

**APPENDIX E**  
**GEOLOGIC LOG**



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 1 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield **FILE NO.** 06-072  
**CLIENT** Tetra Tech **ELEVATION** 65.0 Estimated  
**BORING LOCATION** N 562316.22; E 1367070.6 **BORING TYPE** Mud Rotary/Reverse Air  
**COUNTY** Osceola **STATE** Florida **CASING TYPE** 8-inch Black Steel  
**DATE STARTED** 8/2/07 **COMPLETED** 12/19/07 **DRILLER/RIG** John Disk  
**WATER TABLE ATD:** -- **DATE** -- **TIME** --  
**WATER TABLE AD:** -- **DATE** -- **TIME** --  
**REMARKS**

GTGS LOG - ARDAMAN ORLANDO\_GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
60.0	5			1						Brown poorly graded sand with silt (SP-SM) with roots		
55.0	10			2						Grayish brown silty sand (SM)		
50.0	15			3						Light grayish brown clayey sand with silt (SC-SM)		
45.0	20			4								
40.0	25			5						Light grayish brown clayey sand (SC)		
35.0	30			6								
30.0	35			7						Gray clay with fine grain quartz sand (CL)		







# GEOLOGIC LOG



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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 4 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
-50.0	115			23						Light grayish brown poorly graded sand with silt (SP-SM) <i>(continued)</i>		
-55.0	120			24								
-60.0	125			25								
-65.0	130			26						Light brownish gray poorly graded sand with silt (SP-SM) some shell fragments		
-70.0	135			27								
-75.0	140			28						Dark brownish gray clayey sand with silt (SC-SM) few shell fragments		
-80.0	145			29								
-85.0	150			30						Gray sandy clay (CL) with shell fragments		



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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 5 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
-90.0	155			31						Gray sandy clay (CL) with shell fragments <i>(continued)</i>		
-95.0	160			32						Dark gray sandy clay (CL) with shell fragments		
-100.0	165			33								
-105.0	170			34						Dark gray clay (CL)		
-110.0	175			35								
-115.0	180			36								
-120.0	185			37						Grayish brown clay (CL)		
-125.0	190			38								



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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 6 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
-130.0	195			39						Grayish brown clay (CL) (continued)		
-135.0	200			40						Grayish brown clay (CL) with white well indurated fine grain limestone		
-140.0	205			41								
-145.0	210			42								
-150.0	215			43								
-155.0	220			44								
-160.0	225			45								
				46						Light gray, poor to moderately, well indurated fossiliferous limestone (wackestone)		









# GEOLOGIC LOG



Ardaman & Associates, Inc.  
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**BORING NO:** DZMWV  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 9 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
-245.0	310									Pale brown fossiliferous limestone (packstone) with benthic foraminifera (continued)		
-250.0	315			62						Very pale brown moderately indurated fossiliferous limestone (packstone) with echinoids		
-255.0	320											
-260.0	325			63						Pale brown moderately indurated limestone (packstone)		
-265.0	330											
-270.0	335			64						Pale brown well indurated limestone (wackestone)		
-275.0	340											
-280.0	345									Pale brown well indurated fossiliferous limestone (wackestone/packstone) with echinoids		



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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 10 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (µS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
-285.0	350			65								Pale brown well indurated fossiliferous limestone (wackestone/packstone) with echinoids (continued)		
-290.0	355			66								Very pale brown well indurated limestone (packstone)		
-295.0	360													
-300.0	365			67								Very pale brown poorly indurated limestone (packstone)		
-305.0	370													
-310.0	375			68								Very pale brown well indurated limestone (wackestone)		
-315.0	380													
												Light grayish brown moderately indurated limestone (wackestone) with echinoids		

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ









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Ardaman & Associates, Inc.  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 14 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
440.0	505			81						Very pale brown lightly indurated slightly chalky limestone (mudstone) some echinoids (continued)		
445.0	510											
450.0	515			82								
455.0	520											
460.0	525			83						Brown very well indurated micritic dolomitic limestone		
465.0	530											
470.0	535			84								

