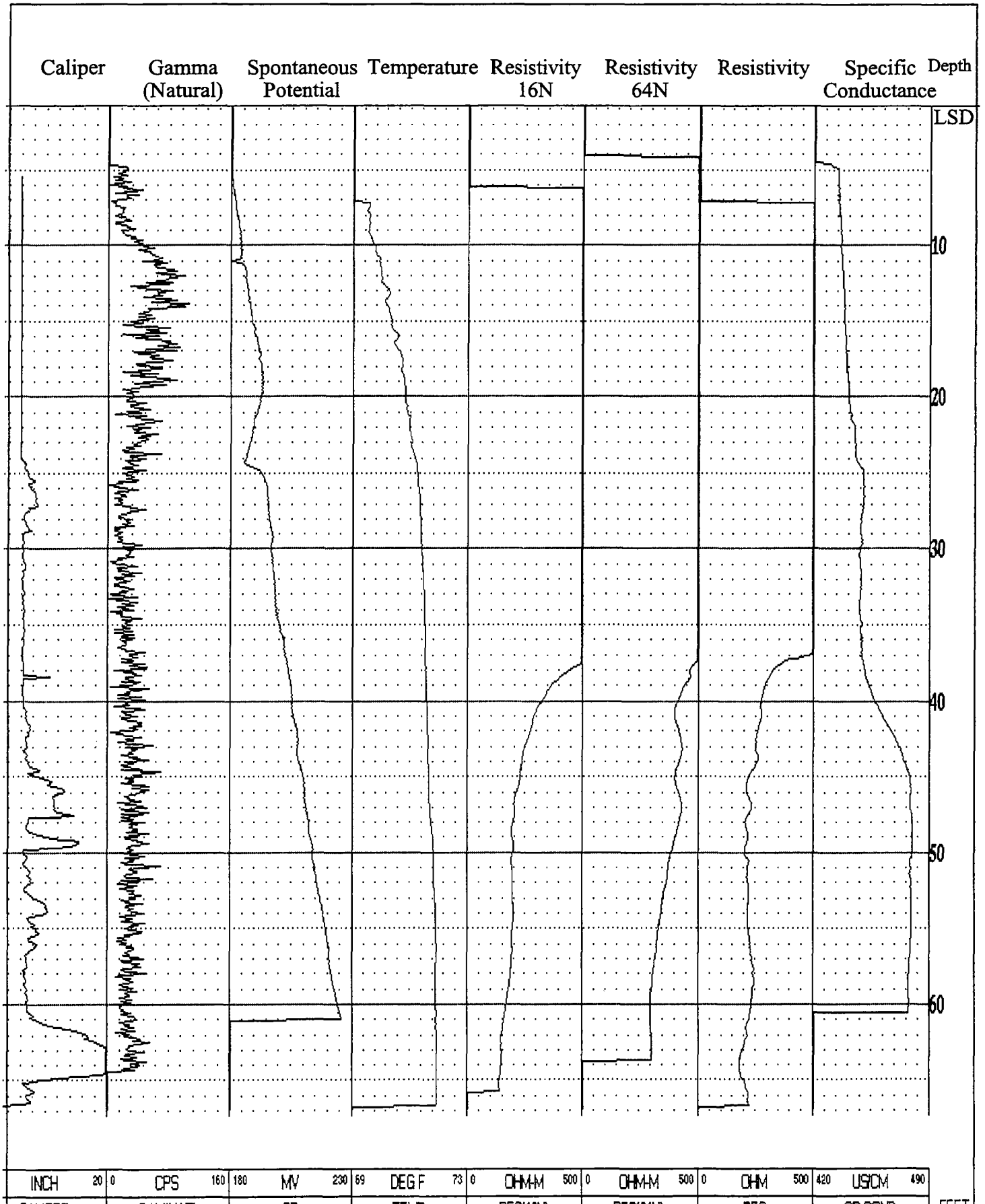

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Figure 10: CSPR-3 (Chassahowitzka) Geophysical Logs

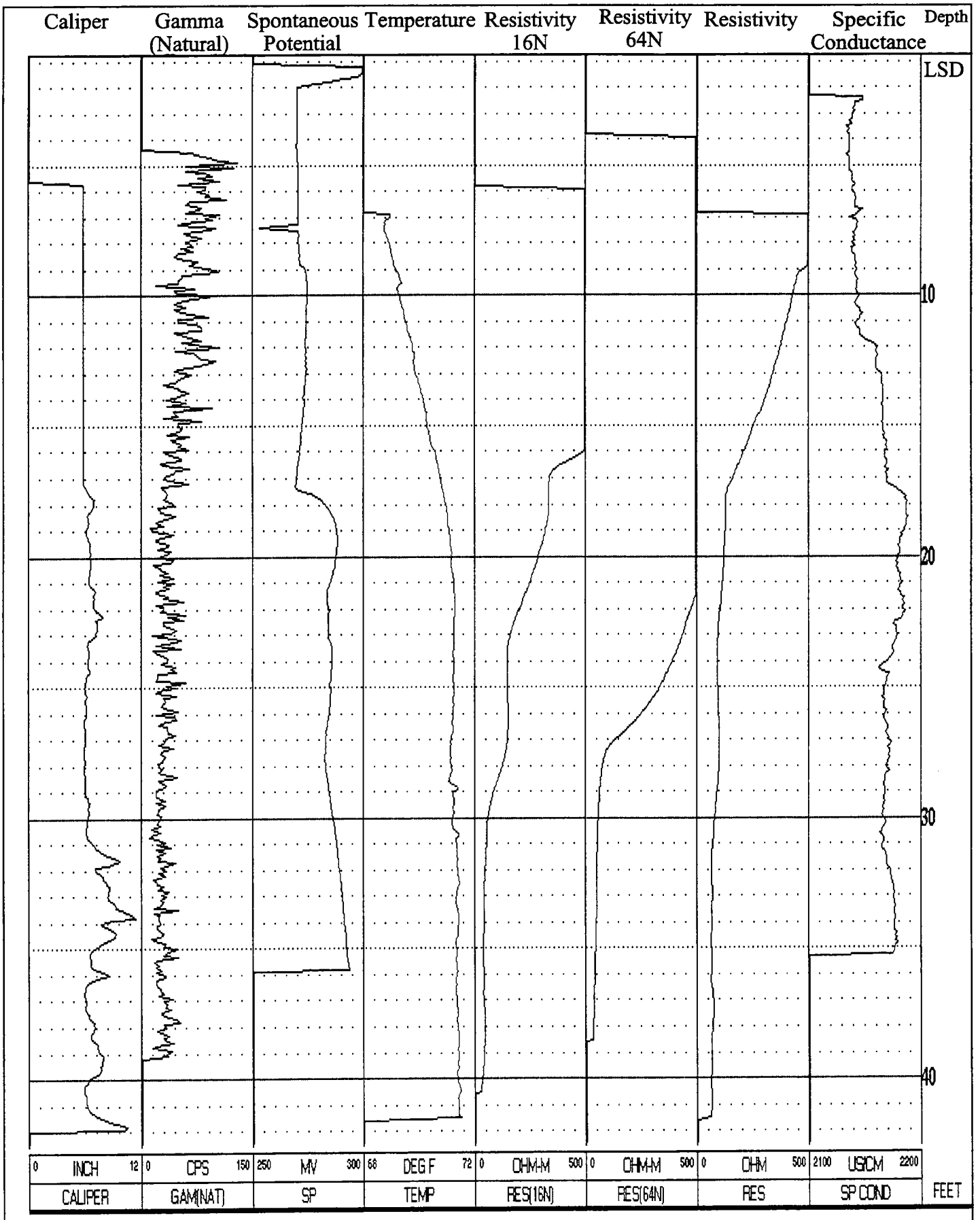

Figure 11: CSPR-4 (Nature's Resort Campground) Geophysical Logs

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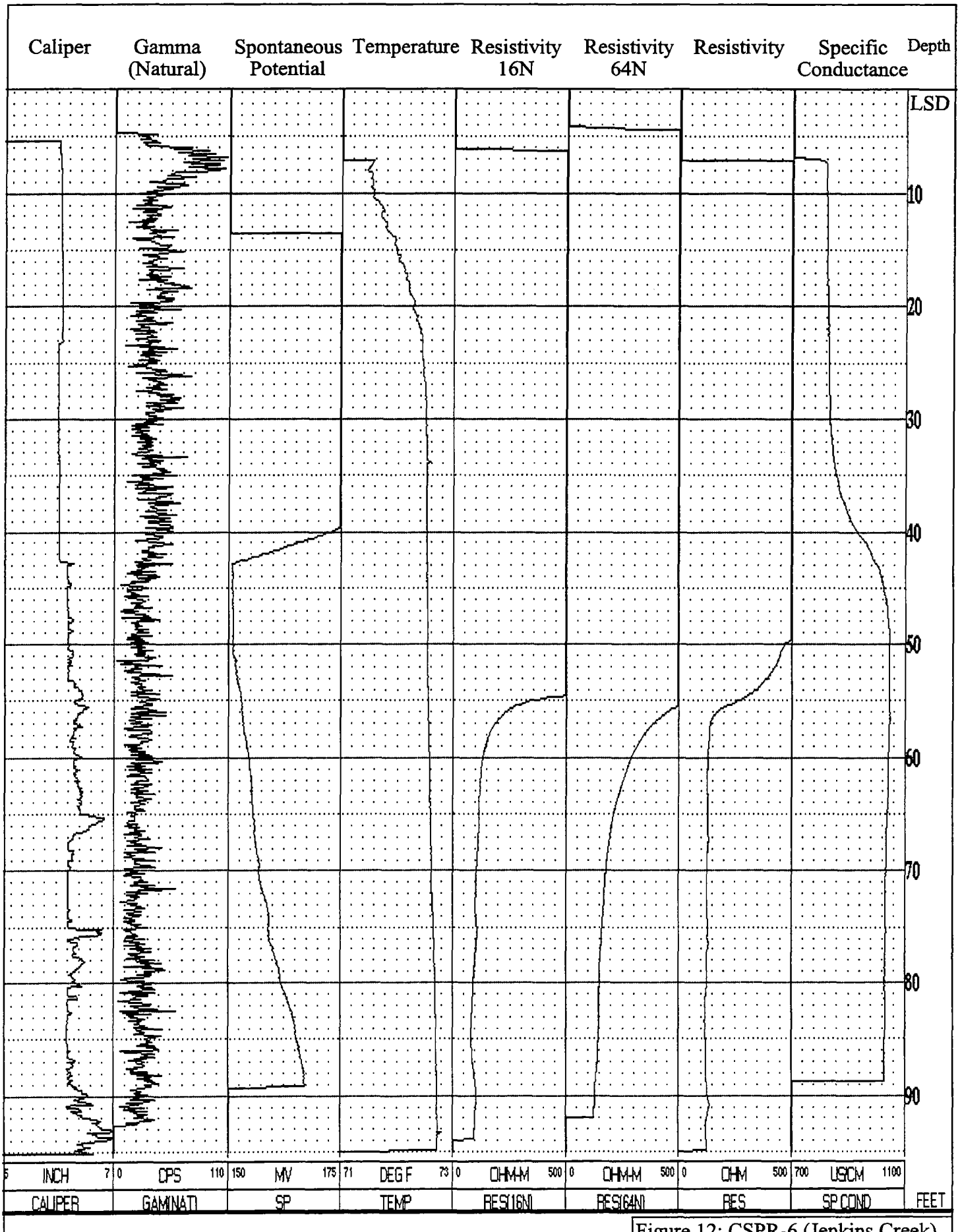

Figure 12: CSPR-6 (Jenkins Creek) Geophysical Logs

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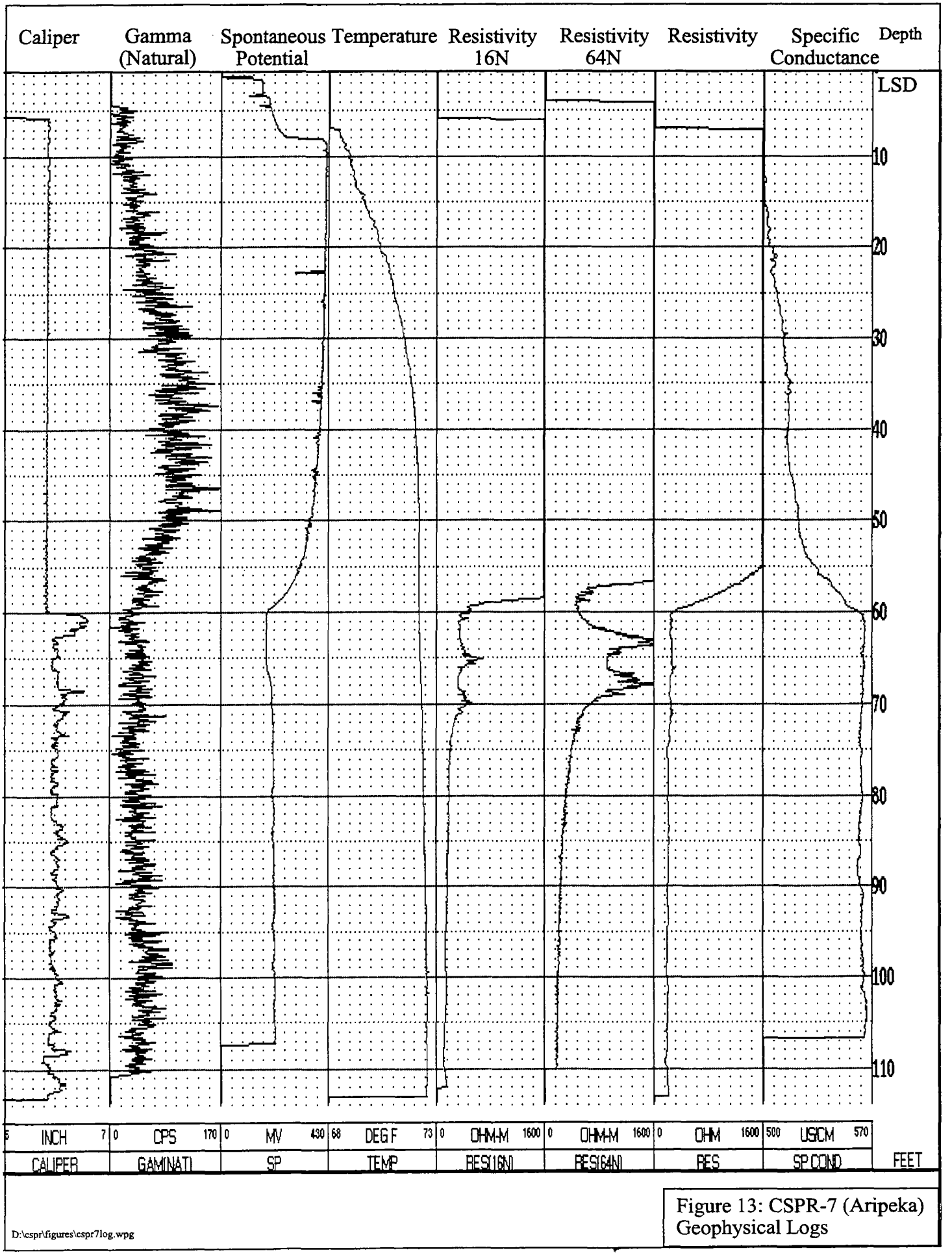

