SECTION 4
GROUNDWATER MONITORING PLAN
P82-17 SUPPLEMENTAL ENVIRONMENTAL MANAGEMENT PLAN

Prepared for:

CEMEX MATERIALS OF FLORIDA, LLC
CEMEX SOUTH PLANT

Brooksville, Florida

&

DELTA POWER SERVICES, INC.
CPL PLANT

Brooksville, Florida

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BCI Project No. 14073.1

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Professional Geologist Certification

I hereby certify that I am a registered professional geologist in the State of Florida practicing with BCI Engineers & Scientists, Inc. (BCI), a corporation authorized to operate as a business providing geological consulting services (GB 0000013) by the State of Florida Department of Professional Regulation, Board of Professional Geologists. I further certify that I have reviewed the geological evaluations, findings, opinions, calculations, conclusions, or technical advice hereby represented in this report, and find it correct. The historical data presented in this report was not generated by BCI, and was assumed accurate, in the preparation of this report.

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P82-17 Supplemental Environmental Management Plan

BCI Project No. 14073.1

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4.1.0 OVERVIEW

4.1.1 Previous Groundwater Monitoring Plans

This Groundwater Monitoring Plan (GWMP) was originally prepared by Imperial Testing Laboratories (ITL), a water resource consultant from Lakeland, Florida, that is no longer in business. ITL made several modifications and addendums to the plan, the last of which occurred in April 2000. After that time, any changes were made by Creative Environmental Solutions, Inc., located at 611 North Broad Street, Brooksville, Florida, 32601. This current version of the GWMP is provided by BCI Engineers & Scientists, Inc. (BCI) located at 2000 East Edgewood Drive, Suite 215, Lakeland, Florida, 33803.

4.1.2 Introduction and History

This GWMP fulfills conditions of Certification No. PA82-17 and OGC File No. 98-0093 for the CEMEX South Plant and the CPL Plant (Facility), located in Brooksville, Florida. The original GWMP was implemented in 1986, under the terms of the Site Certification Document (SCD). The goal of the original plan, under the SCD was the monitoring of a clay lined coal storage area, cooling ponds, and a planned solid waste landfill. The solid waste landfill was never built, because it was deemed unnecessary, after production was initiated. Since the implementation of the original GWMP, modifications include the addition and subsequent replacement of monitor well MW-CPL-8 due to inconsistent groundwater levels, the replacement of cooling pond monitor wells MW-CPL-4 and MW-CPL-2, and the abandonment of MW-CPL-7. MW-CPL-8, MW-CPL-4, and MW-CPL-2 were replaced with MW-CPL-8R, MW-CPL-4R, and MW-CPL-2R during February 2004, September 2007, and August 2010 respectively due to failures. MW-CPL-7 was abandoned during August 2010, but was removed from the GWMP with FDEP approval during October 2004.

The monitor wells installed around the cooling ponds and coal storage areas were monitored for at least four quarters (**Figure 1**). After this time, the background water quality was established with a 95 percent statistical confidence level from the parameters specified in the SCD as being representative of coal pile leachate. After establishing the background water quality, quarterly monitoring of indicator parameters was initiated to determine future parameter lists based on the parameters of concern found in the SCD. Since that time, it was necessary to expand to the full list of parameters one time, to check for groundwater impacts by other coal leachate parameters. This check revealed no impact to the groundwater.

In April of 1999, the Florida Department of Environmental Protection (FDEP) requested extensive water quality analyses from monitor wells MW-CPL-1, MW-CPL-8 (both near the coal storage area), MW-CPL-5 (near the cooling pond), and MW-CPL-1 (near the proposed landfill area). The results of these analyses also indicated no impact to the groundwater, as indicated in the August 1999 letter from the FDEP (**Appendix A**). Monitor well MW-CPL-1 was not required for monitoring, after determining the landfill was unnecessary. However, MW-CPL-1 was retained as a water level monitor to comply with the facility's Southwest Florida Water Management District (SWFWMD) permit.

In response to a request from Florida Crushed Stone (FCS) in October 2004, the FDEP agreed to eliminate monitor well MW-CPL-7 from the GWMP, but requested that the remaining wells (MW-CPL-1, MW-CPL-2, MW-CPL-3, MW-CPL-4, MW-CPL-5, MW-CPL-6, and MW-CPL-8) be kept as compliance points. In that same letter from the FDEP, dated March 9, 2005 (**Appendix B**), the FDEP also agreed to limit the parameters to be monitored in the monitoring wells, provided FCS monitored the Perimeter Ditch for the parameters listed in Section 4.2.2.1 of this GWMP. The resulting parameter list for the compliance monitor wells is listed in Section 4.2.1 of this GWMP.

Due to the absence of any evidence leading to negative groundwater impact, after almost +15 years of operation and monitoring, the risk of any future negative impact is minimal. Based on the review of groundwater sampling performed in 1999 (**Table 1**), the FDEP Solid Waste Section determined that iron and chloride will remain as monitored parameters for the compliance monitored wells to determine the future need of monitoring metals. During that same time, the FDEP also determined that arsenic, barium, cadmium, lead, could be eliminated from the groundwater monitoring parameter list.

Each of the monitor wells is four inches in diameter and was originally equipped with dedicated electric jet pumps. When those pumps began to fail in mid-1990, they were replaced with dedicated submersible pumps. The monitor wells were purged, and then sampled by Creative Environmental Solutions in accordance with the FDEP Standard Operating Procedures (SOP's). Monitoring under the current GWMP is continuing, and the sampling is performed by BCI, in accordance with the FDEP SOP's.

4.2.0 MONITORING PLAN

4.2.1 Groundwater Monitoring

The compliance monitor wells included in the GWMP are those recommended by the FDEP and their locations are shown in **Figure 1**. Diagrams showing the construction and lithology of each well are included in **Figures 2** through **10**. As previously noted the only modification in the wells' configuration from that shown on the diagrams is the current and proposed future use of dedicated submersible pumps, as opposed to surface (jet) pumps. **Table 2** shows the previously established background groundwater quality for each well. The results of a horizontal and vertical survey by a Professional Land Surveyor are shown in **Appendix C**.

Groundwater monitoring is performed quarterly for each monitor well and the parameter list is shown below. The sampling will be performed by BCI, in accordance with the FDEP-SOP-001/01 FS 2200 and their FDEP approved CompQAP no. 930109G. Sample analysis will continue to be by an FDEP certified chemical lab with a current approved CompQAP covering the analyses to be performed. The parameter monitoring list for the compliance monitor wells is as follows:

Iron	Total Dissolved Solids
Sulfate	Chloride
pH	Conductivity
Turbidity	

Note also that compliance monitor well sampling is conducted for comparison to secondary drinking water standards at five-year intervals.

Prior to sampling, water levels are recorded on the groundwater sampling logs provided by the FDEP using an electric water level indicator. Each of the wells is equipped with dedicated electric submersible pumps, which are purged to remove any stagnant water. The temperature, pH, conductivity, dissolved oxygen, and turbidity are measured to ensure proper stabilization criteria based on the guidelines set forth by the FDEP. After proper stabilization has been reached, the sample bottles are filled directly from the well and then properly stored on ice. The samples are shipped by courier to the laboratory for analysis. The water level indicator is field decontaminated between wells, using the procedures found in FDEP-SOP FC1000.

4.2.2 Surface Water Monitoring

4.2.2.1 Perimeter Ditch

As requested in the FDEP March 9, 2005 letter (**Appendix B**), the details for sampling the Perimeter Ditch and Cooling Pond 4 are included in this revision of the GWMP. The Perimeter Ditch is sampled and analyzed quarterly for the parameter list below. The sampling is performed by BCI, in accordance with the FDEP-SOP-001/01 FS 2100 and their FDEP approved CompQAP no. 930109G.

Sample analysis will continue to be by an FDEP certified chemical lab with a current approved CompQAP covering the analyses to be performed. The parameter monitoring list for the Perimeter Ditch is as follows:

Total recoverable aluminum	Total recoverable arsenic
Total recoverable barium	Total recoverable cadmium
Total recoverable chromium	Total recoverable iron
Total recoverable lead	Total recoverable mercury
Total recoverable selenium	Total recoverable silver
Total recoverable petrol hydrocarbons	Oil and grease
pH	Total dissolved solids
Total suspended solids	Turbidity

The samples are collected from the bridge over the ditch, using a stainless steel pot, with a nylon lanyard. The samples are poured directly from the pot into the sample bottles. They are immediately stored on ice and then shipped by courier to the laboratory. The lanyard and stainless steel pot are dedicated to this project and are stored wrapped in aluminum foil inside a white plastic bag. All equipment is decontaminated using the procedures found in FDEP-SOP FC1000.

4.2.2.2 Cooling Pond 4

Cooling Pond 4 is sampled monthly by BCI, in accordance with the FDEP-SOP-001/01 FS 2100 and their FDEP approved CompQAP no. 930109G. Sample analysis will continue to be by a NELAC certified chemical lab with a current approved CompQAP covering the analyses to be performed. The parameter monitoring list for Cooling Pond 4 includes pH and total suspended solids. The samples are collected by a polyethylene dipper extending from the boat ramp into the pond just below the water surface. The polyethylene container is decontaminated and stored according to FDEP-SOP FC1000 and dedicated to this project. The sample containers are filled directly from the dipper. Once the containers are filled, the samples are immediately stored on ice and shipped by courier to the laboratory.

4.3.0 BACKGROUND INFORMATION

The following information is included to aid in assessing and understanding the proposed GWMP.

4.3.1 Hydrogeological, Physical, and Chemical Data for the Site

As discussed with the FDEP during their review of the existing groundwater monitoring data, there is no consistent groundwater flow direction for the coal storage area. It is clear from the data and anticipated in the SCD that significant recharge and associated groundwater mounding does and will continue to occur beneath the cooling ponds. Both the cooling pond monitor wells are down-gradient of this mounding effect. The inconsistency of the flow direction in the coal storage area is believed to be related to the combination of effects from this mounding and drawdown effects from production wells (wells 17 and 18) located immediately adjacent to this area. This realization was the motivation behind FCS's proposed and approved modification of the existing GWMP to add monitor well MW-CPL-8 to ensure that at least one well would be down-gradient regardless of the flow direction. The risks associated with this inability to predict which well will be down-gradient are offset by the number of wells surrounding the coal storage are and FDEP's recommendation to not allow a zone of discharge beyond the existing wells.

Background water quality for each well was established within the first year of installation for each well and is shown in **Table 2**. Natural background groundwater quality is probably best represented by the results for MW-1, which is included as part of the attached submittal to FDEP dated June 24, 1999 (**Appendix D**). This well was selected by FDEP because of its great distance from the cooling ponds, coal pile storage area, and any other activities, which could affect the natural groundwater quality. Except for a few naturally elevated secondary parameter levels, the groundwater quality is typical for this area of Florida.

As the monitor well lithology logs indicate, they are all completed in limestone of the Floridan aquifer. In the monitored areas, a separate surficial aquifer is not present. According to a 1987 SWFWMD staff report prepared in connection with the facility's water use permit, the Floridan occurs under water table conditions at the site. That report also indicated representative values for transmissivity and storage coefficient of 1,196,800 gpd/ft and 0.15 respectively, values which are typically associated with the surficial aquifer. A site-specific aquifer performance test (APT) conducted in 1987 at the request of SWFWMD on production well 18 immediately adjacent to the coal storage area indicated a transmissivity of 1,237,000 gpd/ft. The results of the APT are shown in **Figure 11**. Although there are likely variations in the vertical and horizontal hydraulic conductivity within the aquifer, the aquifer testing did not identify the presence of any confining beds.

The Facility contains numerous surface features that define on-site topographic conditions and related storm water flow paths, as shown in **Exhibits 1** and **2**. Of particular importance are the many active and inactive limestone quarries, active and inactive settling ponds, cooling ponds, and naturally low-lying areas located throughout the site. Given these drainage features, it is important to note that there is typically no off-site discharge of land surface runoff from the active (developed) portion of the site, which includes the plant operations described previously. The only exceptions would occur in the event of an emergency discharge of excess water from Settling Pond 7 or Cooling Pond 4. In this instance, the excess water would discharge in a westerly direction to a low-lying area located on CEMEX property on the west side of CR 491. This low-lying area does not have a surface drainage outlet feature. Therefore, in the event of an emergency discharge from Settling Pond 7 or Cooling Pond 4, the excess water would remain on the property.

To assist in the definition of surface drainage patterns of the Facility, drainage basins and sub-basins have been delineated, as illustrated in **Exhibits 1** and **2**. These delineations were created using available topographic mapping and field observations of flow paths and topographic conditions. Given the limited coverage and accuracy of the available topographic mapping, these delineations were to a large extent completed using observations made in the field.

In particular, five drainage basins were delineated and identified as CNTR, EAST, NRTH, WEST, and SOTH, which are located in the central, eastern, northern, western, and southern portions of the developed site. These five drainage basins were further delineated into drainage sub-basins 5, 7, 6, 6 and 4, which produced a total of 28 sub-basins. Sub-basins that do not have a gravity discharge outlet feature under normal circumstances (i.e., not considering an emergency discharge) were identified as "closed basins" (I.D.), which accounted for 20 of the 28 sub-basins. Note: for the purpose of this evaluation, sub-basins that have a pumped discharge outfall, which includes Sub-basins WEST-3 (Settling Pond 7 pump) and SOTH-1 (Perimeter Ditch pump), were also considered to be closed basins.

Important surface features that cause sub-basins to be closed basins, include old inactive quarries, active quarries, naturally low-lying areas, Settling Ponds 7 and 9, and Cooling Ponds 4 and 5. The eight sub-basins not identified as closed basins generate stormwater runoff that discharges to sub-basins that are closed basins. Therefore, as stated previously, there is typically no off-site discharge from the active portion of the Facility. Also, in the event of an emergency discharge from Settling Pond 7 and Cooling Pond 4, the water will discharge to a low-lying area located on CEMEX property west of CR 491, which does not have a surface water discharge outlet feature.

4.3.2 Waste Disposal Rate and Frequency, Chemical Composition, Method of Discharge, Pond Volume, Spray-field Dimension, or Other Site Specific Information

The primary wastewater is coal storage leachate and stormwater. The entire coal storage area, including a runoff collection sump, is underlain by a very low permeability clay liner, as reported in the initial GMWP (**Appendix E**). The runoff collection sump in the west end of the storage area was designed to contain the 100-year storm according to FCS. Any additional stormwater, which cannot be contained in the sump, is pumped to the main runoff collection ditch, which lies between the coal storage area and the Central Power and Lime power plant. Any discharge into this ditch, which drains the entire plant area, flows to the cooling ponds. There is no surface discharge from these ponds, except under extreme storm conditions, and then no off-site discharge occurs. The recharge from these ponds causes groundwater mounding beneath them, which is monitored by monitor wells MW-CPL-4R and MW-CPL-5. Water quality analysis results of the coal storage runoff collection sump (**Appendix F**) and the main runoff collection ditch (characterized by MW-CPL-1 to MW-

CPL-8R in **Table 3**). Details regarding the size of the cooling ponds are contained in the attached Site Water Management Plan (SWMP) (**Section 3**). Based on the monitoring data gathered during the past 15 years of operation, it appears that the coal storage area liner is preventing any significant leachate migration to the underlying groundwater.

4.3.3 Toxicity of Waste

Precipitation onto the coal pile primarily becomes runoff, due to the low permeability liner preventing percolation to the aquifer below. The actual coal pile leachate and wastewater are believed to be best characterized by the water quality results of the sample taken from the coal storage area runoff collection sump (**Appendix F**). Of the complete list of parameters analyzed, only a few secondary standards were exceeded, indicating that the waste water is non-toxic.

4.3.4 Present and Anticipated Discharge Volume and Seepage Rate to the Receiving Groundwater; and Physical, Chemical and Microbiological Characteristics of the Leachate

As discussed above, discharge from the coal storage area runoff collection sump is rare. If discharge does occur, it is to the cooling pond, where vast dilution is available and discharge occurs only during extreme storm events. Attached is a water balance that estimates the seepage rate from the cooling and disposal ponds (**Figure 12**). Seepage from the coal storage area runoff collection sump is considered to be minimal, if occurring at all, due to the underlying clay liner. The likely chemical make up of the leachate/wastewater is discussed in Section 3.3 above.

4.3.5 Disposal System Water Balance

Discussed in Section 3.4, see **Figure 13**.

4.3.6 Present and Reasonably Expected Future Pollution Sources Located Within One Mile Radius of the Site

Four potential sources of groundwater contamination are located within a one-mile radius of the site. The first location is the coal storage pile, which is located east and adjacent to the Cement kiln. In addition, a waste tire processing facility associated with the cement plant is also located adjacent to the cement kiln. The third and forth potential sites are the Fly Ash storage areas located onsite and northeast of the facility along the coal unloading rail line and mine entrance road.

The coal pile is located in an area that is lined with a very low permeability clay lining that is constructed in such a manner, that any potential discharge is directed to water control structures (**Table 4**). Precipitation and water applied to the pile to control dust, is collected in a sump, and located in the southeastern part of the clay-lined area. Excess water is pumped to a nearby abandoned quarry.

The waste tire processing facility is located near the Central Power and Lime power plant. This facility is associated with the CEMEX Cement Plant kiln. The tires are not shredded, but are fed to the kiln as whole unit. The tire processing facility is operated under an FDEP solid waste permit, and is designated with the FDEP site ID 40778. Under the FDEP permit, no monitor wells are specifically required. There have been no non-compliance issues related to this facility. The coverage of the monitor wells associated with the Delta Power Plant and CEMEX Cement Plant are sufficient to detect any contamination related to the facility.

The first fly ash storage area is located 300-400 feet northeast of the cement plant coal storage area, along the coal unloading rail line. The second pile is located northeast of the Cement plant and along the east side of the CEMEX Mine entrance road approximately one half mile from the cement plant. Fly ash is a common cement additive, which enhances the cement quality and provides valuable raw material to the cement mixture. Both of these stockpiles are covered with heavy tarps and weighted to prevent any potential impacts from rainfall to either surface or groundwater.

In addition, CEMEX leases property to several independent operations at the Brooksville Facility, including Miller Tire and Cliff's Septic Tanks. None of these operations generates a significant volume of process water. The latter two facilities have been constructed in the recent past, and have permitted on-site stormwater management facilities. Therefore, Miller Tire and Cliff's Septic Tanks should not be considered as potential sources of pollution.

4.3.7 Inventory Depth, Construction Detail and Cones of Depression of Water Supply Wells or Well Fields and Monitor Wells Located Within One Mile Radius of the Site or Potentially Affected by the Discharge

The information presented in **Table 5** was prepared during the facility's most recent water use permitting renewal. Wells 8, 10, CPLE, and CPLW are associated with the power plant. The remaining wells are associated with the Gregg Mine, mostly for process water. **Table 6** shows the construction data for the monitor wells associated with the Central Power and Lime power plant.

Groundwater modeling performed by SWFWMD staff during the Gregg Mine Water Use Permit Modification 7 concluded that with 6,785,000 gpd average/day and 10,140,000 gpd peak month being withdrawn from the mine area, that the draw down would less than 1.0 foot in the Floridan surficial aquifer at 6,000 feet. The location of the current major pumpage is approximately 6,000 feet from the nearest property boundary.

4.3.8 Site-Specific Economic and Feasibility Conclusions

The facility, as approved in the SCD, was designed to route all waste and stormwater to the huge limestone tailing disposal and cooling pond system, where any pollutants would be diluted or bound up with the tailings. The pond system was designed not to discharge and so that the maximum capture of rainfall would be achieved, which would minimize the need for groundwater pumpage. Based on the monitoring data collected over the first fifteen years of operation, this design appears to have worked very well.

4.3.9 Chronological Information on Water Levels in the Monitor Wells and Water Quality Data on Water Supplies Collected from the Water Supply and Monitor Wells

Historical water level data collected from the monitor wells under the current GWMP are shown in **Tables 7** to **12**. Water quality data for the monitor wells for the last three years are shown in **Tables 13** to **20**. The data are believed to be representative of the upper Floridan aquifer groundwater quality under this site. This is the aquifer into which all the small potable water supply wells used at the facility are completed.

4.3.10 Type and Number of Waste Disposal Facilities within the Installation

For other than the small domestic effluent disposal facilities for the plants, the cooling ponds and the coal storage area, see **Appendix G** (SWMP). The cooling ponds and the coal storage area have been discussed above and based on the FDEP August 1999 comments and recommendations letter (**Appendix A**), the domestic effluent disposal facilities were not considered significant enough to monitor.

4.3.11 Chronological Information on Surface Water Flows and Water Quality Upstream and Downstream from the Site

See **Appendix G** (SWMP).

4.3.12 Construction and Operation Details of Disposal Facilities

See **Appendix G** (SWMP) and Sections 4.3.2 and 4.3.4 above.

4.3.13 History of Construction and Land Development in the Vicinity of the Site

See **Appendix G** (SWMP).