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:28 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 15 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-475.0	540										Brown very well indurated micritic dolomitic limestone ( <i>continued</i> )		
-480.0	545			85							Pale brown moderately indurated limestone (packstone)		
-485.0	550												
-490.0	555			86							Pale brown moderately indurated limestone (wackestone)		
-495.0	560												
-500.0	565			87							Very pale brown well indurated limestone (mudstone)		
-505.0	570												
-510.0	575			88							Very pale brown lightly indurated chalky limestone (mudstone) and interbedded grayish brown very well indurated micritic dolomitic limestone		





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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 16 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-515.0	580										Very pale brown lightly indurated chalky limestone (mudstone) and interbedded grayish brown very well indurated micritic dolomitic limestone (continued)		
-520.0	585			89									
-525.0	590										Very pale brown moderately indurated limestone (wackestone)		
-530.0	595			90									
-535.0	600												
-540.0	605			91							Very pale brown moderately indurated limestone (wackestone/packstone)		
-545.0	610												
-550.0	615			92							Very pale brown poorly indurated limestone (wackestone)		



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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 17 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-555.0	620										Very pale brown poorly indurated limestone (wackestone) (continued)		
-560.0	625			93									
-565.0	630										Pale brown to dark brown very well indurated micritic dolomite with pin point porosity		
											639' bls start very pale brown well indurated dolomitic limestone		
-570.0	635			94									
-575.0	640				8.3	235	25						
-580.0	645			95							Grayish brown moderately indurated limestone (mudstone)		
-585.0	650												
-590.0	655										Very pale brown moderately indurated limestone (packstone)		



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 18 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

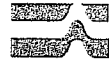
BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-595.0	660			96									
-600.0	665			97							Very pale brown moderately indurated limestone (packstone) (continued)		
-605.0	670												
-610.0	675			98							Interbedded dark brown very well indurated micritic dolomite with gray moderately indurated limestone (wackestone)		
-615.0	680				7.8	260	25				Dark brown very well indurated micritic dolomite		
-620.0	685			99							Pale brown very well indurated micritic dolomite with interlayered pale brown limestone (wackestone)		
-625.0	690										Brown very well indurated micritic dolomite with pin point porosity		

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 19 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data							Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
-630.0	695			100								Brown very well indurated micritic dolomite with pin point porosity (continued)		
-635.0	700													
-640.0	705			101										
-645.0	710													
-650.0	715			102								Pale brown moderately well indurated fossiliferous micritic dolomite Slightly vuggy		
-655.0	720													
-660.0	725			103								Pale brown moderate to well indurated dolomitic limestone Slightly vuggy Low reaction to 10% HCL		
-665.0	730													

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ







# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 22 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-750.0	815			112							Pale brown well indurated dolomitic limestone With lenses of brown very well indurated micritic dolomitic limestone <i>(continued)</i>		
-755.0	820												
-760.0	825			113									
-765.0	830												
-770.0	835			114							Pale brown well indurated dolomitic limestone Slightly vuggy to moderately vuggy porosity 830'-840' bls increase in vuggy porosity 850'-910' bls decrease in porosity		
-775.0	840				8.6	266							
-780.0	845			115									

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
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Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 23 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log		
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
-785.0	850													
-790.0	855			116										
-795.0	860													
-800.0	865			117										
-805.0	870													
-810.0	875			118										
-815.0	880				8.7	269								
-820.0	885			119										

Pale brown well indurated dolomitic limestone  
 Slightly vuggy to moderately vuggy porosity  
 830'-840' bls increase in vuggy porosity  
 850'-910' bls decrease in porosity (continued)





# GEOLOGIC LOG



Ardaman & Associates, Inc.  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 24 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (µS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-825.0	890												
-830.0	895			120									
-835.0	900												
-840.0	905			121									
-845.0	910												
-850.0	915			122									
-855.0	920				8.0	288							
-860.0	925			123									

Pale brown well indurated dolomitic limestone  
Slightly vuggy to moderately vuggy porosity  
830'-840' bis increase in vuggy porosity  
850'-910' bis decrease in porosity (continued)

Pale brown well indurated dolomitic limestone with few pore spaces  
Interlayered pale brown to black poorly indurated limestone (wackestone)

