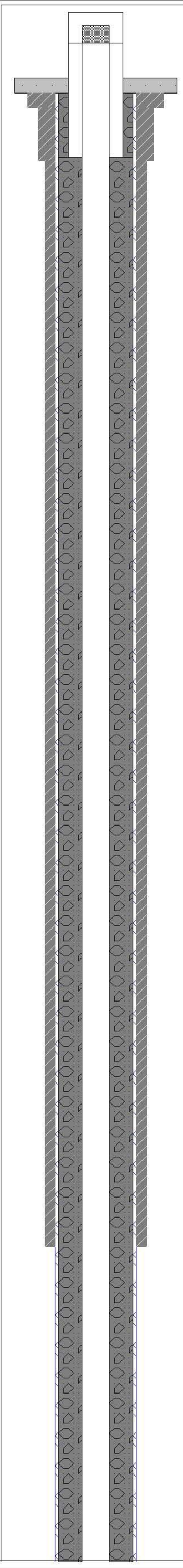
Client	Westinghouse Electric Company	Drilling Method:	Rotary
Location:	Hematite, MO	Surf. Elev.	435.53
Project:	Hematite Remedial Investigation	Northing:	865539.77
Date Started:	08/12/04	Easting:	826977.29
Date Finished:	08/31/04	Total Depth of Boring:	178.3 feet
Geologist:	T. Calhoun	Top of Casing:	438.11
Drilling Contractor:	Geotechnology	Total Depth of Well:	178.5 feet

Boring: BR-12-RB

Elevation (ft)	Depth (ft)	Core Recovery (Pen/Rec)	RQD	Fracture Frequency	Lithology Description
435	0				OVERBURDEN: Drilled without sampling
430	5				
425	10				
420	15				
415	20				Top of Bedrock 22.0'
410	25				Began Coring
		3.9/3.9	0	2	DOLOMITE: gray to brown, hard slightly weathered, pitted, fractured and broken throughout
405	30				DOLOMITE: gray, very hard, micritic wavy green shale laminae 31.7-35.3' wavy gray shale laminae 35.3' broken 36.9-37.0'
		10.0/10.0	88	0	
400	35				
					NO SAMPLE: 10" air rotary
395	40				DOLOMITE: gray, very hard, silty w/occasional gray shale laminae cherty 46.3-47.2' sandy 47.4-47.9' green shale 57.9-58.1'
		8.9/8.9	64	0	
390	45				
	50				



Well Construction Desc.

- Protective Casing (4")
- 2.0' x 2.0' x 0.5' Concrete Pad
- 2" Sch 80 PVC Riser
- 6" Steel Isolation Casing
- Portland Cement
- High Solids Bentonite Grout (Tremied)
- High Solids Bentonite Grout (Tremied)

Westinghouse

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, MO 63028

SAIC
An Employee-Owned Company

SAIC
8421 St. John Industrial Drive
St. Louis, Missouri

Client:	Westinghouse Electric Company
Project:	Hematite Remedial Investigation
Location:	Hematite, MO
Borehole:	BR-12-RB
Sheet:	1 of 4

Client	Westinghouse Electric Company	Drilling Method:	Rotary
Location:	Hematite, MO	Surf. Elev.	435.53
Project:	Hematite Remedial Investigation	Northing:	865539.77
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Boring: BR-12-RB

Elevation (ft)	Depth (ft)	Core Recovery (Pen/Rec)	RQD	Fracture Frequency	Lithology	Lithology Description	Well Construction	Well Construction Desc.
385, 380	50, 55	10.0/10.0	91	0				
375, 370	60, 65	10.0/10.0	91	0		DOLOMITE: gray, very hard, med. grained, crystalline, turbid, sandy DOLOMITE: gray, hard, fine-grained green shale laminae 61.4-62.3' sandy 66.0-66.6		High Solids Bentonite Grout (Tremied)
365, 360	70, 75	10.0/10.0	86	0		DOLOMITE: gray, very hard, sandy, cherty DOLOMITE: gray, very hard, fine-grained broken shale 72.4-72.5' green shale laminae 73.0-76.0' black shale laminae 76.0-79.1' styolites 80.9-81.1' green shale laminae 83.2-84.6' chert 85.8-86.0' wavy green and gray shale laminae 88.7-91.3' cherty 92.3-92.9'		
355, 350	80, 85	10.0/10.0	83	0				
345, 340	90, 95	10.0/10.0	87	0		DOLOMITE: gray, very hard, sandy, pitted/vuggy		High Solids Bentonite Grout (Tremied)
	100							

