APPENDIX B – BORING LOGS

APPENDIX B.1 BACKGROUND SOIL BORINGS

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11
13
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17
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19
20
22
-

Subsurface Boring Legend

Lithology Graphics

Symbol	Lithology
	Fill
	Top Soil
070707070 00000000 07007000 07007000	Gravel
0 0 0 0 9 8 8 0 8 8	Well Graded Gravel (GW)
0 0 0 0 9 0 0 0 0 0 0	Poorly Graded Gravel (GP)
	Silty Gravel (GM)
	Silty, Clayey Gravel (GC-GM)
	Clayey Gravel (GC)
	Well Graded Gravel with Silt (GW-GM)
	Well Graded Gravel with Clay (GW-GC)
	Poorly Graded Gravel with Silt (GP-GM)
	Poorly Graded Gravel with Clay (GP-GC)
••••	Well Graded Sand (SW)
	Poorly Graded Sand (SP)
	Silty Sand (SM)
	Silty, Clayey Sand (SC-SM)
	Clayey Sand (SC)
	Well Graded Sand with Silt (SW-SM)
$\boxed{\cdot \cdot \mathbb{Z}}$	Well Graded Sand with Clay (SW-SC)
	Poorly Graded Sand with Silt (SP-SM)
	Poorly Graded Sand with Clay (SP-SC)
	Silt (ML)
	Silty Clay (CL-ML)
	Lean Clay (CL)
	Organic Silt (OL)
	Elastic Silt (MH)
	Fat Clay (CH)
	Organic Clay (OH)
	Shale
$\begin{array}{c} \times \times \times \times \\ \times \times \times \times \\ \times & \times & \times \end{array}$	Siltstone
	Coal
	Limestone
· · · · · · · · · · · · · · · · · · ·	Sandstone

Other Graphics

Symbol	Description
	Denotes environmental analytical sample interval
	Denotes SS sample interval
	Denotes ST sample interval
	Denotes DP sample interval
	Denotes RS sample interval
	Denotes RC sample interval
Ā	First water level reading
Ţ	Second water level reading
 Co	mmon Abbreviations

Common Abbreviations

Abbreviation	Definition
DP	Direct Push
HA	Hand Auger
HSA	Hollow Stem Auger
N/A	Not Applicable
NR	Not Recorded
RC	Rock Core
RQD	Rock Quality Designation
RS	Rotary Sonic
SS	Split Spoon
ST	Shelby Tube
WH	Weight of Hammer
WR	Weight of Rod

General Notes

The boring logs include sample numbering used during drilling. For assigned Environmental Analytical Sample ID numbers, see relevant Environmental Chain-of- Custody forms from the drilling date range listed on each log.

For pH readings and additional field data, see applicable field documentation (e.g., Soil pH Data Form) from the drilling date range listed on each log.

Lithology Graphics are based on TVA drafting standards.



	lient F	Borehole	ID N/A		Stantec Borin	na N	• WBF	-BG01			
	lient			see Valley Authority	Boring Locati			50 N; 2,364,268	.87	E NAD27	Plant Local
		Number		·	Surface Eleva		-	Elevatio			
	-			DEC Order	Date Started		9/11/19	Comple			
	-	Locatio		ea Co, Spring City, Tennessee	Depth to Wat			Date/Til		N/A	<u> </u>
	-	or G.B			Depth to Wat	_		Date/Til		N/A	
	•	-		wkston (Subcontractor)	Drill Rig Type				110		
	-		-	Sampling Tools (Type and Size)			-		PV	C liners	
			-	ling Tools (Type and Size) N/A							
		•	•	and Size) N/A				Overdrill	De	pth N	I/A
s	ample	r Hamm	er Type	GH70 Direct Push Weight N/A	Drop _!	N/A		Efficiency		N/A	
В	oreho	le Azimu	th	N/A	Borehole Incl	inati	on (from	Vertical)	N/	A	
R	leview	ed By	E. Sm	ith	Approved By		C. Kocka				
	l	ithology			Overburden:	5	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	<u> </u>	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	706.8		Top of Hole							
		707.0		Topsoil, sandy		HA.	HA01	0.0 - 0.5		0.5	
- 1	1.0	705.8		SILTY SAND SOME CLAY, SM, 7.5YF	2.1/3 (brown)	$\left \right $			10		-
			 	fine, very loose, dry, with fragments of		<u>,</u>					
- 2			∦ †↓†↓			5/3.5-2	DP01	0.0 - 5.0	0.0	3.0	N/A
- 3			╽┫┹╡			01909	DI UI	0.0 - 0.0	5.0	5.0	-
			∐†Ĭ † Ĭ † Ĭ †Ì			1					
- 4			╟┇╽┇						((-
	5.0	701.8	↓↓↓↓↓						1 ((
- 5				SANDY LEAN CLAY TRACE GRAVE	L, CL, 10YR	1				1	_
- 6				5/6 (yellowish brown) and 10YR 4/1 (d	ark gray), low						-
				plasticity, soft, moist Well graded sand with fine gravel lens	from 5 2' to						
- 7				5.6'	10110.2 10	6.5/8.5			5.0		-
						-20190	DP02	5.0 - 10.0) - 10.0	3.5	N/A
- 8						0911					-
_s – 9									$ \rangle$		_
7/29/2	9.8	697.0							$ \rangle$		
- 10	0.0	001.0		SANDY LEAN CLAY, CL, 10YR 4/1 (d	ark gray), low	1				ł	_
T 20190				plasticity, soft to firm, moist	3 ,,,						
											-
ans 29 - 12						11.5/			$ \rangle$		_
						13.5-2	DP03	10.0 - 15.0	10.0 - 1	4.6	N/A
- 13	13.3	693.5				019091			5.0		-
TDEC				LEAN CLAY WITH SAND, CL, 10YR 4	1/4 (dark						
				yellowish brown) and 10YR 4/1 (dark g	gray), low						-
⁰⁵⁰⁸⁹⁹⁵² - 15			$\langle / / \rangle$	plasticity, firm, moist					[[_
L0G 17									$ \rangle$		_
9 - 10 - 11 - 12 - 1300 - 111 - 12 - 131 -			$\langle / / \rangle$								-
VA EIP E											
- 47-	1		<u> </u>							1	



Clie	t Borehole	IDN/A	Λ	Stantec Borin	g No	. WBF	-BG01			
Clie	nt	Tennes	see Valley Authority	Boring Location			60 N; 2,364,268	8.87	E NAD27	Plant Local
Proj	ect Number	175668	050	Surface Eleva	ation	706.8 ft	Elevatio	on E	Datum_N	IGVD29
	Lithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth F	t ³ Elevation	Graphic	Description	Rock Core:	F	RQD % Run Ft			Rec. Ft	Rec. %
- 17 - 18			LEAN CLAY WITH SAND, CL, 10YR 4 yellowish brown) and 10YR 4/1 (dark of plasticity, firm, moist <i>(Continued)</i>		16.5/18.5-20190911	DP04	15.0 - 20.0	15.0 - 20.0	5.0	N/A
- 19 - 20 <u>2(</u> - 21	.0 686.8		SANDY FAT CLAY, CH, 10YR 4/6 (da brown), medium plasticity, firm to soft,		-					-
- 22 - 23 - 24					21.5/23.5-20190911	DP05	20.0 - 25.0	20.0 - 25.0	5.0	N/A -
- 25 - 26 - 27					26.5/28.5-20	DP06	25.0 - 27.5	25.0 - 27.5	3.4	N/A
- 28 - 29 - 30			With fragments of weathered sandstor 30.7'	ne from 28.5' to	0190911	DP07	27.5 - 30.0	27.5 - 30.0	3.6	N/A _
- 31 - 32	.7 676.1		SANDY LEAN CLAY, CL, 10YR 4/2 (d brown), low to medium plasticity, soft,		31.5/33.5-	DP08	30.0 - 32.5	30.0 - 32.5	3.7	N/A
2000000 - 33 - 34 - 34 - 34 - 34	.8 672.0				20190911	DP09	32.5 - 35.0	32.5 - 35.0	3.7	N/A
- 35 - 36 - 36 - 36 - 36 - 36 - 37	.0 670.8		CLAYEY SAND, SC, 10YR 4/2 (dark g fine, very loose, wet SANDY LEAN CLAY, CL, 5YR 5/6 (ye and 10YR 4/1 (dark gray), very soft, w	llowish red)	36.5/38.	DP10	35.0 - 37.5	35.0 - 37.5	5.0	
- 38 - 38 - 39			POORLY GRADED SAND, SP, 10YR yellowish brown), very fine, very loose SILTY SAND, SM, 10YR 3/1 (very dar fine to fine, loose, wet, with organics, v 36.7' to 40.0'	, wetk gray), very	1.5-20190911	DP11	37.5 - 40.0	37.5 - 40.0	4.7	N/A

Stantec Consulting Services Inc.



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Client Tennessee Valley Authority Boring Location 446,082.60 N; 2,364,268.87 E NAD27 Plant Local Project Number 175668050 Surface Elevation 706.8 ft Elevation Datum_NGVD29 Lithology Overburden: Sample ^{1/2} Depth Ft ³ Rec. Ft Blows/PSI Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Rec. % 40 41 41.2 665.6 HILL Graphic Mella GRADED SAND WITH GRAVEL, SW, 10YR DP12 40.0 - 44.4 4.4 N/A 42 42.1 664.7 664.7 5/2 (grayish brown), very fine to coarse, loose, wet, multicolored gravel DP12 40.0 - 44.4 4.4 N/A	Client Borehole ID	N/A	Stantec Boring	No. WBF	-BG01		
Project Number 175668050 Surface Elevation 706.8 ft Elevation Datum_NGVD29 Lithology Description Overburden: Sample ^{1/2} Depth Ft ³ Rec. Ft Blows/PSI Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. % 40 41.4 41.2 665.6 Httl Httl Rec. % Rec. % Rec. % 41 41.2 665.6 Httl Ketter Surface Elevation DP12 40.0 - 44.4 Mttl N/A 42 42.1 664.7 Ketter Surface Ravel, losse, wet, multicolored gravel DP12 40.0 - 44.4 Mttl N/A 43 44.4 662.4 Bedrock Refusal / Bottom of Hole at 44.4 Ft. Top of Rock = 42.1 Ft. Top of Rock = 42.1 Ft. Top of Rock Elevation = 664.7 Ft. 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody 2: a b,c denote Split Spoon divided between Environmental and Geotechnical Samples 2: a b,c deno	-					7 E NAD27	Plant Local
Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Rec. % 40 41 41.2 665.6 41.1 41.2 665.6 41.4 Run Ft Rec. Ft Rec. % 42 42.1 664.7 664.7 5/2 (grayish brown), very fine to coarse, loose, wet, multicolored gravel DP12 40.0 - 44.4 4.4 N/A 43 44 44.4 662.4 Bedrock Refusal / Bottom of Hole at 44.4 Ft. Top of Rock = 42.1 Ft. Top of Rock Elevation = 664.7 Ft. 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody 2: a b,c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface	Project Number17	5668050	-		Elevation	Datum_I	NGVD29
40 41 41.2 665.6 665.6 664.7 WELL GRADED SAND WITH GRAVEL, SW, 10YR 42 42.1 664.7 664.7 5/2 (grayish brown), very fine to coarse, loose, wet, multicolored gravel DP12 40.0 - 44.4 4.4 N/A 43 44.4 662.4 Bale, dark green gray and dark gray red, soft to moderately hard, laminated, highly weathered, moist to dry, glaucontitic DP12 40.0 - 44.4 4.4 N/A Bedrock Refusal / Bottom of Hole at 44.4 Ft. Top of Rock = 42.1 Ft. Top of Rock = 42.1 Ft. Top of Rock Elevation = 664.7 Ft. 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody 2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
41 41.2 665.6 WELL GRADED SAND WITH GRAVEL, SW, 10YR 42 42.1 664.7 52 (grayish brown), very fine to coarse, loose, wet, multicolored gravel DP12 40.0 - 44.4 4.4 N/A 43 44.4 662.4 Shale, dark green gray and dark gray red, soft to moderately hard, laminated, highly weathered, moist to dry, glauconitic DP12 40.0 - 44.4 4.4 N/A 44 44.4 662.4 Shale, dark green gray and dark gray red, soft to moderately hard, laminated, highly weathered, moist to dry, glauconitic DP12 40.0 - 44.4 4.4 N/A 44 462.4 Or dry, glauconitic Bedrock Refusal / Bottom of Hole at 44.4 Ft. Top of Rock = 42.1 Ft. Top of Rock Elevation = 664.7 Ft. 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody Geotechnical Sample Custody Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface Split Spoon divided between Environmental and Geotechnical Samples Speths are reported in feet below ground surface	Depth Ft ³ Elevation Gra	ohic Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
	Depth Ft ³ Elevation Gra 40 41 41.2 665.6 42 42 42.1 664.7 43 44 44 44.4 662.4 1 1 1 2 3 1 1 1	 WELL GRADED SAND WITH GRAV 5/2 (grayish brown), very fine to coar multicolored gravel Shale, dark green gray and dark gra moderately hard, laminated, highly w to dry, glauconitic Bedrock Refusal / Bottom of Hole at 44.4 Ft. Top of Rock = 42.1 Ft. Top of Rock Elevation = 664.7 Ft. E = Environmental Sample Custody (two S G = Geotechnical Sample Custody a,b,c denote Split Spoon divided between I Depths are reported in feet below ground s 	Rock Core: /EL, SW, 10YR rse, loose, wet, y red, soft to veathered, moist plit Spoons may be re Environmental and Ge	RQD %	Run Ft 40.0 - 44.4	Rec. Ft	Rec. %
							-



C	lient F	Borehole	ID N/A	Λ	Stantec Borir	na No	WBF	-BG03		
	lient			see Valley Authority	Boring Locati				94 E NAD27	' Plant Local
		Number			Surface Eleva					
	-			DEC Order	Date Started		9/4/19	Complete		
	-	-		ea Co, Spring City, Tennessee	Depth to Wat		N/A	Date/Tim	-	
	-		-	Logger G. Budd	Depth to Wat		N/A	Date/Tim	-	
				wkston (Subcontractor)	Drill Rig Type		ID Geop			
	-			Sampling Tools (Type and Size)					VC liners	
R	ock D	rilling and	d Sampl	ling Tools (Type and Size)						
0	verdri	ll Tooling	(Type a	and Size) <u>N/A</u>				Overdrill [Depth	N/A
S	ample	er Hamme	er Type	GH70 Direct Push Weight N/A	Drop			Efficiency	N/A	
		le Azimut		N/A	Borehole Incl			Vertical)	N/A	
R	eview	ed By _	E. Sm	hith	Approved By	C	C. Kocka			
	L	ithology			Overburden:	Sa	ample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	704.0		Top of Hole		-				
	1.0	703.0		Topsoil		HA4	HA01	0.0 - 0.5	0.5	
- 1	1.0	705.0		SANDY LEAN CLAY, CL, 7.5YR 5/6 (s	strona brown)					_
- 2				and 7.5YR 6/1 (gray), firm, dry to mois		1.5/3				-
				manganese		.5-2019	DP01	0.0 - 5.0	4.7	N/A
- 3						90904		, c		-
- 4						$ \Pi $				-
- 5									555	_
- 6										-
						0				
- 7						5/8.5-2	DDOO	F 0 10 0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-
- 8						201909	DP02	5.0 - 10.0	5.0	N/A
	9.0	695.0				4				
- 9	9.5	694.5		_ POORLY GRADED SAND WITH CLA	Y. SP-SC.	111				-
<u>ୟ</u> – 10	10.0	694.0		7.5YR 5/6 (strong brown), fine, very lo	/					_
3DT 4/3			\therefore	POORLY GRADED SAND, SP, 7.5YR	5/6 (strong					
00000 11 - 11				brown), fine, very loose, moist]					-
8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				POORLY GRADED SAND WITH CLA		11.5/1		-		-
UBSUR				7.5YR 5/6 (strong brown), fine, very lo dry	ose, moist to	3.5-20	DP03	10.0 - 15.0	4.3	N/A
°⊒⊏ 13				aly .		19090			5	-
_{до} . на – 14			\cdots			4				-
Ĕ ₩ ₩			\cdots						HH I	_
m ⁻ 09089 - 16			\cdots							
01			\cdots			-			K(()	-
90 97 97 97 97 97			\therefore			3.5/18.		Ę	5	-
- 10			\cdots			5-2019	DP04	15.0 - 20.0	4.0	N/A
≝ – 18 ≰			··//			0904)))]	



Client I	Borehole	ID N/A		Stantec Borin	ig No	D. WBF	-BG03			
Client		Tennes	see Valley Authority	Boring Location			43 N; 2,365,157	.94 E	E NAD27	Plant Local
Project	Number	1756680	050	Surface Eleva	ation	704.0 ft	Elevatio	n D	atum_1	NGVD29
	Lithology			Overburden:	s	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 19 - 20 - 21 - 22 - 23 - 23 - 24 - 23 - 23 - 24 - 23 - 23 - 24 - 25 - 25 - 25 - 26 - 27 - 28 - 28 - 28 - 28 - 29 - 30 - 31 - 32 - 33 - 34 - 34 - 34	684.0 679.8 679.0 675.5 674.0 669.1		WELL GRADED SAND WITH CLAY 3 GRAVEL, SW-SC, 10YR 4/4 (dark ye very fine to coarse, very loose, wet, n gravel, clay content decreases with d SANDY LEAN CLAY, CL, 10YR 4/4 (brown), low plasticity, very soft, wet POORLY GRADED SAND WITH CLA 10YR 4/4 (dark yellowish brown), fine WELL GRADED SAND WITH CLAY M SW-SC, 10YR 4/4 (dark yellowish bro coarse, wet, fine to coarse, multicolor WELL GRADED SAND WITH GRAVI 4/4 (dark yellowish brown), very fine t wet	llowish brown), nulticolored epth dark yellowish AY, SP-SC, , loose, wet WITH GRAVEL, wn), fine to ed, gravel EL, SW, 10YR	21.5/23.5-20190904 26.5/28.5-20190904 31.5/33.5-20190904	DP05 DP06 DP07	20.0 - 25.0 25.0 - 30.0 30.0 - 35.0	20.0 - 25.0 25.0 - 30.0 30.0 - 35.0	5.0	N/A N/A
		G = 2: a,b,c 3: Dept	Shale, dark green gray, soft, weather glauconitic No Refusal / Bottom of Hole at 35.0 Ft. Top of Rock = 34.9 Ft. Top of Rock Elevation = 669.1 Ft. Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su o sample (0.0/0.5-20190904) sampled u	lit Spoons may be n nvironmental and G				nple)		



С	lient E	Borehole	ID N/A	N N	Stantec Borin	ig No	WBF	-BG04			
	lient				Boring Locati				2.21	E NAD27	Plant Local
P	roject	Number		· · ·	Surface Eleva		-				
	-	-			Date Started		9/6/19	 Comple	eted	9/6/19)
	-	Location		-	Depth to Wate		N/A	Date/Ti			
	-	or G. Bu			Depth to Wate		N/A	Date/Ti	me	N/A	
D	rilling	Contract	or Hav		Drill Rig Type	and	ID Geop	probe 3230DT			
0	verbu	rden Drill	ing and	Sampling Tools (Type and Size)_	DT37 Dual Tub	e Soil	Sampling	System w/ 60"	line	rs	
		-	•	ling Tools (Type and Size) <u>N/A</u>							
		-		and Size)				Overdrill		·	I/A
	•		• •	GH70 Direct Push Weight N/A	Drop _!			Efficiency		N/A	
		le Azimut			Borehole Incli			Vertical)	N/.	A	
	eview	ed By _	S. Bol	den	Approved By		. Kocka				
		_ithology			Overburden:	Sa	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	704.1		Top of Hole		Ξ		00.05		0.5	
				Topsoil, sandy		P.,	HA01	0.0 - 0.5		0.5	
- 1	1.5	702.6	ijijij								-
- 2				SANDY LEAN CLAY, CL, 7.5YR 5/6 (st		1.5/3.5-			0.0		-
- 3			//	and 7.5YR 6/1 (gray), firm, dry, with sor manganese	ne	20190	DP01	0.0 - 5.0) - 5.0	3.7	N/A
3				5		906					-
- 4			//								-
- 5									[[_
			//								
- 6											-
- 7			\square			6.5/8.5			5.		-
						;-20190	DP02	5.0 - 10.0	0 - 10.0	5.0	N/A
- 8			//			906(-
- 9											-
- 10	10.0	694.1	\square								_
			//	SANDY LEAN CLAY, CL, 10YR 4/6 (da	-						
The BORINGLOOG 17660.00016.001 17309 17319 17319 T				brown), low plasticity, firm, moist, sand with depth	increasing		DP03	10.0 - 12.5	10.0 - 1	3.2	N/A
- 12 - 12				mar dopar		11.5/13			2.5		-
3F DT 21						3.5-201				ŧ l	
Hinsans - 13						90906			12.		-
⁸ ⊢ 14							DP04	12.5 - 15.0	5 - 15.(3.2	N/A
DER.GP											
ຊື – 15 ພ										1	-
[₽] ₩ – 16							DP05	15.0 - 17.5	15.0 -	3.0	N/A
- 98020 ⁻						16.5/	5100	10.0 - 17.0	17.5	0.0	
17 – 18 و						18.5-20				H	-
07 18)19090					-
^{bg} ⊒ – 19						6	DP06	17.5 - 20.0	⁷ .5 - 20	3.2	N/A
									Ö		



С	lient E	Borehole	ID N/A		Stantec Borin	g No	. WBF	-BG04				
C	lient		Tennes	see Valley Authority	Boring Location 447,467.30 N; 2,365,012.21 E NAD27 Plant Local							
P	roject	Number	175668	050	Surface Eleva	ation	704.1 ft	Elevatio	on E	Datum_N	NGVD29	
		ithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %	
- 20 - 21 - 22				SANDY LEAN CLAY, CL, 10YR 4/6 (or brown), low plasticity, firm, moist, sand with depth <i>(Continued)</i>	•	21.5/23.5-201	DP07	20.0 - 22.5	20.0 - 22.5	3.4	N/A -	
- 23 - 24	23.8	680.3		Wet at 23.0' CLAYEY SAND, SC, 10YR 5/6 (yellow fine, loose, wet	vish brown),	30606	DP08	22.5 - 25.0	22.5 - 25.0	3.6	N/A _	
- 25 - 26 - 27	25.0	679.1		CLAYEY SAND WITH CLAY, SC, 10Y (yellowish brown), fine, loose, wet, alte sand and sandy lean clay layers		26.5/28.5-2	DP09	25.0 - 27.5	25.0 - 27.5	5.0	– N/A –	
- 28 - 29 - 30						0190906	DP10	27.5 - 30.0	27.5 - 30.0 30	5.0	- N/A _	
- 31 - 32	31.2	672.9		WELL GRADED SAND WITH GRAVE 3/4 (dark reddish brown), very fine to o medium dense, wet, iron oxide stainin	coarse, loose to	31.5/33.5-201	DP11	30.0 - 31.2	.0 - 31.2 31.	1.8	N/A -	
- 33 - 34 - 35	33.5 35.0	670.6 669.1		gravel WELL GRADED SAND WITH GRAVE 5/4 (reddish brown), very fine to coars multicolored gravel	, ,	90906	DP12	31.2 - 35.0	2 - 35.0	3.0	N/A - -	
- 36 - 37	36.3 37.0	667.8 667.1		POORLY GRADED SAND TRACE CL 4/1 (dark gray), fine, loose, wet, trace clay Trace multicolored, subangular to sub	brown, sandy	-	DP13	35.0 - 37.0	35.0 - 37.0	2.0	N/A -	
EP BORING LOG 175668050_WFF_TDEC_ORDER.GPJ TDEC SUBSURF DT 20198330.GDT				from 36.0' to 36.3' Shale, dark green gray, soft to modera weathered, glauconitic Bedrock Refusal / Bottom of Hole at 37.0 Ft.	ately hard,						-	
050_WBF_TDEC_ORDEF			1 [.] F =	Top of Rock = 36.3 Ft. Top of Rock Elevation = 667.8 Ft. Environmental Sample Custody (two Spl	it Spoons may be r	requir	ed to obta	in sufficient san	nple)	-	
A EIP BORING LOG 1756681			G = 2: a,b,o 3: Dep	Geotechnical Sample Custody (wo op c denote Split Spoon divided between Er ths are reported in feet below ground su o sample (0.0/0.5-20190906) sampled us	nvironmental and G	•				,	-	