Pale brown well indurated slightly fossiliferous dolomitic limestone with moldic porosity  
Some interlayered limestone



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 25 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-865.0	930												
-870.0	935			124									
-875.0	940												
-880.0	945			125									
-885.0	950												
-890.0	955			126									
-895.0	960				8.2	273							
-900.0	965												

Pale brown well indurated slightly fossiliferous dolomitic limestone with moldic porosity  
Some interlayered limestone (continued)



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
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**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 26 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-905.0	970			127							<p>Pale brown well indurated slightly fossiliferous dolomitic limestone with moldic porosity</p> <p>Some interlayered limestone (<i>continued</i>)</p>		
-910.0	975			128									
-915.0	980												
-920.0	985			129									
-925.0	990												
-930.0	995			130							<p>Very pale brown poor to moderately indurated limestone (mudstone)</p> <p>1007'-1008' bls pale brown very well indurated moldic dolomitic limestone lens</p>		
-935.0	1000				8.1	276							

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 27 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
-940.0	1005			131								Very pale brown poor to moderately indurated limestone (mudstone) 1007'-1008' bis pale brown very well indurated moldic dolomitic limestone lens (continued)		
-945.0	1010											Pale grayish brown very well indurated dolomitic limestone with few pore spaces Grades into a very pale brown very well indurated micritic dolomite White to very pale brown poorly indurated limestone (wackestone)		
-950.0	1015			132										
-955.0	1020													
-960.0	1025			133										
-965.0	1030											Very pale brown very well indurated micritic slightly fossiliferous dolomitic limestone		
-970.0	1035			134										
-975.0	1040													

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 28 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\INT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-980.0	1045			135	8.2	277							
-985.0	1050												
-990.0	1055			136						Very pale brown very well indurated micritic slightly fossiliferous dolomitic limestone (continued)			
-995.0	1060												
1000.0	1065			137						Brown very well indurated micritic dolomite			
										Brown very well indurated micritic dolomite			
										With pale brown very well indurated micritic dolomitic limestone			
1005.0	1070												
1010.0	1075			138						Very pale brown well indurated dolomitic limestone			
1015.0	1080				8.3	275							







# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 31 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
-1095.01160					8.3	305	6						
-1100.01165				147	7.3	551	104						
1105.01170					8.2	397	200						
1110.01175				148									
1115.01180													
1120.01185				149									
1125.01190													
1130.01195				150									

Pale brown moderate to well indurated dolomitic limestone  
Some grey chert nodules and lenses of thin black and brown organic material (continued)

White to gray well indurated slightly fossiliferous limestone

Pale brown well indurated dolomitic limestone

Pale brown well indurated dolomitic limestone

Minor amounts of chert, thin organic mudstone/clay layers and small amounts of limestone interbedded





# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 32 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
1135.0	1200													
1140.0	1205			151										
1145.0	1210													
1150.0	1215			152										
1155.0	1220													
1160.0	1225			153										
1165.0	1230													
1170.0	1235			154										

Pale brown well indurated dolomitic limestone

Minor amounts of chert, thin organic mudstone/clay layers and small amounts of limestone interbedded (*continued*)

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 33 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1175.01240					8.3	328	4						
1180.01245				155									
1185.01250										Pale brown well indurated dolomitic limestone			
1190.01255				156						Minor amounts of chert, thin organic mudstone/clay layers and small amounts of limestone interbedded ( <i>continued</i> )			
1195.01260													
1200.01265				157									
1205.01270													
1210.01275										Pale brown very well indurated dolomitic limestone			

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ





# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 35 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1250.0	1315			162									
1255.0	1320				8.0	282	25						
1260.0	1325			163									
1265.0	1330												
1270.0	1335			164									
1275.0	1340												
1280.0	1345			165									
1285.0	1350												
										Light brownish gray well indurated dolomitic limestone with minor moldic porosity (continued)			
										Light gray to dark brown interbedded layers of well indurated dolomitic limestone with minor moldic porosity			



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 36 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**CLIENT** Tetra Tech