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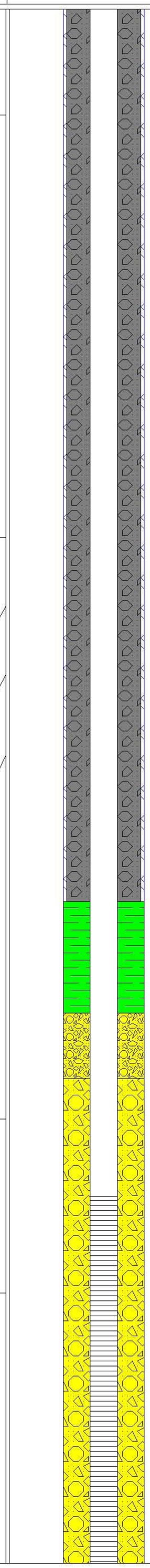
Client:	Westinghouse Electric Company
Project:	Hematite Remedial Investigation
Location:	Hematite, MO
Borehole:	BR-12-RB
Sheet:	2 of 4

Client	Westinghouse Electric Company	Drilling Method:	Rotary
Location:	Hematite, MO	Surf. Elev.	435.53
Project:	Hematite Remedial Investigation	Northing:	865539.77
Date Started:	08/12/04	Easting:	826977.29
Date Finished:	08/31/04	Total Depth of Boring:	178.3 feet
Geologist:	T. Calhoun	Top of Casing:	438.11
Drilling Contractor:	Geotechnology	Total Depth of Well:	178.5 feet

Boring: BR-12-RB

Elevation (ft)	Depth (ft)	Core Recovery (Pen/Rec)	RQD	Fracture Frequency	Lithology	Lithology Description	Well Construction	Well Construction Desc.
335, 330, 325, 320, 315, 310, 305, 300, 295, 290	100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150	10.0/10.0	94	0		DOLOMITE: gray, very hard, micritic green shale 106.0-106.8' chert 106.8-107.0' cherty 113.9-114.5'		High Solids Bentonite Grout (Tremied)
		10.0/10.0	95	0		DOLOMITE: gray, very hard, silty to sandy 45" fracture 118.7-118.9' green shale 119.1-119.3'		
		10.0/10.0	72	0		DOLOMITE: gray, very hard, sandy, burrowed healed vertical fracturing 120.0-120.5' DOLOMITE: gray, very hard, silty, cherty, green shale laminae 122.0-122.2' chert 122.2-122.6',123.3-123.4',123.8-123.9'		
		10.0/10.0	93	0		DOLOMITE: gray, very hard, sandy, pitted chert w/60º fractures 134.1-135.2'		0.25" Bentonite Pellets Secondary Filter Pack (100 Mesh)
		10.0/10.0	82	0		DOLOMITE: gray, very hard, fine-grained to silty w/wavy green shale laminae DOLOMITE: gray, hard to very hard, sandy, pitted/vuggy, cherty white chert 141.3-141.6' gray chert 141.8-142.1',144.5-144.8',145.2-145.3' pitted and vuggy 145.1-156.4' slightly friable 150.5-150.9'		Primary Filter Pack (10/20 Mesh) 2" Sch. 80 PVC Screen, 0.010" Slot



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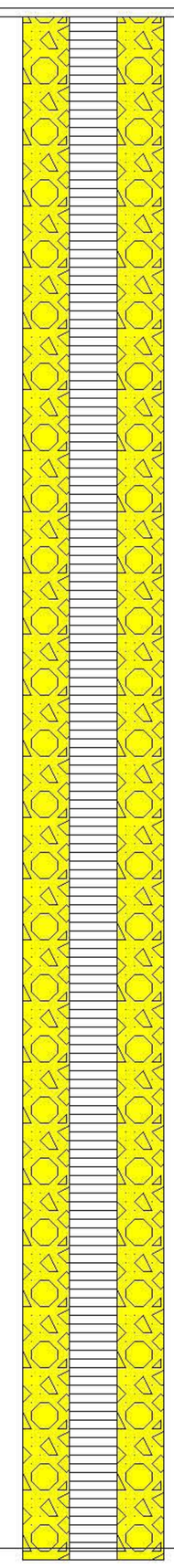
Client:	Westinghouse Electric Company
Project:	Hematite Remedial Investigation
Location:	Hematite, MO
Borehole:	BR-12-RB
Sheet:	3 of 4