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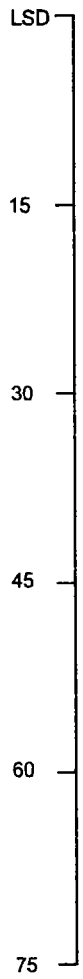
Figure 13: CSPR-7 (Aripeka) Geophysical Logs

Resource Data Department-Geohydrologic Data Section			
Project Name: **USGS-District Coastal Springs Project**		Completion Date:	**Existing Well**
Project Location (County):	**Citrus**	Pumping Rate (gpm):	**130 gpm**
Well Designation:	**CSPR-1 Homosassa Attraction Upper Floridan Well**	Depth to Water (Static):	**4.45 ft bls**
S-T-R:	**27-19S-17E**	Estimated Specific Capacity:	**32.9 gpm/ft**
LATITUDE: **28° 47' 58.69815"** LONGITUDE: **82° 34' 39.26956"**		Measuring Point Elevation	**6.97 ft NGVD**

LITHOLOGY

Unknown-existing well



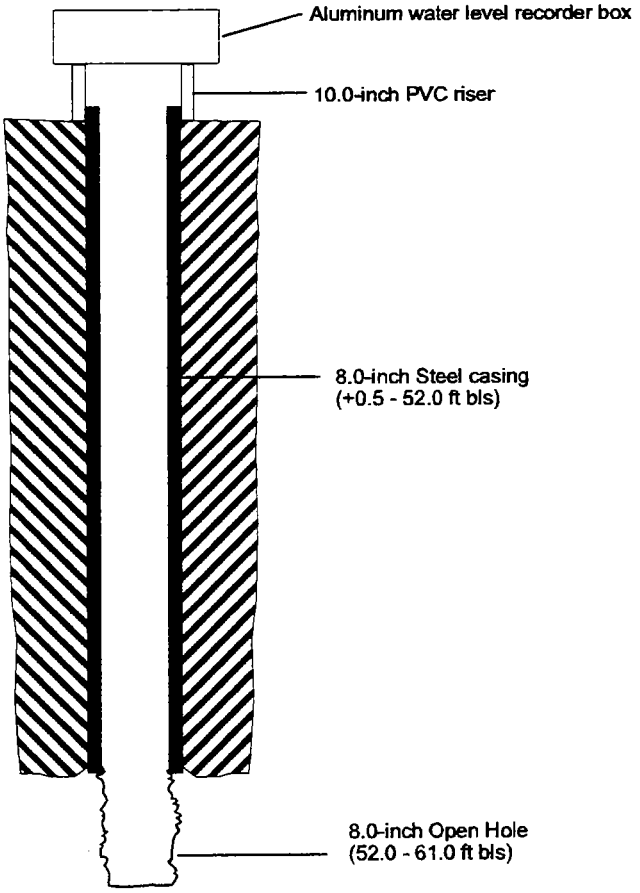


FIGURE 14: CSPR-1 UPPER FLORIDAN MONITOR-WELL AS-BUILT

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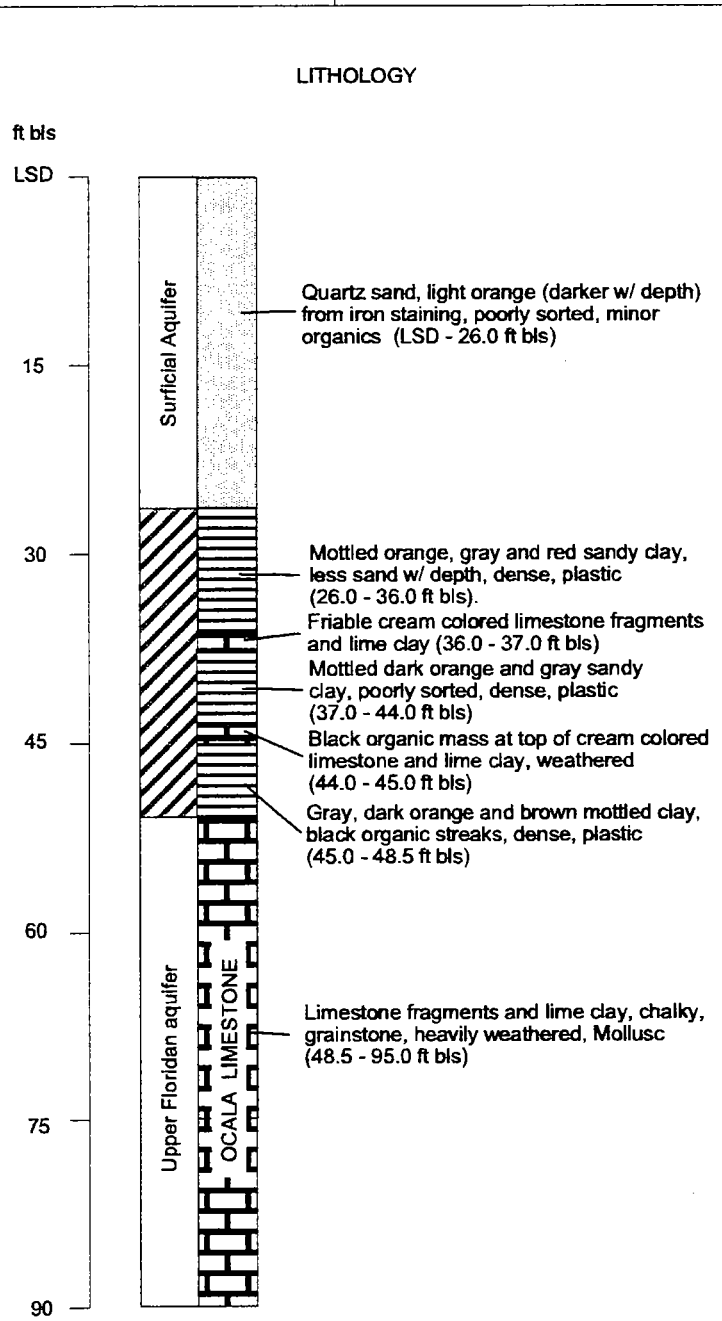
Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**	Completion Date: **5-27-98**
Project Location (County): **Citrus**	Well Development Time: **1.50 Hours** Pumping Rate (gpm): **28 gpm**
Well Designation: **CSPR-2 Withlacoochee State Forest Site Upper Floridan Well**	Depth to Water (Static): **50 ft bls** Estimated Specific Capacity: **280 gpm/ft**
S-T-R: **NE ¼ of the SE ¼ of 26-19S-18E**	Land Surface Elevation **60.80 ft NGVD**
LATITUDE: **28° 47' 33.05379"** LONGITUDE: **82° 27' 03.21012"**	Measuring Point Elevation **63.75 ft NGVD**



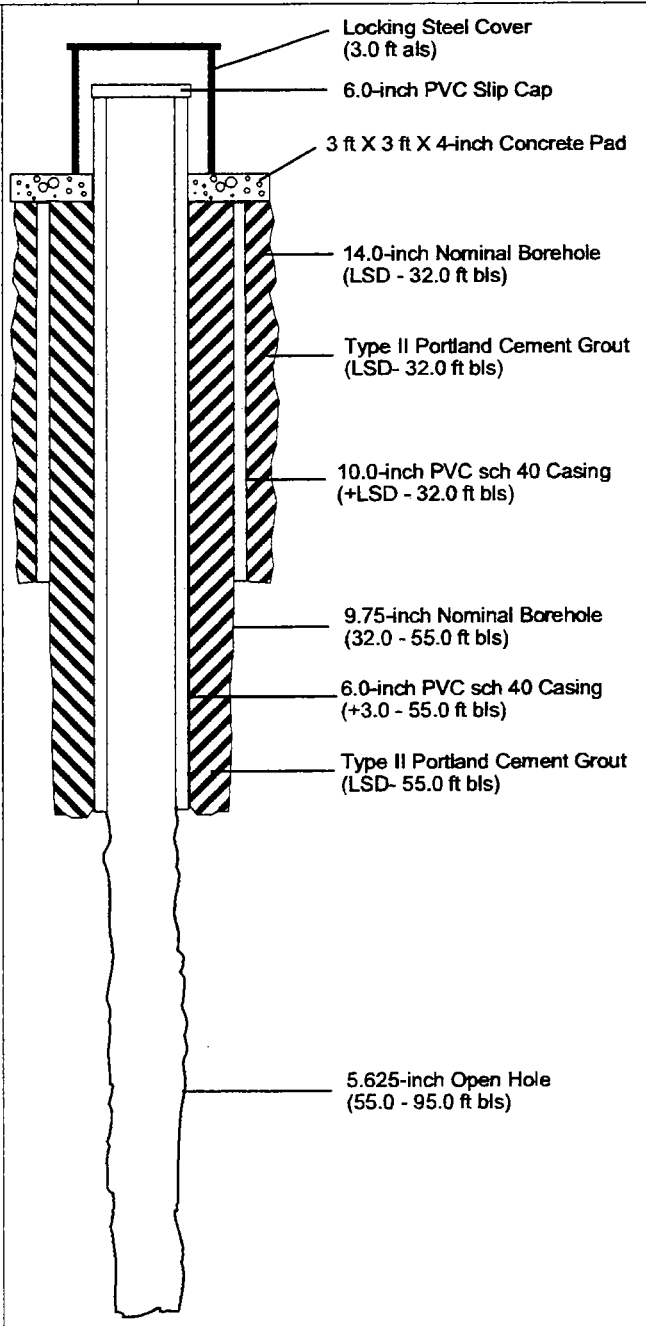


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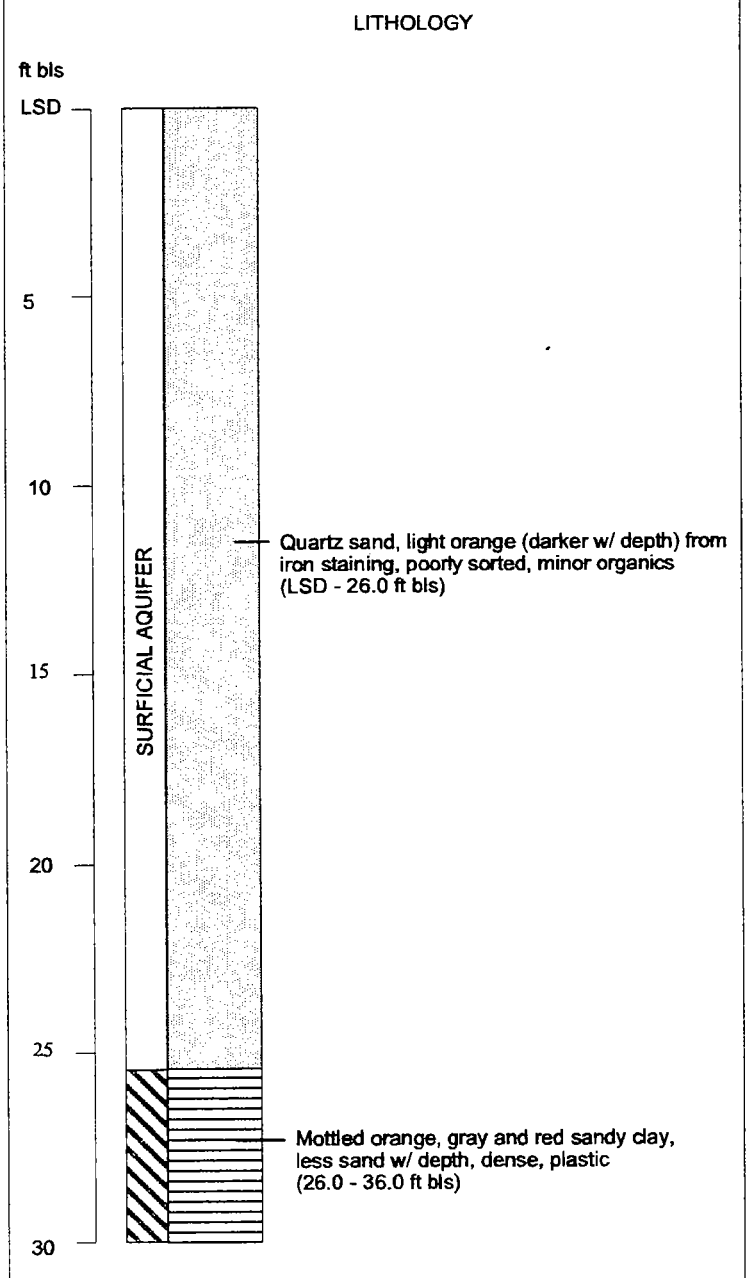
FIGURE 15: CSPR-2 UPPER FLORIDAN MONITOR-WELL AS-BUILT

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**	Completion Date: **5-27-98**
Project Location (County): **Citrus**	Well Development Time: **1.0 Hour**
Well Designation: **CSPR-2 Withlacoochee State Forest Site Surficial Well**	Land Surface Elevation **60.80 ft NGVD**
S-T-R: NE¼ of the SE ¼ of **26-19S-18E**	Measuring Point Elevation **63.09 ft NGVD**
LATITUDE **28° 47' 33.05078"** LONGITUDE: **82° 27' 03.14386"**	



