CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-01

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				CL: Pale Brown (10YR,6/3) SILTY CLAY
-1				
-2				
-3				
-4				
-5				Becomes Dark Yellowish-Brown (10YR,4/4) w/ abundant coarse sand sized claystone fragments, moist, stiff
-6				
-7			0	
-8				
-9			0	
-10				Becomes Very Dark Grayish Brown (10YR,3/2) with abundant Brownish Yellow (10YR,6/8) claystone fragments, very stiff
-11				
-12			0	Becomes Dk Olive Gray (5Y,3/2), Strong Odor
-13				
-14			0	Decreased claystone fragments
-15				Increased sand to gravel sized claystone fragments
-16			0	
-17				
-18				Becomes Very Dk Grayish-Brown (10YR,3/2), decreased odors
-19			20	CH: Very Dark Gray (2.5Y,4/3) to Black (2.5Y,2/1) CLAY w/trace claystone fragments, very strong odor, increased moisture content
-20				
-21			502	CLAYSTONE: Yellowish-Brown (10Y,5/4) & Lt Yellowish-Brown (2.5Y,6/3) SILTY CLAYSTONE, hard
-22			714	
-23				
-24			401	
-25				

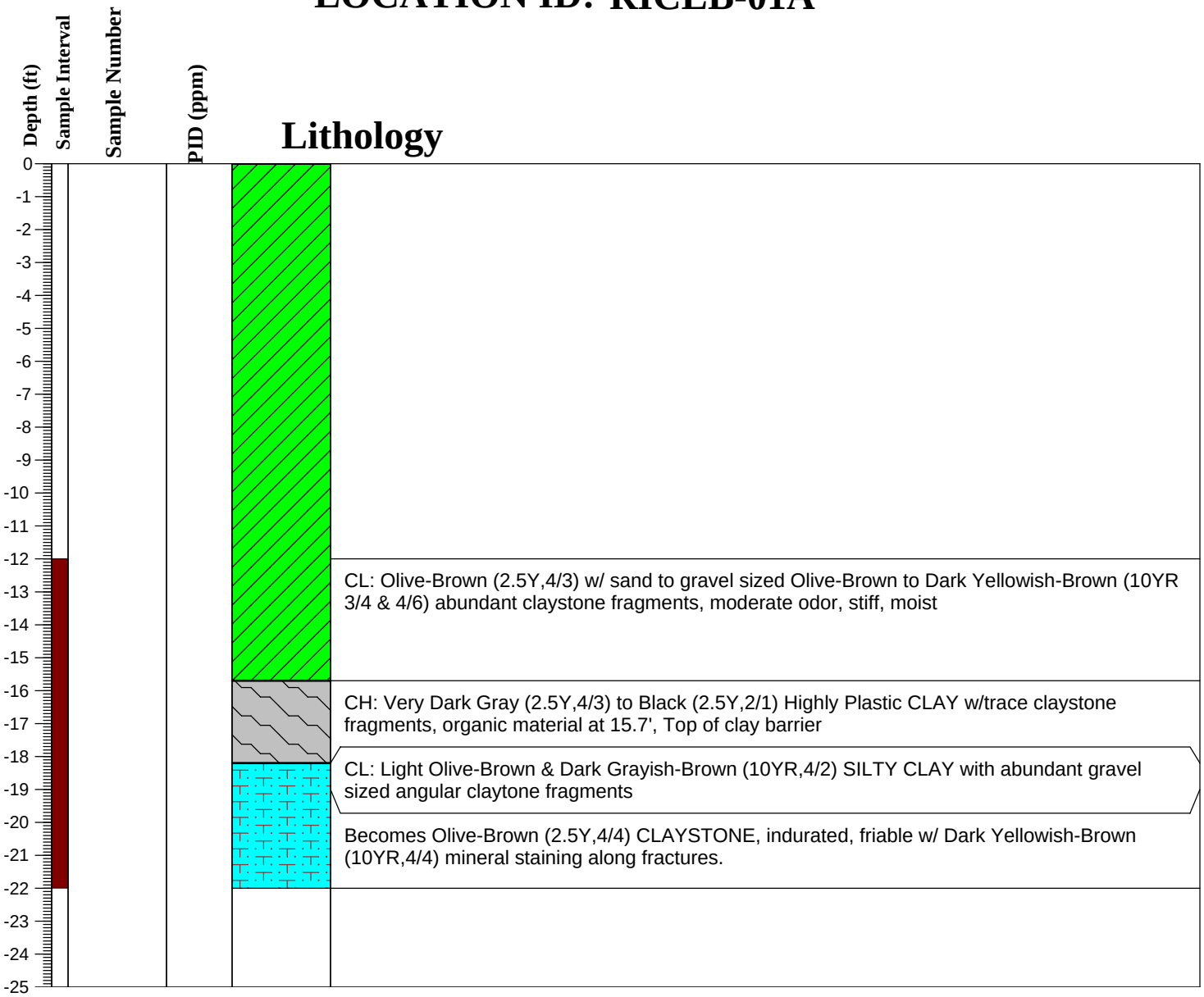
Total Depth= 24 **Groundwater not encountered**

