Preliminary Hydrogeological Investigation Report
Calusa Green Solid Waste Management Facility
Charlotte County, Florida

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PROFESSIONAL CERTIFICATION

I certify that this document entitled "*Preliminary Hydrogeological Investigation Report Calusa Green Solid Waste Management Facility, Charlotte County, Florida*" *was* prepared by Progressive Water Resources, LLC, a firm licensed to practice engineering and geology. All analyses and interpretation(s) provided by Progressive Water Resources were supervised by David J. Brown, P.G. No. 566, a Registered Professional Geologist pursuant to Chapter 492, Florida Statutes (F.S.) and Chapter 61G16, Florida Administrative Code, F.A.C. and are based on sound geologic and hydrogeologic information available at the time the report was prepared.

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CONTENTS

Section			Page
PROFESSIONAL CERTIFICATION			i
TABLE OF CONTENTS			ii
1.0	EXECUTIVE SUMMARY		1
2.0	INTRODUCTION		3
	2.1	Purpose and Scope	3
	2.2	Site Description	3
	2.3	Local Topography and Drainage	3
	2.4	Regional Geology	4
		2.4.1 Surficial Deposits	5
		2.4.2 Tamiami Formation	5
		2.4.3 Hawthorn Group	5
		2.4.4 Suwannee, Ocala Limestones and Avon Park Formation	6
	2.5	Regional Hydrogeology	7
		2.5.1 Surficial Aquifer System	7
		2.5.2 Intermediate Aquifer System	7
		2.5.3 Floridan Aquifer System	8
		2.5.4 Regional Aquifer Water Levels and Confinement	8
3.0	SUBSURFACE INVESTIGATION METHODS		10
	3.1	Quality Assurance	10
	3.2	Soil Boring Procedures	10
	3.3	Laboratory Test Procedures	10
	3.4	Monitor Well Construction	10
	3.5	Lithology Determination	11
	3.6	Hydrologic Investigations	11
		3.6.1 Water Level Measurements	11
		3.6.2 Aquifer Performance Tests	12
4.0	SUMMARY OF SUBSURFACE INVESTIGATION		13
	4.1	Site Specific Hydrology	13
		4.1.1 Lithology	13
		4.1.2 Potential Sinkhole Development	13
		4.1.3 Groundwater Flow and Aquifer Characteristics	14
5.0	CONCLUSION		15
6.0	REFERENCES CITED		16

FIGURES

Figure		Page
Figure 1	Site Location Map	17
Figure 2	Site Layout	18
Figure 3	Physiographic Regions	19
Figure 4	Land Surface Elevation	20
Figure 5	Local Drainage and Hydrography	21
Figure 6	Localized Soils	22
Figure 7	Hydrogeologic Data Locations	23
Figure 8	Regional Hydrogeologic Framework	24
Figure 9	ROMP 12 Groundwater Levels	25
Figure 10	ROMP 13 Groundwater Levels	26
Figure 11	Upper Florida Aquifer Recharge	27
Figure 12	Piezometer No. 1 (P-1) Well Construction Diagram	28
Figure 13	Piezometer No. 2 (P-2) Well Construction Diagram	29
Figure 14	Piezometer No. 3 (P-3) Well Construction Diagram	30
Figure 15	Top Elevation of Clay (Peace River Formation)	31
Figure 16	Sinkhole Locations and Thickness of Sediments above Limestone	32
Figure 17	Hydraulic Gradient Analysis	33

TABLES

Table		Page
Table 1	Piezometers and SPT /Soil Boring Locations and Information	34
Table 2	Piezometer Water Levels	35

APPENDICES

Appendix		Page
Appendix A	Site Survey	36
Appendix B	Geotechnical Report	37

1.0 Executive Summary

The proposed Calusa Green Solid Waste Disposal Facility (CG Facility) is located within the Prairie Creek and Shell Creek watersheds, which drain to the Peace River and ultimately Charlotte Harbor. The site is more specifically located within the sub-basins of Myrtle Slough (Shell Creek Watershed) and Cow Slough (Prairie Creek Watershed). Information from the South Florida Water Management District (SFWMD) indicates that land surface elevations, within the project boundary, range from approximately 53 to 59 feet above the 1988 North American Vertical Datum (NAVD 88). The site was historically part of a large citrus operation and is currently permitted by the SFWMD to discharge stormwater to the north-northeast towards Montgomery Canal, a Class III surface water body.

The hydrogeologic units underlying the subject property consist of the Surficial Aquifer System (SAS), i.e. "water table aquifer", composed of near-surface undifferentiated sands, underlain by shell fragments of the Caloosahatchee Formation. The SAS is approximately 26 feet in thickness. Underlying the SAS is the Intermediate Aquifer System (IAS) comprised of the Hawthorn Group sediments, which extends to a depth of approximately 600 feet below land surface (bls). Underlying the IAS is the upper portion of Floridan Aquifer System (FAS) that extends to depths of over 1,500 feet bls and includes the Suwannee Limestone, the Ocala Limestone and the Avon Park Formation. The Hawthorn Group sediments of the IAS is composed of a complex interbedded sequences of clay; fine sands and dense limestone which collectively form the confining unit above the Suwannee Limestone. The Hawthorn Group greatly inhibits vertical hydraulic communication, resulting in no recharge to very low recharge potential (l-inch or less) between the SAS and the underlying FAS as indicated in Map 6 of Charlotte County's Comprehensive Plan. The low vertical rate of infiltration is also indicative of the site's low sinkhole potential.

To investigate the site's hydrogeology, ten (10) onsite geotechnical borings were advanced to 50 feet bls, through the SAS and into the upper contact of the Hawthorn Group, (Peace River Formation). The onsite drilling indicated that the upper section of the Peace River Formation to be composed of dense, dark green, marine clay and clayey sands that exist at a consistent depth beneath the site. Laboratory testing of undisturbed samples of the clay indicated very low vertical permeabilities and supports the reported low recharge rate of the area. In addition to the geotechnical borings, three (3) SAS shallow wells or piezometers were installed and tested to determine horizontal permeability, groundwater flow direction and gradient. These data indicate that horizontal permeabilities are also relatively low, thereby restricting the horizontal movement of water.

Therefore, based on the preliminary data collected to date, the hydrogeologic properties of the site provide reasonable assurance that the proposed Calusa Green Solid Waste Disposal Facility

is in agreement with Charlotte County's Future Land Use Policies regarding water quality protection and aquifer recharge potential.

2.0 INTRODUCTION

2.1 Purpose and Scope

The purpose of this investigation was to evaluate the site-specific hydrogeological characteristics through research and field investigations in accordance with the requirements set forth within Section 62-701.410, Florida Administrative Code (F.A.C) in support of the Planning and Development Phase of the Calusa Green Solid Waste Disposal Facility (CG Facility). This document provides preliminary site-specific information on the local geology and hydrogeology of the subject property and includes the results and methodologies utilized during the investigation.

2.2 Site Description

The proposed CG Facility is located approximately 7.4 miles east-northeast of the intersection of State Roads 31 and 74 in northeastern Charlotte County, Florida. The site is situated in Section 18, Township 40 South, Range 27 East as shown in **Figure 1**. A site survey has been provided in **Appendix A**.

The site was historically used for citrus cultivation. However, a majority of the citrus trees were removed as part of the State of Florida's citrus canker eradication program. More recently, a small section of the southern portion of the site has been replanted with citrus. To the north of this area, many of the historic citrus operation furrows, beds and ditches are still evident. South Florida Water Management District (SFWMD) agricultural Water Use and Environmental Resource Permits, Nos. 08-00006-W and 08-00006-S, are currently active and authorize the irrigation of citrus and discharge of stormwater from the citrus operation. The site is currently characterized as open, predominately vegetated with grasses and weeds, allowing for easy access to investigative equipment. To preliminarily investigate the subsurface conditions at the CG Facility site, ten (10), fifty-foot deep, Standard Penetration Test (SPT) borings were drilled at the locations shown on **Figure 2**.

2.3 Local Topography and Drainage

The CG Facility is located within the southern portion of the DeSoto Plan physiographic province (White, 1970) in northeastern Charlotte County, Florida as shown in **Figure 3**. The DeSoto Plain is primarily located in Manatee, Hardee, DeSoto, Highlands, Charlotte and Glades counties. The DeSoto Plain generally slopes to the south and has elevations which range from approximately 85 feet in the north to approximately 50 feet above mean sea level (msl) to the south. White characterized the DeSoto Plain as a submarine plain due to its lack of relict shorelines.

Based on the South Florida Water Management District (SFWMD) 300-foot Digital Elevation Model (DEM) for the area, land surface elevations within the project boundary range from approximately 53 to 59 feet above the North American Vertical Datum of 1988 (NAVD 88) as shown in **Figure 4**. As shown in **Figure 4**, the CG Facility site gently slopes to the north. The land surface elevations at the 10 SPT borings varied from 56.36 to 58.78 feet NAVD 88 and closely agree with elevations portrayed in the SFWMD DEM.

The site is located within the lower portion of the Peace River Basin and within the local watersheds of both Prairie and Shell Creek, which drain to the Peace River and ultimately Charlotte Harbor. The site is actually within the sub-basins of Myrtle Slough (Shell Creek Watershed) and Cow Slough (Prairie Creek Watershed) as shown in **Figure 5**. However, it appears that most of the surface water drains to the north-northeast, around the southern perimeter of the Long Island Marsh, via the Montgomery Canal. Montgomery Canal, a Class III waterbody, drains into Cow Slough and eventually into Prairie Creek, a Class I waterbody. The CG Facility is outside of Charlotte County's Watershed Overlay District setback distances and is not located within, or in proximity to, Charlotte County's Public Water System Wellhead Protection Areas.

Soil survey information from the National Resource and Conservation Service (NRCS) indicates the following soil series for the site, identified in their order of predominance: Myakka Fine Sand, Immokalee Sand, Valkaria Fine Sand, Anclote Sand (Depressional), Smyrna Fine Sand, Pompano Fine Sand (Depressional), Malabar Fine Sand, Myakka Fine Sand (Depressional) and Pineda Fine Sand, as shown in **Figure 6**. The predominate soil, Myakka Fine Sand, has a soil profile consisting of a surface layer of approximately six-inches of gray fine sand, underlain by approximately twenty inches of light gray fine sand, underlain by approximately six-inches of organic stained, reddish brown to yellowish brown fine sand. In 1989 the legislature designated Myakka Fine Sand as the official state soil. Myakka soils are unique to Florida and occur in more than one million acres of Flatwoods, making it the single most extensive soil in the state. The depressional-type soils found at the site occur in shallow ephemeral marshes and ponds that existed before the site was developed for citrus cultivation. SPT borings located immediately next to these remnant features indicated the presence of black organic fine sands. No mucks or thick sequences of organic-rich sediments were identified. None of these SPT borings performed to date indicated any structural influences or active karst features, such as fractures and/or sinkholes.

2.4 Regional Geology

The following description of the regional geology of the area relied heavily upon the United States Geological Survey (USGS) Water Resource Investigation Report (WRIR) 01-4015, *Hydrogeologic Framework and Geochemistry of the Intermediate Aquifer System in Parts of*

Charlotte, De Soto, and Sarasota Counties, Florida (Torres et al, 2001). This report used the stratigraphic descriptions for six Southwest Florida Water Management District (SWFWMD) Regional Observation and Monitoring Program (ROMP) Sites that included ROMP Sites 12 and 13, which are located approximately six miles to the northwest and northeast of the subject property, respectively, as shown in **Figure** 7. The relevant geologic stratigraphy of the area consists of (in descending order): undifferentiated surficial deposits, the Caloosahatchee Formation, the Tamiami Formation (where present), the Hawthorn Group that consists of the Peace River Formation and Arcadia Formations (may also include the Nocatee and Tampa Members), the Suwannee Limestone, Ocala Limestone and Avon Park Formation. A general characterization of each geologic stratigraphic unit is provided below.

2.4.1. Surficial Deposits

The surficial deposits in the area are a comprised of Plio-Pleistocene to Holocene-age; highly fossiliferous siliciclastics. In Charlotte County, the surficial deposits generally include the Caloosahatchee Formation (Marl) of Pliocene and Pleistocene age consisting of shell beds, shelly, sandy, or silty marl, and sandy limestone. At ROMP 12, the Caloosahatchee Formation extends from approximately 7 feet to 29.5 feet below land surface (bls) and is comprised chiefly of quartz sand and marine shells with lesser amounts of sandstone, limestone and phosphate. The SPT borings appear to indicate the presence of the Caloosahatchee Formation at the site, i.e., shell-rich sediments with minor phosphate particles, which occurred from approximately 12 to 30 feet bls.

2.4.2 Tamiami Formation

The Tamiami Formation occurs over much of southern Florida and consists of sand, clay, carbonate, and reef facies. The formation contains thick carbonate sequences in southwestern Florida and grades into siliciclastic sediments to the north and east. In Charlotte, the base of the Tamiami Formation occurs at the top of the first major green dolosilt/sand unit that marks the top of the Peace River Formation (Missimer, 1992). While the Tamiami Formation is described as approximately 70 feet thick at ROMP 12, it appears to absent at ROMP 13. Based on the subsurface exploration conducted to date, the Tamiami Formation appears to also be absent at the CG Facility site.

2.4.3 Hawthorn Group

In the area of the proposed CG Facility, the 400 to 600-foot thick, Miocene- and early Pliocene-age Hawthorn Group sediments contain multiple distinct lithologic units consisting of interbedded layers of the siliciclastic (sand) and carbonate units. The sediments consist of highly variable mixtures of clay, silt, sand, and carbonate. Limestone is the dominant

carbonate phase in the Hawthorn Group. Additionally, the Hawthorn Group sediments contain unique minerals including phosphorite ranging from trace amounts up to approximately 50 percent by volume. The Hawthorn Group includes the Peace River Formation and Arcadia Formation.

The Peace River Formation is the uppermost unit of the Hawthorn Group and unconformably overlies the Arcadia Formation. Siliciclastics are the predominate lithology in the Peace River Formation, comprising greater than 66 percent of the rock material. Clay beds are common in the formation and phosphate, in varying amounts, generally is present. The carbonate content increases near the base of the formation.

The Arcadia Formation is the basal unit of the Hawthorn Group. The Arcadia Formation may contain up to two named members, in descending order, the Tampa and Nocatee Members. The Arcadia Formation is composed predominately of carbonate rocks with varying amounts of included and interbedded siliciclastics. The predominant carbonate rock type is dolostone. The undifferentiated Arcadia Formation consists predominantly of limestone and dolostone containing varying amounts of quartz sand, clay, and phosphate grains. Thin beds of quartz sand and clay are present sporadically throughout the section.

2.4.4 Suwannee Limestone, Ocala Limestone and Avon Park Formation

Underlying the several hundred foot thick Hawthorn Group, is the 70 to 400-ft thick, Oligocene-age Suwannee Limestone which is a granular, fossilifereous limestone. The Suwannee Limestone generally is distinguished from the overlying Hawthorn Group by the lack of phosphatic sand content; however, the contact becomes obscure in Charlotte County (Randazzo, 1997).

Underlying the Suwanne Limestone is the 200 to 300-ft thick, late Eocene-age Ocala Limestone. The Ocala Limestone can contain two distinct lithologic units that include a basal dense dolostone and an upper relatively pure, porous limestone. The limestone unit has been described as fossiliferous, white, soft, friable, and porous, and includes fossils of foraminifera, bryozoan fragments, and echinoid remains loosely bound by a matrix of micritic cement. The top of the Ocala ranges from about 700 to about 1,100 feet below sea level.

The 1,200-ft thick, middle Eocene-age Avon Park Formation is the oldest stratigraphic unit exposed in Florida (Miller, 1986). Lithologically, the formation consists predominately of cream, tan, or light-brown, soft to well-indurated limestone. The limestone may be interbedded with dark brown, highly fractured dolostone. The top of the Avon Park ranges from about 1,000 to 1,230 ft below sea level the region.

2.5 Regional Hydrologeology

The hydrogeologic units underlying the subject property consist of the Surficial Aquifer System (SAS), the Intermediate Aquifer System (IAS) and the Floridan Aquifer System (FAS). Deposits overlying the Hawthorn Group comprise the SAS. Deposits of the Hawthorn Group form the IAS, and the underlying Oligocene and older carbonate rocks including the Suwannee and Ocala Limestones as well as the Avon Park Formation represent the Upper Floridan Aquifer (UFA) of the FAS. The FAS consists of the Upper and Lower Floridan aquifers that are separated by a middle confining unit (Miller, 1986). Each of these aquifer systems include one or more water-producing zones separated by less-permeable units. The hydrogeologic framework described in this report is based on data from the six ROMP sites in the area and is provided in **Figure 8**.

2.5.1 Surficial Aquifer System

The surficial aquifer system comprises Pliocene to Holocene-age, unconsolidated to poorly indurated, clastic sediments, and is defined as a permeable unit contiguous with land surface (Southeastern Geological Society, 1986). The thickness of the SAS ranges from approximately 22 to 30 feet onsite based on the preliminary SPT borings. The hydraulic properties of the surficial aquifer system have been estimated from aquifer tests conducted at three SWFWMD ROMP sites in the area. The reported ROMP values for the horizontal hydraulic conductivity of the SAS ranged between 33 and 1,390 feet per day. Site specific "slug tests", performed on the three 20-foot deep piezometers installed as part of this preliminary investigation, indicate much lower values, with an average horizontal hydraulic conductivity of 2.6 feet per day, and weighted test values ranging for each piezometer ranging from 2.25 feet per day to 3.03 feet per day.

2.5.2 Intermediate Aquifer System

The intermediate aquifer system includes all rock units that lie between the overlying surficial aquifer system and underlying upper Floridan Aquifer, and generally coincide with the stratigraphic unit designated as the Hawthorn Group (Torres et al, 2001). In general, the IAS begins with the presence of low permeability sandy clays, silty clays and marls that function as a confining unit between the overlying SAS and the Peace River Formation. The IAS also typically includes up to three water-producing zones that are separated by confining units and composed primarily of carbonate and sandy carbonate rocks. The IAS is generally confined from the underlying UFA by a sandy clay or clayey sand confining unit. The three water producing zones within the IAS have been described as follows: the Tamami/Peace River zone (PZ-1), the Upper Arcadia Zone (PZ-2) and Lower Arcadia Zone (PZ-3). Generally, the carbonate units yield substantial volumes of water to wells as compared to the less permeable siliciclastic units.

2.5.3 Floridan Aquifer System

The UFA of the FAS consists of a thick carbonate sequence that includes all or part of the Suwanee Limestone, Ocala Limestone and the Avon Park Formation. The UFA contains one or more water-producing zones separated by less-permeable units. In general, the permeability of the UFA is very high in parts of the Avon Park Formation and less so in the Suwannee and Ocala Limestones.

2.5.4 Regional Aquifer Water Levels and Confinement

Figures 9 and 10 include hydrographs for ROMP 12 and ROMP 13, respectively, which are in proximity to the subject property. It should be noted that the potentiometric surface of the UFA and lower IAS is consistently higher than land surface elevation at ROMP 12 indicating that the UFA and lower IAS exerts an upward gradient on the SAS at ROMP 12. Therefore, wells penetrating into the UFA and lower IAS near ROMP 12 discharge under artesian pressure. However, the potentiometric surface of the UFA is approximately 15 to 20 feet below land surface at ROMP 13 indicating a downward water level gradient from the SAS towards the underlying UFA as this location. Using Geographic Information Systems (GIS) shapefiles to compare the dry season May 2010 UFA potentiometric surface with land surface elevations in the area, an approximate flowing-artesian line can be delineated as shown in **Figure 7** where the UFA potentiometric surface is above land surface, west of the proposed CG Facility. The flowing artesian line most likely oscillates based hydrologic conditionsmoves easterly during the wet season. Note that the subject property is in an area of higher elevation, therefore the UFA potentiometric surface is not expected to reach land surface in this area and a downward head gradient from the SAS to the underlying IAS and UFA exists. This water level relationship appears to be accurate for the site, as the water level in irrigation Well No. 8, open to the IAS is approximately 9 feet lower than the water level in the nearby piezometer, P-2.

It should be noted that a similar water level differential exists between the SAS and the lower IAS and UFA at both ROMP locations, denoting excellent confinement between these aquifer systems and at the proposed CG Facility site. Therefore, while it is anticipated that UFA water levels are below SAS water levels at the subject property indicating a downward gradient of groundwater flow, the confinement between the SAS and UFA significantly inhibits recharge from the SAS to the producing zones of the underlying IAS and UFA. In fact, the USGS estimates that Floridan Aquifer recharge in the area is less than one inch per year as shown in **Figure 11** (Aucott, 1988) which further indicates considerable confinement in the area. Site specific testing of the clay unit indicating the top of the IAS indicates very low vertical permeabilities, ranging from 1.47×10^{-7} to 1.53×10^{-6} centimeters per second (cm/sec).

The lack of vertical recharge to underlying aquifers at the CG Facility site is further supported by Charlotte County's Future Land Use Element Map No. 6, entitled *Prime Aquifer Recharge Areas.* Although the map's title is potentially confusing, Map No. 6 characterizes the CG Facility site as having "No recharge to very low recharge" (0.0 to 1.0 inches per year) to the upper Floridan Aquifer". The very low rate of vertical recharge identified in Map No. 6 is in agreement with the CG Facility site geology, vertical permeability test results, and water level differentials derived as part of this investigation.

3.0 SUBSURFACE INVESTIGATION METHODS

3.1 Quality Assurance

The subsurface investigation was conducted in accordance with the standard operating procedures prescribed by the Florida Department of Environmental Protection (FDEP) Quality Assurance Section Chapter 62-160 and applicable industry standard operating procedures.

3.2 Soil Boring Procedures

The subsurface conditions within the proposed solid waste disposal area were explored using a total of ten (10) Standard Penetration Test (SPT) borings (S-1 to S-10) advanced to depths of 50 feet below existing grade. The locations and pertinent information regarding the SPT and soil borings have been provided in **Table 1**. SPT borings were performed in accordance with ASTM D-1586 procedures, with continuous sampling performed above a depth of 10 feet, to detect slight variations in the soil profile at shallow depths. The basic procedure for the SPT is as follows: A standard split-barrel sampler (split spoon) is driven into the soil by a 140-pound hammer falling 30 inches. The number of blows required to drive the split spoon 1-foot, after seating the first 6 inches, is designated as the penetration resistance, or N-value; this value is an index to soil strength and consistency.

3.3 Laboratory Testing Procedures

The confining unit, i.e. clay, was observed in the lower section of all 10 SPT borings and seven (7) thin wall tube (Shelby-Tube) samples were extracted from depths ranging from 25 to 43 feet bls at test borings S-1, S-3, S-4, S-5, S-8, S-9 and S-10. The SPT jar samples recovered from the soil test borings were returned to a laboratory, visually examined by an engineer and compared to the field descriptions. Representative soil samples were selected for laboratory testing consisting of twenty-one (21) wash <200 sieve analyses, twenty-one (21) moisture content tests, seven (7) triaxial permeability tests and seven (7) unit weight tests. The test were performed to aid in classifying the soils and to help evaluate the general engineering and permeability characteristics of the site. Results of the analyses, and their respective vertical sampling depths, are indicated on the boring logs provided in **Appendix B**.

3.4 Piezometer Well Construction

The installation of shallow piezometers occurred on April 17, 2012. The locations and specifications for each piezometer have been provided in **Table 1**. The piezometers, designated P-1, P-2, and P-3, were installed using a truck-mounted mobile drilling rig equipped with a 6.75-inch, outside diameter (O.D.) hollow stem auger. The boreholes were completed down to

approximately 20 feet bls. All piezometer well installations were completed in accordance with the FDEP Monitor Well Design and Construction Guidance Manual (FDEP, 2008), and ASTM D-1452 procedures.

As shown in **Figures 12 – 14**, all three piezometers consist of a 4-inch sediment "sump" or point, followed by a ten-foot section of 2-inch diameter, 0.010 inch slotted and threaded schedule 40 PVC well screen that extends up to approximately 10 feet bls. Above the screen, approximately 13 feet of solid 2-inch diameter, schedule 40 PVC casing extends to approximately 3 feet above land surface. The 10-foot section of slotted well screen allows for the intercept of the SAS, i.e., water table, and can be used for both water level and water quality analyses.

The borehole annulus around the PVC, from the bottom of the borehole to approximately 3 feet bls was backfilled with clean, 20/30 fine sand. Above the fine sand, a 1-foot bentonite plug was emplaced. Type I/II cement was then placed on top of the bentonite plug to seal off the top 2 feet around the piezometer. All piezometers were completed with a 2-foot x 2-foot x 4-inch thick concrete slab and a protective metal casing around the PWC riser with a locking metal lid. A 2-inch PVC vented cap was placed on top of the 2-inch piezometer well.

Subsequent to construction, all three piezometers were developed by the use of a Geopump to pump out all water inside the piezometer, until the water was free of sediments. After installation, each piezometer was outfitted with a water level data logger.

3.5 Lithology Determination

The lithology beneath the site was characterized by visual analysis of soils collected from the split spoon samples. Split-spoon samples were collected and sediment characterized at selected intervals from land surface to 50 ft bls for all borings. All split spoon borings and field sampling events were overseen and observed by a Professional Geologist. Soil boring results have been provided in **Appendix B**.

3.6 Hydrologic Investigations

3.6.1 Water Level Measurements

To facilitate hydrogeologic characteristic calculations, a measuring point elevation (MPE) was surveyed at a small "V-Notch" cut into the top of the piezometer well casing. Depth to groundwater was measured in the wells from the bottom of a "V-Notch" on the well casing at each of the piezometers. Water level elevation at each piezometer was calculated by subtracted the depth to water (DTW) at each of the piezometers from the surveyed MPE.

The calculated water level elevations were then used to produce a surficial aquifer hydraulic gradient map using the "three-point" technique that is widely used by the USGS.

3.6.2 Aquifer Performance Tests

Slug Tests were performed at each piezometer location. The tests were performed by purging a portion of the water column (the slug) from the piezometers using a bladder pump and recording the water level recovery in the well using a submersible data logger. A hydraulic conductivity was determined for the SAS adjacent to each piezometer.

4.0 SUMMARY OF SUBSURFACE INVESTIGATION

4.1 Site Specific Hydrogeology

4.1.1 Lithology

In general, very loose, medium to dense, gray and brown fine sand with varying amounts of shell fragments, and silt and clay fines were encountered from approximately land surface to approximately 23 feet bls. This description appears to be consistent with the Caloosahatchee Formation previously described at ROMP 12. Below 23 feet, to the boring termination depth of 50 feet bls, SPT blow counts decreased indicating a very soft to medium stiff, sandy, green clay intermixed with very loose greenish-gray and green, phosphatic clayey fine sand. Although the Tamiami Formation is present at ROMP 12, the sediments underlying the Caloosahatchee Formation at the subject property may be more consistent with the Peace River Formation given the alternating beds of clay and phosphatic sands. If the Tamiami Formation does exist, it is extremely thin and cannot readily be distinguished from the sediments associated with the Peace River Formation.

The clay unit encountered at the site is therefore most likely associated with the upper contact of the Peace River Formation and appears to be relatively thick and uniform throughout the proposed CG Facility area as shown in **Figure 15**. Constant head vertical permeability and unified classification of the clay unit encountered indicated vertical permeabilities ranging between 1.47×10^{-7} and 1.53×10^{-6} cm per second (4.17×10^{-4} to 4.34×10^{-3} feet/day). Despite indications that the clay continued to depths beyond the SPT borings, a 23 to 27 foot confining layer appears to exist at the upper contact of the IAS. Based on the testing to date, the leakance coefficient (K'/b') of this confining layer would range from 1.88×10^{-4} to 1.5×10^{-6} days^{-1} which represents a significant confining layer and impediment to the vertical exchange of water. The site is therefore characterized as having a very low recharge potential to the underlying producing units of the IAS and FAS. The results of the permeability testing and sieve analyses have been provided in **Appendix B**.

4.1.2 Potential of Sinkhole Development

An evaluation of sinkhole potential at the site was also completed. As shown in **Figure 16**, the subject property lies within an area that has more than 200 feet of low permeability sediments separating land surface from limestone (USGS, 1985). Sinkholes occur when overlying surficial sediments "collapse" or "ravel" into the voids caused by the dissolution of limestone. This is much less likely in areas which have a thick sequence of sand/clay sediments overlying limestone. In fact, based on the Florida Geological Survey (FGS) Sinkhole Database last updated in 2007, no sinkholes have been reported within 19 miles of

the subject property. In addition, the subject lies within an area of very low recharge potential due to the confinement of the SAS from underlying aquifer systems as shown in **Figure 11**. Therefore, the probability of sinkholes occurring at this location is very low.

4.1.3 Groundwater Flow and Aquifer Characteristics

Groundwater levels in the SAS typically respond quickly to rainfall and prolonged droughts, resulting in seasonal highs and lows. Dry season measurements obtained from site on April 23, 2012 indicate an approximate depth to water level ranging from 4.95 feet to 5.22 feet bls as shown in **Table 2.** Using these values, the horizontal hydraulic gradient was calculated using piezometers P-1, P-2 and P-3. The calculated horizontal hydraulic gradient, or change in water level per foot of distance, for April 23, 2012 was 1.16×10^{-3} Foot per Foot. The direction of SAS groundwater flow is to the north-northeast as shown in **Figure 17.**

Slug Tests were performed at all three piezometers to determine the horizontal hydraulic conductivity in the upper surficial aquifer. The results of the tests indicated a hydraulic conductivity ranging from 2.25 feet per day to 3.03 feet per day (weighted test average for each piezometer) and averaging 2.60 feet per day for all three piezometers (average of each piezometer). The slug test results have been provided in **Appendix B**. Assuming an effective porosity range of 0.01 to 0.46 for fine sand, estimated horizontal travel times range from 3.02×10^{-1} to 6.56×10^{-3} feet per day. Low travel time values are indicative of the CG Facility's low horizontal permeability and gradient.

5.0 Conclusion

Based on the site specific information collected to date, the site appears to be underlain by very low permeability sediments that collectively form the confining unit below the SAS and above the limestones associated with the FAS. These confining sediments result in a very low potential for the downward movement of groundwater, i.e., recharge, which is consistent with information obtained from the United States Geological Survey and the Southwest Florida Water Management District. The low potential for recharge is also evidenced in Charlotte County's Future Land Use Element Map No. 6 which indicates no recharge to very low recharge for the site. In addition, onsite testing indicates that the sediments comprising the SAS exhibit low horizontal permeabilities, thus impeding the lateral movement of groundwater. These hydrogeologic properties provide reasonable assurance and are in agreement with Charlotte County's Future Land Use Policies regarding water quality protection and aquifer recharge potential. Therefore, based on the preliminary hydrogeologic data collected to date, the site appears to be well-suited for the proposed Calusa Green Solid Waste Disposal Facility.