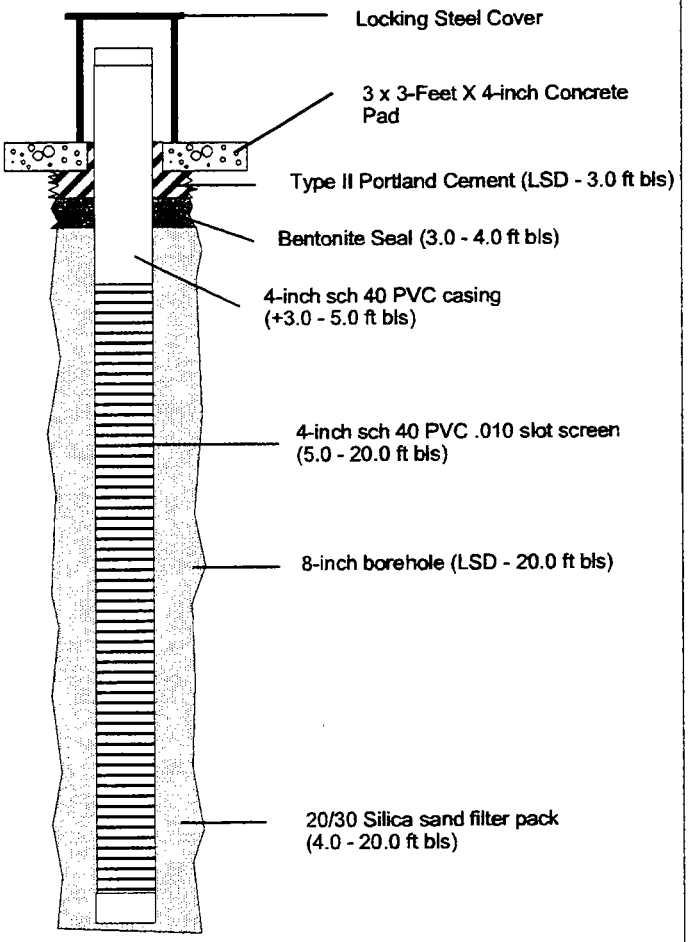


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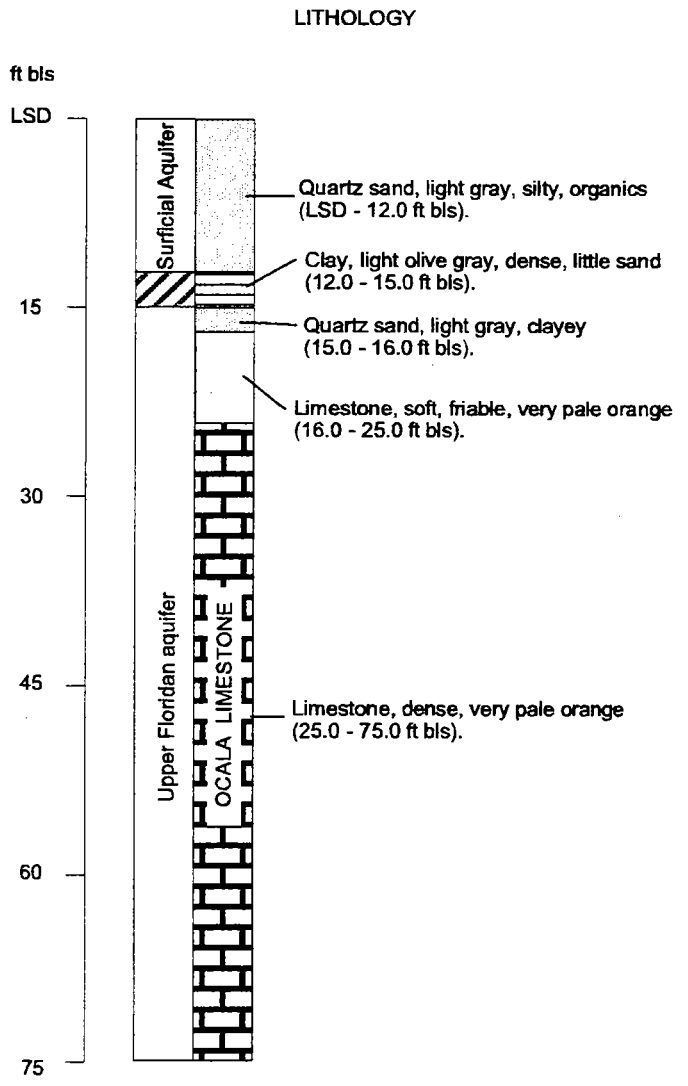
FIGURE 16: CSPR-2 SURFICIAL MONITOR-WELL AS-BUILT DIAGRAM

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**	Completion Date: **10-28-97**
Project Location (County): **Citrus**	Well Development Time: **1.50 Hours** Pumping Rate (gpm): **125 gpm**
Well Designation: **CSPR-3 Chassahowitzka River Site Upper Floridan Well**	Depth to Water (Static): **4.26 ft bls** Estimated Specific Capacity: **58.1 gpm/ft**
S-T-R: **NW ¼ of the NE ¼ of 26-20S-17E**	Land Surface Elevation **9.08 ft NGVD**
LATITUDE: **28° 43' 16.19034"** LONGITUDE: **82° 34' 28.45365"**	Measuring Point Elevation **11.98 ft NGVD**



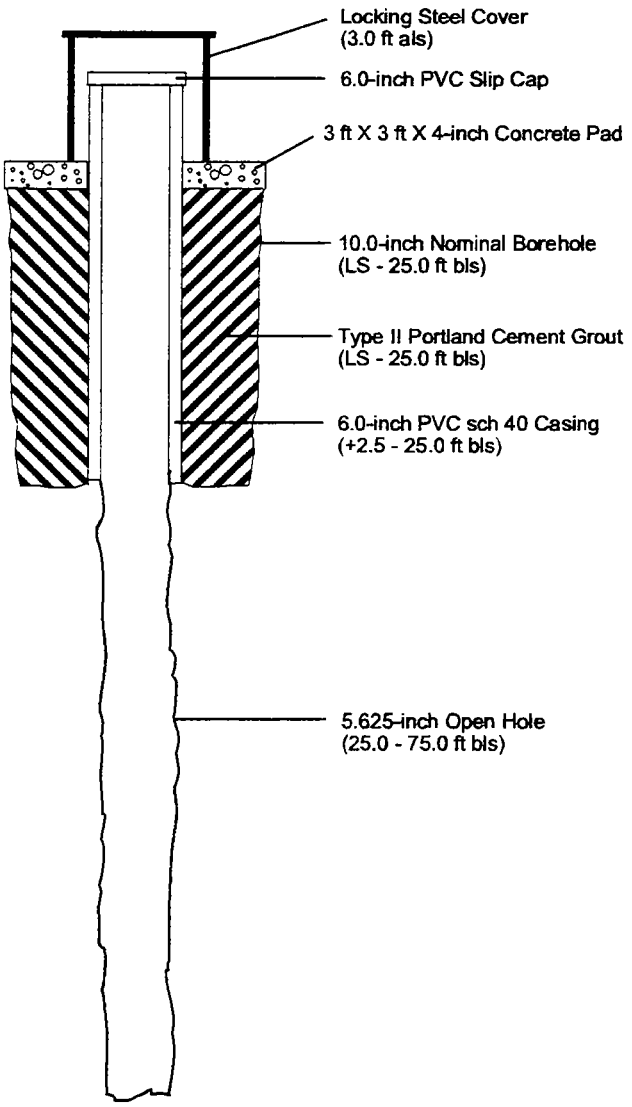


FIGURE 17: CSPR-3 UPPER FLORIDAN MONITOR-WELL AS-BUILT

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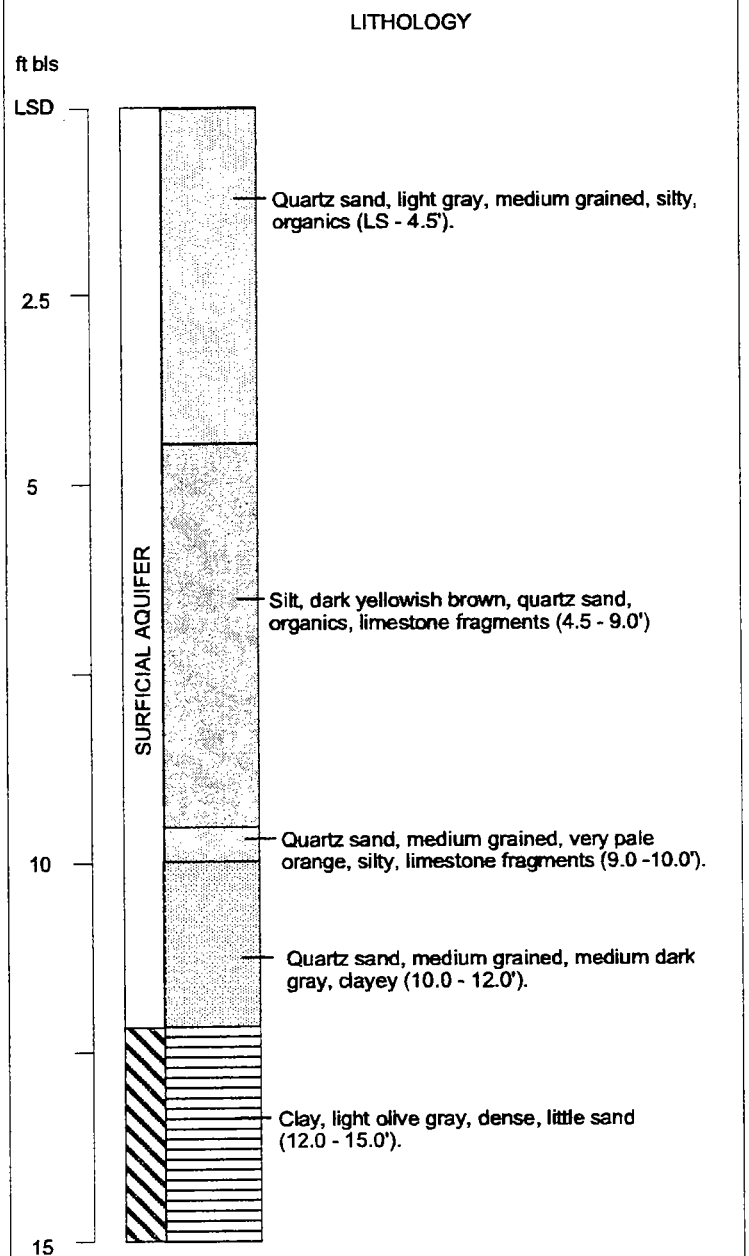
Resource Data Department-Geohydrologic Data Section			
Project Name: **USGS-District Coastal Springs Project**		Completion Date:	**10-28-97**
Project Location (County):	**Citrus**	Well Development Time:	**0.50 Hours**
Well Designation:	**CSPR-3 Chassahowitzka River Site Surficial Well**	Depth to Water (Static):	**3.53 ft bls**
S-T-R:	**NW¼ of the NE ¼ of 26-20S-17E**	Land Surface Elevation	**9.08 ft NGVD**
LATITUDE: **28° 43' 16.12008"** LONGITUDE: **82° 34' 28.47519"**		Measuring Point Elevation	**12.11 ft NGVD**



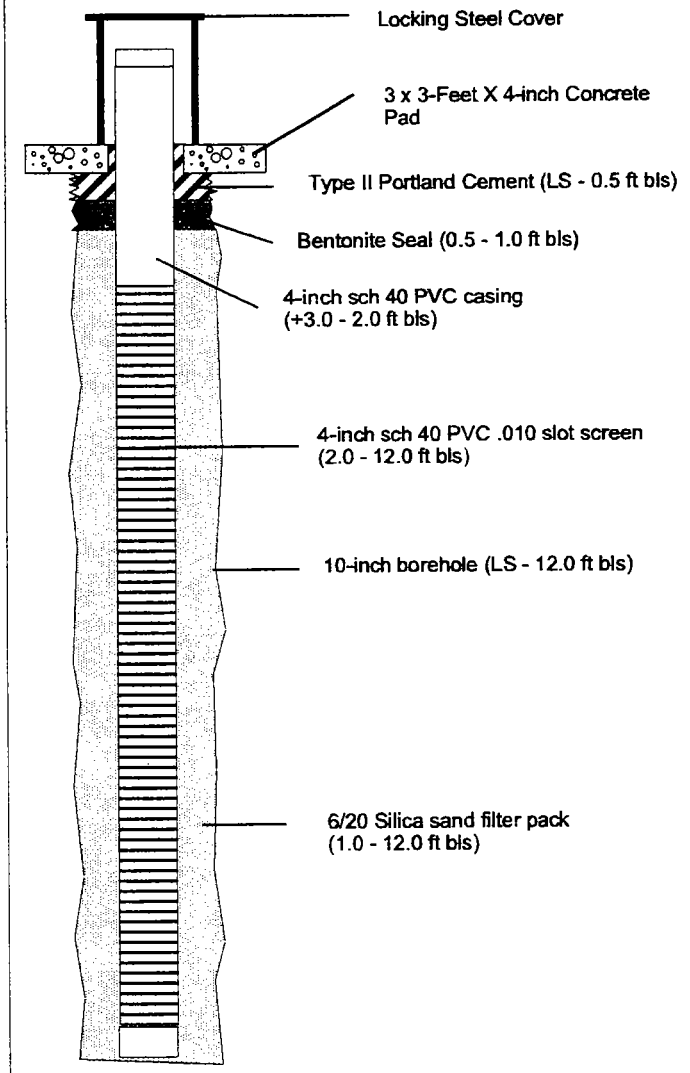


FIGURE 18: CSPR-3 SURFICIAL MONITOR-WELL AS-BUILT DIAGRAM

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Resource Data Department-Geohydrologic Data Section			
Project Name: **USGS-District Coastal Springs Project**		Completion Date: **2/10/98**	
Project Location (County): **Citrus**		Well Development Time:	**1.0 Hours**
		Pumping Rate (gpm):	**100**
Well Designation: **CSPR-4 Nature's Resort Campgnd Upper Floridan Well**		Depth to Water (Static):	**2 ft bls**
		Estimated Specific Capacity:	**625 gpm/ft**
S-T-R: **NW ¼ of the NE ¼ of 29-19S-17E**		Land Surface Elevation	**3.0 ft NGVD**
LATITUDE: **28° 47' 51.07227"** LONGITUDE: **82° 36' 24.25555"**		Measuring Point Elevation	**6.39 ft NGVD**