URS

Date of Boring:	**10/14/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505894.1630**
Easting:	**1237385.128**
Elevation:	**533.48**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 18.8 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-01A



Total Depth= 22 feet **Groundwater not encountered**

URS

Date of Boring:	**10/15/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505894.16**
Easting:	**1237385.13**
Elevation:	**533.48**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 15.7 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-02

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				CL: Pale Brown (10YR,6/3) SILTY CLAY, with claystone fragments, dry, loose
-1				
-2				Becomes Olive-Brown (2.5Y,4/3) clay matrix with sand to cobble sized claystone clasts, moist, stiff
-3				
-4				
-5				faint odor
-6				
-7				
-8				
-9				
-10				odor becomes moderate, soils become medium stiff
-11				
-12				
-13				
-14				Becomes Dark Brown (10YR,3/3)
-15				
-16				Becomes Olive-Brown (2.5Y,4/3), moderate odor
-17				CH: Very Dark Gray (3/1), decreasing abundance & size of claystone fragments, very stiff
-18				
-19				fine root particles are apparent
-20				
-21				Becomes Light Olive-Brown (2.5Y,5/3) mottled with Very Dark Gray (10YR,3,1)
-22				
-23				
-24				
-25				

Total Depth= 22 feet **Groundwater not encountered**

URS

Date of Boring:	**10/14/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505898.3450**
Easting:	**1237349.2319**
Elevation:	**538.55**
Approved By:	**David Myers R.G. 7348**

Remarks: Clay barrier encountered at 16.8 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-03

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				CL: Pale Brown (10YR,6,3) SILTY CLAY w/ sand and gravel sized claystone fragments, soft, dry
-1				
-2				
-3				HDPE liner at 2.5 feet
-4				
-5				Becomes Light Olive-Brown (2.5 Y,5/4) Clay matrix with abundant Dk. Yellowish-Brown gravel sized claystone fragments, moist, stiff
-6				
-7				
-8				
-9				
-10				Becomes Very Dark Grayish-Brown (10YR,3/2) decreased size of claystone fragments to sand
-11				
-12				Increased size of claystone fragments
-13				Becomes Light Olive-Brown (2.5Y,5/4)
-14				
-15				
-16				Becomes Very Dark Grayish-Brown (10YR,3/2), faint to moderate odor, claystone fragments are sand to gravel size
-17				
-18				
-19				Thin lense of Light Olive-Brown (2.5Y, 5/4)
-20				
-21				
-22				
-23				Becomes Very Dark Grayish-Brown (10YR,3/2) increased moisture content
-24				
-25				

Total Depth= 34 feet **Groundwater not encountered**

URS

Date of Boring:	**10/15/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505912.6040**
Easting:	**1237251.8109**
Elevation:	**553.12**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 29.7 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-03