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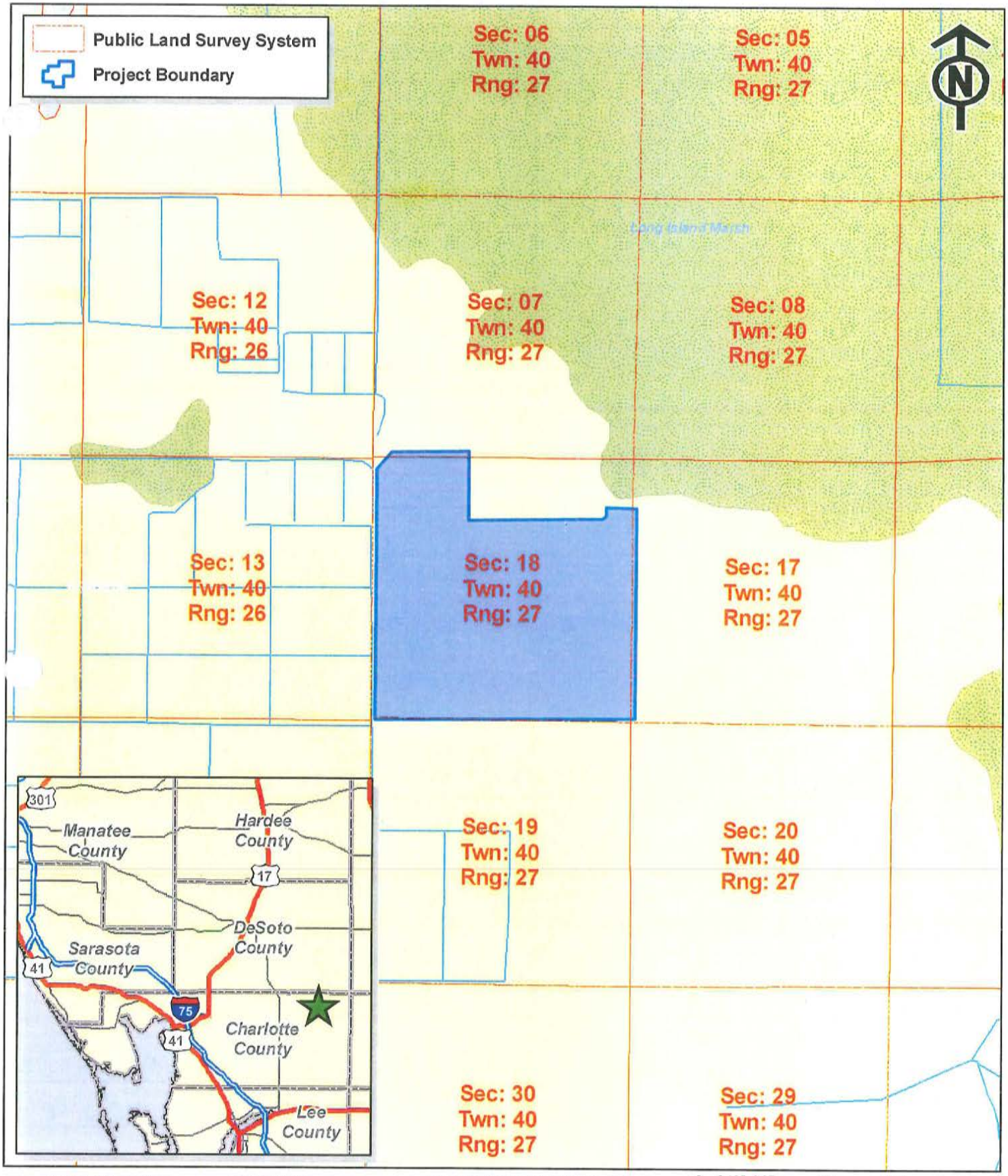

Scale: 1:30,000 05/10/2012 Image: 2011 SWFWMD Aerial

0 0.125 0.25 0.5 0.75 1 Miles

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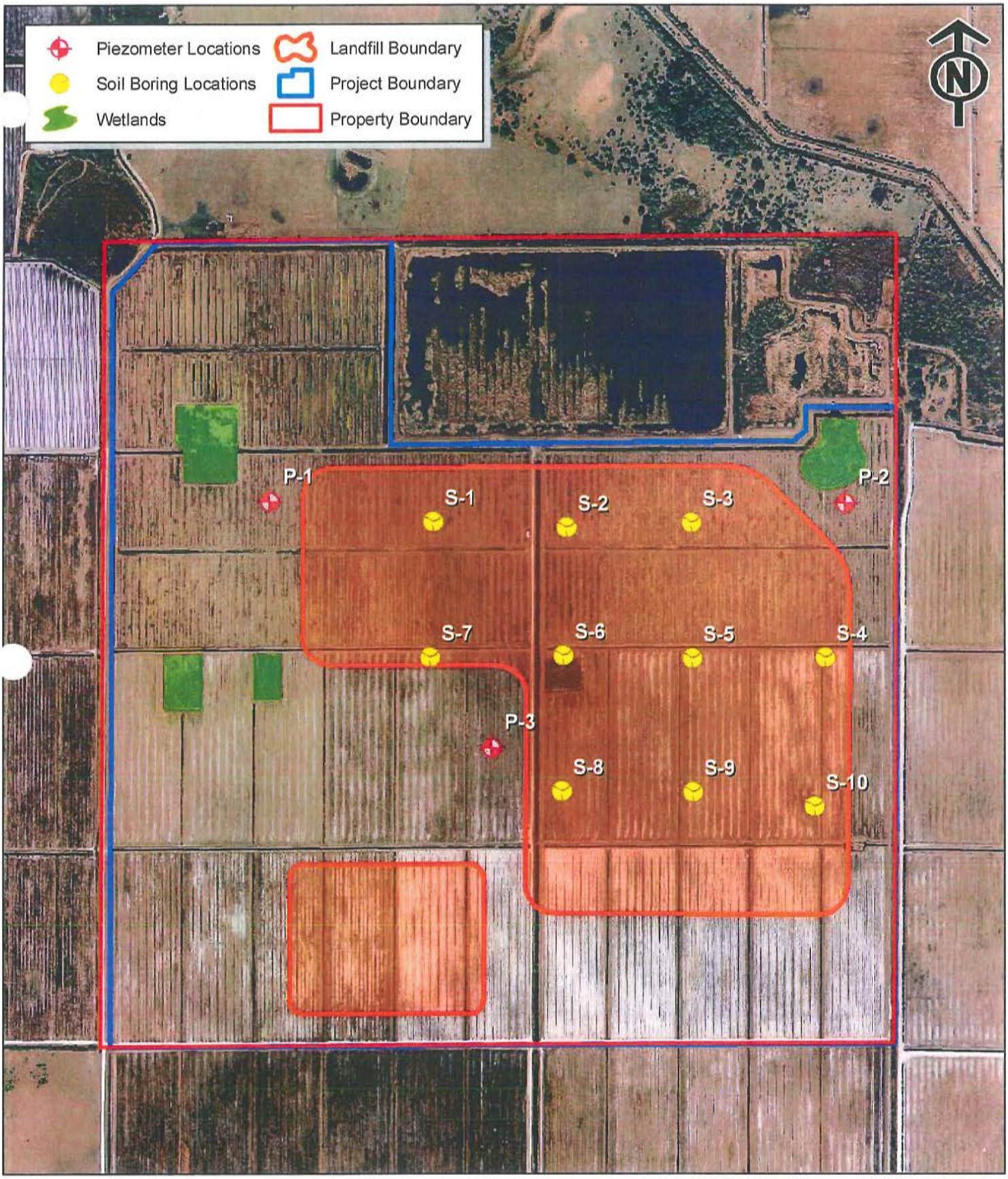
Figure 1
Calusa Green Facility
Project Location Map

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:10,000 05/10/2012 Image: 2011 SWFWMD Aerial

0 250 500 1,000 1,500 Feet

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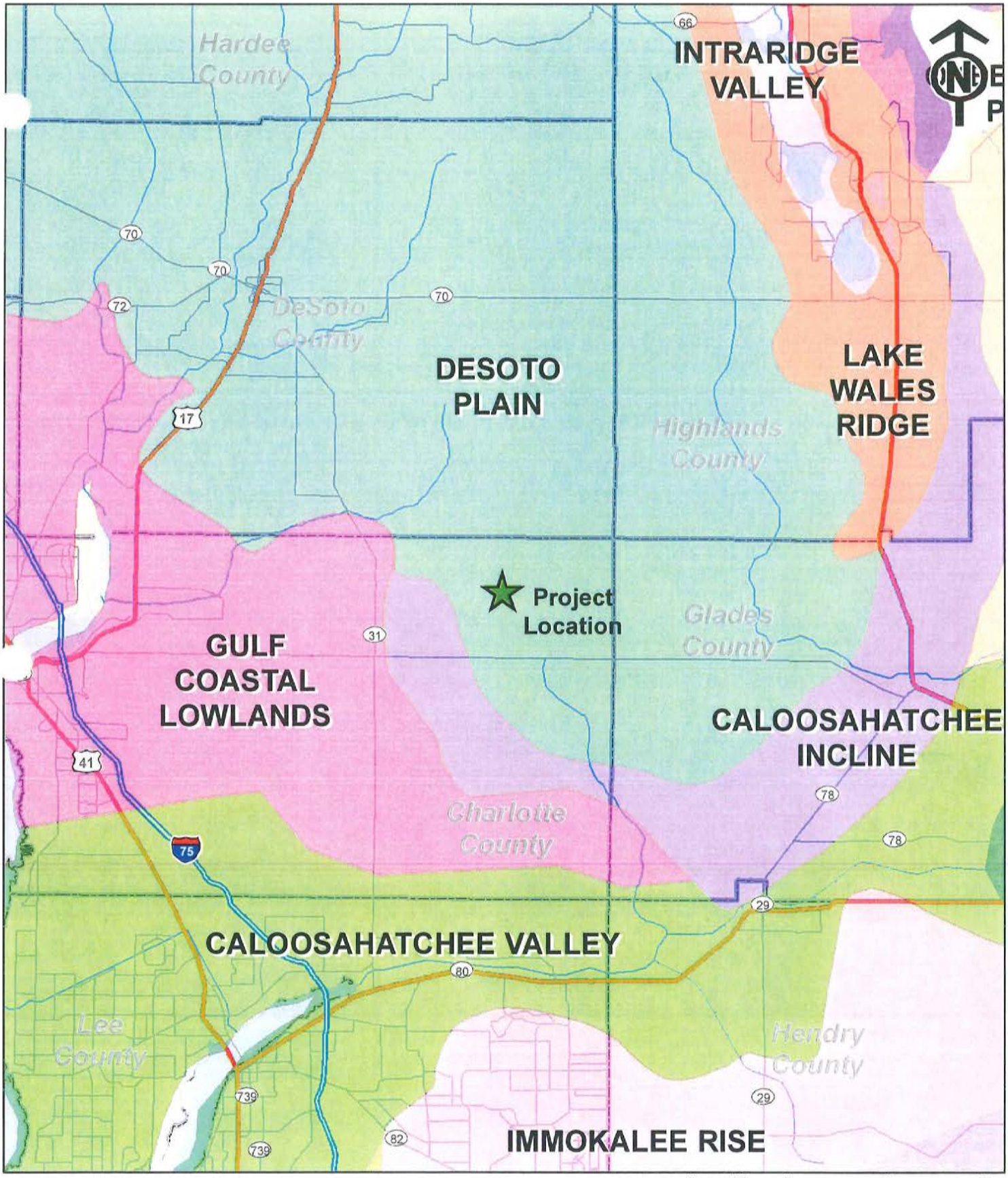
Figure 2
Calusa Green Facility
Project Site Map

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:400,000 05/10/2012 Image: 2011 SWFWMD Aerial 0 2.5 5 10 15 Miles

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Figure 3
Calusa Green Facility
Physiographic Regions

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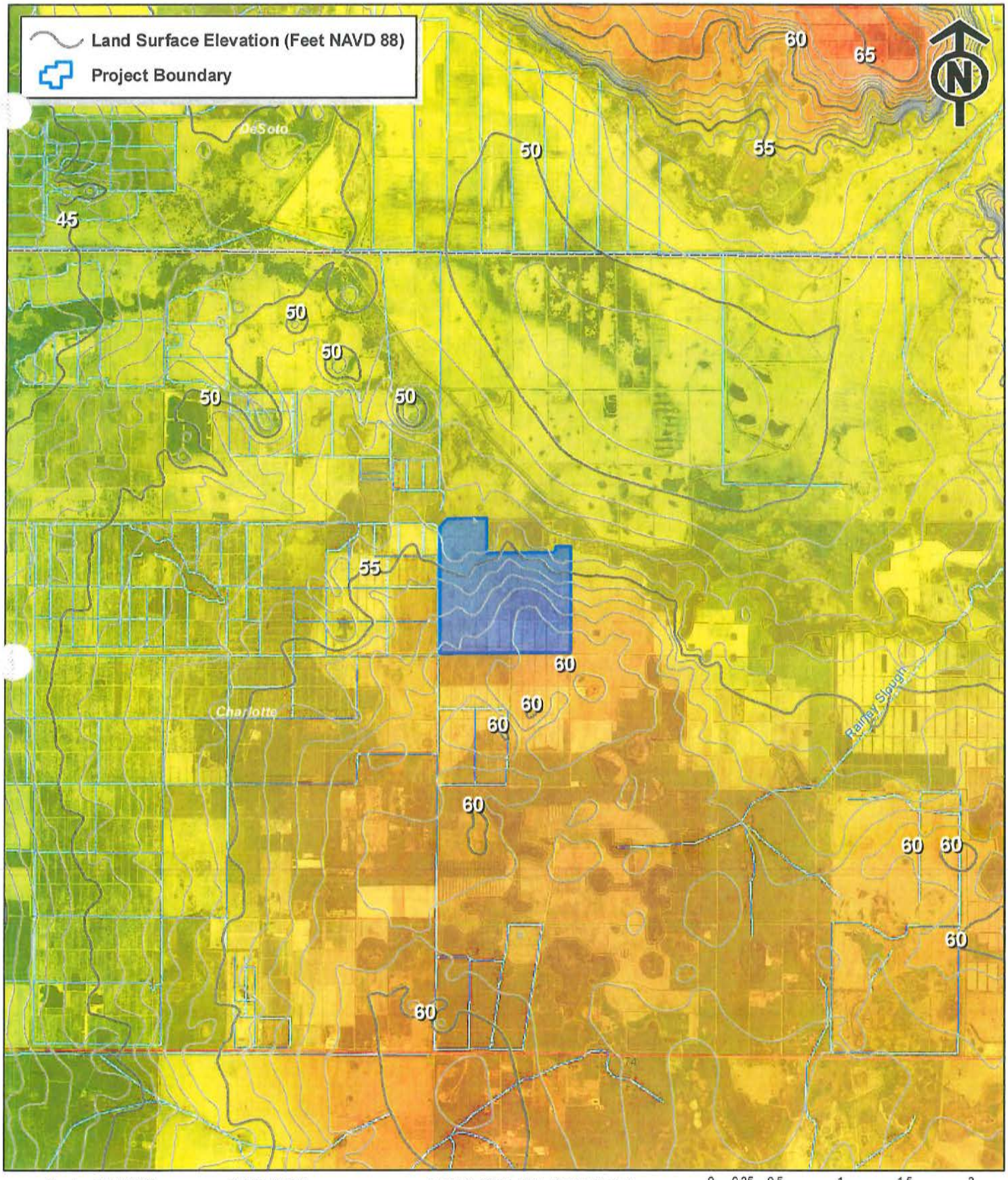
Integrated Water Resource Consultants



Scale: 1:60,000 05/10/2012 Image: 2011 SWFWMD Aerial 0 0.25 0.5 1 1.5 2 Miles

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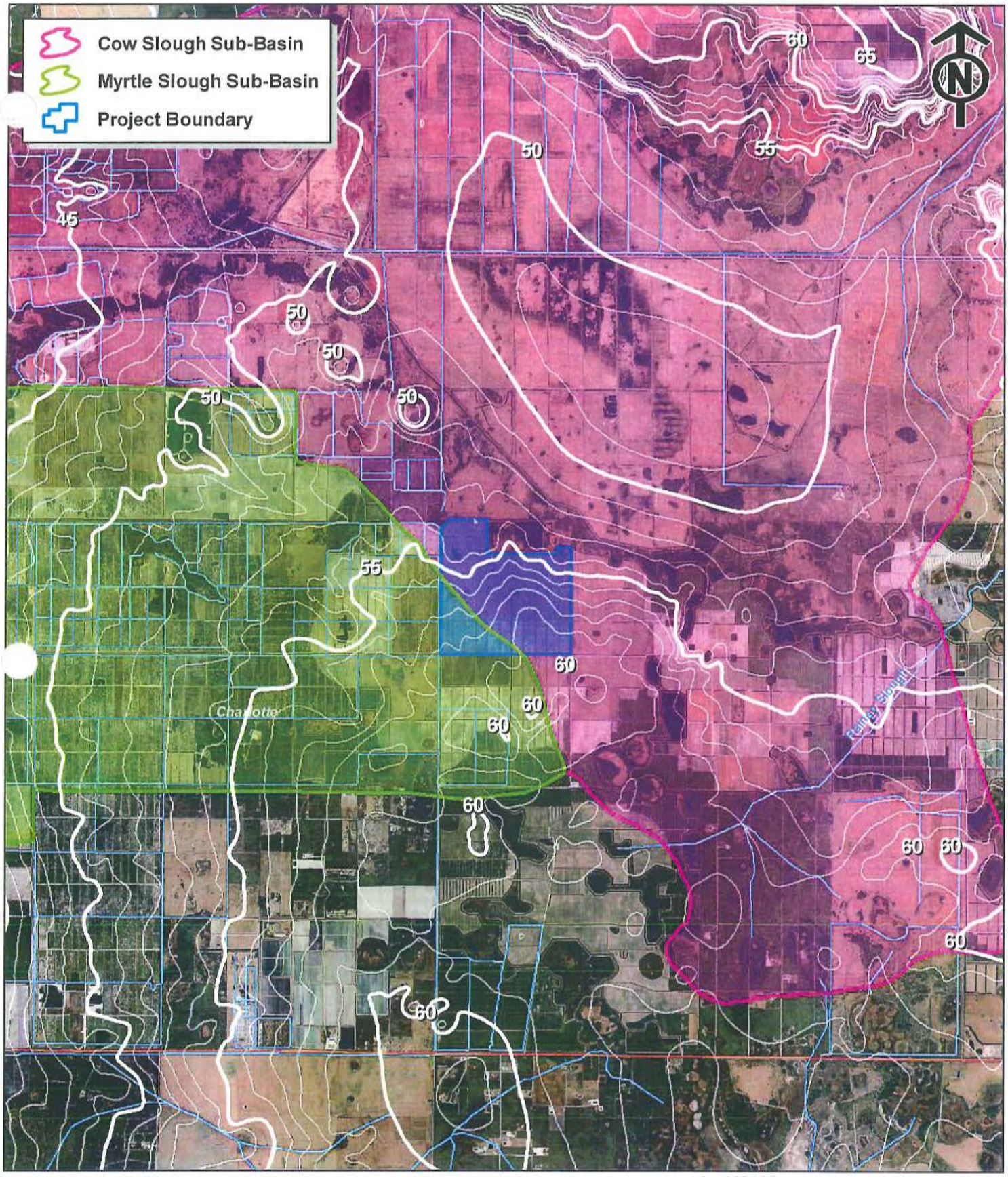
Figure 4
Calusa Green Facility
Land Surface Elevation

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:60,000 05/10/2012 Image: 2011 Aerial Image

0 0.25 0.5 1 1.5 2 Miles

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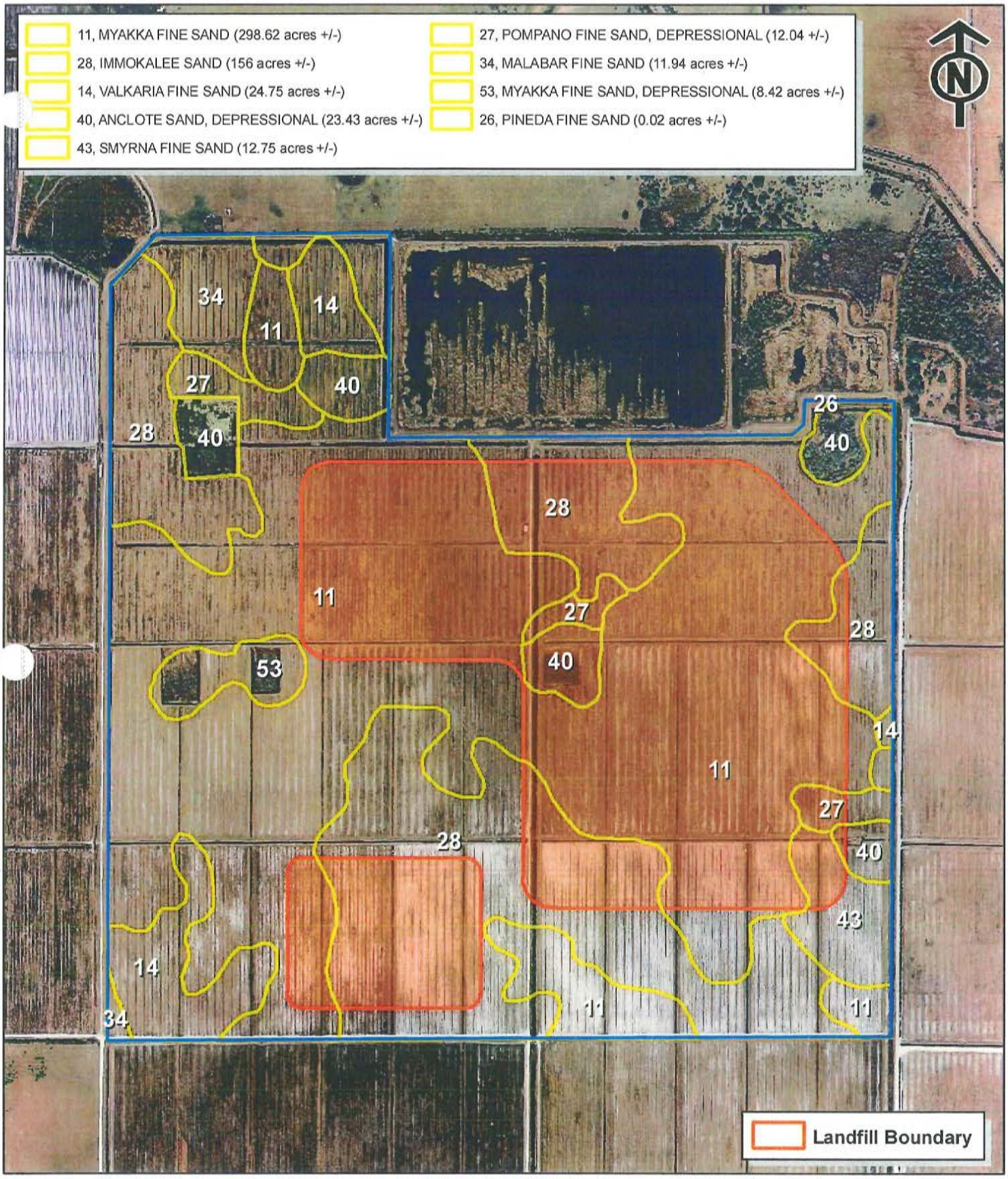
Figure 5
Calusa Green Facility
Surface Water Drainage

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:10,000 05/10/2012 Image: 2011 SWFWMD Aerial

0 250 500 1,000 1,500 Feet

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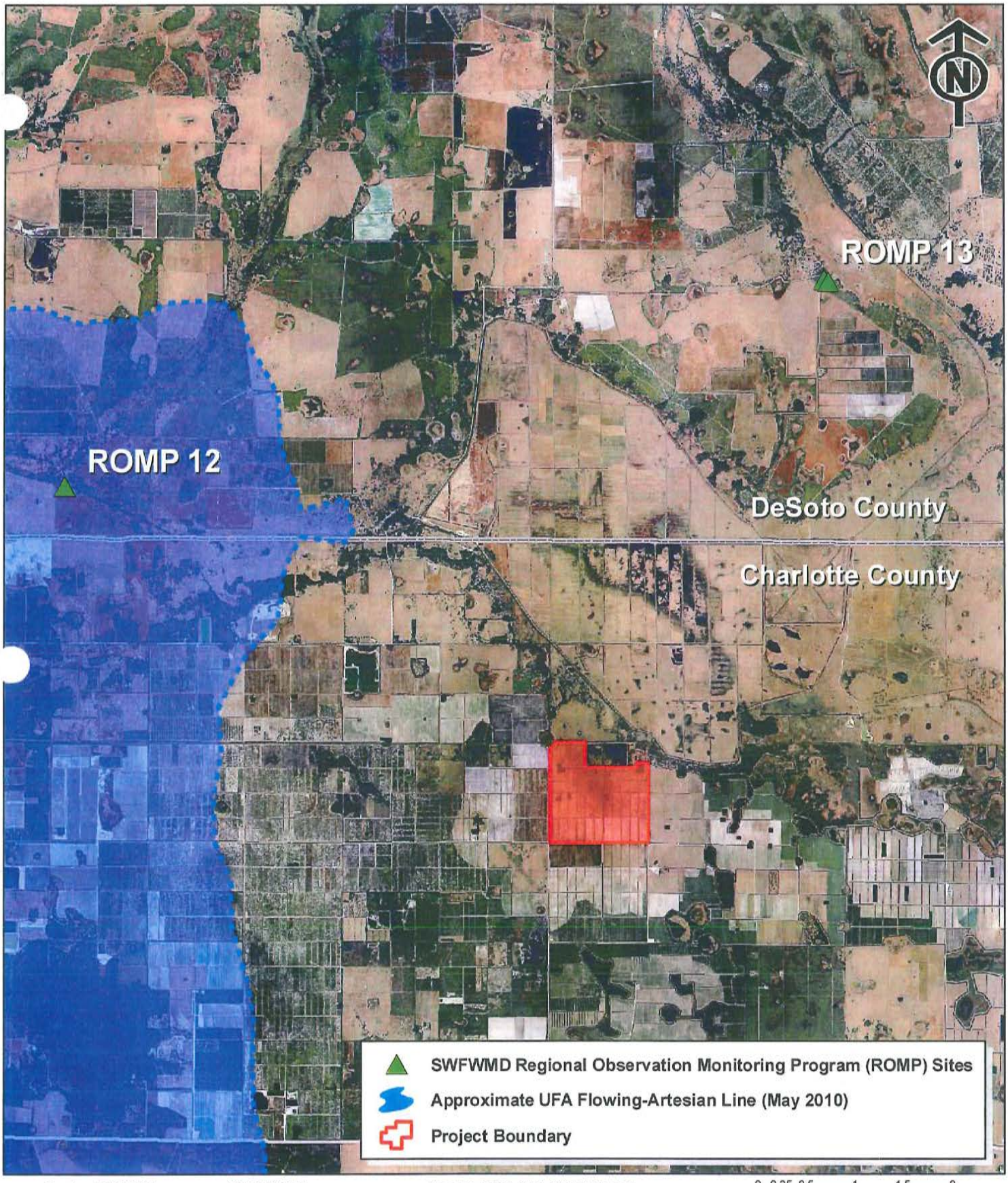
Figure 6
Calusa Green Facility
NRCS Soil Survey

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:80,000 05/10/2012 Image: 2011 SWFWMD Aerial

0 0.25 0.5 1 1.5 2 Miles

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Figure 7
Calusa Green Facility
Hydrogeologic Data Locations

Progressive Water Resources
Integrated Water Resource Consultants

<table>
<tr><th>Series</th><th colspan="3">Stratigraphic unit</th><th colspan="2">Hydrogeologic unit</th><th>Lithology</th></tr>
<tr><td>Holocene and Pleistocene</td><td colspan="3" rowspan="2">Undifferentiated surficial deposits (including the Caloosahatchee Formation and the Tamiami Formation)</td><td colspan="2">Surficial aquifer system</td><td>Undifferentiated sand with some limestone and shell beds.</td></tr>
<tr><td>Pliocene</td><td rowspan="5">Intermediate aquifer system</td><td>Confining unit
Tamiami/Peace River zone (PZ1)</td><td>Sand, limestone, and shell beds. Thick clay near top.</td></tr>
<tr><td rowspan="4">Miocene</td><td rowspan="4">Hawthorn Group</td><td>Peace River Formation</td><td rowspan="3">Confining unit</td><td rowspan="3">Mostly limestone, sandy limestone and sand. Phosphatic in part. Dolomite beds common. Clayey in middle and lower parts.</td></tr>
<tr><td rowspan="3">Undifferentiated Arcadia Formation
Tampa Member / Nocatee Member</td></tr>
<tr><td rowspan="3">Oligocene</td></tr>
<tr><td>Upper Arcadia zone (PZ2)
Confining unit
Lower Arcadia zone (PZ3)
Confining unit</td><td>Limestone, sandy limestone and sand. Clay beds in upper and lower parts.</td></tr>
<tr><td colspan="2">Suwannee Limestone</td><td colspan="2" rowspan="3">Upper Floridan aquifer</td><td rowspan="3">Granular, fossiliferous limestone, with trace amounts of sand and clay in the upper portions. Dense dolostone and indurated limestone, mostly pelletal</td></tr>
<tr><td rowspan="2">Eocene</td><td colspan="2">Ocala Limestone</td></tr>
<tr><td colspan="2">Avon Park Formation</td></tr>
</table>