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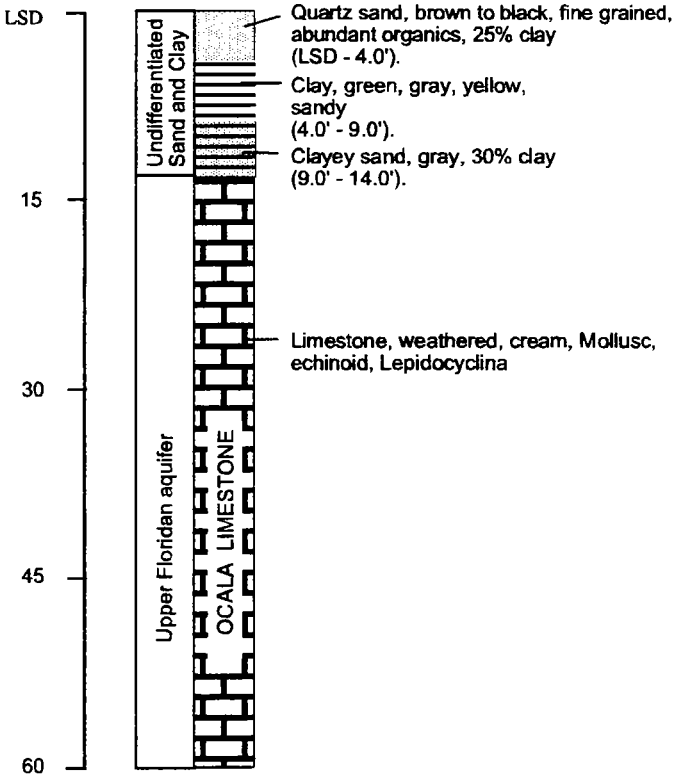

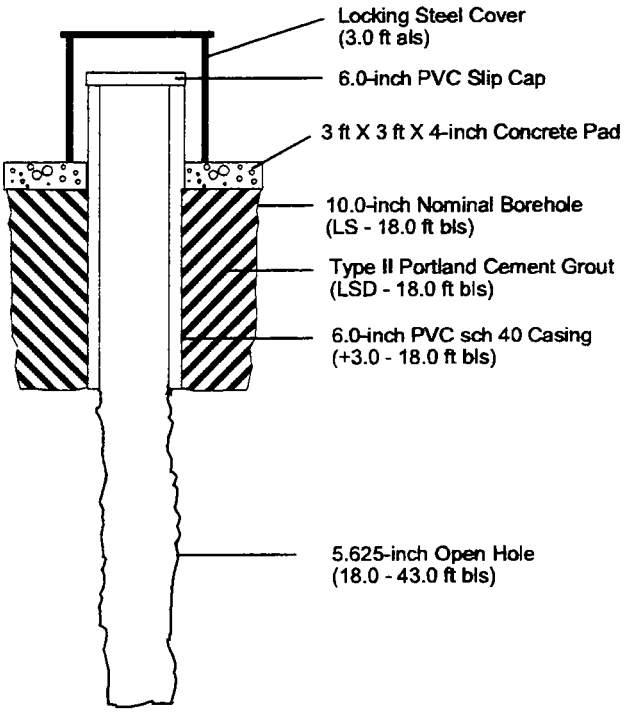

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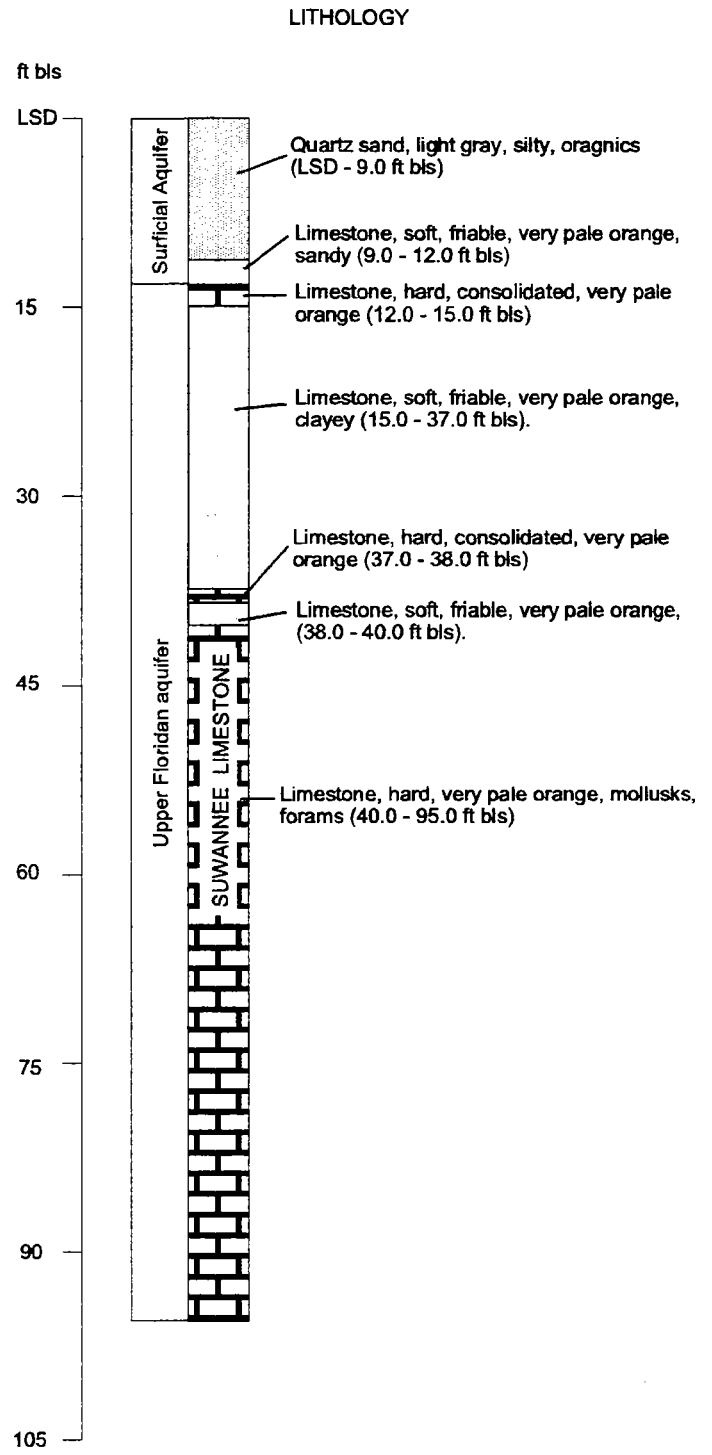
FIGURE 19: CSPR-4 UPPER FLORIDAN MONITOR-WELL AS-BUILT

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**		Completion Date:	**10-29-97**
Project Location (County):	**Hernando**	Well Development Time:	**1.50 Hours**
		Pumping Rate (gpm):	**12 gpm**
Well Designation:	**CSPR-6 Jenkins Creek Site Upper Floridan Well**	Depth to Water (Static):	**6.49 ft bls**
		Estimated Specific Capacity:	**1.7 gpm/ft**
S-T-R:	**5-23S-17E**	Land Surface Elevation	**8.15 ft NGVD**
LATITUDE: **28° 31' 11.55373"** LONGITUDE: **82° 37' 58.00259"**		Measuring Point Elevation	**11.41 ft NGVD**



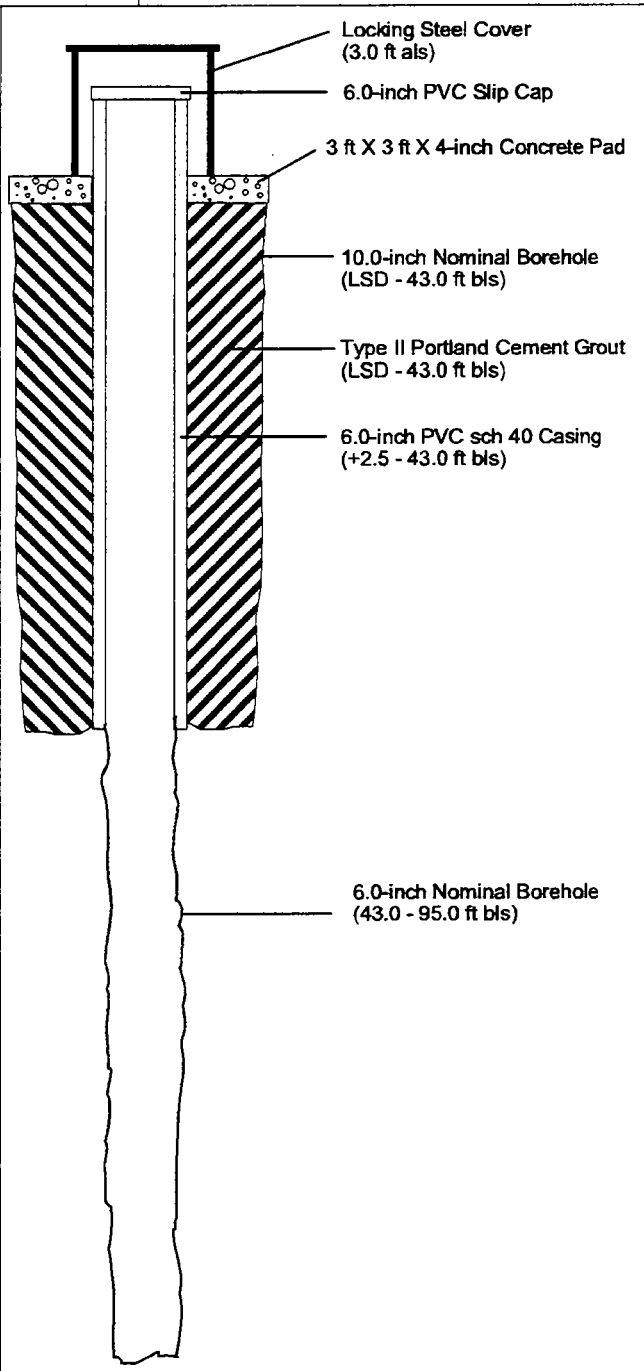


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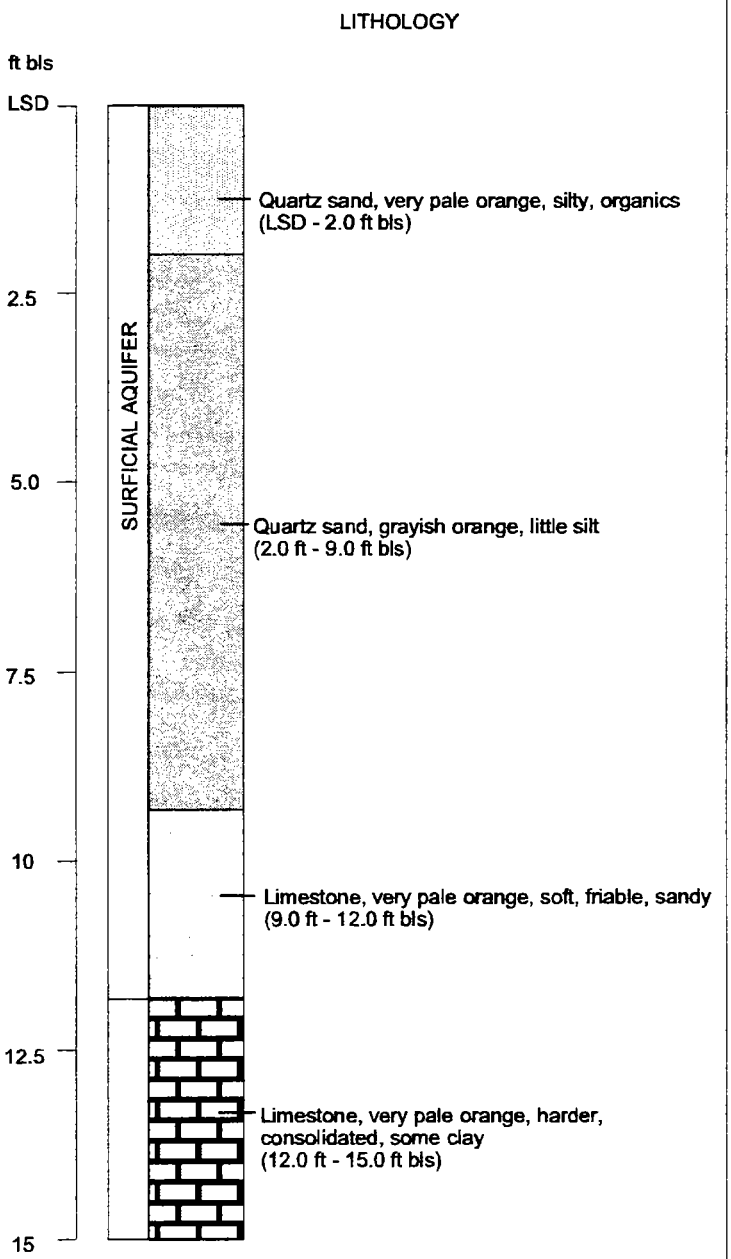
FIGURE 20: CSPR-6 UPPER FLORIDAN MONITOR-WELL AS-BUILT

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**		Completion Date:	**10-29-97**
Project Location (County):	**Hernando**	Well Development Time:	**0.50 Hours**
Well Designation:	**CSPR-6 Jenkins Creek Site Surficial Well**	Depth to Water (Static):	**4.50 ft bls**
S-T-R:	**5-23S-17E**	Land Surface Elevation	**8.15 ft NGVD**
LATITUDE: **28° 31' 11.60562"** LONGITUDE: **82° 37' 57.92461"**		Measuring Point Elevation	**11.58 ft NGVD**