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
-25				
-26				Becomes Dark Gray (2.5Y,4/1), increased odors
-27				
-28				
-29				
-30				CH: Very Dark Gray (2.5Y,3/1) to Black (2.5Y,2/1) CLAY w/ trace claystone fragments, very stiff, contains very fine root fragments
-31				
-32				
-33				
-34				
-35				
-36				
-37				
-38				
-39				
-40				
-41				
-42				
-43				
-44				
-45				
-46				
-47				
-48				
-49				
-50				

Total Depth= 34 feet **Groundwater not encountered**

URS

Date of Boring:	**10/15/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505912.6040**
Easting:	**1237251.8109**
Elevation:	**553.12**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 29.7 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-04

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				Very Pale Brown (10YR,7/3) SILTY CLAY, with claystone fragments, dry, soft
-1				
-2				
-3				
-4				HDPE liner at 4.25'
-5				
-6				
-7				
-8				
-9				
-10				Becomes Brwn (10YR,5/3) clay matrix w/sand to gravel sized Lt Yellowish-Brown (10YR,6/3) and Dk. Yellowish-Brown (10YR,4/6) claystone fragments, moinst, stiff
-11				
-12				
-13				
-14				
-15				
-16				
-17				
-18				
-19				
-20				Becomes Dark Olive-Gray (5Y,3/2) moderate-strong odor, wiith some sand to gravel claystone fragments, stiff
-21				
-22			81	Becomes Olive-Gray (5Y,4/2) w/ cobble sized claystone fragments, stiff
-23				
-24				
-25				

Total Depth= 46 feet **Groundwater not encountered**

URS

Date of Boring:	**10/15/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505931.55**
Easting:	**1237183.81**
Elevation:	**565.44**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 41 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-04

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
-25				
-26			381	Becomes Black (5Y,2/1) w/ increased silt & some very fine sand, medium stiff, staiing, strong odor, decreased abundance of claystone fragments, claystone fragments are coarse sand sized to cobble sized, stained
-27			97	
-28				
-29			63	Becomes Dark Olive-Gray (5Y,3/2)
-30				
-31			0	
-32				
-33				
-34			35	Becomes Dark Gray (5Y,4/1) w/ fragments of green painted wood, increased odor, claystone fragments
-35				
-36				
-37			1160	Dark Grayish-Brown (2.5Y,4/2), very strong odor
-38				
-39				
-40				
-41			881	CH: Very Dark Gray (2.5Y3/0) to Black (2.5Y,2/1), CLAY with trace of sand sizes claystone fragments, very stiff, decreasing odor some minor organics
-42				
-43				
-44				
-45				
-46				
-47				
-48				
-49				
-50				

Total Depth= 46 feet **Groundwater not encountered**

URS

Date of Boring:	**10/15/04**
Geologist:	**Mark Wanek**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505931.55**
Easting:	**1237183.81**
Elevation:	**565.44**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 41 feet below ground surface
No samples collected for analytical testing

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-07

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				Auger drill to 30' bgs
-1				
-2				
-3				
-4				
-5				
-6				
-7				
-8				
-9				
-10				
-11				
-12				
-13				
-14				
-15				
-16				
-17				
-18				
-19				
-20				
-21				
-22				
-23				
-24				
-25				

Total Depth= 50 feet **Groundwater not encountered**

URS

Date of Boring:	**7/27/06**
Geologist:	**Dave Kubeczko**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505935.57**
Easting:	**1237189.97**
Elevation:	**565.40**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 42 feet below ground surface

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-07

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
-25				
-26				
-27				
-28				
-29				
-30			12.4	Dark grayish-brown CLAY (2.5Y/4/2) with scattered gray to light olive brown (2.5Y/5/1 to 2.5Y/5/6) cobble sized claystone clasts, slightly to moderately plastic, scattered Fe oxidation staining, slightly moist to moist, slight to strong chemical odor
-31			18.1	
			25.6	
-32			20.2	
			90.7	
-33			11.1	
			8.2	
-34			58.8	
			75.5	
-35			47.6	
			71.6	
-36			62.1	
			81.0	
-37			62.4	
			292	
-38			184	
-39				Very strong chemical odor
-40			1563	Dark gray-brown to very dark gray CLAY (2.5Y/4/2 to 2.5Y/3/1) with scattered cobble sized claystone clasts, scattered Fe oxidation staining, very strong chemical odor, slightly moist to moist, slightly to moderately plastic
			1885	
-41			1812	
			1558	
-42			1864	
			1440	Black (10YR/2/1) CLAY, highly plastic, very strong chemical odor, medium stiff, moist
-43				
-44			1516	
-45			37.5	
-46				
-47				
-48		SSS01042	23.5	
-49				
-50				