Source: Adapted from Torres et al, 2001

Figure 8
Relation of Stratigraphic and Hydrogeologic Units

Figure 9

Regional Observation Monitoring Program (ROMP) Site 12

Aquifer Water Levels 2001 to 2012

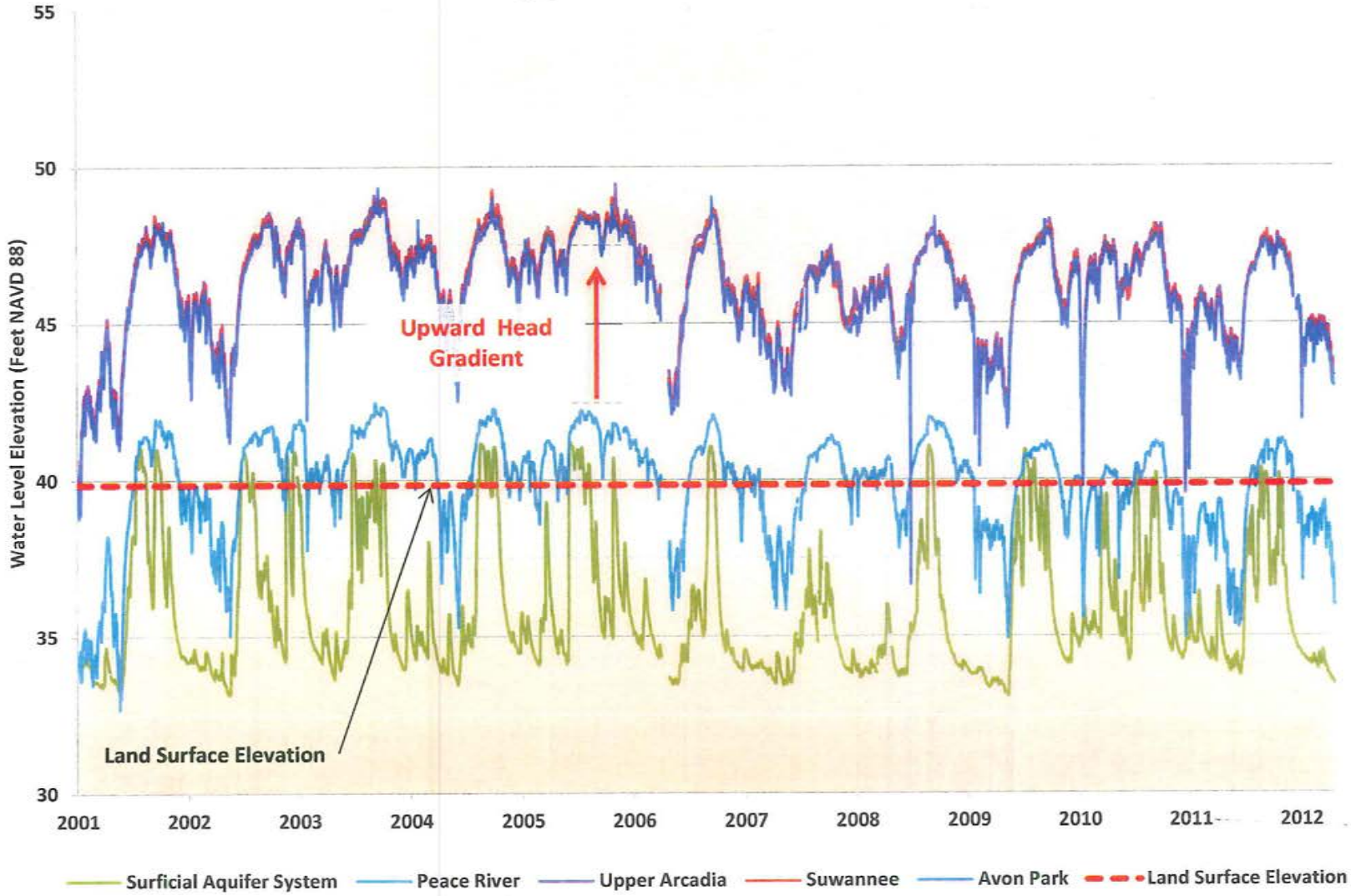

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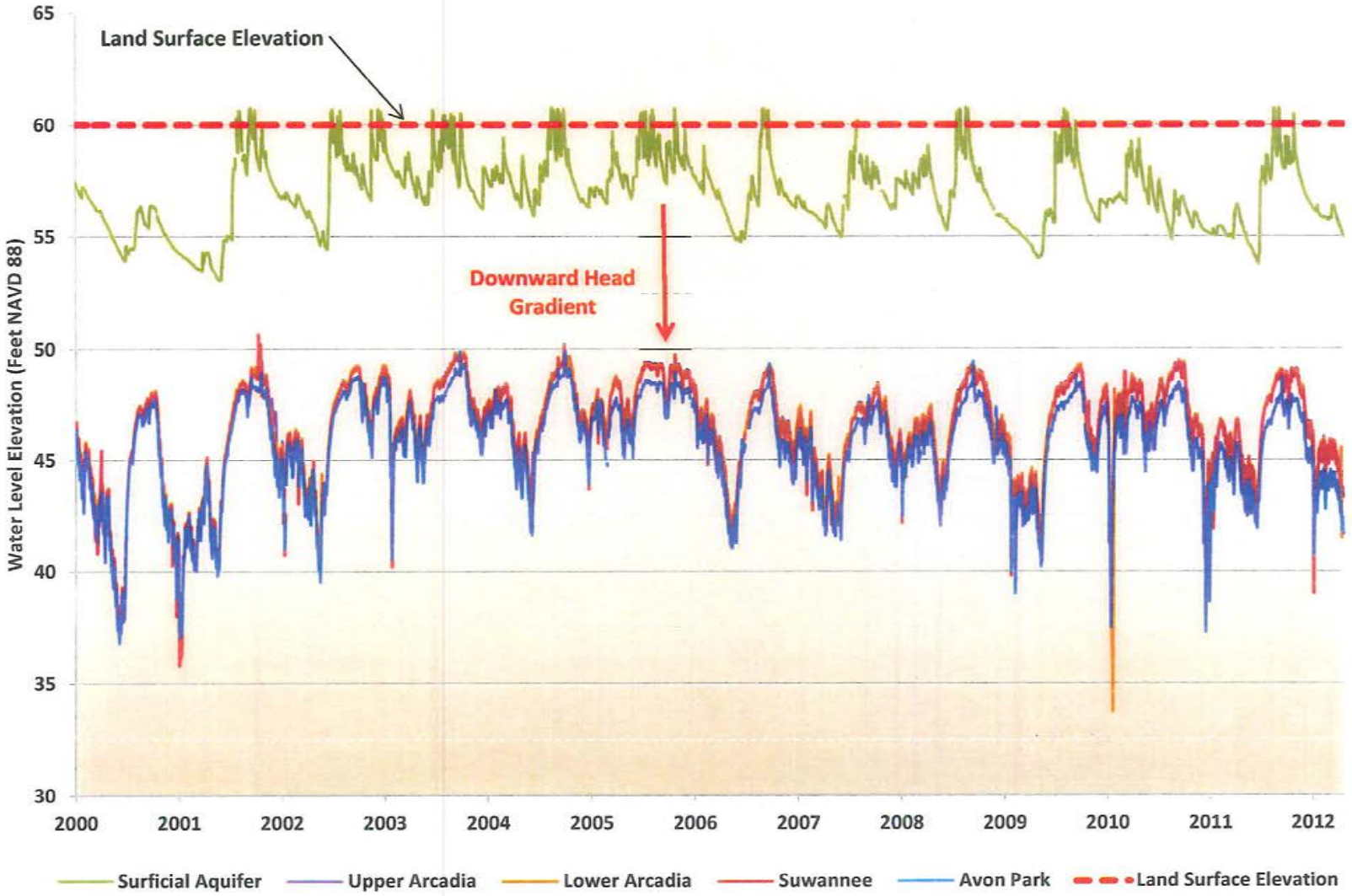
Figure 10

Regional Observation Monitoring Program (ROMP) Site 13

Aquifer Water Levels (2000 to 2012)



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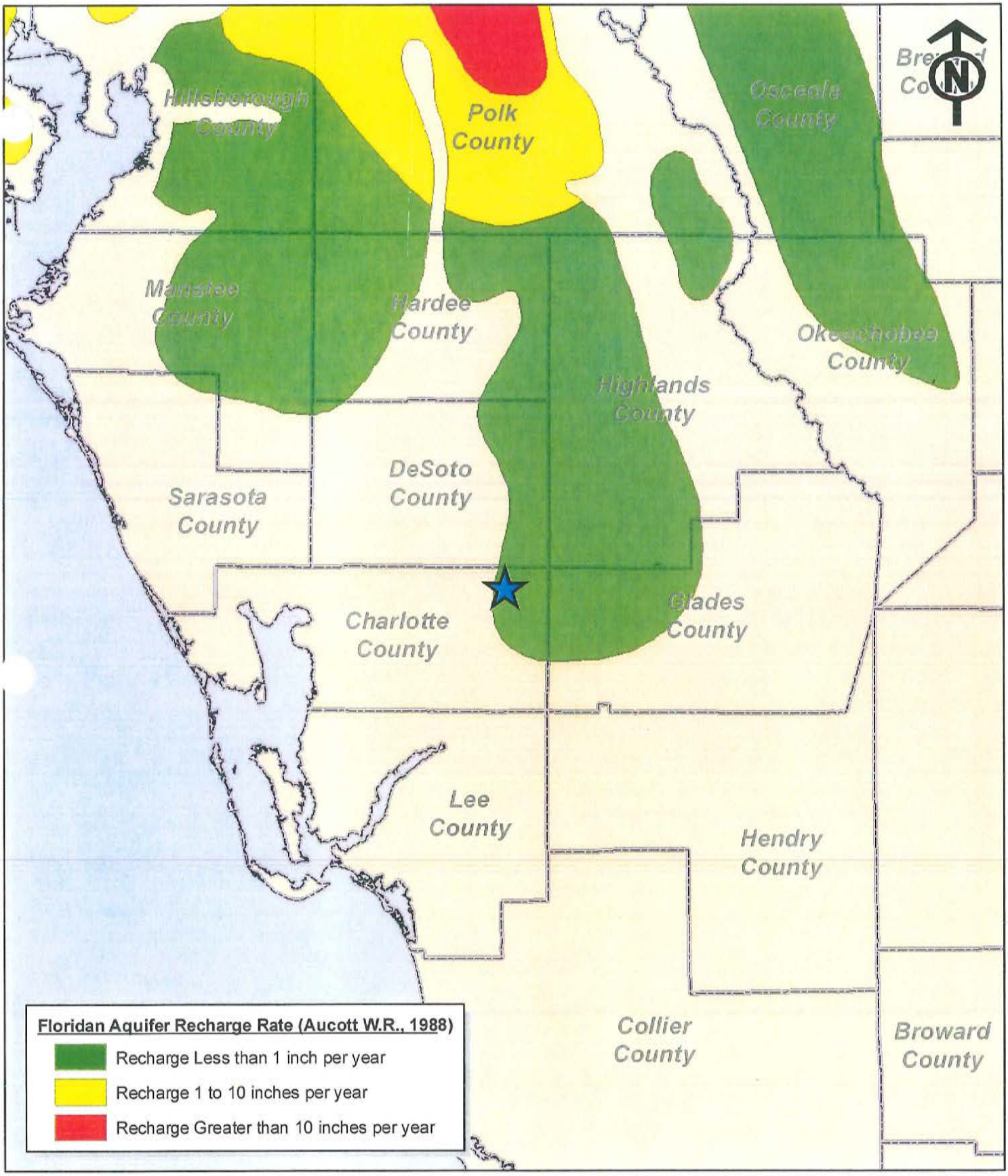

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Figure 11
Calusa Green Facility
Floridan Aquifer Annual Recharge

Progressive Water Resources
Integrated Water Resource Consultants

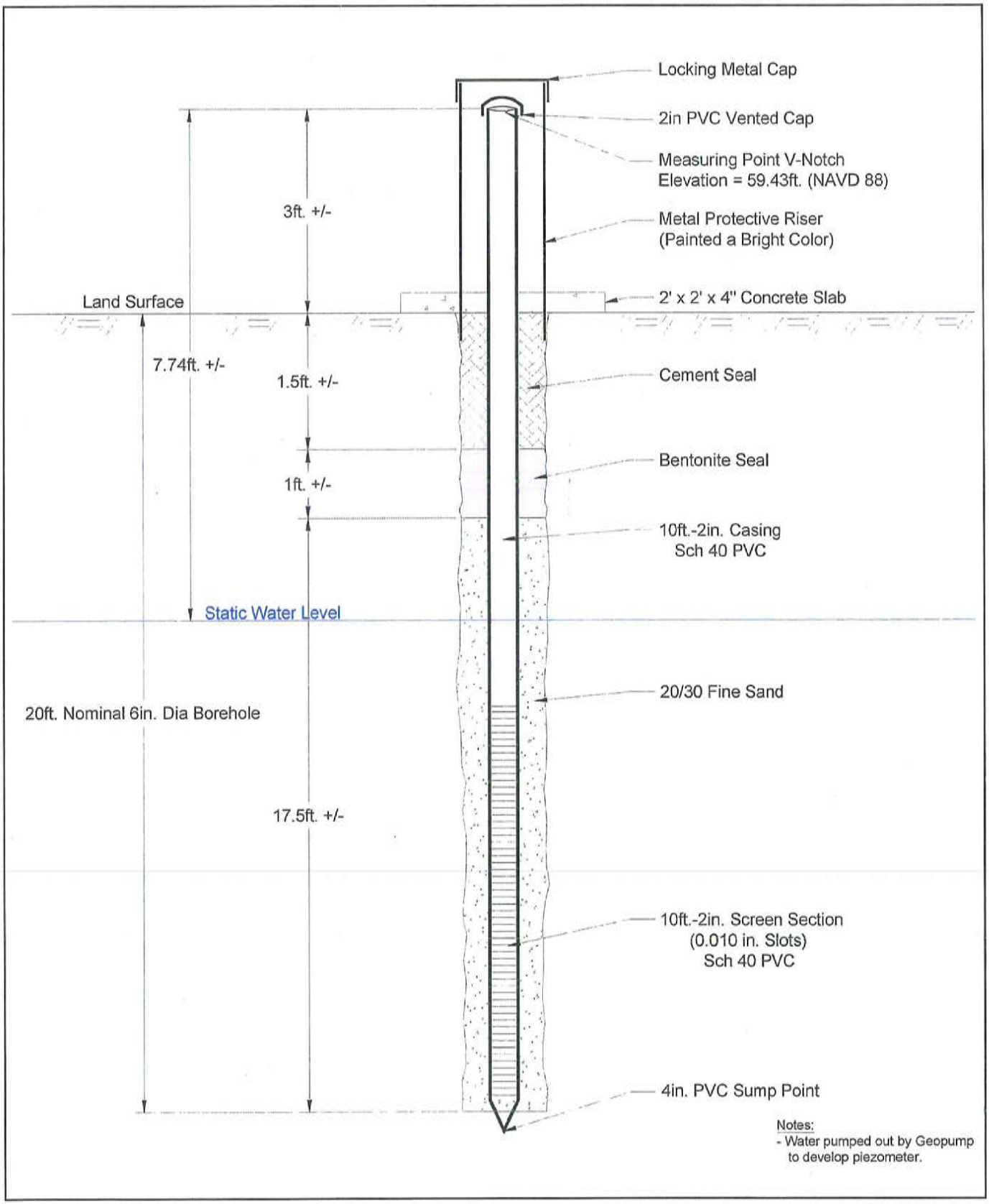

Figure 12
Piezometer No. 1 (P-1)
Well Construction Schematic

Progressive Water Resources
Integrated Water Resource Consultants

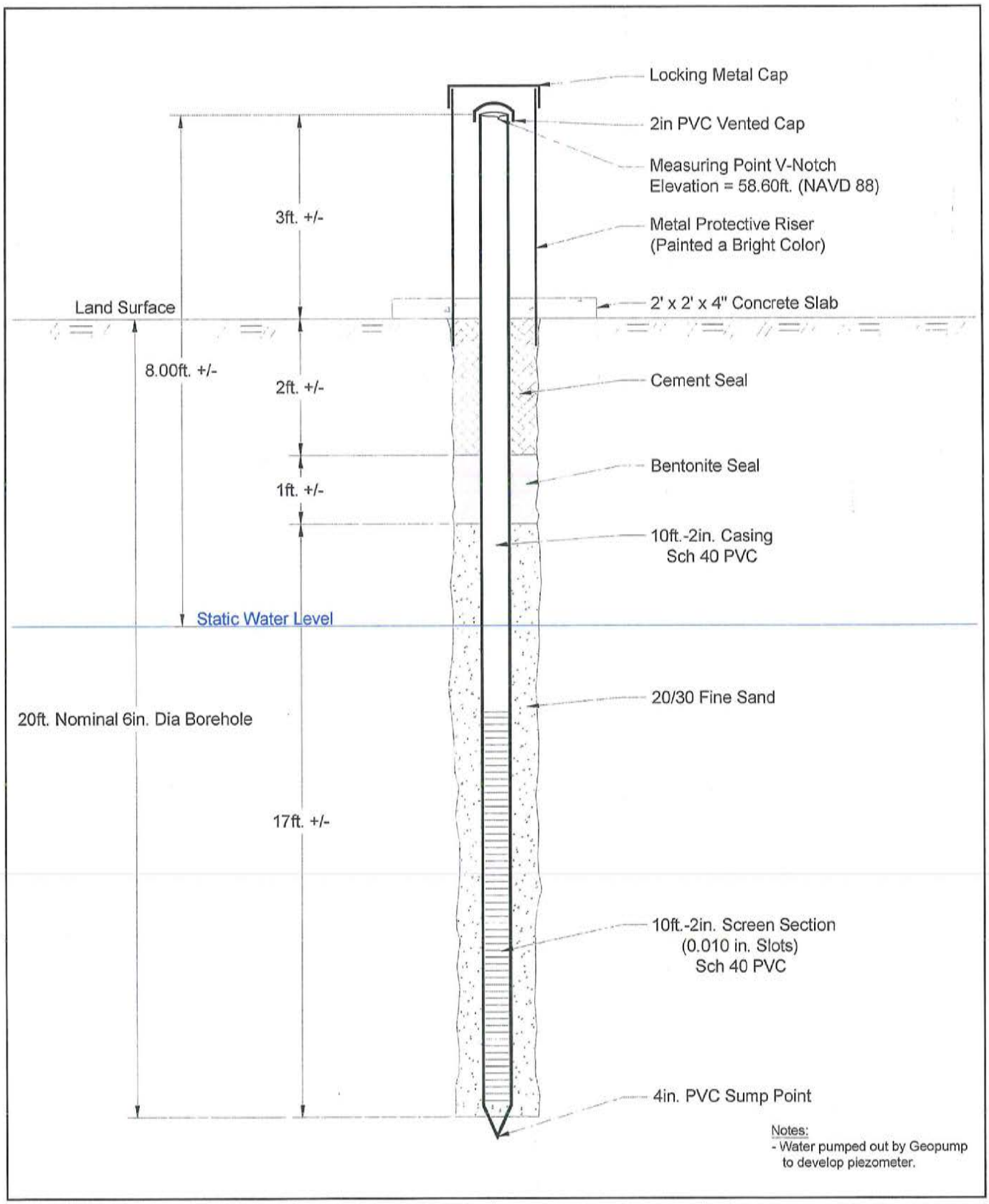

Figure 13
Piezometer No. 2 (P-2)
Well Construction Schematic

Progressive Water Resources
Integrated Water Resource Consultants

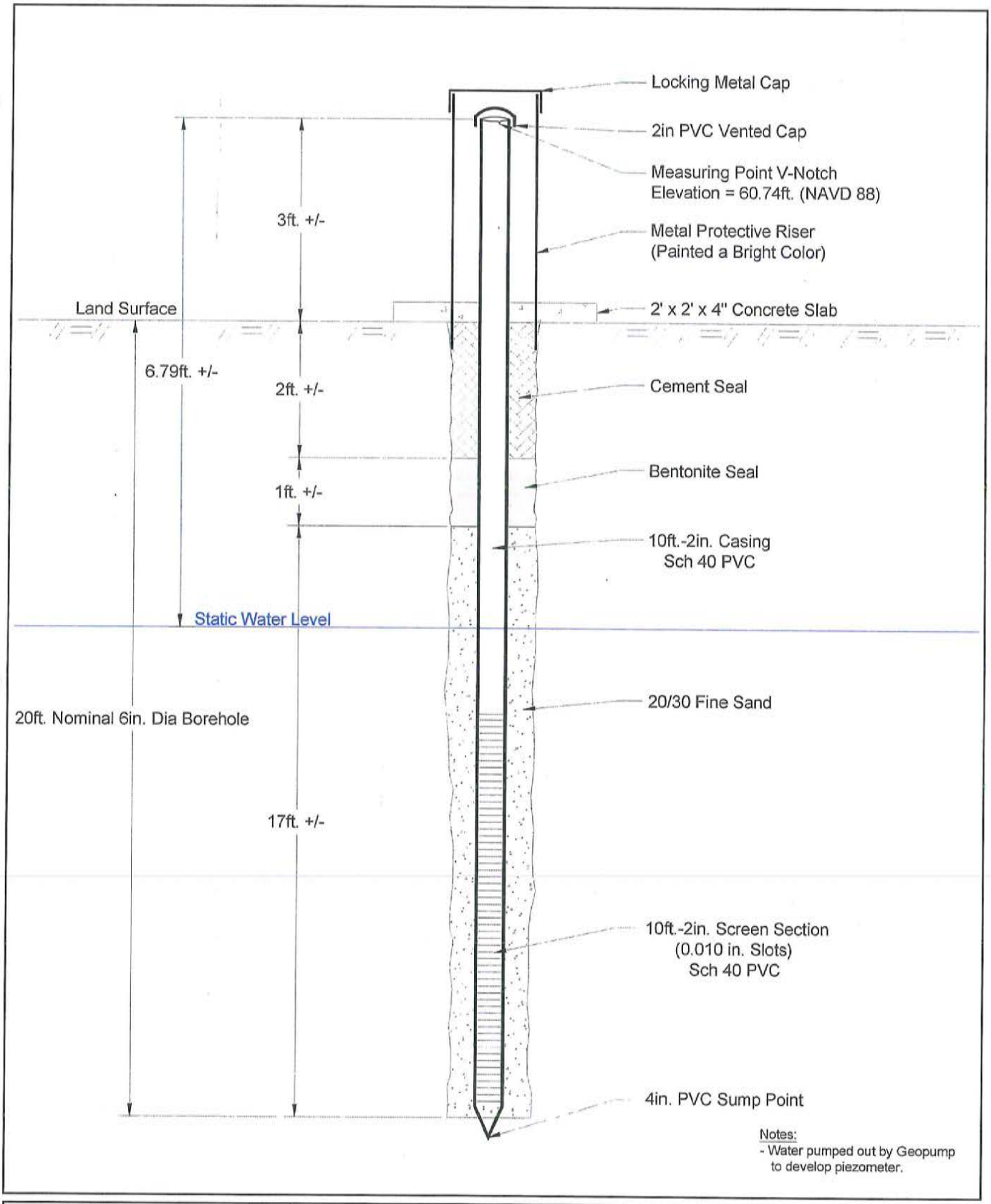

Figure 14
Piezometer No. 3 (P-3)
Well Construction Schematic

Progressive Water Resources
Integrated Water Resource Consultants

Scale: 1:6,000 05/10/2012 Image: 2011 SWFWMD Aerial 0 250 500 1,000 Feet

Figure 15
Calusa Green Facility
Top Elevation of Clay
(Peace River Formation)

Progressive Water Resources
Integrated Water Resource Consultants

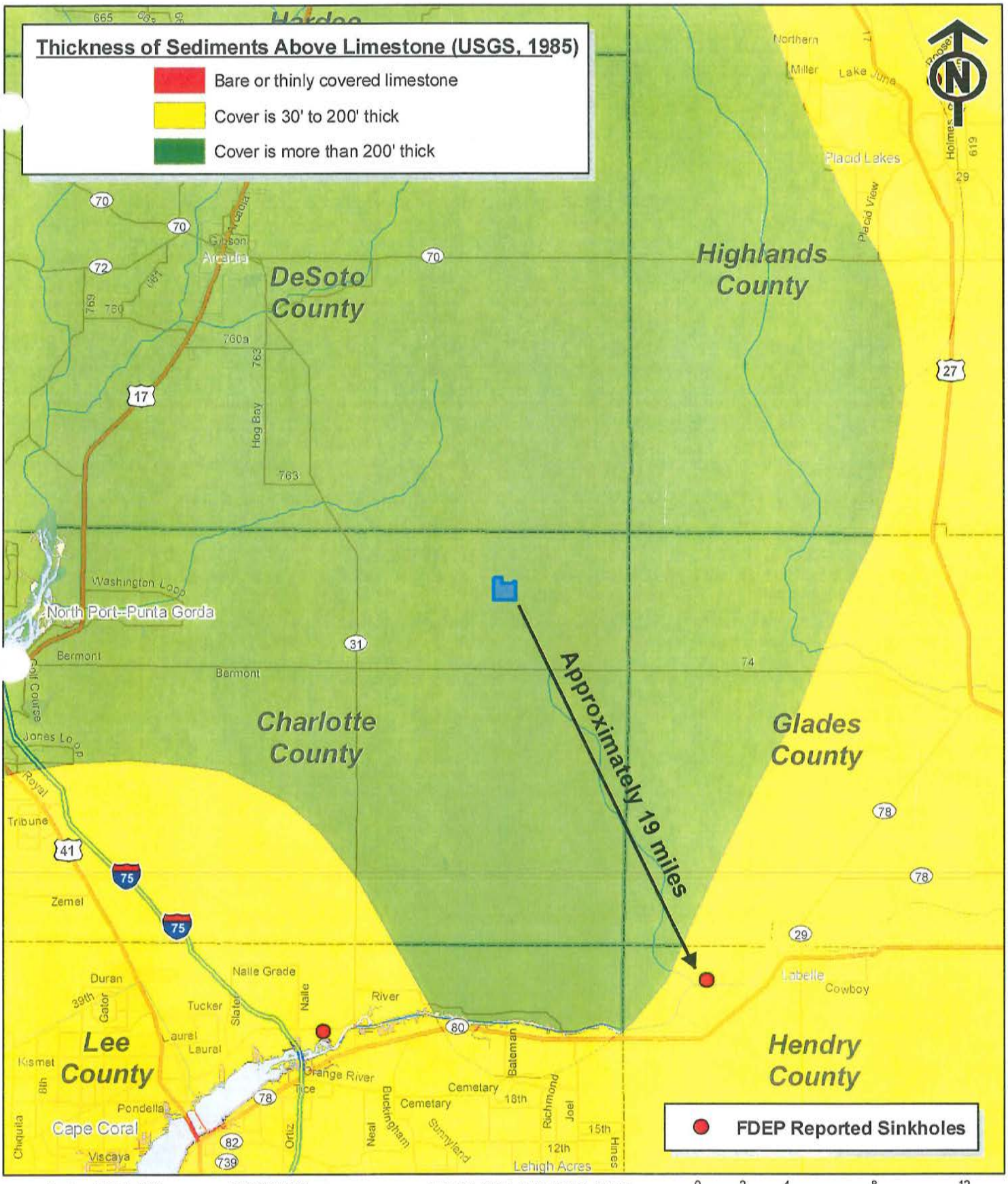

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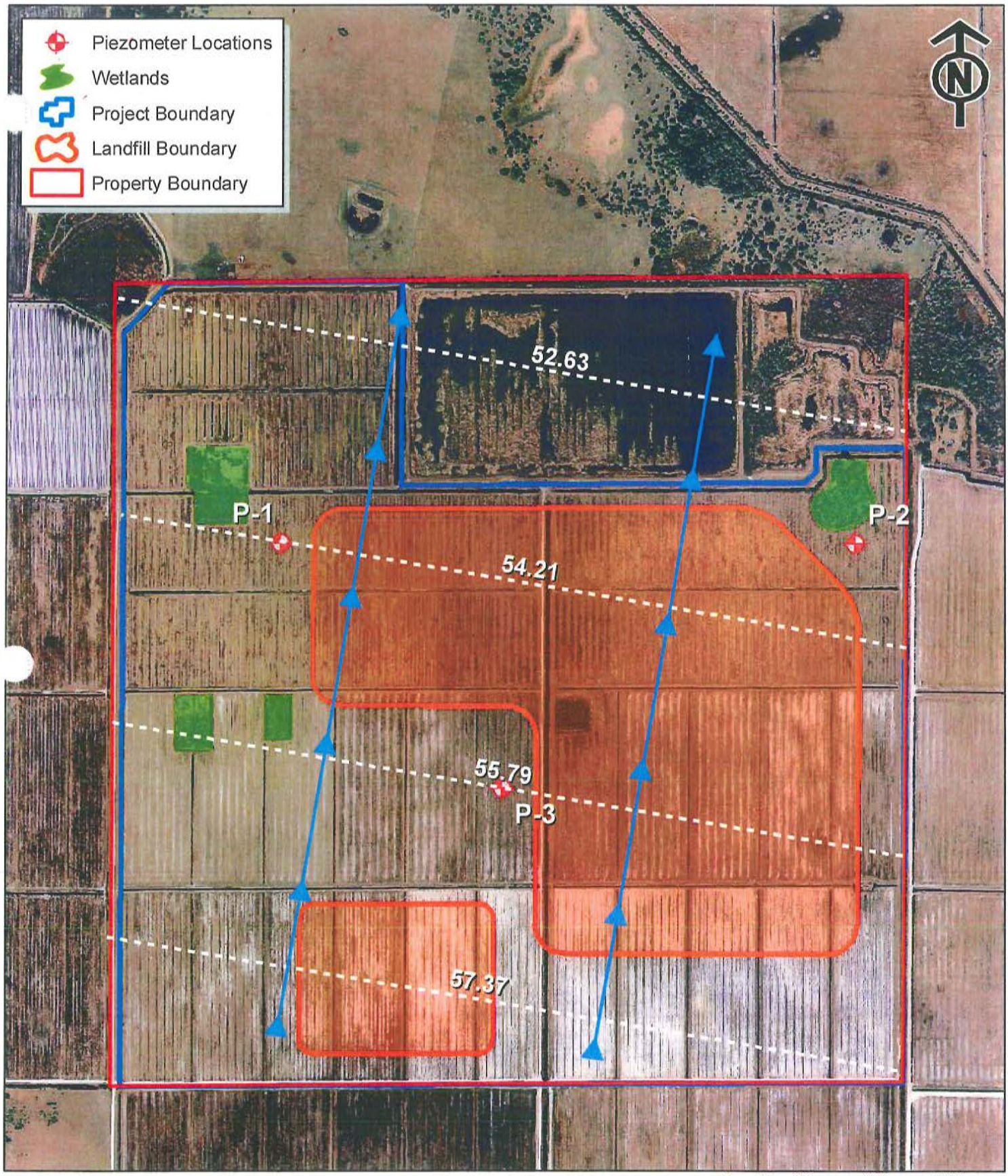
Figure 16
Calusa Green Facility
Sinkhole Locations and Thickness of Sediments Above Limestone

Progressive Water Resources
Integrated Water Resource Consultants



Scale: 1:10,000 05/10/2012 Image: 2011 SWFWMD Aerial 0 250 500 1,000 1,500 Feet

Progressive Water Resources has provided the images or data presented in this map for informational purposes only. This data is not intended to be used in lieu of official survey data provided by a Professional Surveyor licensed by the State of Florida

Figure 17
Calusa Green Facility
Surficial Aquifer System
April 23, 2012
Hydraulic Gradient Analysis

Progressive Water Resources
Integrated Water Resource Consultants

Table 1

Piezometer and Soil Boring Information

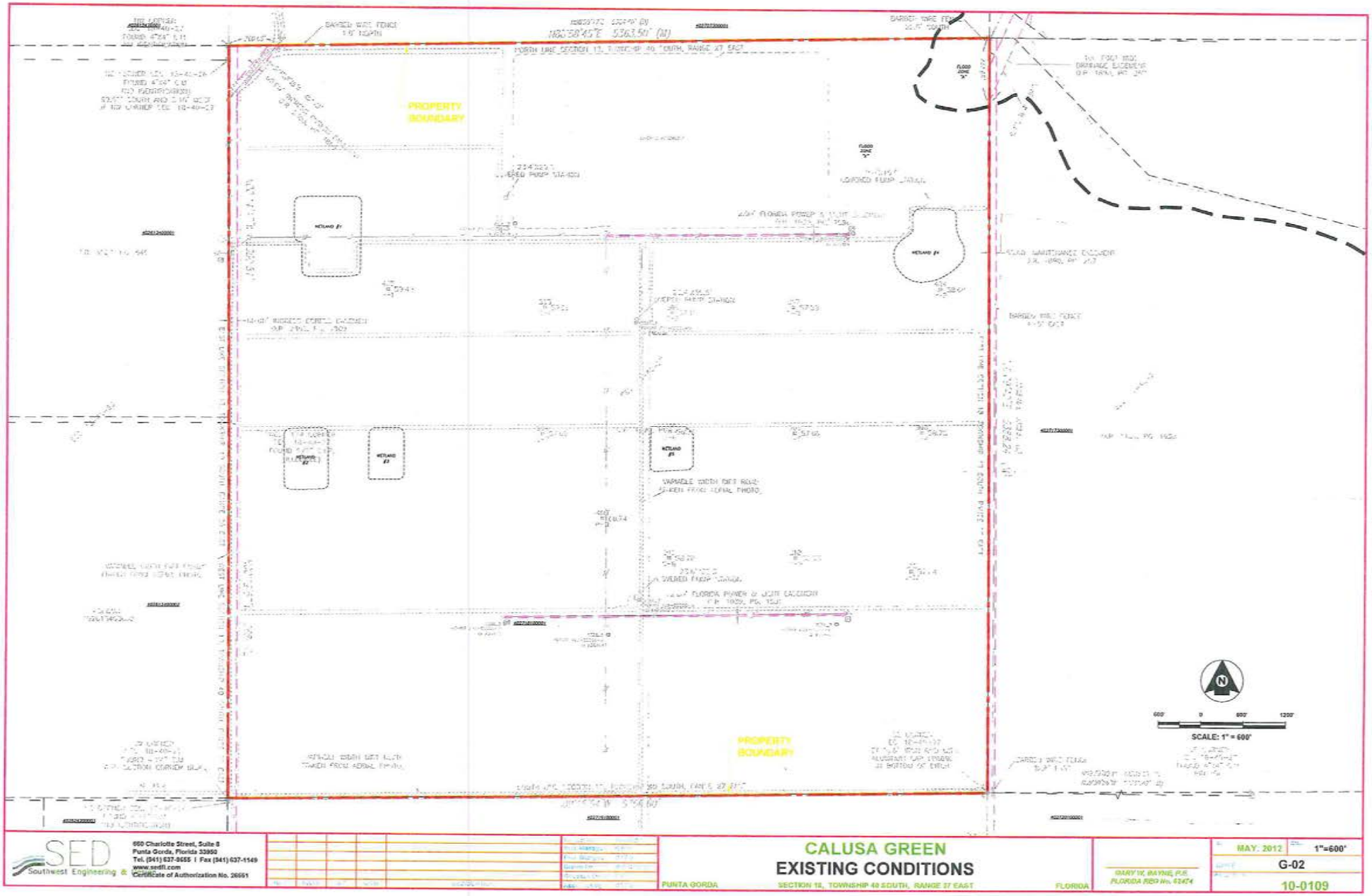
Piezometer Locations							
Name	**Type**	**Latitude**	**Longitude**	**Measuring Point Elevation (Feet NAVD 88)**	**Total Depth (Feet)**	**Casing Depth (Feet)**	**Screen Length (Feet)**
P-1	Piezometer	26° 59' 57.85" N	81° 39' 29.40" W	59.43	20	10	10
P-2	Piezometer	26° 59' 57.95" N	81° 38' 46.38" W	58.60	20	10	10
P-3	Piezometer	26° 59' 41.71" N	81° 39' 12.69" W	60.74	20	10	10