**BORING LOCATION** N 562316.22; E 1367070.6

**FILE NO.** 06-072

**ELEVATION** 65.0 Estimated

**BORING TYPE** Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log		
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
1290.01355				166										
1295.01360					8.2	299	18							
1300.01365				167										
1305.01370														
1310.01375				168										
1315.01380														
1320.01385				169										
1325.01390														

Light gray to dark brown interbedded layers of well indurated dolomitic limestone with minor moldic porosity (continued)



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 37 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
1330.0	1395			170										
1335.0	1400				8.1	289	23							
1340.0	1405			171										
1345.0	1410													
1350.0	1415			172										
1355.0	1420													
1360.0	1425			173										
1365.0	1430													

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Light gray to dark brown interbedded layers of well indurated dolomitic limestone with minor moldic porosity (continued)

Dark grayish brown dolomite with minor moldic porosity



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 38 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1370.01435				174						Dark grayish brown dolomite with minor moldic porosity <i>(continued)</i>		
1375.01440					8.4	302	19			Light gray dense very well indurated limestone with low porosity		
1380.01445				175						Dark yellowish brown very well indurated dolomite		
1385.01450												
1390.01455				176								
1395.01460										Yellowish brown to dark yellowish brown very well indurated low porosity dolomite		
1400.01465				177								

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 39 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**CLIENT** Tetra Tech

**BORING LOCATION** N 562316.22; E 1367070.6

**FILE NO.** 06-072

**ELEVATION** 65.0 Estimated

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1405.01470													
1410.01475				178							Yellowish brown to dark yellowish brown very well indurated low porosity dolomite (continued)		
1415.01480					8.3	341	69						
1420.01485				179									
1425.01490													
1430.01495				180							Brown well indurated dolomite interbedded with some slightly fossiliferous porous dolomitic limestone		
1435.01500													
1440.01505				181									

GTCS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ





# GEOLOGIC LOG



Arqaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 40 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1445.01510										Brown well indurated dolomite interbedded with some slightly fossiliferous porous dolomitic limestone ( <i>continued</i> )		
1450.01515				182								
1455.01520					8.4	334	120					
1460.01525				183						Yellowish brown very well indurated micritic dolomite with lenses of light gray to light yellowish brown dolomitic limestone with trace amounts of white crystalline calcite		
1465.01530												
1470.01535				184								
1475.01540												
1480.01545				185						Very dark grayish brown well indurated micritic dolomite with some black banding present, with trace amounts of crystalline calcite present along with minor amounts of white porous limestone		



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 41 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (µS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1485.0	1550									Very dark grayish brown well indurated micritic dolomite with some black banding present, with trace amounts of crystalline calcite present along with minor amounts of white porous limestone ( <i>continued</i> )		
1490.0	1555			186								
1495.0	1560				8.3	345	52					
1500.0	1565			187								
1505.0	1570									Brown to dark brown well indurated micritic dolomite with minor amounts of white slightly porous limestone		
1510.0	1575			188	8.3	409	30					
1515.0	1580									Light gray very well indurated micritic dolomite with some lenses of dark brown micritic dolomite		
1520.0	1585											

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 42 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
1525.0	1590			189								Light gray very well indurated micritic dolomite with some lenses of dark brown micritic dolomite (continued)		
1530.0	1595			190								Light brownish gray banded with light brown very well indurated micritic dolomite Noticed an increase in H2O production		
1535.0	1600											Cavity		
1540.0	1605			191	8.3	613	125					Light gray poorly indurated high intergranular porosity micritic dolomite 1608' bls become well indurated		
1545.0	1610				7.8	1552	598							
1550.0	1615			192								Gray well indurated slightly porous micritic dolomite with lenses of dark yellowish brown micritic dolomite		
1555.0	1620				8.1	1415	550					White to light gray moderately indurated fossiliferous limestone (wackestone)		



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 43 OF 68.