Total Depth= 50 feet **Groundwater not encountered**

URS

Date of Boring:	**7/27/06**
Geologist:	**Dave Kubeczko**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505935.57**
Easting:	**1237189.97**
Elevation:	**565.40**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 42 feet below ground surface

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-08

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				Auger drill to 18' bgs
-1				
-2				
-3				
-4				
-5				
-6				
-7				
-8				
-9				
-10				
-11				
-12				
-13				
-14				
-15				
-16				
-17				
-18			6.5	Brown to dark gray-brown (10YR/4/3 to 2.5Y/4/2) with light yellow-brown to olive-yellow (2.5Y/6/4 to 2.5Y/6/8) coarse sand to gravel sized claystone clasts, slightly plastic, medium stiff, very slight chemical odor
-19			5.8	
-20			19.3	
-21			6.5	Dark gray-brown CLAY (2.5Y/4/2) with coarse sand to gravel sized claystone clasts, medium stiff to stiff, slightly plastic, slight chemical odor, moist
-22		SSS01041	2.1	Contact between overlying fill and clay barrier material
-23				
-24			0.2	Black CLAY (10YR/2/1), highly plastic, medium stiff to stiff, slight chemical odor, moist
-25			0.0	

Total Depth= 29.5 feet **Groundwater not encountered**

URS

Date of Boring:	**7/28/06**
Geologist:	**Dave Kubeczko**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505902.35**
Easting:	**1237309.05**
Elevation:	**543.91**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 22 feet below ground surface

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-08

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
-25				
-26				
-27			0.0	
-28				
-29				
-30				
-31				
-32				
-33				
-34				
-35				
-36				
-37				
-38				
-39				
-40				
-41				
-42				
-43				
-44				
-45				
-46				
-47				
-48				
-49				
-50				

Total Depth= 29.5 feet **Groundwater not encountered**

URS

Date of Boring:	**7/28/06**
Geologist:	**Dave Kubeczko**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505902.35**
Easting:	**1237309.05**
Elevation:	**543.91**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 22 feet below ground surface

CASMALIA REMEDIAL INVESTIGATION
SOIL BORING LOG
LOCATION ID: RICLB-09

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	Lithology
0				Auger drill to 15' bgs
-1				
-2				
-3				
-4				
-5				
-6				
-7				
-8				
-9				
-10				
-11				
-12				
-13				
-14				
-15			7.8	Brown to dark gray-brown (10YR/4/3 to 2.5Y/4/2) with light yellow-brown to olive-yellow coarse sand to gravel sized claystone clasts (2.5Y/6/4 to 2.5Y/6/8) slightly plastic, medium stiff, moist, very slight chemical odor
-16				
-17			12.9	
-18				
-19			8.1 8.9	Black CLAY (10YR/2/1), highly plastic, medium stiff, slight chemical odor, moist
-20				
-21			463	
-22				
-23		SSS01040	45.7 0.8	
-24				
-25			0.5	

Total Depth= 25.5 feet **Groundwater not encountered**

URS

Date of Boring:	**7/28/06**
Geologist:	**Dave Kubeczko**
Drilling Company:	**Gregg Drilling**
Drilling Rig Used:	**Marl M5T "Rhino"**
Drilling/Sampling Method:	**6-inch Hollow Stem Auger/Continuous Core**
Northing:	**505899.29**
Easting:	**1237345.90**
Elevation:	**538.58**
Approved By:	**David Myers R.G. 7348**

Remarks: Top of clay barrier encountered at 18.8 feet below ground surface