Standard Penetration Test / Soil Boring Locations							
Name	**Type**	**Latitude**	**Longitude**	**Land Surface Elevation (Feet NAVD 88)**	**Boring Depth (Feet)**	**Depth of Clay Unit (Feet)**	**Top of Clay Unit (Feet NAVD 88)**
S-1	SPT Boring	26° 59' 56.59" N	81° 39' 17.18" W	57.19	50	27	30.19
S-2	SPT Boring	26° 59' 56.24" N	81° 39' 07.23" W	57.13	50	23	34.13
S-3	SPT Boring	26° 59' 56.64" N	81° 38' 57.84" W	57.33	50	23	34.33
S-4	SPT Boring	26° 59' 47.79" N	81° 38' 47.83" W	58.73	50	23	35.73
S-5	SPT Boring	26° 59' 47.73" N	81° 38' 57.73" W	57.06	50	23	34.06
S-6	SPT Boring	26° 59' 47.83" N	81° 39' 07.43" W	56.36	50	23	33.36
S-7	SPT Boring	26° 59' 47.66" N	81° 39' 17.36" W	57.09	50	28	29.09
S-8	SPT Boring	26° 59' 38.89" N	81° 39' 07.47" W	58.78	50	21	37.78
S-9	SPT Boring	26° 59' 38.92" N	81° 38' 57.64" W	58.55	50	22	36.55
S-10	SPT Boring	26° 59' 37.98" N	81° 38' 48.61" W	57.24	50	23	34.24

Table 2

Piezometer Groundwater Levels

Date	Water Level Elevation (Feet NAVD 88)		
	P-1	P-2	P-3
4/17/2012	51.69	50.60	53.95
4/23/2012	54.21	53.49	55.79
4/26/2012	53.88	53.07	55.39


PROPERTY BOUNDARY
PROPERTY BOUNDARY
SCALE: 1" = 600'
SED
Southwest Engineering & Design
660 Charlotte Street, Suite 8
Punta Gorda, Florida 33950
Tel. (941) 637-0655 | Fax (941) 637-1149
www.sedfl.com
Certificate of Authorization No. 26651
CALUSA GREEN
EXISTING CONDITIONS
PUNTA GORDA
SECTION 18, TOWNSHIP 40 SOUTH, RANGE 27 EAST
FLORIDA
GARY W. WAYNE, P.E.
FLORIDA REG No. 41474
MAY, 2012
1"=600'
G-02
10-0109

Appendix A

Appendix B

Geotechnical Report

Progressive Water Resources

Integrated Water Resource Consultants

UNIVERSAL
ENGINEERING SCIENCES

PRELIMINARY GEOTECHNICAL EXPLORATION
PROPOSED CALUSA GREEN
STATE ROAD 74
CHARLOTTE COUNTY, FLORIDA

UES Order No.: 0530.1200026.0000

Prepared For:

Calusa Green, LLC
660 Charlotte Street, Suite 8
Punta Gorda, Florida 33950

Prepared By:

Universal Engineering Sciences
5971 Country Lakes Drive
Fort Myers, Florida 33905

April 20, 2012

UNIVERSAL
ENGINEERING SCIENCES
Consultants In: Geotechnical Engineering • Environmental Sciences
• Construction Materials Testing • Private Provider & Threshold Inspections

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Atlanta, DeBary, Fort Pierce, Jacksonville, Miami, Orlando, Panama City, Rockledge, St. Augustine, West Palm Beach, Daytona, Fort Myers, Gainsville, Leesburg, Ocala, Palm Coast, Pensacola, Sarasota, Tampa, Clermont

April 20, 2012

Calusa Green, LLC
660 Charlotte Street, Suite 8
Punta Gorda, Florida 33950

Attention: Mr. Bruce Laishley

Reference: **PRELIMINARY GEOTECHNICAL EXPLORATION**
PROPOSED CALUSA GREEN
STATE ROAD 74
Charlotte County, Florida

Dear Mr. Laishley:

Universal Engineering Sciences, Inc. (UES) has completed the subsurface exploration for the site of a proposed landfill in Charlotte County, Florida. The scope of our exploration was planned in conjunction with and authorized by Southwest Engineering & Design. This exploration was performed in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

This report contains the results of our explorations and a general engineering interpretation of these with respect to the project characteristics described to us.

We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,
UNIVERSAL ENGINEERING SCIENCES, INC.

Matthew A. Hoffman, E.I.
Staff Engineer

LINDSEY N. WEAVER LICENSE NO. 41790 STATE OF FLORIDA PROFESSIONAL ENGINEER

Lindsey N. Weaver, P.E. #41790
Regional Manager

MAH/mah
1 cc: Client
2 cc: SW Engineering & Design - Gary Bayne (email)
1 cc: Progressive Water Resources (email only: tcameratta@prowatersource.com)

TABLE OF CONTENTS

Section		Page
1.0	INTRODUCTION	1
	1.1 GENERAL	1
2.0	SCOPE OF SERVICES	1
	2.1 PROJECT DESCRIPTION	1
	2.2 PURPOSE	2
	2.3 FIELD EXPLORATION	2
	2.4 LABORATORY TESTS	3
3.0	FINDINGS	3
	3.1 SURFACE CONDITIONS	3
	3.2 SUBSURFACE CONSIDERATIONS	4
	3.3 SLUG TESTS	5
4.0	LIMITATIONS	6

LIST OF APPENDICES

Section		Page
APPENDIX A		
	SITE LOCATION PLAN	A-1
APPENDIX B		
	REPORT ON TRIAXIAL PERMEABILITY	B-1
APPENDIX C		
	BORING LOCATION PLAN	C-1
	PIEZOMETER LOCATION PLAN	C-2
	BORING LOGS	C-3 - C-12
	SOILS CLASSIFICATION CHART	C-13
	DESCRIPTION OF TEST PROCEDURES	C-14
APPENDIX D		
	IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT	D-1
	CONSTRAINTS AND RESTRICTIONS	D-2

1.0 INTRODUCTION

1.1 GENERAL

In this report we present the results of our preliminary geotechnical exploration of the proposed Calusa Green landfill area located in Charlotte County, Florida. We have divided this report into the following sections:

SCOPE OF SERVICES - Defines what we did

FINDINGS - Describes what we found

LIMITATIONS - Describes the restrictions inherent in this report

APPENDICES - Presents support materials referenced in this report.

2.0 SCOPE OF SERVICES

2.1 PROJECT DESCRIPTION

We understand the project under consideration involves the design and permitting of a solid waste landfill on a parcel of land in Charlotte County located within Section 18, Township 40 South and Range 27 East. The purposes of service was to provide Progressive Water Resources soil and groundwater information to aid in their initial hydrogeologic evaluation of the landfill site.

We were provided with site plans depicting the locations of the proposed borings and piezometers. We used this information in preparing our exploration.

Our explanations and findings are based upon the above considerations. If any of this information is incorrect or if you anticipate any changes, inform Universal Engineering Sciences so that we may review our recommendations.

The site is located north of State Road 74 in Charlotte County, Florida. A general location plan of the project area appears in Appendix A: Site Location Plan.

2.2 PURPOSE

The purposes of this preliminary exploration were:

- to explore the general subsurface conditions within the proposed landfill areas at the site;
- to interpret or review the general subsurface conditions with respect to the proposed landfill areas; and
- to provide soil, groundwater and permeability information to aid in the design of the proposed landfill.

Recommendations concerning landfill foundation, pavements and other site soil related considerations were beyond the scope of our preliminary exploration. Our work did not address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. This reports presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards.

2.3 FIELD EXPLORATION

The subsurface conditions within the proposed landfill areas were explored with a total of ten (10) rotary wash borings (S-1 to S-10) advanced to depths of 50 feet below existing grade while performing the Standard Penetration Test.

We performed the Standard Penetration Test borings according to the procedures of ASTM D-1586, with continuous sampling performed above a depth of 10 feet, to detect slight variations in the soil profile at shallow depths. The basic procedure for the Standard Penetration Test is as follows: A standard split-barrel sampler is driven into the soil by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler 1-foot, after seating 6 inches, is designated the penetration resistance, or N-value; this value is an index to soil strength and consistency.

Consider the indicated boring depths and locations to be approximate. The borings were located and field staked by a representative of Progressive Water Resources.

UES also installed three (3) piezometers to depths of approximately 20 feet below existing grade at the site to perform slug tests, obtain initial groundwater measurements and to provide future groundwater measurements. The peizometers were each were installed to a depth of 20 feet below existing grade using a hollow-stem auger. The wells were constructed of 10 feet of slot 0.010 PVC screen with 2-inch PVC solid riser to approximately 3 feet existing grade. The annulus of the borehole was backfilled with 20/30 silica sand to seven feet above the top of the screen, 1 feet of bentonite seal and 2 feet of neat cement grout to the ground surface. The piezometers were finished with a 2' by 2' concrete pad with a 3 feet metal protective riser.

Additionally, seven (7) thin wall tube samples were extracted from depths ranging from 25 to 43 inches at the location of test borings S-1, S-3, S-4, S-5, S-8, S-9 and S-10.

2.4 LABORATORY TESTING

The soil samples recovered from the soil test boring were returned to our laboratory and then an engineer visually examined and reviewed the field descriptions. We selected representative soil samples for laboratory testing consisting of twenty-one (21) wash 200 analyses, twenty-one (21) moisture content tests, seven (7) triaxial permeability tests and seven (7) unit weight tests.

We performed these tests to aid in classifying the soils and to help evaluate the general engineering and permeability characteristics of the site soils. See Appendix B: Report on Triaxial Permeability and Percent Passing No. 200 Sieve and Appendix C: Log of Borings and Description of Testing Procedures for further data and explanations. Jar samples of the soils will be held in our laboratory for your inspection for sixty days unless we are notified otherwise.

3.0 FINDINGS

3.1 SURFACE CONDITIONS

A Universal Engineering Sciences representative performed a visual site inspection of the subject property to gain a "hands-on" familiarity with the project area.

Although no site specific topographic information was provided, based on our field representative's observations, the overall parcel is relatively flat. The site was comprised of a fallow agricultural area. The site was generally covered with a tall grass ground cover. Shallow drainage ditches and deeper drainage swales were located throughout the site.

We examined U.S.G.S. topographic quadrangle maps and the USDA Soil Conservation Service (SCS), Soil Survey of Charlotte County for relevant information about the site. The Charlotte County Soil Survey identifies four (4) soil types on the site as further described in Table 1 (USDA Soil Conservation Service, 1984).

TABLE 1
Summary of Soil Survey Information

Map Unit	Soil Map Unit	Description	Hydrologic Group	Seasonal High Water Levels	Presence of Shallow Rock Layer	Location On Site
11	Myakka fine sand	Nearly level, poorly drained soil on broad flatwoods areas	B/D	0 to 1 foot	> 60 inches	Majority of site
28	Immokalee sand	Nearly level, poorly drained soil in flatwoods areas	B/D	0 to 1 foot	> 60 inches	Northern, eastern and southern areas
27	Pompano fine sand, depressional	Nearly level, poorly drained soil in depressions	B/D	+2 - 1.0 feet	> 60 inches	Small portions of NW and SE areas
40	Anclote sand, depressional	Nearly level, very poorly drained soil in isolated depressions	B/D	+2 - 0 feet	> 60 inches	Small portions of NW and SE areas

3.2 SUBSURFACE CONDITIONS

The boring locations and detailed subsurface conditions are illustrated in Appendix C: Boring Location Plan and Log of Borings. The classifications and descriptions shown on the logs are generally based upon visual characterizations of the recovered soil samples and a limited number of laboratory tests. Also, see Appendix C: Soils Classification Chart for further explanation of the symbols and placement data on the Log of Borings.

TABLE 2
General Soil Profile

Typical Depth (ft.)	Soil Descriptions
0 - 23	Very loose, loose and medium dense, gray and brown, fine SAND with varying amounts of shell fragments, and silt and clay fines [SP, SP-SM, SP-SC, SC]
23 - 50*	Very soft, soft and medium stiff, sandy, green CLAY [CL] and Very loose and loose, greenish-gray and green, clayey, fine SAND [SC]

*** Termination of Deepest Boring**
[ ] Bracketed Text Indicates: Unified Soil Classification

Significant variations in the depth, thickness, and consistency of the aforementioned soil strata occurred at the individual test boring locations.

We measured groundwater at a depths between 3.3 and 4.7 feet below existing grade at the time of our exploration. The difference in groundwater levels can mainly be attributed to variations in the topography at the boring locations. The apparent water table can be expected to fluctuate with seasonal rainfall. Fluctuations in groundwater levels should be anticipated throughout the year, primarily due to seasonal variations in rainfall, surface runoff and other factors that may vary from the time the boring was conducted.

3.3 SLUG TESTS

UES performed slug tests at each piezometer location. The tests were performed by purging a portion of the water column (the slug) from the piezometers using a bladder pump and recording the well recovery using a submersible data logger. The results of the slug tests are presented in the table below.

TABLE 3
Slug Test Results

Location	Test	Initial Water level (Feet from TOC)	Drawdown (feet)	Recovery Time (sec)	K Value (ft per day)
P-1	1	7.8	5.1	52	3.0
	2	7.4	4.5	88	1.8
	3	7.8	4.5	55	2.8
P-2	1	8.02	6.3	88	2.2
	2	8.2	6.3	83	2.3
P-3	1	6.5	4.9	74	2.6
	2	6.5	4.9	54	3.6
	3	6.5	4.9	68	2.9

4.0 LIMITATIONS

This report has been prepared in order to aid the engineer in the design of the proposed landfill. The scope of services provided were limited to the specific project and locations described herein. The description of the project's design parameters represents our understanding of significant aspects relevant to soil and foundation characteristics.

No site or project facilities/improvements, other than those described herein, should be designed using the soil information presented in this report. Moreover, UES will not be responsible for the performance of any site improvement so designed and constructed.

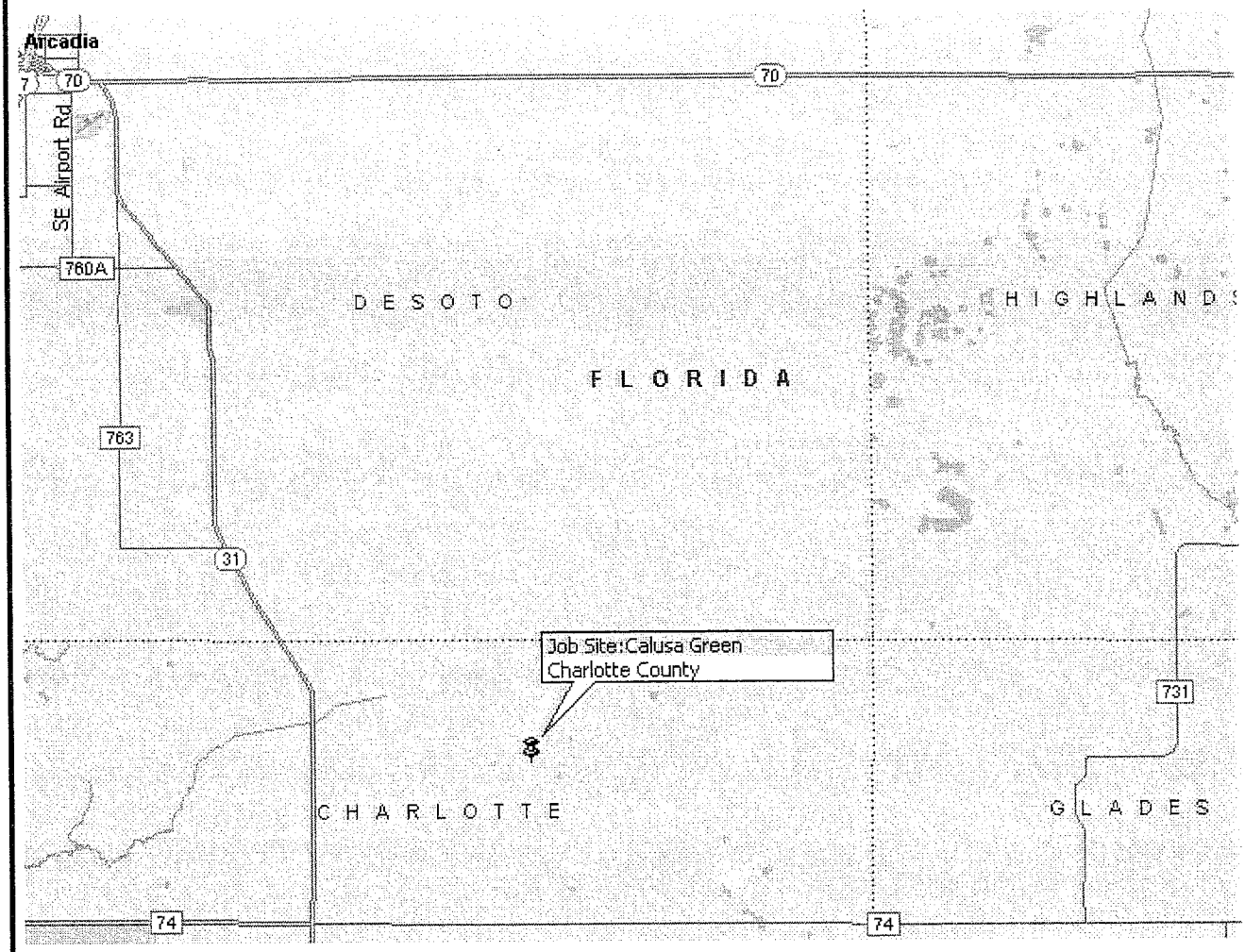
The recommendations submitted in this report are based upon the data obtained from the limited number of soil borings performed at the locations indicated on the Boring Location Plan and from other information as referenced. This report does not reflect any variations which may occur between the boring locations or unexplored areas of the site. This report should not be used for estimating such items as cut and fill quantities.

Our field exploration did not find unsuitable or unexpected materials at the time of occurrence. However, borings for a typical geotechnical report are widely spaced and generally not sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. Accordingly, UES does not recommend relying on our boring information to negate presence of anomalous materials or for estimation of material quantities unless our contracted services ***specifically*** include sufficient exploration for such purpose(s) and within the report we so state that the level of exploration provided should be sufficient to detect such anomalous conditions or estimate such quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

All users of this report are cautioned that there was no requirement for Universal to attempt to locate any man-made buried objects or identify any other potentially hazardous conditions that may exist at the site during the course of this exploration. Therefore no attempt was made by Universal to locate or identify such concerns. Universal cannot be responsible for any buried man-made objects or environmental hazards which may be subsequently encountered during construction that are not discussed within the text of this report. We can provide this service if requested.

For a further description of the scope and limitations of this report please review the document attached within Appendix D "Important Information About Your Geotechnical Engineering Report" prepared by ASFE, an association of firms practicing in the geosciences.

APPENDIX A



UNIVERSAL
ENGINEERING SCIENCES

PROPOSED CALUSA GREEN
SR. 74
CHARLOTTE COUNTY, FLORIDA

SITE LOCATION PLAN

DRAWN BY: Sandra.C	DATE: APRIL, 2012	CHECKED BY: M.H	DATE: APRIL, 2012
SCALE: NOT TO SCALE	PROJECT NO: 0530.1200026.0000	REPORT No:	APPENDIX:

APPENDIX B

UNIVERSAL ENGINEERING SCIENCES
Consultants in: Geotechnical Engineering • Environmental Sciences
Geophysical Services • Construction Materials Testing • Threshold Inspection
Building Inspection • Plan Review • Building Code Administration
3532 Maggie Boulevard • Orlando, FL 32811 • (407) 423-0504 • (407) 423-3106

Project No: 0530.1200026.0000
Date: April 19, 2012

REPORT ON TRIAXIAL PERMEABILITY AND PERCENT PASSING NO. 200 SIEVE (ASTM D-5084 AND ASTM C-117) (AASHTO T-11)

Client: Calusa Green, LLC.

Project: Calusa Green, SR 74, Charlotte County, Florida

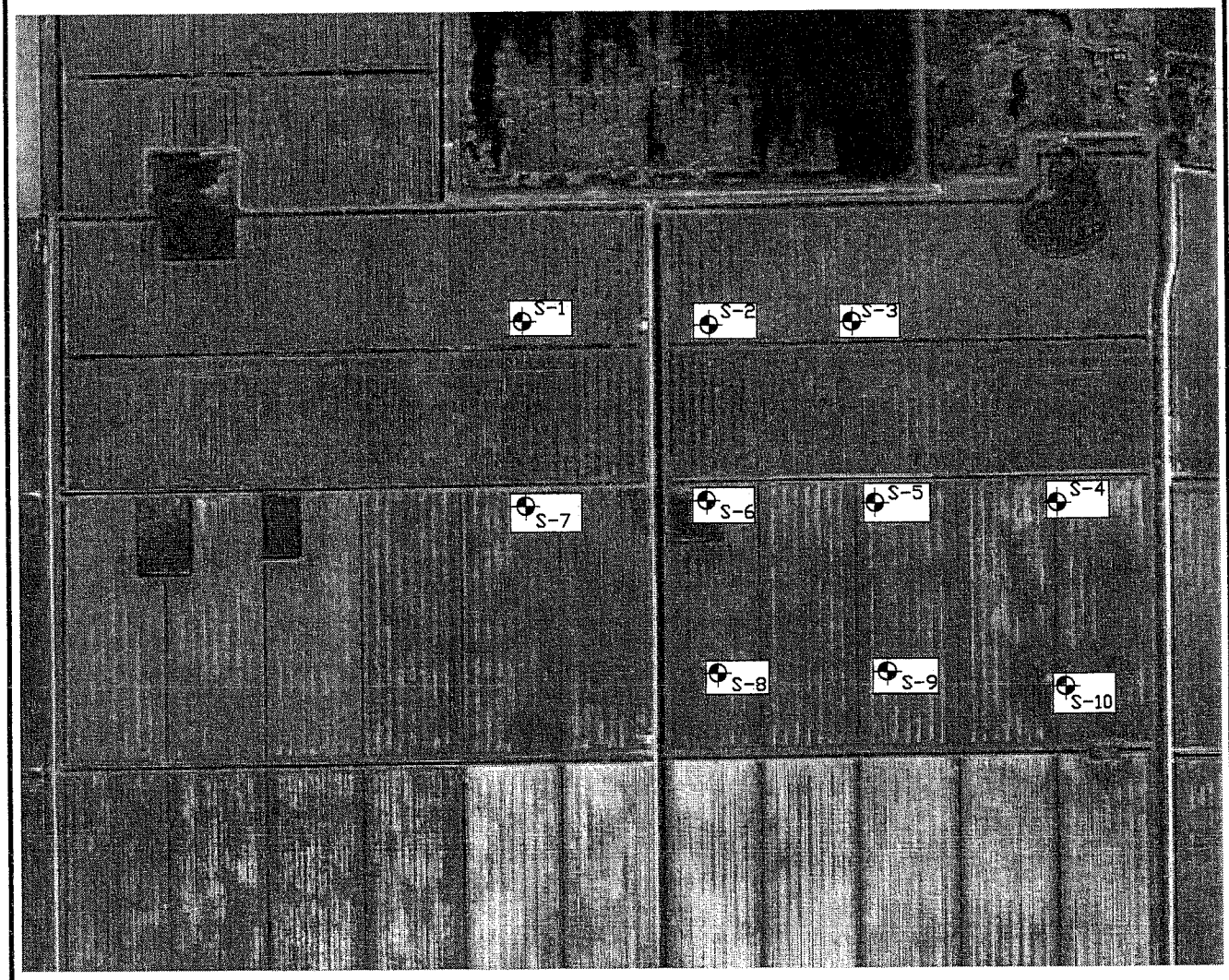
Date Tested: 4-19-12 **Tested By:** R. Castro

Date Sampled: 4-06-12 **Sampled By:** R. Hays

TEST RESULTS

Sample Location	Percent Passing No. 200 Sieve	Sample Ran At:		Permeability	
		Moisture Content (%)	Dry Unit Weight (pcf)	K (cm/s)	K ft/day
S1 (30'-33)	43.7	60.1	63.6	6.24^{10-7}	1.77^{10-3}
S4 (25'-28')	61.2	79.2	59.5	1.47^{10-7}	4.18^{10-4}
S5 (25'-28')	44.6	57.7	63.6	1.53^{10-6}	4.33^{10-3}
S10 (25'-26')	75.4	83.3	51.5	1.19^{10-6}	3.38^{10-3}
S3 (25'-28')	59.5	65.7	58.2	1.12^{10-6}	3.17^{10-3}
S8 (40'-43')	86.0	136.61	34.7	1.37^{10-6}	3.87^{10-3}
S9 (25'-28')	57.2	70.7	52.3	4.22^{10-7}	1.19^{10-3}

APPENDIX C

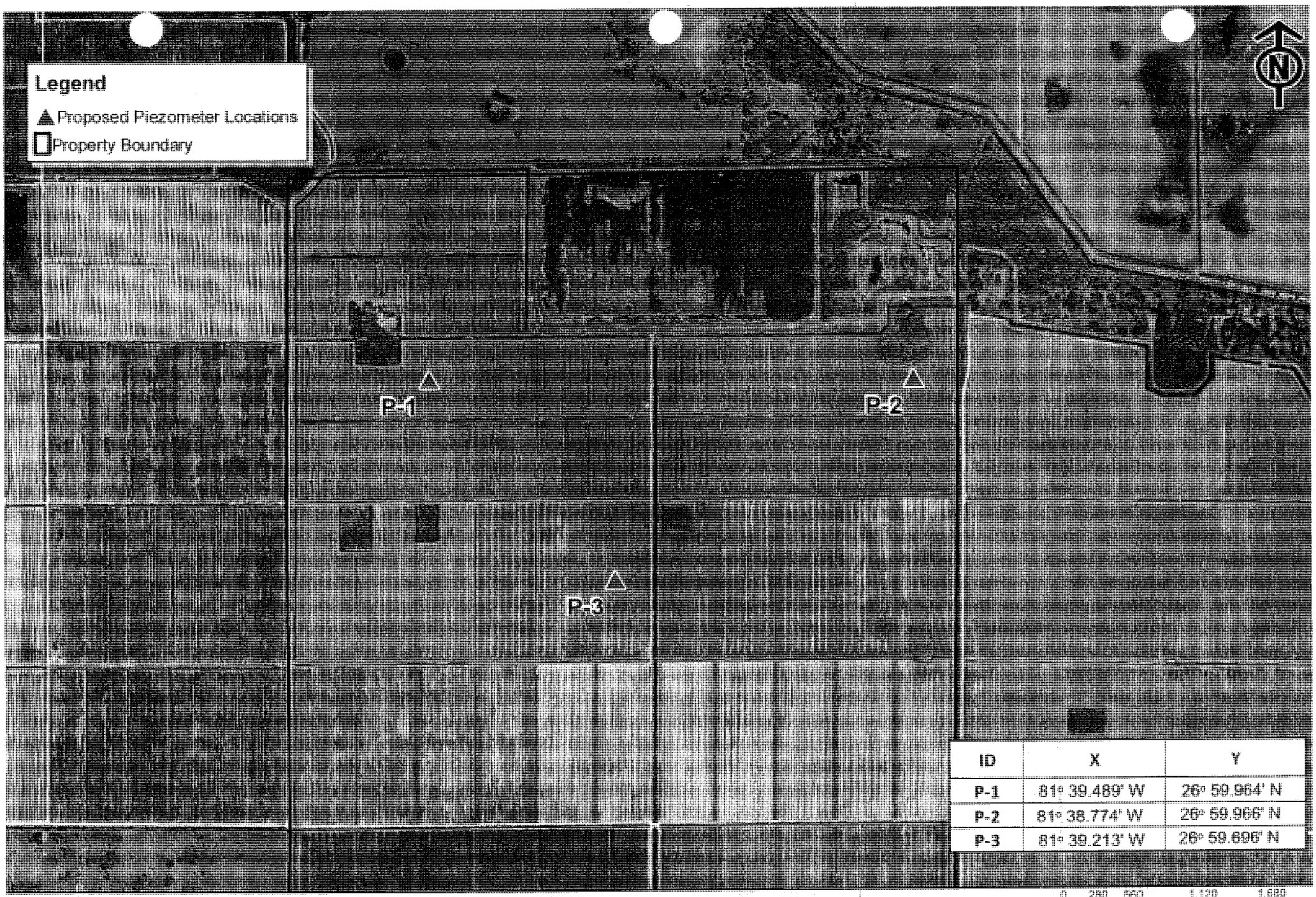


UNIVERSAL
ENGINEERING SCIENCES

PROPOSED CALUSA GREEN
SR. 74
CHARLOTTE COUNTY, FLORIDA

BORING LOCATION PLAN

DRAWN BY: S.C	DATE: APRIL, 2012	CHECKED BY: M.H	DATE: APRIL, 2012
SCALE: NOT TO SCALE	PROJECT NO: 0530.1200026.0000	REPORT NO:	APPENDIX:



ID	X	Y
P-1	81° 39.489' W	26° 59.964' N
P-2	81° 38.774' W	26° 59.966' N
P-3	81° 39.213' W	26° 59.696' N

Scale: 1:11,860 4/5/2012

0 280 560 1,120 1,680 Feet

Progressive Water Resources has provided the images or data presented in this map for informational purposes only. This data is not intended to be used in lieu of official survey data provided by a Professional Surveyor licensed by the State of Florida

Proposed Piezometer Locations
Charlotte County, Florida

Progressive Water Resources

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	1

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-01** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 4.6
DATE OF READING: 3-30-2012
EST. W.S.W.T. (ft):

DATE STARTED: 3/30/12
DATE FINISHED: 3/30/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
		1-2-2	4			Very loose gray fine sand with roots (SP)						
		3-4-4	8			Loose light gray, dark grayish brown fine sand with roots (SP)						
		4-4-4	8	▼			6	18				
5		3-3-3	6			Loose very dark grayish brown to black fine sand with silt (SP-SM)						
		4-5-6	11			Loose brown fine sand with roots (SP)						
		6-7-9	16			Medium dense brown and light tan fine sand (SP)						
10		5-6-9	15			Medium dense greenish brown clayey sand (SC)						
						Loose light greenish gray fine sand with shell fragments (SP)						
15		2-2-4	6									
20		3-3-2	5									
						Loose gray green fine sand with silt and shell fragments, phosphate (SP-SM)						
25		3-2-2	4				10	30				
30		1-1-3	4			Firm dark green clayey sand (sc)	44	60				
						Shelby Tube from 30'-33'						
35		1-2-1	3			Soft green and dark green clay (CL)						
40		1-F-1	1									
45		1-2-3	5			Soft green and dark green, light tan clay (CL)	75	106				
50		2-16-9	25			Medium dense greenish gray fine sand with phosphate (SP)						
						Boring Terminated at 50 Feet.						