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log		
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)					
1560.0	1625			193										
1565.0	1630													
1570.0	1635			194										
1575.0	1640				8.3	1348	388							
1580.0	1645			195										
1585.0	1650													
1590.0	1655			196										
1595.0	1660													

White to light gray moderately indurated fossiliferous limestone (wackestone) (continued)

White to light gray poorly indurated fossiliferous limestone (wackestone/packstone) with lenses of light gray moderately indurated dolomite

Light gray moderately indurated fossiliferous limestone (packstone)

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\INT\TYCIPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 44 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1600.01665				197									
1605.01670													
1610.01675				198						Light gray moderately indurated fossiliferous limestone (packstone) <i>(continued)</i>			
1615.01680					8.2	455	200						
1620.01685				199									
1625.01690													
1630.01695				200						Pale brown to brown moderately indurated dolomitic limestone with moldic porosity			
1635.01700										Gray very well indurated chert with a marble like texture			
					8.3	488	113			Brownish yellow well indurated dolomitic limestone			

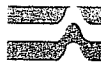
GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ







# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 47 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1715.0	1780									Light gray poor to moderately indurated calcareous sandstone interbedded with light gray silty clay ( <i>continued</i> )		
1720.0	1785			209								
1725.0	1790									Light yellowish brown poor to moderately indurated calcareously cemented fine grain quartz sandstone with trace amounts of soft white gypsum crystals		
1730.0	1795			210						Light gray well indurated slightly vuggy fossiliferous limestone (wackestone/packstone)		
1735.0	1800				8.0	372	59			Light gray to gray well indurated limestone (mudstone) very low porosity		
1740.0	1805			211								
1745.0	1810									Light gray to very pale brown interbedded layers of poor to moderately indurated limestone (mudstone)		
1750.0	1815			212								

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\INT\CYPRESS LAKE WELLFIELD.GPJ





# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 48 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1755.0	1820									Light gray to very pale brown interbedded layers of poor to moderately indurated limestone (mudstone) (continued) Dark gray very well indurated dolomitic limestone		
1760.0	1825			213						Interbedded layers of gray well indurated dolomitic limestone with pale brown moderately indurated limestone		
1765.0	1830									Dark brownish gray dolomitic limestone Very pale brown moderately indurated limestone		
1770.0	1835			214								
1775.0	1840				8.1	406	138			Light yellowish brown poor to moderately indurated limestone (wackestone/packstone)		
1780.0	1845			215								
1785.0	1850											
1790.0	1855			216						Dark brown well indurated micritic dolomite		

GTGS LOG - ARDAMAN ORLANDO.GDT - 8/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

BORING NO: DZMW  
TOTAL DEPTH: 2602.0 ft.  
SHEET 49 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
1795.01860										Dark brown well indurated micritic dolomite (continued)		
1800.01865				217						Interbedded layers of moderately indurated pale brown limestone (wackestone) with brown very well indurated micritic dolomite		
1805.01870										Pale brown moderately indurated dolomitic limestone		
1810.01875				218						Very pale brown poorly indurated limestone (wackestone) with some small void spaces		
1815.01880					8.1	2290	700					
1820.01885				219								
1825.01890					7.6	2670	695			Very pale brown poorly indurated limestone (wackestone)		
1830.01895												

QTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 16:29 - W:\PROJECTS\2008\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 50 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTCS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1835.01900				220							Very pale brown poorly indurated limestone (wackestone) (continued)		
1840.01905				221							Very pale brown poorly indurated limestone (wackestone) interbedded with brown very well indurated dolomitic limestone		
1845.01910													
1850.01915				222							Pale brown moderate to well indurated dolomitic limestone		
1855.01920					8.0	2930	1085						
1860.01925				223							Very pale brown poorly indurated limestone (wackestone/packstone)		
1865.01930					7.8	2280	1025						
											Light yellowish brown moderately indurated dolomitic limestone		



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 51 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1870.0	1935			224									
1875.0	1940												
1880.0	1945			225									
1885.0	1950												
1890.0	1955			226									
1895.0	1960				8.1	2650	870						
1900.0	1965			227									
1905.0	1970												
										Light yellowish brown moderately indurated dolomitic limestone (continued)			
										Interbedded layers of light yellowish brown moderately indurated dolomitic limestone with white poorly indurated limestone			



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 52 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
1910.0	1975			228									
1915.0	1980												
1920.0	1985			229									
1925.0	1990												
1930.0	1995			230									
1935.0	2000				8.0	2760	915						
1940.0	2005			231									
1945.0	2010												