Clie	ent Bor	rehole	ID N/A	N N N N N N N N N N N N N N N N N N N	Stantec Borin	g No.	WBF-	BG05				
Clie				see Valley Authority	Boring Location 448,660.23 N; 2,364,859.47 E NAD27 Plant Local							
Pro	ject N	umber	175668		Surface Eleva		2.1 ft	Elevatio	on D	atum N	IGVD29	
	, oject Na			DEC Order	Date Started		9/19	_ Comple				
	-	ocatior		ea Co, Spring City, Tennessee	Depth to Wate			Date/Ti		-	07:57	
	-	G. Bi		Logger <u>G. Budd</u>	Depth to Wate		A	Date/Ti		N/A		
	•	-		wkston (Subcontractor)	Drill Rig Type				-			
	-			Sampling Tools (Type and Size)	0 71				liner	s		
			-	ling Tools (Type and Size) N/A								
Ove	erdrill ⁻	Tooling	(Type a	and Size) N/A				Overdrill	De	pth_ Ւ	I/A	
San	mpler I	Hamme	er Type	GH70 Direct Push Weight N/A	Drop _!	N/A		Efficiency	1	N/A		
Bor	rehole	Azimu	th	N/A	Borehole Incli	ination	(from \	/ertical)	N//	٩		
Rev	viewed	Ву_	S. Bol	den	Approved By	C. K	ocka					
	Lith	nology			Overburden:	Sam	ole ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Depth	Ft ³ El	evation	Graphic	Description	Rock Core:	RQI)%	Run Ft		Rec. Ft	Rec. %	
	0.0	712.1		Top of Hole								
				Topsoil		H A	A01	0.0 - 0.5		0.5		
- 1	1.5	710.6									-	
- 2				SILTY SAND SOME CLAY, SP-SM, 7.	5YR 5/6	1.5/					_	
				(strong brown), fine, dry		3.5-201	P01	0.0 - 5.0	0.0 - 6	4.7	N/A	
- 3						190909			5.0		-	
			 • • 									
- 4			ŀ ∶• ↓								-	
- 5			: : 						I W		_	
	6.0	706.1	 ·∶· 									
- 6	0.0	100.1		POORLY GRADED SAND TRACE SIL	T. SP. 7 5YR	1					-	
- 7				5/6 (strong brown), fine, moist, iron oxi	de staining,	6.5/8					-	
				with trace weathered sandstone lenses	5	3.5-201	P02	5.0 - 10.0	5.0 - 10	4.3	N/A	
- 8						60606			.0		-	
- 9											-	
- 10											-	
330.GD1												
³⁰⁶¹⁰² – 11											-	
5 - 12				Iron staining from 11.5' to 12.5'		11.5/1					-	
C SUB						3.5-20	P03	10.0 - 15.0	0.0 - 1	4.3	N/A	
- 13						119090			5.0		-	
ZDER.G						9						
10- 12 - 12 - 13 - 13 - 14											-	
	15.0	697.1									_	
668050			 .:. 	SILTY SAND, SP-SM, 10YR 6/6 (brow	nish yellow),							
15 - 15 - 15 - 15 - 16 - 16			 :-: 	very fine to fine, very loose, moist		16.5					-	
AG L	17.2	694.9				6.5/18.5-201					-	
	∠	JJ-1.J				20190g	P04	15.0 - 20.0	5.0 - 2	5.0	N/A	
[≥] L_₁₈ ∟			///			80(8			



	Borehole	ID N/A	ι	Stantec Boring	No. WBF	-BG05		
Client	-		see Valley Authority	Boring Location		3 N; 2,364,859.4	7 E NAD27	Plant Local
	Number			Surface Elevat		Elevation		
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
Depth Ft ³		1: E = G = 2: a,b, 3: Dep	Description CLAYEY SAND, SC, 10YR 5/6 (yell fine, very loose, moist to wet (Con Shale, dark red brown, soft to mode highly weathered, moist to dry, Wat Trace coarse gravel at 18.5' No Refusal / Bottom of Hole at 20.0 Ft. Top of Rock = 18.2 Ft. Top of Rock Elevation = 693.9 Ft. Environmental Sample Custody (two S Geotechnical Sample Custody (two S Geotechnical Sample Custody (two S sample (0.0/0.5-20190909) sampled b sample (0.0/0.5-20190909) sampled	owish brown), <i>tinued)</i> rately hard, er at 18.8' Split Spoons may be re Environmental and Ge surface	equired to obtain	n sufficient sampl		Rec. %





CI Pr Pr In: Dr O\ Ro	ient oject oject oject spect	-	Tennes	see Valley Authority	Stantec Borin Boring Location				6.60 F	E NAD27	Plant Local
Pr Pr In: Dr Ov Ro	oject oject oject spect	Name	175668				-) -				i iani Luudi
Pr Pr In: Dr O\ Ro	oject oject spect	Name		050	Surface Eleva	ation 7					
Pr Ins Dr Ov Ro	oject spect	-	WBF TI	DEC Order	Date Started	9	9/10/19	Comple	ted	9/10/1	9
Dr Ov Ro		Location		ea Co, Spring City, Tennessee	Depth to Wate	er N	I/A	 Date/Ti		N/A	
Dr Ov Ro			-	Logger _G. Budd	Depth to Wate		I/A	Date/Ti	me	N/A	
Ro	ming			wkston (Subcontractor)	Drill Rig Type	and I	D Geop	robe 3230DT			
	verbu	rden Drill	ing and	Sampling Tools (Type and Size)	DT37 Dual Tub	e Soil S	Sampling	System w/ 60"	liner	S	
	ock D	rilling and	d Sampl	ling Tools (Type and Size) <u>N/A</u>							
0	verdri	ll Tooling	(Type a	and Size) <u>N/A</u>				Overdrill	De	pth _N	/A
	•			GH70 Direct Push Weight N/A	Drop _N			Efficiency	N	N/A	
		le Azimut		N/A	Borehole Incli		n (from	Vertical)	N/A	4	
Re	eview	ed By	S. Bol	den	Approved By	C.	Kocka				
		_ithology			Overburden:	San	nple ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:	RC	QD %	Run Ft		Rec. Ft	Rec. %
- 0 -	0.0	704.0		Top of Hole				00.07		0.5	
				Topsoil, sandy		A ⁴	HA01	0.0 - 0.5		0.5	
- 1	1.5	702.5									-
- 2				SANDY LEAN CLAY, CL, 10YR 5/6 (ye		1.5/3.					-
				and 10YR 5/1 (gray), soft, dry, some m	langanese,	5-2019	DP01	0.0 - 5.0).0 - 5.0	4.0	N/A
- 3				trace organics		0910					-
- 4											
			//						(((
- 5											_
- 6			//								-
	6.5	697.5	\square	SANDY LEAN CLAY, CL, 10YR 5/6 (ye	allowich	<u>б</u> .5					
- 7			//	brown), low plasticity, moist	ellowish	/8.5-20	DP02	5.0 - 10.0	5.0 -	5.0	N/A
- 8				With manganese from 6.5' to 15.0'		019091	01 02	5.0 - 10.0	10.0	5.0	
			//			0			1 11		
- 9											-
- 10			//								_
- 11							DP03	10.0 - 12.5).0 - 12	3.4	N/A
- 12						1.5/13.			öη		-
			$//\Lambda$			5-2019					
- 13						90910			12.5		
- 14							DP04	12.5 - 15.0	5 - 15.0	3.1	N/A
4-											
- 15				Sand increasing with depth from 15.0'							-
- 16							DP05	15.0 - 17.5	15.0 -	3.3	N/A
47						16.5/		10.0 - 17.0	17.5	0.0	
- 17						18.5-2			[[[-
- 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18						019091			17.5		-
	18.8	685.2	$\Box \Delta$			10	DP06	17.5 - 20.0	5 - 20.0	4.1	N/A



Clie	ent B	orehole	ID N/A		Stantec Boring	No. WBF	-BG06		
Clie	ent		Tennes	see Valley Authority	Boring Location		22 N; 2,364,466.	60 E NAD27	Plant Local
Pro	ject	Number	175668	050	Surface Elevation	on <u>704.0 ft</u>	Elevatio	n Datum_r	NGVD29
	L	ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth	Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 21 - 22 - 23 - 24	20.0	684.0		CLAYEY SAND, SC, 10YR 5/6 (yellow fine, loose, moist to wet <i>(Continued)</i> Wet at 19.5' POORLY GRADED SAND WITH CLA 10YR 5/6 (yellowish brown) and 10YF fine, very loose, wet, with trace organ	AY, SP-SC, ₹ 5/1 (gray),	DP07 DP08	20.0 - 22.5 22.5 - 25.0	200-225 225-250 4.0	N/A N/A
- 25 - 26 - 27 - 28	29.0	675.0		ے Trace fine, subrounded to rounded, g	26.5/28.5 20190910 ravel from 28.5'	DP09	25.0 - 27.5 27.5 - 30.0	250-275 275	N/A
- 30 - 31	31.5	672.5		Vito 29.5' POORLY GRADED SAND WITH SIL 10YR 5/2 (grayish brown), very fine to loose, wet WELL GRADED SAND WITH GRAVE 10YR 4/6 (dark yellowish brown) and gray), fine to coarse, very loose, wet	T, SP-SM, o fine, very EL, SP-SC,	DP11	30.0 - 35.0	300-350 4.2	N/A
- 34	35.2	668.8		Gray, sandy clay lens with fine gravel 32.5'		DP12	35.0 - 36.2	8 	N/A
- 36 3	36.2	667.8		Shale, dark red brown and dark gray, moderately hard, highly weathered to moist to dry, iron oxide staining Bedrock Refusal / Bottom of Hole at 36.2 Ft. Top of Rock = 35.2 Ft. Top of Rock Elevation = 668.8 Ft.			55.0 - 50.2	36 <u>2</u>	
			G = 2: a,b,c 3: Dep	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su o sample (0.0/0.5-20190910) sampled u	nvironmental and Gec rface	•		ple)	





С	lient E	Borehole	ID N/A	N N	Stantec Borin	ng No	. WBF	-BG07		
	lient			see Valley Authority	Boring Locati				17 E NAD27	7 Plant Local
P	roject	Number			Surface Eleva				n Datum	
		Name		DEC Order	Date Started		9/5/19	 Complet		
	-	Location		ea Co, Spring City, Tennessee	Depth to Wate		N/A	Date/Tir		
	-	or G. Bu		· · · · ·	Depth to Wate			Date/Tir		
	•	-		wkston (Subcontractor)	Drill Rig Type					
	-			Sampling Tools (Type and Size)					iners	
			-	ling Tools (Type and Size) N/A						
		-	•	and Size) N/A				Overdrill	Depth	N/A
S	ample	er Hamme	er Type	GH70 Direct Push Weight N/A	Drop _!	N/A		Efficiency	N/A	
В	oreho	le Azimut	th	N/A	Borehole Incli	inati	on (from	Vertical)	N/A	
R	eview	ed By _	S. Bol	lden	Approved By		C. Kocka			
		_ithology			Overburden:	S	ample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	700.9	<u>سر میں معر</u>	Top of Hole						
	1.0	699.9		Topsoil		HA4	HA01	0.0 - 0.5	0.5	
- 1	1.0	033.3		SANDY LEAN CLAY, CL, 7.5YR 5/6 (s	strong brown)	$\left \right $				-
- 2				and 7.5YR 6/1 (gray), firm, dry to mois		1.5/3				_
				organics, manganese		1.5-201	DP01	0.0 - 5.0	^{0.0} -5	N/A
- 3						90905			0	-
- 4										-
- 5									K44	_
			//							
- 6										-
- 7			\square			6.5/8				-
						.5-201	DP02	5.0 - 10.0	4.8	N/A
- 8			\square			90905			0	-
- 9										_
ut - 10	10.0	690.9	<u> </u>			$\left\{ \left \right \right\}$			<u>}</u>	_
0630.GE			//	SANDY LEAN CLAY, CL, 10YR 4/6 (d brown) and 10YR 5/1 (gray), low plasti	-					
11 - 13				to wet, increasing sand with depth	, , ,				KK	-
- 12			//			11.5/13			1	-
DECSU						1.5-201	DP03	10.0 - 15.0	5.0	N/A
ୟ – 13 ଜୁ						90905			.o	-
ан Окрыта – 14										_
TDEC									SSS	
b b b b b c b c b c c c c c c c c c c c c c			///						///)))]	-
7566805									5	
[™] – 16			//			16.5/1	DP04	15.0 - 17.5	4.0	N/A
						8.5-20			σ	_
VA EIP			//			19090)))	
- -18						ப்			W//1	





Client	Borehole	ID N/A		Stantec Boring	g No	. WBF	-BG07			
Client		Tennes	see Valley Authority	Boring Location			33 N; 2,365,243	3.17	E NAD27	Plant Local
Projec	Number	175668	050	Surface Eleva	ition	700.9 ft	Elevatio	on E	Datum_N	IGVD29
	Lithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19 - 20			SANDY LEAN CLAY, CL, 10YR 4/6 (brown) and 10YR 5/1 (gray), low plas to wet, increasing sand with depth (ticity, soft, moist		DP05	17.5 - 20.0	17.5 - 20.0	4.0	N/A
- 21 - 22 _ 22.5	678.4				21.5/23.5-	DP06	20.0 - 22.5	20.0 - 22.5	4.4	N/A
- 23 - 24 - 25			CLAYEY SAND, SC, 10YR 5/6 (yello fine, loose, wet Fine grained sand lens from 22.5' to 2		20190905	DP07	22.5 - 25.0	22.5 - 25.0	5.0	N/A
- 26 - 27	675.4		CLAYEY SAND, SC, 10YR 5/1 (gray) (yellowish brown), very fine to fine, ve		26.5/28.5-20	DP08	25.0 - 27.5	25.0 - 27.5	5.0	N/A
- 28 - 29 <u>29.0</u> - 30 <u>30.0</u>	671.9		WELL GRADED GRAVEL WITH SAN coarse, very loose, wet, multicolored		190905	DP09	27.5 - 30.0	27.5 - 30.0	4.0	N/A
- 31 - 32 <u>32.0</u>	668.9		POORLY GRADED SAND WITH GR 10YR 4/2 (dark grayish brown), fine, I multicolored gravel	, ,		DP10	30.0 - 32.5	30.0 - 32.5	2.5	N/A
32.5	668.4	\smile	Shale, dark green gray, moderately h ∖moist, glauconitic	ard, weathered, /						
ZUIBASAUGUI HISIZU			Bedrock Refusal / Bottom of Hole at 32.5 Ft. Top of Rock = 32.0 Ft.	,						-
WAEP BUKING LUG 17000000_WPF_ILDEU_UKDERKSF4 I LEEU SUBSURF UI ZU1903016011		G = 2: a,b,o 3: Dep	Top of Rock Elevation = 668.9 Ft. Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su b sample (0.0/0.5-20190905) sampled u	nvironmental and G Irface				nple)	-





С	lient E	Borehole	ID N/A	N N	Stantec Borin	ng N	o. WBF	-BG08			
	lient			see Valley Authority	Boring Locati			97 N; 2,360,090	.38	E NAD27	Plant Local
		Number			Surface Eleva						
	-			DEC Order	Date Started		9/12/19	 Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Wat	_	N/A	Date/Ti		N/A	
	-	or G. Bi	-	Logger G. Budd	Depth to Wat		N/A	 Date/Tii		N/A	
	•			wkston (Subcontractor)	Drill Rig Type				_		
	-			Sampling Tools (Type and Size)					line	rs	
R	ock D	rilling and	d Samp	ling Tools (Type and Size)							
0	verdri	II Tooling	(Туре а	and Size)N/A				Overdrill	De	pth _N	I/A
s	ample	er Hamme	er Type	GH70 Direct Push Weight N/A	Drop _I	N/A		Efficiency	_1	N/A	
В	oreho	le Azimu	th	N/A	Borehole Incl	inati	on (from	Vertical)	N//	A	
R	eview	ed By _	S. Bo	lden	Approved By		C. Kocka				
		Lithology			Overburden:	-	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	$\left \right $	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	736.2		Top of Hole		Ŧ		0.0.05	$ _{I}$	0.5	
	0.5	735.7		Topsoil, trace limestone gravel		A*	HA01	0.0 - 0.5		0.5	
- 1	1.5	734.7	ĬijĬijĬij	SILTY SAND, SM, 10YR 6/6 (brownish fine, very loose, dry, with organics	n yellow), very						-
- 2				SANDY LEAN CLAY, CL, 10YR 6/8 (b	rownish vellow)	1.5/3.5			0		-
			\square	and 10YR 6/1 (gray), firm, dry to moist		-20190	DP01	0.0 - 5.0	0 - 5.0	3.9	N/A
- 3						912			1 1		-
- 4											-
- 5			\square						11		-
- 6											-
			$\langle / / \rangle$			6.					
- 7						5/8.5-2	DP02	5.0 - 10.0	5.0 -	5.0	N/A
- 8			\langle / \rangle			01909		5.0 - 10.0	10.0	5.0	IN/A
	8.5	727.7	///			12					
- 9				SANDY LEAN CLAY, CL, 5YR 5/8 (yel and 10YR 6/8 (brownish yellow), low p							-
01 - 4/6/20				hard, moist, and 10YR 7/1 (light gray)	,,				M		_
			//								
50190630.GDT - 11											-
5						11.5/					
12 - 12						13.5-2	DP03	10.0 - 15.0	10.0 -	5.0	N/A
- 13						01909			15.0		-
ZDER.G						12					
TDEC_ORDER.GPJ_TDEC SUBSURF											-
≌_− 15	15.0	721.2	\langle / \rangle			$\left \right $					-
668050				SANDY LEAN CLAY, CL, 7.5YR 6/8 (r and 7.5YR 7/1 (light gray), low to medi							
²¹ - 16				hard, moist	απ ριασιισιτy,	16.5	DP04	15.0 - 17.5	5.0 - 1	3.0	N/A
- 17				Iron oxide staining from 15.0' to 20.0'		/18.5-2			7.5		-
A EIP B(\langle / \rangle			1909					
≥ <mark>18</mark>			///			12				/1	



Clie	ent E	Borehole	ID_N/A		Stantec Borin	ig N	o. WBF	-BG08			
Clie	ent		Tennes	see Valley Authority	Boring Locati			97 N; 2,360,090).38	E NAD27	Plant Local
Pro	oject	Number	175668	050	Surface Eleva	atio	n <u>736.2 ft</u>	Elevatio	on E	Datum_N	IGVD29
	l	ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth	Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19				SANDY LEAN CLAY, CL, 7.5YR 6/8 and 7.5YR 7/1 (light gray), low to mee hard, moist <i>(Continued)</i>			DP05	17.5 - 20.0	17.5 - 20.0	4.4	N/A
- 20 - 21 - 22						21.5/23.5-	DP06	20.0 - 22.5	20.0 - 22.5	4.5	– N/A
- 23 2 - 24 - 25	23.3	712.9		SANDY LEAN CLAY, CL, 10YR 5/1 (plasticity, soft, moist	gray), low	-20190912	DP07	22.5 - 25.0	22.5 - 25.0	5.0	N/A _
- 26 - 27	26.0	710.2		CLAYEY SAND, SC, 10YR 5/1 (gray) moist to wet Wet at 27.3'), fine, loose,	26.5/28.5-20	DP08	25.0 - 27.5	25.0 - 27.5	4.2	N/A
- 28 <u>2</u> - 29 - 30	28.3	707.9		POORLY GRADED SAND WITH CL/ 10YR 5/1 (gray), fine, very loose, wet of wood 29.6' to 30.0', some, multicol subangular to subrounded fine, grave	, with fragments ored,	190912	DP09	27.5 - 30.0	27.5 - 30.0	5.0	N/A _
- 32	<u>31.7</u> 32.5	704.5		Shale, dark green gray to dark gray, s	soft, highly	_	DP10	30.0 - 32.5	30.0 - 32.5	4.5	N/A
	~~*			weathered, moist to dry No Refusal / Bottom of Hole at 32.5 Ft. Top of Rock = 31.7 Ft. Top of Rock Elevation = 704.5 Ft.					<u>.</u> ш	<u></u>	-
			G = 2: a,b,o 3: Dep	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su o sample (0.0/0.5-20190912) sampled u	nvironmental and C Irface				nple)	-



Client	Borehole	ID N/A	4	Stantec Boring	No. WBF	-BG09		
Client		Tennes	see Valley Authority	Boring Locatio		75 N; 2,361,033.9	4 E NAD27	Plant Local
Projec	t Number	175668	050	Surface Elevat	tion 735.3 ft	Elevation	Datum_N	IGVD29
Projec	t Name	WBF T	DEC Order	Date Started	9/13/19	Complete	ed 9/13/1	9
Projec	t Locatio	n Rhe	ea Co, Spring City, Tennessee	Depth to Wate	r N/A	Date/Time	e N/A	
Inspec	ctor <u>G</u> . B	udd	Logger G. Budd	Depth to Wate	r N/A	Date/Time	e N/A	
	-		wkston (Subcontractor)	Drill Rig Type				
		-	Sampling Tools (Type and Size)	DT37 Dual Tube	e Soil Sampling	System w/ 60" lin	ners	
	-	-	ling Tools (Type and Size)NA					
	-		and Size) N/A			Overdrill D	•	N/A
		• •	GH70 Direct Push Weight N/A	Drop <u>N</u>		Efficiency	N/A	
	ole Azimu		N/A	Borehole Inclin	•	Vertical)	N/A	
Review	wed By	S. Bo	lden	Approved By	C. Kocka			
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
0.0	735.3		Top of Hole					
	704.0		Topsoil and limestone gravel fill, [FILL]				22	
- 1 1.0	734.3		SANDY LEAN CLAY, CL, 10YR 6/8 (bi					
			and 10YR 2/1 (black), hard, dry, with fr					
- 2			coal and CCR, [CCR]	5	DP01	0.0 - 5.0	4.2	N/A
- 3						5.0		
- 4							84	
5.0	730.3							
			No Refusal /					
			Bottom of Hole at 5.0 Ft.					
			Environmental Sample Custody (two Spli	t Spoons may be re	equired to obtai	n sufficient sampl	le)	
			Geotechnical Sample Custody c denote Split Spoon divided between En	vironmental and Ge	eotechnical Sar	noles		
		3: Dep	oths are reported in feet below ground surf	face		npico		



AVT.

SUBSURFACE LOG

	liont F	Borehole			Stantec Boring		WBF	-BG09A			
	Client	borenoie		see Valley Authority	Boring Locatio			39 N; 2,361,056	97	= NAD27	Plant Local
		Number		· · ·	Surface Eleva	-		Elevatic			
				DEC Order	Date Started	-	9/13/19				
	-	Location		ea Co, Spring City, Tennessee	Depth to Wate		N/A	Comple Date/Tir		N/A	19
	-	or G.B		i	Depth to Wate			Date/Til Date/Til		N/A	
	•	-		Logger <u>G. Budd</u> wkston (Subcontractor)	Depth to wate				ne		
	-			Sampling Tools (Type and Size)	0,11				liner	s	
			-	ling Tools (Type and Size) N/A			<u></u>			-	
		•	•	and Size) N/A				Overdrill	De	oth N	N/A
		-		GH70 Direct Push Weight N/A	Drop N	I/A		Efficiency		√A	
	•	le Azimu		5	Borehole Inclir		n (from		N/A	٩	
		ved By		den	Approved By		. Kocka	,			
┣─		Lithology			Overburden:	Sa	mple ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Der	oth Ft ³	Elevation	Granhic	Description	Rock Core:		QD %	Run Ft		Rec. Ft	Rec. %
⊢ ·	0.0	736.5	Graphic	Top of Hole	TOOK COIE.			NullEt		1.00. FL	1.50. /0
- 0	0.0	736.0		_ Topsoil, [FILL]					+ m		
			IIIII	SILTY SAND, SM, 10YR 6/8 (brownis	h vellow) verv						-
	1.5	735.0		\sim fine, loose, dry, [CCR]							
- 2				SANDY LEAN CLAY, CL, 10YR 6/8 (b	prownish vellow)				9		-
				and 10YR 2/1 (black), firm, dry, with fr			DP01	0.0 - 5.0) - 5.0	4.7	N/A
- 3				coal and CCR, [CCR]					1)))		-
- 4)))		-
									$ \rangle\rangle\rangle$		
- 5											_
- 6	6.0	730.5									-
				SANDY LEAN CLAY, CL, 5YR (brown							
- 7				10YR 7/1 (light gray), soft to firm, mois Some iron oxide staining from 6.0' to 7					5.0		-
- 8							DP02	5.0 - 10.0	- 10.0	5.0	N/A
٢°									1 111		-
- 9									$ \rangle\rangle\rangle$		-
	10.0	726.5							$ \rangle\rangle\rangle$		
	1 . 0.0			No Refusal /		1	Į		1 111		
				Bottom of Hole at 10.0 Ft.							-
i i											
											-
											_
5											
											-
1											
			1. F =	Environmental Sample Custody (two Spl	lit Spoons may be r	equire	ed to obtai	in sufficient sam	nple)		_
			G =	Geotechnical Sample Custody					·p·c)		-
				c denote Split Spoon divided between Er ths are reported in feet below ground su		eotech	nnical Sar	nples			
				-							-
<u>1</u>											



SUBSURFACE LOG

Clien	t Borehole	D N/A	A	Stantec Borin	g No. WBF	-BG10			
Clien	nt	Tennes		Boring Locatio		70 N; 2,361,722	2.26	E NAD27	Plant Local
	ect Numbe			Surface Eleva		Elevatio			
	ect Name			Date Started	9/16/19	Comple			
				Depth to Wate		Date/Ti		N/A	
1 '	ector G. I			Depth to Wate				N/A	
· ·				Drill Rig Type					
	0		Sampling Tools (Type and Size)	••••			line	rs	
		-	ling Tools (Type and Size) N/A						
Over	drill Toolin	g (Type a	and Size) <u>N/A</u>			Overdrill	De	pth _N	I/A
Sam	pler Hamn	ner Type	GH70 Direct Push Weight N/A	Drop _N	N/A	Efficiency		N/A	
Bore	hole Azim	uth	N/A	Borehole Incli	nation (from	Vertical)	N/.	A	
Revie	ewed By	C. Ko	cka	Approved By	L. Price				
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft	t ³ Elevatior	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
0.0	0 729.6		Top of Hole						
			Topsoil, silty, with some limestone grav	el	<u>डू</u> HA01	0.0 - 0.5		0.5	
- 1	5 728.1						$ \rangle$		
- 2			SILTY LEAN CLAY, CL, 5YR 5/8 (yellow	,	1.5/3.5-		<u>.</u>		
- 3			5YR 6/1 (gray), firm, dry, iron oxide stai weathered siltstone	nıng,	201 90 90	0.0 - 5.0) - 5.0	5.0	N/A
					916				
- 4									
- 5 5.	0 724.6						1 🖁	5	
- 6			SILTY LEAN CLAY, CL, 10YR 6/4 (light brown) and 5Y 5/2 (olive gray), hard, dr				5.0		
			staining, weathered siltstone	, , , , , , , , , , , , , , , , , , ,	୍କ DP02 ଜ	5.0 - 7.5	- 7.5	2.5	N/A
- 7					/8.5-20		14	4	
- 8					19091				
- 9					DP03	7.5 - 10.0	.5 - 10	3.0	N/A
							^o		
- 10					<u> </u>		l 🕅	1	
- 11					D.5/12.5	10.0 - 12.5	10.0 -	3.0	N/A
- 12					5-2019	10.0 12.0	12.5	0.0	1.177
12 12	.5 717.1		De dre els Defue el /		0916				
			Bedrock Refusal / Bottom of Hole at 12.5 Ft.						
- ¹² 12									
		1. ⊨ =	Environmental Sample Custody (two Split	Spoons may be r	required to obtai	in sufficient san	nnleì		
1		G =	Geotechnical Sample Custody				npie)	,	
			c denote Split Spoon divided between Env oths are reported in feet below ground surfa		eotechnical Sar	mples			
			b sample (0.0/0.5-20190916) sampled usir						