BORING_LOG_(4-5)CALUSA GREE_SR 74 (CHARLOTTE COUNTY).GPJ_UNIENGSC.GDT 4/19/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	2

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-02** SHEET: **1 of 2**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 4.0
DATE OF READING: 3-30-2012
EST. W.S.W.T. (ft):

DATE STARTED: 3/30/12
DATE FINISHED: 3/30/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0		1-1-1	2			Very loose dark gray and gray fine sand with roots (SP)						
		1-3-5	8			Loose light gray fine sand with roots (SP)						
		5-6-5	11	▼		Medium dense very light gray and brown fine sand with roots (SP)						
5		3-4-5	9			Loose dark brown and brown fine sand with roots (SP)						
		4-8-9	17									
		6-8-9	17			Medium dense light brown fine sand with silt (SP-SM)						
10		7-11-13	24			Medium dense light brown fine sand with silt and brown fine sand (SP-SM,SP)						
						Loose and medium dense light greenish gray fine sand with shell fragments (SP)						
15		3-4-6	10									
20		4-6-6	12									
						Loose grayish green clayey sand with phosphate (SC)						
25		1-3-4	7									
						Very loose to loose green clayey sand (SC)						
30		1-1-2	3									
35		2-2-3	5									
40		1-2-4	6									
						Dense grayish gray fine sand with phosphate (SP)						
45		16-30-11	41									
						Medium stiff green clay (CL)						
50		2-3-3	6			Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE_SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/19/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	1

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-03** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 5.7
DATE OF READING: 4-2-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/2/12
DATE FINISHED: 4/2/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
	X	1-1-1	2			Very loose gray fine sand with roots (SP)						
	X	3-2-3	5			Loose very light gray fine sand with roots (SP)						
	X	4-4-3	7			Loose very light gray and brown fine sand (SP)						
5	X	3-3-2	5	▼		Very loose to loose brown fine sand (SP)						
	X	2-4-5	9									
	X	6-6-9	15			Medium dense grayish brown clayey sand (SC)	22	15				
10	X	6-9-12	21			Medium dense grayish brown finwe sand (SP)						
						Medium dense light gray fine sand (SP)						
15	X	4-6-7	13									
						Loose shell fragments with greenish gray fine sand (SP)						
20	X	3-4-5	9									
	X	1-1-2	3			Soft green clay (CL)	60	66				
25	■					Shelby tube from 25'- 28'						
	X	12-4-4	8			Loose grayish green fine sand with phosphate (SP)						
						Soft to medium stiff green / gray clay (CL)						
30	X	1-1-1	2			Shelby tube from 25'- 28'						
35												
	X	1-2-1	3									
40												
	X	1-2-2	4									
45												
	X	2-2-4	6									
50						Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/20/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	5

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-04** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 5.4
DATE OF READING: 4-4-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/4/12
DATE FINISHED: 4/4/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
		2-3-4	7			Loose grayish brown fine sand with traces clay (SP,SC)						
		6-8-10	18			Loose dark gray fine sand with roots (SP)						
		8-9-7	16			Medium dense to loose light gray fine sand with roots (SP)						
5		6-5-5	10	▼		Medium dense grayish brown fine sand with silt (SP-SM)						
		5-7-6	13									
		6-8-12	20			Medium dense grayish brown silty sand with roots (SM)						
		5-6-8	14			Medium dense grayish brown fine sand (SP)						
10						Medium dense light brown fine sand (SP)						
						Very loose light gray / brown fine sand (SP)						
15		2-2-F	2									
20		2-4-4	8			Loose grayish green fine sand with shell fragments (SP)						
25		2-2-3	5			Medium stiff grayish green clay (CL)	61	79				
						Shelby tube 25' - 28' 8", recovery						
30		12-3-4	7									
35		1-1-1	2			soft green clay (CL)						
40		1-1-2	3									
						Very soft dark green clay (CL)						
45		1-F-1	1									
50		1-1-1	2				90	190				
						Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/19/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	6

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-05** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 4.3
DATE OF READING: 4-4-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/4/12
DATE FINISHED: 4/4/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0		1-2-4	6			Loose grayish brown fine sand with roots (SP)						
		5-4-4	8									
		3-2-4	6	▼		Loose dark brown fine sand with trace of clay (SP-SC)						
5		3-3-4	7			Loose light grayish brown fine sand with silt (SP-SM)						
		6-6-9	15			Medium dense light grayish brown fine sand with silt (SP-SM)	21	15				
		8-8-9	17									
		7-8-11	19			Medium dense light green clayey sand (SC)						
10						Medium dense light gray fine sand with silt (SP-SM)						
						Medium dense light gray fine sand with shell fragments (SP)						
15		5-6-10	16									
						Loose light green gray fine sand with shell fragments, phosphate (SP)						
20		4-4-5	9									
						Very loose green clayey sand (SC)						
25		1-1-1	2				45	58				
						Shelby tube 25' - 28'						
30		1-F-1	1									
						Medium dense green fine sand (SP)						
35		11-7-5	12									
						Very loose to loose light green clayey sand (SC)						
40		1-2-2	4									
45		2-3-3	6									
50		1-2-3	5				37	191				
						Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/19/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	2

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-06** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 6.0
DATE OF READING: 4-2-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/2/12
DATE FINISHED: 4/2/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
	X	2-3-4	7			Loose brown fine sand with traces roots (SP)						
	X	4-4-2	6			Loose and very loose dark gray to black fine sand with organics (SP-OL)						
	X	2-2-1	3									
5	X	2-2-4	6	▼		Loose brown fine sand with silt and roots (SP-SM)						
	X	3-1-3	4			Very loose gray / brown fine sand (SP)						
	X	3-4-5	9			Loose greenish gray / brown fine sand with clay (SP-SC)						
10	X	3-4-5	9									
15	X	2-2-2	4			Very loose light green gray fine sand (SP)						
20	X	1-1-3	4			Very loose light green gray fine sand with shell fragments (SP)						
25	X	2-1-3	4			Soft to medium stiff green sandy clay (CL)						
						Shelby tube 25' - 28', 0% recovery						
30	X	1-1-1	2			Shelby tube 30' - 33'. 0% recovery						
35	X	2-3-4	7			Shelby tube 35' - 38' 0% recovery						
40	X	2-3-4	7									
45	X	2-3-4	7				54	71				
50	X	2-3-4	7			Boring Terminated at 50 Feet.						

BORING_LOG_(4-5)CALUSA GREE_SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/20/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	8

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-07** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 3.8
DATE OF READING: 4-2-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/2/12
DATE FINISHED: 4/2/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
	X	1-F-2	2			Very loose grayish brown fine sand with roots (SP)						
	X	2-3-3	6			Loose brown fine sand (SP)						
	X	3-4-3	7	▼		Loose light grayish brown fine sand (SP)						
5	X	1-1-1	2			Very loose to loose light gray fine sand (SP)						
	X	3-4-5	9									
	X	6-8-10	18			Medium dense very light gray to white fine sand (SP)						
10	X	12-14-15	29			Medium dense brown fine sand with clay (SP-SC)						
						Medium dense light grayish brown fine sand (SP)						
15	X	4-6-6	12									
						Medium dense brown fine sand with shell fragments (SP)						
20	X	2-8-9	17									
						Loose grayish green silty sand with shell fragments, phosphate (SP)						
25	X	1-3-2	5				14	31				
	X	1-1-1	2			Very soft green clay with shell fragments (CL)						
30						Shelby tube / 0% recovery						
	X	1-1-1	2			Very soft green clay (CL)						
35						Shelby tube /0% recovery.						
	X	F-F-F	F			Shelby tube /0% recovery.						
40												
	X	F-F-F	F									
45												
						Soft green clay (CL)						
	X	1-2-2	4				74	131				
50						Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/19/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	3

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-08** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 4.5
DATE OF READING: 4-3-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/3/12
DATE FINISHED: 4/3/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
		1-1-3	4			Very loose dark grayish brown and gray fine sand with roots (SP)						
		4-4-6	10			Loose very light gray fine sand (SP)						
		6-7-7	14	▼		Medium dense very dark grayish brown to black fine sand with silt, organics (SP-SM)	5	17				
5		6-9-9	18			Medium dense dark brown fine sand with silt (SP-SM)						
		7-8-12	20			Medium dense light grayish brown fine sand with roots (SP)						
		7-9-12	21			Medium dense light brown fine sand (SP)						
10		8-11-12	23			Medium dense light grayish brown fine sand (SP)						
						Medium dense very light gray fine sand (SP)						
15		3-5-6	11									
						Medium dense shell fragments with green gray fine sand (SP)						
20		3-7-8	15									
						Medium stiff green sandy clay (CL)						
25		2-3-2	5									
		1-F-1	1			Very soft clay with shell fragments (CL)						
30						Shelby tube 30'-33' x 2 / 0% recovery						
35		F-F-F	F									
40		1-1-1	2			Shelby tube 40'-43' / 100% recovery	86	137				
		3-5-6	11			Medium dense green clay / clayey sand (CL/SC)						
45						Medium stiff dark green clay (CL)						
50		2-3-3	6			Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/20/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	4

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

BORING DESIGNATION: **S-09** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

G.S. ELEVATION (ft):
WATER TABLE (ft): 5.0
DATE OF READING: 4-3-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/3/12
DATE FINISHED: 4/3/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./ DAY)	ORG. CONT. (%)
0												
		1-1-3	4			Very loose gray and light gray fine sand with roots (SP)						
		4-3-4	7			Loose dark brown and brown fine sand (SP)						
		2-1-3	4			Very loose light brown fine sand (SP)						
5		4-6-8	14	▼		Medium dense brown fine sand with roots (SP)						
		4-6-8	14			Medium dense very light gray fine sand (SP)						
		4-8-9	17									
10		6-7-9	16			Medium dense light grayish brown fine sand with clay, roots (SP-SC)						
						Medium dense light grayish brown fine sand with clay (SP-SC)						
15		6-8-7	15				12	17				
20		4-5-6	11			Medium dense light green fine sand with shell fragments (SP)						
						Soft green clay (CL)						
25		1-F-3	3			Shelby tube 25'-28' /100% recovery.	57	52				
30		F-F-1	1			Very soft green clay with fine sand (CL,SP)						
						Shelby tube 25'-28' /100% recovery.						
35		1-F-1	1			Very soft to soft green clay (CL)						
40		1-F-2	2									
45		1-2-2	4			Medium stiff green with dark gray clay (CL)						
						Medium stiff green clay (CL)						
50		1-2-2	4			Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE_SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/20/12

UNIVERSAL ENGINEERING SCIENCES
BORING LOG

PROJECT NO.:	0530.1200026.0000
REPORT NO.:	
PAGE:	5

PROJECT: Calusa Green
SR. 74
Charlotte County, Florida

BORING DESIGNATION: **S-10** SHEET: **1 of 1**
SECTION: TOWNSHIP: RANGE:

CLIENT: Southwest Engineering & Design

LOCATION: See Boring Location Plan

REMARKS:

G.S. ELEVATION (ft):
WATER TABLE (ft): 4.25
DATE OF READING: 4-3-2012
EST. W.S.W.T. (ft):

DATE STARTED: 4/3/12
DATE FINISHED: 4/3/12
DRILLED BY: R/C
TYPE OF SAMPLING: ASTM 1586

DEPTH (FT.)	SAMPLE	BLOWS PER 6" INCREMENT	N (BLOWS/FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	K (FT./DAY)	ORG. CONT. (%)
0	X	1-1-3	4			Very loose brown fine sand with roots (SP)						
	X	3-3-3	6			Loose very dark graysish brown fine sand with organics (SP)						
	X	2-4-5	9	▼		Loose to medium dense very light gray with brown fine sand, roots (SP)						
5	X	5-4-5	9			Loose to medium dense very light gray with brown fine sand (SP)						
	X	3-5-9	14									
	X	9-12-15	27									
10	X	19-28-30	58			Dense grayish brown clayey sand (SC)	21	13				
						Loose dark brown fine sand (SP)						
15	X	4-3-3	6									
20	X	5-6-6	12			Medium dense shell fragments with light green fine sand (SP)						
25	X	1-2-2	4			Firm grayish green clay (CL)	61	50				
	■					Shelby tube 25'-28' /1' recovery.	75	83				
30	X	1-F-1	1			Very soft green sandy clay (CL)						
35	X	1-F-1	1			Very soft to soft green clay (CL)						
40	X	F-1-F	1									
45	X	1-F-2	2									
50	X	1-1-1	2			Boring Terminated at 50 Feet.						

BORING_LOG (4-5)CALUSA GREE, SR 74 (CHARLOTTE COUNTY).GPJ UNIENGSC.GDT 4/20/12

Description of Laboratory Testing Procedures

Natural Moisture Content

The natural moisture content of a soil is the ratio of weight of water within the voids of the soil and the over dry weight of the soil expressed in percent. This test is performed in general accordance with the applicable sections of ASTM D-2974.

Percent Fines Content

The soil material passing the No. 200 sieve falls into the particle size of silts and clays. This analysis can be used to refine visual classifications. This test method is performed in general accordance with ASTM D-140.

UNIVERSAL ENGINEERING SCIENCES

KEY TO BORING LOGS

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE-GRAINED SOILS (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

Descriptive Terms	Relative Density	SPT Blow Count
Very loose	0 to 15 %	< 4
Loose	15 to 35 %	4 to 10
Medium dense	35 to 65 %	10 to 30
Dense	65 to 85 %	30 to 50
Very dense	85 to 100 %	> 50

FINE-GRAINED SOILS (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

Descriptive Terms	Unconfined Compressive Strength kPa	SPT Blow Count
Very soft	< 25	< 2
Soft	25 to 50	2 to 4
Medium stiff	50 to 100	4 to 8
Stiff	100 to 200	8 to 15
Very stiff	200 to 400	15 to 30
Hard	> 400	> 30

GENERAL NOTES

1. Classifications are based on the United Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. Surface elevations are based on topographic maps and estimated locations.

3. Descriptions on these boring logs apply only at the specific boring locations and at the time the borings were made. They are not guaranteed to be representative of subsurface conditions at other locations or times.

SYMBOLS

▼ Measured Water Table Level

▽ Estimated Seasonal High Water Table

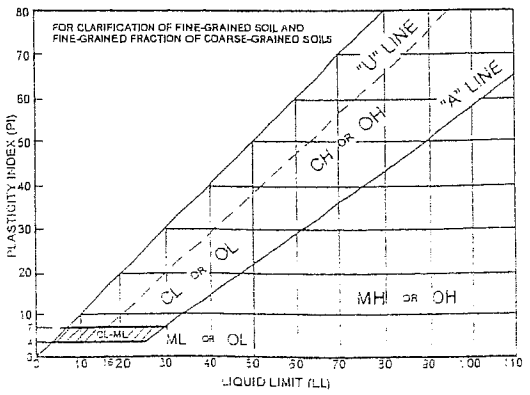
Major Divisions			Group Symbols	Typical Names	Laboratory Classification Criteria
Coarse-Grained soils (More than half the material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravel (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW
		Gravel with fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4 / Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			GC	Clayey gravels, gravel-sand-silt mixtures	Atterberg limits above "A" line or P.I. greater than 7
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_U = \frac{D_{60}}{D_{10}}$ greater than 6; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			SP	Poorly-graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW
		Sands with fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4 / Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above "A" line or P.I. greater than 7
Fine-Grained soils (More than half the material is smaller than No. 200 sieve size)	Silts and Clays (Liquid limit less than 60)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
			OL	Organic silts and organic silty clays of low plasticity	
	Silts and Clays (Liquid limit greater than 60)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, organic silts	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic clays of medium to high plasticity, organic silts	
	Highly Organic Soils		Pt	Peat and other highly organic soils	

Determine percentages of sand and gravel from grain size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve) coarse-grained soils are classified as follows:

Less than 5 percent..... GW, GP, SW, SP
More than 12 percent..... GM, GC, SM, SC
5 to 12 percent..... Borderline cases requiring dual symbols*

Particle Size	Sieve sizes
	< #200
	#200 to #40
	#40 to #10
	#10 to #4

Particle Size	mm
Material	
Silt or clay	< 0.074
Sand	0.074 to 0.42
Fine	0.42 to 2.00
Medium	2.00 to 4.76
Coarse	



Plasticity Chart

Particle Size	Sieve
Material	mm
Gravel	4.76 to 19.1
Fine	#4 to 3/4 in.
Coarse	19.1 to 76.2
Cobble	3/4 in. to 3 in.
	76.2 to 304.8
	3 in. to 12 in.
Boulders	304.8 to 914.4
	12 in. to 36 in.

* When the percent passing a No. 200 sieve is between 5% and 12%, a dual symbol is used to denote the soil. For example: SP-SC, poorly-graded sand with clay content between 5% and 12%.

APPENDIX D

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique; each geotechnical engineering report is uniquely prepared for the client. No one except you should rely on your geotechnical engineering report without first confiding with the geotechnical engineer who prepared it. And no one-not even you-should apply the report for any purpose or project except the one originally contemplated.

A Geotechnical Engineering Report is Based on A Unique Set of Project Specific Factors

Geotechnical engineers consider a number of unique project specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conduced the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership

As a general rule, always inform your geotechnical engineer of project changes-even minor ones-and request an assessment of their impact. Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of when they were not informed.

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. Do not rely on a geotechnical engineering report whose adequacy may have been affected by the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events such as flood, earthquakes, or groundwater fluctuations. Always contact the geotechnical engineer before applying the report, to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identified subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ-sometimes significantly-from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not over rely on the construction recommendations included in your report. Those recommendations are not final, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

A Geotechnical Engineering Report is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also, retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce such risks, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. Read these provisions closely. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a geoenvironmental study differ significantly from those used to perform a geotechnical study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Unanticipated environmental problems have led to numerous project failures. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. Do not rely on an environmental report prepared for someone else.

Rely on Your Geotechnical Engineer for Additional Assistance

Membership in ASFE exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE PROFESSIONAL FIRMS PRACTICING IN THE GEOSCIENCES

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email: info@asfe.org www.asfe.org

IIGER06983.5M

CONSTRAINTS AND RESTRICTIONS

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinion contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative east or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicated normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuation in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions and variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

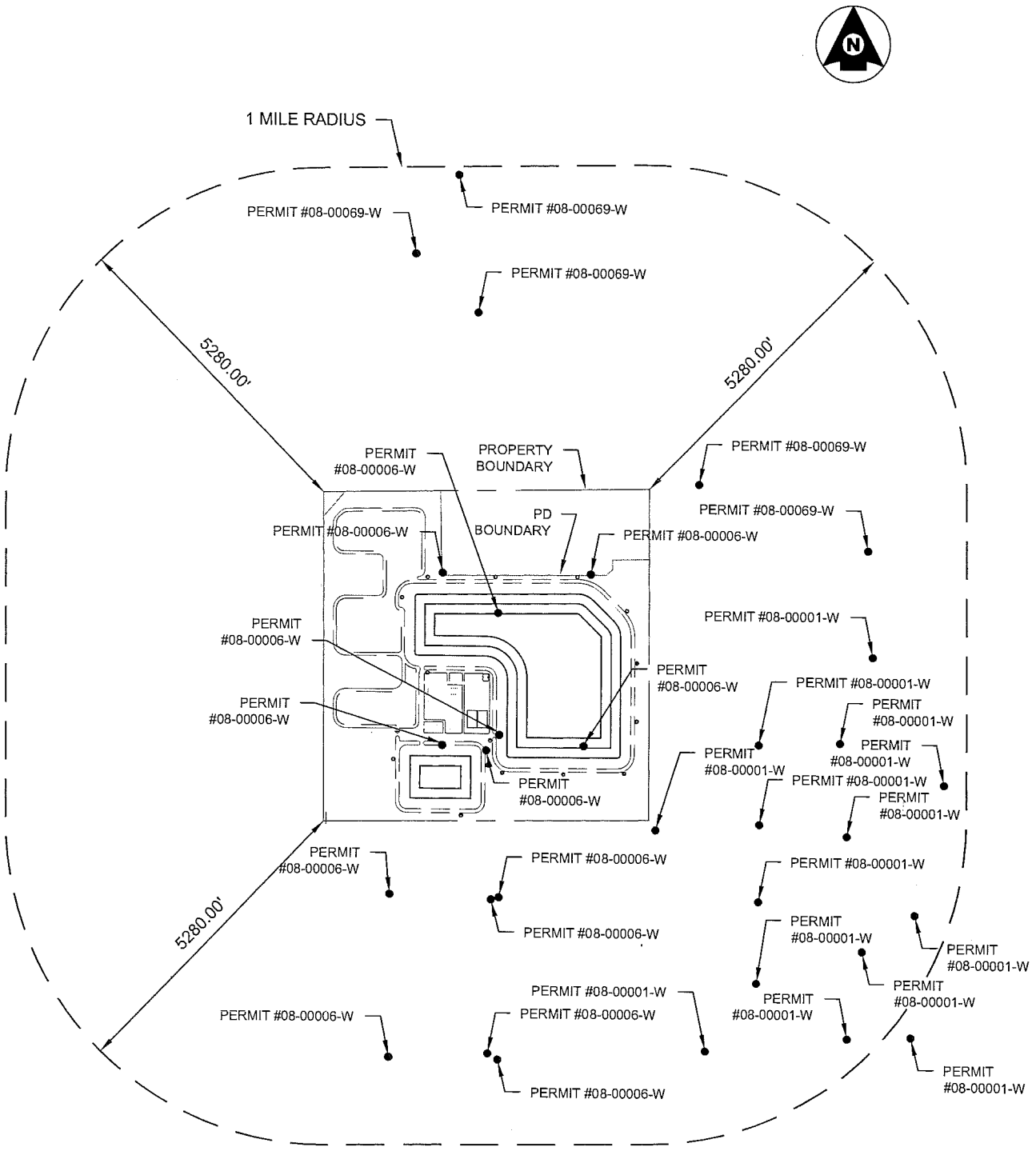
This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

Existing Wells within One Mile

The existing well locations within one mile of the proposed Calusa Green project site are shown on the following graphics and supplemented with permit and construction log data behind that.

The boundary between Southwest Florida Water Management District and South Florida Water Management District is congruent with the easterly property line of the Calusa Green site. Therefore the graphics show the permitted wells within each respective District. The third graphic is a field verification of the registered wells.

Most of the wells are for irrigation, others are for groundwater monitoring. The irrigation wells have Water Use Permits associated with them with permitted withdrawal rates.



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Certificate of Authorization No. 26551

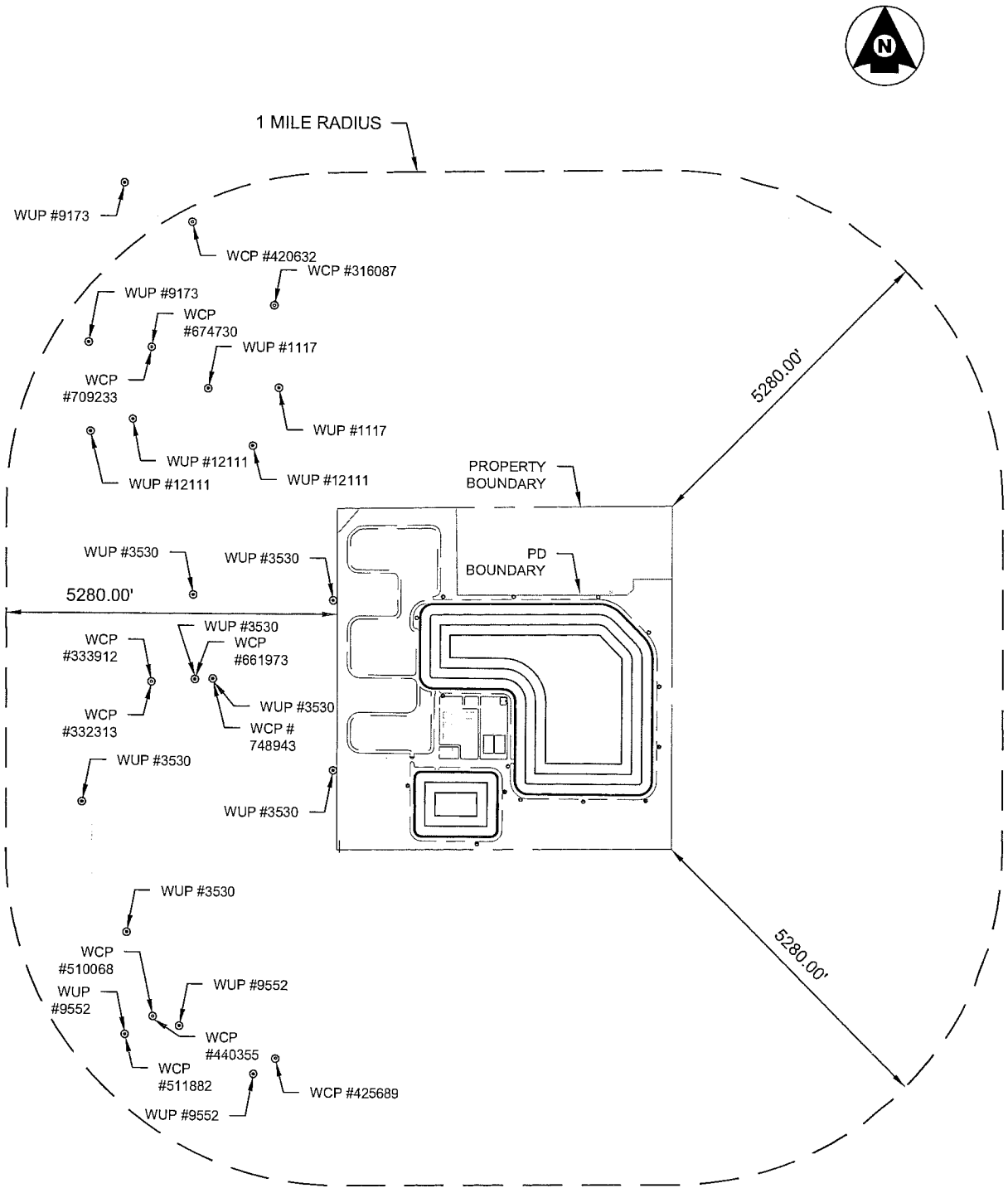
Project No.:	10-0109
Proj. Manager:	K H R
Proj. Designer:	G W B
Drawn By:	R G
Checked By:	E P L
Approved By:	G W B

CALUSA GREEN

SFWMD WELL LOCATIONS MAP

SECTION 18 TOWNSHIP 40S RANGE 27E

DATE:	05-01-12
SCALE:	1" = 2500'
SHEET	1 of 3
PROJECT No.:	10-0109



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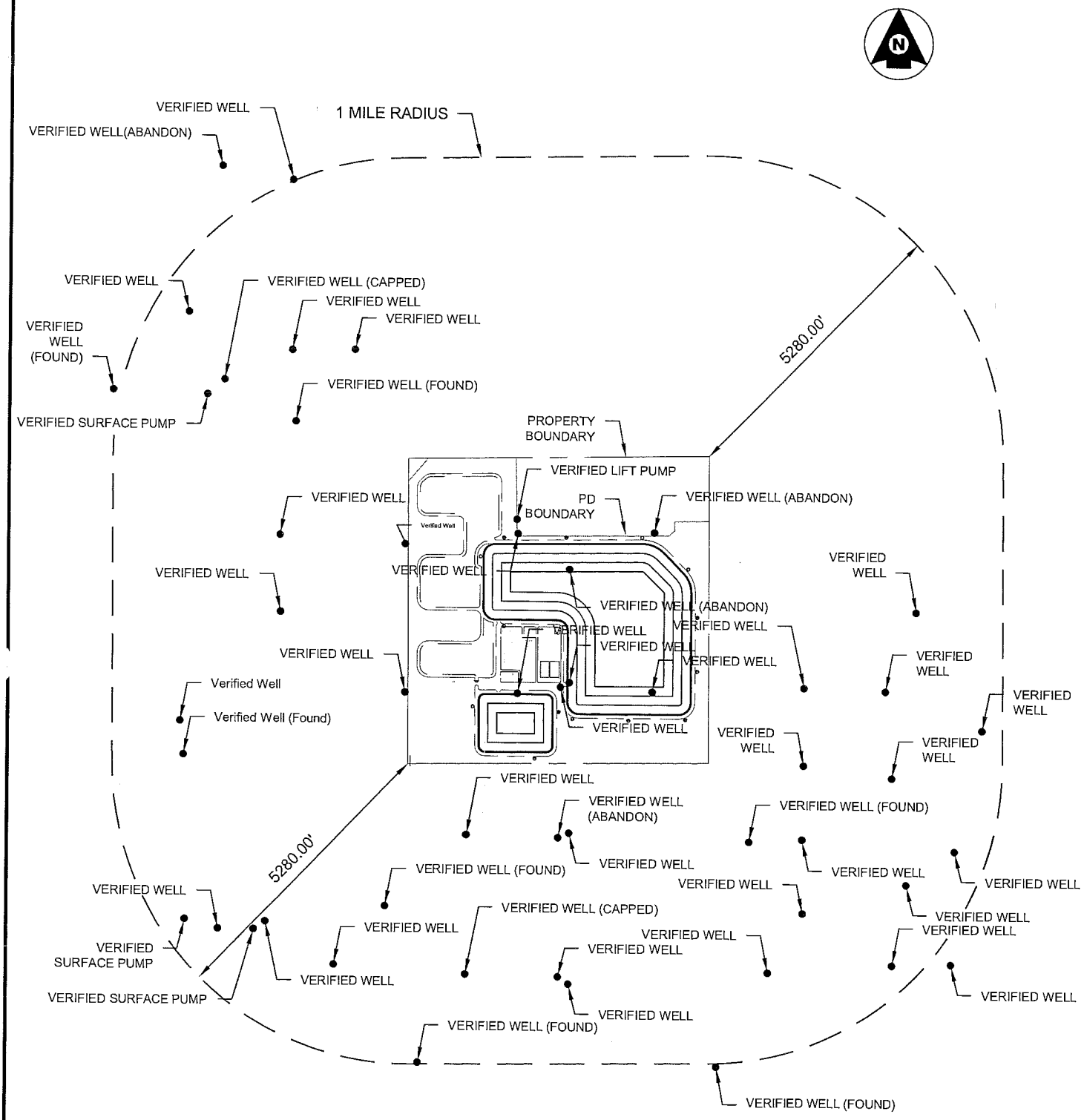
CALUSA GREEN