Interbedded layers of light yellowish brown moderately indurated dolomitic limestone with white poorly indurated limestone (continued)

Light yellowish brown moderately indurated dolomite

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# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 53 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)				Hydrogen Sulfide (mg/L)
1950.02015				232						Light yellowish brown moderately indurated dolomite ( <i>continued</i> )		
1955.02020												
1960.02025				233						Light gray poorly indurated limestone (mudstone) High reaction to 10% HCL At 2030' bls the composition becomes a mixture of 55-60% calcite matrix with a 40-45% dolomite crystals		
1965.02030												
1970.02035				234								
1975.02040					8.1	2710	1170					
1980.02045				235						Light yellowish brown moderately indurated dolomite with some interbedded layers of light gray poorly indurated limestone (mudstone)		
1985.02050												

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# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 57 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)				Hydrogen Sulfide (mg/L)
2105.02170					7.7	19400	8002					
2110.02175				248						Light gray well indurated well indurated dolomite		
2115.02180												
2120.02185				249						Light gray poor to moderately indurated limestone (mudstone)		
2125.02190												
2130.02195				250						Pale brown moderately indurated dolomitic limestone		
2135.02200					7.6	20000	8000					
2140.02205										Brown very well indurated dolomite with few to no pore spaces Some chert like properties and succhroidal texture		

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 58 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2145.02210				251							Brown very well indurated dolomite with few to no pore spaces Some chert like properties and succhroidial texture ( <i>continued</i> )		
2150.02215				252							Pale brown very well indurated dolomite Succhroidial texturing		
2155.02220													
2160.02225				253									
2165.02230													
2170.02235				254							Pale brown to gray chert and dolomite Chert has slight conchoidal fracturing with cryptocrystalline structuring From 2250-2260' bls noted trace amounts of black organics (peat)		
2175.02240					7.6	20000	8000						

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 59 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTCS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (µS/cm)	Chloride (mg/L)	Sulfate (mg/L)				Hydrogen Sulfide (mg/L)
2180.02245				255								
2185.02250					7.6	48000	8000					
2190.02255				256								
2195.02260					7.5	49500	8000					
2200.02265				257								
2205.02270												
2210.02275				258								
2215.02280					7.5	48000	8000					

Pale brown to gray chert and dolomite

Chert has slight conchoidal fracturing with cryptocrystalline structuring

From 2250-2260' bls noted trace amounts of black organics (peat)  
(continued)

Interbedded layers of moderately indurated gray dolomite with gray dolomitic limestone

Becomes less indurated around 2280' bls



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 60 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

GTSS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
2220.02285				259						interbedded layers of moderately indurated gray dolomite with gray dolomitic limestone  Becomes less indurated around 2280' bls ( <i>continued</i> )		
2225.02290												
2230.02295				260								
2235.02300										Pale brown poorly indurated limestone (wackestone)  Reacts vigorously in 10% HCL  Depth of 2300' bls noted interbedded lenses of poorly indurated limestone (mudstone) with laminations of black organics		
2240.02305				261								
2245.02310												
2250.02315				262						Very pale brown poorly indurated limestone (wackestone)  Becomes more moderately indurated at 2320' bls		
2255.02320					7.5	49000	8000					



# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 61 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2260.02325				263									
2265.02330													
2270.02335				264									
2275.02340													
2280.02345				265									
2285.02350													
2290.02355				266									
2295.02360													

Very pale brown poorly indurated limestone (wackestone)  
 Becomes more moderately indurated at 2320' bls (continued)

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 62 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2300.02365				267	7.5	47500	8000				Light grayish brown moderately indurated dolomitic limestone		
2305.02370													
2310.02375				268									
2315.02380													
2320.02385				269							Gray moderately indurated dolomitic limestone interbedded with pale brown poorly indurated limestone		
2325.02390													
2330.02395				270							Pale brown, poorly indurated, limestone (grainstone - grains are composed cemented calcite crystals) Noted trace amounts of white soft anyhdrite at 2400'		