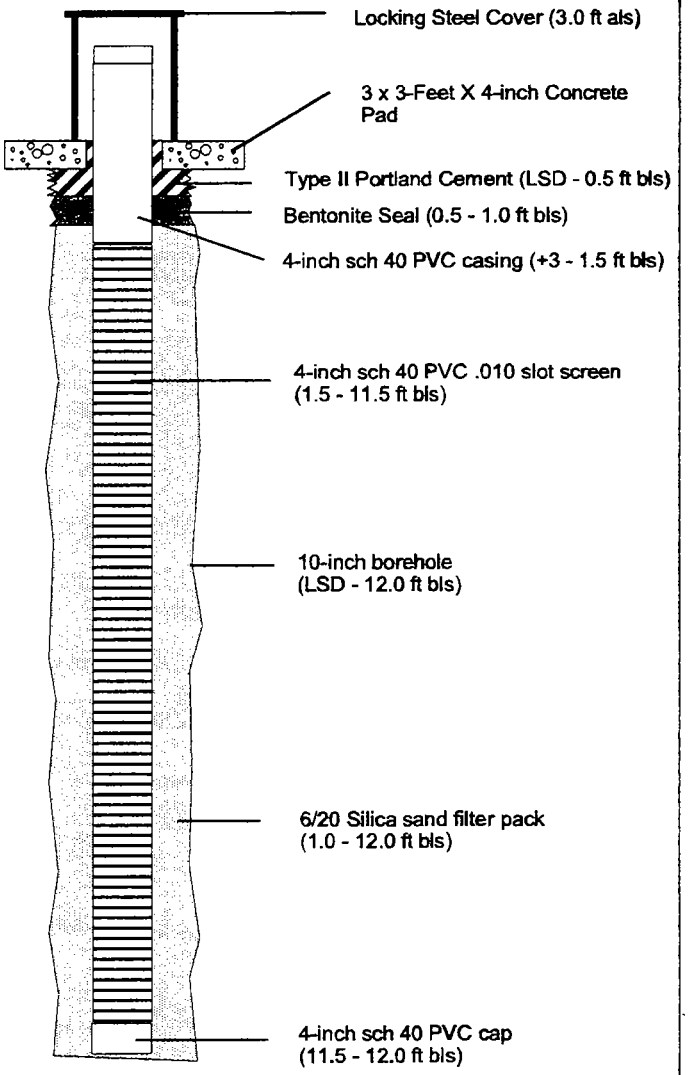


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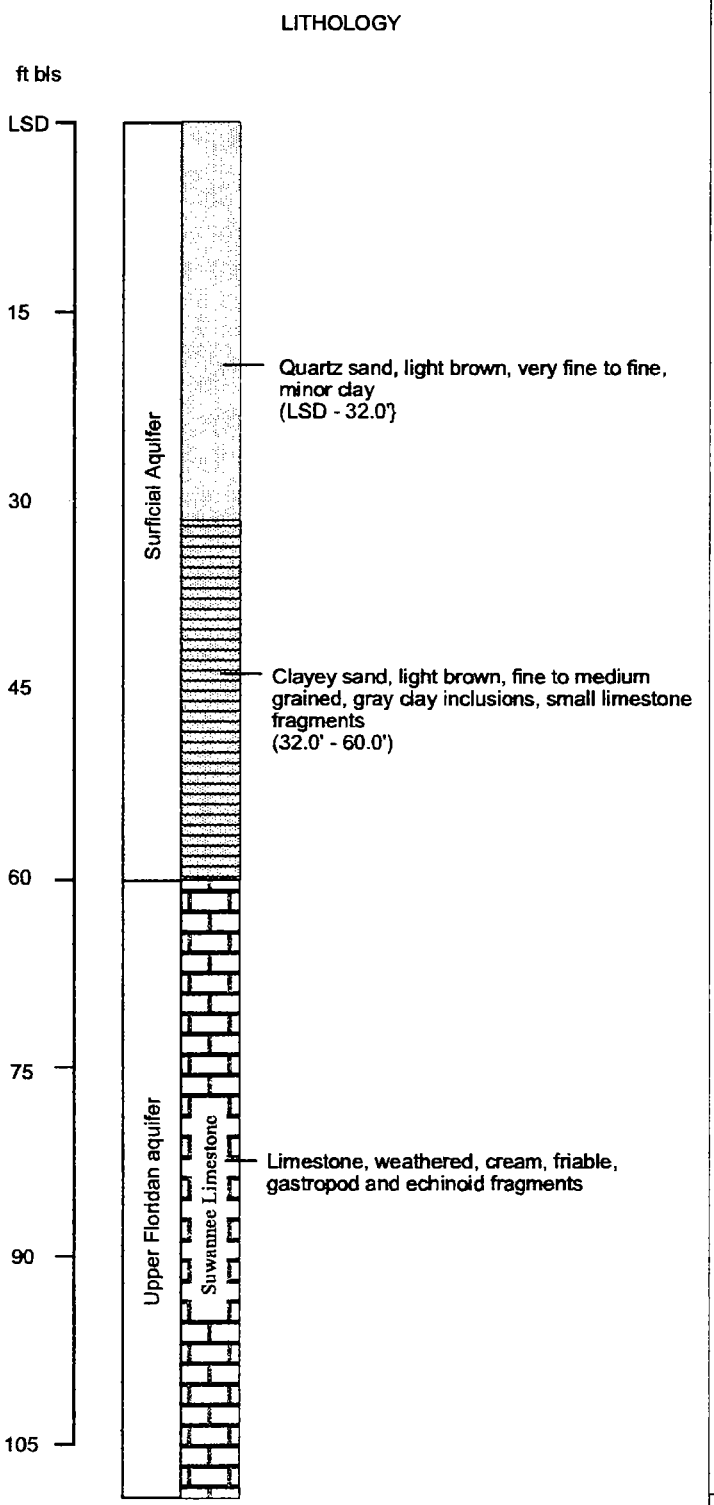
FIGURE 21: CSPR-6 SURFICIAL MONITOR-WELL AS-BUILT DIAGRAM

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**		Completion Date:	**2/12/98**
Project Location (County):	**Pasco**	Well Development Time:	**.75 Hours**
		Pumping Rate (gpm):	**37.5**
Well Designation:	**CSPR-7 Aripeka Site Upper Floridan Well**	Depth to Water (Static):	**2.0 ft bls**
		Estimated Specific Capacity:	**6.2 gpm/ft**
S-T-R:	**12-24S-16E**	Land Surface Elevation	**11.1 ft NGVD**
LATITUDE: **28° 24' 57.36390"** LONGITUDE: **82° 39' 12.63454"**		Measuring Point Elevation	**14.18 ft NGVD**



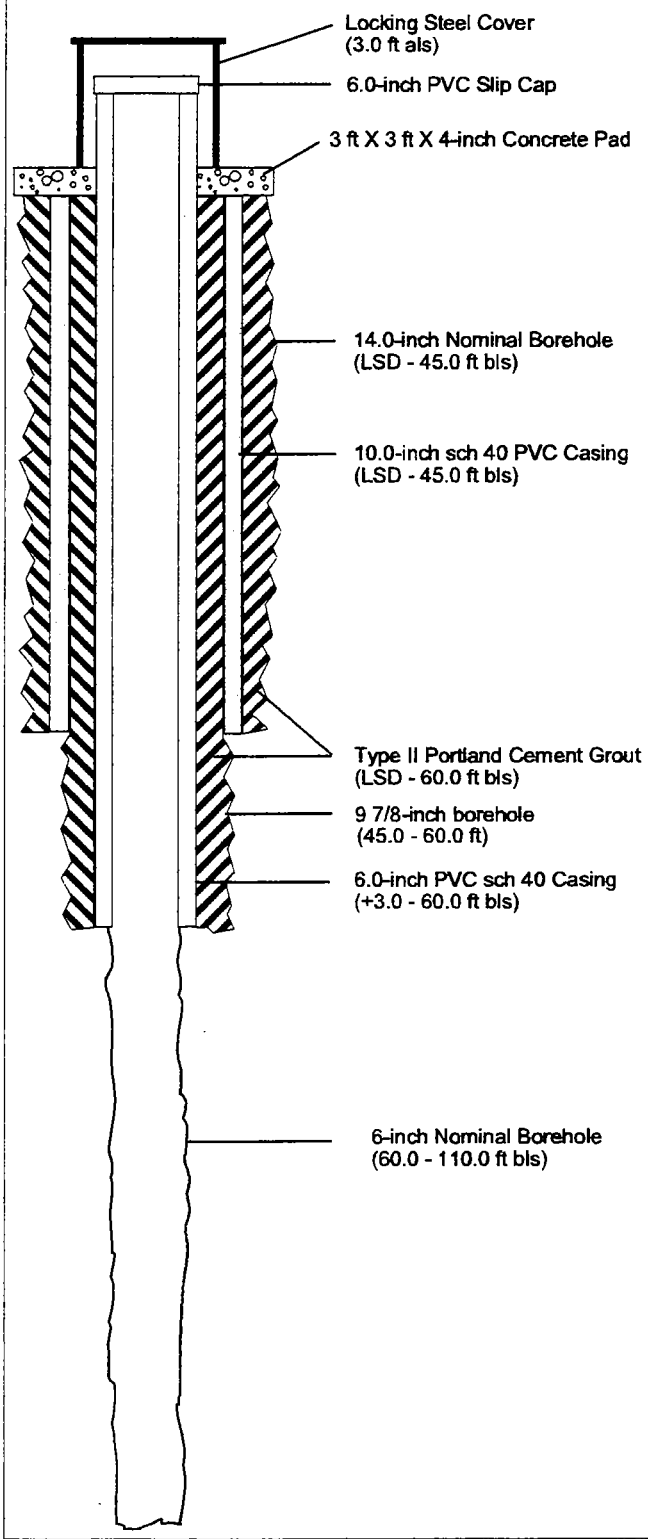


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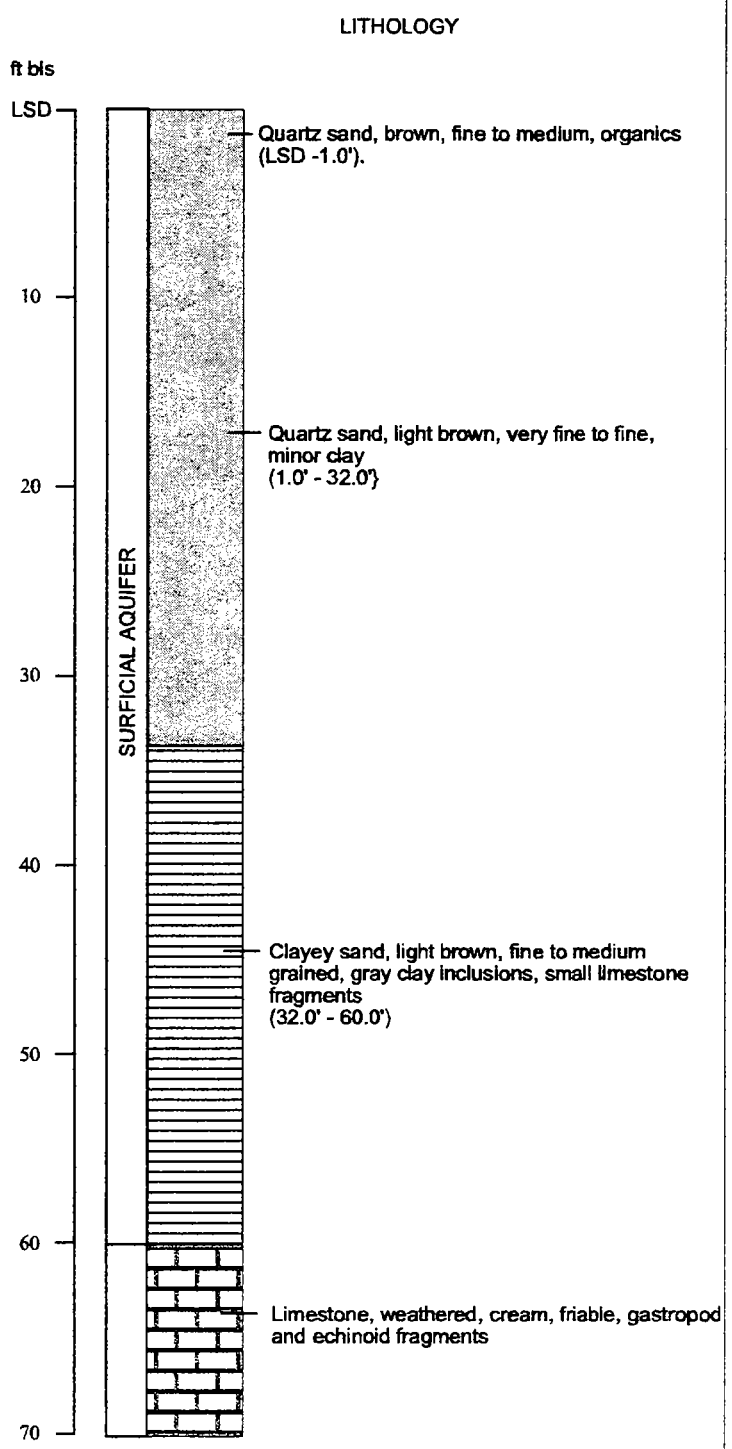
FIGURE 22: CSPR-7 UPPER FLORIDAN MONITOR-WELL AS-BUILT

Resource Data Department-Geohydrologic Data Section

Project Name: **USGS-District Coastal Springs Project**	Completion Date: **2/12/98**
Project Location (County): **Pasco**	Well Development Time: **0.50 Hours**
Well Designation: **CSPR-7 Aripeka Site Surficial Well**	Pumping Rate (gpm): **11** Depth to Water (Static): **2.0 ft bls**
S-T-R: **12-24S-16E**	Land Surface Elevation **11.1 ft NGVD**
LATITUDE: **28° 24' 57.30100"** LONGITUDE: **82° 39' 12.66960"**	Measuring Point Elevation **13.79 ft NGVD**



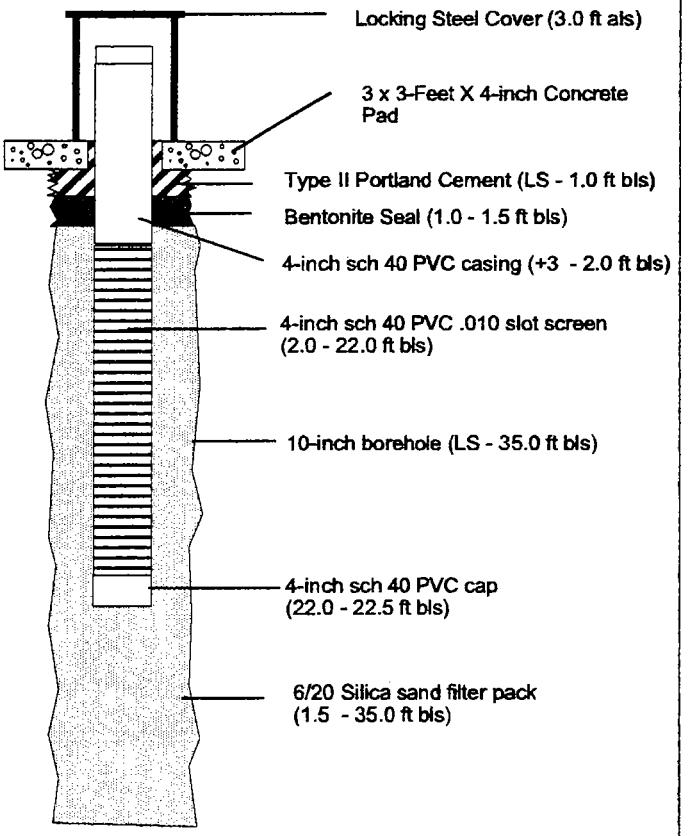


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FIGURE 23: CSPR-7 SURFICIAL MONITOR-WELL AS-BUILT DIAGRAM

TABLE 1. WATER QUALITY RESULTS FROM FINISHED FLORIDAN WELLS (LABORATORY PROCESSED)