SWFWMD
WELL LOCATIONS MAP

SECTION 18 TOWNSHIP 40S RANGE 27E

DATE:	05-01-12
SCALE:	1" = 2500'
SHEET	2 of 3
PROJECT No.:	10-0109



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Proj. Designer:	G W B
Drawn By:	R G
Checked By:	E P L
Approved By:	G W B

CALUSA GREEN

VERIFIED SWFWMD/SFWMD WELL LOCATIONS MAP

SECTION 18 TOWNSHIP 40S RANGE 27E

DATE:	05-01-12
SCALE:	1" = 2500'
SHEET	3 of 3
PROJECT No.:	10-0109

1 MILE RADIUS WELL LOCATIONS

SWFWMD WUP Locations – 1 Mile Radius from Section 18, Township 40, Range 27

WUP #	District ID #	User ID	Applicant/Permittee	Stratigraphic Unit	Static Water Level
12111.002	1	1	American Citrus Products Corporation	ROMP 5,12,13	-
12111.002	2	2	American Citrus Products Corporation	ROMP 5,12,13	-
12111.002	3	3	American Citrus Products Corporation	ROMP 5,12,13	-
12111.002	4	4	American Citrus Products Corporation	ROMP 5,12,13	-

WUP #	District ID #	User ID	Pumpage	Water Quality	Meter Reading	Withdrawal Type	Withdrawal Status	Longitude	Latitude	Pump Capacity
12111.002	1	1	X	-	X	Groundwater	Existing	81 39 56.76	27 00 24.62	3,000
12111.002	2	2	X	-	X	Groundwater	Capped	81 40 18.11	27 00 28.63	3,000
12111.002	3	3	X	-	X	Groundwater	Existing	81 40 40.00	27 00 26.91	3,000
12111.002	4	4	X	X	X	Groundwater	Proposed	81 40 25.53	27 00 26.70	3,000

WUP #	District ID #	User ID	Mainline Diameter	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	WD Avg GPD	WD Peak GPD	WD Max GPD	Elevation	Well Construction Date
12111.002	1	1	8	8	55	325	74,500	271,790	504,000	-	-
12111.002	2	2	8	8	60	350	74,500	271,790	588,000	-	-
12111.002	3	3	10	12	250	600	97,600	356,340	1,428,000	-	-
12111.002	4	4	10	12	250	600	97,600	356,340	1,428,000	-	-

WUP #	District ID #	User ID	Applicant/Permittee	Stratigraphic Unit	Static Water Level
3530.007	1	2	Kenny Grace	ROMP 5,12,13	-
3530.007	2	7	Kenny Grace	ROMP 5,12,13	-
3530.007	3	13	Kenny Grace	ROMP 5,12,13	-
3530.007	4	18	Kenny Grace	ROMP 5,12,13	-

3530.007	5	20	Kenny Grace	ROMP 5,12,13	-
3530.007	6	22	Kenny Grace	ROMP 5,12,13	-
3530.007	7	25	Kenny Grace	ROMP 5,12,13	-
3530.007	8	26	Kenny Grace	ROMP 5,12,13	-
3530.007	9	35	Kenny Grace	ROMP 5,12,13	-
3530.007	10	21	Kenny Grace	ROMP 5,12,13	-
3530.007	11	14	Kenny Grace	ROMP 5,12,13	-

WUP #	District ID #	User ID	Pumpage	Water Quality	Meter Reading	Withdrawal Type	Withdrawal Status	Longitude	Latitude	Pump Capacity
3530.007	1	2	X	-	X	Groundwater	Existing	81 41 44.93	26 59 08.48	-
3530.007	2	7	X	-	X	Groundwater	Capped	81 41 16.63	26 59 08.38	-
3530.007	3	13	X	X	X	Groundwater	Capped	81 40 47.85	26 59 35.05	-
3530.007	4	18	X	-	X	Groundwater	Existing	81 39 42.46	26 59 34.16	-
3530.007	5	20	X	X	X	Groundwater	Capped	81 40 03.79	26 59 48.29	-
3530.007	6	22	X	-	X	Groundwater	Existing	81 39 42.51	27 00 00.59	-
3530.007	7	25	X	X	X	Groundwater	Existing	81 40 47.68	26 59 08.44	-
3530.007	8	26	X	-	X	Groundwater	Capped	81 40 18.91	26 59 08.76	-
3530.007	9	35	X	X	X	Groundwater	Existing	81 40 06.97	26 59 48.20	-
3530.007	10	21	X	-	X	Surface	Existing	81 40 07.32	27 00 01.35	-
3530.007	11	14	X	-	X	Surface	Existing	81 40 26.82	26 59 29.05	-

WUP #	District ID #	User ID	Mainline Diameter	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	WD Avg GPD	WD Peak GPD	WD Max GPD	Elevation	Well Construction Date
3530.007	1	2	0	12	135	1,446	140,000	867,600	2,880,000	-	-
3530.007	2	7	0	6	63	397	0	-	-	-	-
3530.007	3	13	0	12	140	810	0	-	-	-	-
3530.007	4	18	0	8	253	630	125,000	744,200	-	-	-
3530.007	5	20	0	12	580	1,250	0	-	-	-	-
3530.007	6	22	0	10	60	410	125,000	744,200	-	-	-
3530.007	7	25	0	10	60	503	251,900	1,550,600	2,880,000	-	-
3530.007	8	26	0	8	0	500	0	-	-	-	-
3530.007	9	35	0	12	235	525	109,000	492,000	-	-	-
3530.007	10	21	0	16	0	0	109,000	492,000	-	-	-
3530.007	11	14	0	10	0	0	158,900	978,400	4,320,000	-	-

WUP #	District ID #	User ID	Applicant/Permittee	Stratigraphic Unit	Static Water Level
9552.003	1	1	Calusa Growers L.C.	ROMP 5,12,13	-
9552.003	2	2	Calusa Growers L.C.	ROMP 5,12,13	-
9552.003	3	3	Calusa Growers L.C.	ROMP 5,12,13	-

WUP #	District ID #	User ID	Pumpage	Water Quality	Meter Reading	Withdrawal Type	Withdrawal Status	Longitude	Latitude	Pump Capacity
9552.003	1	1	X	-	X	Groundwater	Existing	81 40 19.18	26 58 52.84	1,200
9552.003	2	2	-	-	-	Groundwater	Existing	81 39 56.26	26 58 46.81	1,000
9552.003	3	3	X	-	X	Surface	Existing	81 40 09.52	26 58 54.21	1,400

WUP #	District ID #	User ID	Mainline Diameter	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	WD Avg GPD	WD Peak GPD	WD Max GPD	Elevation	Well Constructio n Date
9552.003	1	1	10	12	250	480	111,900	692,200	1,008,000	-	-
9552.003	2	2	0	10	0	500	0	-	1,176,000	-	-
9552.003	3	3	-	12	-	-	106,500	646,100	1,176,000	-	-

WUP #	District ID #	User ID	Applicant/Permittee	Stratigraphic Unit	Static Water Level
1117.004	1	33	Kenny Grace	ROMP 5,12,13	-
1117.004	2	32	Kenny Grace	ROMP 5,12,13	-

WUP #	District ID #	User ID	Pumpage	Water Quality	Meter Reading	Withdrawal Type	Withdrawal Status	Longitude	Latitude	Pump Capacity
1117.004	1	33	X	-	X	Groundwater	Existing	81 40 04.72	27 00 33.50	-
1117.004	2	32	-	-	-	Groundwater	Existing	81 39 52.19	27 00 33.63	-

WUP #	District ID #	User ID	Mainline Diameter	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	WD Avg GPD	WD Peak GPD	WD Max GPD	Elevation	Well Construction Date
1117.004	1	33	0	10	58	364	31,700	185,200	357,000	-	-
1117.004	2	32	0	8	450	720	31,700	185,200	630,000	-	-

SWFWMD WCP Locations – 1 Mile Radius from Section 18, Township 40, Range 27

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
316087	M Ballard	ROMP 5,12,13	11	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
316087	-	-	81 39 53.01	27 00 46.45	8	70	525	-	07/01/1979

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
332313	H J Stripe	ROMP 5,12,13	4	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
332313	-	-	81 40 14.67	26 59 47.76	3	21	40	-	07/01/1979

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
333912	Stipc H	ROMP 5,12,13	6	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
333912	-	-	81 40 14.67	26 59 47.76	4	21	38	-	07/01/1979

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
382831	L M Haddad Trust-Fl Home Juice H S Lang 1st Natl Bank-Bermont	ROMP 5,12,13	3	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
382831	-	-	81 40 43.26	26 59 34.20	12	580	1250	-	11/21/1983

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
420632	David F Scales	ROMP 5,12,13	8	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
420632	-	-	81 40 07.60	27 00 59.38	8	450	720	-	12/20/1986

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
425689	Boney, Marvin	ROMP 5,12,13	-	Domestic

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
425689	-	-	81 39 52.38	26 58 49.27	2	21	63	-	12/30/1986

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
440355	Frederick C Hill	ROMP 5,12,13	10	Livestock

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
440355	-	-	81 40 14.18	26 58 55.67	2	72	140	-	11/11/1987

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
510068	Miller, William	ROMP 5,12,13	-	Domestic

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
510068	-	-	81 40 14.18	26 58 55.67	2	192	340	-	02/13/1991

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
511882	Ralph Chastain	ROMP 5,12,13	14	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
511882	9552.003	1	81 40 19.18	26 58 52.84	8	250	480	-	04/27/1991

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
661973	Kenny Grace	ROMP 5,12,13	20	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
661973	3530.007	9	81 40 06.97	26 59 48.20	12	235	525	-	12/10/2001

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
662657	Kenny Grace	ROMP 5,12,13	20	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
662657	12111.001	3	81 40 40.00	27 00 26.91	12	225	485	-	12/27/2001

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
674730	Dorothy L Henderson	ROMP 5,12,13	-	Livestock

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
674730	-	-	81 40 14.74	27 00 39.85	4	70	340	-	10/23/2002

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
698464	Brian Bartholomew	ROMP 5,12,13	13	Irrigation

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
698464	9173.004	5	81 40 46.61	27 00 40.16	16	120	460	-	04/30/2004

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
709233	Debbie Vilardi	ROMP 5,12,13	6	Domestic

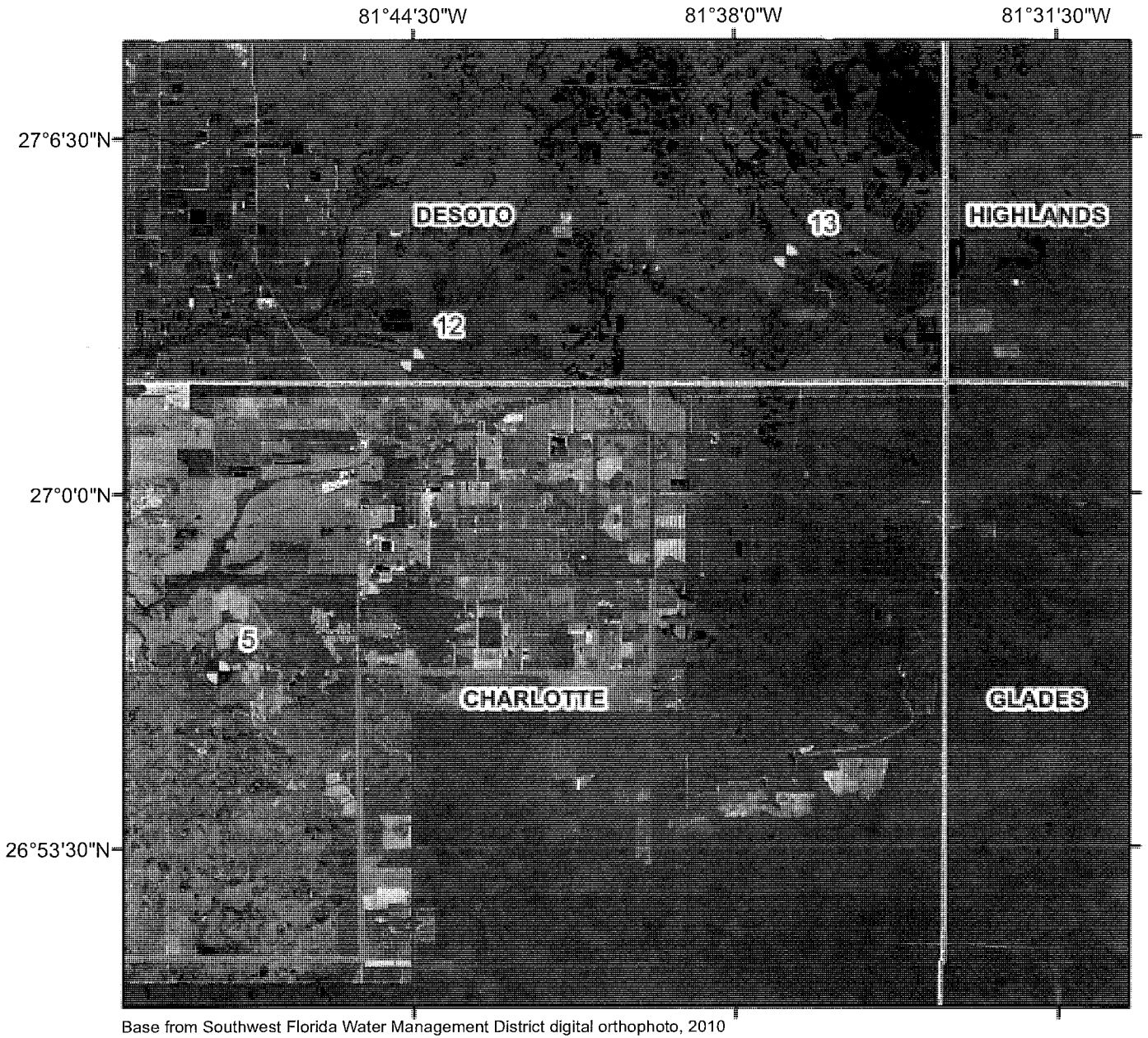
WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
709233	-	-	81 40 14.74	27 00 39.85	4	63	160	-	11/11/2004

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
748940	No Name - Do Not Modify (Under Review)	ROMP 5,12,13	-	PLUGGED

WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
748940	3530.007	3	81 40 47.85	26 59 35.05	12	-	-	-	-

WCP #	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Well Use
748943	American Citrus Products (Withdrawn)	ROMP 5,12,13	-	PLUGGED

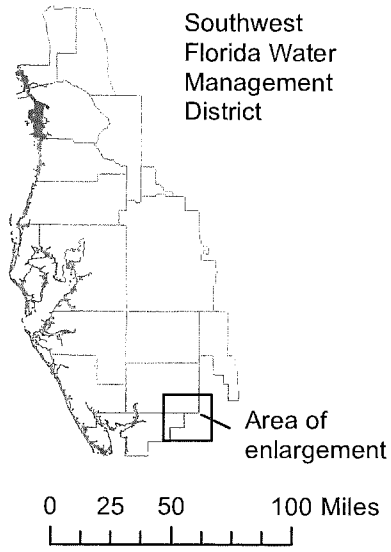
WCP #	WUP #	District ID #	Longitude	Latitude	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Elevation	Well Construction Date
748943	3530.007	5	81 40 03.79	26 59 48.29	12	-	-	-	-



Base from Southwest Florida Water Management District digital orthophoto, 2010
NAD 1983 HARN StatePlane Florida West FIPS 0902 Feet projection

0 2.5 5 10 Miles

0 2.5 5 10 Kilometers



Explanation

- Sections 12,13, 24 Township 40 Range 26
- Southwest Florida Water Management District Boundary
- County Boundary
- Regional Observation and Monitor-well Program site number

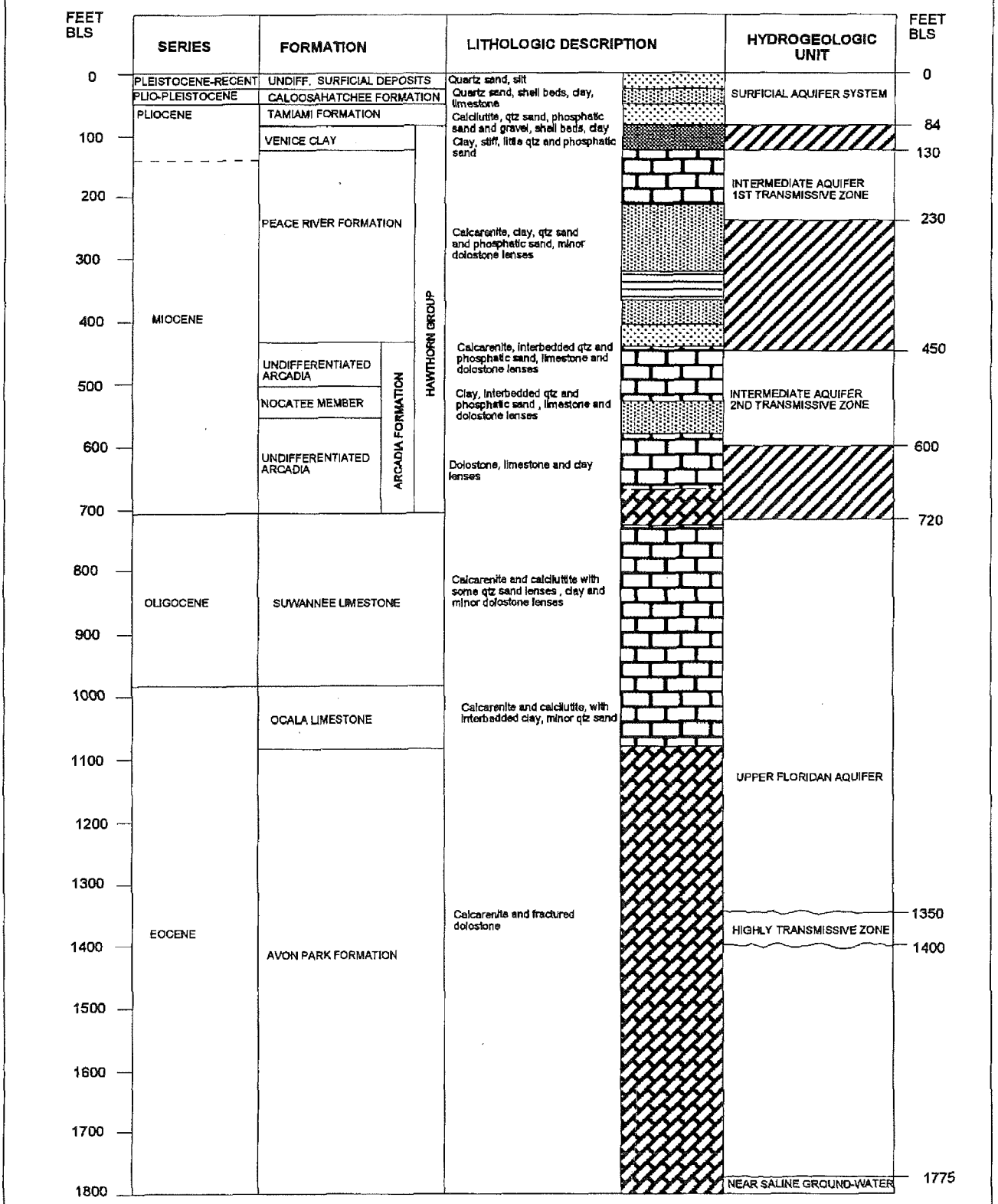
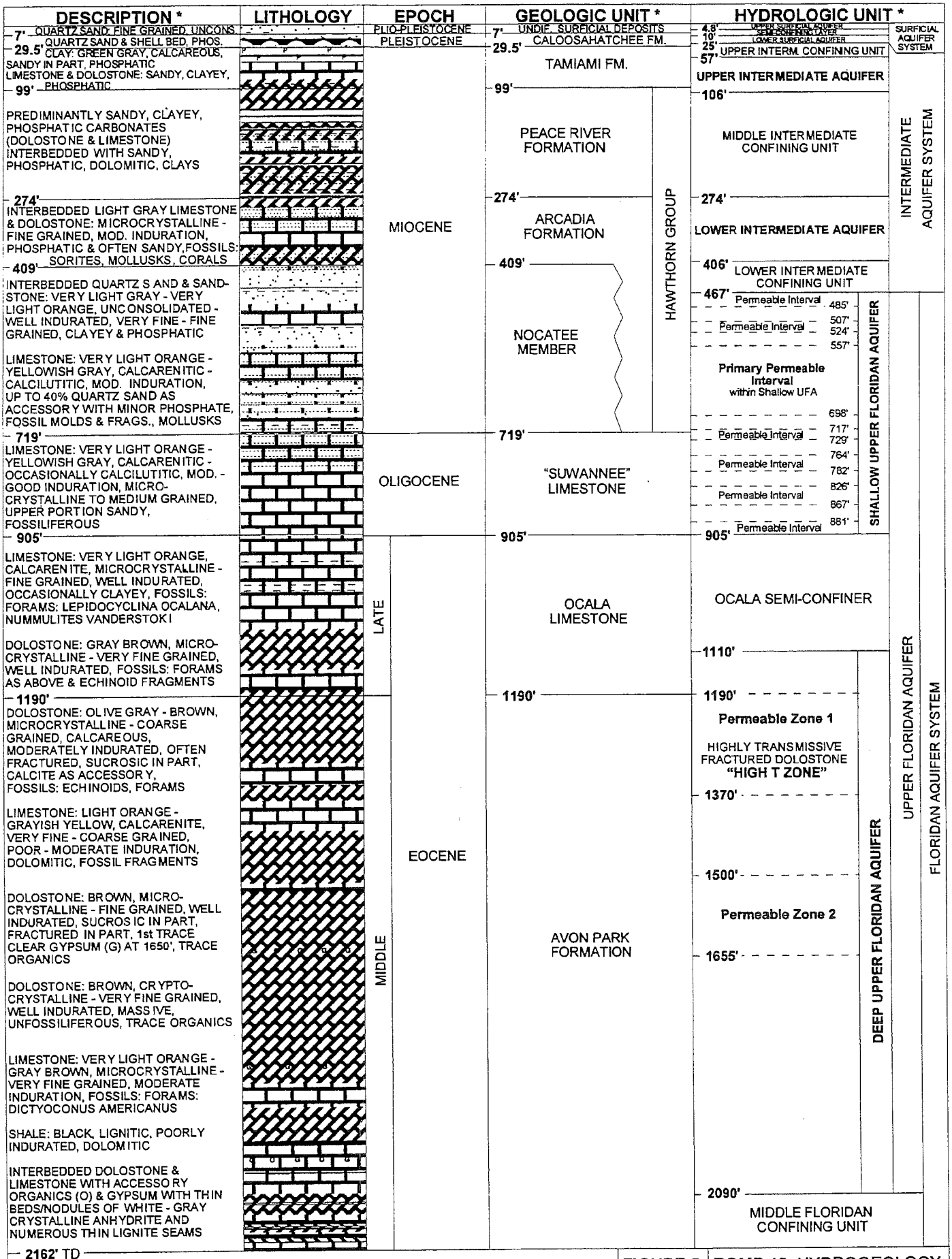


FIGURE 11. ROMP 5 CECIL WEBB HYDROGEOLOGY

R5hydr3.wpg



* **Note**: All depths are below land surface.

FIGURE 5 | ROMP 12 HYDROGEOLOGY

R12HYGEO.WPG\9/15/99

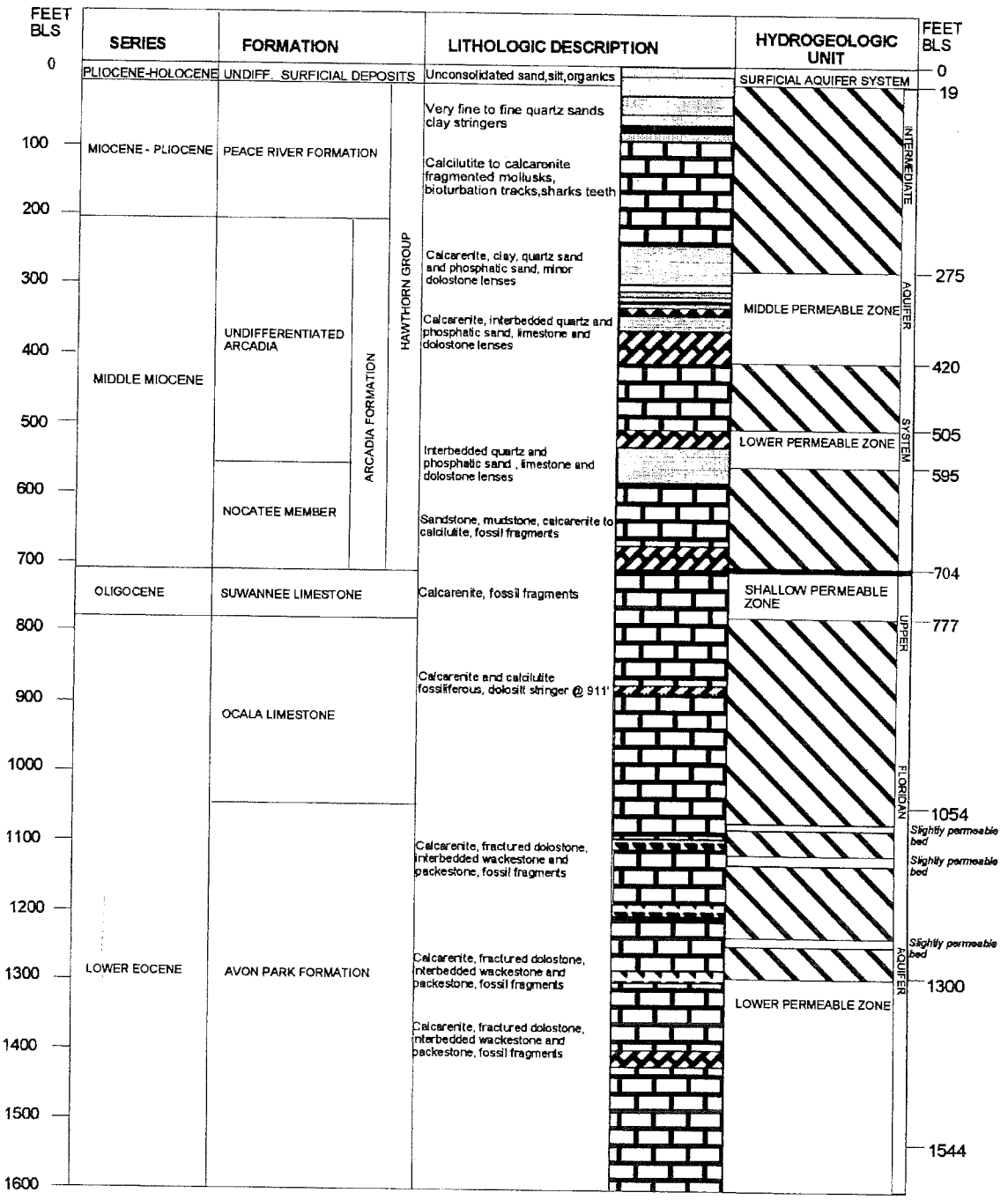


FIGURE 12. ROMP 13 TIPPEN BAY
HYDROGEOLOGY

R13hydr3.wpg

SFWMD WUP Locations – 1 Mile Radius from Section 18, Township 40, Range 27

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00001-W	10928	W-1	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	10929	W-4	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Monitor
08-00001-W	10929	W-4	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	10933	W-7	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	10935	W-9	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Monitor
08-00001-W	10935	W-9	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36707	P-1	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36708	P-2	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00001-W	10928	W-1	Well	449253	967162	500	0.00	300	490	Existing
08-00001-W	10929	W-4	Well	449362	965643	500	0.00	300	500	Existing
08-00001-W	10929	W-4	Well	449362	965643	500	0.00	300	500	Existing
08-00001-W	10933	W-7	Well	449617	963768	500	0.00	300	550	Existing
08-00001-W	10935	W-9	Well	449365	962345	500	0.00	280	545	Existing
08-00001-W	10935	W-9	Well	449365	962345	500	0.00	280	545	Existing
08-00001-W	36707	P-1	Pump	447906	967130	2508	12.00	0.00	0.00	Existing
08-00001-W	36708	P-2	Pump	447915	965835	2871	16.00	0.00	0.00	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00001-W	10928	W-1	Lower Hawthorn Aquifer	-	-
08-00001-W	10929	W-4	Lower Hawthorn Aquifer	-	-
08-00001-W	10929	W-4	Lower Hawthorn Aquifer	-	-
08-00001-W	10933	W-7	Lower Hawthorn Aquifer	-	-
08-00001-W	10935	W-9	Lower Hawthorn Aquifer	-	-
08-00001-W	10935	W-9	Lower Hawthorn Aquifer	-	-
08-00001-W	36707	P-1	On-Site Lake	-	-
08-00001-W	36708	P-2	On-Site Lake	-	-

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00001-W	36709	P-3	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36710	P-4	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36711	P-6	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36713	P-8	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36714	P-9	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36720	P-5	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	36721	P-10	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Irrigation
08-00001-W	149556	MW-1	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Monitor
08-00001-W	149558	MW-3	Packers Gulf Citrus Inc Chiquita Pride Groves	ROMP 5,12,13	-	Monitor

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00001-W	36709	P-3	Pump	447896	964577	2553	12.00	0.00	0.00	Existing
08-00001-W	36710	P-4	Pump	447861	963249	2913	16.00	0.00	0.00	Existing
08-00001-W	36711	P-6	Pump	449808	968557	3987	16.00	0.00	0.00	Existing
08-00001-W	36713	P-8	Pump	450990	966480	3306	16.00	0.00	0.00	Existing
08-00001-W	36714	P-9	Pump	450502	964357	4001	16.00	0.00	0.00	Existing
08-00001-W	36720	P-5	Pump	447008	962143	2940	16.00	0.00	0.00	Existing
08-00001-W	36721	P-10	Pump	450435	962369	3820	16.00	0.00	0.00	Existing
08-00001-W	149556	MW-1	Well	450009	960538	0.00	0.00	0.00	0.00	Existing
08-00001-W	149558	MW-3	Well	446183	965742	0.00	0.00	605	800	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00001-W	36709	P-3	On-Site Lake	-	-
08-00001-W	36710	P-4	On-Site Lake	-	-
08-00001-W	36711	P-6	On-Site Lake	-	-
08-00001-W	36713	P-8	On-Site Lake	-	-
08-00001-W	36714	P-9	On-Site Lake	-	-
08-00001-W	367120	P-5	On-Site Lake	-	-
08-00001-W	36721	P-10	On-Site Lake	-	-
08-00001-W	149556	MW-1	Lower Hawthorn Aquifer	-	-
08-00001-W	149558	MW-3	Lower Hawthorn Aquifer	-	-

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00006-W	26151	1	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26152	2	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	26152	2	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26153	3	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26154	4	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26155	5	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	26155	5	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26158	7	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	26158	7	CALUSA	ROMP 5,12,13	-	Irrigation