TABLES

Table 1
Groundwater Monitoring Well Analytical Summary 1999
Florida Crushed Stone Brooksville Facility

Parameter	MCL	MW-CPL-1 4-12-99	MW-CPL-5 4-12-99	MW-CPL-6 4-12-99	MW-CPL-1 4-12-99	MW-CPL-1 6-1-99
Turbidity		**4.5**	**0.39**	**10**	**22**	**5.32**
Fluoride	**2.0**	**0.27**	**0.68**	**0.48**	**0.19**	
Lead	**0.015**	**0.006**	**BDL**	**0.003**	**0.05**	**0.003**
Nitrate	**10**	**0.45**	**0.09**	**0.16**	**0.57**	
Sodium	**160**	**10.9**	**18.5**	**6.2**	**12.1**	
Other Inorganics		**BDL**	**BDL**	**BDL**	**BDL**	
Aluminum	**0.2**	**1.64**	**BDL**	**3.34**	**13.7**	**2.66**
Chloride	**250**	**13.7**	**26.6**	**5.13**	**24.6**	
Copper	**1**	**BDL**	**BDL**	**BDL**	**0.05**	
Fluoride	**2.0**	**0.27**	**0.66**	**0.46**	**0.19**	
Iron	**0.3**	**0.85**	**BDL**	**1.06**	**4.17**	**0.97**
Manganese	**0.05**	**BDL**	**BDL**	**0.02**	**0.05**	
Sulfate	**250**	**29**	**36**	**19**	**12**	
Zinc	**5**	**0.039**	**0.025**	**0.042**		
Color	**15Units**	**60**	**2**	**122**	**334**	**153**
Odor	**3**	**2**	**BDL**	**2**	**4**	
pH	**6.5-8.5**	**7.45**	**7.76**	**7.76**	**7.36**	
TDS	**500**	**249**	**218**	**150**	**352**	
Other Secondary Chemistry		**BDL**	**BDL**	**BDL**	**BDL**	
Volatile Organics		**BDL**	**BDL**	**BDL**	**BDL**	
Pesticide & PCB		**BDL**	**BDL**	**BDL**	**BDL**	
Unregulated Group I		**BDL**	**BDL**	**BDL**	**BDL**	
Unregulated Group II		**BDL**	**BDL**	**BDL**	**BDL**	
Gross Alpha	**15pc/l**	**2.6+/-2.3**	**3.5+/-2.5**	**2.6+/-2.3**	**6.3+/-2.2**	
Radium 226	**5pc/l**				**0.61+/-.1**	
Total THMS	**0.10**	**BDL**	**BDL**	**BDL**	**BDL**	

Table 2
Background Groundwater Quality
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	MW-CPL-1	MW-CPL-2	MW-CPL-3	MW-CPL-4	MW-CPL-5	MW-CPL-6	MW-CPL-8
pH	**SU**	**6.5-8.5**	**7.24**	**7.49**	**7.01**	**7.43**	**7.2**	**6.79**	**7.02**
Conductivity	**µS**		**480**	**339**	**578**	**392**	**630**	**636**	**330**
Iron	**mg/L**	**0.3**	**0.1**	**0.03**	**0.27**	**0.61**	**0.83**	**0.85**	**0.68**
TDS	**mg/L**	**500**	**297**	**180**	**328**	**187**	**306**	**349**	**189**
Sulfate	**mg/L**	**250**	**10**	**13**	**23**	**17**	**34**	**8.2**	**9**
Chloride	**mg/L**	**250**	**18.3**	**13.4**	**18.3**	**15.8**	**84.6**	**18.4**	**2.44**
Temperature	**°C**		**23.7**	**23.1**	**23.6**	**23.5**	**23**	**24**	**NA**
Aluminum	**mg/L**	**0.2**	**3.45**	**2.40**	**5.08**	**0.34**	**<0.1**	**0.56**	**1.58**
Arsenic	**mg/L**	**0.05**	**<0.001**	**<0.001**	**<0.001**	**0.001**	**0.001**	**<0.001**	**0.002**
Barium	**mg/L**	**2**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Beryllium	**mg/L**	**0.004**	**<0.005**	**<0.05**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.003**
Cadmium	**mg/L**	**0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.005**
Chromium	**mg/L**	**0.1**	**<0.04**	**<0.04**	**<0.04**	**<0.04**	**<0.04**	**<0.04**	**<0.04**
Copper	**mg/L**	**1.3**	**<0.02**	**<0.02**	**<0.02**	**<0.02**	**<0.02**	**0.03**	**0.025**
Lead	**mg/L**	**0.015**	**<0.04**	**<0.04**	**<0.04**	**<0.04**	**<0.04**	**0.011**	**0.030**
Manganese	**mg/L**	**0.05**	**<0.01**	**<0.01**	**0.02**	**0.03**	**<0.01**	**<0.01**	**0.02**
Mercury	**mg/L**	**0.002**	**<0.0001**	**<0.0001**	**<0.001**	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
Nickel	**mg/L**	**0.1**	**<0.02**	**<0.02**	**<0.1**	**<0.02**	**<0.02**	**<0.02**	**<0.02**
Selenium	**mg/L**	**0.05**	**<0.002**	**<0.002**	**<0.005**	**<0.002**	**<0.002**	**<0.002**	**<0.002**
Silver	**mg/L**	**0.1**	**<0.01**	**<0.01**	**<0.005**	**<0.01**	**<0.01**	**<0.01**	**<0.005**
Sodium	**mg/L**	**160**	**7.47**	**9.20**	**13.18**	**11.7**	**33.1**	**12.1**	**3.59**
Zinc	**mg/L**	**5**	**<0.005**	**<0.005**	**<0.02**	**0.015**	**0.007**	**0.07**	**0.024**
Fluoride	**mg/L**	**4**	**0.26**	**0.44**	**<0.04**	**0.65**	**0.36**	**0.31**	**0.59**
Gross Alpha	**pCi/L**	**15**	**1.28 ± 1.36**	**1.71 ± 1.40**	**1.79 ±1.48**	**0.38 ± 1.6**	**3.68 ± 7.18**	**2.19 ± 1.91**	**6.9 ± 1.9**

Table 3
Summary of Detected Constituents
Florida Crushed Stone

Constituent	Drinking Water Standard	BG	GPO-1	GPO-2	GPO-3	GSR-1	GSR-2	GSR-3	MW-CPL-1	MW-CPL-2	MW-CPL-3	MW-CPL-4	MW-CPL-5	MW-CPL-6	MW-CPL-7	MW-CPL-8	MW-CPL-9	Coal Pond
Odor	3	4.0	1.0	1.0	BDL	1.0	2.0	1.0	Dry	NA	NA	NA	NA	NA	NA	NA	BDL	NA
pH	6.5-8.5	6.0	7.4	7.7	7.7	7.5	7.5	7.4	Dry	7.4	7.1	7.4	7.7	7.6	7.6	7.7	7.9	7.4
Color	15	6000	10000	20	5.0	8000	8000	9000	Dry	NA	NA	NA	NA	NA	NA	NA	BDL	NA
Aluminum	0.2	4.2	32	0.7	0.23	47	58	40	Dry	NA	0.17	0.62	0.19	0.13	0.12	0.66	0.063	NA
Arsenic	0.05	0.014	0.013	BDL	BDL	0.018	0.021	0.016	Dry	NA	BDL	0.017	0.014	BDL	BDL	0.018	0.014	0.12
Beryllium	0.004	BDL	BDL	BDL	BDL	BDL	0.004 6	BDL	Dry	NA	NA	NA	NA	NA	NA	NA	BDL	NA
Chloride	250	2.2	34	38	39	36	35	26	Dry	NA	NA	NA	NA	NA	NA	NA	32	NA
Chromium	0.1	0.007	0.092	BDL	BDL	0.12	0.15	0.1	Dry	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.005
Fluoride	2.0	0.24	0.90	0.90	0.83	0.78	0.85	0.79	Dry	NA	NA	NA	NA	NA	NA	NA	0.68	NA
Iron	0.3	2.2	9.8	0.24	0.14	14	18	12	Dry	NA	0.19	0.69	0.17	0.10	0.095	0.31	BDL	NA
Lead	0.015	BDL	0.018	BDL	BDL	0.017	0.034	0.018	Dry	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.009 8
Manganese	0.05	0.015	0.38	BDL	BDL	0.36	0.56	0.36	Dry	NA	NA	NA	NA	NA	NA	NA	BDL	NA
MBAs	0.5	0.12	BDL	0.13	0.12	0.13	BDL	BDL	Dry	NA	NA	NA	NA	NA	NA	NA	0.11	NA
Nitrate	10	0.14	0.38	0.16	BDL	0.25	0.18	0.19	Dry	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
Sodium	160	1.9	11	26	27	19	19	18	Dry	NA	NA	NA	NA	NA	NA	NA	22	NA
Sulfate	250	2.0	21	19	19	21	23	18	Dry	NA	NA	NA	NA	NA	NA	NA	22	NA
Zinc	5	0.051	0.047	0.1	0.12	0.11	0.26	0.11	Dry	NA	NA	NA	NA	NA	NA	NA	0.16	NA
TDS	500	170	540	260	290	400	560	600	Dry	1700	320	330	330	290	300	300	300	900
TSS	NA	140	22000	22	14	9000	20000	25000	Dry	380	130	21	BDL	16	130	330	BDL	760
TPH	NA	NA	NA	NA	NA	NA	NA	NA	Dry	0.84	1.6	5.4	1.7	1.1	6.1	30	NA	430
Total Phos	NA	NA	NA	NA	NA	NA	NA	NA	Dry	NA	0.015	3.0	BDL	BDL	BDL	BDL	NA	NA
Nitrogen	NA	NA	NA	NA	NA	NA	NA	NA	Dry	NA	BDL	0.018	0.012	BDL	BDL	0.019	NA	NA
Turbidity	NA	NA	NA	NA	NA	NA	NA	NA	Dry	NA	5.1	0.53	BDL	BDL	BDL	BDL	NA	NA

Table 4
Summary of Material Properties
Florida Crushed Stone Coal Storage Liner Material

Sample Number	Description	% Pass No. 200 Sieve	Moisture Content		Plasticity Index	Dry Unit Weight After Perm Test	% of Standard Proctor Max	% of Modified Proctor Max	Permeability Cm/sec**
			Initial	After Perm. Test					
1	**Natural Clay**	**77**	**42**	**41.5**	**71**	**79.5**	**91**	**87**	**2.2×10^{-9}**
2	**Natural Clay**	**--**	**49***	**--**	**71**	**--**	**--**	**--**	**--**
3	**Natural Clay**	**83**	**38**	**46.2**	**71**	**76.1**	**87**	**83**	**3.7×10^{-8}**
4	**Clay w/ sand added**	**42**	**25**	**26.7**	**--**	**97.6**	**--**	**--**	**1.4×10^{-9}**
5	**Clay w/ lime added**	**68**	**39**	**51.8**	**--**	**69.8**	**--**	**--**	**6.5×10^{-7}**

* Water added to in-situ amount; sample too soft to compact properly.
** Permeability test conducted with an acid leachate formed from soaking coal in distilled water to a pH = $\pm$ 3.

Table 5
Production Wells at the Brooksville Facility

ID No. Owner	Diameter	Total Depth	Depth Cased	Construction Date	Pump Capacity (gpm)	Average Annual	Peak Month	Remarks
1	6	UNK	UNK	12/1/1974	75	6,500	10,000	
2	8	UNK	UNK	12/1/1974	1000	1,000	3,200	
3	UNK	UNK	UNK	12/1/1974	NA	--	--	
4	18	118	UNK	12/1/1974	2000	1,500,000	3,100,000	
5	18	154	UNK	12/1/1974	2000	1,500,000	3,100,000	
6	18	146	UNK	12/1/1974	3500	1,500,000	2,500,000	
7	12	UNK	UNK	12/1/1974	1200	300,000	840,000	
8	20	280	UNK	UNK	5800	--	--	CPL WUP 207015
9	16	84	UNK	12/1/1974	5800	700,000	2,400,000	
10	6	160	UNK	UNK	1200	--	--	CPL WUP 207015
11	12	250	UNK	12/1/1974	NA	--	--	
12	12	250	UNK	12/1/1974	NA	--	--	
13	8	UNK	UNK	12/1/1974	NA	--	--	
14	10	UNK	UNK	12/1/1974	NA	--	--	
15	14	165	UNK	12/1/1974	5000	1,200,000	2,900,000	
16	4	260	152	5/30/1986	25	8,000	12,000	
CPLE	16	502	220	10/5/1984	2000	--	--	CPL WUP 207015
CPLW	16	630	220	8/1/1986	2000	--	--	CPL WUP 207015
19	4	240	105	9/30/1983	UNK	1,400	1,800	
20	4	200	105	4/15/1984	NA	--	--	
21	4	380	359	1/31/1995	UNK	600	2,200	
23	4	240	142	UNK	UNK	500	800	Added by Mod 08
MW1	12	UNK	UNK	12/1/1974	NA	--	--	
MW2	4	135	120	7/25/1988	NA	--	--	

Table 6
Monitoring Well Construction Data

Well	Date Installed/ Replaced	Total Depth (ft-bls)	Casing Diameter (in)	Screened Interval (ft)	Top of Casing Elev. (ft-msl)	Total Depth (ft-msl)
MW-CPL-1	1986	65	4	62-65	79.18	14.18
MW-CPL-2R[1]	1986/2010	78	4	68-78	89.5	11.50
MW-CPL-3	1986	118	4	113-118	133.5	15.50
MW-CPL-4R[1]	1986/2007	165	4	NA	125.10	-39.90
MW-CPL-5	1986	140	4	90-140	113.97	-26.03
MW-CPL-6	1987	70	4	60-70	72.57	2.57
MW-CPL-7[2]	1987	90	4	NA	77.15	-12.85
MW-CPL-8R[1]	1995/2004	120	4	100-120	124.62	4.62

(1) Original well replaced.
(2) Well has been abandoned.

Table 7
Historical Water Level Data MW-CPL-1

Identification No: MW-CPL-1
Measuring Point: Tope of Well Seal
Elevation of Land Surface: 75.7'
Depth of Well: 65'

Elevation of Measuring Point: 79.18'
Depth of Casing: 55'

Date	Held	Wet	Depth to Water	Taped Elevation
11/29/95	65.00	15.80	49.20	31.07
02/20/96	55.00	7.39	47.61	32.66
05/31/96	60.00	11.40	48.60	32.67
08/30/96	57.00	5.70	51.30	28.97
11/19/96	65.00	14.50	50.50	29.77
05/02/97	65.00	13.50	51.50	28.77
06/13/97	70.00	16.5	53.5	26.8
08/20/97	60.00	6	54.0	26.3
12/29/97	60.00	8.21	51.79	28.48
06/25/98	50.00	5.34	44.66	35.61
06/30/98	70.00	16	54	26.27
09/14/98	60.00	7.42	52.58	27.69
12/17/98	60.00	6.76	53.24	25.94
03/24/99	60.00	6.98	53.02	26.16
06/29/99	60.00	5.5	54.5	24.7
09/30/99	65.00	6.23	58.77	20.41
12/01/99	70.00	11.28	58.72	20.46

Table 8
Historical Water Level Data MW-CPL-3

Identification No: MW-CPL-3
Measuring Point: Tope of Well Seal
Elevation of Land Surface: 129.8’
Depth of Well: 118’

Elevation of Measuring Point: 133.50’
Depth of Casing: 113’

Date	Held	Wet	Depth to Water	Taped Elevation
11/29/95	115.00	10.40	104.60	29.66
02/20/96	110.00	8.96	101.04	33.22
05/31/96	115.00	13.04	101.963	32.30
08/30/96	115.00	9.20	105.80	28.46
11/19/96	115.00	10.00	105.00	29.26
05/02/97	115.00	6.50	108.50	25.76
06/13/97	120.00	11.5	108.5	25.8
08/20/97	115.00	6.0	109.0	25.3
12/29/97	115.00	10.92	104.08	30.18
06/25/98	120.00	18	102	32
06/30/98	120.00	13	107	27
09/14/98	111.00	11.12	99.88	34.38
12/17/98	110.00	8.85	101.15	32.35
03/24/99	115.00	9.08	105.92	27.58
06/29/99	115.00	7.5	107.5	26.0
09/30/99	115.00	7.08	107.92	25.58
12/01/99	115.00	7.79	107.21	26.29

Table 9
Historical Water Level Data MW-CPL-4

Identification No: MW-CPL-4
Measuring Point: Tope of Well Seal
Elevation of Land Surface: 111.3'
Depth of Well: 145

Elevation of Measuring Point: 112.97'
Depth of Casing: 95'

Date	Held	Wet	Depth to Water	Taped Elevation
11/29/95	81.00	3.60	77.40	36.18
02/20/96	81.00	3.20	40.53	35.78
05/31/96	90.00	6.18	83.82	29.76
08/30/96	90.00	7.70	82.30	31.28
11/19/96	86.00	3.50	82.50	31.08
05/02/97	90.00	2.30	87.70	25.88
06/13/97	90.00	3.5	86.5	27.1
08/20/97	90.00	3.0	87.0	26.6
12/29/97	90.00	6.01	83.99	29.59
06/25/98	100.00	18	82	32
06/30/98	100.00	14	86	28
09/14/98	95.00	15.21	79.79	33.79
12/17/98	90.00	5.51	84.49	28.48
03/24/99	90.00	4.97	85.03	27.94
06/29/99	90.00	4	86	27
09/30/99	95.00	7.48	87.52	25.45
12/01/99	95.00	7.18	87.82	25.15

Note: MW-CPL-4 was abandoned due to failure and replaced during 2007 with MW-CPL-4R.

Table 10
Historical Water Level Data MW-CPL-5

Identification No: MW-CPL-5
Measuring Point: Tope of Well Seal
Elevation of Land Surface: 112.5'
Depth of Well: 140

Elevation of Measuring Point: 113.97'
Depth of Casing: 90'

Date	Held	Wet	Depth to Water	Taped Elevation
08/30/95	90.00	13.75	76.25	38.73
11/29/95	80.00	9.50	70.50	44.48
02/20/96	75.00	3.79	71.21	43.77
05/31/96	80.00	9.74	70.26	44.72
08/30/96	80.00	8.10	71.90	43.08
11/19/96	80.00	5.50	74.50	40.48
05/02/97	80.00	6.20	73.80	41.18
06/13/97	80.00	5.0	75.0	40.0
08/20/97	80.00	4.5	75.5	39.5
12/29/97	80.00	6.38	73.62	41.36
06/25/98	90.00	19	71	43
06/30/98	100.00	24	76	38
09/14/98	80.00	7.88	72.12	41.75
12/17/98	80.00	7.12	72.88	40.91
03/24/99	80.00	5.11	74.89	39.08
06/29/99	80.00	3	77	37
09/30/99	80.00	4.92	75.08	38.89
12/01/99	80.00	3.34	76.66	37.31

Table 11
Historical Water Level Data MW-CPL-6

Identification No: MW-CPL-6
Measuring Point: Tope of Well Seal
Elevation of Land Surface: 72.1'
Depth of Well: 70'

Elevation of Measuring Point: 72.57'
Depth of Casing: 69'

Date	Held	Wet	Depth to Water	Taped Elevation
02/20/96	45.00	4.47	40.53	33.00
05/31/96	50.00	8.62	41.38	31.95
08/30/96	50.00	6.70	43.30	30.23
11/19/96	55.00	11.00	44.00	29.53
05/02/97	55.00	8.10	46.90	26.63.
06/13/97	60.00	9.0	51.0	22.5
08/20/97	56.00	4.0	52.0	21.53
12/29/97	56.00	5.98	50.02	23.51
06/12/98	45.00	3.66	41.34	32.19
06/30/98	70.00	17	53	21
09/14/98	55.00	9.89	45.11	28.42
12/17/98	50.00	8.95	41.05	31.52
03/24/99	55.00	4.02	50.98	21.59
06/29/99	56.00	8.5	47.5	25.1
09/30/99	60.00	4.13	58.87	16.70
12/01/99	60.00	3.82	56.18	16.39

Table 12
Historical Water Level Data MW-CPL-8

Identification No: MW-CPL-8
Measuring Point: Top of Well Seal
Elevation of Land Surface: 122.3'
Depth of Well: 111.60'

Elevation of Measuring Point: 124.62'
Depth of Casing: 90'

Date	Held	Wet	Depth to Water	Taped Elevation
02/20/96	95.00	3.72	91.28	30.77
05/31/96	100.00	7.91	92.09	29.96
08/30/96	105.00	8.00	97.00	25.05
11/19/96	100.00	5.50	94.50	27.55
05/02/97	100.00	2.00	98.00	24.05
06/13/97	100.00	5.0	95.0	27.0
08/20/97	100.00	4.5	95.5	26.6
12/29/97	100.00	11.88	88.12	33.93
06/12/98	100.00	8.72	91.28	30.77
06/30/98	110.00	19	91	31
09/14/98	100.00	7.09	92.91	29.14
12/17/98	96.00	2.01	93.99	30.63
03/24/99	100.00	8.68	91.32	33.30
06/29/99	100.00	2.5	97.5	27.1
09/30/99	100.00	5.02	94.98	29.64
12/01/99	100.00	8.92	91.08	33.54

Note: MW-CPL-8 was abandoned due to failure and replaced during 2004 with MW-CPL-8R.