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 63 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)				Hydrogen Sulfide (mg/L)
2335.02400					7.6	48500	8000					
2340.02405				271								
2345.02410										Pale brown, poorly indurated, limestone (grainstone - grains are composed cemented calcite crystals) Noted trace amounts of white soft anhydrite at 2400' (continued)		
2350.02415				272								
2355.02420												
2360.02425				273								
2365.02430										Dark gray, moderate to well indurated, dolomitic limestone with saccharoidal texture Thin lenses of white crystals (possible anhydrite)		
2370.02435				274								

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# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 64 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data						Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2375.02440					7.6	48000	8000				Dark gray, moderate to well indurated, dolomitic limestone with saccharoidal texture		
											Thin lenses of white crystals (possible anhydrite) (continued)		
2380.02445				275									
2385.02450											Pale brown to gray moderately indurated limestone with trace amounts of white poorly indurated anhydrite		
2390.02455				276									
2395.02460													
2400.02465				277							Gray poorly indurated limestone (mudstone/wackestone)		
2405.02470													
2410.02475				278							Gray poorly indurated limestone (mudstone) Interbedded with gray clay (CL)		

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# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 65 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2415.02480					7.6	47000	8000				Gray poorly indurated limestone (mudstone) Interbedded with gray clay (CL) <i>(continued)</i>		
2420.02485				279									
2425.02490													
2430.02495				280									
2435.02500													
2440.02505				281									
2445.02510													
2450.02515													

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# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 66 OF 68

**TETRA TECH, INC.**

**PROJECT** Cypress Lake Wellfield

**FILE NO.** 06-072

**CLIENT** Tetra Tech

**ELEVATION** 65.0 Estimated

**BORING LOCATION** N 562316.22; E 1367070.6

**BORING TYPE** Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)				
2455.02520				282							Light gray poorly indurated limestone (mudstone) <i>(continued)</i>		
2460.02525				283	7.5	40500	8000						
2465.02530													
2470.02535				284							Light gray poorly indurated limestone (mudstone/wackestone) interbedded with trace amounts of gray clay (CL)		
2475.02540													
2480.02545				285									
2485.02550													

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ



# GEOLOGIC LOG



Ardaman & Associates, Inc.  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 67 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

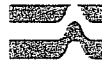
BORING TYPE Mud Rotary/Reverse Air

Elevation	Depth (ft)	Lithology Related Data		Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log	
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)				Hydrogen Sulfide (mg/L)
2490.02555				286						Light gray poorly indurated limestone (mudstone/wackestone) Interbedded with trace amounts of gray clay (CL) (continued)		
2495.02560												
2500.02565				287	7.6	45000	8000					
2505.02570												
2510.02575				288								
2515.02580												
2520.02585				289								
2525.02590												

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# GEOLOGIC LOG



**Ardaman & Associates, Inc.**  
Geotechnical, Environmental and  
Materials Consultants

**BORING NO:** DZMW  
**TOTAL DEPTH:** 2602.0 ft.  
**SHEET** 68 OF 68

TETRA TECH, INC.

PROJECT Cypress Lake Wellfield

FILE NO. 06-072

CLIENT Tetra Tech

ELEVATION 65.0 Estimated

BORING LOCATION N 562316.22; E 1367070.6

BORING TYPE Mud Rotary/Reverse Air

GTGS LOG - ARDAMAN ORLANDO.GDT - 9/19/08 15:29 - W:\PROJECTS\2006\06-072 CYPRESS LAKE WELLFIELD\GINT\CYPRESS LAKE WELLFIELD.GPJ

Elevation	Depth (ft)	Lithology Related Data			Field Chemistry Data					Soils Descriptions and Remarks	Depth (ft)	Graphic Log
		Date	Hardness	Sample Number	pH (units)	Specific Conductance (uS/cm)	Chloride (mg/L)	Sulfate (mg/L)	Hydrogen Sulfide (mg/L)			
2530.02595				290						Light gray poorly indurated limestone (mudstone/wackestone) Interbedded with trace amounts of gray clay (CL) <i>(continued)</i>		
2535.02600					7.5	43000	8000					
										BORING TERMINATED AT 2602.0 FEET BELOW GROUND SURFACE		