С	lient E	Borehole	ID N/A	N N	Stantec Borir	ng N	o. WBF	-BG11			
	lient	_		see Valley Authority	Boring Locati				5.42	E NAD27	Plant Local
		Number		· · · · ·	Surface Eleva						
	-			DEC Order	Date Started		9/17/19	 Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Wat	_	N/A	·			
	-		-	Logger G. Budd	Depth to Wat			 Date/Ti		-	
				wkston (Subcontractor)	Drill Rig Type	e and	d ID Geop	orobe 3230DT			
0	verbu	rden Drill	ling and	Sampling Tools (Type and Size)	DT37 Dual Tub	be So	il Sampling	System w/ 60"	' line	rs	
R	ock D	rilling and	d Sampl	ling Tools (Type and Size)	N. Contraction of the second s						
0	verdri	ll Tooling	і (Туре а	and Size) N/A				Overdril	l De	pth _^	N/A
S	ample	er Hamme	er Type	GH70 Direct Push Weight N/A	Drop _	N/A		Efficiency		N/A	
		le Azimut		N/A	Borehole Incl	linati	on (from	Vertical)	N/.	A	
R	eview	ed By _	E. Sm	ith	Approved By		C. Kocka				
	l	_ithology			Overburden:	: 5	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	_	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	708.0		Top of Hole							
	1.0	707.0		Topsoil, silty		HA4	HA01	0.0 - 0.5		0.5	
- 1	1.0	101.0		SANDY LEAN CLAY, CL, 7.5YR 5/6 (strong brown).	$\left \right $					-
- 2				soft, dry, with limestone gravel fill, [FIL		1.5/3					-
						.5-201	DP01	0.0 - 5.0	0.0 - 5	3.5	N/A
- 3						90917					-
- 4									18		_
1											
- 5	5.0	703.0			(0 (-				4	_
				LEAN CLAY SOME SAND, CL, 5YR 5 red) and 5YR 7/1 (light gray), low plas							
- 6				moist, iron oxide staining, with fragme					((-
- 7				and sandstone, increasing with depth		6.5/8.5			ت		-
						5-2019	DP02	5.0 - 10.0	0 - 10.0	2.7	N/A
- 8						0917					-
- 9											-
20											
§ – 10											-
^{5.} 11 11	11.0	697.0	\Box								-
= DT 20'				LEAN CLAY LITTLE SAND, CL, 10YF		±					
- 12			//	grayish brown) and 7.5YR 5/8 (strong plasticity, soft to firm, moist	brown), low	.5/13.5			10.0		-
				Dark grayish brown from 11.2' to 11.7		5-2019	DP03	10.0 - 15.0) - 15.0	3.7	N/A
F – 13			///	Grading to strong brown from 11.7' to	15.0'	0917					-
- 14											-
∰ − 15										Ĭ	-
⁸⁹⁹⁵ ⊢ 16	16.0	692.0	44								-
VG LOG				SANDY LEAN CLAY, CL, 7.5YR 6/8 (16.5/18.					
			$\langle / / \rangle$	and 7.5YR 6/1 (gray), firm to hard, iron staining, with fragments of sandstone		5-2019		15.0 00.0	15.0 -	EO	-
	18.0	690.0				30917	DP04	15.0 - 20.0	- 20.0	5.0	N/A



Client E	Borehole	ID N/A		Stantec Boring	No. WBF	-BG11		
Client		Tennes	see Valley Authority	Boring Locatio			2 E NAD27	Plant Local
Project	Number	175668	050	Surface Elevat	tion 708.0 ft	Elevation	Datum_1	NGVD29
	_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
18 19 20.0	688.0	× × × × × × × × × × × × × × × × × × ×	Siltstone, red brown and gray, moder highly weathered, dry, iron oxide stai					
20 20.0			No Refusal / Bottom of Hole at 20.0 Ft.					
			Top of Rock = 18.0 Ft. Top of Rock Elevation = 690.0 Ft.					
		G = 2: a,b,o 3: Dep	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su b sample (0.0/0.5-20190917) sampled u	nvironmental and Ge			le)	





С	lient E	Borehole	ID N/A	N N	Stantec Borin	ng No	, WBF	-BG12			
	lient		-	see Valley Authority	Boring Location			24 N; 2,362,082	.92	E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleva	ation	707.4 ft	Elevatio	n D	Datum N	IGVD29
	-	Name		DEC Order	Date Started		9/17/19	 Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Wate		N/A	Date/Ti		N/A	
	-	or G. Bu		Logger G. Budd	Depth to Wate		N/A	 Date/Tii		N/A	
	•			wkston (Subcontractor)	Drill Rig Type		ID Geop	robe 3230DT			
	-			Sampling Tools (Type and Size)	• • •				liner	ſS	
R	lock D	rilling and	d Sampl	ling Tools (Type and Size) N/A							
0	Verdri	II Tooling	(Туре а	and Size) N/A				Overdrill	De	pth _N	I/A
s	ample	er Hamme	er Type	GH70 Direct Push Weight N/A	Drop _t	N/A		Efficiency	1	N/A	
В	oreho	le Azimut	th	N/A	Borehole Incli	inatio	on (from	Vertical)	N//	A	
R	Review	ed By _	E. Sm	ith	Approved By		. Kocka				
	I	_ithology			Overburden:	Sa	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	oth Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	707.4	يستنصر	Top of Hole							
				Topsoil, silty, with gravel		ΗA4	HA01	0.0 - 0.5		0.5	
- 1	1.5	705.9							1 111		-
- 2				SANDY LEAN CLAY, CL, 7.5YR 5/6 (strong brown),	1.5/					_
				soft, dry, with abundant fragments of s		3.5-20	DP01	0.0 - 5.0	0.0 - 5	3.1	N/A
- 3				siltstone		19091			0		-
- 4			\square						(((-
- 5									IЩ		_
- 6									1 11		-
- 7	7.0	700.4	[]]			6.5/8					-
				SILTY LEAN CLAY, CL, 10YR 3/1 (ve		.5-201	DP02	5.0 - 10.0	5.0 - 10	3.0	N/A
- 8				low plasticity, very soft, moist, with org	anics	90917			Ö		_
- 9											-
			\square								
^{2/2} – 10	10.5	696.9									_
IVA EIP BORINGLOG 7756606050, WBF_TDEC_ORDER GPJ TDEC SUBSURE DT 20196230 GDT 4/320 	10.5	030.8	\square	LEAN CLAY LITTLE SAND, CL, 10YR	(4/3 (brown)						
11 - 130				and 10YR 4/1 (dark gray), low plasticit							_
- 12						1.5/13			j [[-
DECSU						.5-201	DP03	10.0 - 15.0	.0 - 15	5.0	N/A
[⊥] − 13						90917			°))		_
≝ – 14			//			$ \square$					-
TDEC											
[₩] - 15			\square								-
1266806											
≝ – 16	16.5	690.9	$\Box \Delta$			16.5/1					-
9 17 9				SANDY LEAN CLAY, CL, 10YR 5/6 (y		8.5-20			15		-
VA EIP			//	and 10YR 5/1 (gray), low plasticity, firr fragments of sandstone increasing wit		19091	DP04	15.0 - 20.0	0 - 20,4	5.0	N/A
⊢ <mark>– 10</mark> –				g		7			10111		

Stantec Consulting Services Inc.



Client I	Borehole	ID N/A		Stantec Boring	g No. WBF	-BG12		
Client		Tennes	see Valley Authority	Boring Locatio		24 N; 2,362,082.92	E NAD27	' Plant Local
Project	Number	175668	050	Surface Eleva	tion 707.4 ft	Elevation [Datum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
		1: E = G = 2: a,b,0 3: Dep	Description SANDY LEAN CLAY, CL, 10YR 5/6 () and 10YR 5/1 (gray), low plasticity, fir fragments of sandstone increasing wit <i>(Continued)</i> Sandstone, dark brown to tan, fine gra moderately hard, highly weathered, du No Refusal / Bottom of Hole at 25.0 Ft. Top of Rock = 24.1 Ft. Top of Rock Elevation = 683.3 Ft. Environmental Sample Custody (two Sp Geotechnical Sample Custody (two Sp Geotechnical Sample Custody us c denote Split Spoon divided between En- ths are reported in feet below ground su o sample (0.0/0.5-20190917) sampled us	Rock Core: yellowish brown) m, moist, with th depth ained, y lit Spoons may be movironmental and G rface	Equired to obta	Run Ft 20.0 - 25.0 0 in sufficient sample	Rec. Ft	
1/2008030_wer_IL								-
VA EIP BORING LOC								-

APPENDIX B.2 GEOTECHNICAL BORINGS

Table of Contents

Subsurface Boring Legend	1
WBF-B01	2
WBF-B02	5
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WBF-B041	1
WBF-B051	5
WBF-B061	9
WBF-B07	2
WBF-B08	26
WBF-B092	29
WBF-B10	1
WBF-B11	3
WBF-B12	5
WBF-B13	57
WBF-B14	9
WBF-B154	1
WBF-B16A4	3
WBF-B174	5
WBF-B184	7
WBF-B194	.9
WBF-B20	51
WBF-B21	; 4
WBF-B22	57
WBF-B23	;9
WBF-B246	;1
WBF-B256	3
WBF-B26	6
WBF-B276	;9
WBF-B287	2

Subsurface Boring Legend

Lithology Graphics

Symbol	Lithology
	Fill
	Top Soil
070707070 00000000 07000000 07070700	Gravel
0 0 0 0 0 0 0 0 0 0 0 0	Well Graded Gravel (GW)
0 0 0 0 9 9 0 0 0 0 0	Poorly Graded Gravel (GP)
	Silty Gravel (GM)
	Silty, Clayey Gravel (GC-GM)
	Clayey Gravel (GC)
	Well Graded Gravel with Silt (GW-GM)
	Well Graded Gravel with Clay (GW-GC)
	Poorly Graded Gravel with Silt (GP-GM)
	Poorly Graded Gravel with Clay (GP-GC)
••••	Well Graded Sand (SW)
	Poorly Graded Sand (SP)
	Silty Sand (SM)
	Silty, Clayey Sand (SC-SM)
	Clayey Sand (SC)
	Well Graded Sand with Silt (SW-SM)
$\overline{\cdots}$	Well Graded Sand with Clay (SW-SC)
	Poorly Graded Sand with Silt (SP-SM)
	Poorly Graded Sand with Clay (SP-SC)
	Silt (ML)
	Silty Clay (CL-ML)
	Lean Clay (CL)
	Organic Silt (OL)
	Elastic Silt (MH)
	Fat Clay (CH)
	Organic Clay (OH)
	Non-Durable Shale
	Durable Shale
	Coal
	Limestone
· · · · · · · · · · · · · · · · · · ·	Sandstone

Other Graphics

Symbol	Description
	Denotes environmental analytical sample interval
	Denotes SS sample interval
	Denotes ST sample interval
	Denotes DP sample interval
	Denotes RS sample interval
	Denotes RC sample interval
Ā	First water level reading
Ţ	Second water level reading
Go	mmon Abbreviations

Common Abbreviations

Abbreviation	Definition
DP	Direct Push
HA	Hand Auger
HSA	Hollow Stem Auger
N/A	Not Applicable
NR	Not Recorded
RC	Rock Core
RQD	Rock Quality Designation
RS	Rotary Sonic
SS	Split Spoon
ST	Shelby Tube
WH	Weight of Hammer
WR	Weight of Rod

General Notes

The boring logs include sample numbering used during drilling. For assigned Environmental Analytical Sample ID numbers, see relevant Environmental Chain-of- Custody forms from the drilling date range listed on each log.

For pH readings and additional field data, see applicable field documentation (e.g., Soil pH Data Form) from the drilling date range listed on each log.

Lithology Graphics are based on TVA drafting standards.





	lient F	Borehole	חו	N/	Α	Stantec R	orina	No. WBF	-B01			
	lient				See Valley Authority	Boring Lo			3 N; 2,363,048	3 76 1	= NAD27	Plant Local
		Number			i	•		on 700.2 ft				
	-				TDEC Order	Date Start		8/19/19				
	-	Location			nea Co, Spring City, Tennessee				Comple		N/A	9
	-				Logger G. Budd							
	-				antec Consulting Services Inc.	•		nd ID CME		me		
	-				d Sampling Tools (Type and Size)	-						
			-			-3 Wireline, Sp						
		-			and Size) N/A			,	Overdrill	De	pth N	I/A
		-	• •	• •	Automatic Weight 140 I	b Droj	p 30"		Efficiency		' ∖/A	
	•	le Azimu		• •		·			Vertical)	N//	٩	
R	eview	ed By		K. Bl	lakley	Approved	Ву _	A. Welshans	s			
	l	_ithology				Overburg	den:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Gra	aphic	Description	Rock Co	ore:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	700.2			Top of Hole							
			8 0	8 9 8 9 8 9	POORLY GRADED GRAVEL, GP, 10			SS01G	0.0 - 1.5	0.0 -	1.4	26-28-24
- 1			8 0		gray), very dense, dry, angular to suba crushed limestone gravel, [FILL]	angular,		33010	0.0 - 1.5	1.5	1.4	20-20-24 _
- 2			8		· · · · · · · · · · · · · · · · · · ·							
2			8 0		•							
- 3	3.1	697.1	° °					SS02aG	2.5 - 3.1	2.5 -	1.5	10-8-8
					SANDY SILT, ML, 7.5YR 3/3 (dark bro	own),		SS02bG	3.1 - 4.0	4.0	1.5	10-0-0
- 4					non-plastic, firm, dry, [FILL]							_
- 5	5.0	695.2										_
			₩ţ.	‡ ‡	SILTY SAND, SM, 10YR 5/6 (yellowis loose to very loose, dry, some clay	h brown), fine,	,	SS03G	5.0 - 6.5	5.0 -	0.7	5-5-6
- 6				╏┥┇┥						6.5		
- 7			₿‡.	¦‡¦‡								-
- 8			₩‡ ·	I I				SS04G	7.5 - 9.0	7.5 - 9	1.2	2-2-3
- 9				╏┥┇┥						0		_
				<u> </u> ‡ ‡								
12 5 5				! 	1							_
00230.GI				‡ ‡				SS05G	10.0 - 11.5	0.0 - 1	1.3	4-2-3
D1 _ 11				┇┥┇┥						1.5		-
- 12	10 5	607 7		‡ İ								-
DECSU	12.5	687.7		╞┼╞┨	SILTY SAND, SM, 10YR 4/6 (dark yel	lowish brown)						
⊢_ 13				╏┥┇┥	and 10YR 5/6 (yellowish brown), fine,			SS06G	12.5 - 14.0	2.5 - 14	1.2	3-1-2
Hand - 14			₩ţ.	<u>†</u> †	moist to wet					1.0		_
TDEC				! ∤‡∤								
bg – 15				 <u>†</u> <u>†</u>	-					10		_
1220000				t t				ST01G	15.0 - 17.0	15.0-	2.0	400 -
0.00				 <u>†</u> <u>†</u>	Wet at 16.0'				11.0	17.0		
TVA EIP BORNOLOG 775660000 WHE. TDEC. ORDER. GP 1 TDEC SUBSURE 07 7077277				¦ †						ΙF		-
				 <u> </u>								



Client	Borehole ID N/A		Stantec Boring	g N	lo. WBF	-B01			
Client	Tennes	see Valley Authority	Boring Locatio			73 N; 2,363,048	3.76	E NAD27	' Plant Local
Projec	t Number 175668	050	Surface Eleva	tio	n <u>700.2</u> ft	Elevatio	on E	Datum_	NGVD29
	Lithology		Overburden:	:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19		SILTY SAND, SM, 10YR 4/6 (dark ye and 10YR 5/6 (yellowish brown), fine, moist to wet <i>(Continued)</i>			SS07G	17.5 - 19.0	17.5 - 19.0	1.3	WH-WH-1
- 20 - 21 - 22					SS08G	20.0 - 21.5	20.0 - 21.5	1.5	
- 23 - 24					ST02G	22.5 - 24.5	22.5 - 24.5	2.0	- 200 -
- 25 <u>25.0</u> - 26	675.2	SANDY LEAN CLAY, CL, 10YR 4/4 (brown) and 10YR 5/1 (gray), low plas wet			SS09G	25.0 - 26.5	25.0 - 26.5	1.5	
- 27 <u>27.5</u> - 28 - 29	672.7	LEAN CLAY WITH SAND, CL, 10YR gray), low plasticity, very soft, wet, wi wood fragments			SS10G	27.5 - 29.0	27.5 - 29.0	1.5	- WH-WH-WH -
- 30 - 31 - 32					ST03G	30.0 - 32.0	30.0 - 32.0	2.0	300 -
- ₃₃ <u>33.0</u> 33.7		POORLY GRADED SAND WITH SIL GRAVEL, SP-SM, 10YR 3/1 (very da coarse, loose, wet			SS11aG SS11bG SS11cG	32.5 - 33.0 33.0 - 33.7 33.7 - 34.0	32.5 - 34.0	1.5	 2-6-22
- 35 35.5 - 36	664.7	Shale, green gray, soft to hard, highly moist to dry Shale (80%) With Limestone (20%)	weathered,		SS12G	35.0 - 35.7	35.0 - 35.7	0.7	
- 34 - 35 - 35 - 36 - 36 - 37 - 38 - 39 - 39 - 39 - 40		Shale, green gray and light gray, very weathered, shale fragments captured drill water return Limestone, weathered, fractured throu recovered core, with calcite and chlor surfaces	in mud tub with ughout		0	35.5 - 41.0 5.5	35.5 - 41.0	1.2	- 22 - -
90199 - 41 HI - 42									



SUBSURFACE LOG

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	Borehole I	D N/A		Stantec Boring	No. WBF	-B01		
Client			ee Valley Authority	Boring Locatio		73 N; 2,363,048.76	6 E NAD27	' Plant Loca
Project	t Number	1756680	50	Surface Elevat		Elevation		
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43 44 45 46.0	654.2				0	41.0 - 46.0 5.0	0.8	16
4 6 + 40.0			Bottom of Hole at 46.0 Ft. Top of Rock = 33.7 Ft. Top of Rock Elevation = 666.5 Ft Begin Core = 35.5 Ft.				••	
		Boring b	packfilled with 30% solids bentonite	e grout.				
		G = 0 2: a,b,c	nvironmental Sample Custody (tw Geotechnical Sample Custody denote Split Spoon divided betwee ns are reported in feet below groun	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 0 2: a,b,c	Geotechnical Sample Custody denote Split Spoon divided between	en Environmental and Ge			e)	



	liont F	Borehole			Stantec Boring	a N	o WBF	-B02			
	lient		-	see Valley Authority	Boring Locatio			61 N; 2,362,444	1 20	= NAD27	Plant Local
		Number		· · · ·	Surface Eleva		-	Elevatio			
	-						7/31/19				
	-			DEC Order ea Co, Spring City, Tennessee	Date Started			Comple		8/1/19 N/A	
	•	Location or G. B			Depth to Wate	_		Date/Ti		 N/A	
	•			Logger <u>G. Budd</u> ntec Consulting Services Inc.	Depth to Wate Drill Rig Type			Date/Ti	me	IN/A	
	-		-	Sampling Tools (Type and Size			-				
			-		Q-2 Wireline, Solid B				•		
		-		and Size) N/A		une		Overdril		nth N	J/A
		-		Automatic Weight 140	lb Drop 3	0"		Efficiency		V/A	
	•	le Azimu	• •	N/A	Borehole Inclin		ion (from	,	N//		
		ed By			Approved By		A. Welshan		,		
		_ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	719.1		Top of Hole							
	0.5	718.6		Topsoil			SS01G	0.0 - 1.5	0.0 -	1.4	3-3-5
- 1				SANDY LEAN CLAY WITH GRAVEL (yellowish red) to 5YR 6/1 (gray), me					5		-
- 2				soft to firm, dry to moist, with fragmer							_
	2.7	716.4		and sandstone, [FILL]			SS02aG	2.5 - 2.7			
- 3				SILT, ML, 10YR 2/1 (black), non-plas	tic, soft, moist,		SS02bG	2.7 - 4.0	2.5 - 4	1.5	5-8-9
				trace organics, [CCR]			000200	2.7 - 4.0	4.0		
- 4											-
- 5											_
							SS03G	5.0 - 6.5	5.0 -	1.5	3-2-2
- 6								0.0 0.0	6.5		
- 7											_
	7.7	711.4					SS04aG	7.5 - 7.7			
- 8				WELL GRADED SAND WITH SILT, S					7.5 -	1.5	5-6-5
				2/1 (black) and 10YR 3/6 (dark yellow to coarse, loose, moist, [CCR]	vish brown), fine		SS04bG	7.7 - 9.0	9.0		
- 9			· ·								-
²⁰¹⁶ – 10			· ·								_
30.GDT	10.9	708.2					SS05aG	10.0 - 10.9	10.0 -	1.5	3-3-1
11 - 1302				SILTY SAND, SM, 10YR 2/1 (black),	very fine to fine,		SS05bG	10.9 - 11.5	11.5	1.0	
12 12			IIIIIII	very loose, moist to wet, [CCR]	-						_
	12.5	706.6	╟┇┥┇┥┇	Wet at 11.0'							
<u> </u>			.	WELL GRADED SAND WITH SILT, S			SS06G	12.5 - 14.0	12.5 -	0.3	- 3-1-WH
DER.G				2/1 (black), very fine to coarse, very I [CCR]	oose, wet,		00000	12.5 - 14.0	14.0	0.5	5-1-0011
ຮ_– 14			•••	[00.1]							-
₽ ₩ - 15	15.0	704.1	╷╴								_
			╟╁╂╁╿	SILTY SAND, SM, 10YR 3/1 (very da			SS07G	15.0 - 16.5	15.0 -	1.5	WR-WH-1
[₩]				10YR 2/1 (black), very fine to fine, ve with trace medium to coarse sand, [C			33076	10.0 - 10.0	- 16.5	(1.5	VVIC-VVII-I
					· 1						
TVA EIP BORINGLOOS 175680900 WBF. TDEC ORDER/GPJ TDEC SUBSURF DT 2019020 GAD 40002 10002											-
≸ <mark>18</mark>			<u> </u>								



С	lient E	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B02			
C	lient		Tennes	see Valley Authority	Boring Location			61 N; 2,362,444	1.29	E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleva	atior	n <u>719.1 ft</u>	Elevatio	on E	Datum_	NGVD29
		ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19 - 20				SILTY SAND, SM, 10YR 3/1 (very dat 10YR 2/1 (black), very fine to fine, ver with trace medium to coarse sand, [Cr (Continued)	y loose, wet,		SS08G	17.5 - 19.0	17.5 - 19.0	1.5	- WH-WH-1
- 21	20.9 21.5	698.2 697.6		LEAN CLAY, CL, 10YR 4/2 (dark gray ∖ plasticity, soft, moist, hydrocarbon sta			SS09aG SS09bG	20.0 - 20.9 20.9 - 21.5	20.0 - 21.5	1.5	2-2-2 _
- 22 - 23 - 24	23.5	695.6		LEAN CLAY WITH SAND, CL, 10YR brown) and 10YR 5/1 (gray), very fine firm, moist	5/6 (yellowish		ST01G	21.5 - 23.5	21.5 - 23.5	1.6	- 800 -
- 25 - 26				SANDY LEAN CLAY, CL, 5YR 4/6 (ye and 5YR 6/1 (gray), low plasticity, firm with trace organics			SS10G	25.0 - 26.5	25.0 - 26.5	1.5	
- 27 - 28 - 29							SS11G	27.5 - 29.0	27.5 - 29.0	1.5	- 6-9-13 -
- 30 - 31 - 32							SS12G	30.0 - 31.5	30.0 - 31.5	1.5	
- 33	<u>32.5</u> 34.0	<u>686.6</u> 685.1		CLAYEY SAND, SC, 5YR 4/6 (yellow 5YR 6/1 (gray), fine, loose, moist, with			SS13G	32.5 - 34.0	32.5 - 34.0	1.5	3-4-5
- 34 - 35 - 35 - 35 - 36 - 37 - 37 - 37 - 37 - 37 - 37 - 37 - 37				CLAYEY SAND, SC, 7.5YR 4/4 (brow loose, moist to wet	n), fine, very		SS14G	35.0 - 36.5	35.0 - 36.5	1.5	- 1-3-4 _
115608050 WeF TPEC ORDER OPJ TPECSUBS - 32 - 38 - 38 - 39 - 40	36.5	682.6		Wet at 36.0' SANDY SILT, ML, 7.5YR 4/4 (brown), very soft, wet	non-plastic,		SS15G	37.5 - 39.0	37.5 - 39.0	1.5	- WR-WR-WH
- 40 - 41 - 41 - 42	40.0	679.1		CLAYEY SAND, SC, 7.5YR 4/4 (brow loose, moist	'n), fine, very		SS16G	40.0 - 41.5	40.0 - 41.5	1.5	2-3-3 _