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00006-W	26151	1	Well	441782	962035	0.00	0.00	0.00	0.00	Existing
08-00006-W	26152	2	Well	443414	962104	795	0.00	78	466	Existing
08-00006-W	26152	2	Well	443414	962104	795	0.00	78	466	Existing
08-00006-W	26153	3	Well	441803	964693	0.00	0.00	70	466	Existing
08-00006-W	26154	4	Well	443476	964610	0.00	0.00	78	466	Existing
08-00006-W	26155	5	Well	442671	967120	944	0.00	78	522	Existing
08-00006-W	26155	5	Well	442671	967120	944	0.00	78	522	Existing
08-00006-W	26158	7	Well	442686	969926	590	0.00	120	480	Existing
08-00006-W	26185	7	Well	442686	969926	590	0.00	120	480	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00006-W	26151	1	Intermediate Aquifer System	-	-
08-00006-W	26152	2	Intermediate Aquifer System	-	-
08-00006-W	26152	2	Intermediate Aquifer System	-	-
08-00006-W	26153	3	Intermediate Aquifer System	-	-
08-00006-W	26154	4	Intermediate Aquifer System	-	-
08-00006-W	26155	5	Intermediate Aquifer System	-	-
08-00006-W	26155	5	Intermediate Aquifer System	-	-
08-00006-W	26158	7	Intermediate Aquifer System	-	-
08-00006-W	26158	7	Intermediate Aquifer System	-	-

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00006-W	26159	8	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26160	9	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	26160	9	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	26164	6	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	189114	2	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	189114	2	CALUSA	ROMP 5,12,13	-	Irrigation
08-00006-W	189117	3	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	189117	3	CALUSA	ROMP 5,12,13	-	Irrigation

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00006-W	26159	8	Well	445129	969903	0.00	0.00	0.00	0.00	Existing
08-00006-W	26160	9	Well	445004	967109	581	0.00	126	485	Existing
08-00006-W	26160	9	Well	445004	967109	581	0.00	126	485	Existing
08-00006-W	26164	6	Well	443397	967037	0.00	0.00	0.00	0.00	Existing
08-00006-W	189114	2	Pump	443600	964644	2850	8.00	0.00	0.00	Existing
08-00006-W	189114	2	Pump	443600	964644	2850	8.00	0.00	0.00	Existing
08-00006-W	189117	3	Pump	443614	967288	2957	8.00	0.00	0.00	Existing
08-00006-W	189117	3	Pump	443614	967288	2957	8.00	0.00	0.00	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00006-W	26159	8	Intermediate Aquifer System	-	-
08-00006-W	26160	9	Intermediate Aquifer System	-	-
08-00006-W	26160	9	Intermediate Aquifer System	-	-
08-00006-W	26164	6	Intermediate Aquifer System	-	-
08-00006-W	189114	2	On-site Reservoir	-	-
08-00006-W	189114	2	On-site Reservoir	-	-
08-00006-W	189117	3	On-site Reservoir	-	-
08-00006-W	189117	3	On-site Reservoir	-	-

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00006-W	189118	4	CALUSA	ROMP 5,12,13	-	Monitor
08-00006-W	189118	4	CALUSA	ROMP 5,12,13	-	Irrigation

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00006-W	189118	4	Pump	443600	969271	3326	8.00	0.00	0.00	Existing
08-00006-W	189118	4	Pump	443600	969271	3326	8.00	0.00	0.00	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00006-W	26159	8	Intermediate Aquifer System	-	-
08-00006-W	26160	9	Intermediate Aquifer System	-	-

Permit #	Facility ID #	Facility Name	Applicant/Permittee	Stratigraphic Unit	Static Water Level	Water Use
08-00069-W	12922	3	Emerald Isles	ROMP 5,12,13	-	Irrigation
08-00069-W	12925	6	Emerald Isles	ROMP 5,12,13	-	Irrigation
08-00069-W	12926	7	Emerald Isles	ROMP 5,12,13	-	Irrigation
08-00069-W	12927	8	Emerald Isles	ROMP 5,12,13	-	Irrigation
08-00069-W	37007	P-11	Emerald Isles	ROMP 5,12,13	-	Irrigation

Permit #	Facility ID #	Facility Name	Facility Type	X-Coordinate	Y-Coordinate	Pump Capacity (GPM)	Diameter	Casing Depth (ft)	Well Depth (ft)	Facility Status
08-00069-W	12922	3	Well	442277	975126	800	0.00	430	600	Proposed
08-00069-W	12925	6	Well	443293	974165	800	0.00	430	600	Proposed
08-00069-W	12926	7	Well	446931	971362	800	0.00	430	600	Proposed
08-00069-W	12927	8	Well	449732	970295	800	0.00	430	600	Proposed
08-00069-W	37007	P-11	Pump	442983	976409	15000	30	0.00	0.00	Existing

Permit #	Facility ID #	Facility Name	Source	Elevation	Well Construction Date
08-00069-W	12922	3	Lower Hawthorn Aquifer	-	-
08-00069-W	12925	6	Lower Hawthorn Aquifer	-	-
08-00069-W	12926	7	Lower Hawthorn Aquifer	-	-
08-00069-W	12927	8	Lower Hawthorn Aquifer	-	-
08-00069-W	37007	P-11	On-Site Canal	-	-

SFWMD WCP Locations – 1 Mile Radius from Section 18, Township 40, Range 27

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF041599A	South Florida Sod/John Hancock Mutual Life (Emerald Island Farm)	Yes	5	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF041599A	08-00069-W	W-8	08-40-27	14	252	694	-	-	-	06-14-1999

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF041599B	South Florida Sod/John Hancock Mutual Life (Emerald Island Farm	No	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF041599B	08-00069-W	W-7	08-40-27	-	-	-	-	-	-	Cancelled

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF12047-A	Calusa Groves	Yes	6	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF12047-A	-	6	18-40-27	12	120	520	400	-	Construct	March 1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02098-A	Calusa Groves	Yes	6	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02098-A	-	7	18-40-27	12	126	485	600	-	Construct	April 1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF-02098-J	Calusa Groves	Yes	6	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF-02098-J	-	9	18-40-27	12	126	485	300	-	Construct	April 1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02298-A	Calusa Groves	100 Bags Grout	-	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02298	-	(A) 11	18-40-27	-	-	-	-	-	Abandon	03-23-1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02098-I	Calusa Groves	Yes	6	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02098-I	-	8	18-40-27	12	105	510	700	-	Construct	March 1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF0812910	Chiquita Gulf Citrus	326 Bags Cement	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF0812910	-	E-5	17-40-27	-	-	470	-	-	Abandon	09-05-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-A	Chiquita Pride Groves	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-A	-	W-1	17-40-27	12	296	550	-	-	Construct	03-06-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-A	Chiquita Pride Groves	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-A	-	W-1	17-40-27	12	296	550	-	-	Construct	03-06-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF122491A	Chiquita Gulf Citrus	Yes	15	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF122491A	-	W-1	17-40-27	18	300	490	-	-	Construct	03-04-1992

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF122491A	Chiquita Gulf Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF122491A	-	W-1	17-40-27	18	300	490	-	-	Construct	03-04-1992

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF04216-B	Tri-Britton, Inc	Yes	10	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF04216-B	-	7	19-40-27	6	-	600	400	-	Repair	05-30-1986

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF04216-A	Tri-Britton, Inc	Yes	10	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF04216-A	-	6	19-40-27	8	-	600	400	-	Repair	05-30-1986

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02098-K	Calusa Groves	Yes	6	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02098-K	-	10	19-40-27	112	126	525	700	-	Construct	March 1988

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-E	Chiquita Gulf Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-E	-	W-7	20-40-27	12	278	575	-	-	Construct	04-16-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF062891-B	Chiquita Gulf Citrus	191 Bags Cement	-	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF062891-B	-	E-2	20-40-27	12	100	370	-	-	Abandon	07-26-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF062891-E	Chiquita Gulf Citrus	262 Bags Cement	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF062891-E	-	E-3	20-40-27	12	-	305	-	-	Abandon	08-09-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-B	Chiquita Gulf Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-B	-	W-4	20-40-27	18	285	570	-	-	Construct	03-21-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-E	Chiquita Gulf Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-E	-	W-7	20-40-27	12	278	575	-	-	Construct	04-16-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF062891-D	Chiquita Gulf Citrus	259 Bags Cement	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF062891-D	-	E-4	20-40-27	12	-	530	-	-	Abandon	08-07-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF062891-E	Chiquita Gulf Citrus	163 Bags Cement	-	-

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF062891-E	-	E-6	20-40-27	12	100	470	-	-	Abandon	07-31-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF08116-E	T.J. Chastain	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF-08116-E	-	2	20-40-27	13	95	500	-	-	Construct	10-15-1986

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF081160	T.J. Chastain	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
20-40-27	-	1	20-40-27	13	90	500	-	-	Construct	10-15-1986

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
Hendry Co.	AMS (Chiquita Brands)	Yes	8	Monitor

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
Hendry Co.	-	-	20-40-27	4	200	535	-	-	Construct	06-09-1990

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
Hendry Co.	AMS (Chiquita Brands)	Yes	8	Monitor

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
Hendry Co.	-	-	20-40-27	4	200	535	-	-	Construct	06-09-1990

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
Hendry Co.	AMS (Chiquita Brands)	Yes	-	Monitor

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
Hendry Co.	-	-	20-40-27	4	200	535	-	-	Construct	06-09-1990

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-G	Chiquita Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-G	-	9	20-40-27	18	280	545	-	-	Construct	03-06-1991

WCP #	Applicant/Permittee	Drill Cutting Log	Static Water Level	Well Use
SF02061-B	Chiquita Citrus	Yes	-	Irrigation

WCP #	WUP #	District / Well ID #	Section Township Range	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Pump Capacity (GPM)	Elevation	Type of Work	Well Construction Date
SF02061-B	-	W-4	20-40-27	18	285	570	-	-	Construct	03-21-1991

WELL COMPLETION REPORT (Please complete in black ink or type.)

6

PERMIT SFD41599A CUP/WUP 08-00004W DID # W-8

If permit is for multiple wells indicate the number of wells drilled ____

Indicate remaining wells to be cancelled ____

WATER WELL CONTRACTOR'S SIGNATURE ____ License # 9019

Fur Enrald Is Land Farm

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (Ft.)	To (Ft.)
Neat Cement:			
Bentonite:			

WELL LOCATION: County Charlotte

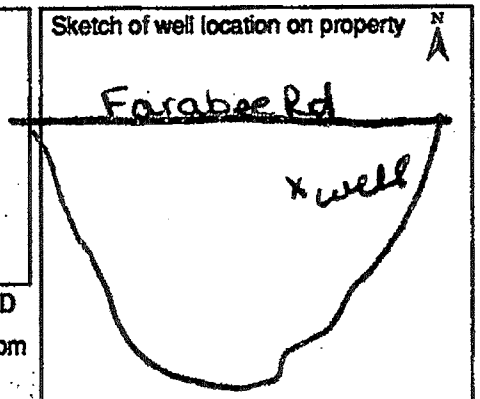
SW 1/4 of NE 1/4 of Section 8 Twp: 40 Rge: 22

Latitude ____ Longitude ____

ENTERED JAN 8 2000

DATE STAMP
RECEIVED
JUN 24 1999
WELL PERMITTING
Official Use Only

Sketch of well location on property



Give distances from septic tank and house or other reference points

CHEMICAL ANALYSIS WHEN REQUIRED

Iron: ____ ppm Sulfate: ____ ppm

Chloride: ____ ppm

[ ] Lab Test [ ] Field Test Kit

Pump Type

[ ] Centrifugal [ ] Jet [ ] Submersible [ ] Turbine

Horsepower ____ Capacity ____ G.P.M. ____

Pump Depth ____ Ft. Intake Depth ____ Ft.

Form 41.10-410(2) Rev. 6/85

OWNER'S NAME South Florida Sod / John Hancock, Mgr. LLC

COMPLETION DATE 6-14-99 Florida Unique I.D. ____

WELL USE: DEP/Public ____ Irrigation X Domestic ____ Monitor ____

HRS Limited ____ 62-524 ____ Other ____

DRILL METHOD [X] Rotary [ ] Cable Tool [ ] Combination

[ ] Jet [ ] Auger Other ____

Measured Static Water Level 5' Measured Pumping Water Level ____

After ____ Hours at ____ G.P.M. Measuring Pt. (Describe): ____

Which is 1 Ft. [X] Above [ ] Below Land Surface

Casing: [X] Black Steel [ ] Galv. [ ] PVC Other ____

[X] Open Hole [ ] Screen

Casing Diameter & Depth (Ft.)

Diameter 14" From 0' To 960'

Diameter 10" From 960' To 1041'

Liner [ ] or Casing [ ] Diameter ____ From ____ To ____

From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. *Color | Grain Size | Type of Material*
0	20	Sand Oyster Shale
20	60	Shell
60	90	green clay
90	120	hard rock,
120	150	sand green clay
150	200	white clay & rock
200	260	white clay
260	330	green shale
330	400	white clay & tan rock
400	500	green shale
500	600	Sandy lime
600	700	hard lime
760	900	soft lime
900	1100	hard brown
1100	1200	broken brown

Driller's Name: (print or type) Darryl Cannon

WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT # SFO41599B CUP/WUP # 08-00069-W DID # W-7

If permit is for multiple wells indicate the number of wells drilled _____

Indicate remaining wells to be cancelled _____

WATER WELL CONTRACTOR'S SIGNATURE _____ Licensee # 9069

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (Ft.)	To (Ft.)
Neat Cement:			
Bentonite:			

WELL LOCATION: County Charlotte

____ 1/4 of ____ 1/4 of Section 3 Twp: 40 Rge: 27

Latitude _____ Longitude _____

DATE STAMP

RECEIVED

JUN 2 4 1999

WELL PERMITTING

Official Use Only

Sketch of well location on property

N

Give distances from septic tank and house or other reference points

CHEMICAL ANALYSIS WHEN REQUIRED

Iron: ____ ppm Sulfate: ____ ppm

Chloride: ____ ppm

[ ] Lab Test [ ] Field Test Kit

Pump Type

[ ] Centrifugal [ ] Jet [ ] Submersible [ ] Turbine

Horsepower _____ Capacity _____ G.P.M. _____

Pump Depth _____ Ft. Intake Depth _____ Ft.

Form 41.10-410(2) Rev. 6/85

OWNER'S NAME South Florida Sod / John Hancock Mutual Life

COMPLETION DATE _____ Florida Unique I.D. _____

WELL USE: DEP/Public ____ Irrigation X Domestic ____ Monitor ____

HRS Limited ____ 62-524 ____ Other _____

DRILL METHOD [X] Rotary [ ] Cable Tool [ ] Combination

[ ] Jet [ ] Auger Other _____

Measured Static Water Level _____ Measured Pumping Water Level _____

After ____ Hours at ____ G.P.M. Measuring Pt. (Describe): _____

Which is ____ Ft. [X] Above [ ] Below Land Surface

Casing: [ ] Black Steel [ ] Galv. [ ] PVC Other _____

[ ] Open Hole [ ] Screen	Depth (Ft.)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones.
Casing Diameter & Depth (Ft.)	From	To	*Color | Grain Size | Type of Material*
Diameter ____ From ____ To ____			NO WORK DONE
Diameter ____ From ____ To ____			PERMIT CANCELLED
Liner [ ] or Casing [ ] Diameter ____ From ____ To ____			

Driller's Name:

(print or type) _____

Emerald Isle Farms

Cancel

SCANNED

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. [redacted] SF12047-A

Owner: Edna Graves | Address: Isabell | City: Fla | State: | Zip:

Contractor's Signature: Harry Bonner | License No. | Completion Date: March 88 | Casing Depth: 120' PVC | Total Depth: 520 | Well #: 6

Driller's Name: Mack Tedder | Registration No.

metropolitan life

8-12-88

TYPE OF WORK: Construct (X) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )

Irrigation ( ) Fire Well ( ) Other

METHOD: Rotary with MUD (X) or Air ( ), Cable Tool ( ), Jet ( )

Casing Driven ( ), Other

STATIC WATER LEVEL 6 Ft. below top of casing

PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM

PUMP SIZE ____ H.P. CAPACITY 400 GPM

PUMP TYPE ____ INTAKE DEPTH 120 From top of ground

LOCATION

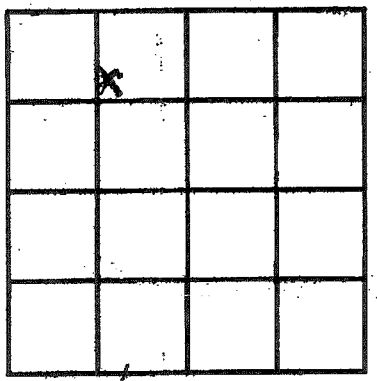
Located Near Isabell

County Carlton

SW, NE, NW 18 4S 27E
¼ Section Township Range

Latitude-Longitude

Will be cuttings sent to District? (Y) Yes (N) No



Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter	& Depth	Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
4"	12	120	0	120	Sand & clay
			120	150	Limestone
			150	190	Green clay
			190	250	Lime stone & clay
			250	260	Lime stone
			260	330	Green & white
			330	435	Hard brown lime
			435	500	Sandy gray clay
			500	520	Sand & limestone
Number of bags					
60					

Casing: Black Steel ( ) Galv. ( ) PVC (X) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with % additives ____

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

WELL COMPLETION REPORT

FORM 0124 Rev. 4/85 — WELL PERMIT NO. [illegible]

Owner Clara Crowell Address Lakeland City Fla State Zip

Contractor's Signature [illegible] License No. 136 Completion Date April 88 Casing Depth 126 Total Depth 485 Well #

Driller's Name Wade Fedder Registration No.

metropolitan life

TYPE OF WORK: Construct (X) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( ) 05

Irrigation (X) Fire Well ( ) Other

METHOD: Rotary with MUD (X) or Air ( ), Cable Tool ( ), Jet ( )

Casing Driven (X), Other

STATIC WATER LEVEL 6 Ft. below top of casing

PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM

PUMP SIZE ____ H.P. CAPACITY 600 GPM

PUMP TYPE ____ INTAKE DEPTH 120 From top of ground

8-12-88 $82.00

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
4"	2 126	0	36	Sand + clay
		126	130	Hard Rock
		130	140	Limestone + clay
		140	200	Dark green clay
		200	270	Rock + white clay
		270	300	Gray Sandy clay
		300	340	Rock + clay + sand
		340	405	Very hard brown
		426	455	Fine sand
		455	470	Sandy blue clay
		470	480	Sand stone
Number of bags		480	485	Blue clay
50				

LOCATION

Located Near Lakeland

County Polk

SW, NE, NE 18 40 27

¼ ¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (X) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Casing: Black Steel (X) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with % additives Portland

Water: Clear ( ) Colored ( ) Sulphur (X) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

SCANNED

8-12-88

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF-020[illegible]-J

Owner	Address	City	State	Zip
Calusa Groves		Labell	Fla	

Contractor's Signature	License No.	Completion Date	Casing Depth	Total Depth	Well #
Harry Ioannou	1376	Mar/Apr. 88	126	485	#9

Driller's Name: Mark Tedder
Registration No.

Metropolitan Life

TYPE OF WORK: Construct (X) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other

METHOD: Rotary with MUD (X) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other

STATIC WATER LEVEL 6 Ft. below top of casing

PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM

PUMP SIZE ____ H.P. CAPACITY 300 GPM

PUMP TYPE ____ INTAKE DEPTH 120 From top of ground

Grout: Thickness & Depth	Casing & Screen: Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG: Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
4"	12	126	0	126	Sand & Clay
↓		1-2	126	140	Lime Stone
			140	190	Green Clay
			190	250	Rock & Clay
			250	290	Green Gumbo
			290	310	Rock
			310	360	Lime Stone & Clay
			360	410	Hard Brown Lime
			410	420	gray Clay
			420	470	solid stone
			470	485	Brown Clay
Number of bags					
60					

LOCATION

Located Near Labell

County Charlotte

¼	Section	Township	Range
NW, SE, SE	18	40	27

Latitude-Longitude

Cuttings sent to District? ( ) Yes
(X) No

LOCATE IN SECTION

		X	
			X

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Casing: Black Steel (X) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with % additives ____

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02298-A

26 MAY 1988

Owner: Gyles WILL GIVE YOU — Address: Isabell — City: Y IS OUR — State: — Zip: — Well #: #11

Contractor's Signature: Mary Lou — License No. — Completion Date: 3-88 — Casing Depth: ? — Total Depth: 500 — Well #: A

Driller's Name: Mack Tedder — Registration No.

Metropolitan Life

TYPE OF WORK: Construct ( ) Repair ( ) Abandon (X)

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other _____

METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____

STATIC WATER LEVEL _____ Ft. below top of casing 6

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY _____ GPM

PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

8-12-88

LOCATION

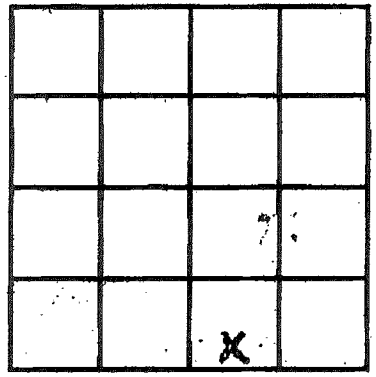
Located Near Isabell
Highway # 74

County Charles

SW SE 18 4o 27
¼ ¼ Section Township Range

Latitude-Longitude 66

Cuttings sent to District? ( ) Yes
(X) No



LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
					used 100 bags of Grout
Number of bags					
100					

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives _____

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. 21-Dec-15-1

Owner: Chevron | Address: [illegible] | City: Santa Cruz | State: Ca | Zip: [illegible]

Contractor's Signature: Harry Lawson | License No. [illegible] | Completion Date: March 88 | Casing Depth: 105 | Total Depth: 510 | Well #: 5 8

Driller's Name: Mike Tolbert | Registration No. [illegible]

Metropolitan Life

8-12-88

TYPE OF WORK: Construct (X) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )

Irrigation ( ) Fire Well ( ) Other _____

METHOD: Rotary with MUD (X) or Air ( ), Cable Tool ( ), Jet ( )

Casing Driven ( ), Other _____

STATIC WATER LEVEL 6 Ft. below top of casing

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY 700 GPM

PUMP TYPE _____ INTAKE DEPTH 120 From top of ground

LOCATION

Located Near Tabell

County Contra Costa

NW, SE, SW 18 4S 2W
¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (X) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
H	12	105	0	105	Sand & Clay
↓			105	120	Rock
			120	160	Lime & Blue Clay
			160	270	Blue Clay
			270	290	Cemented
			290	320	Lime Stone
			320	380	Brown Lime
			380	380	White Sandy Clay
			380	430	Brown Sandy Lime
			430	460	Gray Sand
			460	503	Sand
Number of bags			503	510	Black Green Clay
50					

Casing: Black Steel (X) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives _____

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SFD812910

Chiquita Gulf Citrus 250 East Fifth St. Cincinnati OH 45202
Owner Address City State Zip

McGregor Pump Co. 2946 9-5-91 470 ft. E-5
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Ernie Morgan
Driller's Name Registration No.

3/16/92

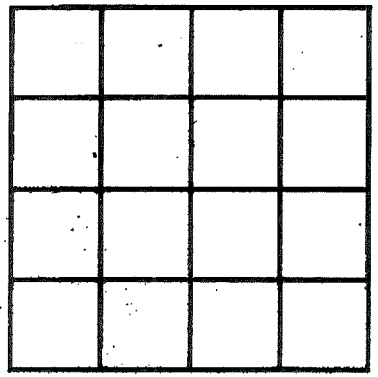
TYPE OF WORK: Construct ( ) Repair ( ) Abandon (X)
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (X) Fire Well ( ) Other _____
METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other plugged w/cement
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near St. Rd. 74 - 6 miles East on 31
County Charlotte

17 40 27
¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (X) No



LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
	12¼	0	470	plugged well with 326 bags of Cement-Bottom to Surface
Number of bags				
326				

Casing: Black Steel (X) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives neat cement
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

2738

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02061-A

Chiquita Pride Groves 250 E. 5th St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 3-6-91 296' 550' W-1
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Gary Griffey - Ken Fovergy
Driller's Name Registration No.

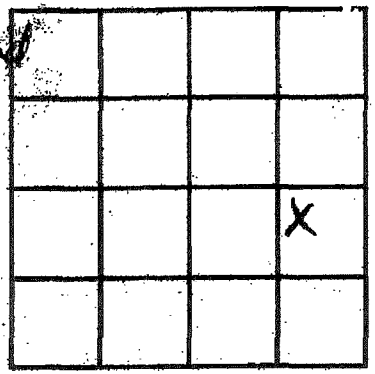
TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( ) 10
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
2" 0	12"	0	0	25	Dark Brown Sand
			25	55	Clay
			55	110	limerock & Clay
			110	162	marly Clay
			162	198	stiff gm. clay
			198	210	stiff gm clay, Clay & limerock
			210	245	Soft limestone
↓		↓	245	277	Stiff clay & Rock
297		297	277	394	limestone
			394	430	limerock
			430	488	Clay & Rock
Number of bags			488	550	Clay & Rock
120					

LOCATION
Located Near 7 miles E. of 3 and 74 intersection - N. 4 miles
County Charlotte

NE SE 17 40 27
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes ( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives _____
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

2738

COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02061-A

Davita Pride Groves 250 E. 5th St. Cincinnati, Ohio 45202

McGregor Pump Co.	2946	3-6-91	296'	550'	W-1
Contractor's Signature	License No.	Completion Date	Casing Depth	Total Depth	Well #

Gary Shiffley - Ken Pomeroy
Driller's Name — Registration No.

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other
STATIC WATER LEVEL ____ Ft. below top of casing
PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM
PUMP SIZE ____ H.P. CAPACITY ____ GPM
PUMP TYPE ____ INTAKE DEPTH ____ From top of ground

9/26/91

LOCATION
Located Near 7 miles E. of Hand
74 intersection-N. 4 miles
County Charlotte

NE SE 17 40 27
¼ ¼ Section Township Range

Latitude-Longitude

ENTERED SEP 26

LOCATE IN SECTION

Cuttings sent to District? ( ) Yes ( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"0	12"	0	0	25	Dark Brown Sand
			25	55	Clay
			55	110	Limestock & Clay
			110	162	marly clay
			162	198	stiff gm. clay
			198	210	stiff gm clay, clay & limerock
			210	245	Soft limestone
√		√	245	277	Stiff clay & Rock
297		297	277	394	limestone
991			394	430	limerock
Number of bags			430	488	Clay & Rock
			488	550	Clay & Rock
120					

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type ____ Slot size ____
Screened from ____ (ft.) to ____ (ft.)
Type of grout with % additives ____
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity ____ Chlorides ____ mg/l

SCANNED

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

(2894) WELL PERMIT NO. SF122491A

Chiquita Gulf Citrus, 250 E. Fifth St. Cincinnati, Ohio 45202
Owner — Address — City — State — Zip

McGregor Pump Co. 2946 3-4-92 300 ft. 490 ft. W-1
Contractor's Signature — License No. — Completion Date — Casing Depth — Total Depth — Well #

Charles Mills
Driller's Name — Registration No.

3/14/92

(page 1 of 2)

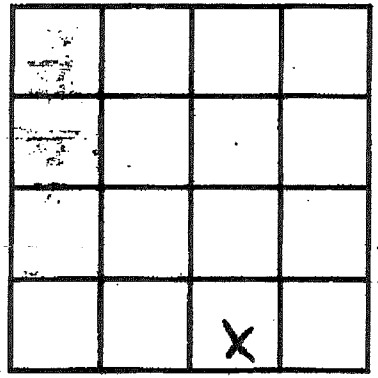
TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL 15 Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near 7 miles East of Rt. 31 on Rt. 74
County Charlotte

SW SE 17 40 27
¼ ¼ Section Township Range

_____ Latitude-Longitude

Cuttings sent to District? ( ) Yes (✓) No



LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"2"	18"	12"	0	8	Sand
↓	↓		8	22	Sandy clay
↓	↓		22	26	Shell
30	30		26	64	drk. grn. clay
			64	75	dolomite, Tan L.S.
			75	115	Lt. grn. Sandy clay and L.S.
			115	140	Tan L.S. & clay
			140	160	lt. grn. clay & L.S.
↓		↓	160	182	drk. grn. clay
300		300	182	190	drk. grn. clay, Phosphate
Number of bags			190	203	marl & phosphate
153			203	215	drk. grn clay
			215	270	marl & phosphate
			270	292	drk. grn. clay & L.S.

Casing: Black Steel (✓) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives neat cement
Water: Clear (✓) Colored ( ) Sulphur (✓) Salty ( ) Iron ( )
Conductivity _____ Chlorides 600 mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

(2899) WELL PERMIT NO. SE122491A

Chiquita Gulf Citrus, 250 E. Fifth St. Cincinnati, Ohio 45202
Owner — Address — City — State — Zip

McGregor Pump Co. 2946 — 3-4-92 — 300 ft. — 490 ft. — W-1
Contractor's Signature — License No. — Completion Date — Casing Depth — Total Depth — Well #

Charles Mills
Driller's Name — Registration No.

(page 2 of 2)

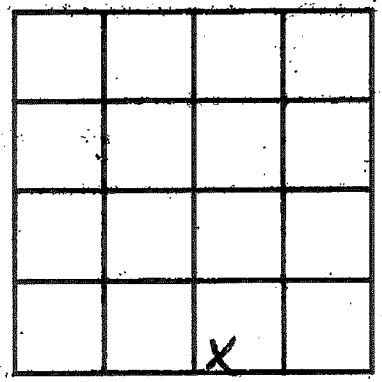
TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near 7 miles East of Rt. 31 on Rt. 74
County Charlotte

SW SE 17 40 27
¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (✓) No



LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"	18"	12"	292	340	Tan L.S. & lt. grn. clay
			340	355	dolomite & Tan L.S.
			355	365	Tan L.S. & clay
			365	385	Tan & gray L.S. & clay
			385	395	dolomite " " "
			395	425	Brwn L.S. gray L.S. & clay
			425	435	dolomite & Brwn. L.S.
			435	450	Brwn L.S. Gray L.S. Sandstone
			450	475	Sandstone
			475	490	dark grn. clay
Number of bags					
153					

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives neat cement
Water: Clear ( ) Colored ( ) Sulphur (✓) Salty ( ) Iron ( )
Conductivity _____ Chlorides 1200 mg/l

WELL COMPLETION REPORT FORM 0124 Rev. 4/85 **WELL PERMIT NO.** SF 0426-6

Tri-Britton, Inc Po Box 256 Alturas Fl. 33820

Owner | Address | City | State | Zip

Curtis Newberry 1212 5-30 1986 600 7

Contractor's Signature | License No. | Completion Date | Casing Depth | Total Depth | Well #

Curtis Newberry Jr. 40029

Driller's Name | Registration No.

TYPE OF WORK: Construct ( ) Repair (✓) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )

Irrigation (✓) Fire Well ( ) Other _____

METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )

Casing Driven ( ) Other _____

STATIC WATER LEVEL 10 Ft. below top of casing

PUMPING WATER LEVEL 100 Ft. after 1 Hrs. at 80' GPM

PUMP SIZE 3/4 H.P. CAPACITY 400 GPM

PUMP TYPE Turbine INTAKE DEPTH 100' From top of ground

LOCATION

Located Near OF Hwy 74

County Charlotte

19 40S 27E

¼ ¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (✓) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
	11	500	600	WELL HAD
	6			Closed off
				at 500' FT.
		500	600	Blue Grey
				Shale + white
				SAND
Number of bags				

Casing: Black Steel (✓) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives _____

Water: Clear ( ) Colored (✓) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

SCANNED

WELL COMPLETION REPORT FORM 0124 Rev. 4/85 **WELL PERMIT NO.** SFCHarlotta

TRI-BRITTON, INC	PO Box 256	ALTURAS	Fl.	33820
Owner	Address	City	State	Zip

Curtis Newbury	1272	5-30 1986		600	6
Contractor's Signature	License No.	Completion Date	Casing Depth	Total Depth	Well #

Curtis Newbury Jr.	400029
Driller's Name	Registration No.