Table 13
MW-CPL-1 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	mg/L	0.05	<0.001	--	--	--	--	--	--	--	U	--
Barium	mg/L	2	<0.1	--	--	--	--	--	--	--	0.0114	--
Cadmium	mg/L	0.005	<0.005	--	--	--	--	--	--	--	U	--
Lead	mg/L	0.015	<0.04	--	--	--	--	--	--	--	U	--
Aluminum	mg/L	0.2	3.45	--	--	--	--	--	--	--	--	--
Iron	mg/L	0.3	0.1	0.33	U	0.15	U	0.56	U	0.57	--	0.544
Chromium	mg/L	0.1	<0.04	--	--	--	--	--	--	--	--	--
Sodium	mg/L	160	7.47	--	--	--	--	--	--	--	--	8.69
Chloride	mg/L	250	18.3	13	15	12	11.3	9.8	13.4	10.8	10.4	8.65
Sulfate	mg/L	250	10	37	55	42	35.3	28.3	44.3	24.3	25.3	26.4
TDS	mg/L	500	297	360	360	330	232	341	366	312	291	325
Turbidity	NTU	NA	--	4	1	5	2	16	18.0	11.0	27	<10
pH	SU	6.5-8.5	7.24	7.17	6.8	7.38	7.42	6.90	6.79	6.71	6.64	7.93

Table 14
MW-CPL-2 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**<0.001**	*	*	*	--	--	--	--	**U**	--
Barium	**mg/L**	**2**	**<0.1**	*	*	*	--	--	--	--	**0.0125**	--
Cadmium	**mg/L**	**0.005**	**<0.005**	*	*	*	--	--	--	--	**U**	--
Lead	**mg/L**	**0.015**	**<0.04**	*	*	*	--	--	--	--	**0.0052**	--
Aluminum	**mg/L**	**0.2**	**2.40**	*	*	*	--	--	--	--	--	--
Iron	**mg/L**	**0.3**	**0.03**	*	*	*	**0.27**	**0.4**	**0.33**	**0.81**	--	**1.0**
Chromium	**mg/L**	**0.1**	**<0.04**	*	*	*	--	--	--	--	--	--
Sodium	**mg/L**	**160**	**9.2**	*	*	*	--	--	--	--	--	**15**
Chloride	**mg/L**	**250**	**13.4**	*	*	*	**30.0**	**10.4**	**14.1**	**11.7**	**12.1**	**10.9**
Sulfate	**mg/L**	**250**	**13**	*	*	*	**11.9**	**29.5**	**50.1**	**47.2**	**58.5**	**>50**
TDS	**mg/L**	**500**	**180**	*	*	*	**324**	**440**	**454**	**393**	**1060**	**429**
Turbidity	**NTU**	**NA**	--	*	*	*	**2**	**56**	**43.0**	**23.0**	**21**	**<10**
pH	**SU**	**6.5-8.5**	**7.49**	*	*	*	**7.51**	**7.00**	**6.91**	**6.41**	**7.08**	**7.85**

* Due to a communication error, MW-CPL-2 was believed to be eliminated from the GWMP for 2006. Sampling resumed in the fourth quarter of 2006.

Note: MW-CPL-2 was abandoned due to failure and was replaced during the fourth quarter of 2010 with MW-CPL-2R.

Table 15
MW-CPL-3 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	mg/L	0.05	<0.001	Dry	--	--	--	--	--	--	U	--
Barium	mg/L	2	<0.1	Dry	--	--	--	--	--	--	0.0156	--
Cadmium	mg/L	0.005	<0.005	Dry	--	--	--	--	--	--	U	--
Lead	mg/L	0.015	<0.04	Dry	--	--	--	--	--	--	0.0052	--
Aluminum	mg/L	0.2	5.08	Dry	--	--	--	--	--	--	--	--
Iron	mg/L	0.3	0.27	Dry	0.28	0.22	1.64	1.73	U	1.16	--	0.722
Chromium	mg/L	0.1	<0.04	Dry	--	--	--	--	--	--	--	--
Sodium	mg/L	160	13.18	Dry	--	--	--	--	--	--	--	11.2
Chloride	mg/L	250	18.3	Dry	18	16	16.6	19.1	27.7	21.7	22.9	14.1
Sulfate	mg/L	250	23	Dry	60	79	88.4	52.5	60.5	40.6	48.2	29.7
TDS	mg/L	500	328	Dry	390	410	329	448.0	60.5	370	920	320
Turbidity	NTU	NA	--	Dry	14	14	15	103	120	46	237	<10
pH	SU	6.5-8.5	7.01	Dry	7.0	7.07	7.49	7.00	7.26	6.64	6.72	7.88

Table 16
MW-CPL-4 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**<0.001**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**U**	**--**
Barium	**mg/L**	**2**	**<0.1**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**0.0073**	**--**
Cadmium	**mg/L**	**0.005**	**<0.005**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**U**	**--**
Lead	**mg/L**	**0.015**	**<0.04**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**0.0076**	**--**
Aluminum	**mg/L**	**0.2**	**0..34**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**--**	**--**
Iron	**mg/L**	**0.3**	**0.61**	**Dry**	**Dry**	**Dry**	**0.2**	**0.29**	**U**	**0.780**	**--**	**49.3**
Chromium	**mg/L**	**0.1**	**<0.04**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**--**	**--**
Sodium	**mg/L**	**160**	**11.7**	**Dry**	**Dry**	**Dry**	**--**	**--**	**--**	**--**	**--**	**13.5**
Chloride	**mg/L**	**250**	**15.8**	**Dry**	**Dry**	**Dry**	**18.2**	**21.2**	**25.4**	**18.1**	**16.5**	**18.5**
Sulfate	**mg/L**	**250**	**17**	**Dry**	**Dry**	**Dry**	**0.550**	**0.599**	**0.833**	**0.759**	**0.486**	**U**
TDS	**mg/L**	**500**	**187**	**Dry**	**Dry**	**Dry**	**419**	**19**	**15**	**15.0**	**108**	**45**
Turbidity	**NTU**	**NA**	**--**	**Dry**	**Dry**	**Dry**	**8**	**95**	**82.0**	**1**	**7**	**<10**
pH	SU	**6.5-8.5**	7.43	**Dry**	**Dry**	**Dry**	**5.20**	**6.00**	**5.13**	**4.52**	**4.48**	**7.14**

Note: MW-CPL-4 was abandoned due to failure and replaced during 2007 with MW-CPL-4R.

Table 17
MW-CPL-5 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**0.001**	--	--	--	--	--	--	--	**U**	--
Barium	**mg/L**	**2**	**<0.1**	--	--	--	--	--	--	--	**0.0101**	--
Cadmium	**mg/L**	**0.005**	**<0.005**	--	--	--	--	--	--	--	**U**	--
Lead	**mg/L**	**0.015**	**<0.04**	--	--	--	--	--	--	--	**U**	--
Aluminum	**mg/L**	**0.2**	**<0.1**	--	--	--	--	--	--	--	--	--
Iron	**mg/L**	**0.3**	**0.83**	**0.022**	**0.16**	**0.26**	**0.2**	**0.32**	**U**	**0.410**	--	**0.656**
Chromium	**mg/L**	**0.1**	**<0.04**	--	--	--	--	--	--	--	--	--
Sodium	**mg/L**	**160**	**33.1**	--	--	--	--	--	--	--	--	**26.8**
Chloride	**mg/L**	**250**	**84.6**	**24**	**25**	**23**	**24.4**	**25.9**	**32.4**	**26.0**	**37.3**	**>25**
Sulfate	**mg/L**	**250**	**34**	**21**	**22**	**27**	**23.9**	**24.1**	**33.7**	**26.7**	**27**	**24.8**
TDS	**mg/L**	**500**	**306**	**190**	**190**	**200**	**22**	**174**	**218**	**U**	**510**	**192**
Turbidity	**NTU**	**NA**	--	**1**	**5**	**10**	**5**	**9**	**10.0**	**11**	**4**	**<10**
pH	**SU**	**6.5-8.5**	**7.2**	**7.79**	**7.3**	**7.68**	**8.11**	**6.40**	**7.35**	**7.13**	**7**	**8.5**

Table 18
MW-CPL-6 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**<0.001**	--	--	--	--	--	--	--	**U**	--
Barium	**mg/L**	**2**	**<0.1**	--	--	--	--	--	--	--	**0.0111**	--
Cadmium	**mg/L**	**0.005**	**<0.005**	--	--	--	--	--	--	--	**U**	--
Lead	**mg/L**	**0.015**	**0.011**	--	--	--	--	--	--	--	**0.0082**	--
Aluminum	**mg/L**	**0.2**	**0.56**	--	--	--	--	--	--	--	--	--
Iron	**mg/L**	**0.3**	**0.85**	**0.022**	**0.025**	**0.034**	**0.92**	**0.31**	**1.47**	**0.620**	--	**0.633**
Chromium	**mg/L**	**0.1**	**<0.04**	--	--	--	--	--	--	--	--	--
Sodium	**mg/L**	**160**	**12.1**	--	--	--	--	--	--	--	--	**14.7**
Chloride	**mg/L**	**250**	**18.4**	**16**	**15**	**13**	**15.1**	**15.4**	**18.4**	**14.0**	**15.6**	**15.1**
Sulfate	**mg/L**	**250**	**8.2**	**57**	**63**	**73**	**73.8**	**50.7**	**142.0**	**81.1**	**83.6**	**>50**
TDS	**mg/L**	**500**	**349**	**350**	**380**	**350**	**132**	**292**	**328**	**328**	**913**	**339**
Turbidity	**NTU**	**NA**	--	**6**	**6**	**7**	**24**	**106**	**120**	**104**	**215**	**<10**
pH	**SU**	**6.5-8.5**	**6.79**	**7.36**	**7.3**	**7.51**	**7.92**	**6.70**	**7.72**	**6.73**	**6.89**	**8.08**

Table 19
MW-CPL-7 Quarterly Monitoring
Delta Power Brooksville Facility

Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**<0.001**	--	--	--	--	--	--	--	**U**	--
Barium	**mg/L**	**2**	**<0.1**	--	--	--	--	--	--	--	**0.0080**	--
Cadmium	**mg/L**	**0.005**	**<0.005**	--	--	--	--	--	--	--	**U**	--
Lead	**mg/L**	**0.015**	**<0.04**	--	--	--	--	--	--	--	**0.0055**	--
Aluminum	**mg/L**	**0.2**	**<0.1**	--	--	--	--	--	--	--	--	--
Iron	**mg/L**	**0.3**	**0.13**	--	--	--	**U**	**0.17**	**U**	**0.320**	--	**0.389**
Chromium	**mg/L**	**0.1**	**<0.04**	--	--	--	--	--	--	--	--	--
Sodium	**mg/L**	**160**	**7.0**	--	--	--	--	--	--	--	--	**15.01**
Chloride	**mg/L**	**250**	**30.4**	--	--	--	**15.0**	**13.0**	**17.5**	**15.1**	**15.2**	**15.2**
Sulfate	**mg/L**	**250**	**12**	--	--	--	**38.9**	**33.9**	**45.1**	**38.7**	**45.4**	**40.4**
TDS	**mg/L**	**500**	**230**	--	--	--	**330**	**256**	**248**	**274**	**705**	**273**
Turbidity	**NTU**	**NA**	--	--	--	--	**1**	**5**	**2.0**	**4**	**19**	**<10**
pH	**SU**	**6.5-8.5**	**7.23**	--	--	--	**7.84**	**6.50**	**7.23**	**6.73**	**7.08**	**8.21**

Table 20
MW-CPL-8R Quarterly Monitoring
Delta Power Brooksville Facility

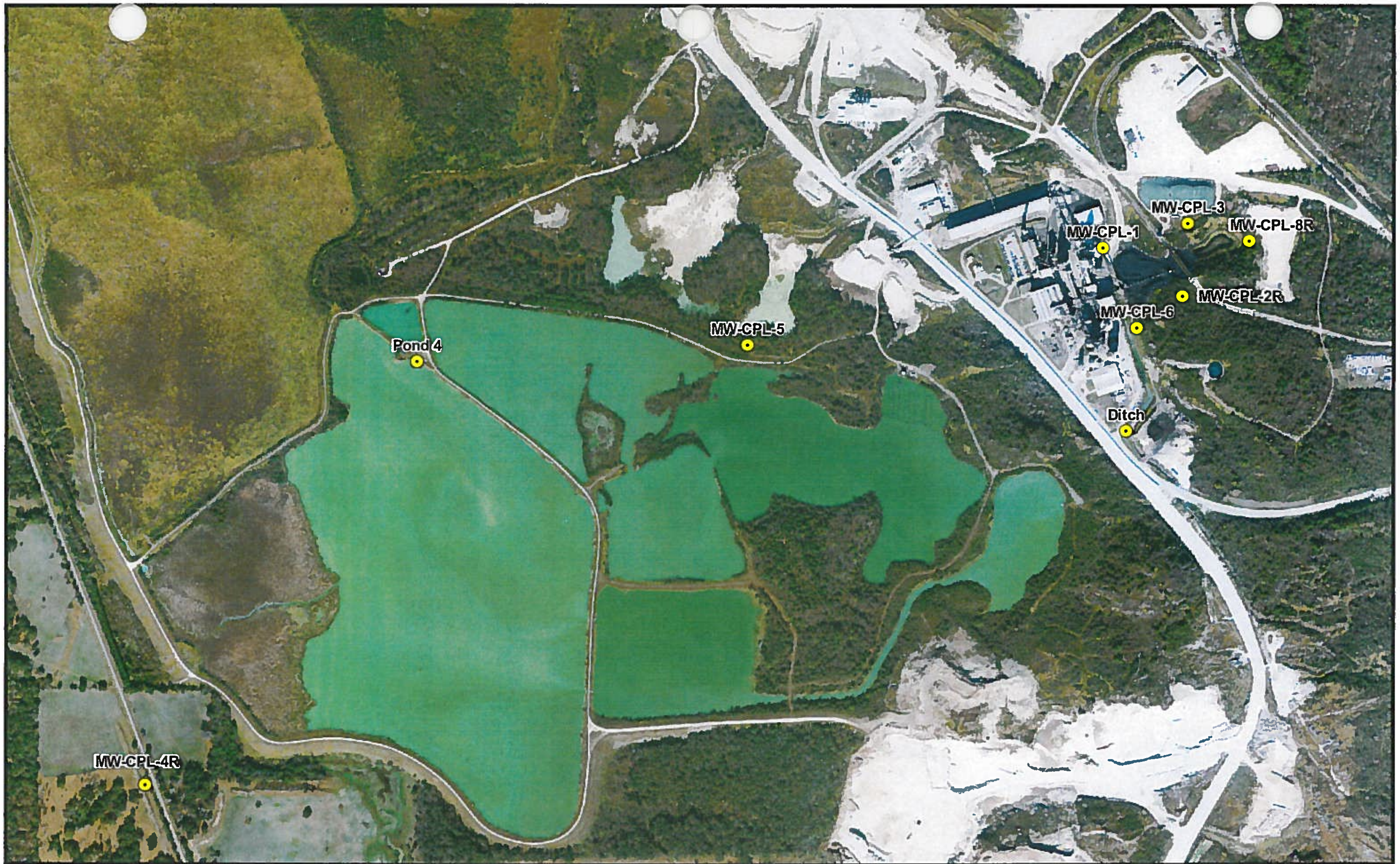
Parameter	Units	Drinking Water Standard	Background	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
Arsenic	**mg/L**	**0.05**	**0.002**	--	--	**Dry**	--	--	--	--	**U**	--
Barium	**mg/L**	**2**	**0.1**	--	--	**Dry**	--	--	--	--	**0.0178**	--
Cadmium	**mg/L**	**0.005**	**0.005**	--	--	**Dry**	--	--	--	--	**U**	--
Lead	**mg/L**	**0.015**	**0.030**	--	--	**Dry**	--	--	--	--	**U**	--
Aluminum	**mg/L**	**0.2**	**1.58**	--	--	**Dry**	--	--	--	--	--	--
Iron	**mg/L**	**0.3**	**0.68**	**0.11**	**1.0**	**Dry**	**0.94**	**0.95**	**0.24**	**0.790**	--	**0.622**
Chromium	**mg/L**	**0.1**	**0.04**	--	--	**Dry**	--	--	--	--	--	--
Sodium	**mg/L**	**160**	**3.59**	--	--	**Dry**	--	--	--	--	--	**9.5**
Chloride	**mg/L**	**250**	**2.44**	**3.0**	**11**	**Dry**	**9.7**	**12.5**	**18.0**	**18.3**	**5.1**	**5.91**
Sulfate	**mg/L**	**250**	**9**	**21**	**18**	**Dry**	**18.0**	**28.2**	**44.3**	**37.6**	**21.9**	**24.8**
TDS	**mg/L**	**500**	**189**	**210**	**250**	**Dry**	**250**	**218**	**263**	**275**	**438**	**163**
Turbidity	**NTU**	**NA**	**NA**	**36**	**92**	**Dry**	**17**	**455**	**190**	**141**	**995**	**<10**
pH	**SU**	**6.5-8.5**	**7.02**	**7.33**	**7.3**	**Dry**	**7.57**	**6.80**	**7.06**	**6.85**	**6.88**	**8.19**

Note: MW-CPL-8 was abandoned due to failure and replaced during 2004 with MW-CPL-8R.

Table 21
Quarterly Monitoring for CPL Perimeter Ditch
Delta Power Brooksville Facility

Parameter	Units	Back-ground	Sep-06	Jun-06	Mar-06	Dec-05	Sep-05	Jun-05	Mar-05	Jun-04	Apr-04
FL-PRO	mg/L	--	<0.40	0.25	0.10	0.32	0.095	U	0.854	0.169	0.279
Arsenic	mg/L	--	<0.0048	0.0048U	0.0048	U	0.003	U	U	0.00544	U
Barium	mg/L	BDL	0.026	0.020	0.012	0.001	0.019	0.036	0.048	0.0525	0.000069
Cadmium	mg/L	--	<0.00071	0.00071U	0.00071	U	0.001	U	U	U	U
Lead	mg/L	BDL	<0.0016	0.0047I	0.0016	U	0.002	U	0.006	0.0115	0.000008
Aluminum	mg/L	0.12	1.5	1.1	0.11	0.27	0.33	0.35	0.810	13.6	2.49
Iron	mg/L	0.095	24	0.92	0.12	0.31	0.27	U	1.06	0.073	U
Chromium	mg/L	BDL	0.012	0.0071	0.0021	U	0.001	U	0.005	0.0437	0.000014
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	0.0010	0.000085I	0.000072	U	0.0003	U	0.009	U	--
Selenium	mg/L	--	0.011	0.0059U	0.0059	U	0.004	U	U	0.00804	U
Silver	mg/L	--	<0.0019	0.0019U	0.0019	U	0.002	U	0.009	U	U
Chloride	mg/L	--	--	--	--	--	--	--	--	--	--
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--
Oil/Grease	mg/L	--	<1.1	1.7U	1.7	U	3.51	6.32	U	--	10
TDS	mg/L	300	410	250	220	401	313	261	232	257	240
TSS	mg/L	--	60	52	8.4	401	41	69.0	92.5	233	88
Turbidity	NTU	--	28	14	6.6	27	3.3	6.2	20.0	165	2.5
pH	SU	7.6	6.37	7.8	8.09	8.34	6.8	7.98	7.89	7.32	8.11

FIGURES



Notes:

1- Project No.: 03-18964

2- Data Source - 2009 SWFWMD Aerials

3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 11/01/2010
Checked By: LS
Map Prepared By: ARB

N

Explanation of Features

Sample Point

0 1,000
1" = 1,000 Feet

Figure 1
Monitoring Well and Perimeter Ditch Locations
Cemex/Central Power and Lime
Hernando County, Florida