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0	ehole ID <u>N/A</u>		Stantec Boring	No. WBF	-002		
Client	Tenness	see Valley Authority	Boring Location	n <u>444,557.</u> 6	61 N; 2,362,444.2	29 E NAD2	7 Plant Local
Project Nu	mber 1756680	050	Surface Elevat	ion <u>719.1 ft</u>	Elevation Datum NGVD2		
Lithc	ology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³ Ele	vation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43	76.6	Shale, very dark gray brown, so moist to dry, iron oxide staining	ft to hard, weathered,	SS17G	42.5 - 43.6	435 5	15-34-50/ [,] Began Cor
45		Shale (90%) With Limestone (1 Shale, dark gray, soft, laminated iron oxide staining,		0	44.2 - 46.4 2.2	⁴⁴ 2- 1.6	73
47 48 49		Limestone, light gray, hard, thin Shale bedding breaks and mech throughout the length of the reco associated with the very soft, we bedding	nanical breaks overed core	0	46.4 - 49.0 2.6	464 4.490	65
50 51 52 53		Fracture, 45°, rough, at 49.9' Fracture, 15°, rough, matte surfa shale, limestone bedding contac Fracture, 15°, calcite coating, ca to striated, polished surface, at \$	ct, at 50.0' alcite infilling, smooth	0	49.0 - 54.0 5.0	490. 490. 4.6	92
₅₄ 54.0 6	65.1	Bottom of Hole at 54.0 Ft. Top of Rock = 42.5 Ft. Top of Rock Elevation = 676.6 F Begin Core = 44.2 Ft.				11	
	1: E = I G = 0 2: a,b,c	ng Wire Piezometers installed. See Environmental Sample Custody (tv Geotechnical Sample Custody c denote Split Spoon divided betwe ths are reported in feet below grou	vo Split Spoons may be re een Environmental and Ge	quired to obta		ole)	



CI	ient E	Borehole	ID N/A	N N	Stantec Boring No. WBF-B03					
	Client Tennessee Valley Authority				Boring Location 444,612.30 N; 2,363,046.92 E NAD27 Plant Local					
Pr	oject	Number	175668	050	Surface Elevation 699.9 ft Elevation Datum NGVD29			NGVD29		
Pr	oject	Name	WBF T	DEC Order	Date Started 8/26/19		Complet	Completed 8/28/19		
Pr	oject	Location	ר Rhe	ea Co, Spring City, Tennessee	Depth to Water N/A		Date/Time N/A			
In	spect	or <u> </u>	udd	Logger _G. Budd	Depth to Water <u>N/A</u> Date/Time <u>N/A</u>					
	-					Drill Rig Type and ID_CME 850XR, #953				
	Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 2" SS w/o liners, 3" Shelby Tubes									
	Rock Drilling and Sampling Tools (Type and Size) NQ-3 Wireline, Split Barrel, Surface Set Bit									
	Overdrill Tooling (Type and Size) N/A									
	Sampler Hammer Type Automatic Weight 140 lb									
	Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By K. Blakley Approved By A. Welshans									
	eview	eu by _			,					
	Lithology				Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI	
Dept		Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %	
- 0	0.0	699.9	8 8 8 4 8 8 8 9							
	0.5	699.4		POORLY GRADED GRAVEL, GP, 10 \bigcirc gray), very dense, dry, angular to sub	· · ·	SS01G	0.0 - 1.5	1.4	6-10-21	
- 1				crushed limestone gravel, [FILL]				້ຳ		
- 2				SANDY LEAN CLAY WITH GRAVEL						
2	2.8	697.1		(brown), low plasticity, firm to hard, dr	y, [FILL]	0000-0	05.00			
- 3	2.8	697.1		SILTY SAND WITH GRAVEL, SM, 7.	5YR 2 5/1	SS02aG	2.5 - 2.8		-	
			 + + + +	(black) and 7.5YR 4/4 (brown), very fi		SS02bG	2.8 - 4.0		10-12-6	
- 4			╟┇╎┇╎	very dense, dry, trace CCR, [FILL]				-	-	
			║┇┥┇┥┇┥╎							
- 5	5.5	694.4	╟┇╽┇╷			SS03aG	5.0 - 5.5	л л	_	
- 6				POORLY GRADED SAND WITH CLA		SS03bG	5.5 - 6.5	1.5	3-3-5	
				10YR 4/6 (dark yellowish brown), fine loose, moist	, very loose to					
- 7									-	
- 8						SS04G	7.5 - 9.0	7.5-0 1.1	- 1-2-2	
1/27/21			\cdots					5		
								\Box	-	
⁵⁰⁶¹⁰² – 10	10.	000 -					10.0 10.1		_	
125-04054 GPT 10EC SINGLA GPT 10EC SINGLAG COL 125-04054 GPT	10.4	689.5		SANDY LEAN CLAY, CL, 10YR 4/6 (dark vellowish	SS05aG	10.0 - 10.4	100	040	
			$\langle / / \rangle$	brown), low to medium plasticity, very		SS05bG	10.4 - 11.5	1.3	2-1-2	
JPJ TDE								Η Ι		
⁹ – 12			$\langle / / \rangle$						-	
	13.0	686.9				SS06aG	12.5 - 13.0		-	
			║╫╫╏╫┇╿	SILTY SAND, SM, 10YR 5/6 (yellowis	sh brown), fine,	SS06bG	13.0 - 14.0	1.5	1-1-2	
⁰⁵⁰⁸⁹⁹⁵ – 14			╟┇┝┇┝	very loose, moist					-	
	45.0	004.0	 							
901 PNING - 15 -	15.0 15.5	684.9 684.4		SANDY LEAN CLAY, CL, 10YR 5/6 (vellowish	SS07aG	15.0 - 15.5	5	-	
VA EIP	15.5	004.4		brown), low plasticity, very soft, moist				150- 16: 1.5	1-2-1	
- 16 −					llting Services Ir		I		1/27/21	

Stantec Consulting Services Inc.





Client Tennesse Valley Authonty Boring Location 44.612.30.K.2.363.046.92 E.NAD27 Plant Local Value Surface Elevation Gene Plant Elevation Datum NSVD29 Litholog Description Rock Care Rock C	Client	Borehole IDN/A		Stantec Boring	g No. WBF	-B03		
Lithology Depth Ft ² Elevation Graphic Description Overburden: Sample '7 Depth Ft ² Rue, Ft Rec, Ft BiowaPSI 16	Client	Tennes	see Valley Authority				92 E NAD27	Plant Local
Depth FI ² Elevation Graphic Description Rock Core: RQD % Run FI Rec. FI FI Rec. FI	Project	Number <u>175668</u>	050	Surface Elevat	tion <u>699.9 ft</u>	Elevatior	n Datum_	NGVD29
16 POORLY GRADED SAND WITH CLAY, SP-SC, 107R 5/6 (pallowish brown), fine, very loose, wet (Continued) SS07bG 15.5 - 16.5 17		Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
17 POORLY GRADED SAND WITH CLAY, SP-SC, 107R 56 (ejelowish brown), fine, very loose, wet (Continued) ISO/RG	Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
19 20 20.3 679.6 SANDY LEAN CLAY, CL. 10YR 4/4 (dark yellowish brown) and 10YR 6/1 (gray), non-plastic to low plasticity, very soft, wet SS08aG 20.0 - 20.3 1.5 1.5 1.1-1-1 22 22.5 677.4 SANDY LEAN CLAY, CL. 10YR 4/4 (dark yellowish brown), fine, very loose, wet SS08aG 20.0 - 20.3 1.5 1.4 200 23 22.5 677.4 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic to low plasticity, very soft, wet ST02G 22.5 - 24.5 1.4 200 24 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet ST02G 22.5 - 24.5 1.4 200 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet ST02G 25.0 - 26.5 1.5 WH-WH-1 28 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 0.0 500 31 S3.3 666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose, wet SS11aG 32.5 - 33.3 1.5 WH-8-12 34 S511aG 35.3 - 664.6 Shale, soft, weathered, wet to dry, glauconitic SS11aG 35.3 - 36.5	- 17		10YR 5/6 (yellowish brown), fine, very		SS07bG	15.5 - 16.5		-
203 0/30 0/30 1 SANDY LEAN CLAY, CL, 10YR 4/4 (dark yellowish prown) and 10YR 6/1 (gray), non-plastic to low plasticty. very soft, wet 500aG 20.3 - 21.5 1					ST01G	17.5 - 19.5	0.0	 200
21 brown) and 10YR 6/1 (gray), non-plastic to low plasticity, very soft, wet SS08bG 20.3 - 21.5 1.4 20 22 22.5 677.4 1.1 SILTY SAND, SM, 10YR 5/6 (yellowish brown), fine, very loose, wet ST02G 22.5 - 24.5 1.4 200 24 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet SS09G 25.0 - 26.5 1.4 200 26 27 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 29 33 666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 0.0 500 33 366.6 S513 666.4 S5126 S513G 33.3 - 34.0 1.5 WH-8-12 34 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.3 - 36.5 1.2 8-23-21 35 Shale, soft, weathered, wet to dry, glauconitic SS12aG 36.5 - 36.7 1.2 8-23-21	- 20 20.3	679.6			SS08aG	20.0 - 20.3		_
22.5 677.4 677.4 SILTY SAND. SM. 10YR 5/6 (yellowish brown), fine, very loose, wet 24 25.0 674.9 1.4 200 25 25.0 674.9 1.4 200 26 25.0 674.9 1.4 200 26 25.0 674.9 1.4 200 27 28 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 29 31 33.3 666.6 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 33 3666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, corarse, medium dense, wet SS11aG 32.5 - 33.3 511aG 32.5 - 33.3 511aG 33.3 - 34.0 1.5 WH-8-12 36 35.3 664.6 4 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.3 - 36.5 5 1.2 8-23-21 37 Shale, soft, weathered, wet to dry, glauconitic SS13G 36.5 - 36.7 5 0.2 50/2*			brown) and 10YR 6/1 (gray), non-plas		SS08bG	20.3 - 21.5	1.5	1-1-1 _
23 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet Sand lens from 25.5' to 25.8' SS09G 25.0 - 26.5 1.5 WH-1-2 -26 -27 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 -28 -31 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 -33 33.3 666.6 For early proper to loose, wet POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 0.0 500 34 S5.3 664.6 For early proper to loose, wet SS11bG 33.3 - 34.0 1.5 WH-8-12 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.0 - 35.3 1.2 8-23-21 36 Shale, soft, weathered, wet to dry, glauconitic SS13G 36.5 - 36.7 1.2 8-23-21	- 23	677.4		h brown), fine,	ST02G	22.5 - 24.5	225-245	- 200 -
- 28 - 28 - 29 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 - 30 - 31	- 25	674.9	non-plastic, very soft, wet	h brown),	SS09G	25.0 - 26.5	1.5	— WH-1-2 _
31 32 32.5 667.4 0.0 500 33 33.3 666.6 900 PORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 1.5 WH-8-12 34 900 RAVEL, SP-SM, 10YR 5/1 (gray), very fine to coarse, medium dense, wet SS11bG 33.3 - 34.0 1.5 WH-8-12 35 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.0 - 35.3 1.2 8-23-21 36 36 36.5 - 36.7 90 0.2 50/2"	- 28		Color change to 10YR 5/1 (gray) at 27	7.5'	SS10G	27.5 - 29.0	1.5	- WH-WH-1 -
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	- 30 - 31 - 31 - 32				ST03G	30.0 - 32.0	0.0	 500 –
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	32.5	667.4		E/1 (area) free				
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	₽ - 33 <u>33.3</u>	666.6		or r (gray), line,	SS11aG	32.5 - 33.3	5 	WH-8-12
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	напос - 34 - 35 - 25 остан - 35 - 25 остан	664.6	GRAVEL, SP-SM, 10YR 5/1 (gray), ve				40 	-
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	5.50		Shale, soft, weathered, wet to dry, gla	uconitic			35 0- 10	8_03_01
	04ING - 36						วั	-
		662.6					5	Began Core



Client I	Borehole IDN/A		Stantec Boring	No. WBF	-B03		
Client	Tenness	see Valley Authority	Boring Locatio		30 N; 2,363,046.	92 E NAD27	Plant Local
Project	t Number1756680	050	Surface Elevat	tion 699.9 ft	Elevation	n Datum_I	NGVD29
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
38		Limestone (80%) With Shale (20%) Limestone, light gray, hard, weathere	d, oolitic,	0	37.3 - 38.7 1.4	373 - 1.4	100
39 40		Shale, dark gray, soft, highly weather Fractured throughout recovered core	-	0	38.7 - 40.9 2.2	38.7 - 1.7	77
41		limestone/shale bedding contacts, ab observed within fractures, and numer breaks along previously calcite-filled healed fractur	ous mechanical			40	
43				0	40.9 - 43.7 2.8	¹⁹ -43.7	43
14 15		Artesian flow observed at 43.7'		0	43.7 - 45.6 1.9	43.7 O.6	32
46 47 47.5	652.4		-	0	45.6 - 47.5 1.9	45.6 - 47.5	32
		Bottom of Hole at 47.5 Ft. Top of Rock = 35.3 Ft. Top of Rock Elevation = 664.6 Ft. Begin Core = 37.3 Ft.					
	Vibratir	ng Wire Piezometers installed. See inst	allation log for backfil	ll details.			
	G = 2: a,b,c	Environmental Sample Custody (two Sp Geotechnical Sample Custody : denote Split Spoon divided between E hs are reported in feet below ground su	nvironmental and Ge			ole)	



	lient F	Borehole		A	Stantec Boring	No WBF	-B04			
	lient	5001010		see Valley Authority	Boring Location			.46 F	NAD27	Plant Local
		Number		<u> </u>	Surface Elevat	-				
	-			DEC Order	Date Started	8/6/19	Comple			
	-			ea Co, Spring City, Tennessee	Depth to Water		Oomple Date/Tir		N/A	·
	-	or G. B	-		Depth to Water				N/A	
	•	-		Intec Consulting Services Inc.	Drill Rig Type a	-				
	-		-	Sampling Tools (Type and Size	0 11					
			•		Q-3 Wireline, Split Ba					
0	verdri	II Tooling	(Type	and Size) N/A			Overdrill	Dep	oth _N	I/A
s	ample	er Hamme	er Type	Automatic Weight 140	Ib Drop 30	"	Efficiency	N	/A	
В	oreho	le Azimu	th	N/A	Borehole Inclin	ation (from	Vertical)	N/A		
R	leview	ed By	K. Bla	akley	Approved By	A. Welshan	s			
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	l	Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	713.4		Top of Hole						
	0.5	712.9		Topsoil		SS01G	0.0 - 1.5	0.0	1.2	5-6-6
- 1				SANDY LEAN CLAY WITH GRAVEL	, , ,	33010	0.0 - 1.5	.5	1.2	
				(yellowish red) and 5YR 5/1 (gray), m firm, dry, with fragments of siltstone a						
- 2				[FILL]						-
- 3								2		_
Ŭ						SS02G	2.5 - 4.0	5 - 4.0	1.5	4-4-6
- 4										-
		700 4								
- 5	5.0 5.3	708.4 708.1	///	LEAN CLAY WITH SAND, CL, 5YR 5		SS03aG	5.0 - 5.3			
			•••••	red) and 10YR 2/1 (black), low plastic		SS03bG	5.3 - 6.5	5.0 - 6	1.5	14-12-10
- 6				[CCR]]	000000	5.5 - 0.5	σ		-
- 7			••••	WELL GRADED SAND, SW, 10YR 3/						_
	7.5	705.9		grayish brown) and 10YR 2/1 (black),						
- 8				fragments of glassy CCR, [CCR]		SS04G	7.5 - 9.0	7.5	1.2	3-5-9
9/10/20			••• +	WELL GRADED SAND WITH SILT, S	SW-SM, 10YR	5504G	7.5 - 9.0	- 9.0	1.2	3-5-9
^{GDT 9/}				3/6 (dark yellowish brown) and 10YR	· · · ·					-
190530.	10.0	703.4	••• +	very fine to coarse, very loose to loos iron oxide staining, with fine to coarse						
9 00007 WHE TOPEC ONCREMENT TO 201406300 GOT 10 10 10 10 10 10 10 10 10 10								10.		_
unsans - 11				WELL GRADED SAND, SW, 10YR 4/		SS05G	10.0 - 11.5	0 - 11.	1.2	6-8-11 _
TDEC				brown) and 10YR 2/1 (black), fine to o medium dense, moist to wet, with fine				5		
^{GEY:CED} – 12				glassy CCR, [CCR]						-
EC_ORL				Wet at 11.0 feet						
₽ - 13						SS06G	12.5 - 14.0	12.5 - 1	1.1	4-6-5
68050_\								4.0		
14 90								$ \square$		-
or NI NI NI NI NI NI NI NI NI NI NI NI NI	15.0	698.4								_
A EIP BC						SS07G	15.0 - 16.3	5.0 - 16	1.3	11-27-50/4"
[≵] _ 10			.• . • •	Stantec Consu				ω. ω	-	9/10/20



Client E	Borehole IDN/A	A	Stantec Boring No. WBF-B04						
Client	Tennes	see Valley Authority	Boring Locatio		39 N; 2,362,922.4	6 E NAD27	Plant Local		
Project	Number <u>175668</u>	050	Surface Eleva	tion <u>713.4 ft</u>	Elevation	Datum_N	NGVD29		
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI		
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
- 16 - 17 - 18 - 19 - 20	694.6	WELL GRADED SAND WITH SILT A SW-SM, 10YR 2/1 (black) and 10YR 3 grayish brown), fine to coarse, mediur dense, wet, with medium to coarse gla [CCR] <i>(Continued)</i> LEAN CLAY, CL, 10GY 5/1 (greenish plasticity, firm, dry, glauconitic	3/2 (very dark n dense to very assy CCR,	SS08aG SS08bG	17.5 - 18.8 18.8 - 19.0	1.5	- - 11-7-5 -		
- 21 - 22		LEAN CLAY WITH SAND, CL, 10YR yellowish brown) and 10YR 5/1 (gray) firm, moist		ST01G	20.0 - 22.0	1.8	800 -		
- 23 - 24		Trace organics from 22.5' to 24.0'		SS09G	22.5 - 24.0 ;24.0 ;24.0	1.0	6-8-12 - -		
- 25 - 26 - 27				SS10G	25.0 - 26.5 25.0	1.5			
- 28				SS11G	27.5 - 29.0 27.5 - 29.0	1.4			
- 30 - 31 - 31 - 32 - 32		With manganese concretions from 30	.0' to 31.5'	SS12G	30.0 - 31.5	1.5	2-4-7		
220- 30 220-6 Loo 0000000000000000000000000000000000	680.9	LEAN CLAY WITH SAND, CL, 10YR vellowish brown) and 10YR 5/1 (gray) soft to firm, moist		SS13G	32.5 - 34.0	1.5	2-3-5 - -		
BA 000000000000000000000000000000000000	676.9	LEAN CLAY WITH SAND, CL, 10YR	4/1 (dark gray),	ST02G	35.0 - 37.0	2.0			

Stantec Consulting Services Inc.



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С	lient E	Borehole	IDN/A		Stantec Boring	g N	lo. WBF	-B04			
C	lient		Tennes	see Valley Authority	Boring Location			39 N; 2,362,922	2.46	E NAD27	' Plant Local
Pi	roject	Number	175668	050	Surface Eleva	atio	n <u>713.4 ft</u>	Elevatio	on E	Datum_	NGVD29
		ithology			Overburden:	;	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 38 - 39				LEAN CLAY WITH SAND, CL, 10YR 4 low plasticity, soft to very soft, moist			SS14	37.5 - 39.0	37.5 - 39.0	1.5	- WR-WH-WH
- 40 - 41 - 42							SS15G	40.0 - 41.5	40.0 - 41.5	1.5	WR-WR-WH_
- 42 - 43 - 44	42.5	670.9		SILTY SAND, SM, 10YR 4/1 (dark gra loose, wet Wood fragments at 44.0'	y), fine, very		SS16G	42.5 - 44.0	42.5 - 44.0	1.4	WR-WR-WR
- 45 - 46	45.0 46.0	668.4 667.4		SANDY WELL GRADED GRAVEL, G (dark gray), fine to coarse, loose to me wet, rounded, alluvial sand and multic Fragments of wood from 45.2' to 45.3'	edium dense, olored gravel /	-	SS17aG SS17bG	45.0 - 46.0 46.0 - 46.5	45.0 - 46.5	1.5	
- 47 - 48	48.0	665.4		Shale, very dark green gray, soft to m weathered to highly weathered, moist glauconitic, with some calcite	oderately hard,		SS18G	47.5 - 47.7	47.5 - 4	0.2	- 50/2" Began Core _
- 49 - 50 - 51				Shale (90%) With Limestone (10%)Shale, dark gray and light gray, soft to weathered to moderately weathered,Limestone, light gray, thin bedded, ha with evidence of calcite filled, healed,	rd, weathered		0	48.0 - 52.0 4.0	7.7 48.0 - 52.0	0.0	- 0 -
или – 52 – 53 – 53 – 54 – 55 – 55 – 56 – 57							0	52.0 - 57.0 5.0	52.0 - 57.0	0.7	- 14
- 56 - 57 - 58							0	57.0 - 59.2	57.0	0.3	- 14 -
								2.2	- 59.2	0.0	14



TVA EIP BORING LOG 175668050_WBF_TDEC_ORDER.GPJ TDEC SUBSURF DT 20190530.GDT 9/10/20

SUBSURFACE LOG

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		Borehole	-		Stantec Borin				40.1		
	lient			see Valley Authority	Boring Locatio			39 N; 2,362,922			
P	rojeci	Number	175668	050	Surface Eleva		Π <u>/13.4 π</u>	Elevatio			GVD29
		Lithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
Dep - 59 - 60 - 61 - 62 - 63	th Ft ³ 59.2 63.8		1: E = G = 2: a,b,	Description Limestone (90%) With Shale (10%) Limestone, light gray, hard, thin bedded Shale, dark gray, laminated, soft, with a calcite filled, healed fractures Fractures, 15° - 30°, healed, calcite and from 59.3' to 62.8' Vertical fracture, open, weathered, with surface from 59.7' to 60.3' Fractures, 15°, along limestone/shale to contact at 60.6', 60.7', 60.8', 61.0' Fracture zone, fresh from 61.4' to 61.8' Fracture zone, weathered, with calcite from 62.1' to 62.4' Bottom of Hole at 63.8 Ft. Top of Rock = 46.0 Ft. Top of Rock Elevation = 667.4 Ft. Begin Core = 48.0 Ft. ng Wire Piezometers installed. See install Environmental Sample Custody (two Split Geotechnical Sample Custody c denote Split Spoon divided between Enviths are reported in feet below ground surf	Rock Core: d, weathered, abundant d quartz filled, o calcite on redding on surfaces	fill d	RQD %	Run Ft 59.2 - 63.8 4.6	59.2-63.8	3.6	
											_
											-
											-



С	lient F	Borehole	ID	N/A	ι	Stantec Boring	a N	o. WBF	-B05			
	lient		_			Boring Locatio				9.29 I	E NAD27	Plant Local
		Number				Surface Eleva		-				
	-					Date Started		8/8/19	 Comple			
	-	Location				Depth to Wate		N/A	Date/Ti		N/A	
	-	or G. Bi				Depth to Wate			 Date/Ti		N/A	
D	rilling	Contract	or _	Sta		Drill Rig Type			850XR, #953			
0	verbu	rden Drill	ling	and	Sampling Tools (Type and Size)_	4-1/4" HSA, 2" S	SS w	v/o liners, 3'	" Shelby Tubes	6		
R	ock D	rilling and	d Sa	mpl	ling Tools (Type and Size)HQ-3	Wireline, Split Ba	arrel	, Surface S	et Bit			
		-		•	and Size) <u>N/A</u>				Overdril		•	N/A
	•		-	•	Automatic Weight 140 lb				Efficiency		N/A	
		le Azimu	-			Borehole Inclir			·	N//	۹	
R	eview	ed By _	K	. Bla	kley	Approved By		A. Welshan	S			
		ithology				Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Grap	ohic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	717.2			Top of Hole					+		
	0.5	716.7		폣	Topsoil			SS01G	0.0 - 1.5	0.0 -	0.9	5-4-5
- 1			\mathbb{Z}	\square	LEAN CLAY WITH SAND, CL, 5YR 5/6 red) and 5YR 6/1 (gray), low plasticity, f					1.5		
- 2				\square	fragments of siltstone and sandstone, [F	-						-
				\square	-	_						
- 3	3.5	713.7		\square				SS02aG	2.5 - 3.5	2.5 - 4	1.2	2-6-8
- 4			ΠĤ	ĺΠ	SILT, ML, 10YR 2/1 (black), non-plastic	, very soft,		SS02bG	3.5 - 4.0	Ō		-
					moist, [CCR] With glassy CCR fragments at 3.7'							
- 5					With glassy CON hagments at 3.7					(7)		-
- 6								SS03G	5.0 - 6.5	5.0 - 6.5	1.0	2-3-3
Ŭ												
- 7												-
- 8										.7		_
								SS04G	7.5 - 9.0	5 - 9.0	1.5	WR-1-WH
- 9												-
8/21												
⁸ 7 − 10										10.0		_
- 11								SS05G	10.0 - 11.5) - 11.5	1.5	WR-WH-WH
IRF DT 2												
insens:												-
 					Some clay with fragments of siltstone and	nd sandstone		66000	105 110	12.5		-
DER.GP					from 12.5' to 14.0'			SS06G	12.5 - 14.0	- 14.0	1.5	1-1-1
ਸ਼ ਗ਼ ਗ਼												-
^모 병 – 15												_
668050										15.		
9 ² - 16								ST01G	15.0 - 17.0	0-17.0	NR	800 -
										ľ		-
A EIP B	17.5	699.7										
≤ <mark>L_18</mark> _			111	111	Stantec Consulti							2/8/21