TYPE OF WORK: Construct ( ) Repair (✓) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other ____

METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other ____

STATIC WATER LEVEL 10' Ft. below top of casing

PUMPING WATER LEVEL 100 Ft. after 1 Hrs. at 100 GPM

PUMP SIZE 40 H.P. CAPACITY 400 GPM

PUMP TYPE turbine INTAKE DEPTH 100' From top of ground

LOCATION

Located Near OF Hwy 74

County Charlotte

19 - 40S - 27E
¼ ¼ Section Township Range

____ Latitude-Longitude

Cuttings sent to District? ( ) Yes (✓) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout	Casing & Screen	Depth (ft)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
Thick-ness & Depth	Diameter & Depth	From	To	
		500	600	WELL HAD
	4"			CLOSED OFF
				AT. 500 FT.
		500	600	Blue Grey
				SHALE & White
				SAND
Number of bags				

Casing: Black Steel (✓) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with % additives ____

Water: Clear ( ) Colored (✓) Sulphur ( ) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

6-9-87

SCANNED

WELL COMPLETION REPORT

FORM D120 (1 Rev. 4/85)

WELL PERMIT NO. [illegible]

Owner Gibson Grocery Address Bakersfield City CA State Zip

Contractor's Signature [illegible] License No. C Completion Date 8 Casing Depth [illegible] Total Depth [illegible] Well #

Driller's Name Mitchell Fiddler Registration No.

Metropolitan Life

TYPE OF WORK: Construct (X) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other

METHOD: Rotary with MUD (X) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other

STATIC WATER LEVEL 6 Ft. below top of casing

PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM

PUMP SIZE ____ H.P. CAPACITY 700 GPM

PUMP TYPE ____ INTAKE DEPTH 120 From top of ground

8-12-88

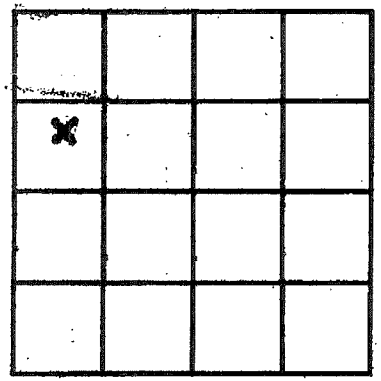
LOCATION

Located Near Bakersfield

County Kern

NE, SW, NW 19, 32 27
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes (X) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
	12 - 120	0	126	Sand & clay
		126	135	Rock & clay
		135	180	Rock & Phosphate
		180	200	Coarse clay
		200	215	Rock
		215	280	Gray clay
		280	300	Gold clay
		300	315	Water clay
		315	420	Rock
		420	425	Broken Sandy Rock
		425	465	Fine sand & Water
		465	520	Sand & Gravel Water
		520	525	Clay

Casing: Black Steel (X) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with % additives ____

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

#2767

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02061-E

Chiquita Gulf Citrus 250 East First St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 4-16-91 278' 575' W-7
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

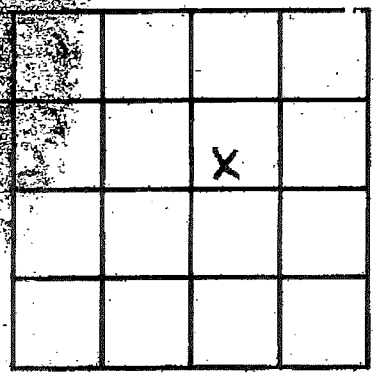
Dary Griffey
Driller's Name Registration

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Municipal ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other
STATIC WATER LEVEL ____ Ft. below top of casing
PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM
PUMP SIZE ____ H.P. CAPACITY ____ GPM
PUMP TYPE ____ INTAKE DEPTH ____
From top of ground

LOCATION
Located Near 7 miles E. of 31 & 74 intersection - N. 3 miles
County Charlotte

SW NE 20 40 27
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes ( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"	12"		0	20	Sand
			20	30	Clay
			30	56	Clay
			56	91	Rock
			91	250	Limerock & Clay
			250	260	Clay
			260	280	Limerock
			280	420	Limerock, some clay
			420	460	Sandy limerock
			460	500	Limerock
			500	513	Clay
Number of bags			513	575	Clay
139					

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type ____ Slot size ____
Screened from ____ (ft.) to ____ (ft.)
Type of grout with % additives ____
Water: Clear (✓) Colored ( ) Sulphur ( ) Salty (✓) Iron ( )
Conductivity ____ Chlorides ____ mg/l

SCANNED

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

2811

WELL PERMIT NO. SE 062891-B

Chiquita Gulf Citrus 250 East East Fifth St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 7-26-91 100 370' E-2
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Ernie Morgan
Driller's Name Registration No.

8-6-91

TYPE OF WORK: Construct ( ) Repair ( ) Abandon (✓)
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other _____
METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other plugged with cement
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near St. Rd. 74
10 miles E on Rt. 31
County Charlotte
SW 20 40 27
¼ Section Township Range
Latitude-Longitude

Grout	Casing & Screen		Depth (ft)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
Thickness & Depth	Diameter & Depth		From	To	
	12"		0	370	Plugged well with 191 Bags of Cement
					ENTERED AUG 0 2 1991
Number of bags					
191					

Cuttings sent to District? ( ) Yes (✓) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives neat cement
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

2818

WELL PERMIT NO. SE0128911-E

Chiquita Gulf Citrus — Owner
250 East Fifth St. — Address
Cincinnati — City
Ohio — State
45202 — Zip

McGregor Pump Co. — Contractor's Signature
2946 — License No.
8-9-91 — Completion Date
305 ft. — Casing Depth
E-3 — Total Depth / Well #

Ernie Morgan — Driller's Name
Registration No.

TYPE OF WORK: Construct ( ) Repair ( ) Abandon (✓)

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____

METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____

STATIC WATER LEVEL _____ Ft. below top of casing

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY _____ GPM

PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION

Located Near St Rd. 74 - 6 miles East on 31

County Charlotte

20 — ¼ Section
40 — Township
27 — Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes (✓) No

LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
	12"	0	305	plugged well with 262 bags of cement
Number of bags				
262				

ENTERED AUG 16 1991

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives neat cement

Water: Clear (X) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

SCANNED

274

COMPLETION REPORT

FORM 0124 Rev. 4/85

WELL PERMIT NO. SF0206I-B

Owner: Tiquita Citrus | Address: 250 East 5th St. | City: Cincinnati | State: Ohio | Zip: 45202

Contractor's Signature: McGregor Pump Co. | License No.: 2946 | Completion Date: 3-21-91 | Casing Depth: 285' | Total Depth: 570' | Well #: W-4

Driller's Name: Bobby Lee Williams | Registration No.:

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____

METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____

STATIC WATER LEVEL _____ Ft. below top of casing

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY _____ GPM

PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

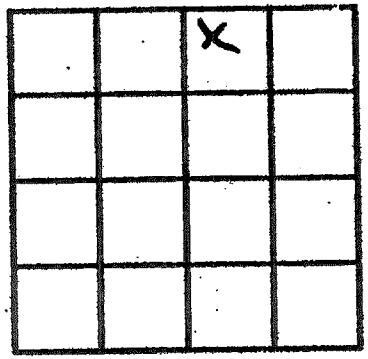
LOCATION

Located Near Ingles E. of 31 & 74 intersect. N. 4 miles

County Charlotte

NW NE 20 40 27
¼ ¼ Section Township Range

_____ Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes (✓) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth 18" 12"	Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
2"		0	9	Sand
		9	16	Sand Clay
		16	50	dark grn. clay
		50	60	limestone w/ clay
		60	90	limestone
		90	120	dark grn clay
		120	150	lime stone
		150	175	Stiff Sticky clay
		175	200	Soft clay w/ phosphate
		200	240	Stiff clay
		240	260	limestone w/ clay
Number of bags		260	275	limestone-Grad
		275	285	Tan limestone
		285	290	greenish clay, limestone
		290	520	hard limestone w/ Sand
		520	570	dark green clay

Casing: Black Steel ( ) Galv. ( ) PVC (X) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives 10% gel

Water: Clear (X) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

9/26/97

ENTERED SEP 26 1991

SCANNED

#2767

WELL COMPLETION REPORT

FORM 0124 Rev. 4/85

WELL PERMIT NO. SF02061-E

Chiquita, Gulf Citrus 250 East First St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 4-16-91 278' 575' W-7
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Gary Griffey 66
Driller's Name Registration No.

4/26/91

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near 7 miles E. of 31 & 74 intersection - N. 3 miles
County Charlotte

SW NE 20 40 27
¼ ¼ Section Township Range

Latitude-Longitude

		X	
	ENTERED SEP 20 1991		

LOCATE IN SECTION

Cuttings sent to District? ( ) Yes ( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2'	12"		0	20	Sand
			20	30	Clay
			30	56	Clay
			56	91	Rock
			91	250	limerock & clay
			250	260	Clay
			260	280	Limerock
			280	420	Limerock some clay
			420	460	Sandy limerock
			460	500	limerock
			500	513	Clay
Number of bags			513	575	Clay
139					

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives _____
Water: Clear (✓) Colored ( ) Sulphur (✓) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

SCANNED

✓ Rec'd

WELL COMPLETION REPORT

FORM 6124
Rev. 4/85

2817

WELL PERMIT NO. SF062891-D

Chiquita Gulf Citrus — 250 East Fifth St. — Cincinnati, Ohio — 45202
Owner — Address — City — State — Zip

McGregor Pump Co. — 2444 — 8-7-91 — 530' — E-4
Contractor's Signature — License No. — Completion Date — Casing Depth — Total Depth — Well #

Driller's Name — Registration No.

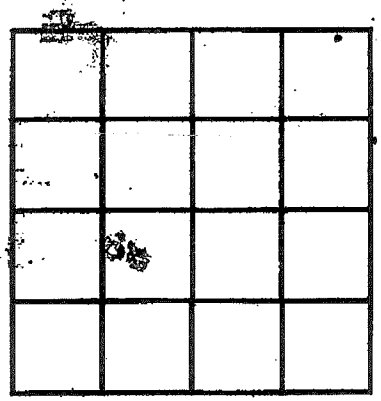
8/15/91

TYPE OF WORK: Construct ( ) Repair ( ) Abandon (✓)
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other plugged w/ cement
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

LOCATION
Located Near St. Rd. 74
6 miles East on 31
County _____

20 — 40 — 27
¼ — ¼ — Section — Township — Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes
(✓) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thick-ness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
	12"	0	530	plugged well with 259 bags of cement
Number of bags				
259				

ENTERED AUG 16 1991

Casing: Black Steel (✓) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives neat cement 6% gel
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

SCANNED

WELL COMPLETION REPORT

FORM 0124 Rev. 4/85

2814

WELL PERMIT NO. SF 062891-E

Chiquita Gulf Citrus 250 East Fifth St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 7-31-91 100 470' E-6
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Ernie Morgan
Driller's Name Registration No.

8/14/91

TYPE OF WORK: Construct ( ) Repair ( ) Abandon (✓) 40

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other _____

METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____

STATIC WATER LEVEL _____ Ft. below top of casing

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY _____ GPM

PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

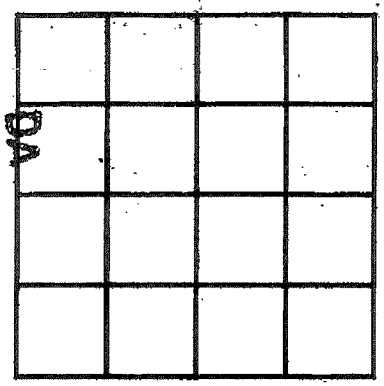
LOCATION

Located Near St. Rd. 74 - 6 miles East on 31

County Charlotte

20 40 27
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes ( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
	12"	0	170	plugged well with 163 bags of cement
				ENTERED AUG 16 1991
Number of bags				
163				

Casing: Black Steel (✓) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives neat cement

Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

SCANNED

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. 3-08116-4E

T.J. Chastain Star Rt A#3 Box 110 Punta Gorda Fla. 33950
Owner Address City State Zip

Paul Lawrence 1759 10-15-86 95 500 2
Contractor's Name License No. Completion Date Casing Depth Total Depth Well #

Jesse Lawrence 40664
Driller's Name Registration No.

TYPE OF WORK: Construct ( ) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other _____
METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

3/14/87

LOCATION

Located Near _____

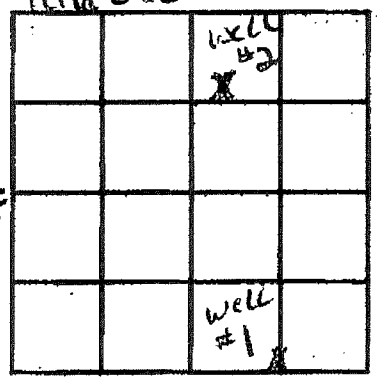
_____

County _____

20 40S 27E
¼ ¼ Section Township Range

_____
Latitude-Longitude

Feild Sec



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes
( ) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
	13"	95'	95	140	Green Clay
			141	175	Sandy clay
			176	180	Rock
			181	245	Clay
			246	325	Rock + Cavities
			326	380	Clay
			381	480	Rock + Cavities
			481	500	Sand.
Number of bags					

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives _____
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SFa81160

Owner: Dinsdale T J — Address: Star Rt A Box 110 — City: Punta — State: FL — Zip: 33950

Contractor's Name: Paul Lawrence — License No.: 1754 — Completion Date: 10-15-86 — Casing Depth: 90 — Total Depth: 500 — Well #: 1

Driller's Name: Jesse Lawrence — Registration No.: 40664

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____

METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____

STATIC WATER LEVEL _____ Ft. below top of casing

PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM

PUMP SIZE _____ H.P. CAPACITY _____ GPM

PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

3/16/87

LOCATION

Located Near _____

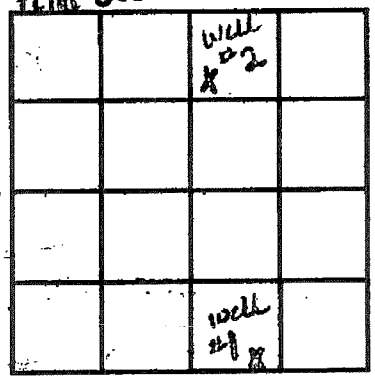
County _____

20 ¼ ¼ Section 405 Township 27E Range

Latitude-Longitude _____

Cuttings sent to District? ( ) Yes
( ) No

Field See.



LOCATE IN SECTION

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
	13"	90'	90'	138	Green Clay
			139	170	Sandy Clay
			171	175	Rock
			176	230	Clay
			231	300	Rock + Cavities
			301	380	Clay
			381	480	Rock + Cavities
			481	500	Sand -
Number of bags					

Casing: Black Steel (✓) Galv. ( ) PVC ( ) Fiberglass ( )

Screen: Type _____ Slot size _____

Screened from _____ (ft.) to _____ (ft.)

Type of grout with % additives _____

Water: Clear (✓) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity _____ Chlorides _____ mg/l

#2588

WELL COMPLETION REPORT

FORM 0[illegible] Rev. 4/85 — WELL PERMIT NO. Hendry Co.

AMS (Chiquita Brands) 204 E. McKenzie St. Punta Gorda Fl 33950

Owner — Address — City — State — Zip

McGregor Pump Co 2946 6-9-90 200' 535'

Contractor's Signature — License No. — Completion Date — Casing Depth — Total Depth — Well #

Ken Lovejoy

Driller's Name — Registration No.

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )

WELL USE: Domestic Well ( ) Public ( ) Monitor (✓) Test ( )

Irrigation ( ) Fire Well ( ) Other

METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )

Casing Driven ( ), Other

STATIC WATER LEVEL 8 Ft. below top of casing

PUMPING WATER LEVEL ____ Ft. after ____ Hrs. at ____ GPM

PUMP SIZE ____ H.P. CAPACITY ____ GPM

PUMP TYPE ____ INTAKE DEPTH ____ From top of ground

LOCATION

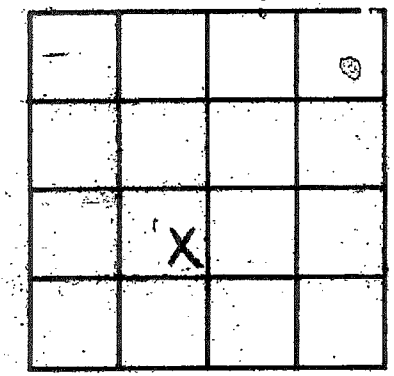
Located Near off SR #74 North Side

County Hendry

NE SW 20 40S 27E

¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes (✓) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
2"	4"	0	5	Sand
↑	↑	5	21	limestone & Shell
		21	52	green clay
		52	91	gray limestone & Shell
		91	99	green clay
		99	115	marly limestone
		115	140	tan limestone
		140	179	green clay
↓	↓	179	195	some with some limestone
200	200	195	210	green clay
		210	285	white marly limestone
Number of bags		285	292	stiff clay
36		292	320	limestone
		320	329	marly limestone

(Page 1 of 2)

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )

Screen: Type ____ Slot size ____

Screened from ____ (ft.) to ____ (ft.)

Type of grout with ____ additives 6% gel

Water: Clear (✓) Odor ( ) Sulphur ( ) Salty ( ) Iron ( )

Conductivity ____ Chlorides ____ mg/l

SCANNED

2588

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. Hendry Co

AMS (Chiquita Brands)
Owner

Mc Gregor Pump Co. 2946 6-9-90 200' 535'
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

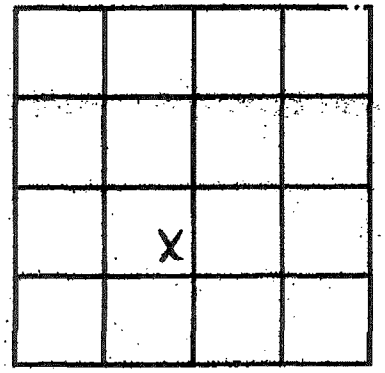
Ken Lovejoy
Driller's Name Registration No.

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor (✓) Test ( )
Irrigation ( ) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

LOCATION
Located Near off SR # 74
North Side
County Hendry

NE SW 20 40s 27E
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Cuttings sent to District? ( ) Yes
(✓) No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
2"	4"	327	335	limestone
		335	435	marly limestone
		435	460	gray limestone
		460	492	tan limestone
		492	515	gray clay
		515	527	same w/ limestone
		527	535	Sandstone (Brown) w/ Sand
Number of bags				

(Page 2 of 2)

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives 6% gel
Water: Clear (✓) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

SCANNED

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SFD2061-G

Chiquita Citrus 250 East 5th St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 3-6-91 280' 545 #9
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Bobby Williams
Driller's Name Registration No.

(Page 1 of 2)

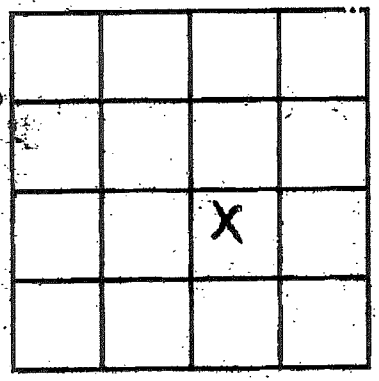
B-15-91

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( ) 84
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE Turbine INTAKE DEPTH 80 From top of ground

LOCATION
Located Near 7 miles E. of 31 & 74 intersect. - N. 4 miles
County Charlotte

NW SE 20 40 27
¼ ¼ Section Township Range

Latitude-Longitude



LOCATE IN SECTION

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"	18"	12"	0	7	Sand
	↓	↓	7	15	Sandy Clay
	↓		15	22	Shell Bed
	28		22	58	dark green clay
			58	90	Limestone
			90	118	Limestone, Clay
			118	125	Limestone - Lost
			125	137	White marley Clay
			137	187	Stiff green Clay
			187	200	Clay w/phosphate
			200	210	Stiff green Clay
Number of bags		↓	210	280	Limestone w/ Clay
		280	280	340	White & Tan Limestone
			340	385	Hard Tan limestone

Cuttings sent to District? ( ) Yes (✓) No

Casing: Black Steel ( ) Galv. ( ) PVC (✓) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives 6% gel
Water: Clear (✓) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

Note: PWS Wells attach a site map if well location is different from site location on permit application.

2737

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02061-G

Chiquita Groves — 250 East 5th St. Cincinnati, Ohio 45202
Owner — Address — City — State — Zip

McGregor Pump. — 2946 — 3-6-91 — 280' — 545' — #9
Contractor's Signature — License No. — Completion Date — Casing Depth — Total Depth — Well #

Bobby Williams
Driller's Name — Registration No.

(Page 2 of 2)

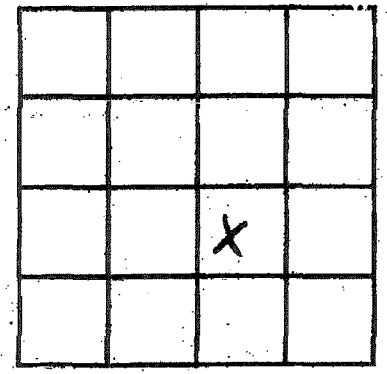
TYPE OF WORK: Construct ( ) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation ( ) Fire Well ( ) Other _____
METHOD: Rotary with MUD ( ) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE _____ INTAKE DEPTH _____ From top of ground

LOCATION
Located Near 7 miles E. of 31
& 74 intersect. - N. 4 miles
County Charlotte

NW SE 20 40 27
¼ Section Township Range

Latitude-Longitude

Cuttings sent to District? ( ) Yes ( ) No



LOCATE IN SECTION

Grout Thickness & Depth	Casing & Screen Diameter & Depth		Depth (ft) From	Depth (ft) To	DRILL CUTTINGS LOG. Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"	18"	12"	385	420	Soft Tan
			420	430	green clay
			430	450	Limestone w/clay
			450	545	Tan limestone - hard
			545	—	Sand
Number of bags					
164					

Casing: Black Steel ( ) Galv. ( ) PVC ( ) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives _____
Water: Clear ( ) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

Note: PWS Wells attach a site map if well location is different from site location on permit application.

SCANNED

2742

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. SF02061-B

Chiquita Citrus 250 East 5th St. Cincinnati, Ohio 45202
Owner Address City State Zip

McGregor Pump Co. 2946 3-21-91 285' 570' W-4
Contractor's Signature License No. Completion Date Casing Depth Total Depth Well #

Bobby Williams
Driller's Name Registration No.

4/19/91

TYPE OF WORK: Construct (✓) Repair ( ) Abandon ( )
WELL USE: Domestic Well ( ) Public ( ) Monitor ( ) Test ( )
Irrigation (✓) Fire Well ( ) Other _____
METHOD: Rotary with MUD (✓) or Air ( ), Cable Tool ( ), Jet ( )
Casing Driven ( ), Other _____
STATIC WATER LEVEL _____ Ft. below top of casing
PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
PUMP SIZE _____ H.P. CAPACITY _____ GPM
PUMP TYPE Turb INTAKE DEPTH _____ From top of ground

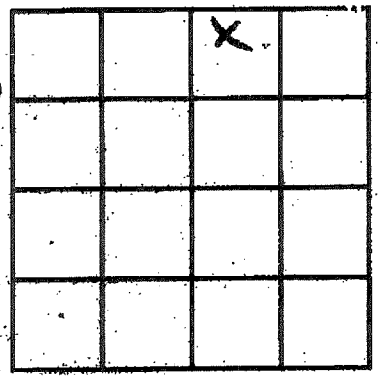
LOCATION
Located Near Ingles E. of 31 & 74 intersect. N. 4 miles
County Charlotte

NW NE 20 40 27
¼ ¼ Section Township Range

Latitude-Longitude

CANNED

Cuttings sent to District? ( ) Yes (✓) No



LOCATE IN SECTION

Grout Thickness & Depth	Casing & Screen Diameter & Depth 18" 12"		Depth (ft) From	To	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Give color, grain size, and type of material. Note cavities, depth to producing zones.
2"			0	9	Sand
			9	16	Sand Clay
			16	50	dark grn. clay
			50	60	limestone w/ clay
			60	90	limestone
			90	120	dark grn clay
			120	150	limestone
			150	175	Stiff Sticky clay
			175	200	Soft Clay w/ phosphate
			200	240	Stiff clay
			240	260	limestone w/ clay
Number of bags			260	275	Limestone-Hard
			275	285	Tan limestone
			285	290	greenish clay, limestone
			290	520	hard limestone w/ sand
			520	570	dark green clay

Casing: Black Steel ( ) Galv. ( ) PVC (X) Fiberglass ( )
Screen: Type _____ Slot size _____
Screened from _____ (ft.) to _____ (ft.)
Type of grout with % additives Le % gel
Water: Clear (X) Colored ( ) Sulphur ( ) Salty ( ) Iron ( )
Conductivity _____ Chlorides _____ mg/l

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Exhibit 16-1

Narrative – Aquifer Recharge in Charlotte County

I. Prime Recharge Area Designations

1. History of Prime Recharge Designation and Related Legislative Direction

In 1982, the Florida legislature directed the state's Water Management Districts to conduct Groundwater Basin Resource Availability Inventories (GWBRAI) covering areas deemed appropriate by the District's Governing Board (Section 373.0395, F.S.). The concept of "Prime Groundwater Recharge Areas" appeared in Florida's water policy framework at this same time. "Prime Groundwater Recharge Areas" were specifically mandated for inclusion in the GWBRAIs.
The inventory of the groundwater basins was to comprise a variety of issues, including but limited to:

A. A hydrologic study to define the groundwater basin and its associated recharge areas;

B. Delineation of site specific areas in the basin deemed prone to contamination or overdraft resulting from current or projected development; and

C. Delineation of "Prime Groundwater Recharge Areas".

Upon completion, a copy of the applicable GWBRAI was to be submitted to each affected municipality, county, and regional planning agency and reviewed for consistency with the local government's comprehensive plans and to be considered in future revisions of such plans. Since groundwater basins can be of a scale much larger than local and/or county government jurisdictions, it was the intent of the legislature to provide each of these local governments, contained within these groundwater basins, with information at a county-level scale to assist in future governmental planning efforts.

II. Technical Findings Regarding Recharge within the Southern West-Central Florida Ground-Water Basin

In response to this legislative direction, the Southwest Florida Water Management District "SWFWMD" conducted an inventory of the groundwater basins contained within its jurisdiction. A report entitled **"Groundwater Resource Availability Inventory; Charlotte County, Florida"** (GWRAI) was published in March, 1988. The report includes findings about Charlotte County's hydrogeology, including recharge; in addition to other pertinent characteristics of the respective basin in which Charlotte County is located.

1. Southern West-Central Florida Ground-Water Basin (SWCFGWB)

Charlotte County is contained entirely within Southern West-Central Florida Ground-Water Basin (SWCFGWB), representing a geographically extensive area of approximately 7,300 square miles that extends far beyond the county itself as shown in **Figure 1**. In the report, SWFWMD identified the recharge characteristics of the aquifer systems across the entire basin. Although some areas within the SWCFGWB provide variable rates of recharge to the upper Floridan Aquifer, other areas do not, i.e., they are discharge areas. Therefore, all portions of the basin outside of discharge areas are designated as potential recharge areas. However, the simple identification that a particular site is located within an area that provides some degree of recharge does not necessarily mean that the site is within a "Prime Recharge Area". Recharge across the SWCFGWB was found to vary widely, with high rates of recharge, i.e., greater than 10 inches per year, occurring in the northern areas of the basin and very little to no recharge occurring within Charlotte County itself. Therefore, Charlotte County cannot be objectively considered as a "Prime Groundwater Recharge Area" for the upper Floridan Aquifer within the SWCFGWB.

2. Susceptibility to Groundwater Contamination

The SWFWMD's Charlotte County GWRAI addressed susceptibility to groundwater contamination of the SWCFGWB using the "DRASTIC" methodology developed by the U.S. Environmental Protection Agency (EPA). General findings for the SWCFGWB were that the upper Floridan Aquifer System may be highly susceptible to ground-water contamination in the northern areas of the SWCFGWB (far to the north of Charlotte County) and much less susceptible in the southern areas of the basin, primarily due to thickening of clay or confining units overlying the upper Floridan Aquifer and a corresponding lack of recharge. In Charlotte County these confining sediments are considerable and approach a thickness of approximately 650 feet in the eastern sections of county. Additionally, these same sequences of confining sediments occur above, between, and below the Intermediate Aquifer System producing zones, greatly reducing susceptibility to ground-water contamination.

The SWFWMD report found that groundwater recharge rates to the Intermediate and upper Floridan Aquifer Systems in Charlotte County to be very low. This is supported by the fact that groundwater levels in the Intermediate and upper Floridan aquifers are above land surface in a majority of Charlotte County. Wells open to these systems can therefore exhibit "free-flowing conditions", as a consequence of the upward pressure gradient.

The SWFWMD used four categories of natural recharge (developed independently by the United State Geological Survey) in the report, ranked from lowest to highest recharge:

A. Areas of generally no recharge, i.e., discharge;

B. Areas of known very low recharge;
C. Areas of very low to moderate recharge; and
D. Areas of high recharge.

The SWFWMD report indicates that "areas of known very low recharge" are located where the upper Floridan aquifer is known to be overlain by relatively impermeable confining beds.

3. Recharge Characteristics of the Calusa Green Project Site

Regional-Scale Study Information
According to the regional SWCFGWB report, the subject site is generally anticipated to be located within a Category 2 area, defined as an area of "known very low recharge (less than 2 inches per year)". This is the lowest level of recharge identified, short of the Category 1 designation representing an "area of no recharge", i.e., discharge. Additional work performed by W.R. Aucott, entitled "Areal Variation in Recharge to and Discharge from the Floridan Aquifer System in Florida" indicates that the eastern section of Charlotte County is characterized as having recharge rates of less than 1 inch per year. This particular study appears to have been the basis for the Charlotte County's Future Land Use Element (FLUE) Map No. 6.

County Comprehensive Plan Information
Information derived from the Charlotte County's FLUE Map No. 6: entitled "Prime Aquifer Recharge Areas" indicates the eastern portion of Charlotte County to be characterized as having very low recharge values, in agreement with those data presented by Aucott. As designated in the County's Comprehensive Plan, the eastern section of the County is described as having "No recharge to very low recharge (0.0 to 1.0 inches per year) to the Upper Florida Aquifer".

Calusa Green Project Site Information
Localized hydrogeologic information collected within, and in the vicinity of, the Calusa Green Project Site suggests that the hydrogeology is consistent with the lower recharge values identified in Map No. 6, and there is credible data that suggests that there may be little if any recharge, i.e., zero, at the site. This determination is supported by the thick, low permeability sediments that comprise the confining unit above the upper Floridan Aquifer, the minimal differential between the water levels of the Surficial Aquifer and the upper Floridan Aquifer Systems, the highly mineralized water quality of the Intermediate and upper Floridan Aquifer Systems, and the proximity of the project site to areas of known discharge.

In summary, the subject site appears to provide very little, if not zero, recharge to the upper Floridan Aquifer, with recharge best described as either de minimus or nonexistent. The site specific data further supports the conclusion that the Calusa Green Project Site cannot reasonably be considered as being located

within a “prime recharge area” in the context of how that term was intended by the state legislature in 1982.