File Pathway: V:\03-18964_Cemex\MXD\MW_map_8x11LS_09142010.mxd

MONITOR WELL CONSTRUCTION AND LITHOLOGY LOG

Well Number CPL - 1 Installation Date: 3/11/86

Project Location: Florida Crushed Stone - Brooksville - Coal Pile Monitor

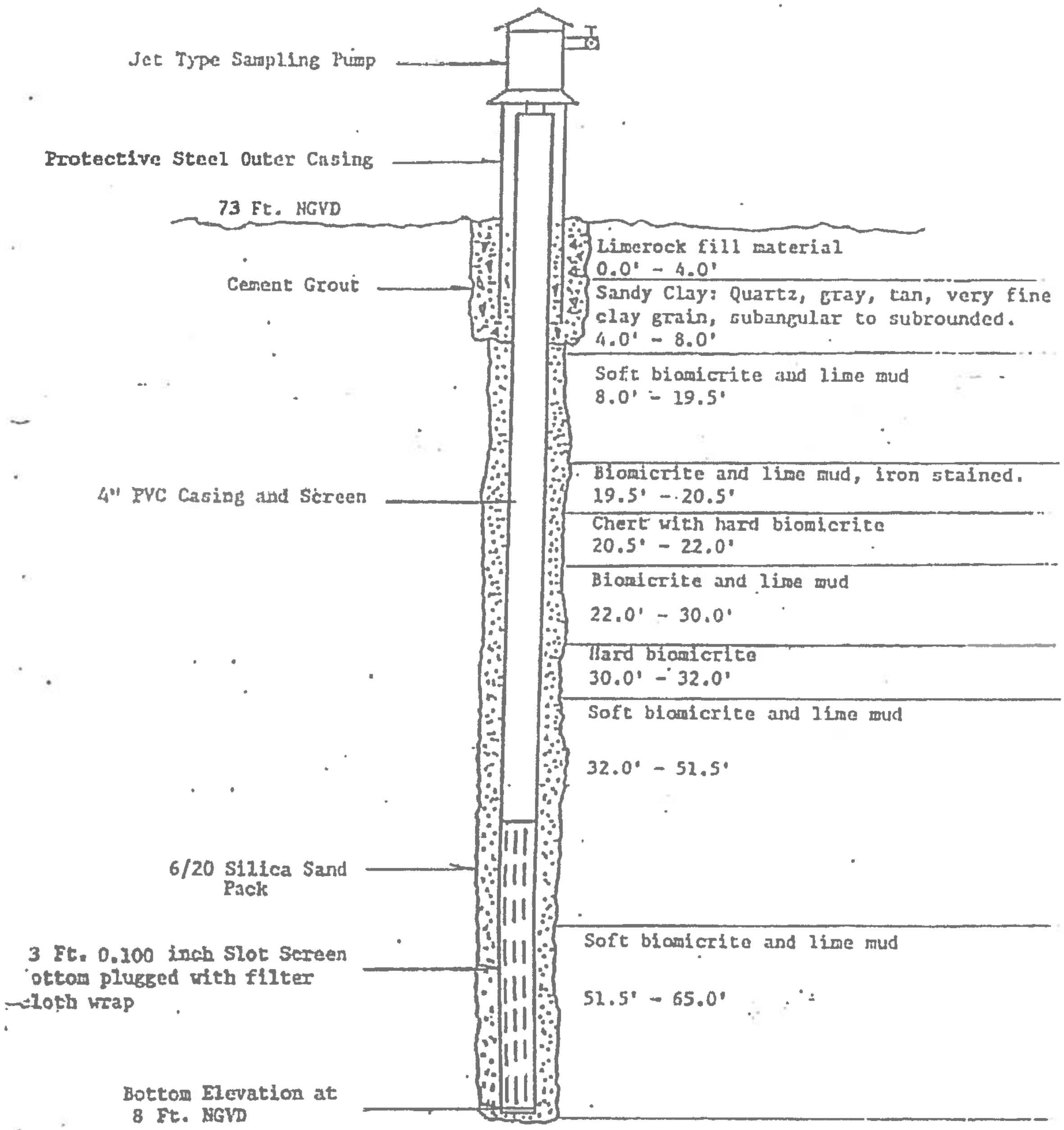


FIGURE 2

MONITOR WELL CONSTRUCTION AND LITHOLOGY LOG

Well Number CPL - 3 Installation Date: 3/6/86

Project Location: Florida Crushed Stone - Brooksville - Coal Pile Monitor

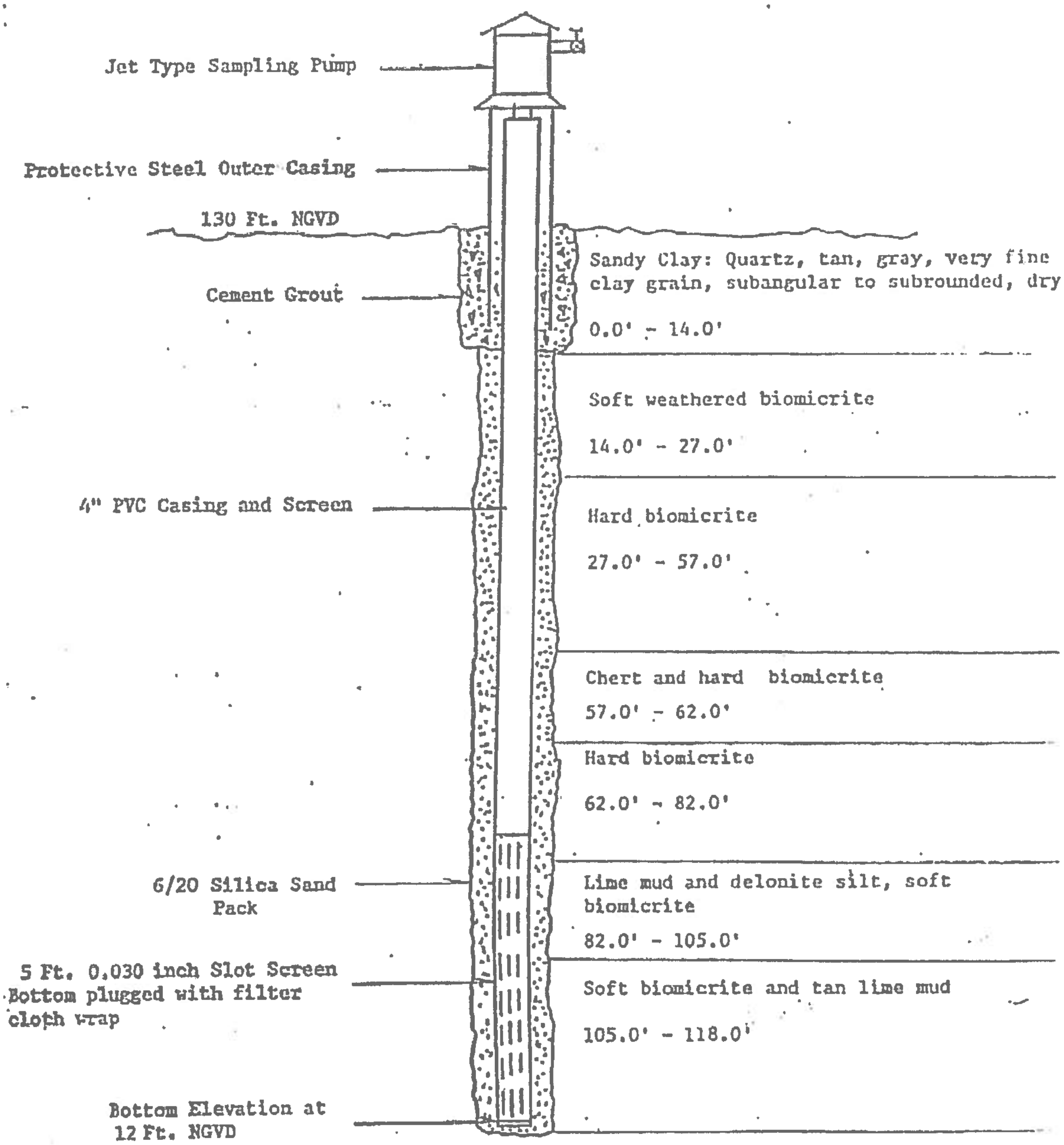


FIGURE 3

RE: Monitor Well Construction Log

Well Number CPL-4 Installation Date: 9/22/86

oject Location: Florida Crushed Stone - Brooksville - Cooling Pond Monitor

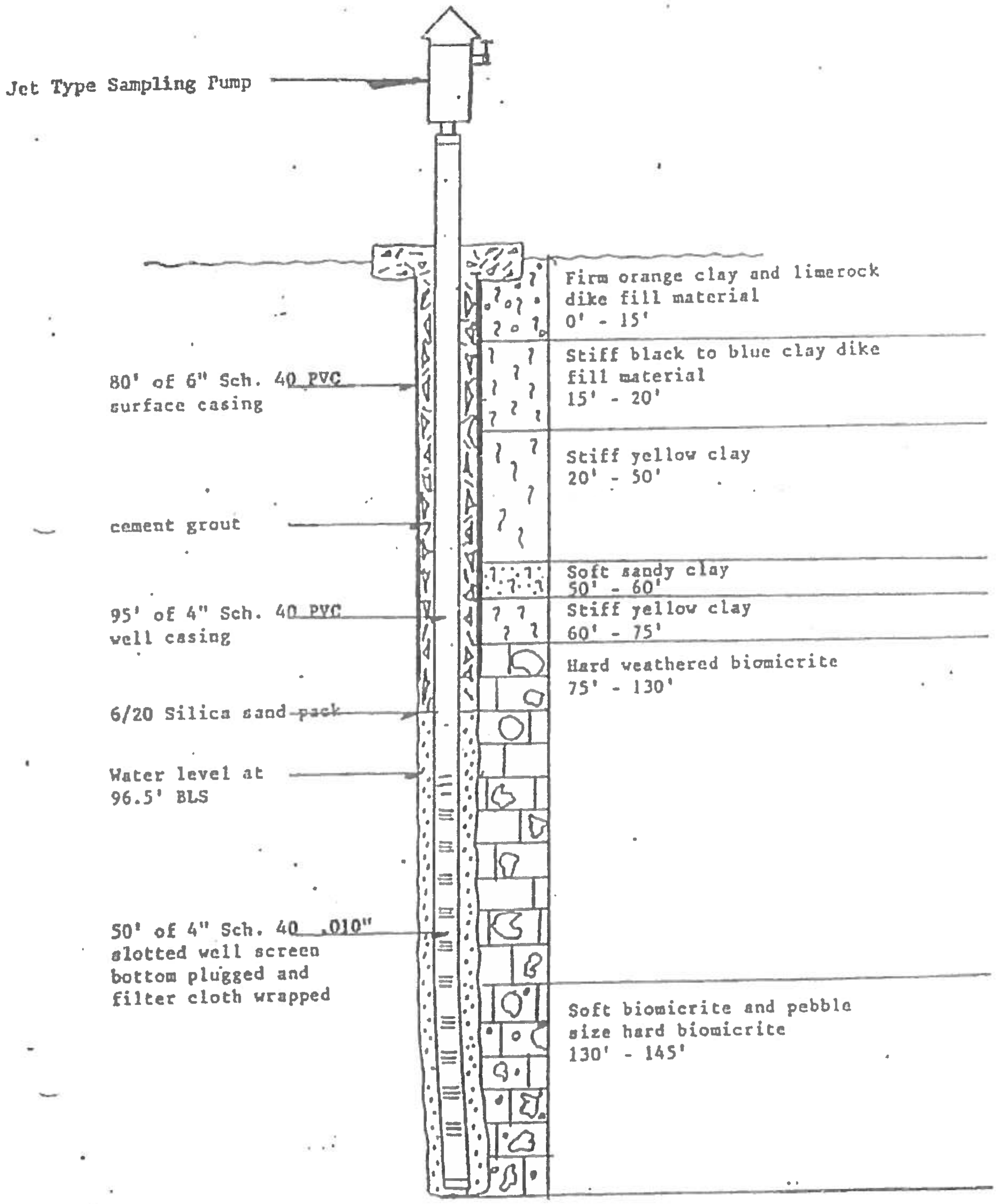


FIGURE 4

RE: Monitor Well Construction Log

Well Number CPL-5 Installation Date: 9/24/86

Project Location: Florida Crushed Stone - Brooksville - Cooling Pond Monitor

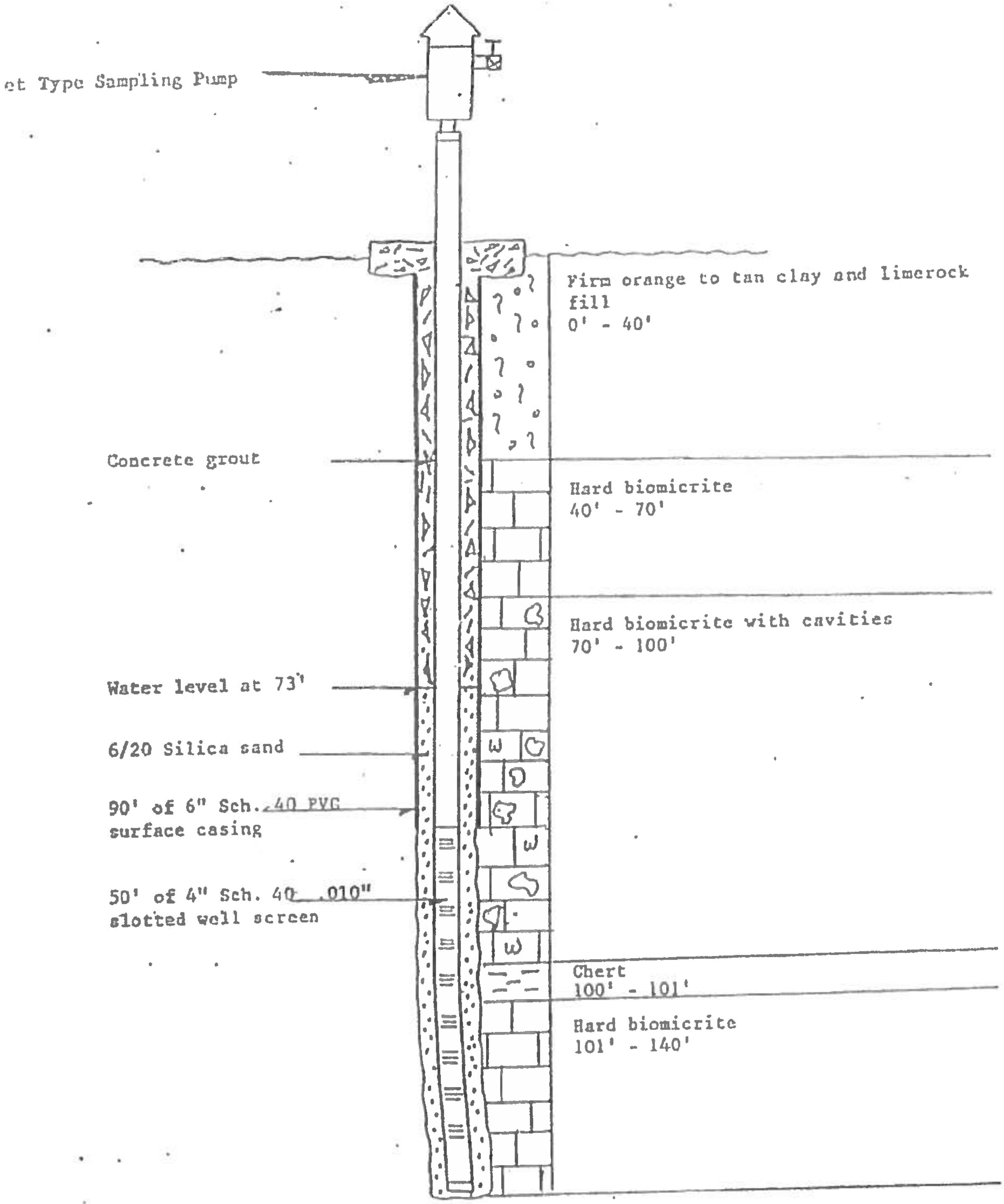


FIGURE 5

Re: Monitor Well Construction Log

WELL NUMBER CPL - 6 INSTALLATION DATE 6/18/87

PROJECT LOCATION Florida Crushed Stone - Brooksville - Coal Pile Monitor

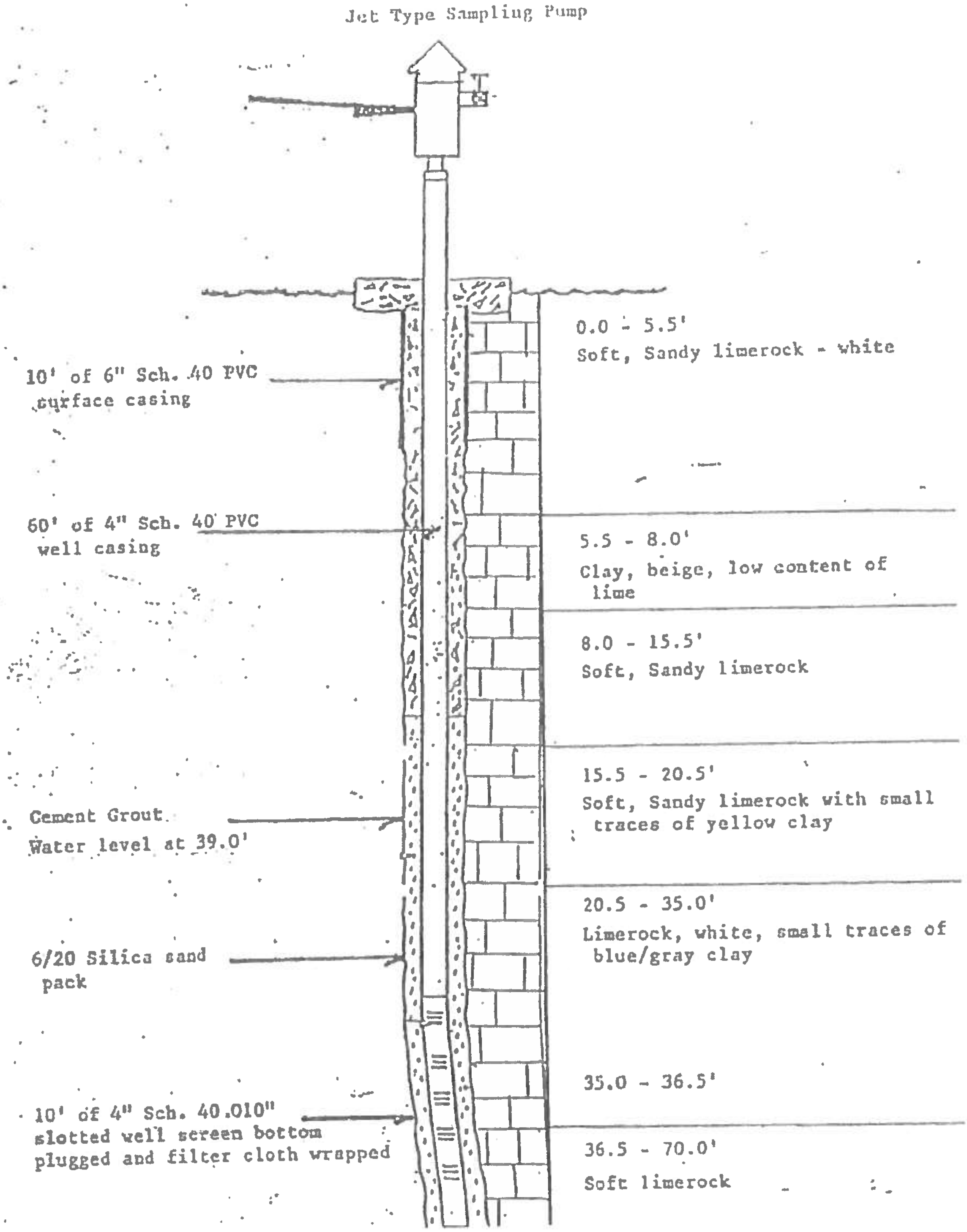


FIGURE 6

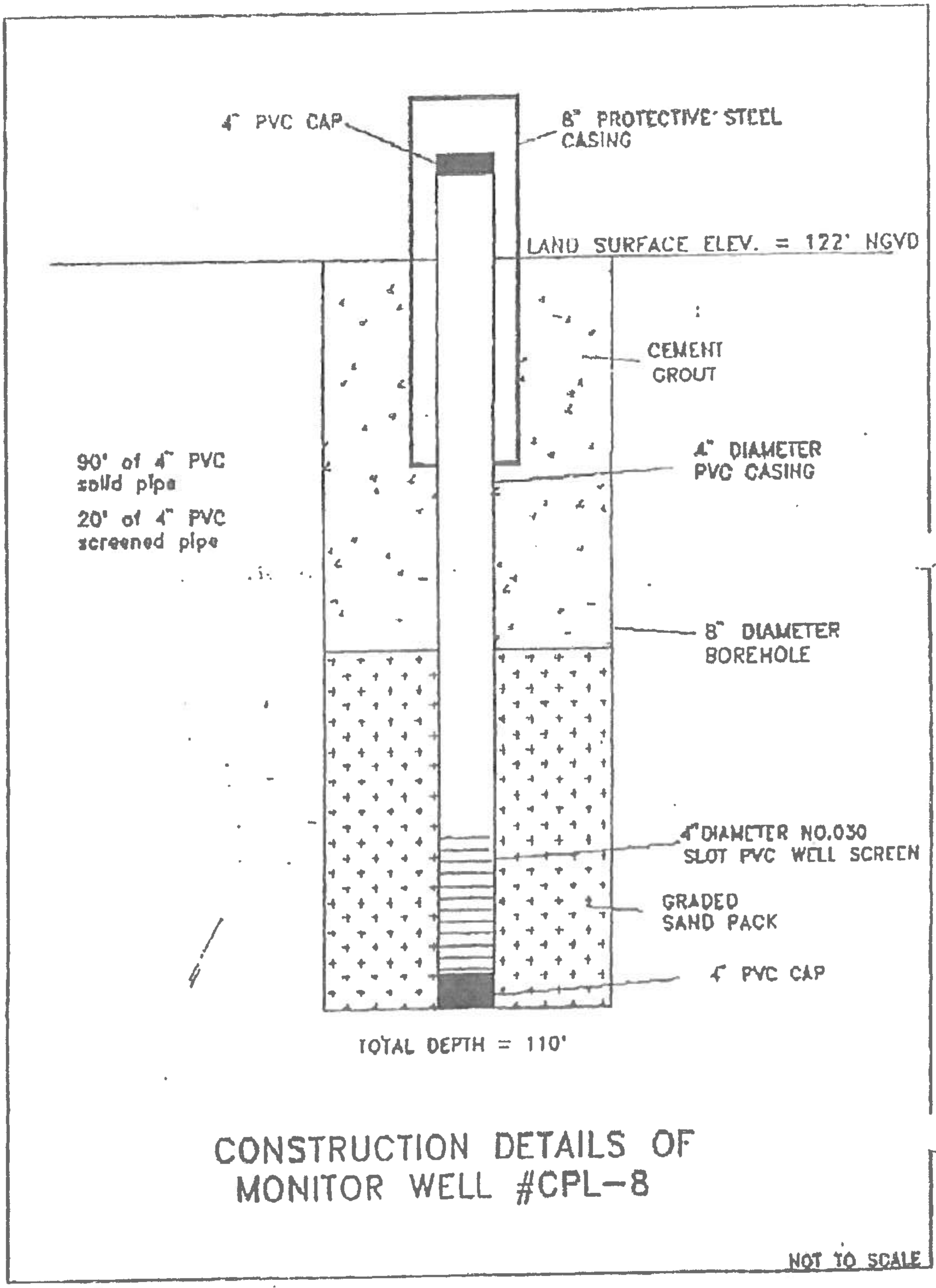

4" PVC CAP
8" PROTECTIVE STEEL CASING
LAND SURFACE ELEV. = 122' NGVD
CEMENT GROUT
90' of 4" PVC solid pipe
20' of 4" PVC screened pipe
4" DIAMETER PVC CASING
8" DIAMETER BOREHOLE
4" DIAMETER NO.030 SLOT PVC WELL SCREEN
GRADED SAND PACK
4" PVC CAP
TOTAL DEPTH = 110'
CONSTRUCTION DETAILS OF MONITOR WELL #CPL-8
NOT TO SCALE