Client Borehole ID N/A Stantec Boring No. WBF-B05									
Client	Tenn	essee Valley Authority	Boring Location 444,830.68 N; 2,362,709.29 E NAD27 Plant Local						
Project	Number 1756	68050	Surface Elevat	ion <u>717.2 ft</u>	Elevation	Datum_	NGVD29		
	_ithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI		
Depth Ft ³	Elevation Graphi	c Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
- 18 - 19 - 20.0	697.2	SILTY SAND, SM, 10YR 3/2 (very da brown), very fine to fine, very loose, n (<i>Continued</i>)		SS07G	17.5 - 19.0	1.5	 1-WH-WH 		
- 21 - 22		WELL GRADED SAND WITH SILT A SW-SM, 10YR 2/1 (black) and 10YR grayish brown), very fine to coarse, ve loose, wet, [CCR] Wood fragments at 21.0'	3/2 (very dark	SS08G	20.0 - 21.5	1.0	 1-3-4		
- 23	694.4	<u>}</u>		SS09aG	22.5 - 22.8	3	_		
- 24		SANDY LEAN CLAY WITH GRAVEL, (yellowish brown) and 10YR 5/1 (gray coarse, low plasticity, soft, wet		SS09bG	22.8 - 24.0	1.0	2-4-5		
- 25 <u>25.0</u> - 26	692.2	LEAN CLAY, CL, 10YR 4/2 (dark gray firm, moist, with organics	vish brown),	SS10G	25.0 - 26.5	1.4			
- 27	689.7	LEAN CLAY, CL, 10YR 5/4 (yellowish	brown) and		7		_		
- 28 - 29		10YR 5/1 (gray), low to medium plast moist, mottled, with some fine sand a fragments of sandstone, trace organio	city, firm to soft, nd weathered	SS11G	27.5 - 29.0	1.5	4-6-7 –		
- 30 - 31		Some iron staining from 30.0' to 40.0'		SS12G	30.0 - 31.5	1.0	2-3-5		
- 32 - 33 - 34				ST02G	32.5 - 34.5	1.3	- 700 -		
- 35 - 36				SS13G	35.0 - 36.5	1.5			
- 37 - 38 - 39		Sand content increasing at 37.5'		SS14G	37.5 - 39.0	1.5	- 4-6-6 -		
- 40 <u>40.0</u> - 41	677.2	SANDY LEAN CLAY, CL, 10YR 5/6 (and 10YR 5/1 (gray), low to medium p moist to wet		SS15G	40.0 - 41.5	1.5	2-4-3		



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С	lient E	Borehole	IDN/A		Stantec Boring	g١	lo. WBF	-B05			
C	lient		Tennes	see Valley Authority	Boring Location			68 N; 2,362,709	9.29	E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleva	itio	n <u>717.2 ft</u>	Elevatio	on l	Datum_	NGVD29
		ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 43 - 44	42.5	674.7		LEAN CLAY WITH SAND, CL, 10YR 4 low plasticity, very soft, wet	I/1 (dark gray),		SS16G	42.5 - 44.0	42.5 - 44.0	1.5	1-1-1 -
- 45 - 46 - 47	47.5	669.7					ST03G	45.0 - 47.0	45.0 - 47.0	2.0	
- 48 - 49				SILTY SAND, SM, 10YR 4/1 (dark gra to medium dense, wet, with some fine subrounded, alluvial gravel			SS17G	47.5 - 49.0	47.5 - 49.0	1.5	1-1-1 -
- 50 - 51	<u>50.6</u> 51.6	<u>666.6</u> 665.6		Siltstone, light gray brown to dark gray moderately hard, highly weathered, dr			SS18aG SS18bG	50.0 - 50.6 50.6 - 51.2	50.0 - 51.2	1.2	– 21-38-50/2" Began Core
- 52 - 53 - 54 - 55 - 56 - 56	57.2	660.0		No recovery			0	51.6 - 57.2 5.6	51.6 - 57.2	0.0	0 -
- 57 - 58 - 58 - 59 - 59 - 59 - 59 - 60 - 61 - 61 - 62	51.2	000.0		Shale (70%) With Limestone (30%) Shale, dark green gray, very soft, high place to clay, limited recovery Limestone, dark green gray and dark g moderately hard to very soft, highly we fractured, staining and calcite on fractu	gray, eathered, highly		0	57.2 - 62.2 5.0	57.2 - 62.2	2.0	40
TVA EIP BORING LOG 17560000 WBF TDEC - 64 - 65 - 66							0	62.2 - 67.2 5.0	62.2 - 67.2	1.1	22



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Client Borehole	Client Borehole IDN/A Stantec Boring NoWBF-B05									
Client	Tennes	ssee Valley Authority	Boring Locatio		8 N; 2,362,709.29	E NAD27	' Plant Local			
Project Number	175668	8050	Surface Elevat	ion <u>717.2 ft</u>	Elevation	Datum_	NGVD29			
Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Depth Ft ³ Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 67 67.2 650.0		Bottom of Hole at 67.2 Ft.								
		Top of Rock = 50.6 Ft. Top of Rock Elevation = 666.6 Ft. Begin Core = 51.6 Ft.					-			
	Vibrati	ing Wire Piezometers installed. See insta	allation log for backfil	l details.			-			
			lit On some were to	and the state of		-)	-			
	G = 2: a,b,	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E	nvironmental and Ge			9)	-			
	3: Dep	oths are reported in feet below ground su	nace				-			
							_			
							_			
							_			
							-			
							_			
							-			
_							-			
0.6DT 2/8/2							-			
E DT 2019053							-			
EC SUBSURF							_			
ER.GPJ TDE							-			
трес_окр							-			
368050_WBF							-			
6 L06 175							-			
TVA EIP BORING LOG 175688050, WBF, TDEC, ORDER GPJ TDEC SLIBS UFF DT 20196530 GDT 28821							_			
2		Stantec Consu	Ilting Services In	C.			2/8/21			



С	lient F	Borehole	ID N/A	Ν	Stantec Boring	a No. WBF	-B06		
	lient			see Valley Authority	Boring Locatio		54 N; 2,363,046.	90 E NAD27	Plant Local
		Number			Surface Eleva	-		n Datum N	
	-			DEC Order	Date Started	8/21/19		ed 8/21/1	
	-			ea Co, Spring City, Tennessee	Depth to Wate		Date/Tin		
	-			Logger G. Budd	Depth to Wate				
	-			ntec Consulting Services Inc.	Drill Rig Type				
0	verbu	rden Drill	ling and	Sampling Tools (Type and Size)	4-1/4" HSA, 2" S	SS w/o liners, 3	" Shelby Tubes		
R	ock D	rilling and	d Samp	ling Tools (Type and Size) <u>NQ</u> -	-3 Wireline, Split Ba	arrel, Surface S	et Bit		
0	verdri	ll Tooling	ı (Туре а	and Size) N/A			Overdrill	Depth _	I/A
	-			Automatic Weight 140 II		0"	Efficiency	N/A	
		le Azimu		N/A	Borehole Inclin	•	·	N/A	
R	eview	ed By	K. Bla	ikley	Approved By	A. Welshar	S		
		ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	699.7		Top of Hole					
	0.5	699.2	* * • • • • • • •	_ POORLY GRADED GRAVEL, GP, 10`		SS01G	0.0 - 1.5		8-36-42
- 1				crushed limestone gravel, [FILL]			0.0 1.0	, б	- 10 00 42
- 2				WELL GRADED GRAVEL WITH SILT	, SW-SM,				-
				10YR 2/1 (black), fine to coarse, dense					
- 3			•••	limestone gravel, [CCR]		SS02G	2.5 - 4.0	^{2,55}	11-13-14
- 4								0	_
4									
- 5	5.0	694.7							_
6				WELL GRADED SAND WITH CLAY, S 2/1 (black) and 10YR 3/6 (dark yellowi		SS03G	5.0 - 6.5	50 6 1.5	4-3-6
- 6				very fine to coarse, very loose to loose	'			Ċn	-
- 7	7 5	<u></u>		some sandy clay and gravel, [CCR]					-
	7.5	692.2		WELL GRADED SAND, SW, 10YR 2/2	1 (black) verv				
- 8			••••	fine to coarse, loose, moist, with fragm		SS04G	7.5 - 9.0	0.8	3-3-3
- 9			••••	CCR, [CCR]					-
123	10.0	689.7							
8 - 10	10.0	000.7		SANDY LEAN CLAY, CL, 10YR 3/1 (v	ery dark gray)			10	_
				to 10YR 4/2 (dark grayish brown), low	plasticity, very	SS05G	10.0 - 11.5	1.2	2-5-4
1 1			$\langle / / \rangle$	soft to soft, moist to wet					
12 h									-
 			$\langle / / \rangle$					12.5	-
				Wet at 13.0'		SS06G	12.5 - 14.0	1.0	1-1-1
- 14			//						-
≝	15.0	684.7							_
				SILTY SAND, SM, 10YR 5/4 (yellowish	h brown), fine,			15	
⁸ 2 − 16			╟┇╽┇	loose, wet		ST01G	15.0 - 17.0	2.0	500 -
- 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 16 - 17 - 10 - 17 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10			 						
¥9 – 17	17.5	682.2	ŀĮŀĮŀĮ						-
[⊾] _18_			///						



Client	Borehole IDN/A	Α	Stantec Boring No. WBF-B06						
Client	Tennes	see Valley Authority	Boring Locatio		54 N; 2,363,046	6.90	E NAD27	' Plant Local	
Proje	t Number 175668	050	Surface Eleva	ntion <u>699.7 ft</u>	Elevatio	on E	Datum_	NGVD29	
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %	
- 18 - 19		CLAYEY SAND, SC, 10YR 5/6 (yellow fine, very loose, wet <i>(Continued)</i>	wish brown),	SS07G	17.5 - 19.0	17.5 - 19.0	1.2	WH-1-1	
- 20 - 21 - 22	678.9	SANDY LEAN CLAY, CL, 10YR 3/3 (10YR 5/1 (gray), low plasticity, very s		SS08aG SS08bG	20.0 - 20.8 20.8 - 21.5	20.0 - 21.5	1.5		
- 23 - 24		SILTY SAND, SM, 10YR 5/6 (yellowis 10YR 5/1 (gray), fine, very loose, wet		ST02G	22.5 - 24.5	22.5 - 24.5	2.0	500	
- 25 - 26				SS09G	25.0 - 26.5	25.0 - 26.5	1.5	— WH-WH-WH_	
- 27 - 28 <u>28.</u> - 29	671.4 	SILTY SAND, SM, 10YR 5/6 (yellowis 10YR 5/1 (gray), fine, dense, moist Color change to 10YR 4/1 (dark gray)	,	SS10aG SS10bG	27.5 - 28.3 28.3 - 29.0	27.5 - 29.0	1.5		
- 30 - 31 - 32				ST03G	30.0 - 32.0	30.0 - 32.0	2.0		
- 33		POORLY GRADED SAND WITH SIL GRAVEL, SP-SM, 10YR 4/1 (dark gra coarse, very loose to dense, wet, with	ay), very fine to	SS11G	32.5 - 34.0	32.5 - 34.0	0.9	1-1-5	
$\frac{787}{140}$ - 34 34.4 - 35 35.2		wood fragments Shale, gray, moderately hard, weathe	_	SS12aG SS12bG	34.0 - 34.5 34.5 - 35.2	34.0 - 35.2	1.2	- 13-43-50/2" Began Core	
286 - 34 34.: 35 35.:		\dry Shale (80%) With Limestone (20%) Shale, green gray and light gray, very weathered, shale captured in mud tub return	with drill water	0	35.2 - 39.0 3.8	35.2 - 39.0	1.4	37 -	
- 39 - 39 - 40 - 41 - 41		Limestone, weathered, fractured throu recovered core, with calcite on fractur Evidence of glauconitic, micaceous, b shale, with trace marine shell fossils a limestone/shale bedding contacts	e surfaces ioturbated,	0	39.0 - 42.2 3.2	39.0 - 42.2	1.1	34	



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Client	Borehole IDN/A	\	Stantec Boring	No. WBF	-B06		
Client	Tennes	see Valley Authority	Boring Locatio		54 N; 2,363,046.9	0 E NAD27	' Plant Loca
Project	t Number 175668	050	Surface Elevat	tion 699.7 ft	Elevation	Datum	NGVD29
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
epth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
3			_	20	42.2 - 45.2 3.0	0.6	20
45.2	654.5	Bottom of Hole at 45.2 Ft.					
	1: E = G =	Top of Rock Elevation = 665.2 Begin Core = 35.2 Ft. backfilled with 30% solids bento Environmental Sample Custody Geotechnical Sample Custody	nite grout. (two Split Spoons may be re			e)	
	2. a,u, 3: Dep	c denote Split Spoon divided betv ths are reported in feet below gro	bund surface		inples		



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С	lient E	Borehole	ID N/A	A	Stantec Boring	No. WBF	-B07		
C	lient		Tennes	see Valley Authority	Boring Locatio			.63 E NAD	27 Plant Local
P	roject	Number	175668	3050	Surface Elevat	ion 716.5 ft	Elevatio	n Datum	NGVD29
P	roject	Name	WBF T	DEC Order	Date Started	8/13/19	Comple	ted 8/1	5/19
	-			ea Co, Spring City, Tennessee	Depth to Wate	-	 Date/Tir		۸
	-	or G.B			Depth to Wate			-	۸
	Prilling	Contract	or Sta	intec Consulting Services Inc.	Drill Rig Type a	and ID CME	850XR, #953		
c)verbu	rden Dril	ling and	Sampling Tools (Type and Size)	4-1/4" HSA, 2" S	S w/o liners, 3	" Shelby Tubes		
R	lock D	rilling an	d Samp	ling Tools (Type and Size) <u>HQ</u>	-3 Wireline, Split Ba	rrel, Surface S	et Bit		
C	Verdri	ll Tooling	g (Type	and Size) N/A			Overdrill	Depth	N/A
s	ample	er Hamm	er Type	Automatic Weight 140 I	·)"	Efficiency	N/A	
		le Azimu			Borehole Inclin			N/A	
R	leview	ed By	K. Bla	akley	Approved By	A. Welshan	S		
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. I	-t Blows/PSI
Dep	oth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. I	-t Rec. %
- 0	0.0	716.5		Top of Hole					
	0.5	716.0		Topsoil		SS01G	0.0 - 1.5	1.5	7-7-8
- 1				FAT CLAY WITH SAND, CH, 5YR 5/6			0.0 - 1.0	т. 0	
				and 5YR 6/1 (gray), high plasticity, firm fragments of siltstone and sandstone,					
- 2				5					-
- 3								2.5	
	10	740 5				SS02G	2.5 - 4.0	0.9	2-4-4
- 4	4.0	712.5		SILTY SAND, SM, 10YR 2/1 (black), f	ine loose dry				-
			1 + 1 + 1 + 1	[CCR]	ine, ioose, ury,				
- 5			$ \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow $					5.	
- 6						SS03G	5.0 - 6.5	-6.5 5	4-6-6
	6.5	710.0							
- 7				WELL GRADED SAND WITH SILT, S 2/1 (black), fine to coarse, loose, mois					-
- 8			•••	trace coarse fragments of glassy CCR					
Г°						SS04G	7.5 - 9.0	1.5	4-7-8
₈ – 9			••• +						-
DT 5/15									
⁹⁰²³⁰ – 10			•••	Wet at 10.0					-
11 – ¹¹				horat loto		SS05G	10.0 - 11.5	1.0	4-4-5
BSURF			••• +					<i>ъ</i>	
ла Эд – 12									-
CPJ T			•••						
– 13						SS06G	12.5 - 14.0	12.5	4-6-8
			••• <u> </u>					14.0	
HRM 09									-
²⁸⁹⁹² – 15			 						
6 LOG						SS07G	15.0 - 16.5	15.0	2-3-5
NING 16							10.0 - 10.0	1.3	- 2-3-3
LVA EIF									



Clie	ent Bore	ehole l	D_N/A		Stantec Boring	g No	o. WBF	-B07			
Clie	ent		Tennes	see Valley Authority	Boring Locatic			38 N; 2,362,653	.63 E	E NAD27	Plant Local
Pro	oject Nu	mber_	175668	050	Surface Eleva	ation	716.5 ft	Elevatio	n D	atum_1	IGVD29
	Litho				Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth	Ft ³ Ele	vation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 19	18.8 6	97.7		WELL GRADED SAND WITH SILT, S 2/1 (black), fine to coarse, loose, mois trace coarse fragments of glassy CCR (<i>Continued</i>) LEAN CLAY, CL, 10YR 4/1 (dark gray plasticity, firm, wet, with fragments of s	t to wet, with , [CCR]), medium		SS08aG SS08bG	17.5 - 18.8 18.8 - 19.0	17.5 - 19.0	1.5	2-1-8
- 20 - 21 - 22	22.5 6	94.0					ST01G	20.0 - 22.0	20.0 - 22.0	0.0	500
- 23 - 24		04.0		LEAN CLAY WITH SAND, CL, 7.5YR brown) and 7.5YR 5/1 (gray), medium soft to soft, moist, sand increasing with	plasticity, very		SS09G	22.5 - 24.0	22.5 - 24.0	1.0	WH-2-3
- 25 - 26 - 27							ST02G	25.0 - 27.0	25.0 - 27.0	2.0	700
- 28 - 29							SS10G	27.5 - 29.0	27.5 - 29.0	1.5	WH-2-4
- 30 - 31							SS11G	30.0 - 31.5	30.0 - 31.5	1.5	- 1-3-3
- 33	32.5 6	84.0		CLAYEY SAND, SC, 7.5YR 5/8 (stron 7.5YR 5/1 (gray), fine, very loose, moi			SS12G	32.5 - 34.0	32.5 - 34.0	1.5	1-3-4
10. + + - 34 - 35 - 35 - 36 - 37		, , , , ,		Wet at 35.0'			SS13G	35.0 - 36.5	35.0 - 36.5	1.5	- WH-WH-1
MA - 37 33 33 34 34 34 37 34 37 34 37 34 37 34 37 34 37 34 34 34 34 34 34 34 34 34 34 34 34 34	37.5 6	79.0		SILTY SAND, SM, 10YR 5/4 (yellowisl very loose, wet	n brown), fine,		ST03G	37.5 - 39.5	37.5 - 39.5	2.0	500



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С	lient E	Borehole	ID _N/A		Stantec Boring	g N	lo. WBF	-B07			
	lient			see Valley Authority	Boring Location			88 N; 2,362,653	8.63	E NAD27	Plant Local
Р	roject	Number	175668	050	Surface Eleva	tio	n <u>716.5 ft</u>	Elevatio	on l	Datum_	NGVD29
		ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 40 - 41				SILTY SAND, SM, 10YR 5/4 (yellowish very loose, wet <i>(Continued)</i>	n brown), fine,		SS14G	40.0 - 41.5	40.0 - 41.5	1.5	- WH-1-1
- 42 - 43 - 44							SS15G	42.5 - 44.0	42.5 - 44.0	1.5	WH-WH-1
- 45 - 46	45.0	671.5		WELL GRADED GRAVEL WITH SAN 5/4 (yellowish brown), very fine to coar wet, alluvial sand and multicolored gra	rse, very loose,		SS16G	45.0 - 46.5	45.0 - 46.5	1.0	
- 47 - 48 - 49							SS17G	47.5 - 49.0	47.5 - 49.0	1.5	13-14-18
- 50	50.0 50.6	666.5 665.9		Shale, gray, soft, highly weathered, we	et to dry		SS18G	50.0 - 50.6	50.0	0.6	
- 51 - 52 - 53 - 54 - 55 - 56 - 56				Shale (90%) With Limestone (10%) Shale, dark gray, highly weathered to o little recovery Limestone, light gray, hard, weathered staining, with calcite on surfaces			0	50.7 - 57.3 6.6	50.6 50.7 - 57.3	0.6	Began Core
							0	57.3 - 62.3 5.0	57.3 - 62.3	0.9	



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С	lient E	Borehole	ID N/A		Stantec Boring	No. WBF	-B07		
c	lient		Tennes	see Valley Authority	Boring Locatio		38 N; 2,362,653.6	3 E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleval	tion <u>716.5 ft</u>	Elevation	Datum_N	NGVD29
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 63 - 64 - 65	65.7	650.8				0	62.3 - 65.7 3.4	0.0	0 _
				Bottom of Hole at 65.7 Ft. Top of Rock = 50.0 Ft. Top of Rock Elevation = 666.5 Ft. Begin Core = 50.7 Ft.					- - -
			1: E = G = 2: a,b,c	backfilled with 30% solids bentonite g Environmental Sample Custody (two S Geotechnical Sample Custody denote Split Spoon divided between ths are reported in feet below ground s	plit Spoons may be re Environmental and Ge			e)	-
0190530.GDT 5/15/20									
VA EIP BORING LOG 17568050, WRF_IDEC_ORDER.GPJ TOEC SUBSURF DT 2019620 GDT 5/15/2									-



С	lient F	Borehole	ID N/A	Λ	Stantec Boring	a No. WB	F-B08			
	lient				Boring Locatio			3.00 E	NAD27	Plant Local
		Number			Surface Eleva					
	-				Date Started					
		Location			Depth to Wate		Date/Ti		N/A	
	-		-		Depth to Wate				N/A	
	•				Drill Rig Type					
	-			Sampling Tools (Type and Size)						
R	ock D	rilling and	d Samp	ling Tools (Type and Size) <u>NQ-</u>	3 Wireline, Split Ba	arrel, Surface	Set Bit			
0	verdri	ll Tooling	(Туре а	and Size) <u>N/A</u>			Overdrill	Dep	oth _	N/A
S	ample	er Hamme	er Type	Automatic Weight 140 lb		0"	•		I/A	
		le Azimut			Borehole Inclin	-		N/A	۱	
R	eview	ed By	K. Bla	kley	Approved By	A. Welsha	ans			
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³		Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	700.7	8 8 8 4	Top of Hole						
- 1	0.5	700.2		POORLY GRADED GRAVEL, GP, 10Y gray), very dense, dry, angular to subar crushed limestone gravel, [FILL]		SS01G	0.0 - 1.5	0.0 - 1.5	1.5	12-15-27 _
- 2				WELL GRADED SAND WITH SILT AN SW-SM, 10YR 5/2 (grayish brown) to 1						-
- 3	3.2	697.5	ا ا	gray), very fine to medium, medium der [FILL]		SS02aG		2.5 - 4.1	1.3	19-14-12
- 4	4.5	696.2		Black weathered coal fragments and co CCR (with brown oxide staining) from 1		SS02bG	3.2 - 4.0			-
- 5 - 6				CLAYEY GRAVEL, GC, 10YR 4/2 (dark brown) and 10YR 4/6 (dark yellowish bu medium to coarse, medium dense, dry, hydrocarbon odor, trace organics and s	rown), strong	SS03G	5.0 - 6.5	5.0 - 6.5	1.2	
- 7 - 8	8.5	692.2		CLAYEY SAND WITH GRAVEL, SC, 1 (brown) to 10YR 6/6 (brownish yellow), loose to very dense, dry, iron oxide stai	fine, very ning, [FILL]	SS04G	7.5 - 9.0	7.5 - 9.0	0.2	- WH-WH-WH
- 9 - 10				CLAYEY SAND, SC, 7.5YR 4/4 (brown (dark brown), very fine to fine, non-plas dense, moist, well graded		SS05G	10.0 - 11.5	10.0	1.5	- WH-1-2
- 11	11.4	689.3		LEAN CLAY, CL, 10YR 5/3 (brown) to (brownish yellow), low to medium plasti		33039	10.0 - 11.5	- 11.5	1.5	- vvn-1-2
-10 -11 -12 -13 -14 -15 -16 -17				to soft, moist	,, ,	SS06G	12.5 - 14.0	12.5 - 14.0	1.4	1-1-3
– 15								15.0		-
- 16 - 17						ST01G	15.0 - 17.0	0-17.0	2.0	500 -





С	lient E	Borehole	ID N/A	A la	Stantec Boring	g N	lo. WBF	-B08			
C	lient		Tennes	see Valley Authority	Boring Locatio			35 N; 2,362,938	3.00	E NAD27	' Plant Local
P	roject	Number	175668	050	Surface Eleva	tio	n <u>700.7 ft</u>	Elevatio	on D	Datum_	NGVD29
	I	_ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18							SS07G	17.5 - 19.0	17.5 - 19.	1.5	2-2-3
- 19 - 20 - 21	19.5	681.2		SILTY SAND, SM, 10YR 5/6 (yellowish 10YR 6/2 (light brownish gray), very fin low plasticity, very loose, moist to wet			SS08G	20.0 - 21.5	20.0 - 21.5	1.5	- WH-1-3 _
- 22 - 23 - 24							SS09G	22.5 - 24.0	22.5 - 24.0	1.5	- WH-1-1
- 25 - 26 - 27				Color change to 10YR 3/1 (very dark g 4/2 (dark grayish brown) at 26.0'	gray) to 10YR		ST02G	25.0 - 27.0	25.0 - 27.0	1.7	400 -
- 28 - 29							SS10G	27.5 - 29.0	27.5 - 29.0	1.5	WH-WH-WH
- 30 - 31	30.2	670.5		SILTY SAND, SM, 10YR 5/1 (gray), fir very loose, wet, well graded, with trace			SS11G	30.0 - 31.5	30.0 - 31.5	1.5	— WH-1-1
- 32 - 33 02/01/6 - 34 - 35	33.7	667.0		SILTY SAND, SM, 10YR 5/2 (grayish 3/1 (very dark gray), medium to coarse dense to dense, wet, with some grave	e, medium		ST03G	32.5 - 34.5	32.5 - 34.5 3	1.5	- 800 -
05 - 30	35.6 -35.8 -36.2	665.1 664.9 664.5		☐ FAT CLAY, CH, 10YR 5/2 (grayish bro \\to high plasticity, hard, moist	own), medium		SS12aG SS12bG	35.0 - 35.6 35.6 - 36.2	5.0 - 36.2	1.2	12-27-50/2" Began Core ⁻
0201/1 - 34 - 34 - 35 - 35 - 36 - 37 - 38 - 39 - 40 - 41 - 41 - 41 - 42				Shale, dark gray, very fine grained, we oxide staining Shale (90%) With Limestone (10%) Shale, green gray and light gray, very highly weathered to weathered, shale mud tub with drill water return	soft to hard,		0	36.2 - 40.8 4.6	36.2 - 40.8	0.4	9 -
119 - 41 - 42 - 42				Limestone, weathered, fractured throu recovered core, with calcite on surface							-

Stantec Consulting Services Inc.