Client	Westinghouse Electric Company	Drilling Method:	Rotary
Location:	Hematite, MO	Surf. Elev.	435.53
Project:	Hematite Remedial Investigation	Northing:	865539.77
Date Started:	08/12/04	Easting:	826977.29
Date Finished:	08/31/04	Total Depth of Boring:	178.3 feet
Geologist:	T. Calhoun	Top of Casing:	438.11
Drilling Contractor:	Geotechnology	Total Depth of Well:	178.5 feet

Boring: BR-12-RB

Elevation (ft)	Depth (ft)	Core Recovery (Pen/Rec)	RQD	Fracture Frequency	Lithology	Lithology Description	Well Construction	Well Construction Desc.
285, 280, 275, 270, 265, 260, 255, 250, 245, 240	150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200	10.0/10.0	79	1				
		10.0/10.0	57	0		DOLOMITE: gray, very hard, sandy, turbid DOLOMITE: gray, very hard, silty green shale laminae 163.0-164.8' cherty 164.8-165.0' gray shale/cherty conglomerate 165.9-166.2' soft shale 170.3-170.4'		Primary Filter Pack (10/20 Mesh)
		10.0/10.0	5	0		SANDSTONE: buff, hard, medium-grained DOLOMITE: gray, very hard, silty to sandy w/green shale laminae		2" Sch. 80 PVC Screen, 0.010" Slot
						Bottom of Hole 178.3'	Bottom of Well 178.5'	



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Client:	Westinghouse Electric Company
Project:	Hematite Remedial Investigation
Location:	Hematite, MO
Borehole:	BR-12-RB
Sheet:	4 of 4

Client	Westinghouse Electric Company, Hematitie, MO	Drilling Contractor:	IPS
Project:	Characterization of Soils Under Facility Buildings	Drilling Method:	Direct Push
Borehole	BLD240-01	Surf. Elev:	N/A
Date Started:	11/25/03	Northing:	N/A
Date Finished:	11/25/03	Easting:	N/A
Geologist:	T. Biggs	Total Depth of Boring:	34.5 feet

Elevation (ft)	Depth (ft)	Core Recovery (Pen/Rec)	RAD (Beta/Gamma)	PID (MIP)	PID (Conventional) (ppm) 0 75	Soil Density (tons/ft2)	Sample	Lithology	Lithology Description	USCS
			Bkgr= 70 - 110 / 21000 - 26500		Bkgrd= 0.0					
0	0						BLD240-01-concrete (0.0 - 0.8')		CONCRETE	
		4.0 / 3.0	80 / 25.4			1.5 - 2.5	BLD240-01-fill (0.8 - 1.1') BLD240-01-01 (1.1 - 2.0')		FILL: base coarse gravel CLAY: red, brown, gray moist, medium stiffness, silty w/gravel at top 1.0"	
-5	5	4.0 / 3.7	80 / 23.9			1.0 - 2.0			occasional sand grains softer, silty	
-10	10	4.0 / 4.0	80 / 25.57			1.0	BLD240-01-09 (9.0 - 10.0')			CH
		4.0 / 4.0	80 / 23.8			0.5 - 1.0			softer, silty, slightly wet	
-15	15	4.0 / 4.0	80 / 24.4			0.5 - 1.0			wet from 17.5-18.5'	
-20	20	4.0 / 3.0	80 / 23.9			0.5 - 1.0			soft, wet	
-25	25	4.0 / 1.0	60 / 23.5			0.5 - 1.0			CLAY: gray, moist, soft, silty SLOUGH: red, brown, wet	
									CLAY: gray, moist, soft, silty	CH
-30	30	4.0 / 1.0	60 / 23.6			0.5 - 1.5			SLOUGH	
							BLD240-01-31 (31.0 - 32.0')		CLAY: gray, moist, soft silty, fine sand	CH
		2.5 / 1.0	70 / 23.9			N/A			SLOUGH	
									GRAVEL: gray, moist to wet, clay, sandy	GP
-35	35								Bottom of Hole 34.5'	
-40	40									

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St. Louis, MO 63114

Client:	Westinghouse Electric Company
Site:	Hematite, MO
Project:	Characterization of Soils Under Facility Buildings
Borehole:	BLD240-01
Sheet:	1 of 1