FIGURE 7

MONITOR WELL CONSTRUCTION AND LITHOLOGY LOG

Well Number CPL - 3 Installation Date: 3/6/86

Project Location: Florida Crushed Stone - Brooksville - Coal Pile Monitor

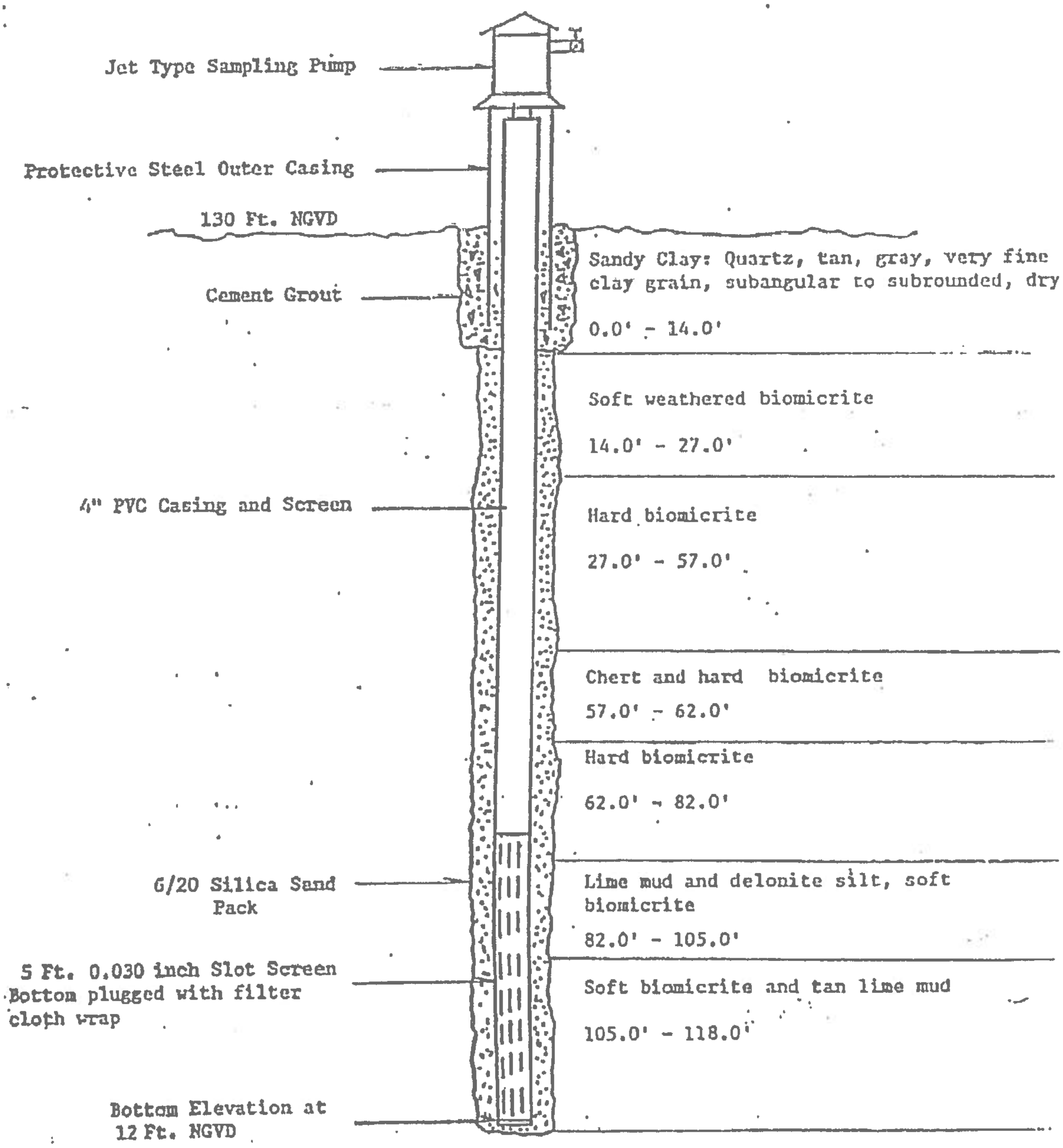


FIGURE 3

RE: Monitor Well Construction Log

Well Number CPL-4 Installation Date: 9/22/86

Project Location: Florida Crushed Stone - Brooksville - Cooling Pond Monitor

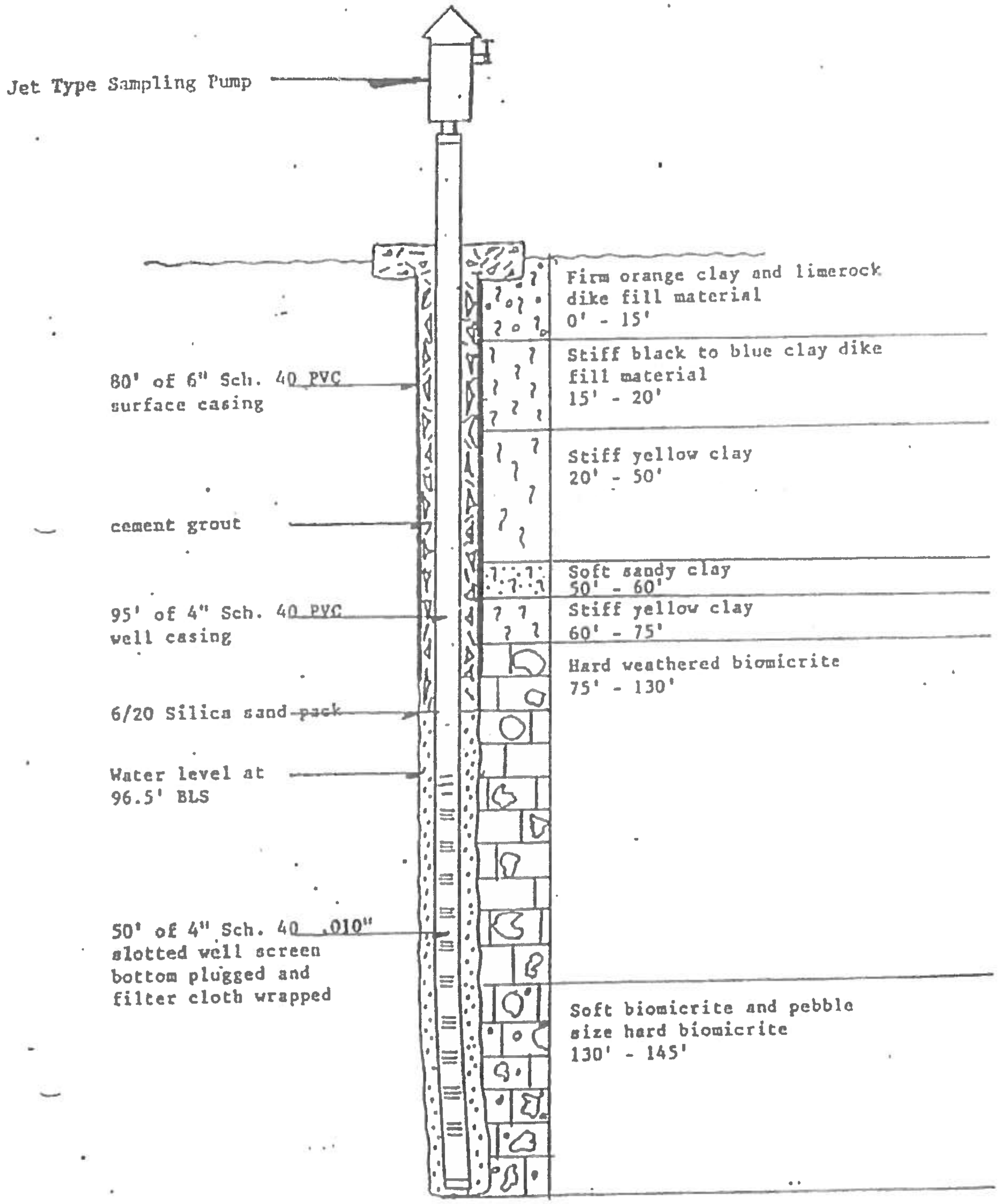


FIGURE 4

RE: Monitor Well Construction Log

Well Number CPL-5 Installation Date: 9/24/86

Project Location: Florida Crushed Stone - Brooksville - Cooling Pond Monitor

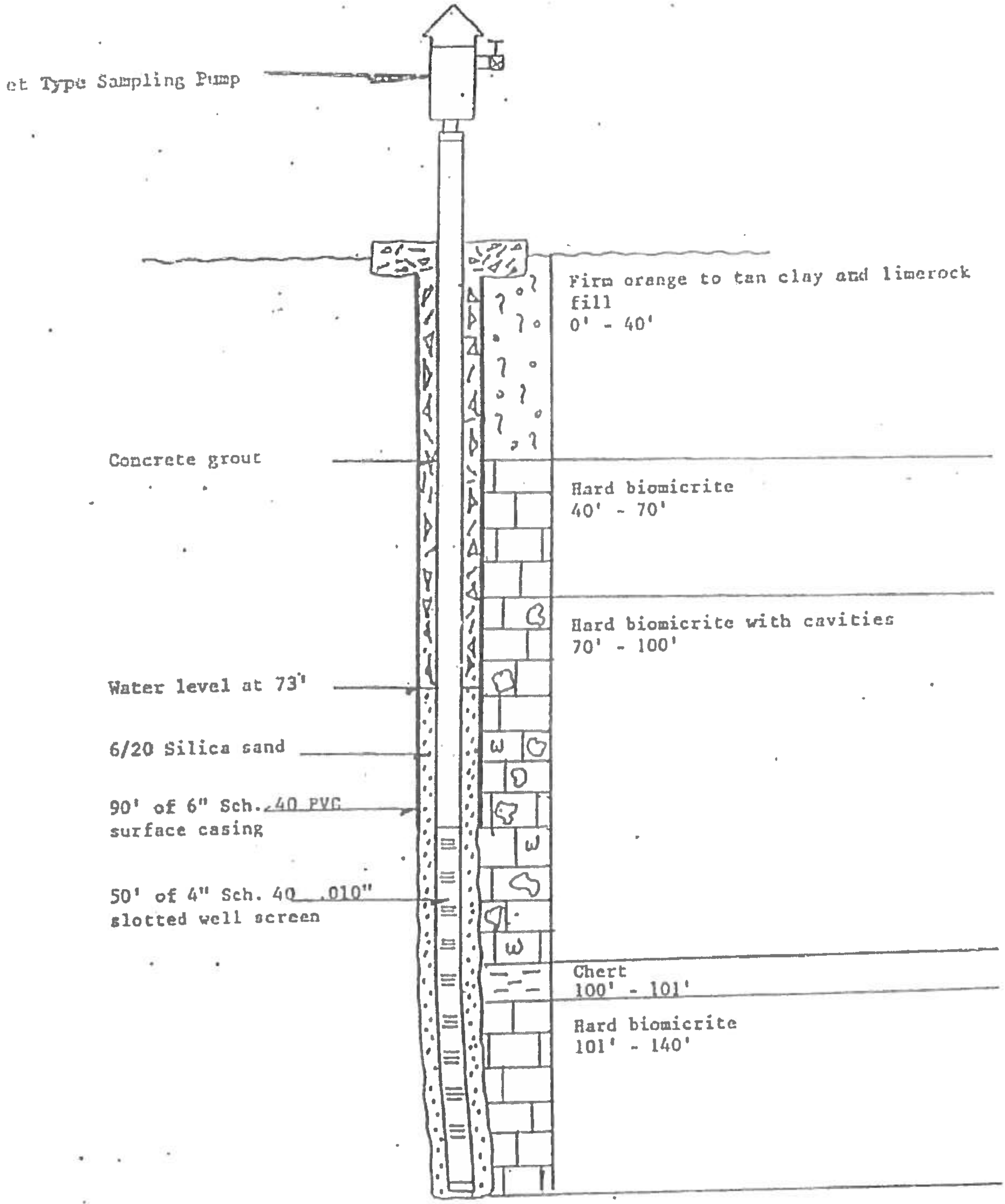


FIGURE 5

Re: Monitor Well Construction Log

WELL NUMBER CPL - 6 INSTALLATION DATE 6/18/87

PROJECT LOCATION Florida Crushed Stone - Brooksville - Coal Pile Monitor

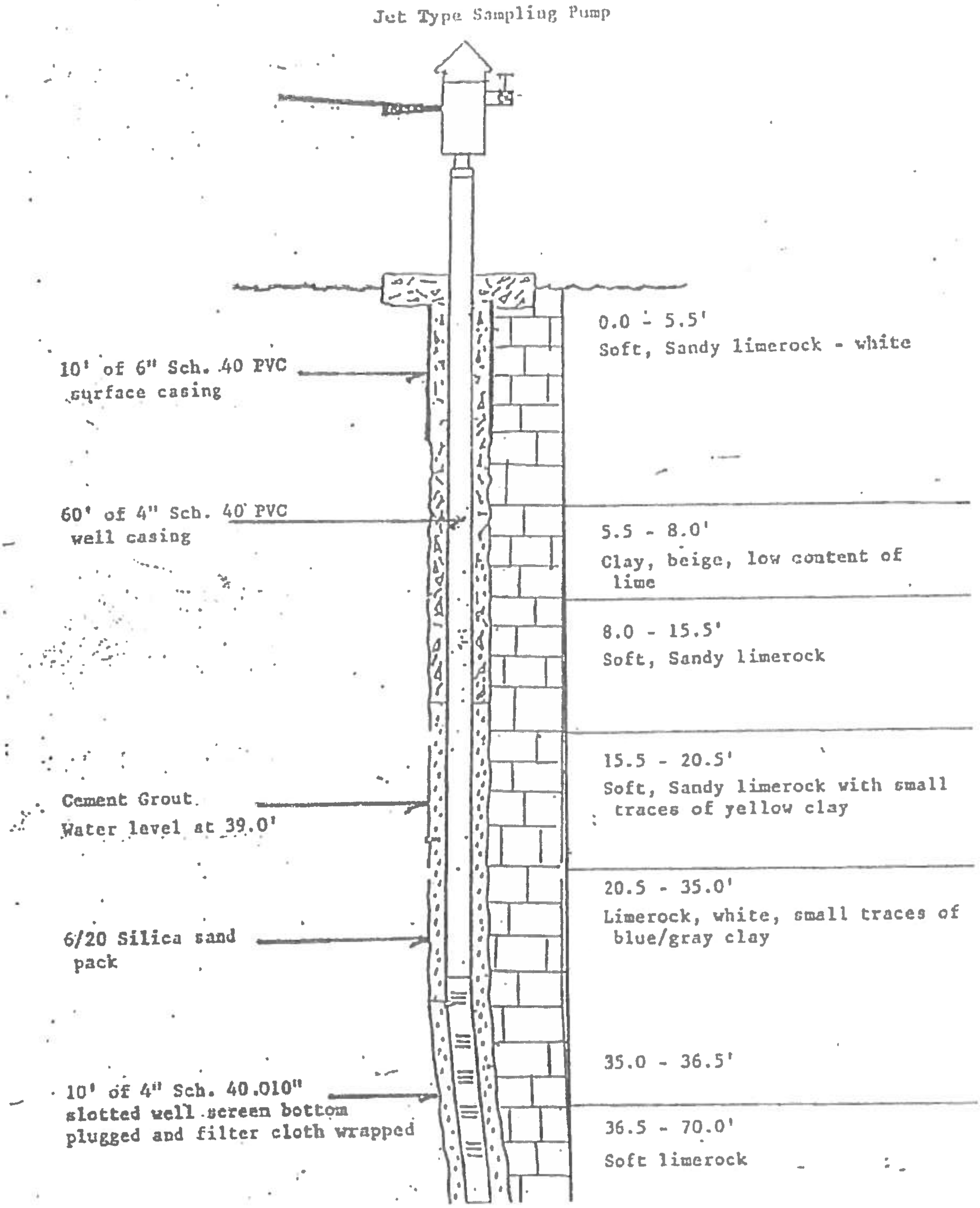
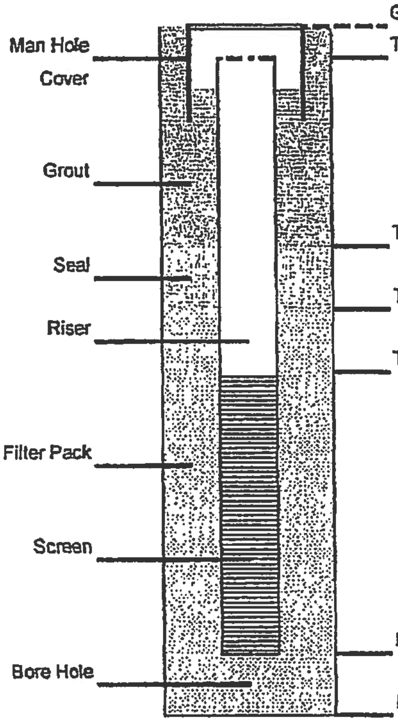


FIGURE 6

MONITOR WELL CONSTRUCTION LOG

SINGLE-CASED MONITOR WELL DATA SHEET

Site Name: CPL, Brooksville Fl	Well ID #: MW82
Facility ID #:	Drilling Company: Diversified Drilling
Project Geologist: M. Minerd	Driller: Ed Palmer
Date Installed 2/12/04	Drilling Method: Mud Rotary



Ground Level

Top of Riser na ft-bls

Top of Seal 62 ft-bls

Top Filter Pack 68 ft-bls

Top of Screen 70 ft-bls

Bottom of Screen 120 ft-bls

Bottom of Boring 126 ft-bls

Lithology

Boring Information	Well Construction Materials		Well Development Data
Drill Method: Mud rotary	Riser Type: PVC	Screen Type: PVC	Pump Type
Boring Diameter (inches):	Filter Type: 20/30 Sand	Slot Size: 10 slot	Development Time:
	Seal Type: Bentonite	Grout Type: Cement	Pump Rate: gpm

Comments: Elevation of Riser is aprox. 2.7 ft above surface
Elevation of Protective is aprox. 3.07 ft above surface
water level was measured @ 86.21 ft-bls @ 3:24 pm

ft-bls = feet below land surface

FIGURE 8

Monitoring Well Construction Log

Well Number: MW-4R Installation Date: 9/27/07

Project Location: FCS/CPL – Brooksville Plant Facility

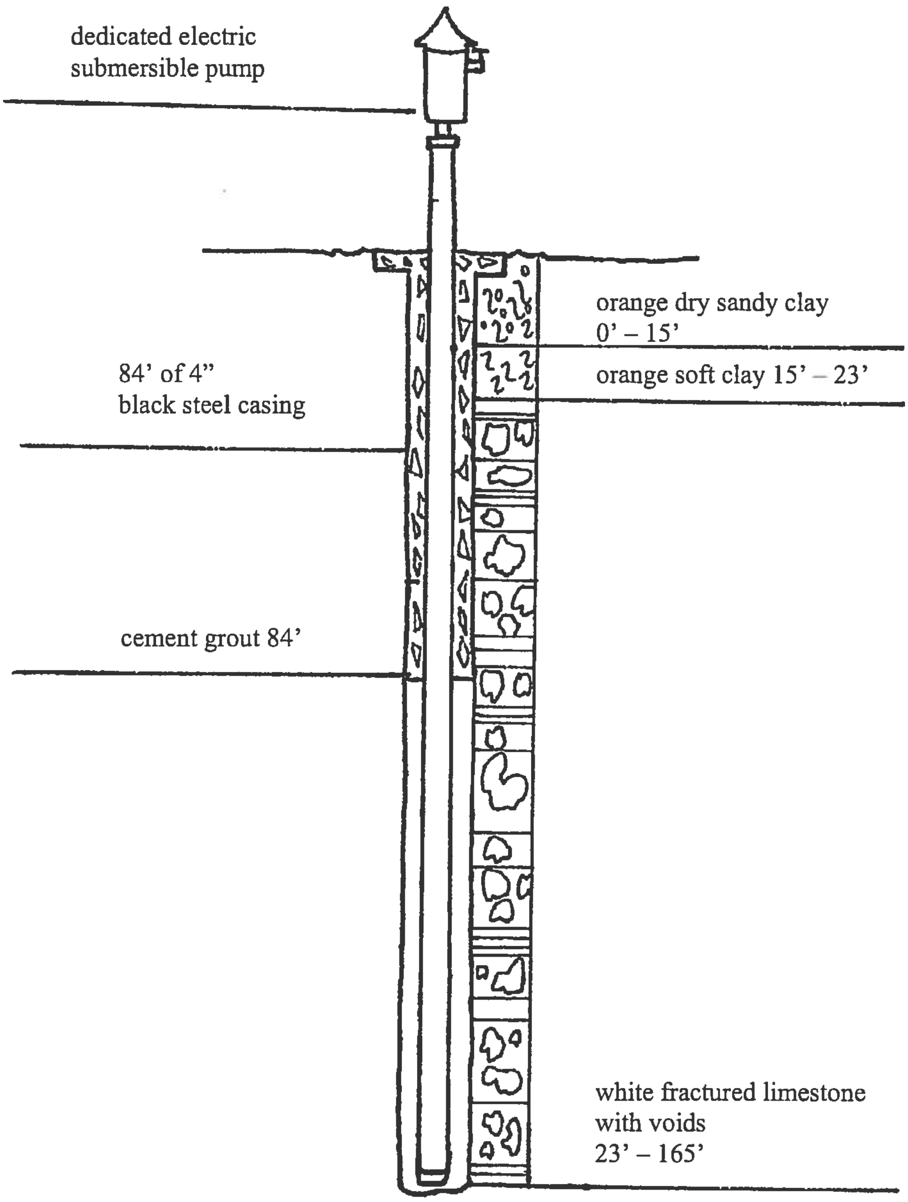


FIGURE 9

Log of Borehole: MW-2R

MONITOR WELL CONSTRUCTION LOG

Project No.: 03-18964

Project: CPL Replacement Well

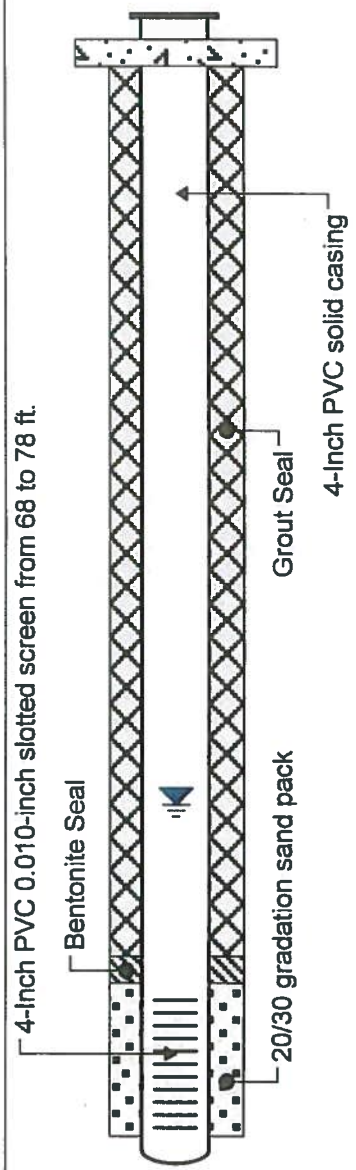
Client: CPL

Enclosure:

Location: Brooksville, FL

Project Manager: L. Seale

SUBSURFACE PROFILE				SAMPLE				Well Completion Details
Depth (ft / m)	Symbol	Description	Depth/Elev.	Number	Type	Recovery	Vapour	
		Ground Surface	0.0					
		Made Land	0.0 -10.0					
		LIMESTONE soft, poorly indurated, local clay-filled fractures	10.0 -30.0					
		LIMESTONE sandy, moderately indurated, local clay-filled fractures	30.0 -50.0					
		LIMESTONE well indurated, groundwater at 54 ft.	50.0 -60.0					
		LIMESTONE sandy, variably indurated, local clay-filled fractures	60.0 -78.0					
			78.0					



Drilled By: Custom Drilling, Inc.