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Client Tennessee Valley Authority Boring Location 445,657.35 N; 2,362,938.00 E NAD27 Plant Loc Project Number 175668050 Surface Elevation 700.7 ft Elevation Datum_NGVD29 Lithology Overburden: Sample ^{1.2} Depth Ft ³ Rec. Ft Blows/F	Client Borehole ID	/A	Stantec Boring	g No. WBF	-B08		
Lithology Description Overburden: Sample ¹² Depth Ft ³ Rec. Ft Blows/F 43 Shale (90%) With Limestone (10%) Shale (90%) Shale (90%) Shale (90%) With Limestone (10%) 0 40.8 - 46.2 6 0.8 15 44 Shale (90%) Shale (90%) With Limestone (10%) 0 40.8 - 46.2 6 0.8 15 45 Shale (90%) Shale (90%) Use athered, shale captured in mud ub with drill water return 0 40.8 - 46.2 6 0.8 15 45 H6.2 654.5 Excovered core, with calcite on surfaces (Continued) 0 40.8 - 46.2 6 0.8 15 46 46.2 654.5 Excovered core, with calcite on surfaces (Continued) 0 40.8 - 46.2 6 0.8 15 46 46.2 654.5 Excovered core, with calcite on surfaces (Continued) 0 40.8 - 46.2 6 0.8 15 46 46.2 654.5 Excovered core, with calcite on surfaces (Continued) 0 40.8 - 46.2 15 15 15 15 15 16 1	Client Tenn	essee Valley Authority				E NAD27	Plant Local
Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Rec. 9 43 -43 -44 -45 -45 -46 46.2 654.5 0.8 15 46 46.2 654.5	Project Number 1756	58050	Surface Eleva	tion 700.7 ft	Elevation I	Datum_N	NGVD29
-43 -43 -44 -44 -45	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
43 A4 A4 <td< td=""><td>Depth Ft³ Elevation Graphi</td><td>c Description</td><td>Rock Core:</td><td>RQD %</td><td>Run Ft</td><td>Rec. Ft</td><td>Rec. %</td></td<>	Depth Ft ³ Elevation Graphi	c Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
Bottom of Hole at 46.2 Ft. Top of Rock = 35.8 Ft. Top of Rock Elevation = 664.9 Ft. Begin Core = 36.2 Ft. Boring backfilled with 30% solids bentonite grout. 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody 2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface	- 44	Shale, green gray and light gray, very highly weathered to weathered, shale mud tub with drill water return Limestone, weathered, fractured thro	e captured in ughout	0	4	0.8	15
	1: E G 2: a, 3: D	Top of Rock = 35.8 Ft. Top of Rock Elevation = 664.9 Ft. Begin Core = 36.2 Ft. mg backfilled with 30% solids bentonite gro = Environmental Sample Custody (two Sp = Geotechnical Sample Custody b,c denote Split Spoon divided between E	blit Spoons may be n)	





С	lient E	Borehole	ID N/A	A	Stantec Boring	no. WBF	-B09				
	lient			ssee Valley Authority	Boring Locatio			9.75 E	E NAD27	Plant Local	
P	roject	Number	175668	3050	Surface Eleva	tion 711.7 ft	Elevatio	on D	atum 1	NGVD29	
	-			DEC Order	Date Started	-	 Comple				
				ea Co, Spring City, Tennessee	Depth to Wate		Date/Ti		N/A		
	-			Logger G. Budd	, Depth to Wate						
	-			Intec Consulting Services Inc.	, Drill Rig Type						
	-		-	Sampling Tools (Type and Size)							
R	ock D	rilling an	d Samp	ling Tools (Type and Size)							
0	verdri	II Tooling	g (Type	and Size) N/A			Overdrill	l De	pth _!	N/A	
S	ample	er Hamme	er Type	Automatic Weight 140 II	b Drop <u>3</u>	0"	Efficiency	<u> </u>	N/A		
B	oreho	le Azimu	th	N/A	Borehole Inclin	nation (from	Vertical)	N/A	4		
R	eview	ed By _	K. Bla	akley	Approved By	T. Greenwe	ell				
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %	
- 0	0.0	711.7	nenene	Top of Hole							
	0.5	711.2		Topsoil		SS01G	0.0 - 1.5	0.0 -	1.2	3-4-5	
- 1				SANDY FAT CLAY, CH, 5YR 5/6 (yell			0.0 - 1.0	1.5			
- 2				high plasticity, hard to soft, dry, with fra chert, siltstone, sandstone, [FILL]	agments of			1		-	
				, []		SS02G	1.5 - 3.0	5 - 3.0	1.2	4-3-4	
- 3										-	
- 4						SS03G	3.0 - 4.5	3.0 - 4	0.7	1-1-2	
- 4	4.5	707.2			_			5		_	
- 5				Trace CCR from 4.4' to 4.5'	/	SS04G	4.5 - 6.0	4.5 -	1.5	1-1-1	
				SILT WITH SAND, ML, 10YR 2/1 (blac very soft, moist to wet, [CCR]	ck), non-plastic,		4.0 - 0.0	6.0	1.5	1-1-1	
- 6				Trace organics from 4.5' to 6.0'				6.0		-	
- 7				Wet at 6.0'		SS05G	6.0 - 7.5) - 7.5	0.5	WH-1-1	
- 8						SS06G	7.5 - 9.0	7.5 - 9.0	1.1	1-WH-WH	
- 9										-	
						SS07G	9.0 - 10.5	9.0 -	1.3	1-WH-WH	
- 10							0.0 10.0	.0 - 10.5			
- 11								10.5			
						SS08G	10.5 - 12.0	5 - 12.0	1.3	1-WH-WH	
- 12										-	
12						SS09G	12.0 - 13.5	2.0 - 1;	1.1	WH-WH-WH	
- 13				Trace loop day, reddich brown from 4	2 3' to 20 4'			3.5		-	
- 14				Trace lean clay, reddish brown from 13	3.3 10 20.4	SS10G	13.5 - 15.0	13.5 -	1.5	WH-WH-WH	
							10.0 - 10.0	- 15.0	1.5	• • • • • • • • • • • • • • •	
- 15								15.1		-	
- 16						SS11G	15.0 - 16.5	0 - 16.5	1.5	WH-WH-WH	
-10 -11 -12 -13 -14 -15 -16 -17 -16 -17 -17											
- 17						SS12G	16.5 - 18.0	6.5 - 18.	1.3	1-1-WH	
	18.0	693.7						3.0			



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Client	Borehole	IDN/A	\	Sta	antec Boring	No. WBF	-В09			
Client		Tennes	see Valley Authority		ring Locatio		61 N; 2,362,289.3	75 E	E NAD27	Plant Local
Projec	t Number	175668	050	Su	rface Elevat	tion <u>711.7 ft</u>	Elevatior	۱D	atum_	NGVD29
	Lithology				Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description		Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19			SILT, ML, 10YR 2/1 (black), non-plastic moist to wet, [CCR]	c, ve	ery soft,	SS13G	18.0 - 19.5	18.0 - 19.5 1	1.5	- WH-WH-WH_
- ²⁰ <u>20.4</u> 20.8	691.3 690.9		¬ SILTY CLAYEY SAND WITH GRAVEL			SS14aG SS14bG	19.5 - 20.4 20.4 - 21.0	19.5 - 21.1	1.5	WH-2-5
<u>- 21 21.0</u>	690.7		10YR 2/1 (black) and 10YR 4/2 (dark g fine to coarse, very loose to loose, wet, CCR, [CCR] LEAN CLAY, CL, 2.5YR 4/4 (reddish bi plasticity, firm, moist	jrayi: , witl	sh brown), h coarse		20.1 2.10			
			No Refusal / Bottom of Hole at 21.0 Ft.							-
		Boring	backfilled with 30% solids bentonite grou	ıt.						_
		G = 2: a,b,	Environmental Sample Custody (two Split Geotechnical Sample Custody c denote Split Spoon divided between Env ths are reported in feet below ground surf	viror	nmental and Ge			ole)		-





С	lient E	Borehole	ID N/A	A	Stantec Boring	g No. WB	-B10		
C C	lient		Tennes	see Valley Authority	Boring Locatio			63 E NAD27	7 Plant Local
P	roject	Number	175668	050	Surface Eleva	ition 714.2 ft	Elevatior	n Datum	NGVD29
P	roject	Name	WBF TI	DEC Order	Date Started	8/29/19	Complet	ed 8/29/	19
				ea Co, Spring City, Tennessee	Depth to Wate		 Date/Tim	-	
	-			Logger G. Budd	Depth to Wate	er N/A	Date/Tim	ne N/A	
D	rilling	Contract	or <u>Sta</u>	ntec Consulting Services Inc.	Drill Rig Type	and ID CME	850XR, #953		
0	verbu	rden Dril	ling and	Sampling Tools (Type and Size)	4-1/4" HSA, 2" S	SS w/o liners			
R	ock D	rilling and	d Samp	ling Tools (Type and Size)					
		-		and Size) <u>N/A</u>			Overdrill I	Depth _	N/A
	-			Automatic Weight 140 I		60"	,	N/A	
		le Azimu			Borehole Inclin			N/A	
R	eview	ed By	K. Bla	ikley	Approved By	T. Greenw	ell		
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	714.2		Top of Hole					
	0.5	713.7		Topsoil		SS01G	0.0 - 1.5	1.3	3-6-6
- 1				GRAVELLY FAT CLAY WITH SAND, (yellowish red), high plasticity, hard to				л л	
- 2				moist, with fragments of chert and silts				<u>_</u>	
				-		SS02G	1.5 - 3.0	1.5	5-7-6
- 3									-
- 4						SS03G	3.0 - 4.5	0.7	4-3-2
	4.5	709.7							
- 5				SANDY LEAN CLAY, CL, 5YR 5/8 (ye and 10YR 4/2 (dark grayish brown), lo		SS04G	4.5 - 6.0	0.6	 1-1-1
- 6				plasticity, very soft to firm, moist, with	fragments of				-
Ĵ				chert, sandstone, siltstone, and fine C organics, [FILL]	CR, trace		0.0.75		100
- 7	7.5	706.7				SS05G	6.0 - 7.5	1.3	1-3-2 _
- 8	1.0	100.1		SILT, ML, 10YR 2/1 (black) and 10YR	5/6 (yellowish			7	_
Ŭ				brown), non-plastic, very soft, wet, tra	ce clay, [CCR]	SS06G	7.5 - 9.0	0.9	WH-WH-1
- 9								-	-
07/01/50						SS07G	9.0 - 10.5	0.6	WH-WH-1
10 - 10									
11 - 11						SS08G	10.5 - 12.0	⁵ 1.4	WH-WH-WH
RF DT 2							10.0 - 12.0		VVI I-VVI I-VVI I
nsans									-
						SS09G	12.0 - 13.5	0.6	WH-WH-WH
DER.GP								-	
ю 14						SS10G	13.5 - 15.0	³⁰ 1.1	WH-WH-WH
Met_TDEC_ORDER GPJ TDEC SUBSIGNET DT 2010620 0 GDT 9/002 Met_TDEC_ORDER GPJ TDEC SUBSIGNET DT 2010620 0 GDT 9/002 H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								15.0	_
668050						SS11aG	15.0 - 16.2	1.2	WR-WH-1
⁹² – 16	16.2	698.0				SS11bG	16.2 - 16.5	קריים <u>ב</u> בייד בייד בייד בייד בייד בייד בייד בייד	-
BORINGLOG				CLAYEY SAND, SC, 10YR 4/2 (dark g and 10YR 6/4 (light yellowish brown),		SS12aG			-
A EIP B(17.7	696.5		_ coarse, very loose, wet, with fragment				1.5	1-1-1
[≥] 18				Stantec Consu	/	SS12bG	17.7 - 18.0		9/10/20

Stantec Consulting Services Inc.



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Client E	Borehole II	DN/A		Stantec Bo	ring	No. WBF	-B10		
Client		Tennes	see Valley Authority	Boring Loc	atior	444,192.4	7 N; 2,362,047.6	3 E NAD2	7 Plant Local
Project	Number_	175668	050	Surface El	evati	on <u>714.2 ft</u>	Elevation	Datum_	NGVD29
	Lithology			Overburd	en:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
epth Ft ³	Elevation	Graphic	Description	Rock Co	e:	RQD %	Run Ft	Rec. Ft	Rec. %
8 9 0 <u>20.3</u>	693.9		and sandstone SANDY SILTY CLAY, CL-ML, 10YR brown), low plasticity, very soft, wet, lean clay and trace gravel (Continu	, some sandy,]	SS13G SS14aG	19.5 - 20.3	1.5	WH-WH-W
21.0	693.2		SILTY, CLAYEY SAND WITH GRA			SS14bG	20.3 - 21.0		
			10YR 5/1 (gray), very fine to coarse very loose, wet, with some gravel	, low plasticity,	/				
			No Refusal /						
			Bottom of Hole at 21.0 Ft.						
		Boring	backfilled with 30% solids bentonite g	rout.					
		4. 5 -	Environmental Cample Custadu (tura C					1-)	
		G = 2: a,b,o	Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between ths are reported in feet below ground s	Environmental ar				ne)	
		0. Бор		Jundoo					





С	lient E	Borehole	ID N/A	A	Stantec Boring	g No. WBF	-B11		
C C	lient		Tennes	ssee Valley Authority	Boring Locatio			.99 E NAD27	' Plant Local
P	roject	Number	175668	3050	Surface Eleva	tion 711.5 ft	Elevatio	n Datum	NGVD29
P	roiect	Name	WBF T	DEC Order	Date Started	9/18/19	 Complet	ted 9/18/	19
	•			ea Co, Spring City, Tennessee	Depth to Wate		Date/Tir	-	
	-	or G. B	-		Depth to Wate		 Date/Tir		
	•	-		wkston (Subcontractor)	Drill Rig Type				
	-		-	I Sampling Tools (Type and Size)	• • •	-			
R	ock D	rilling and	d Samp	ling Tools (Type and Size)	L .				
C C	verdri	ill Tooling	(Type	and Size) N/A			Overdrill	Depth	N/A
s	ample	er Hamme	er Type	N/A Weight N/A	Drop _N	I/A	Efficiency	N/A	
В	oreho	le Azimu	th	N/A	Borehole Inclin	nation (from	Vertical)	N/A	
R	eview	ed By _	K. Bla	akley	Approved By	T. Greenwe	ell		
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	711.5		Top of Hole					
	0.5	711.0		Topsoil		DP01aG	0.0 - 1.5		
- 1				SANDY FAT CLAY, CH, 5YR 5/8 (yell		DPUTaG	0.0 - 1.5		-
- 2				high plasticity, dry, with fragments of s limestone, and chert, [FILL]	andstone,	DP01bG	1.5 - 2.5		
2						DFUIDG	1.5 - 2.5	2.5	N/A
- 3								5.0	-
						DP01c	2.5 - 5.0		
- 4									-
- 5	5.0	706.5						44	_
				SILT, ML, 10YR 2/1 (black), non-plast	ic, soft, moist to	DP02aG	5.0 - 6.5		
- 6				wet, [CCR] Wet at 5.3'		01 0200	0.0 - 0.0		-
- 7									-
ľ						DP02bG	6.5 - 8.0	5.0	N/A
- 8								0.0	-
						DP02cG	8.0 - 9.5		
- 9									-
- 10						DP02dG	9.5 - 10.0		_
30.GDI						DP03aG	10.0 - 11.5		
96 – 11									-
12 - 12									-
						DP03bG	11.5 - 13.0	4.5	N/A
<u> </u>								5.0	-
RDER.G						DP03cG	13.0 - 14.5		
ы <mark>— 14</mark>									-
- - 15						DP03d	14.5 - 15.0		-
5668050				With coarse, glassy particles from 15.0	U' to 19.5'	DP04aG	15.0 - 16.5		
[£] ⊢ 16									-
TVA EIP BORINGLOOP 175680809 WHE, TDEC ORDER GP1 1 TDEC SUBSURE DT 201920.0201 772/122 									-
 ▼						DP04bG	16.5 - 18.0	5.0 2	N/A
L_18_								3	



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Oliant Danahala ID		Otoreto e Donino		_R11		
Client Borehole ID <u>N/A</u> Client Tennes	ssee Valley Authority	Stantec Boring Boring Locatior				Plant Local
Project Number 175668		Surface Elevati		Elevation		
	000					NGVD29
Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 18 - 19 - 19 - 20 - 20 - 20 - 20 - 21 - 22 - 2 -	SILT, ML, 10YR 2/1 (black), non-plast wet, [CCR] <i>(Continued)</i> SANDY LEAN CLAY, CL, 10YR 5/1 (g very soft, wet, [CCR] CLAYEY SAND, SC, 10YR 4/4 (dark y brown) and 10YR 5/1 (gray), dense, d highly weathered shale Shale, green gray, soft to moderately weathered Bedrock Refusal / Bottom of Hole at 22.5 Ft. Top of Rock = 21.5 Ft. Top of Rock Elevation = 690.0 Ft. backfilled with 30% solids bentonite gro Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between En ths are reported in feet below ground su	gray), medium, yellowish iry to moist, hard, highly ut. lit Spoons may be re-		18.0 - 19.5 19.5 - 20.0 20.0 - 20.3 20.3 - 21.5 21.5 - 22.5	2.5	N/A -



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Client Boreho	e ID N/	A	Stantec Boring	No. WBF	-B12		
Client		ssee Valley Authority	Boring Location		64 N; 2,363,054.9	4 E NAD27	Plant Local
Project Numb	er 17566	8050	Surface Elevat				
Project Name			Date Started	6/10/20	Complete		
Project Locat		ea Co, Spring City, Tennessee	Depth to Water	- 13.0 ft	Date/Tim		20 10:05
Inspector T			Depth to Water				20 08:37
· · -		antec Consulting Services Inc.	Drill Rig Type a				
-		d Sampling Tools (Type and Size					
Rock Drilling	and Samp	bling Tools (Type and Size)	A				
Overdrill Tool	ng (Type	and Size) N/A			Overdrill	Depth _	N/A
Sampler Ham	mer Type	Automatic Weight 140	lb Drop <u>30</u>	"	Efficiency	N/A	
Borehole Azir	nuth	N/A	Borehole Inclin	ation (from	Vertical)	N/A	
Reviewed By	K. Bl	akley	Approved By	A. Welshan	S		
Lithology	,		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevati	on Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
0.0 699.4		Top of Hole					
- 1		GRAVELLY LEAN CLAY WITH SANE	1	SS01G	0.0 - 1.5	1.4	3-5-9
- 2		\[FILL] SILTY SAND, SM, 7.5YR 3/4 (dark br		SS02G	1.5 - 3.0	1.3	3-9-10
- 3		to fine, medium dense, dry, trace clay	′, [FILL]				-
- 4 4.5 694.9				SS03G	3.0 - 4.5	1.0	6-5-6
- 5		CLAYEY SAND, SC, 7.5YR 4/3 (brow (strong brown), very fine to fine, loose	·	SS04G	4.5 - 6.0	1.3	4-3-4
- 6 <u>6.5</u> 692.9				SS05aG	6.0 - 6.5	1.4	
- 7		POORLY GRADED SAND WITH CLA 7.5YR 6/4 (light brown), fine to mediu		SS05bG	6.5 - 7.5		· · · · ·
^{- 8} 8.3 691.1		SILT WITH SAND, ML, 7.5YR 4/3 (bro	own),	SS06aG SS06bG	7.5 - 8.4 8.4 - 9.0	1.5	3-3-2
- 9 ₈₈ - 10		non-plastic, soft, moist		SS07G	9.0 - 10.5	1.3	2-2-4
12 11 12 12				SS08G	10.5 - 12.0	1.5	2-3-2
⁸ ⊢ 12 				SS09aG	12.0 - 12.8		-
- 13 +		SILTY SAND, SM, 10YR 5/6 (yellowis		SS09bG	12.8 - 13.5	1.5	2-2-2
ല 27 – 14 26339000 090 – 15		7.5YR 4/3 (brown), very fine to mediu loose, thin seams of brown clayey san throughout	-	SS10G	13.5 - 15.0	1.5	1-2-2
og− 15 		Wet at 13.0'		SS11G	15.0 - 16.5	1.5	1-2-2
989954 – 17 901 50				SS12G	16.5 - 18.0	1.5	2-1-2
				SS13G	18.0 - 19.5	1.5	- 1-2-2



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С	ient E	Borehole	ID N	I/A		Stantec Borin	g N	lo. WBF	-B12			
С	ient		Tenn	esse	ee Valley Authority	Boring Location			64 N; 2,363,054	4.94	E NAD27	Plant Local
Pi	oject	Number	1756	680	50	Surface Eleva	atio	n <u>699.4</u> ft	Elevatio	on E)atum_1	NGVD29
		ithology	1			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphi	ic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 19 - 20 - 21	- <u>19.</u> 2-				SILTY SAND, SM, 10YR 4/4 (dark yell fine to coarse, very loose, moist to wet sandstone and shale fragments			SS14G	19.5 - 21.0	19.5 - 21.0	1.5	
- 22 - 23 - 24	22.6	676.8		•	SANDY SILT, ML, 2.5Y 4/1 (dark gray) very soft, wet, trace angular rock fragm		-	SS15aG SS15bG	22.0 - 22.6 22.6 - 23.5	22.0 - 23.5	1.5	- 2-2-1 _ -
- 25 - 26 - 27					Split spoon sample obtained from 25.5 following attempted shelby tube with no			ST01G	25.5 - 27.5	25.5 - 27.5	0.0	
- 28 - 29 - 30								SS16G	28.0 - 29.5	28.0 - 29.5	1.5	- WH-WH-2 _
- 31 - 32	32.5	666.9						SS17G	30.5 - 32.0	30.5 - 32.0	1.5	WH-WH-1 - -
- 33 - 34 - 35					SILTY SAND, SM, 2.5Y 5/1 (gray) and olive brown), fine to medium, medium of Increasing gravel content below 34.2 fe	dense, moist		SS18G	33.0 - 34.5	33.0 - 34.5	1.5	- WH-11-15 _
10/22/20	35.9 36.8	663.5 662.6			Weathered shale bedrock		_	SS19G	35.5 - 36.8	35.5 - 36.8	1.2	3-19-50/4" ⁻
DER.GPJ TDEC SUBSURF DT 2019(Refusal / Bottom of Hole at 36.8 Ft. Top of Rock = 35.9 Ft. Top of Rock Elevation = 663.5 Ft.							-
EP BORING LOG 175669050_WEF_TDEC_ORDER GPJ TDEC SUBSURF DT 20196590 GDT			1: E G	= E = G	g wire piezometers installed. See installa nvironmental Sample Custody (two Spli Seotechnical Sample Custody	t Spoons may be r	requ	uired to obta		nple)	1	-
TVA EIP BORIN			2: a	b,c	denote Split Spoon divided between En s are reported in feet below ground sur	vironmental and G face	Geot	echnical Sa	mples			



Page: 1 of 2

Clie	nt Borehole	e ID N//	۹.	Stantec Boring	n No. WBF	-B13		
Clier			ssee Valley Authority	Boring Locatio			56 E NAD27	Plant Local
	ect Numbe		· · · · ·	Surface Eleva			n Datum I	
	ect Name			Date Started			ed 6/12/2	
		-	ea Co, Spring City, Tennessee	Depth to Wate			-	20 07:30
-			Logger T. Greenwell	Depth to Wate				20 10:29
			antec Consulting Services Inc.	Drill Rig Type				
	-		Sampling Tools (Type and Size)					
		-	ling Tools (Type and Size) N/A		. ,	y		
	-	•	and Size) N/A			Overdrill	Depth ¹	N/A
			Automatic Weight 140 I	b Drop 3	0"		N/A	
	ehole Azim			Borehole Inclir			N/A	
Rev	iewed By	K. Bla	akley	Approved By	•	·		
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth F	Elevatior	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
0 0	.0 699.6		Top of Hole					_
		0404040	Auger Without Sampling - Crushed sto	one and riprap				
	.5 698.1							-
- 2			CLAYEY GRAVEL, GC, 5YR 5/2 (redo	dish gray), fine			±	_
	8.6 697.0		to medium, medium dense, dry, [FILL]		SS01G	1.5 - 3.0	.5 - 3.0	4-8-9
- 3			WELL GRADED SAND WITH SILT, S	W-SM, 7.5YR				-
- 4			2.5/1 (black), medium to coarse, medi	um dense, dry,	SS02G	3.0 - 4.5	^{3.0} -4.5	5-13-12
	.9 694.7		trace gravel, [CCR]		SS03aG	4.5 - 4.9	бл —	
- 5			SILTY SAND, SM, 5YR 3/2 (dark redd	lish brown)		4.5 - 4.9	4.5-6.0	3-4-4
- 6			very fine to fine, loose, dry to moist, tra	'	SS03bG	4.9 - 6.0	5.0	_
Ů		HIHIHI	with brown lean clay, [FILL]		SS04G	6.0 - 7.5		3-4-3
- 7					33040	0.0 - 7.5	· 7.5	5-4-5
- 8 8	691.4	HIHIHI			SS05aG	7.5 - 8.2	7.5	_
			SANDY LEAN CLAY, CL, 7.5YR 4/3 (brown), low	SS05bG	8.2 - 9.0	1.5	1-1-2
- 9 9	0.0 690.6	HITT	plasticity, soft to firm, moist, slight orga	anic odor, trace /			ο,	-
s− 10			\fine roots	/	SS06G	9.0 - 10.5	1.4	2-2-2
10/22/		 	SILTY SAND, SM, 7.5YR 4/3 (brown),					
5 − 11 ¥			fine, loose, moist to wet, iron oxide sta clay crontent decreasing with depth	inning, dace	SS07G	10.5 - 12.0	10.5 - 12.0	2-2-3
- 12			Trace dark brown staining from 9.0' to	9.5'			12.0	-
		╢╫╫╢			SS08G	12.0 - 13.5	12.0	2-3-2
⁸⁰ – 13		₩ <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>			33000	12.0 - 13.3	1.1	2-J-Z -
5 - 14		╢╫╫╫					13.5	-
		╢┼╏┼┇┥			SS09G	13.5 - 15.0	3.5 1.2	1-2-2
bui – 15					SS10aG			-
15	5.8 683.8						1.4	2-2-2
	6.5 683.1		POORLY GRADED SAND WITH CLA \ 10YR 3/4 (dark yellowish brown), very		SS10bG	15.8 - 16.5	ώ 	
- 17			loose, wet		SS11G	16.5 - 18.0	16.5 - 1.3	WH-2-3
$\frac{10}{100} - 11 + 12 + 12 + 12 + 12 + 12 + 12 + 12$			SILTY SAND, SM, 10YR 4/3 (brown),	very fine to			8.0 18	-
		╟┇┝┇	fine, loose, wet		SS12aG	18.0 - 19.0	18.0-19.5	1-2-4
≥ <mark>L_₁₉ 1</mark> €	9.0 680.6		4		1		ິດ I.3	1-2-4

Stantec Consulting Services Inc.