WELLSITE	DATE (M/D/Y)	DEPTH (ft bls)	SPECIFIC CONDUCT. (umhos/cm)	WATER DENSITY (g/cm^3)	pH	TOTAL DISSOLVED SOLIDS (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)	TOTAL ALKALINITY (CaCO3) (mg/L)	BROMIDE (mg/L)	ION BALANCE (%)	CALCIUM (mg/L)	MAGNESIUM (mg/L)	SODIUM (mg/L)	POTASSIUM (mg/L)	IRON (mg/L)	SILICA (mg/L)	TOTAL HARDNESS (as CaCO3)
CSPR-1	04/15/98	62	532	1.0004	7.4	341	25.7	0.32	257	<.05	-0.18	94.5	4.4	13	0.3	5740	3.5	254
CSPR-2	05/26/98	95	145	1.0001	7.7	90	4.7	4.27	66	<.05	-1.66	25	1.39	2.83	0.14	50	3.6	68
CSPR-3	04/15/98	67	346	1.0002	7.8	211	13.3	4.58	156	<.05	0.65	55.4	6.29	6.77	0.43	1230	3.6	164
CSPR-4	02/10/98	43	3070	1.0015	8.1	1554	784	107	383	2.38	-6.55	93.8	47.6	434	18.1	4290	5.5	430
CSPR-6	02/06/98	95	832	1.0005	7.4	443	137	<.05	223	<.05	2.54	88	6.21	84.1	1.83	4140	2.7	245
CSPR-7	02/12/98	110	370	1.0003	7.7	182	6.2	<.05	191	<.05	-4.61	64.7	1.34	3.93	0.15	3490	2.5	167

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Coastal Springs Monitor-Well - 2
Withlacoochee State Forest
Surficial Lithology

LSD - 0.5	Dark brown fine quartz sand, rounded, poorly sorted, abundant organics and roots
0.5 - 2.0	Lighter brown - light orange quartz fine sand, rounded, poorly sorted, some organics
2.0 - 4.0	Light orange quartz fine sand, sub-rounded, poorly sorted, minor organics
4.0 - 12.0	No recovery (fine sand?)
12.0 - 13.0	Tan quartz fine sand, sub-angular to sub-rounded, poorly sorted, minor organics, small amount of iron staining
13.0 - 15.0	Light orange and tan quartz sand, sub-angular to sub-rounded, poorly sorted, minor organics and more iron staining
15.0 - 16.0	Orange quartz sand and minor clay, heavily iron stained, sub-angular to sub-rounded, poorly sorted, minor organics
16.0 - 26.0	Mottled orange, gray and red fine sand, 30% clay, poorly sorted, heavily iron stained
26.0 - 33.0	Mottled orange, gray and red sandy clay, 40% sand, poorly sorted, sub-angular to sub-rounded sand, dense, plastic
33.0 - 36.0	Mottled orange and gray sandy clay, 15% sand, poorly sorted, sub-angular to sub-rounded sand, dense, plastic, some heavily stained orange pockets
36.0 - 37.0	Cream colored limestone fragments and lime clay, friable
37.0 - 43.5	Mottled dark orange (browner) and gray clay, 10% sand, poorly sorted, sub-rounded, dense, plastic
40.5 - 41.0	Mottled black, orange, brown and gray clay, minor sand, dense, plastic
43.5 - 44.0	Gray clay, minor orange mottle, minor sand, dense, plastic
44.0 - 45.0	Black organic(?) mass at top, cream colored limestone and lime clay, weathered
45.0 - 46.0	Gray clay, some iron staining, minor sand, black organic streaks, white limestone inclusions

Coastal Springs Monitor-Well - 3
Chassahowitzka River
Surficial Lithology

LSD - 4.5	Quartz sand, light gray to medium gray, silty, organics
4.5 - 9.0	Silt, dark yellowish brown, quartz sand, organics, limestone fragments
9.0 - 10.0	Quartz sand, medium grained, very pale orange, silty, limestone fragments
10.0 - 12.0	Quartz sand, medium grained, medium dark gray, clayey
12.0 - 15.0	Clay, light olive gray, dense, little sand

Coastal Springs Monitor-Well - 6
Jenkins Creek
Surficial Lithology

LSD - 2.0	Quartz sand, very pale orange, silty, organics
2.0 - 9.0	Quartz sand, grayish orange, little silt
9.0 - 12.0	Limestone, very pale orange, soft, friable, sandy

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Gary, Bill, Ricky		1
PROGRESS	TASK: Mob	DATE: Tue 10-21-97	SITE HYDROLOGIST: Tim Lohner
DEPTH / PROPOSED TOTAL DEPTH		FORMATION/AQUIFER	DATE MOVED ON SITE: 10-21-97

ROMP SITE NAME/NUMBER: Chassahowitzka River / CSPR-3

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
1230	1300	0.50	Begin mob to CSRR-3, Travel to gate #6,
1300	1345	0.75	Travel to Brooksville
1345	1500	1.25	Meet with Greg McQuown and then Ted Ga
1500	1545	0.75	Travel to site
1545	1615	0.50	BCD Rig up
1615	1730	1.25	Travel to Tampa

Tim Lohner

10-21-97

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW Burnett Contracting & Drilling Gary, Ricky, Booster, Bill		REPORT NO. 1
PROGRESS 0-26'.	TASK	DATE 10-22-97	SITE HYDROLOGIST Ted Gates
DEPTH	PROPOSED TOTAL DEPTH 75'	FORMATION/AQUIFER Ocala / Floridan	DATE MOVED ON SITE 10-21-97

ROMP SITE NAME/NUMBER USGS-District Coastal Springs Project
CSPR-3 Chassahowitzka River Site

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0900	1000	1	T. Gates driving to site from District (Brooksville)
1000	1200	2	Coring from land surface to hard limestone (25.0' cored)
1200	~~1300~~	~~1~~	~~Crew lunch~~, installed Tricone drilled 10" hole to 26',
-	1300	1	installed 25' of 6" PVC casing.
1300	1330	0.5	Installed 8 bags of grout into annulus by tremie pi
1330	1500	1.5	T. Gates off site @ 1330 - to inspect CSPR-6 site.

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Gary, Bill, Ricky	1

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Thu 10-23-97	Ted Gates

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			10-23-97

MILITARY TIME TIME LOG		ELAPSED TIME	ROMP SITE NAME/NUMBER Jenkins Creek / CSPR-6
FROM	TO		DETAILS OF OPERATIONS
1245	1300	0.75	Mob to CSPR-6
1300	1445	1.25	locate site and leave equipment on site, Will drill on Monday,
1445	1530	0.75	Travel to Brooksville
1530	1615	0.75	Return to CSPR-6 with lock for gate to Property,
1615	1730	1.25	Travel to Tampa

Jim Tolman
10-23-97

MUD RECORD	CASING RECORD			CEMENT RECORD	DEPTH DEPTH	COND UMOH	CL	WL	%CO RE
WEIGHT____ VISC_____	SIZE	DEPTHSET	SOR/I.D.	#SC _____ VENDOR_____ WEIGHT_____PPG DISPL TO____ FT W/H _____GALS T.O.C _____ FT CIP @ _____ HRS PSIG _____					
ADDITIVES GEL _____ LIG _____ LCM _____ SX									

ACCIDENTS/INCIDENTS-DESCRIBE IN FULL PERSONNEL/EQUIPMENT FAILURE ON BACK.

PERSONNEL INVOLVED/WITNESS MUST SIGN & GIVE ACCOUNT ON BACK.

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Gary, Bill, Ricky		2
PROGRESS	TASK	DATE Thu 10-23-97	SITE HYDROLOGIST Ted Gates
DEPTH / PROPOSED TOTAL DEPTH		FORMATION/AQUIFER	DATE MOVED ON SITE 10-22-97

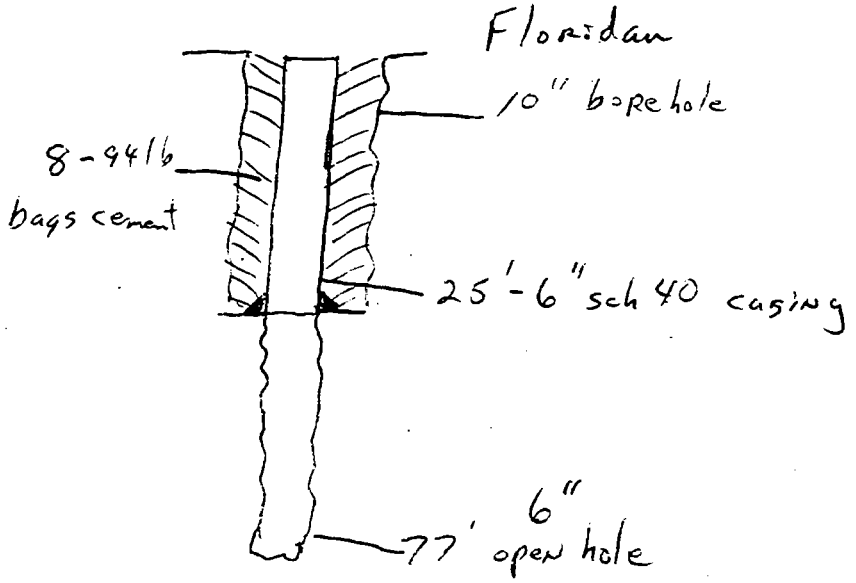
MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	ROMP SITE NAME/NUMBER Chassahowitzka River / CSPR-3 DETAILS OF OPERATIONS
0700	0745	0.75	Travel to Brooksville
0745	0900	1.25	Met with Ted Gates and Don Thompson and procure locks from inventory,
0900	1000	1.00	Travel to CSPR-3.
1000	1015	0.25	Ted Gates on site also, BCD completed Floridan to 77'. Trip out of hole,
1015	1115	1.00	Set up on surficial and fill water truck,
1115	1215	1.00	Install 4" surficial, 4" sch 40 (0.010 slo screen from 12' to 02', 4" sch 40 Blank from 2' to LS, Used 5-50lbs bags 20/3 Sand from 12' to 01', left site at 1215 hrs. Begin mob to CSPR-6. BCD did not develope wells because the did not have air compressor, will develope on Monday mourning.

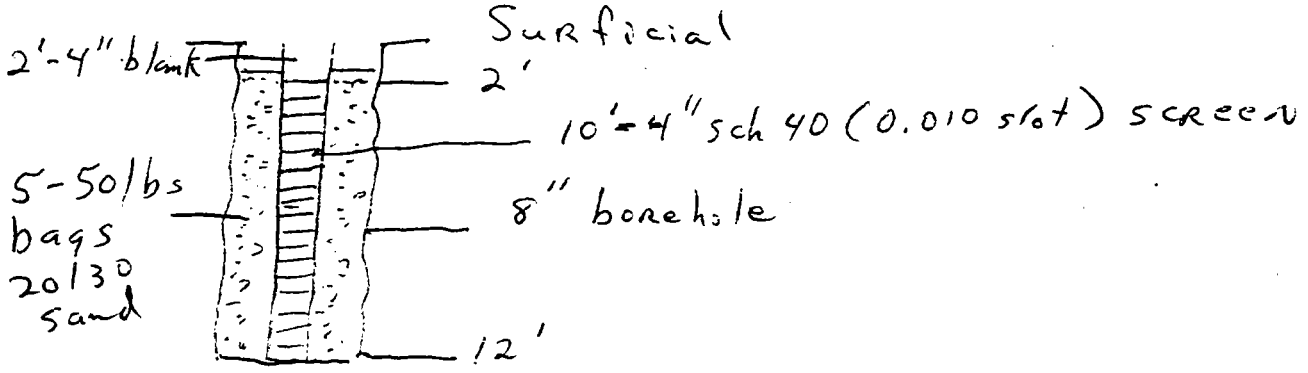
Jim Stiner
10-23-97

MUD RECORD	CASING RECORD			CEMENT RECORD	DEPTH DEPTH	COND UMOH	CL	WL	%COR REC
WEIGHT____ VISC_____	SIZE	DEPTHSET	SOR/I.D.	#SC _____ VENDOR_____ WEIGHT_____PPG DISPL TO____ FT W/H _____GALS T.O.C _____ FT CIP @ _____ HRS PSIG _____					
ADDITIVES GEL _____ LIG _____ LCM _____ SX									

ACCIDENTS/INCIDENTS-DESCRIBE IN FULL PERSONNEL/EQUIPMENT FAILURE ON BACK.

PERSONNEL INVOLVED/WITNESS MUST SIGN & GIVE ACCOUNT ON BACK.





SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Gary, Bill, Roger	2

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Mon 10-27-97	Ted Gates

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			10-23-97

ROMP SITE NAME/NUMBER: Jenkins Creek / CSPR-6

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
1115	1215	1.00	Travel to site from CSPR-3
1215	1245	0.50	BCD decided not to work anymore today due to heavy Rainfall.
1245	1330	0.75	Travel to Brooksville.
1330	1645	3.25	Review contract and progress on work order. Review SWFWMD Chapter 40D-3 Regulation of wells. Met with Greg McQuown.
1645	1730	0.75	Travel to Tampa.

Jim Lehr
10-27-97

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Gary, Bill, Roger		3
PROGRESS	**TASK**	**DATE** Mon 10-27-97	**SITE HYDROLOGIST** Tim Lohner
DEPTH	**PROPOSED TOTAL DEPTH**	**FORMATION/AQUIFER**	**DATE MOVED ON SITE** 10-22-97

MILITARY TIME TIME LOG		ELAPSED TIME	ROMP SITE NAME/NUMBER Chassahowitzka River / CSPR-3
FROM	TO		DETAILS OF OPERATIONS
0700	0715	0.25	Fuel T#427
0715	0800	0.75	Travel to Brooksville
0800	0900	1.00	Met with Ted Gates, Travel to site
0900	0915	0.25	Wait for BCD,
0915	1045	1.50	Develope Floridan well, Floridan well
			has lense or lenses of sand and clay,
			When developement was discontinued
			there was still fine sand in discharge
			water,
1045	1115	0.50	Develope surficial, Leave site for
			CSPR-6.