Drill Method: Hollow Stem Auger

Drill Date: July 21, 2010

Hole Size: 6 Inches

Datum: Ground Surface

Sheet: 1 of 1

FIGURE 10

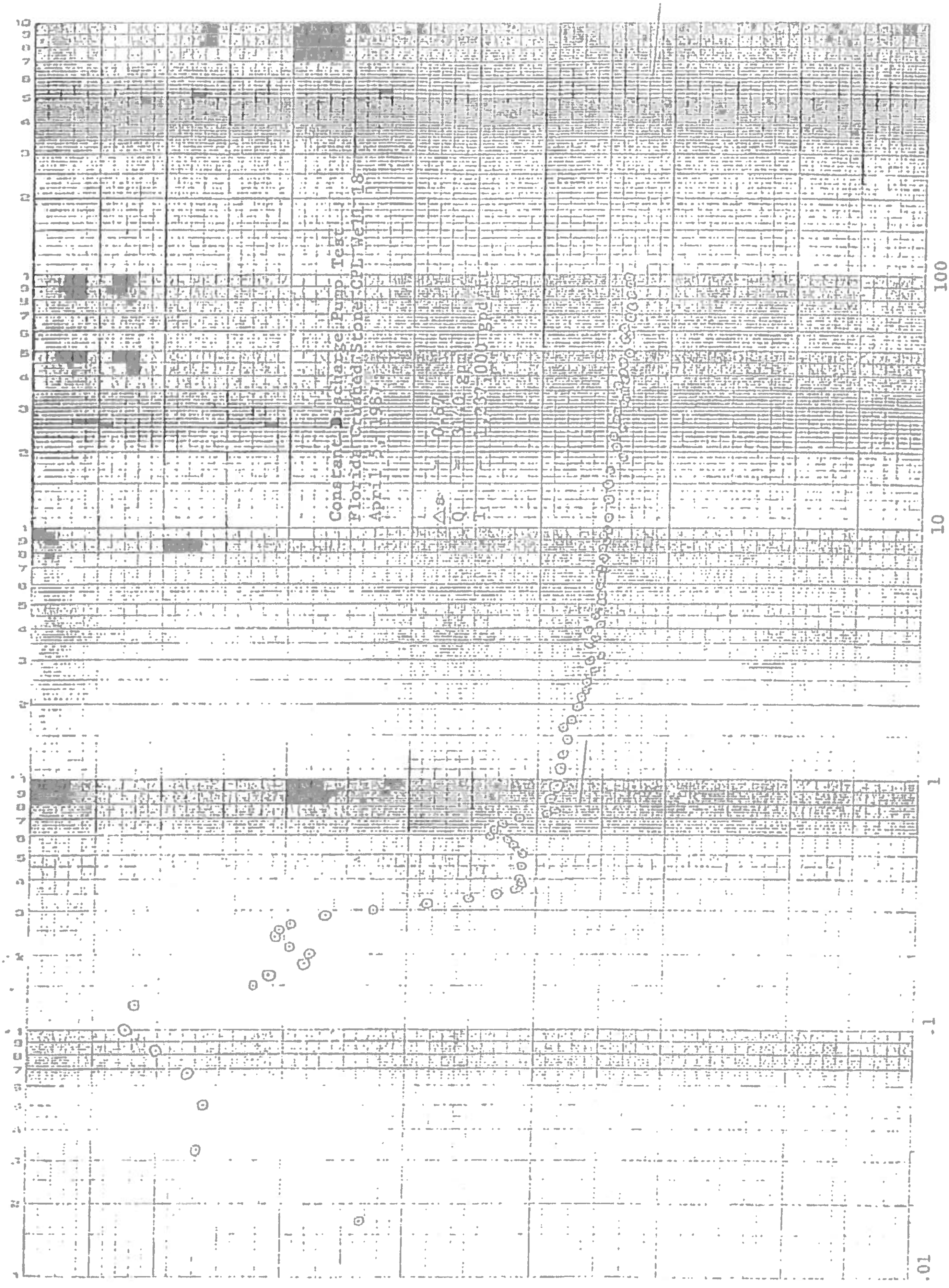
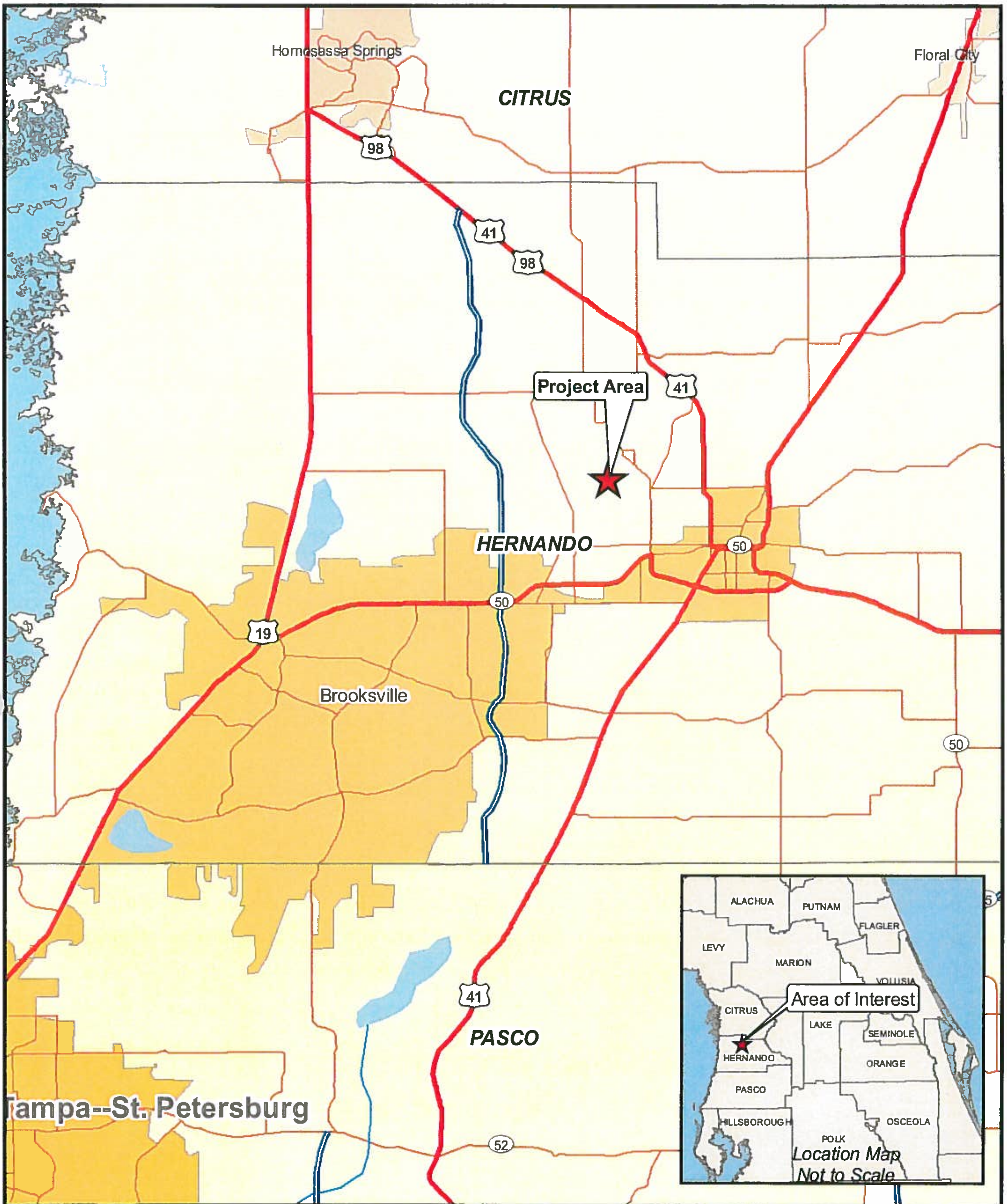

Constant Discharge Pump Test
Florida Crushed Stone CPL Well 18
April 15, 1987
Δs = 0.67
Q = 3,700 gpm
T = 1,237,000 gpd/ft
.01
.1
1
10
100

FIGURE 11



Notes:

1- Project No.: 03-18964

2- Data Source - Street Map USA

3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 11/01/2010
Checked By: LS
Map Prepared By: ARB

N

Explanation of Features

★ Project Area

County Boundary

BCI engineers & scientists

0 3.5

1" = 3.5 Miles

Figure 12
Location Map
Cemex/Central Power and Lime
Hernando County, Florida

File Pathway: V:\03.18964_Cemex\MXD\8x11_P_fig12.mxd

APPENDIX A

August 11, 1999 FDEP Letter

Department of Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
August 11, 1999

David B. Struhs
Secretary

RECEIVED
AUG 12 1999

Jimmy Edwards, President
Imperial Testing Laboratories
3905 Kidron Road
Lakeland, FL 33811

RE: Florida Crushed Stone/Central Power & Lime
Submittal of Monitoring Well Sampling Results
Permits No. IO27-220264 and PA 82-17
OGC File No. 98-0093

Dear Mr. Edwards:

Your submittal dated June 24, 1999, has been reviewed by the Department's Technical Services Support Section The comments and recommendations made by this Section are as follows:

- The new monitoring well measuring point elevations are not substantially different enough to cause any new perspective on the past observations of the local Floridan aquifer potentiometric head from said wells The head elevations from monitor wells CPL-1 through 8 continue to present an enigmatic local Floridan flow regime. Monitoring well CPL-5, north of pond #5, continues to show a significantly higher head than the remainder of the wells. The Department postulates that pond #5 is causing local recharge to the Floridan thus a local potentiometric mounding effect This postulate is further supported by the elevated chloride concentration in ground water samples from CPL-5. Domestic effluent has been routed to pond #5 from the City of Brooksville Croom Road and School Street WWTPs for several years, at approximately 1 MGD. Most recent water table measurements shows that from CPL-5 at 40.91 feet above sea level (ASL), 8 56 feet higher than the next highest of 32.35 feet ASL at CPL-3. In between CPL-3 and 5 is CPL-1 where the head on the same day was 25 94 feet ASL.
- The potentiometric elevation of the Floridan head in the FCS region can be expected to range between approximately 25 and 30 feet ASL year round. Water levels across the area do not fluctuate a great amount seasonally as the limestone of the Floridan in the region is very transmissive and discharge rate towards the Gulf of Mexico is fairly consistent. A SWFWMD potentiometric contouring of the Floridan from September 1994 effectively illustrates how unusually high the water level at CPL-5 actually is. One needs to travel a significant distance to the east to encounter expected head elevations of 40 feet or greater.
- Considering the hydrological complexity of the site involving pumping wells (exact locations are not known), local de-watering of mine pits and recharge to abandoned pits, it is not likely that enough information could ever be gleaned to define all factors effecting the head elevation in any individual well. This complexity and the unknown future of hydrological influences across the site cause difficulty in determining how to define a zone of discharge (ZOD) and GWMP. A sufficient number of monitoring wells exist to encompass the coal pile area but the Department cannot with reasonable assurance designate a particular well as an appropriate ZOD background data point.
- It is not until most recently that the Department has received sample analyses from a select number of monitoring wells for all Primary and Secondary Drinking Water Standard parameters. These data, from wells MW-1, CPL-1, 5, and 8, reveal an expected degree of ground water quality variety considering the size of the site, but do not significantly aide in determining which wells will be most appropriate for a long term GWMP. The data does however show that there are currently no unusual parameters of concern in ground water.
- The best evaluative tool at hand is historic quarterly data from monitor wells CPL-1 through 8 for a select, all though few, list of parameters. The Department has trended sulfate, chloride, and total dissolved solids data from the said wells (see attached charts) starting with and including the first quarter of 1994. The coal pile area wells have shown rather consistent trends for the said parameters and an obvious standout, as previously mentioned, are the chloride levels at CPL-5. There are currently six wells in the immediate vicinity of the coal pile area The Department recommends reducing the number by omitting wells CPL-2 and 7. All remaining wells will be considered as compliance points. These are CPL-1, 3, 4, 5, 6, and 8
- An outstanding issue is that of the GWMP quarterly parameters Considering that there was an agreement in the past that ground water was not a concern stemming from the domestic effluent portion of the site water budget, parameters will not be customized as domestic waste indicators, but coal power plant indicators. A well accepted reference for ground water

APPENDIX B

March 9, 2005, FDEP Letter

Department of Environmental Protection

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Jeb Bush
Governor

Colleen M Castille
Secretary

MAR 1

March 9, 2005

Mr. Tom Mountain
Coastal Engineering Associates, Inc.
966 Candlelight Boulevard
Brooksville, Florida 34601

Re: Response Letter Dated October 26, 2004
Florida Crushed Stone d/b/a Rinker Materials
Permit No FLA012073
Conditions of Certification No. PA82-17
OGC File No. 98-0093
Hernando County

Dear Mr. Mountain:

The Department has reviewed your response letter, dated October 26, 2004, which included the facility's revised Best Management Practices Plan (BMPP), Site Water Management Plan (SWMP), Groundwater Monitoring Plan (GWMP) and Facility Site Plan (FSP). During our meeting on November 2, 2004, Florida Crushed Stone (FCS) stated that the revised plans would combine all letters and documents into a single document for ease of implementation The Department agrees with this approach. However, the revised plans that you submitted still act as three separate plans This is due partly to the current language in the Conditions of Certification (COC), which can be addressed during the current modifications to the COC language.

The submitted documents do not address the management of solid wastes or industrial by-products generated from several of the facility's operations, but this was not requested for inclusion into the COC until December of 2004. The Tire Fuel Preparation Area Permit No. 22787-002-WT has been provided to the Power Plant Siting Section for Incorporation into the COC The Fly Ash Recycling BMP Plan and the Comprehensive Operations Plan for the tire facility will also need to be incorporated into the facility's management plan. The documents do not include any discussion of management practices required for the operations of the domestic wastewater treatment plant, which was not incorporated into the COC during the last modification.

The Department reviewed your revised plans and offers the following comments for your consideration:

1 BMPP comments:

a. No signatures for the responsible plant management have been provided
b Please confirm that the Soft Rock and Dura Rock plant operations have been removed from the facility site. The description for these operations was removed from the BMPP and FSP.
c. Section 3.2.2. The Power Plant megawattage has changed from 125-megawatts, as stated in the old BMPP, to 150-megawatts. Please explain which is the correct number of megawatts.
d There is no mention of the Containment Integrity for Dams/Berms as was stated in Section 2.2 under the May 2001 BMPP. The dam inspection forms included in the May 2001 BMPP have not been included in this revision. Please provide dam inspection and maintenance procedures in your revised BMPP

e Section 5.3.1: This section does not discuss the cleaning of the spillway structures This could be provided in this section or under the Containment Integrity for Dams/Berms section. Details concerning the management and disposition of debris should be included.

f The Environmental Manager inspection forms, which were pages 16, 17 and 18 in the May 2001 BMPP have not been included in this revision. Please provide some type of inspection logs or forms for the implementation and over sight of the BMPP

g. Section 5 2, Paragraph 2: You have used the term MPP. Is this a typo?

h. A list of personnel on the BMPP committee should be included in the BMP Plan. The list should include the office and home telephone numbers of the Committee members and the names and phone numbers of back-up and alternate people (USEPA Guidance Document) If this is found in the SPCC then it should be referenced or/and attached and incorporated into the BMP Plan. State Warning Point and other emergency contact numbers for spills should be included

i. In several sections of the BMPP (Section 4.6 and Section 5.3), the description of curbing and the use of silt fencing has been removed. If this is no longer a needed common practice but will be used on an "as needed" basis, this should be added to the BMPP.

j. The BMPP should include a materials inventory, which addresses the types of materials that are handled, stored and processed on-site.

k. Section 3 2 1, Cement Plant: This section indicates that fly-ash, mill scale and slag are managed at the site. It is also the Department's understanding that industrial wastewater sludge ("gypsum") from a coal-fired power plant has also been managed at the site Additionally, this section indicates that coal and waste tires are burned as fuel in the cement kiln Specific information concerning the management of these materials was not provided. The following information should be provided: 1) all information required by Chapter 62-711, F.A.C, for operation of a waste tire processing facility. 2) a detailed description of each type of waste and industrial by-product material, including analytical characterization of the material, quantity of material received and used yearly, site plans showing the location and storage method for each type of material, description of the process generating the waste and if FCS is not the generator of the waste, the name and contact information for the generator.

l. The Department is also aware that the baghouse dust from the kiln is reused onsite However, information on the storage and management of this material was not provided.

m. Section 3.4, Minor Operations: The information indicates that Cliff's Septic Service is located on a portion of the property. The Solid Waste Section received a complaint that Cliff's was dumping (land applying) septage onsite at their facility. This allegation should be investigated by appropriate staff and revisions to the BMPP and other plans should address any potential impacts to groundwater or surface water in this area

n Section 3.5, Storage & Shipping: The information in this section indicates that only lime (calcium carbonate) is stored in the "A" frame building. However, Section 3 2 1 indicates that tailings from the process flow channel are also stored in the "A" frame building. This section should be revised to address impacts to ground and surface waters from spillage of all materials stored in the "A" frame building

o. Section 5.3.4, Exposure reduction: Although this section indicates that piles will be covered to "minimize the amount of exposed stockpiles," inspections by Solid Waste staff have revealed several instances of inadequate covering of the Gannon ash/dredge material. Based on this, the exemption from solid waste permitting may no longer be valid. Additionally, §403 7045(1)(f), Florida Statutes and Rule 62-701.220(2)(d), F.A.C, require that a majority of the materials must be reused each year FCS should provide waste quantity reports that demonstrate that a majority of the Gannon ash/dredge material has been used each year The management of this material is not discussed in detail in the BMPP

2 SWMP comments:

a Section 2 2 2, Paragraph 2, Second sentence: The following typo was noted: "ion silos" should be "in silos"
b Section 3.3 2: The effluent from the City of Brooksville is no longer mixed with slurry tank water from the Gregg Plant as it was described in the old SWMP Please explain the change in this process
c. Section 4.2 1: The surface water sampling sites have been marked on the revised site map with a red asterisk but this detail has not been provided in the legend of the revised site map. The revised site map does not have the surface water sampling sites marked for GSR-3, CPL 1-8, CPL-9 and BG.
d Section 4 2 2: Table 1 has not been provided. The last sentence on page 10 should read, "surface waters of the State".
e Section 4.3 2: The statement in the last paragraph is an incorrect statement. The Department did not authorize and recommend Creative Environmental Solution. Under the current provisions of Chapter 62-160, Florida Administrative Code, the Department does not require NELAC certification for field sampling. Any Organization which pulls samples must follow the Department's SOP but the Department no longer certifies or authorizes these organizations The following information has been retrieved from the Department's website concerning organizations sampling for regulated industry:

- **Q - Do I need to submit something to DEP to show that I am using the SOPs?** A - No DEP's expectation is that you will use these SOPs unless you have applied for a new or alternative field method

- **Q - Besides following the SOPs, are there other requirements that I need to meet?** A - You will need to develop a quality manual (see FA 3300 of FA 1000) for your organization. This document must be completed by October 9, 2002 but does not need to be submitted to DEP

The sampling requirements by Department rule:

- **62-160.210 Approved Field Procedures.**
  (1) All field sampling organizations shall follow the applicable collection and quality control protocols and requirements described in DEP-SOP-001/01 (February 1, 2004), which is incorporated by reference in Rule 62-160.800, F.A.C., unless specifically exempted by the rules of a particular Department program.
  (2) Any party that wishes to apply for new or alternative field procedures other than those specified in DEP-SOP-001/01 (February 1, 2004) shall follow the requirements provided in Rule 62-160.220, F A C.