Client	Borehole	D_N/A		Stantec Boring	No. WBF	-B13			
Client		Tennes	see Valley Authority	Boring Locatio		96 N; 2,363,057	7.56 I	E NAD27	7 Plant Loca
Project	Number	175668	050	Surface Elevat	ion <u>699.6 ft</u>	Elevatio	on D	atum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PS
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
19 20 21			CLAYEY SAND, SC, 10YR 5/6 (yell 10YR 6/4 (light yellowish brown), ve loose, moist		SS12bG	19.0 - 19.5			
22 23 23.5	676.1				ST01G	21.5 - 23.5	21.5 - 23.5	1.6	400
24 25			SANDY SILT, ML, 7.5YR 5/4 (brown (light gray), non-plastic, soft, wet, tra Split spoon sample obtained from 2 following attempted shelby tube with	ace clay 3.5 to 25.0	ST02G	23.5 - 25.5	23.5 - 25.5 25	0.0	400
26 27					SS13G	25.0 - 26.5	5.0 - 26.5	1.4	WH-3-4
28 29	670.1				SS14G	27.5 - 29.0	27.5 - 29.0	0.3	WH-1-1
29.5 29.5 30 31 32	670.1		SILTY SAND, SM, 10YR 4/1 (dark of medium, very loose, wet, Laminated With clay from 30.0' to 30.7'		SS15G	30.0 - 31.5	30.0 - 31.5	1.4	WH-WH-V
33	004.0		With trace clay, wood from 33.6' to 3	34.0'	SS16aG SS16bG	32.5 - 33.6 33.6 - 34.0	32.5 - 34.0	1.5	WH-1-1
35 35.0 36 36.1	664.6 663.5		Shale, light gray green to gray, very bedded, completely weathered to hi		SS17G	35.0 - 36.1	35.0 - 36.1	1.0	10-26-50/
			Refusal / Bottom of Hole at 36.1 Ft. Top of Rock = 35.0 Ft.	/					
		1: E = G = 2: a,b,c	Top of Rock Elevation = 664.6 Ft. ng wire piezometers installed. See inst Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between ths are reported in feet below ground s	plit Spoons may be re Environmental and Ge	equired to obtai		nple)		



Page: 1 of 2

С	lient E	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B14			
	lient			see Valley Authority	Boring Locatio			59 N; 2,363,044	4.22	E NAD27	Plant Local
		Number			Surface Eleva			Elevatio			
	-			DEC Order	Date Started		6/16/20	Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Wate	_		Date/Ti			20 12:30
				Logger T. Greenwell	Depth to Wate						
	•			intec Consulting Services Inc.	Drill Rig Type						
0	verbu	rden Drill	ling and	Sampling Tools (Type and Size)							
R	ock D	rilling and	d Samp	ling Tools (Type and Size) <u>N/A</u>							
0	verdri	ll Tooling	(Type	and Size) <u>N/A</u>				Overdril	l De	pth _	1/A
S	ample	er Hamme	er Type	Automatic Weight 140 lt	Drop <u>3</u>	0"		Efficiency		N/A	
		le Azimu		N/A	Borehole Inclin		•	·	N/.	A	
R	eview	ed By _	K. Bla	ikley	Approved By		A. Welshan	S			
		ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	700.9	റുറുറു	Top of Hole							
				Auger Without Sampling - Crushed sto	ne and riprap						
- 1			000000000000000000000000000000000000000								-
- 2	2.0	698.9									-
				CLAYEY GRAVEL, GC, 5YR 5/2 (redd to medium, medium dense, dry, [FILL]	lish gray), fine		SS01aG	2.0 - 3.2	2.0 - :	1.5	12-14-18
- 3	3.2	697.7	مر مر مر 111.	WELL GRADED SAND WITH SILT AN			SS01bG	3.2 - 3.5	3.5		-
- 4			••••	SW-SM, 7.5YR 2.5/1 (black), medium	,		SS02G	3.5 - 5.0	3.5	1.2	3-6-8
				medium dense, dry, [CCR]			33029	5.5 - 5.0	. 5.0	1.2	3-0-0
- 5			••• 						5.0		-
- 6							SS03G	5.0 - 6.5	- 6.5	1.2	4-9-10
- 7	7.0	693.9					SS04aG	6.5 - 7.0	6.5	1	_
	0.0	602.0		LEAN CLAY WITH GRAVEL, CL, 5YR			SS04bG	7.0 - 8.0	5 - 8.0	1.4	3-2-3
- 8	8.0	692.9		red) to 10YR 6/2 (light brownish gray),	low to medium						-
- 9			 	SILTY SAND, SM, 10YR 2/2 (very darl	k brown) fine		SS05G	8.0 - 9.5	.0 - 9.5	1.2	3-8-8
			╟┇┝┇┝	medium dense to loose, moist							
- 10			║┼┼┼┼┤	Yellowish - brown poorly graded sand 8.4'	from 8.2' to		SS06G	9.5 - 11.0	9.5 - 11	1.0	3-3-4
- 11			╟┇╞┇┝	0.4					Ö		-
	11.8	689.1	╢┼╏┼┇ ┼║				SS07aG	11.0 - 11.8	11.0 - 1	1.2	3-2-3
- 12	12.5	688.4	₩ ₩₩₩₩	SILTY SAND, SM, 7.5YR 5/4 (brown),	fine to		SS07bG	11.8 - 12.5	12.5		-
- 13					0/0 /		SS08G	12.5 - 14.0	12.5 -	1.3	WH-3-2
	44.5	000 0		SILTY CLAYEY SAND, SC-SM, 10YR brown), fine, very loose to loose, moist					14.0	1.5	₩11- 0- 2
<u> </u>	14.3	686.6		Mottled gray	,		SS09aG	14.0 - 14.3	14.0		100
- 15			║╡┥┇┥╏╽	SILTY SAND, SM, 7.5YR 5/4 (brown),			SS09bG	14.3 - 15.5	- 15.5	1.4	1-2-3 _
- 16			╟┇╏┇	medium, loose, wet, poorly graded, tra	ce clay				15.5	1	_
			║┇┥┇┥┇┥┆				SS10G	15.5 - 17.0	5 - 17.(1.3	2-3-3
10^{-100}			╟┇╏┇						0 17		-
- 18			║ ╋╋ <u>╋</u>				SS11G	17.0 - 18.5	.0 - 18	1.3	1-3-2
			╟┇╎┇╎						σ		
L-49-											



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Client E	Borehole ID N/A		Stantec Boring	g No. WBF	-B14		
Client	Tenness	see Valley Authority	Boring Locatio		59 N; 2,363,044.	22 E NAD27	Plant Local
Project	Number 1756680	050	Surface Eleva	tion <u>700.9 ft</u>	Elevatio	n Datum_ t	NGVD29
L	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 19 <u>¥</u> - 20		SILTY SAND, SM, 7.5YR 5/4 (brown), medium, loose, wet, poorly graded, tra <i>(Continued)</i>		SS12G SS13G	18.5 - 20.0 20.0 - 21.5	18.5 - 20.0 20.0 - 2	2-3-3 - 2-2-2
- 21 - 22 - 23				SS14G	22.5 - 24.0	21.5	2-3-3
- 24 - 25 <u>25.3</u> - 26	675.6	LEAN CLAY WITH SAND, CL, 10YR 4 grayish brown) with 7.5YR 6/3 (light b		SS15aG SS15bG	25.0 - 25.3 25.3 - 26.5	25.0 - 26.5	- 3-5-7
- 27 - 28 <u>28.0</u>	672.9	medium plasticity, hard, moist, iron ox Mottled with gray silt SILTY SAND, SM, 10YR 5/2 (grayish fine to fine, loose, wet, poorly graded	ide staining,	SS16aG SS16bG	27.5 - 28.0 28.0 - 29.0	27.5 - 29.0	3-4-4
- 29 - 30 - 31		Lens of lean clay with sand from 30.0	to 30.3'	SS17aG SS17bG	30.0 - 30.3 30.3 - 31.5	30.0 - 31.5 1.4	- WH-1-1
- 32 - 33		Wood fragments (less than 1/2" diame and 33.8'	eter) at 31.5'	SS18G	32.5 - 34.0	32.5 - 34.0	WH-1-4
- 34 - 35 - 35 - 35.6	666.4 •	Shale, gray, fine grained, very soft, co weathered to highly weathered	mpletely	SS19G	35.0 - 35.6	35 0.6	- 13-50/1"
	· · · · · · · · · · · · · · · · · · ·	Refusal / Bottom of Hole at 35.6 Ft.				- G 35 .0	
		Top of Rock = 34.5 Ft. Top of Rock Elevation = 666.4 Ft.					
IDEC_ONDERVER	Vibratir	ng wire piezometers installed. See instal	lation log for backfil	l details.			-
	G = 2: a,b,c	Environmental Sample Custody (two Spl Geotechnical Sample Custody c denote Split Spoon divided between Er ths are reported in feet below ground su	vironmental and G			ple)	
2 2 2							



Client Borehole ID N/A		Stantec Boring	No. WBF	-B15		
	ee Valley Authority	Boring Location			93 E NAD27	7 Plant Local
Project Number 1756680	50	Surface Elevat	ion 714.7 ft	Elevatio	ו Datum	NGVD29
Project Name WBF TD		Date Started	6/18/20	Complet	ed 6/18/	20
Project Location Rhea		Depth to Water		Date/Tin		20 14:17
	Logger T. Greenwell	Depth to Water		 Date/Tin	ne N/A	<u> </u>
Drilling Contractor Stan		Drill Rig Type a	-			
Overburden Drilling and S	Sampling Tools (Type and Size)	4-1/4" HSA, 2" S	S w/o liners			
Rock Drilling and Sampli	ng Tools (Type and Size) <u>N/A</u>					
Overdrill Tooling (Type a	-			Overdrill	Depth _	N/A
	Automatic Weight 140 lk)"	,	N/A	
	N/A	Borehole Inclin			N/A	
Reviewed By K. Blak	ley	Approved By	A. Welshan	S		
Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	
Depth Ft ³ Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
0.0 714.7	Top of Hole					_
	Topsoil	/	SS01G	0.0 - 1.5		3-3-4
	FAT CLAY WITH SAND, CH, 5YR 4/6 to 5YR 3/2 (dark reddish brown), high r				ύπ	-
- 2	moist, slight organic odor, trace fine ro		00000	45 20	50 00	4.4.0
			SS02G	1.5 - 3.0	0.8	4-4-3
					ω	-
- 4			SS03G	3.0 - 4.5	1.0	2-2-3
- 5						-
			SS04G	5.0 - 6.5	b 1.4	2-3-3
- 7						-
7.8 706.9			SS05aG	7.5 - 7.8	7	
о — — — — — — — — — — — — — — — — — — —	SILT, ML, 5YR 2.5/1 (black), non-plast plasticity, very soft, wet, occasional rec		SS05bG	7.8 - 9.0	5- 00 1.5	1-1-1
- 9 🕁	brown Fat clay intermixed with silty CC					-
동 10	Reddish brown clay layer from 10.0' to	10.6'	SS06aG	10.0 - 10.6	10	_
			SS06bG	10.6 - 11.5	1.4	WH-WH-WH
F D1 20						
						-
					122	-
			SS07G	12.5 - 14.0	1.4	1-1-1
ਲਿੰ – 14						-
편 렇는 15						_
изана — 10 — 11 — 11 — 12 — 13 — 14 — 15 — 16				45.0 40.5	15.0	0.4.4
989 − 16			SS08G	15.0 - 16.5	1.2	3-1-1
					Π	
㎡G 17						-
[≸] 10	Stantec Consult					9/18/20



Client E	Borehole	IDN/A	N	Stantec Boring	No. WBF	-B15		
Client		Tennes	see Valley Authority	Boring Location			3 E NAD27	Plant Local
Project	Number	175668	050	Surface Elevat	ion <u>714.7 ft</u>	Elevation	Datum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
18 19 20			SILT, ML, 5YR 2.5/1 (black), non-plas plasticity, very soft, wet, occasional re brown Fat clay intermixed with silty C(<i>(Continued)</i>	ddish-brown to	SS09G SS10aG	17.5 - 19.0 20.0 - 21.1		1-1-1
21 21.1	693.6	ا ا ا ا ا ا ا د مرجو محمو محم	Coarse CCR below 20.9'		SS10aG SS10bG	21.1 - 21.5	1.5	1-3-12
22 23 22.9	691.8		CLAYEY GRAVEL, GC, 10YR 7/3 (ve and 10YR 5/2 (grayish brown), fine to , medium dense, wet, with CCR intermi	medium,	SS11aG	22.5 - 22.9	3	
23.9	690.8	\smile	Shale, gray, very fine grained, soft, thi \highly weathered, 60° bedding angle	n bedded,	SS11bG	22.9 - 23.9	0.9	9-46-50/5"
			Refusal / Bottom of Hole at 23.9 Ft. Top of Rock = 22.9 Ft. Top of Rock Elevation = 691.8 Ft. ng wire piezometers installed. See instal	-				
		G = 2: a,b,	Environmental Sample Custody (two Spl Geotechnical Sample Custody c denote Split Spoon divided between Er ths are reported in feet below ground su	vironmental and Ge			le)	



	lient F	Borehole		Α	Stantec Boring	No WBF	-B16A			
	lient	Dorenole		see Valley Authority	Boring Locatio			.89	E NAD27	Plant Local
		Number		· · ·	Surface Eleva					
	-			DEC Order	Date Started					
				ea Co, Spring City, Tennessee	Depth to Wate		Oomple Date/Tir		-	0 14:48
	-		-	Logger T. Greenwell	Depth to Wate					
	•			intec Consulting Services Inc.	Drill Rig Type					
	-			Sampling Tools (Type and Size						
R	lock D	rilling and	d Samp	ling Tools (Type and Size)	A					
c	verdri	ill Tooling	ј (Туре а	and Size) N/A			Overdrill	De	pth _N	I/A
s	ample	er Hamme	er Type	Automatic Weight 140	lb Drop 3	0"	Efficiency	1	N/A	
В	oreho	le Azimu	th	N/A	Borehole Incli	•	·	N//	٩	
R	leview	ed By _	K. Bla	ikley	Approved By	A. Welshan	S			
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	713.6		Top of Hole						
	0.8	712.8		Topsoil		SS01G	0.0 - 1.5	0.0 -	1.1	4-5-4
- 1				LEAN CLAY WITH SAND, CL, 7.5YR	· •			1.5		
- 2				brown) to 7.5YR 6/3 (light brown), me firm, dry, trace fine roots, [FILL]	dium plasticity,			1.5		
	3.0	710.6				SS02G	1.5 - 3.0	- 3.0	0.8	3-4-4
- 3	3.0	710.0		LEAN CLAY WITH SAND, CL, 7.5YR	5/4 (brown) to					-
- 4				7.5YR 6/1 (gray), low to medium plast	ticity, firm to	SS03G	3.0 - 4.5	5.0 - 4.5	0.9	3-3-2
				soft, moist, trace CCR streaks, interm trace fine roots, [FILL]	ixed soil fill,					
- 5										-
- 6						SS04G	5.0 - 6.5	5.0 - 6.	0.5	2-2-2
ľ								5		
- 7						SS05G	6.5 - 8.0	6.5 -	1.3	2-3-3
- 8	8.0	705.6					0.0 0.0	8.0		200
	Į.			LEAN CLAY, CL, 2.5Y 4/1 (dark gray)				8.0		-
- 9				soft to firm, moist, moderate organic or sand, trace fine roots, occasionally mi	,	SS06G	8.0 - 9.5	8.0 - 9.5	1.2	2-1-2
8/20			$\langle / / \rangle$	sand, trace fine roots, occasionally mi clay, [FILL]	ixed with red tat					
5 – 10						SS07G	9.5 - 11.0	1.5 - 11	1.5	2-3-2
- 11	11.3	702.3	$\langle / / \rangle$					0		-
RF DT 20	11.0	102.0	///	LEAN CLAY, CL, 2.5Y 7/3 (pale brow	n) to 2.5Y 6/2	SS08G	11.0 - 12.5	11.0 -	1.4	2-2-2
Hosens – 12				(light brownish gray), medium plasticit			11.0 12.0	12.5		
100 - 10 111 - 11 112 - 13 113 - 14 114 - 15 115 - 16 117 - 17			$\langle / / \rangle$	[FILL] Mottled orange, dark gray lean clay fr	om 12 5' to	SS09aG	12.5 - 13.2	12.5		-
ER.GPJ	14.0			13.2'	0 12.0 10	SS09bG	13.2 - 14.0	5 - 14.0	1.5	1-2-3
5 – 14	14.0	699.6		FAT CLAY WITH SAND, CH, 2.5Y 7/3	3 (nale brown)					-
≝ - 15				to 2.5Y 6/2 (light brownish gray), high		SS10G	14.0 - 15.5	4.0 - 15	1.5	1-2-4
28050_V				to very hard, moist, mottled orange, tr				5.5		_
- 16				lenses with iron oxide staining		SS11G	15.5 - 17.0	15.5 -	1.0	3-6-8
							10.0 - 17.0	17.0		0-0-0
ыман – 17 Папанан – 17								17.0 - :		-
≸ L_₁₀_						SS12G	17.0 - 18.5	18.5	1.5	2-12-22



Client E	Borehole	IDNA		Stantec Boring	g No. WBI	F-B16A		
Client		Tennes	see Valley Authority	Boring Location		3.23 N; 2,362,147.89 E NAD27 Plant Loca		
Project	Number	1756680	050	Surface Eleva	tion <u>713.6 ft</u>	Elevation	Datum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/P
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
18 19 20 <u>20.7</u>	692.9		FAT CLAY WITH SAND, CH, 2.5Y 7, to 2.5Y 6/2 (light brownish gray), high to very hard, moist, mottled orange, t lenses with iron oxide staining (<i>Con</i>	h plasticity, firm trace shale	SS13G SS14G	18.5 - 20.0 20.0 - 21.5		2-12-26 9-22-30
21 22 22.8	690.8		Shale, light gray brown to gray, fine of bedded, highly weathered, damp, iro 60° bedding angle		SS15G	21.5 - 22.8	2	16-46-50/
			Refusal / Bottom of Hole at 22.8 Ft. Top of Rock = 20.7 Ft. Top of Rock Elevation = 692.9 Ft.			·		
		2: a,b,c	Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground si	Environmental and G urface	eotechnical Sa	amples		



С	lient F	Borehole	ID N/A	A	No. WBF-B17							
	lient			ssee Valley Authority			444,654.23 N; 2,363,045.72 E NAD27 Plant Local					
P	roject	Number			Surface Elevat			n Datum N				
				DEC Order	Date Started		 Complet					
				ea Co, Spring City, Tennessee	Depth to Wate							
	-			Logger B. Herries	•			ne N/A				
D	rilling	Contract	or Sta	intec Consulting Services Inc.	Drill Rig Type	and ID_CME	85#2, #951					
0	verbu	rden Dril	ling and	I Sampling Tools (Type and Size) 4-7/8" 3-Wing Up	pdraft Bit, 2" S	S w/o liners, 3" S	Shelby Tubes				
		-	•	ling Tools (Type and Size)	A							
		-		and Size) <u>N/A</u>			Overdrill	-	I/A			
				Automatic Weight 140	'	0"	Efficiency	89.9%				
		le Azimu			Borehole Inclin	•	·	N/A				
R	eview	ed By _			Approved By	A. weishan	IS					
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 0	0.0	700.2	000000000000000000000000000000000000000	Top of Hole								
	0.5	699.7		CRUSHED LIMESTONE GRAVEL, 10 \gray), moist, angular to subangular	DYR 7/1 (light							
- 1				LEAN CLAY WITH SAND, CL, 7.5YR	//3 (brown)				-			
- 2				low plasticity, soft, moist	4/3 (blowii),	ST01G	1.0 - 3.5	2.4	250			
						31010	1.0 - 5.5		230			
- 3								2	-			
- 4									-			
- 5								4.5				
- 6						ST02G	4.5 - 7.0	2.3	300 _			
- 7												
ſ '												
- 8	8.0	692.2		LEAN CLAY LITTLE SAND, CL, 7.5Y	\mathbf{D} 4/2 (brown)				_			
- 9				with 7.5YR 3/3 (dark brown), low to m					_			
3				plasticity, moist		ST03G	8.0 - 10.5	2.5	210			
ຸ – 10								8	-			
^{2/94/6} Б - 11									_			
90530.Gf	11.5	688.7	44									
^ธ ุ๊− 12				CLAYEY SAND, SC, 7.5YR 4/3 (brow medium, moist to wet	n), fine to				_			
anser – 13						ST04G	11.5 - 14.0	2.1	170 _			
TDECSL												
- 14 ™								4	-			
J - 15									_			
3F_TDEC								<u> </u>				
[™] 16						ST05G	15.0 - 17.5	1.7	150			
⁸⁹⁹⁵²¹ – 17								7.5	-			
ING LOG								1				
18 - 18	18.5	681.7							_			
19								1	3/16/22			



Page: 2 of 2

Client I	Borehole ID	N/A		Stantec Boring	ing No. WBF-B17						
Client	1	Fennes	see Valley Authority	Boring Location	on <u>4</u>	44,654.2	23 N; 2,363,045	5.72 E	NAD27	Plant Local	
Project	Number_1	75668	050	Surface Eleva	tion 7	00.2 ft	Elevation Datum NGVD29			NGVD29	
	Lithology			Overburden:	Sample ^{1,2}		Depth Ft ³		Rec. Ft	Blows/PSI	
Depth Ft ³	Elevation Gr	raphic	Description	Rock Core:	RQ	D %	Run Ft		Rec. Ft	Rec. %	
- 19 - 20 - 21			SILTY SAND, SM, 7.5YR 4/3 (brown) medium, non-plastic, moist to wet (C		s	T06G	18.5 - 21.0	18.5 - 21.0	2.5	- 170	
- 22 - 23 - 24					s	T07G	22.0 - 24.5	22.0 - 24.5	2.5	_ 220 _ _	
- 25 <u>25.5</u> - 26 - 27 - 28	674.7		POORLY GRADED SAND, SP, 7.5YI gray) with 7.5YR 5/1 (gray), fine to me wet		s	T08G	25.5 - 28.0	25.5 - 28.0	2.5	 140	
- 29 <u>29.0</u> - 30 - 31 - 32	671.2		SILTY SAND, SM, 7.5YR 4/1 (dark gr 5/1 (gray), fine to medium, non-plastic with wood fragments throughout		s	T09G	29.0 - 31.5	29.0 - 31.5	2.5	- 210 - -	
- 33 33.1	667.1		POORLY GRADED GRAVEL SOME 7.5YR 4/1 (dark gray), moist to wet	SAND, GP,	S	T10G	32.5 - 33.1	32.5 - 33.1	0.4	350 _	
- 35 35.5	665.8 • • • • • • • • • • • • • • • • • • •		Shale, dark gray with gray, soft, mode weathered, damp	erately	S	S01G	34.4 - 35.5	34.4 - 35.5	1.1	22-29-50/1"—	
		logging 1: E = G = 2: a,b,c	Refusal / Bottom of Hole at 35.5 Ft. Top of Rock = 34.4 Ft. Top of Rock Elevation = 665.8 Ft. ch (85mm) DGSI inclinometer casing in g, and compression and Seismic Wave (Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su	Crosshole Testing. lit Spoons may be n nvironmental and G	equired	to obta	in sufficient sar	-	ic reson	- - ance - -	