Tim Lohner
10-27-97

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Gary, Bill, Roger	3

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Tue 10-28-97	Ted Gates

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			10-23-97

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	ROMP SITE NAME/NUMBER: Jenkins Creek / CSPR-6 — DETAILS OF OPERATIONS
0630	0800	1.50	Travel to site
0800	0845	0.75	Rig up
0845	0945	1.00	Core sample from LS to 43',
0945	1100	1.25	Drill 10" hole from LS to 43', Trip out of hole.
1100	1115	0.25	Run 43' of 6" sch 40 PVC casing,
1115	1200	0.75	Mix and pump 126 gal cement slurry, (12-94lb bags cement, 22lb bentonite and 90 gal H_2O, Displacement 55gal,
1200	1230	0.50	clean up site

Jim Fahrer
10-28-97

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Gary, Bill, Roger		4
PROGRESS	**TASK**	**DATE** Tue 10-28-97	**SITE HYDROLOGIST** Ted Gates
DEPTH	**PROPOSED TOTAL DEPTH**	**FORMATION/AQUIFER**	**DATE MOVED ON SITE** 10-22-97

MILITARY TIME TIME LOG		ELAPSED TIME	ROMP SITE NAME/NUMBER Chassahowitzka River / CSPR-3
FROM	TO		DETAILS OF OPERATIONS
1230	1315	0.75	Travel from CSPR-6 to CSPR-3
1315	1530	2.25	Build pads and install well covers on Floridan and surficial wells.
1530	1700	1.50	Travel to Tampa

Jim Fahrner
10-28-97

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Gary, Bill, Roger	4

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Wed 10-29-97	Ted Gates

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			10-23-97

ROMP SITE NAME/NUMBER: Jenkins Creek / CSPR-6

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0630	0800	1.50	Travel to site, When I arrived on
			site BCD had already drill a 6" open
			hole from 43' to 95',
0800	0930	1.50	Develope Floridan Well,
0930	1000	0.50	Install 4" surficial Well, to 12'
1000	1115	1.25	Build pad and install well cover on Floridan
1115	1145	0.50	Develope surficial well,
1145	1215	0.50	Build pad and install well cover on
			surficial,
1215	1230	0.25	Prepare to mob. to Cone Ranch

Tim Lohman

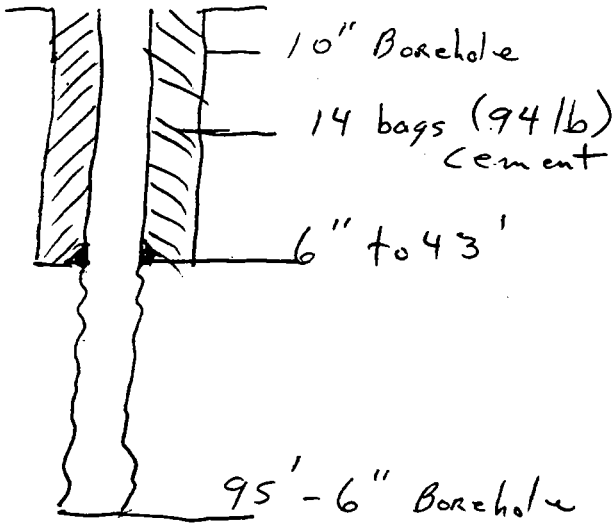
10-29-97

MUD RECORD	CASING RECORD			CEMENT RECORD	DEPTH DEPTH	COND UMOH	CL	WL	%CO RE
WEIGHT____ VISC_____	SIZE	DEPTHSET	SOR/I.D.	#SC _____ VENDOR_____ WEIGHT_____PPG DISPL TO____ FT W/H _____GALS T.O.C _____ FT CIP @ _____ HRS PSIG _____					
ADDITIVES GEL _____ LIG _____ LCM _____ SX									

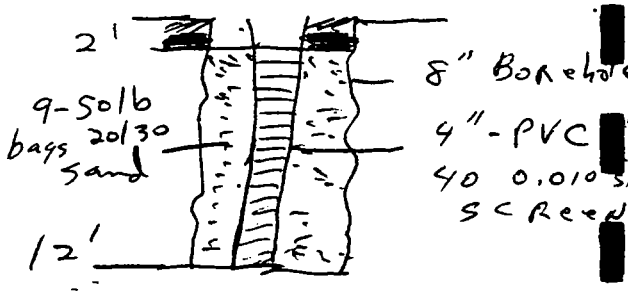
ACCIDENTS/INCIDENTS-DESCRIBE IN FULL PERSONNEL/EQUIPMENT FAILURE ON BACK.

PERSONNEL INVOLVED/WITNESS MUST SIGN & GIVE ACCOUNT ON BACK.

CSPR-6 Floridan



CSPR-6 Surficial



SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Glen, Roger, Dave	1

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Mon 2-9-98	Rick Lee

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			2-9-98

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	ROMP SITE NAME/NUMBER Nature's Resort / CSPR-4 DETAILS OF OPERATIONS
0700	0830	1.50	Annual hearing and breathing test at District in Tampa.
0830	1030	2.00	Travel to site
1030	1200	1.50	When I arrived on site BCD had finished sampling from LS to 17'. Rick Lee was on site. Drill 12" hole from LS to 18'. Run 18' of 6" PVC casing. Cement using 7 (94#) bags cement.
1200	1330	1.50	Wait for cement to set up.
1330	1430	1.00	Tag cement at 15'. Cement using 5 (94#) bags cement. Clean site.
1430	1530	1.00	Travel to Brooksville
1530	1630	1.00	Work on Contract One
1630	1730	1.00	Travel to Tampa

Tim Shaw 2-9-98

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Glen, Roger, Dave		1
PROGRESS	TASK	DATE Tue 2-10-98	SITE HYDROLOGIST Rick Lee
DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE 2-10-98

MILITARY TIME TIME LOG		ELAPSED TIME	ROMP SITE NAME/NUMBER ARIPEKA / CSPR-7
FROM	TO		DETAILS OF OPERATIONS
1400	1430	0.50	Rig Up
1430	1530	1.00	Sample from LS to 36', Retrived only LS to 2 and 34' to 36', Unable to contain sample because it was loose sand in solution. Able to lower Rods from 5' to 28' without pumping or turning. lost circulation at 36',
1530	1630	1.00	Pull out rods, [redacted] to 20' Push 10" casing from LS to 40', Still able to move casing, Will bring more casing in mourning.
1630	1730	1.00	Travel to Tampa

Tim Lohr 2-10-98

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD		2

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Tue 2-10-98	Rick Lee

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			2-9-98

ROMP SITE NAME/NUMBER: Nature's Resort / CSPR-4

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0700	0900	2,00	Travel to site
0900	1000	1,00	Drill 6" hole from 18' to ~~43~~ 43',
100	1045	0,75	Develope well
1045	1130	0,75	Run Specific capacity test (625 gpm/f of drawd
1130	1230	1,00	Rig down, clean up site
1230	1300	0,50	Lunch
1300	1400	1,00	Mob to CSPR-7
~~1400~~	~~1430~~	~~0,50~~	~~Rig Up~~
~~1430~~		5 0f	

Jim Solum 2-10-98

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW	REPORT NO.
BCD	Glen, Roger, Dave	2

PROGRESS	TASK	DATE	SITE HYDROLOGIST
		Wed 2-11-98	Rick Lee

DEPTH	PROPOSED TOTAL DEPTH	FORMATION/AQUIFER	DATE MOVED ON SITE
			2-10-98

ROMP SITE NAME/NUMBER: Aripeka / CSPR-7

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0700	0800	1.00	Travel to Brooksville
0800	1100	3.00	collect information for work order #2
1100	1130	0.50	Travel to site
1130	1230	1.00	BCD had pushed 10" PVC casing from 40' to 45'. Drilled 9 7/8" hole from 45 to 60'. Run 60' of 6" PVC casing. Observed cementing. Used 16 (94#) b
1230	1300	0.50	Lunch
1300	1330	1.00	Travel to CSPR-4
1330	1430	1.00	Observe installation of well cover at CS
1430	1530	1.00	Travel to Brooksville.
1530	1630	1.00	Work on Contract One.
1630	1730	1.00	Travel to Tampa

Tim Johnson 2-11-98

SWFWMD GEOHYDROLOGIC DATA
DAILY DRILLING/CORE REPORT

RIG NO/NAME	CREW		REPORT NO.
BCD	Glen, Roger, Dave		3
PROGRESS	TASK	DATE Thu 2-12-98	SITE HYDROLOGIST Rick Lee
DEPTH / PROPOSED TOTAL DEPTH		FORMATION/AQUIFER	DATE MOVED ON SITE 2-10-98

MILITARY TIME TIME LOG FROM	TO	ELAPSED TIME	ROMP SITE NAME/NUMBER Aripeka / CSPR-7 (Floridan & Surficial) DETAILS OF OPERATIONS
0700	0800	1.00	Travel to Lake Pasadena (BR-3)
0800	1030	2.50	Meet with Gary Russell of OPS. Discuss installation of gates and removal of overhanging limb. Travel to Lake Iola site (BR-2). Will need to locate site corners and clear undergrowth from site. Travel to CSPR-7.
1030	1630	6.00	BCD had drilled 25' of open hole to 85'. Develope well one hr. Run Pump test 1.5 hr not enough GPM. Drill 25' more from 85 to 110'. Develope well for 1.25hr. Run Specific capacity pump test for 1.25 hr. Move Rig over 10'. Drill and install 4" surficial to 22'. Screen from 2' to 22'. Dev. well for one hr. Rig down.
1630	1730	1.00	Travel to Tampa.

Tim Tolan 2-12-98

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
GEOHYDROLOGIC DATA SECTION
DAILY DRILLING LOG-CORE REPORT

REPORT NO.	SITE HYDROGEOLOGIST	DATE	DATE MOVED ON-SITE	NO. DAYS ON SITE
01	Rick Lee	5-19-98 Tu	5-19-98	

RIG NO./NAME CONTRACTOR	CREW	PROPOSED TOTAL DEPTH	PROGRESS	DEPTH
BCD	Glen, Roger, Travis			

ROMP SITE NAME/ NUMBER		WELL TYPE/NAME	
With. State Forest / USGS CSPR-2			Monitor / Upper Floridan

MILITARY TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0630	0730	1.00	Travel to Brooksville.
0730	0800	0.50	Meet with Rick Lee.
0800	0830	0.50	Travel to site.
0830	0900	0.50	Pre-construction meeting. Present: Tim from State Forestry Service, Driller, Rick Lee, and myself.
0900	1100	2.00	Could not locate corner markers of permanent easment. BCD waiting for water truck to arrive from LK. Iola site. Rick Lee left site to meet with Survey to get metal detector.
1100	1200	1.00	Water truck arrived. Still could not locate corner markers. Call survey. They said they would arrive approx. 1300 hrs.
1200	1230	0.50	Lunch
1230	1300	0.50	Wait for survey crew.
1300	1315	0.25	Rick Hall with survey looked for corners. Said they have not yet been put in (incomplete survey). Will drill well based on well stake placed earlier by survey.
1315	1400	0.75	Rig Up
1400	1630	2.50	Sample from 25 to 52'
1630	1700	0.50	BCD decided to set 32' of 10" casing. Used 5 bags
1700	1830	1.50	Travel to Tampa

Total paid Time:		Non-Paid Time:		Accidents	

District Represntative	Jim Johnson	Contractor Representative	

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
GEOHYDROLOGIC DATA SECTION
DAILY DRILLING LOG-CORE REPORT

REPORT NO.	SITE HYDROGEOLOGIST	DATE	DATE MOVED ON-SITE	NO. DAYS ON SITE
02	Tim Lohner	5-20-98 We	5-19-98	

RIG NO./NAME CONTRACTOR	CREW	PROPOSED TOTAL DEPTH	PROGRESS	DEPTH
BCD	Glen, Roger, Travis			

ROMP SITE NAME/ NUMBER	With. State Forest/CSPR-2	WELL TYPE/NAME	Monitor / Upper Floridan Surficial

MILITARY TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0630	0800	1.50	Travel to site.
0800	0915	1.25	Ream hole from 32' to 52' (9 7/8" hole)
			Drill 9 7/8" hole from 52' to 55',
			Call Rick Lee, Rick said to set 6"
			casing at 55'.
0915	0930	0.25	Circulate hole clean. Pull out of hole,
0930	0945	0.25	Run 52' of 6" PVC casing.
0945	1030	0.75	Cement using 14 (94#) bags cement,
1030	1230	2.00	Hold pressure on casing, I traveled
			to Lake Iola to check water levels and
			condition of site.
1230	1330	1.00	Move rig over and install 4" surficial
			well. 20' well with 15' of screen,
1330	1430	1.00	Survey crew arrived to confirm
			permanent site.
1430	1500	0.50	Travel to Brooksville.
1500	1600	1.00	Work on Contract One.
1600	1700	1.00	Travel to Tampa

Total paid Time:		Non-Paid Time:		Accidents	

District Represntative	Tim Lohner	Contractor Representative	

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
GEOHYDROLOGIC DATA SECTION
DAILY DRILLING LOG-CORE REPORT

REPORT NO.	SITE HYDROGEOLOGIST	DATE	DATE MOVED ON-SITE	NO. DAYS ON SITE
03	Rick Lee / Tim Lohner	5-21-98 Th	5-19-98	

RIG NO./NAME CONTRACTOR	CREW	PROPOSED TOTAL DEPTH	PROGRESS	DEPTH
BCD	Glen, Roger, Travis			

ROMP SITE NAME/ NUMBER	Withl. State Forest / CSPR-2	WELL TYPE/NAME	Monitor / Upper Floridan

MILITARY TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0630	0730	1.00	Travel to Brooksville. Procure locks for well covers.
0730	0800	0.50	Travel to site.
0800	0830	0.50	BCD has developed surficial well for one hour from 0730 to 0830. Also cleaned mud from site.
0830	1300	4.50	Trip in hole. Drill 5' of cement. Drill 6" hole from 55' to 95'. Lost circulation at 58'. Made several trips to water source (Fire Station) for water to drill with.
1300	1400	1.00	Develope well.
1400	1600	2.00	Attempt to run 2" PVC in well for specific capacity test. Would not go past 64'. Run bit back in hole. Work bit to bottom of hole. Direct air. Run 2" PVC. 8.5' of fill in hole.
1600	1730	1.50	Travel to Tampa

Total paid Time:		Non-Paid Time:		Accidents	

District Represntative	Tim Lohner	Contractor Representative	

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
GEOHYDROLOGIC DATA SECTION
DAILY DRILLING LOG-CORE REPORT

REPORT NO.	SITE HYDROGEOLOGIST	DATE	DATE MOVED ON-SITE	NO. DAYS ON SITE
04	Tim Lohner	5-26-98 Tu	5-19-98	

RIG NO./NAME CONTRACTOR	CREW	PROPOSED TOTAL DEPTH	PROGRESS	DEPTH
BCD	Glen, Roger, Travis			

ROMP SITE NAME/ NUMBER	with State Forest / CSPR-2	WELL TYPE/NAME	Monitor / Upper Floridan