Any laboratory, which conducts the analytical analysis for water quality sampling, must have a NELAC certification as per Chapter 62-160, Florida Administrative Code.

f. On page 13, second paragraph, last sentence, should state "surface waters of the State".
g The tire fuel preparation area is not clearly defined on the facility Site Map.

h. Section 3 4 3, Cooling pond routing: Please define the size of the storm that is considered "extremely heavy rainfall" and would cause an emergency overflow

3 GWMP comments:

a The revised GWMP is missing a signature and seal of a Professional Geologist registered in the State of Florida
b The reporting materials provided for the new construction of monitoring well CPL-8R and the installation 8.5 feet northwest of the old CPL-8 are acceptable.
c The Department's review of recent ground water data showed significant increasing trends for the indicator parameters of total dissolved solids (TDS) and sulfate in monitoring wells CPL-2 and CPL-7. The quarterly averages of these two parameters from all coal pile area wells have also shown increasing trends. Considering the close proximity of CPL-2 and CPL-7 and the fact that they have similar behavior of the indicator parameters, the Department has no objection to deleting CPL-7 from the GWMP, but CPL-2 will need to remain in the GWMP. All remaining wells are to be considered as GWMP compliance points as stated on page 2 of the revised GWMP
d Since 1999, significant increasing trends for the indicator parameters of total dissolved solids (TDS) and sulfate have been noted in monitoring wells CPL-2 and CPL-7. Therefore, the parameters for TDS and sulfates will remain in the GWMP
e The survey information for the location of monitoring MW-1 was not included in the revised GWMP or SWMP as was detailed in your June 25, 2004 letter Does the revised Facility Site Plan reflect the actual location of MW-1?
f Section (a) Hydrogeological, physical, and chemical data for the site: The last sentence of this section on page 4 states, "For information on topography, soils and surface water drainage systems surrounding the site please refer to the previously submitted March 15, 2000 Florida Crushed Stone – Brooksville, Florida Operations -- Site Water Management Plan (SWMP)" During our meeting on November 2, 2004, FCS stated that the revisions would combine all letters and documents into a single document and therefore easier to work with The Department agrees with this approach Therefore, all relevant information should be included in the revised document instead of referencing old documents that will no longer be used.
g. The Department agreed to limit the parameters to be monitored in the monitoring wells provided you sampled the perimeters ditch for the following parameters: total recoverable aluminum, total recoverable arsenic, total recoverable barium, total recoverable cadmium, total recoverable chromium, total recoverable iron, total recoverable lead, total recoverable mercury, total recoverable selenium, total recoverable silver, total recoverable petrol hydrocarbons, oil and grease, pH, total dissolved solids, total suspended solids, and turbidity. The details for sampling the perimeter ditch were stated in the previous SWMP and have been removed from the current revisions FCS will need to provide the perimeter ditch monitoring in this revision of the GWMP Also, add the cooling pond monitoring under the GWMP This combined monitoring is considered your GWMP.
h. The GWMP may require modification based on information requested by the Department's Solid Waste Section to address the management of solid wastes and industrial by-products at the site The Solid Waste Section will review the removal of iron and chloride from the GWMP

During our meeting on September 1, 2004, your attorney, Jake Varn, was to provide some clarification language to the Hamilton Oven, FDEP Power Plant Siting, for the modification to the COC As of the date of this letter, the language has not been provided Please provide the proposed language within 30 days of receipt of this letter. Please provide three copies of your revised facility management plan incorporating the comments above within 60 days of receipt of this letter

The Department looks forward to your cooperation in completing the resolution for the modifications to the COC and the enforcement case. Should you have any questions, you may contact Cindy Falondysz at (813) 744-6100, extension 391.

Sincerely,

Yanisa G. Angulo, P.E.
Program Manager
Industrial Wastewater

YGA/cf/db

cc: Michael Neal, General Electric Capital Corporation
Bob Noble, Central Power & Lime
Karl Watson, Sr, Florida Crushed Stone
David M. Reilly, Chemical Lime Company of Alabama, Inc.
James Morris, Rinker Materials
Charles Allen, Rinker Materials
Carl Genuardi, Central Power & Lime
Jake Varn, Fowler White Boggs Banker
Hamilton Oven, FDEP/Tal
Scott Goorland, FDEP/OGC
Alissa Blank, FDEP/OGC
Susan Pelz, FDEP

APPENDIX C

Survey of Monitoring Wells

W.D. GREENE LAND SURVEYING, INC.

Surveying and Mapping

ESTABLISHED 1982

December 3, 1998

Florida Crushed Stone Company
P.O. Box 1508
Brooksville, Florida 34605-1508

Attention: Mr. Ron Aliff

Re: Survey of Monitoring Wells

Dear Mr. Aliff:

On December 2 and 3, 1998, W.D. Greene Land Surveying conducted a survey of 8 monitoring wells on your Brooksville properties. A combination of GPS (Global Positioning System) and conventional surveying techniques were utilized to ascertain the position and the elevation of these wells. The following are the results of our survey. Latitude and Longitude are based on the North American Datum of 1983 (NAD83). Elevations are based on the North American Vertical Datum of 1988 (NAVD88).

Well	Latitude	Longitude	Elev.(well)	Elev.(ground)
MWCPL1	28° 34' 58.655"	82° 25' 47.189"	79.18'	75.7'
MWCPL2	28° 34' 52.977"	82° 25' 45.154"	73.82'	72.7'
MWCPL3	28° 35' 00.901"	82° 25' 40.556"	133.50'	129.8'
MWCPL4	28° 34' 36.258"	82° 27' 09.379"	112.97'	111.3'
MWCPL5	28° 34' 51.724"	82° 26' 17.580"	113.79'	112.5'
MWCPL6	28° 34' 56.117"	82° 25' 43.628"	72.57'	72.1'
MWCPL7	28° 34' 54.011"	82° 25' 45.016"	77.15'	76.6'
MWCPL8	28° 34' 59.810"	82° 25' 35.283"	124.62'	122.3'

We hope the above report meets your needs, if you should have any questions, please feel free to call.

Sincerely,

W.D. Greene Land Surveying, Inc.
Sam J. Cooper III, PLS
Fla. Reg. No. 4900

600 West Jefferson St. • Brooksville, Florida 34601 • Telephone (352) 796-0042 • FAX (352) 796-0019

APPENDIX D

June 24, 1999, FDEP Letter

Imperial Testing Laboratories

3905 KIDRON ROAD • LAKELAND, FLORIDA 33811 • TELEPHONE: (941) 647-2877
FAX: (941) 647-1770

June 24, 1999

Ms Cindy Cathey
Environmental Specialist
Industrial Wastewater Program
Southwest District
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: FCS/CPL Monitor Well Sampling Results .
OGC File No. 98-0093

Dear Ms Cathey:

As requested in your 4/1/99 letter, ITL was authorized by FCS/CPL to conduct the required sampling/analysis of the designated existing monitor wells. Wells CPL-1 and 8 around the coal pile, CPL-5 on the northeast side of the cooling ponds and MW-1 on the east side of the north pit haul road, southwest of the proposed landfill were sampled on 4/12/99. Note that MW-1 was originally designated MW-8 during the hydrogeologic investigation for the proposed landfill for which it was installed. However, later it was redesignated as MW-1 after the original MW-1, which had been used for some time as the point of SWFWMD required groundwater elevation monitoring, became unusable. SWFWMD agreed to use this well as the replacement, hence the redesignation at that time.

The laboratory reports of analysis and associated quality assurance documents are attached and the results are summarized in the attached table. As those documents indicate, CPL 1, 5 and 8 were purged (5 well volumes) and sampled through the dedicated sampling pump and plumbing equipment. MW-1 was purged with the installed submersible pump (5 well volumes) and then sampled by Teflon bailer in accord with our approved FDEP CompQAP.

CPL-1, 5 and 8 have dedicated submersible pumps which are used currently to sample groundwater in accord with the approved groundwater monitoring plan on a quarterly basis. These wells have baseline background water quality data which was established over at least a four quarter time period prior to beginning the groundwater monitoring in accord with the approved groundwater monitoring plan. This baseline water quality data and associated statistical analysis was submitted in various past quarterly groundwater monitoring reports. MW-1, however, was originally installed as part of the hydrogeologic investigation done to design the proposed landfill groundwater monitoring system and was only used to gather lithologic and groundwater flow/elevation data. Ultimately, MW-11, 12 and 13 were drilled to be the landfill monitors and baseline water quality data and associated statistical analysis was developed for them and reported. However, the landfill was never built or used, so no quality data after the baseline data gathering period is available for these wells and none at all for MW-1.

The only MCLs exceeded in CPL-1 were secondary standards for aluminum, color and iron. The attached table from the 3/87 groundwater monitoring report indicates elevated aluminum levels to be a background condition common in many of the site monitor wells. Although the iron levels are elevated above those of the baseline period, elevated iron levels are a common background condition in many of the nearby monitor wells and have risen over the years in CPL-1. The elevated color levels which occur in three of the four wells seems to correlate with the elevated iron levels and/or turbidity levels.

None of the MCLs were exceeded in CPL-5.

The only MCLs exceeded in CPL-8 were secondary standards for aluminum, color and iron. The previously reported attached table indicates elevated aluminum levels to be a background condition common in many of the site monitor wells. The iron level is less than the highest recorded during the baseline data gathering period which is also the case for the aluminum level. Elevated iron levels are a common background condition in many of the nearby monitor wells.

The same parameters exceeded in the other wells were also exceeded in MW-1 plus lead and odor. This well had the highest aluminum, color, lead, iron, odor and turbidity levels of all the wells sampled although it is the well farthest from any pollution source and was not installed to monitor any source. Considering this, we feel the elevated aluminum, color and lead levels are likely related to the high turbidity which in part is probably related to the high iron content. This well has never been sampled before but was drilled in the late 1980's and was reportedly developed at that time. According to FDEP guidance, any turbidity over 5 NTU can lead to erroneously high dissolved metals content and we think this is likely the case, although based on the baseline quality results for the nearly proposed landfill monitors (MW-11, 12 and 13 attached table), elevated aluminum and iron levels are background conditions in this area as in other areas of the site.

Because of the elevated lead level in this well, FCS requested we resample it using low-flow quiescent sampling techniques in accord with FDEP guidance documents. This was done and using these techniques we were able to get the turbidity down to acceptable levels. As indicated in the attached table, the lead levels dropped to below the MCL as expected. The levels of the other parameters which were elevated also dropped but remained above their MCLs supporting our suspicion that the elevated levels are related to a background water quality condition.

Please feel free to contact me if there are any questions regarding this report.

Sincerely,

6/24/99

Jimmy R. Edwards, PG# 601
President

cc: Mike McHugh, CPL
Ron Aliff, CPL
Jake Varn, Fowler White
Bill Kelsey, FDEP
Buck Oven, FDEP

APPENDIX E

Clay Liner Criteria

BROMWELL & CARRIER INC.

Offices
Lakeland
Tallahassee
Tampa
Affiliates
Chicago
Sao Paulo
Tegucigalpa
Waterloo

September 17, 1984
File No. 594

Mr. Jack Gries, P.E.
Florida Crushed Stone Company
P. O. Box 668
Brooksville, FL 33512

Re: Clay Liner Criteria
Coal Storage Area
Brooksville Cement/Power Plant
Brooksville, Florida

Dear Jack,

Pursuant to your request we have performed an evaluation of local clay materials to be used as a low permeability liner in a proposed coal storage and storm water retention area. The lined area will cover about 10 acres. The proposed liner configuration consists of 12 inches of compacted clay placed over the natural or compacted fill subgrade materials. A 2-foot layer of stabilized limerock base material will be placed over the clay liner to protect it and prevent drying.

Several clay borrow areas were visually inspected near the project site. The preferred borrow site is an excavation area for a railroad spur located about 0.4 mile south of the coal storage area. The material in this area consists of gray-green, highly plastic sandy clay.

In order to evaluate the engineering characteristics of this clay material, laboratory tests were performed on a representative bulk sample. The tests performed included: moisture content, Atterberg limits, percent passing No. 200 mesh sieve, moisture-density relationship (Proctor test), and triaxial back-saturated permeability. The permeability tests were conducted on remolded samples that had dry unit weights ranging from about 70 to 98 pcf. Two permeability tests were conducted on natural clay samples at two different initial moisture contents, 42 and 38 percent. Two additional tests were performed with sand and quicklime added to each test, respectively.

Fluid used to permeate the compacted clay samples consisted of acidic water (pH = 3) produced by soaking coal in distilled water for a period of several days. The coal used was of relatively high sulfur content. Thus, the pH of the permeant should be conservatively low for the field situation, which will involve low-sulfur coal.

The laboratory test results are summarized on the enclosed Table I.

The gray-green sandy clay is highly plastic with a liquid limit of 90 and a plasticity index of 71. The natural moisture content is about 42 percent. Standard Proctor (ASTM D 698) and modified Proctor (ASTM D 1557) moisture-density test results were as follows:

Standard Proctor	Maximum density: 87.0 pcf Optimum moisture: 32.5%
Modified Proctor	Maximum density: 91.5 pcf Optimum moisture: 26%

The permeability test results ranged from approximately 4×10^{-8} to 2×10^{-9} cm/sec for the remolded samples of the natural clays, while the values for the clay plus lime, and clay plus sand additive were about 7×10^{-7} to 1×10^{-9} cm/sec, respectively. The natural clays were remolded to a dry density of approximately 90 percent of the standard Proctor maximum dry density.

The gray-green clay materials have in-situ moisture content values well above the plastic limit. This condition may make handling, placement and compaction of the clay material in controlled lifts difficult. Placement and compaction may be handled more efficiently if the clay is allowed to air dry as much as practicable, but not below 20% moisture. Drying would be facilitated by spreading and windrowing the clays on a flat surface by use of a motor grader. After air drying the clay could be spread in two lifts with a loose thickness of about 8 inches to form the desired total compacted thickness of 1 foot. The clay should be thoroughly mixed by use of a heavy gang disc prior to compaction.

The soil moisture should be approximately 30 percent or greater at time of compaction and each lift compacted to a dry density of at least 90 percent of the standard Proctor (ASTM D 698) maximum dry density value. Compaction of the lower lift and initial compaction of the upper lift should be carried out with a relatively light, kneading or sheeps-foot roller. Following the kneading compaction of the upper lift, the surface should be subsequently compacted and sealed with a flat steel-wheeled or pneumatic rubber tired roller. Following compaction, density values should be measured by a qualified soil technician. One density test should be made for approximately every 500 cu. yds. of fill placed.

It has been reported by various researchers that field permeability values of compacted fine-grained soils are generally one order of magnitude higher than the laboratory test values. Based upon this criteria and the values determined for this clay material, the field permeability values should be 1×10^{-7} cm/sec or smaller. It should also be noted that the laboratory values are for fully saturated conditions. The field conditions for this clay liner, however, will be a partially saturated state. Permeability values for partially saturated conditions are less than those for saturated soil conditions. Thus, field values of soil permeability of the clay liner should be less than 1×10^{-8} cm/sec provided that the placement, moisture content and compaction recommendations are followed.

To prevent dessication and cracking of the clay liner, particularly if construction takes place during drier periods of the year, the 2-foot thick layer of stabilized base materials should be placed over the completed liner layer as soon as practicable. This will require that liner construction and covering be done incrementally in relatively small areas. Further the stabilized base material should have a moisture content of no less than 2 percent below the optimum moisture content and should be compacted in 1-foot lifts to a dry density of at least 95 percent of the maximum dry density as determined by the modified Proctor test procedure. The covering of the clay liner should also take place at the extreme edges of the storage area, where the liner slopes upward at the area limits.

The embankments and fills used to form the storage and runoff areas should be placed on a firm subgrade surface of limerock or compacted natural soil. Fill materials used to establish the area grades or form embankments should be placed as compacted structural fill. These embankment or subgrade fill materials should be compacted in lifts to a density of at least 95 percent of the maximum dry density as determined by the modified Proctor test procedure (ASTM D 1557).

If you have any questions regarding this letter report please call at your convenience.

Respectfully submitted,

BROMWELL & CARRIER, INC.

Leslie G. Bromwell

Leslie G. Bromwell, P.E.
Principal

Wayne A. Ericson, P.E.
Project Manager

LGB/WAE/sw
Enclosures

APPENDIX F

Sump Pump Water Quality Results

PHOSLAB

Phone 813-682-5897
806 W. Beacon Road • Lakeland, Florida 33803
Fax 813-683-3279

Client: Imperial Testing Laboratories
3905 Kidron Road
Lakeland, Florida 33811

Attn: Mr. Glenn Gross
P.O. #: 5909
Project: FCS/CPL--Brooksville
Reference: 8190

Sampled By: DMT
Sample Date: 04-27-94
Date Received: 04-27-94
Analysis Date: 04-28-94
Analyzed By: GJF/JMC

CERTIFICATE OF ANALYSIS

(expressed as mg/L)

WATER QUALITY CHEMISTRY

	MW-2	MW-4	Coal Pile Sump	Recirculation Ditch	EPA Method
Iron	0.12	2.45	0.62	0.42	236.1
TDS	275.0	47.0	765.0	255.0	160.1
Sulfate	35.0	0.8	348.0	22.6	375.4
Chloride	13.6	18.8	13.4	14.9	325.3
Aluminum	<0.10	<0.10	<0.10	1.07	202.2
Arsenic	0.002	0.003	0.004	0.007	206.2
Barium	0.045	0.007	0.160	0.024	208.2
Beryllium	<0.001	<0.001	<0.001	<0.001	210.2
Cadmium	<0.001	<0.001	<0.001	<0.001	213.2
Chromium	<0.001	<0.001	<0.001	<0.001	218.2
Copper	<0.1	<0.1	<0.1	<0.1	220.1
Lead	<0.001	0.012	<0.001	<0.001	239.2
Manganese	<0.05	0.07	0.1	<0.05	243.2
Mercury (ug/L)	<0.002	<0.002	<0.002	<0.002	245.1
Nickel	<0.1	<0.1	<0.1	<0.1	249.1
Selenium	<0.001	<0.001	<0.001	<0.001	270.2
Silver	<0.001	<0.001	<0.001	<0.001	272.2
Sodium	14.67	10.29	19.81	10.45	273.1
Zinc	<0.1	0.19	<0.1	0.10	289.1
Fluoride	0.68	<0.1	0.44	0.38	340.2

QA OFFICER

FDER QA/QC #870306G

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APPENDIX G

Site Water Management Plan (SWMP)

SECTION 3 SITE WATER MANAGEMENT PLAN

3.1 Overview

3.1.1 Previous Versions

This SWMP was originally prepared March 15, 2000 by PBS&J located at 5300 W. Cypress Street, Suite 300, Tampa, Florida 33607-1712. This is the first revision as proposed by the BMPP Committee and prepared by Coastal Engineering Associates, Inc

3.1.2 Plan Objective

As a specified in the FDEP Consent Order (OGC File No. 98-0093), the objectives of the SWMP are to define routing of process and stormwater at the FCS Facility, assess the facility's potential for causing surface or ground water pollution; and propose operational or structural changes to the FCS Facility to prevent un-permitted discharges. In addition, The Consent Order states that the SWMP shall include the following:

1) Description of the flow path and pollutant concentrations of on-site water streams.
2) Description, including site map, of proposed water quality treatment or control facilities.
3) Description of proposed operational changes.
4) Schedule for implementing the recommendations of the SWMP, including deadlines for implementing operational changes and the permitting, construction and completion of structural changes.

Accordingly, the SWMP provided herein includes the above stated contents. Related topics of discussion are included in the BMP Plan.

3.2 Process Water Routing

3.2.1 Overview

This section has been prepared to address the FDEP Consent Order requirement to define the routing of process and stormwater at the FCS Facility. Discussions provided below describe surface drainage features of the facility, and the routing of industrial process water generated by the Gregg Plant, CPL Plant, Chemical Lime Hydrating Plant and various minor operations.

3.2.1.1 Surface Drainage Characteristics

The FCS Facility site contains numerous surface features that define on-site topographic conditions and related stormwater flow paths, as illustrated on Exhibit A. Of particular importance are the many active and inactive limestone quarries, active and inactive settling ponds, cooling ponds, and naturally low-lying areas located throughout the site. Given these drainage features, it is important to note that there is typically no off-site discharge of land surface runoff from the active (developed) portion of the site, which includes the plant operations described previously. The only exceptions would occur in the event of an emergency discharge of excess water from Settling Pond 7 or Cooling Pond 4, which will be described later. In these instances, the excess water would discharge in a westerly direction to a low-lying area located on FCS property on the west side of CR 491. This low-lying area does not have a surface drainage outlet feature. Therefore, even in the event of an emergency discharge from Settling Pond 7 or Cooling Pond 4, the excess water would remain on FCS property.

3.2.1.2 Basin and Sub-basin Definitions

To assist in the definition of surface drainage patterns on the FCS Facility site, drainage basins and sub-basins were delineated, as illustrated on Exhibit A. These delineations were created using available topographic mapping, and field observations of flow paths and topographic conditions. Given the limited coverage and accuracy of the available topographic mapping, these delineations were to a large extent using observations made in the field.