MILITARY TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS
0700	0830	1.50	Travel to site
0830	0900	0.50	Arrive at site BCD developed the well from 0730 to 0900 hrs,
0900	1130	2.50	Run submersible pump for specific capacity test. Did not pump enough water, Run 2" PVC with 3/4" air line, Did not produce enough, Driller went to town and bought tubing to Run air line on outside of 2",
1130	1330	2.00	Run specific capacity test, test @ 28 GPM, Static - 52.43' Drawdown - 52.53'
1330	1400	0.50	BCD began Rig down, and placement of well covers,
1400	1430	0.50	Travel to Brooksville,
1430	1630	2.00	Work on contract one,
1630	1730	1.00	Travel to Tampa

Total paid Time:		Non-Paid Time:		Accidents	

District Represntative	Tim Lohner	Contractor Representative	

Tues

BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D. P.O. No. BCD Job No. Date 10-21-97

Field and/or Site Chassahowitzka F/A Lykes Rd. Well No. CSPR-3

Work Requested By Permit No. 598633.01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensing					Went & moved Rig from
	Powell					Cove Ranch to CSPR-3
	Collins					Chassahowitzka F/A
						on Lykes Rd. & set up
						Rig & found water.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks

THIS REPORT MUST BE FILLED OUT BY THE OPERATOR DAILY

SIGNED _____ (Operator)

SIGNED _____ Customer and/or Owner

Original copy to BURNETT Office
One copy to customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D P.O. No. ____ BCD Job No. ____ Date 10-22-

and/or Site Chassahowitzka Lykes Ride Well No. CSPR-3

Work Requested By ____ Permit No 598633.01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Mensing					Loaded pipe etc & drove to
	Powell					job CORED 2.0 ft hit conc
	Collins					pulled up & then CORED
						to 23.0 ft. from Land sur
						Drilled hole w/ 10 in Bit
						& set 25.0 ft of 6 in PVC
						casing & grouted in &
						Cleaned up site & went to
						Motel.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Type II grout	8	Bags			
6 in PVC sch 40 casing	25.0	ft			
Drilling mud	6	Bags			

THIS REPORT MUST BE FILLED OUT BY THE OPERATOR DAILY

SIGNED J. Mensing (Operator) SIGNED Tim Lohn Customer and/or Owner

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One copy to customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D. P.O. No. BCD Job No. Date 10-23-9

Location and/or Site Chassahowitzka River Well No. CSPR-3

Work Requested By Permit NO 598633.0

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensing Powell Collins					Went + Agged ground At 6 ft. + then + Aired out 6in well to 77.0ft w/ 6in bit. + moved up + put in Superficial well Drilled to 12.0ft w/ 8in Bit + set pipe in hole + SANDED. + put bevonite SEAL around top. + moved to Jenkins Creek site.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
6in PVC TRILock pipe	5.0	ft		Sch 40	
4in PVC TRILock Screen pipe	10.0	ft		" "	
2 PVC TRI CAP Lock	1				
2 PVC TRI Lock Plug	1				Total Depth of 6in well 77.0ft.
20-30 SAND	5	BAGS			
Bevonite pellets	2	LBS			
					Total Depth of 4in well 12.0ft.
					Total Depth of 4" Case 15.0ft.

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SIGNED _____ Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.I.F.W.M.D P.O. No. BCD Job No. Date 10-23-

Project and/or Site Jenkins Creek site Well No. CSPR-6

Work Requested By 598632.01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensing					Went + moved Rig +
	Collins					water truck from
	Powell					Chassahowitzka River
						maintor well site to
						Jenkins Creek well site

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks

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SIGNED _____ Customer and/or Owner

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Mon

BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D P.O. No. BCD Job No. Date 10-27-97

Project and/or Site Chassahowitzka River Well No. CSPR-3

Work Requested By Permit No 558633.01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mendez					Loaded Supplies &
	Paul					Air compressor & Drove
	Collins					to jobsite & developed
						CSPR-3 w/ Air Compress
						& then blowed surficial
						well w/ Air Compressor
						& then moved Air Compr
6 in	Development for	1.5	hr			or to Jenkins Creek site
	CSPR-3 well					& parked it & shut
4 in	Development for	30	min			down for the DAY Due
	Surficial well					to Rain

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Air Compressor 475CFM	1	DAY			

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SIGNED _____ Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D. P.O. No. BCD Job No. Date 10-28-

and/or Site Jenkins Creek site Well No. CSPR-6

Work Requested By permit No 548632-01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensiar					Went & set up & CORED ho
	Paul					to 43.0ft & Put on 10in
	Collins					bit & drilled hole to 43
						Set 6in Casing & grouted
						& Let Set picked up
						Bags etc.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
6in PVC Sch 40 Solid	43.0	ft			Total Depth of h
Pipe					Casing 43.0ft
Type II grout	12	BAGS			
					Total Depth of co
					43.0 ft.

THIS REPORT MUST BE FILLED OUT BY THE OPERATOR DAILY

SIGNED (Operator)

SIGNED Customer and/or Owner

Original copy to BURNETT Office
One copy to customer and/or Owner

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Tues.

BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D P.O. No. BCD Job No. Date 10-28-97

and/or Site Chassahowitzka River Well No. permit No 598633-01 CSPR-3 & surficial well

Work Requested By

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensing					Went & put Riser's & PADS
	Paul					around CSPR-3 & surficial
	Collins					wells & then cleaned up
						site.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
8 X 8 in STEEL Riser	1				
6 X 6 in STeel Riser	1				
3 X 3 Forms	2				
Concrete mix	14	BAGS	6OLBS		
6in sch 40 Slip CAP	1				

THIS REPORT MUST BE FILLED OUT BY THE OPERATOR DAILY

SIGNED L Mensing (Operator)

SIGNED Tina Johnson Customer and/or Owner

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One copy to customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D P.O. No. ______ BCD Job No. ______ Date 10-29

P... and/or Site Jenkins Creek Site Well No. CSPR-6

Work Requested By ______ Permit No 598632.01

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Mensira					Went + tagged Cement at
	Paul					ground 6in Caseing + tripped
	Collins					Rods in hole + tagged grout in
						6in Caseing At 40.0ft + ...
						out well w/ 6in Bit to 75.0ft.
	Total Depth of well					+ developed well w/ Air com...
	95.0ft.					+ pulled up + set 4in Su...
	Development time		1.5			well to 12.0ft. + developed
	for 6 in well CSPR-6					well w/ AIR Compressor. +
						put Risers on 6in + 4in
	Development time		.5			wells + set pads + poured
	for surficial well					Cocreate ground to them +

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Type II grout	2	Bags			Cleaned up site + m...
Concrete mix	8	Bags			to Cow Ranch.
2X2X4 pads	2				
8X8X5.0ft Riser Steel	1				
6X6X5.0ft Riser "	1				
6in PVC sch40 SlipCap	1				
6in PVC sch40 Coupling	1				
4in TRI Lock PVC Screen pipe	10.0	ft			
4in TRI Lock PVC Solid pipe	5.0	ft.			
4in TRI Lock PVC CAP	1				
4in TRI Lock PVC plug	1				
4in PVC Coupling sch40	1				
20-30 Sand	9	Bags			
Bentonite pellets	2LBS				

THIS REPORT MUST BE FILLED OUT BY THE OPERATOR DAILY

SIGNED G Mensing (Operator)

SIGNED [signature] Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner S.W.F.W.M.D P.O. No. BCD Job No. Date 10-29-97

P. and/or Site Jenkins Creek to Cove Ranch Well No.

Work Requested By

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equip-ment Time	Work Description
	Mensior					Went & moved Rig from
	Paul					Jenkins Creek to Cove
	Colling					Ranch. Dropped off Ri
						Water truck trailer &
						Air compressor.

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer or Owner: South West   P.O. No. ______   BCD Job No. 2-9-98   Date 2-9-9[illegible]

Place and/or Site: Natures Resort CSPR-4   Well No. ______

Work Requested By ______

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glen [illegible]	7				Set up rig and augered down to 17'
	Roger Paul	7				pulled out and drilled down
	Dave Kastler	9				to 18' with 12" bit grouted
						7 bags with tremie no return
						let set until 2 PM tagged at
						app 15' mixed and pumped 5 ba[illegible]

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
6" solid PVC	18'				
Mobe to site	1				
Augered	17				
Drilled	18				
Cement	12	bags			
Gel	1/2				

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer or Owner: South West P.O. No. ____ BCD Job No. ____ Date: 2-10-98

Place and/or Site: CSPR4 + CSPR7 Well No. ____

Work Requested By: ____

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glen Caldwell	9				Tripped in CSPR-4 drilled from 18' to 43'; Develope well for 45
	Roger Paul	8 1/2				sleeve pump test for 45 min
	Dave Xander	8 1/2				cleaned up site; Moved to
						CSPR7 set up tried casing
						to 38' no [illegible] in [illegible]
						started falling in drilled
						down with 19" bit set 40'
						of 10" PVC casing

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Gel	10 bags				
Hole plug	2				
10" PVC Casing	40'			CSPR-7	
Move to site	1				
Develope Well	45 min				
Pump test well	45 min				
CSPR-4 open					
Drilled 5 7/8" hole	25'				

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SIGNED: Glen Caldwell (Operator) SIGNED: Tim [illegible] Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer or Owner: South West P.O. No. ____ BCD Job No. ____ Date: 2-11-98

Place and/or Site: CSPR 7 Well No. ____

Work Requested By: ____

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glen [illegible]	9½				Went to Lakeland picked up
	Roger Paul	6½				more casing and 9 7/8" bit
	Dave Xander	7½				put on and [illegible] another
						of 10" casing put 2 bags of hole
						plug around casing and drilled
						down to 60' set 6" casing
						grouted 16 bags to surface
						Roger went to Nature Reserve
						to put on protective cover [illegible]
						pour Pad

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
CSPR 7					
10" Casing PVC	10'				
Cement	16 bags				
Hole plug	2 bags				
6" Casing PVC	63'				

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner: South West   P.O. No. ____   BCD Job No. ____   Date 2-12-98

Place and/or Site ____   Well No. ____

Work Requested By ____

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glenn Clayton	8½				Tripped in drilled from 60' to
	Roger Paul	8				5⅞" bit. Developed from 9 to 10
	Dave Xander	8				pump test 10 to 11:30 hole to trip
						back in and drill from 85 to 11
						Developed from 12 to 1:15 pump test
						1:15 to 2:30. Drilled surface
						well 20' screen 5' solid 13 bag
						sand Tim picked up 10 more ba
						Developed for 1 hr cleaned up a
						took equipment to Palmer Resort

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
CSPR-7 Deep					
Development time	2½ hr				
Pump test	3¼ hr.				
Open Hole 50' 5⅞"	50				
CSPR Shallow					
4" screen	20'				
4" solid	5'				
4" cap	1				
4" flush valve	1				
Develop	1 hr.				

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SIGNED Glenn Clayton (Operator)   SIGNED Tim [illegible] Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner: Swift & Mead P.O. No. ______ BCD Job No. ______ Date 5-19-9

... and/or Site: CSPR-2 Well No. ______

Work Requested By ______

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glen [illegible]	13½	2		4	Met at site sent Roger &
	Roger Paul	13½				Travis after water truck
	Travis Back	13½				Met with Forest Service. Could
						find survey crew, Rick went to
						get mud & station. Set up &
						Cored down to 52'. Hit rock
						lost circulation tripped out put
						3 bags of hole plug drilled down
						31' set 32' of 10" casing grout
						5 bags
						Water truck got back at 11:00

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Hole plug	3				Survey crew didn't get
Cement	5				until 830
Cored	52'				
10" casing	32'				

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner Swift Mur P.O. No. BCD Job No. Date 5-20-98

and/or Site CSPR-2 Well No.

Work Requested By

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	Glen Clifford	10	2	½	7½	Went to site glen & at mud to
	Roger Paul	10				start drilling set 10" casing
	Travis Burke	10				to set 6" went to 55 feet grout
						14 bags let set up to get rig off
						sent Roger to lakeland for supp
						Travis & I went to Clay to pick up
						sand moved rig set surface
						well to 20' sand pack

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
Drilled 10" To 55'	34'	9 7/8" Rola			
6" PVC	60				
Cement	14				
el	1				
4" screen	15'				
4" solid	8'				
4" cap	2				
4" coupler	1				
Sand	10 bags				

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SIGNED [signature] Customer and/or Owner

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner: Swift Mud P.O. No. ______ BCD Job No. ______ Date 5-21-

[illegible] and/or Site: CSPR-2 Well No. ______

Work Requested By: ______

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	[illegible signature]	11	2			Went to site shovel up
	Roger Paul	11				mud tools to ditch set
	Pierre Buck	11				rig back up on 6" to drill
						and develop drilled to 95
						pulled rods tried to get 2"
						down for reverse air, won't
						go past 64 had to trip
						in and drill back to bottom
						put 2" back in went to 90
						reverse air wouldn't pull [illegible]

Item Description	Quantity Used	Units	Unit Price	Total Price	Remarks
5 7/8" bit	40'				
Development supervision	1 hr	730 to 830			
[illegible] CSPR-2	1 hr				

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BURNETT CONTRACTING AND DRILLING COMPANY, INC.

CUSTOMER TIME AND/OR MATERIAL

Customer and/or Owner: South West P.O. No. ______ BCD Job No. ______ Date: 5-26-98

F... and/or Site: CSRP-2 Well No. ______

Work Requested By: ______

Desc. of Eqpt. or Vehicle	Operator/Helpers	Crew Total Time	Operator Travel Time	Crew hrs oth. than eqpt. time	Equipment Time	Work Description
	[illegible]		2			Went to set a tripod in well
	Rene Paul					go past 68' put in foam went
	Travis Rucke					back to 95' when foam cleared
						air was... go back in formation
						had to pull up to 85' to get
						return. Tripod out is 2"
						in to blow with could get [illegible]
						gpm had to run tubing on outer
						tract enough
						1½ hp pump would lift pump [illegible]

Item Description	[illegible]	Units	Unit Price	Total Price	Remarks
Foam	[illegible]				
pump test	[illegible]				
Development	[illegible]				

THIS REPORT [illegible] BE FILLED OUT BY THE OPERATOR DAILY

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