In particular, five drainage basins were delineated and identified as CNTR, EAST, NRTH, WEST, and SOTH, which are located in the center, eastern, northern, western, and southern portions, respectively, of the developed site. These five drainage basins were further delineated into 5, 7, 6, 6, and 4 drainage sub-basins, respectively, which produced a total of 28 sub-basins. Sub-basins that do not have a gravity discharge outlet feature under normal circumstances (i.e., not considering an emergency discharge) were identified as "closed basins" (I.D.), which accounted for 20 of the 28 sub-basins. Note, for the purpose of this evaluation, sub-basins that have a pumped discharge outfall, which includes Sub-basins WEST-3 (Settling Pond 7 pump) and SOTH-1 (Perimeter Ditch pump), were also considered to be closed basins.

Important surface features that cause sub-basins to be closed basins include old inactive quarries, active quarries, naturally low-lying areas, Settling Ponds 7 and 9, and Cooling Ponds 4 and 5. The 8 sub-basins not identified as closed basins generate stormwater runoff that discharges to sub-basins that are closed basins. Therefore, as stated previously, there is typically no off-site discharge from the active portion of the FCS Brooksville Facility site. Also, in the event of an emergency discharge from Settling Pond 7 and Cooling Pond 4, the water will discharge to a low-lying area located on FCS property west of CR 491, which does not have a surface discharge outlet feature.

3.2.2 Gregg Plant Process Water Routing

3.2.2.1 Process Water Generation

On average, the Gregg Plant uses over 2 million gallons per day (mgd) of water to wash waste materials from the limestone ore. This process water originates from water supply wells located in the vicinity of the plant, and from the Power Plant cooling ponds, to be described later. The resulting process water, which contains high concentrations of limestone fines ($CaCO_3$), silica, and clays, is conveyed from the plant site by various means. A large percentage of the process water is collected in a slurry tank located near the center of the plant, and pumped approximately 2,000 feet to a process water channel located on the west side of the Gregg Plant, as illustrated on Exhibit A. The slurry tank pump is a Morris pump with a rated capacity of approximately 20,000 gallons per minute (gpm).

The remaining process water sheet flows from the Gregg Plant and material piles, and is collected in various gravity systems that ultimately discharge to low lying areas that surround the plant site. These low-lying areas do not have a surface discharge feature, and to a large extent are old quarries that are no longer in use

3.2.2.2 Settling Pond Routing

As described above, a large percentage of the process water generated by the Gregg Plant is pumped from the slurry tank to the upstream end of an open channel system located immediately west of the plant site. At this location, a significant portion of the tailings contained in the process water is excavated from the channel and trucked to the Cement Plant for use in the manufacture of cement

Gregg Plant process water pumped to this channel flows north through Sub-basin WEST-1, then east through Sub-basins NRTH – 1 and 2, then west through Sub-basins WEST-2 and 3, and finally south through Sub-basin WEST-4 and WEST-5 until it enters the Power Plant cooling ponds located in Sub-basin SOTH-2, as illustrated on Exhibit A. Along this flow path, the process water passes through a series of gravity and pumped conveyances contained within a series of active and inactive settling ponds. These settling ponds are necessary to contain waste material (tailings) that settle out from the Gregg Plant process water. Given the large volume of waste material generated by the Gregg Plant, a settling pond is useful (active) for a limited period of time before it's storage volume is completely filled with mine tailings.

In order of occurrence, Gregg Plant process water passes through Settling Ponds, 10,12, 11,9, and combined Ponds 1, 2, and 3. At present, only Pond 12, located in Sub-basin NRTH – 1 and 2, has storage volume available for mine tailings. Therefore, Ponds 1, 2, 3, 9, 10 and 11 are already filled with mine tailings (inactive), except for an open channel that allows the process water to pass through the pond. Settling Pond 7, located in Sub-basin WEST-6, is also filled with tailings.

Settling Ponds 4, 9, 7 and 12 each have an emergency outfall structure located on a perimeter embankment. In the event of extremely heavy rainfall, an emergency overflow at these locations could occur The emergency outfall for Ponds 9 and 12 will discharge water to the North Quarry, which borders these ponds on the north and is closed basins (Sub-basin NRTH-1). As described previously, the emergency outfalls for Settling Pond's 4 and 7 will discharge excess water in a westerly direction to a low-lying area located on FCS property on the west side of CR 491, which does not have a surface drainage outlet feature.

Effluent from the City of Brooksville Wastewater Treatment Plant (WWTP) is conveyed through a force main located along Cement Plant Road then discharges into Sub-Basin SOTH – 2 (Cooling Pond – 5).

3.2.2.3 Gregg Plant Surface Runoff

Gregg Plant process water not collected at the slurry tank sheet flows into nearby gravity collection systems that discharge to adjacent old quarry pits and a naturally low-lying area. In particular, the northern portion of the Gregg Plant site drains to a low lying area and old quarries located in Sub-basins EAST-4 and EAST-5, respectively. Sub-basin EAST-5 discharges to Sub-basin EAST-4, which are closed basins. The southern portion of the Gregg Plant site drains to old quarries located in Sub-basins CNTR-2, CNTR-3, and CNTR-4, which are all closed basins. Stormwater runoff would follow the same flow patterns described above.

3.2.2.4 Truck Operations

The washed limestone placed in the truck beds at Load Out is still quite wet. Therefore, after picking up the limestone, the trucks are required to stop at a truck-draining site located immediately south of the Gregg Plant. At this location, the trucks raise their beds and allow excess water to drain onto the ground, which sheet flows to an adjacent gravity drainage system and ultimately discharges to a nearby old quarry pit located in Sub-basin CNTR-2 (closed basin).

Before leaving the FCS Brooksville Site, the trucks pass through a truck wash facility located adjacent to Cement Plant Road, about 1,800 feet west of CR 485. The purpose of this facility is to wash limestone material from the trucks so that it is not deposited on public roadways. Wash water from this facility is collected in an adjacent concrete pit, and pumped to the perimeter discharge ditch at the CPL Plant.

3.2.3 CPL Plant Process Water Routing

3.2.3.1 Process Water Generation

The Power Plant uses water for various non-contact purposes, meaning that process water generated by the plant is not used to convey waste products other than heat. In particular, all thermal energy produced by the Power Plant cannot be efficiently recycled, and the steam condenser at the co-generation plant rejects heat at a rate of about 600 million BTU/hour. This heat is carried away by pumping water through the condenser at a rate of

216 MGD, which raises the temperature of the water by about 10 degrees Fahrenheit. Two 75,000 GPM condenser water recirculation pumps are used to discharge the heated water to the cooling ponds located southwest of the Power Plant, where the water cools down to ambient conditions.

The Power Plant also generates other non-contact process water from various process equipment (e.g., pump seal water, bearing cooling water, electrical room A/C units) that is discharged to the Perimeter Ditch, located east of the plant. Water supplied to the Power Plant is provided by the cooling ponds, and two wells located adjacent to the plant. Well water is pumped to a ground storage tank located northeast of the Power Plant, on top of a hill. Water from the tank discharges by gravity to the Power Plant.

The manufacture of cement at the Cement Plant is a dry operation that does not require process water. However, stormwater runoff originating from the uncovered material storage sites is considered industrial process water by FDEP. In addition, the Cement Plant also generates other non-contact process water from various process equipment (e.g., pump seal water, bearing cooling water, electrical room A/C units) that is discharged to the Perimeter Ditch

3.2.3.2 Surface Runoff

Uncovered piles of raw materials are located adjacent to the CPL/FCS Plants. In particular, piles of limestone are stored adjacent to the Lime Plant; and piles of mill scale, slag, used tires, and coal are stored adjacent to the Cement and Power Plants. Stormwater runoff from the Lime Plant sheet flows to a gravity discharge system located southwest of the plant, and eventually discharges to an old quarry located across Cement Plant Road in Sub-basin CNTR-2, which is a closed basin.

Stormwater runoff from the mill scale, slag, and used tires piles located adjacent to the Cement Plant discharge to the Perimeter Ditch located on the east side of the plant, which is clay lined. A pump located at the south end of this ditch discharges water to the eastern end of Cooling Pond 5, located in Sub-basin SOTH-2, which is a closed basin.

Stormwater runoff from the coal storage area sheet flows to the northeast, where it discharges to a stormwater pond located in an old mine quarry. This stormwater pond does not have a gravity discharge outlet feature. Water stored in the coal stormwater pond is pumped back to the coal storage pile and sprayed on the surface of the coal pile to control dust. Runoff from the coal pile storage area does not enter the Perimeter Ditch.

3.2.3.3 Cooling Pond Routing

As referenced above, a significant feature of the FCS Brooksville Facility are Cooling Ponds 4 and 5, located in Sub-basin SOTH-2, which were constructed to recycle cooling water required by the Power Plant. Located immediately southwest of the Power Plant, water is pumped through these cooling ponds in order to dissipate approximately 10 degrees Fahrenheit of heat added by the Power Plant. The points of withdrawal and discharge are both located on the eastern side of Pond 5. However, the flow path through Cooling Ponds 4 and 5 is a circuitous route created by internal earthen embankments, which increases the time allowed to dissipate excess heat.

Gregg Plant process water, after passing through the settling ponds and conveyances described previously, discharges to the western end of Cooling Pond 4, which provides an important source of make-up water. By the time the Gregg Plant process water discharges to the cooling pond, the heavy particles associated with mine tailings have already settled out in upstream ponds and conveyances. A pump located near the northwest corner of Cooling Pond 5 makes it possible to pump water from the cooling pond to the Gregg Plant.

Cooling Pond 5 has two emergency outfall structures located on the west side of the pond. In the event of rainfall from a 24-hour 25-year storm event or greater, an emergency overflow at these locations could occur. Excess runoff that passes through the Pond 5 emergency outfall structure will discharge in a westerly direction, pass through a ditch located on the east side of CR 491, discharge through a culvert beneath CR 491, and enter a channel system located in a low-lying area on the west side of CR 491. This low-lying area is on FCS property and does not have a surface outlet feature.

3.2.4 Chemical Lime Hydrate Plant Process Water Routing

Chemical Lime consumes water in the production of hydrate and in the wet scrubber that is the air pollution control device for the hydrator. The scrubber water discharge is recirculated back to the hydrator for production.

Surface runoff from rain events sheet flows into the on-site quarry areas that serve as closed basins.

3.2.5 Minor Operations Process Water Routing

Cliff's Septic Tanks, located in Sub-basin SOTH-3 has a permitted on-site stormwater management facility. The Miller Tire facility is a small operation that consists of an office trailer, an unpaved access road, and equipment used to change truck tires. Other than for human consumption, the facility does not use water. Stormwater runoff from the Miller Tire site sheet flows to the east, is conveyed beneath Camp Mine Road, and eventually discharges to a low lying area located east of Camp Mine Road in Sub-basin EaAST-4, which is a closed basin.

3.3 Water Quality Characteristics and Assessment

3.3.1 Overview

This section has been prepared to address the FDEP Consent Order requirement to assess the facility's potential for causing surface or groundwater pollution. Discussions provided below describe the water quality characteristics of surface water and groundwater at the FCS Facility, as defined through the laboratory analysis of water samples collected throughout the FCS Facility. Sample sites were selected in a manner that allows the assessment of process water discharging from the various operations

3.3.2 Surface Water Quality Characteristics

3.3.2.1 Sampling Sites

In order to characterize surface water quality at the FCS Facility, seventeen sites were identified throughout the property for the purpose of obtaining water quality samples. These sampling sites were selected in a manner that allows the evaluation of process water and surface runoff discharging from the plant sites. As illustrated on Exhibit A, these seventeen sampling sites include the following:

General Location	Sampling Site Names
Gregg Plant Offsite (Settling Ponds)	GPO-1, GPO-2, GPO-3
Site Runoff from the Gregg and Lime Plants	GSR-1, GSR-2, GSR-3
Cement and Power Plant Ditches	CPL-1 through CPL-8
Cooling Pond 5 Discharge to Power Plant	CPL-9
Coal Pond	Coal Pond
Water Body South of Cooling Pond 4 (Background)	BG

In particular, the three GPO sampling sites characterize Gregg Plant process water at the point of discharge from the slurry tank (GPO-1), at the point of discharge from Settling Pond 9 (GPO-2), and at the point of discharge to Cooling Pond 4 (GPO-3). Sampling sites GSR-1 and GSR-2 characterize land surface runoff flowing north from the Gregg Plant site. Sampling site GSR-3 characterizes land surface runoff flowing from the Lime Plant and the southern portion of the Gregg Plant.

Sampling sites CPL-1 and CPL-2 characterize water quality conditions in a small ditch located on the north side of the Cement Plant. Sampling sites CPL-3 through CPL-7 characterize conditions with the Perimeter Ditch; and Sampling Site CPL-8 characterizes conditions in the Perimeter Ditch at the point of pumped discharge to Cooling Pond 5. Sampling site CPL-9 characterizes conditions in Cooling Pond 5 at the point of pumped discharge to the Power Plant. A sampling site identified as "Coal Pond" characterizes conditions in the pond located east of the coal pile. Sampling site BG represents background surface water quality conditions, and is located in a water body located in a pasture immediately south of Cooling Pond 4

3.3.2.2 Collection of Surface Water Samples

On January 28, 2000, PDS&J representatives conducted the surface water-sampling event at the FCS Brooksville Facility. A light rain was falling during the surface water sampling activities. Procedures used to collect the surface water samples were in accordance with PBS&J's FDEP approved Comprehensive Quality Assurance Plan (ComQAP) #910005.

Each of the surface water samples was collected with a dedicated pre-cleaned disposable Teflon bailer-sampling device. Following the collection of surface water samples, they were documented, preserved on ice, and shipped under chain-of-custody procedures to U.S. Biosystems, Inc. in Boca Raton, Florida (ComQAP #980126). Water samples were analyzed for the parameters identified below.

Sampling Site	Parameters
GPO-1, GPO-2, and GPO-3	Primary and Secondary Drinking Water Standards
GSR-1, GSR-2, and GSR-3	Primary and Secondary Drinking Water Standards
CPL-1 and CPL-2	pH, TSS, TDS, and TRPH by FL PRO Method
CPL-3 through CPL-6	pH, TSS, TDS, FL PRO, Turbidity, Total RCRA Metals, DAP, AL, and Fe
CPL-7 and CPL-8	Same as for CPL-6, plus Oil & Grease
CPL-9	Primary and Secondary Drinking Water Standards
Coal Pond	pH, TSS, TDS, Total RCRA Metals, Turbidity
BG	Primary and Secondary Drinking Water Standards

Results from the above referenced laboratory analyses are summarized in Table 3.1, which indicate that certain measured parameter values exceeded drinking water standards. It should be noted, however, that FDEP Consent Order not specify the water quality parameters to be evaluated, and drinking water standards were used for comparison purposes only. Also, as discussed in Section 3.0 (Process Water Routing), the FCS Facility does not have an off-site discharge. Therefore, based on these observations, the FCS Facility does not discharge a contaminant load to surface waters of the State that affects public health and the environment.

3.3.3 Groundwater Quality Characteristics

3.3.3.1 Groundwater Monitoring

Groundwater quality had been monitored at the FCS Facility by Imperial Testing Laboratories (ITL) from the mid-1980's until recently. ITL (Jimmy Edwards, President) prepared a revised groundwater-monitoring plan (GWMP) for the FCS facility. Information from this revised plan was obtained from ITL and provided herein, which includes an overview of the groundwater monitoring sites and observed groundwater quality conditions at the FCS Facility.

The locations and names of the groundwater monitoring wells are depicted on Exhibit A. Based upon information provided by ITL, groundwater quality samples obtained at the FCS Facility have resulted in only minor accedence's of Maximum Contaminant Levels (MCLs) since monitoring was initiated in the mid 1980's. For example, a June 24, 1999 letter from ITL to the FDEP indicated that several of the groundwater monitoring wells (MW-CPL-1, MW-CPL-8, and MW-CPL-5, and MW-1 (formerly MW-8)) were sampled during April 1999, which resulted in MCL accedence's at MW-CPL-1 for secondary standards for aluminum, color, and iron.

Information collected in March 1987 indicates that elevated aluminum levels are a common background condition in many of the monitor wells. Although iron levels are elevated above those provided in the baseline period, elevated iron levels are a common background condition in many of the nearby monitor wells and have risen over the years in MW-CPL-1. Elevated color levels, which was observed in three of the four monitoring wells, appears to correlate with the elevated iron levels and/or turbidity levels.

No MCLs were exceeded in MW-CPL-5. The only MCLs exceeded in MW-CPL-8 were secondary standards for aluminum, color, and iron. Again, elevated aluminum and iron levels are a background condition common in many of the nearby monitoring wells. Aluminum, iron, lead and odor MCLs were exceeded in MW-1, which had the highest aluminum, color, lead, iron, odor, and turbidity levels of all the wells sampled. Monitoring well MW-1 had never been sampled before but was drilled in the late 1980s and was reportedly developed at the time of installation. According to FDEP, any turbidity measurement over 5 NTUs can lead to erroneously high dissolved metals content. ITL staff believes that this is the case, although given baseline water quality measurements, elevated aluminum and iron levels are a background condition throughout the site.

Given the elevated lead concentration detected at MW-1, ITL re-sampled the monitor well using low-flow quiescent sampling techniques in accordance with FDEP guidance documents. The results of the re-sample indicated that the turbidity levels were decreased, and the lead level decreased to below the MCL. The concentrations of the other elevated parameters were also decreased, but remained above their MCLs. ITL concluded that these results supported their opinion that elevated levels are related to a background water quality condition.

3.3.3.2 FDEP Observations

FPL provided PBS&J a copy of an August 11, 1999 letter prepared by FDEP in response to the previously referenced groundwater-sampling event. In summary, the Department commented that the hydrological complexity of the site and unknown future of the hydrological influences across the site cause difficulty in determining how to define a zone of discharge (ZOD) and a GWMP. The Department also stated the data does, however, show that there are currently no unusual parameters of concern in the groundwater. Furthermore, the Department recommended reducing the number of monitoring wells by omitting wells CPL-2 and CPL-7.

As a result, all remaining wells are considered compliance points, which include MW-CPLs-1, 3, 4, 5, 6, and 8. Finally, the Department stated that an outstanding issue is that of the GWMP quarterly parameters. Considering that there was an agreement in the past that groundwater was not a concern stemming from the domestic effluent portion of the site water budget, parameters were not to be customized as domestic water indicators, but as coal power plant indicators. It was the Department's recommendation to continue with existing groundwater parameters with the addition of the following: Arsenic, Barium, Cadmium, and Lead. Revisions to the GWMP were required as part of the FDEP Consent Order. Based on the information provided, PBS&J agreed with the Department and believed that there are no unusual contaminants significantly impacting the groundwater quality beneath the site.

3.4 Proposed Water Quality Enhancements

3.4.1 Overview

This section addresses the FDEP Consent Order requirement to propose operational or structural changes to the FCS Facility in order to prevent unpermitted discharges, and to provide a schedule of the proposed changes. The initial sub-section, however, provides a review of the conclusions presented in the preceding sections in regard to the potential for un-permitted discharges to Waters-of-the-State from the FCS Facility. The potential for these discharges will affect the need for operational or structural changes to the FCS Facility.

3.4.2 Potential Impacts to Water-of-the-State

As described in Section 3.0 (Process Water Routing), there is no off-site surface discharge of process water or land surface runoff from the active portion of the FCS Facility during normal operating conditions. In particular, the 28 sub-basins that delineated and illustrated on Exhibit A, 20 are characterized as closed basins, meaning they do not have a gravity discharge outlet feature under normal operating conditions. The remaining 8 sub-basins discharge to one of the 20 closed basin sub-basins.

The only potential for a discharge from the active portion of the FCS Facility is related to the operation of the emergency spillway structures located along the western embankment of Settling Pond 7 and Cooling Pond 4, which is designed to occur only under severe weather conditions. The operation and maintenance of these emergency spillway structures is addressed in the BMP Plan. However, should there be an emergency discharge from these spillways, the discharged water will be conveyed under CR 491 and be deposited in a low-lying portion of the FCS property located on the west side of CR 491. At this location, the discharged water will infiltrate into the ground or evaporate. Therefore, an off-site impact to surface waters of the State from the FCS Facility will not occur due to a surface discharge of process water or land surface runoff.

In addition, the observations and analytical results presented in Section 4.9 (Water Quality Characteristics) lead to the conclusion that (1) process water and surface runoff generated by the Gregg and CPL Plants is adequately controlled and treated by on-site settling ponds, cooling ponds, and other surface drainage features, and (2) there are no unusual contaminants significantly impacting the groundwater quality beneath the site. Accordingly, the potential for off-site impacts to surface waters of the State are non-existent.

3.4.3 Facility Improvements

3.4.3.1 Recent Gregg Plant Modifications

The Gregg Plant was recently modified through the construction of a new limestone crusher located at the beginning of the plant, and a new and more efficient process train that provides additional crushing, washing, and aggregate distribution. The new Gregg Plant facility was placed into service in early 1999, which has significantly reduced the generation of process water and the production of waste limestone fines.

In 2002 the Lime Rock Fines Recovery System (Sand Plant) was upgraded for improved efficiency, this plant discharges into the upstream end of the open channel system.

In March 2004, FCS completed the Bridge – Tunnel (Brunnel) project, this enables material to be transported from the Lykes West property under County Rd 491 to the Gregg Processing facility.
Overburden removal is scheduled to start in September 2004. Lime rock removal is planned to commence in November 2004.

A dredge will be temporarily installed in Settling Pond 12A in August 2004.
Mine tailings will be pumped into Settling Pond 12C.
Settling Pond 12 is a large settling pond built in two phases, dredging will allow activation of 12C while controlling process water through the system.

EXHIBITS