SUBSURFACE LOG

С	ient E	Borehole	ID N/A	N N	Stantec Boring	g No. WBF	-B18				
	ient	-		see Valley Authority		Boring Location 444,646.65 N; 2,363,033.42 E NAD27 Plant Local					
Pr	oject	Number	175668	050	Surface Eleva	-					
	-			DEC Order	Date Started 6/21/21 Completed						
	-			ea Co, Spring City, Tennessee	Depth to Water N/A Date/Time N/A						
	-			Logger B. Herries	•						
D	rilling	Contract	or Sta	ntec Consulting Services Inc.	Drill Rig Type	and ID_CME	85#2, #951				
0	verbu	ırden Dril	ling and	Sampling Tools (Type and Size	e) 4-7/8" 3-Wing U	pdraft Bit, 2" S	S w/o liners, 3" S	Shell	by Tubes		
		-	•	ling Tools (Type and Size) <u>N/</u>	Α						
		-		and Size) <u>N/A</u>			Overdrill			I/A	
	•		• •	Automatic Weight 140		0"	Efficiency		9.9%		
		le Azimu		N/A	Borehole Incli	•	·	N/A	1		
	eview	ed By _		Donaiu	Approved By						
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dept		Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %	
- 0	0.0	700.3	୦୫୦୫୦୫୦	Top of Hole							
- 1			6262626	CRUSHED LIMESTONE GRAVEL, 1 gray), moist, angular to subangular, [
Γ'Ι					1						
- 2	2.0	698.3	0808080	LEAN CLAY WITH SAND, CL, 7.5YF	2/2 (brown)					-	
- 3				low plasticity, soft, moist	(4/3 (blowii),						
- 4											
- 5										-	
						SS01G	5.0 - 6.5	5.0 -	1.5	1-2-2	
- 6							0.0 0.0	6.5	1.0		
- 7											
- 8											
- 9											
- 10											
										_	
- 11	11.0	689.3	fififi	SILTY SAND, SM, 7.5YR 4/3 (brown) fino to						
²⁶⁹⁰⁶¹⁰ – 12			║╡┥┇┥┇┥╎	medium, non-plastic, loose, moist	<i>,</i> in te to						
URF DT			╟┇╏┇			ST01G	11.0 - 13.5)- 13.5	2.4	210	
nsan- 13			║╡┥┇┥┇┥╏								
a – 14			╟┇╿┇┝┇								
RDER.G	14.5	685.8			1/2 (brown)						
11 - 11 - 12005810201 300101 - 12001 -			$\langle / / \rangle$	LEAN CLAY WITH SAND, CL, 7.5YF low plasticity, soft, moist	α 4/3 (drown),			14		-	
						ST02G	14.5 - 17.0	5-17.0	2.5	210	
8			$\langle / / \rangle$					18			
BORING LOG 1758 - 17 - 17 - 17										-	
DNING - 18			$\langle / / \rangle$							-	
- 10				<u> </u>	ulting Sonvices In					3/16/22	



Client	Borehole	ID N/A		Stantec Boring No. WBF-B18						
Client		Tennes	see Valley Authority	Boring Location		.65 N; 2,363,033	.42 E NAD27	Plant Local		
Project	Number	175668	050	Surface Elevat	ion <u>700.3 ft</u>	n 700.3 ft Elevation Datum_NGVD29				
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS		
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
19 20 21 22 <u>22.5</u>	677.8		LEAN CLAY WITH SAND, CL, 7.5Y low plasticity, soft, moist <i>(Continue</i>		ST03G	20.0 - 22.5	2.5	190		
23 24 25 25.0	675.3		POORLY GRADED SAND SOME C 4/3 (brown), fine to medium, moist to SILTY SAND, SM, 7.5YR 5/1 (gray)	o wet			M			
26 27 28 29			non-plastic, moist to wet		ST04G	25.0 - 27.5	25.0-27.5	200		
30 30.0 31 32	670.3		POORLY GRADED SAND TRACE 5/1 (gray), fine to medium, moist to		ST05G	30.0 - 32.5	300- 325 2.3	220		
³³ <u>33.5</u> 34 <u>34.0</u>	666.8 666.3		SANDY POORLY GRADED GRAVE	EL, GP, 7.5YR	SS02aG		33.5 - 1.1	12-19-4 ⁻		
35.0	665.3		Shale, purple gray with gray, soft, m weathered, damp	oderately	SS02bG	34.0 - 35.0	35.0			
		logging 1: E = 1 G = 2: a,b,c	Refusal / Bottom of Hole at 35.0 Ft. Top of Rock = 34.0 Ft. Top of Rock Elevation = 666.3 Ft. ch (85mm) DGSI inclinometer casing i g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between ths are reported in feet below ground s	Crosshole Testing. Split Spoons may be re Environmental and Ge	quired to obt	ain sufficient sam	-	ance		



Cliv Pro Pro Pro	ent oject	Borehole		see Valley Authority							
Pro Pro	-	Number			Stantec Boring No. WBF-B19 Boring Location 444,639.24 N; 2,363,045.82 E NAD27 Plant Local						Plant Local
Pro	oject		175668	050	Surface Eleva	Elevation 700.1 ft Elevation Datum_NGVD					NGVD29
Pro	-			DEC Order	Date Started 6/13/21 Completed 6/14/21					21	
l Ins	Project Location Rhea Co, Spring City, Tennessee Dep						Depth to Water N/A Date/Time N/A				
	spect	or B. He	erries	Logger _B. Herries	Depth to Wate	er_	N/A	Date/Ti	me	N/A	
	-			ntec Consulting Services Inc.	Drill Rig Type						
			-	Sampling Tools (Type and Size)	4-7/8" 3-Wing U	Jpdra	aft Bit, 2" S	S w/o liners, 3"	She	lby Tubes	
		•	•	ling Tools (Type and Size) <u>N/A</u>							
		-		and Size) <u>N/A</u>				Overdril		•	N/A
	-			Automatic Weight 140 lb						39.9% ^	
		le Azimut		Donald	Borehole Inclin Approved By		•	,	N//	A	
	view	ed By _			Арргочед Бу						
L		ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth		Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft	<u></u>	Rec. Ft	Rec. %
	0.0	700.1	රුරුරුරුර	Top of Hole			SS01aG	0.0 - 0.5			
	0.5	699.6		CRUSHED LIMESTONE GRAVEL, 10 \gray), dense, moist, angular to subang	/ /				0.0 - 1	1.4	11-14-19
- 1	1.5	698.6		\neg CLAYEY SAND, SC, 7.5YR 4/3 (brown			SS01bG	0.5 - 1.5	σ		-
- 2				medium, dense, moist, [CCR] Small lens of CCR from 1.2' to 1.3'							-
- 3				CLAYEY SAND, SC, 7.5YR 4/3 (browr medium, loose, moist	n), fine to		SS02G	2.5 - 4.0	2.5 - 4.0	1.5	5-4-4
- 4	5.0	695.1									-
- 5 -	0.0		••••	POORLY GRADED SAND, SP, 7.5YR fine to medium, loose, moist	4/3 (brown),		SS03G	5.0 - 6.5	5.0 - 6	1.3	- 3-4-3
- 6 - 7									σ		-
	7.5	692.6	$\frac{\cdot \cdot \cdot \cdot}{\cdot \cdot \cdot \cdot}$								
- 8				SANDY LEAN CLAY, CL, 7.5YR 4/3 (b medium plasticity, soft to firm, moist			SS04G	7.5 - 9.0	7.5 - 9	1.4	WH-2-3
- 9				,,,					0		
- 10									10.0		_
- 11							SS05G	10.0 - 11.5	0 - 11.5	1.5	WH-WH-2
			\langle / \rangle							-	
- 12	12.5	687.6	[]]								-
- 13				CLAYEY SAND, SC, 7.5YR 4/3 (brown	n), fine to		SS06G	12.5 - 14.0	12.5 -	1.3	WH-WH-WH
				medium, very loose, moist to wet			33000	12.0 - 14.0	- 14.0	1.3	vvi i-vvm-vvM
- 14											-
- 15 -	15.0	685.1	[]								_
- 16	15.8	684.3		POORLY GRADED SAND TRACE CL 4/3 (brown), fine to medium, very loose	e, moist to wet		SS07aG SS07bG	15.0 - 15.8 15.8 - 16.5	15.0 - 16.5	1.5	WH-WH-WH
- 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17	17.5	682.6		SANDY SILTY CLAY, CL-ML, 7.5YR 4 plasticity, very soft, moist	/3 (brown), low		00000	10.0 - 10.0			-
		002.0									



Page: 2 of 2

Client Tennessee Valley Authority Boring Location 444,639.24 N; 2,363,045.82 E NAD27 Plant Locat Project Number 175668050 Surface Elevation 700.1 ft Elevation Datum_NGVD29 Lithology Overburden: Sample ¹² Depth Ft ³ Rec. Ft Biows/PS Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Rec. % 18 CLAYEY SAND, SC, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet SS08G 17.5 - 19.0 1.5 1.5 1.WH-1 20 20.0 680.1 SLTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet SS08G 20.0 - 21.5 1.4 WH-WH-W 22 22.5 677.6 SLTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet SS10G 22.5 - 24.0 1.4 WH-WH-W 24 25.0 675.1 SLTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 SS11aG 25.0 - 25.5 1.4 WH-WH-W 26 27.5 672.6 TORALY GRADED SAND, SP, 7.5YR 5/1 (gray) with 7.5YR 3/1 SS11aG 25.0 - 25.5	Client E	Borehole	ID N/A		Stantec Boring	ing No. WBF-B19						
Lithology Description Overburden: Sample ¹² Depth Ft ³ Rec. Ft Blows/PS 18 CLAVEY SAND, SC, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet Rock Core: ROD % Run Ft Rec. 7t Rec. % 18 CLAVEY SAND, SC, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet SS08G 17.5 - 19.0 1.5 1.WH-1 20 680.1 Image: state s	Client		Tennes	see Valley Authority				32 E NAD2	7 Plant Local			
Depth Pt ² Elevation Graphic Description Rock Core RDD % Run Ft Rec. Ft Rec. % 18 19 200 680.1 CLAYEY SAND, SC, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet (Continued) SS08G 17.5 - 19.0 15 1.WH-1 20 0 680.1 11 SILTY SAND, SM, 7.5YR 4/3 (brown) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS09G 20.0 - 21.5 1.4 WH-WH-W 22 22.5 677.6 1 SILTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS10G 22.5 - 26.5 1.5 WH-1-WH 24 25.5 674.6 1.1 I.1 SILTY SAND, SM, 7.5YR 6/1 (gray) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS11aG 25.0 - 25.5 1.4 WH-WH-W 27 27.5 672.6	Project	Number	175668	050	_ Surface Elevation 700.1 ft Eleva			ation Datum NGVD29				
18 CLAYEY SAND, SC, 7.5YR 4/3 (brown), fine to medium, very loose, moist to wet (Continued) SS08G 17.5 - 19.0 1.5 1-WH-1 20 680.1 SILTY SAND, SM, 7.5YR 4/3 (brown) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS08G 17.5 - 19.0 1.5 1-WH-1 21 SILTY SAND, SM, 7.5YR 4/3 (brown) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS09G 20.0 - 21.5 1.4 WH-WH-W 22 57.5 677.6 SILTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS10G 22.5 - 24.0 1.5 WH-WH-W 24 25.0 675.1 SILTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 SS11aG 25.5 - 26.5 1.4 WH-WH-W 26	l	Lithology			Overburden: Sample ^{1,2}		Depth Ft ³ Rec. Ft		Blows/PSI			
19 20.0 680.1 1.5 1.WH-1 20 680.1 SSLTY SAND, SM, 7.5YR 4/3 (brown) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS08G 17.5 - 19.0 1.4 WH-WH-W 22 22.5 677.6 1 SLTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS08G 20.0 - 21.5 1.4 WH-WH-W 24 25.0 675.1 SLTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 SS10G 22.5 - 24.0 1.5 WH-1-WH 25 676.4 1 SLTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 SS110G 25.5 - 26.5 1.4 WH-WH-W 26 POORLY GRADED SAND, SP, 7.5YR 5/1 (gray) with 7.5YR 3/1 (very dark gray), fine to medium, very loose, moist to wet SS110G 25.5 - 26.5 1.4 WH-WH-W 27 27.5 672.6 SILTY SAND, SM, 7.5YR 5/1 (gray) to 7.5YR 3/1 (very dark gray), fine to medium, non-plastic, very loose, moist to wet SS12G 27.5 - 29.0 1.4 WR-WR-W 28 SILTY SAND, SM, 7.5YR 5/1 (gray) to 7.5YR 3/1 (very dark gray), fine to medium, non-plastic, very loose, moist stratified SS13G 30.0 - 31.5 1.1 WH-3-3 <td< td=""><td>Depth Ft³</td><td>Elevation</td><td>Graphic</td><td>Description</td><td>Rock Core:</td><td>RQD %</td><td>Run Ft</td><td>Rec. Ft</td><td>Rec. %</td></td<>	Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
20 SILTY SAND, SM, 7.5YR 4/3 (brown) with 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet SS09G 20.0 - 21.5 1.4 WH-WH-W 22 22.5 677.6 1 SILTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS10G 22.5 - 24.0 1.5 WH-WH-W 24 25.5 674.6 1 SILTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS11aG 25.0 - 25.5 1.5 WH-1-WH 25 25.0 677.6 1 SILTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 SS11aG 25.0 - 25.5 1.4 WH-WH-W 26	- 19	600.4				SS08G	17.5 - 19.0	1.5	1-WH-1 _			
- 23 - 23 SILTY SAND, SM, 7.5YR 4/3 (brown), fine to medium, non-plastic, very loose, moist to wet SS10G 22.5 - 24.0 - <td>- 21 - 22</td> <td></td> <td></td> <td></td> <td></td> <td>SS09G</td> <td>20.0 - 21.5</td> <td>1.4</td> <td>WH-WH-WH_</td>	- 21 - 22					SS09G	20.0 - 21.5	1.4	WH-WH-WH_			
25.5 674.6 674.6 11.4 SILTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 4/1 26 (dark gray), fine to medium, very loose, moist to wet SS11aG 25.5 - 26.5 1.4 WH-WH-W 27 27.5 672.6 moist to wet SS11aG 25.5 - 26.5 1.4 WH-WH-W 28 SILTY SAND, SM, 7.5YR 5/1 (gray) with 7.5YR 3/1 (yray) to 7.5YR 3/1 (yray) to 7.5YR 3/1 (yray) does, moist to wet SS12G 27.5 - 29.0 1.4 WH-WH-W 29 SILTY SAND, SM, 7.5YR 5/1 (gray) to 7.5YR 3/1 (yray) to 7.5YR 3/1 (yray) does, moist, stratified SS13G 30.0 - 31.5 1.4 WR-WR-W -30 SS13G 30.0 - 31.5 1.1 WH-3-3 -31 -33	- 23					SS10G	22.5 - 24.0	1.5	- WH-1-WH			
- 27 27.5 672.6 7.5YR 4/1 (dark gray), fine to medium, very loose, moist to wet - 28 - 28 SILTY SAND, SM, 7.5YR 5/1 (gray) to 7.5YR 3/1 (very dark gray), fine to medium, non-plastic, very loose, moist, stratified SS12G 27.5 - 29.0 1.4 WR-WR-W - 30 - 31 - 32 - 33 - 34 - 34.5 665.6 - 1.2 27.15	25.5			\	/ /			²⁵⁰ 250 255 1.4	 WH-WH-WH_			
- 29 - 30 - 31 - 31 - 32 - 33 - 32 - 33 - 34 34.5 665.6 - 4.4 WR-WR-W	27.5	672.6		7.5YR 4/1 (dark gray), fine to medium			2	,	_			
$\begin{bmatrix} -31 \\ -32 \\ -33 \\ -34 \\ 34.5 \\ 665.6 \end{bmatrix} = \begin{bmatrix} 1.1 \\ -32 \\ -34 \\ 34.5 \\ -34 \\ 34.5 \\ -665.6 \end{bmatrix} = \begin{bmatrix} 1.1 \\ -32 \\ -34 $	- 29			(very dark gray), fine to medium, non-		SS12G	27.5 - 29.0	1.4	WR-WR-WR			
²⁰ / ₂₀ - 34 34.5 665.6 1.2 2-7-15	- 31					SS13G	30.0 - 31.5	1.1				
	²² – 34					SS14G	32.5 - 34.0	1.2	2-7-15			
Refusal / Bottom of Hole at 34.7 Ft. Top of Rock = 34.5 Ft. Top of Rock Elevation = 665.6 Ft. 3.34-inch (85mm) DGSI inclinometer casing installed to 35.5 feet for deviation survey, nuclear magnetic resonance logging, and compression and Seismic Wave Crosshole Testing.				↓Limestone. gray with white soft weat	hered, moist	SS15G	34.5 - 34.7	g H 0.2	50/2"			
Top of Rock = 34.5 Ft. Top of Rock Elevation = 665.6 Ft. 3.34-inch (85mm) DGSI inclinometer casing installed to 35.5 feet for deviation survey, nuclear magnetic resonance logging, and compression and Seismic Wave Crosshole Testing.	JRF DT 2019053			Refusal /			ں جب	34.7	-			
3.34-inch (85mm) DGSI inclinometer casing installed to 35.5 feet for deviation survey, nuclear magnetic resonance logging, and compression and Seismic Wave Crosshole Testing.	IDER GPJ TDEC SUBSI								-			
$\frac{2}{8}$ 1: E = Environmental Sample Custody (two Split Spoops may be required to obtain sufficient sample)	568050_WBF_TDEC_OR		3.34-in logging	ch (85mm) DGSI inclinometer casing in g, and compression and Seismic Wave (stalled to 35.5 feet fo Crosshole Testing.	or deviation sur	vey, nuclear mag	gnetic resor	nance -			
G = Geotechnical Sample Custody G = Geotechnical Sample Custody 2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface	VA EIP BORING LOG 175											



Client Borehole ID N/A	g No. WBF-B20						
Client Tennessee Valley Authority	Boring Locatio						
Project Number 175668050		Elevation 714.4 ft Elevation Datum_NGVD29					
Project Name WBF TDEC Order		Date Started 6/25/21 Completed 6/26/2					
Project Location Rhea Co, Spring City, Tennessee	Depth to Wate		·				
Inspector B. Herries Logger B. Herries	LoggerB. Herries Depth to Wate			me N/A			
Drilling Contractor Stantec Consulting Services Inc.	Drill Rig Type	and ID CME	85#2, #951				
Overburden Drilling and Sampling Tools (Type and S	Size) 4-7/8" 3-Wing U	Jpdraft Bit, 2" S	S w/o liners, 3"	Shelby Tubes			
Rock Drilling and Sampling Tools (Type and Size)	N/A						
Overdrill Tooling (Type and Size) <u>N/A</u>			Overdrill	I Depth _^	N/A		
		30"	Efficiency	89.9%			
Borehole AzimuthN/A	Borehole Incli			N/A			
Reviewed By M. McDonald	Approved By	A. Welshan	IS				
Lithology	Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI		
Depth Ft ³ Elevation Graphic Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
0.0 714.4 Top of Hole							
FAT CLAY LITTLE GRAVEL, CH and 7.5YR 7/8 (reddish yellow), I		SS01G	0.0 - 1.5		5-6-8		
	nard, dry, [r iEE]		0.0	1.5			
2.5 711.9							
– 3 ELASTIC SILT WITH SAND, MH and 7.5YR 5/4 (brown), low to m		SS02G	2.5 - 4.0	2.5	3-6-6		
dry to moist, [FILL]	outum pluotiony, oun,			4.0			
- 5 5.5 708.9		ST01G	5.0 - 5.6	g 0.6	- 360		
	OME SAND GP	SS03aG	5.6 - 6.1	° ⊡	300		
- 6			6.1 - 7.1	5. 66.6 -7	5-7-6		
- 7	se, dry to moist,	SS03bG	0.1 - 7.1				
8.5 705.9							
9 SANDY LEAN CLAY, CL, 7.5YR				α 5			
to 10YR 6/8 (brownish yellow), fi dry to moist, [CCR]	ine to medium, firm,	SS04G	8.5 - 10.0	1.0	1-5-4		
					-		
11 11.0 703.4							
SILT, ML, 7.5YR 2.5/1 (black), lo	ow plasticity, firm,	00050	110 105	11.0	1 14/11 0		
- 12 moist to wet, [CCR]		SS05G	11.0 - 12.5	- 1.2 12.5	1-WH-6		
POORLY GRADED GRAVEL LI		SS06G	13.5 - 15.0	³ , 1.0	3-4-4		
7.5YR 2.5/1 (black), coarse, loos moist to wet, some roots, [CCR]	se to mealum aense,	33000	13.3 - 13.0	15.0	0-4-4		
					-		
		SS07G	16.0 - 17.5	1.0	3-4-7		
10 11.0 703.4 dry to moist, [CCR] 11 11.0 703.4 SILT, ML, 7.5YR 2.5/1 (black), lot moist to wet, [CCR] 12 13 13.5 700.9 14 •••• •••• POORLY GRADED GRAVEL LIT 7.5YR 2.5/1 (black), coarse, loos moist to wet, some roots, [CCR] 16 •••• •••• •••• •••• •••• •••• •••• •••• ••••			10.0 - 17.0	17.5	J- - -1		



С	lient E	Borehole	IDN/A	Λ	Stantec Boring	ig No. WBF-B20						
c	lient		Tennes	see Valley Authority	Boring Locatio		28 N; 2,362,919.86	6 E NAD27	Plant Local			
P	roject	Number	175668	050	Surface Eleva	tion <u>714.4 ft</u>	Elevation	Datum_	NGVD29			
		ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 18	18.5	695.9		SILTY SAND WITH GRAVEL, SM, 7.5	5VR 2 5/1				-			
- 19 - 20				(black), coarse, non-plastic, medium d wet, some roots, [CCR]		SS08G	18.5 - 20.0 ³⁵ , 200	1.2	13-12-15 –			
- 21 - 22						ST02G	21.0 - 22.2	1.2	200			
- 23	22.7	691.7		LEAN CLAY TRACE SAND, CL, 7.5Y with 7.5YR 5/1 (gray), medium plastici		SS09aG SS09bG	22.2 - 22.7 22.7 - 23.7	1.1	1-3-4 -			
- 24 - 25				man r.o m.o.n. (gray), meulum plastic	, iiiii, iii0ist	SS10G	24.5 - 26.0	1.2	- 2-4-4			
- 26							24.0 - 20.0 26.0		∠ + -4			
- 27 - 28						ST03G	27.0 - 29.5	1.8	- 360			
- 29 - 30							ιο σ		-			
- 31						SS11G	30.0 - 31.5	1.5	1-2-5			
- 32 - 33 ^{2291/6} - 34						ST04G	32.5 - 35.0	2.2	200			
BSURF DT 20190530.60 - 32 - 32	36.0	678.4		SANDY LEAN CLAY, CL, 7.5YR 5/1 (grav) fine to		ω		-			
RDEK.GPJ TDECSUE - 37 - 38				wet		SS12G	36.0 - 37.5	1.5	WH-WH-WH			
20020 MBL Дес 06 1200020 мВL Дес 06 1200020 мВL Дес 06 1200020 мВL Дес 06						SS13G	38.5 - 40.0	1.5	- 1-WH-WH _			
921 - 40 921 - 41									-			



Client	Borehole	IDN/A		tec Boring	oring No. WBF-B20						
Client		Tennes	see Valley Authority	Borir	ng Locatio	n <u>444,656.2</u>	28 N; 2,362,919.8	36 E NAD27	' Plant Local		
Projec	t Number	175668	050	Surface Elevation 714.4 ftEleva				tion Datum NGVD29			
	Lithology			0	verburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI		
Depth Ft ³	Elevation	Graphic	Description	R	ock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
43 44			SANDY LEAN CLAY, CL, 7.5YR 5/1 medium, low to medium plasticity, ve wet <i>(Continued)</i>			ST05G	41.0 - 43.5	2.3	250		
45 46 46.0	668.4					SS14G	44.5 - 46.0	1.4	WH-1-WH		
47 47.7	666.7		WELL GRADED GRAVEL WITH SA 5/1 (gray) with 7.5YR 8/1 (white), fin medium dense, moist to wet			SS15G	46.0 - 47.5	0.8	6-5-13		
48 48.6	665.8		Shale, purple gray, soft, thin bedded	d, weather	ed, dry	SS16G	47.7 - 48.6	0.8	26-50/5"		
		G = 2: a,b,o	Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between l ths are reported in feet below ground s	Environm	-	•		ble)			
		3. Dep	ins are reported in reet below ground s	Surface							



Client Borehole ID N/A Stantec Boring No. WBF-B21 Client Tennessee Valley Authority Boring Location 444,650.23 N; 2,362,824.28 E NAD27 I Project Number 175668050 Surface Elevation 716.2 ft Elevation Datum N Project Name WBF TDEC Order Date Started 6/27/21 Completed 6/28/2 Project Location Rhea Co, Spring City, Tennessee Depth to Water N/A Date/Time N/A Inspector B. Herries Logger B. Herries Depth to Water N/A Date/Time N/A Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drill Doping (Type and Size) N/A Overdrill Tooling (Type and Size) N/A Overdrill Depth N/A Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By M. McDonald Approved By A. Welshans Uberth Ft ³ Elevation Graphic Description Rock Core: RQD	GVD29 1 // /A Blows/PSI Rec. %
Project Number 175668050 Surface Elevation 716.2 ft Elevation Datum N Project Name WBF TDEC Order Date Started 6/27/21 Completed 6/28/2 Project Location Rhea Co, Spring City, Tennessee Depth to Water N/A Date/Time N/A Inspector B. Herries Logger B. Herries Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID CME 85#2, #951 Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Depth N Overdrill Tooling (Type and Size) N/A Overdrill Depth N Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A N/A Borehole Inclination (from Vertical) N/A Reviewed By M. McDonald Approved By A. Welshans A. Welshans Util UI Description Rock Core: RQD % Run Ft Rec. Ft	GVD29 1 // /A Blows/PSI Rec. %
Project Name WBF TDEC Order Date Started 6/27/21 Completed 6/28/2 Project Location Rhea Co, Spring City, Tennessee Depth to Water N/A Date/Time N/A Inspector B. Herries Logger B. Herries Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID CME 85#2, #951 Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Depth N/A Overdrill Tooling (Type and Size) N/A Overdrill Depth N/A Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A McDonald Approved By A. Welshans N/A Lithology Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core is the cor	/A Blows/PSI Rec. %
Project Location Rhea Co, Spring City, Tennessee Depth to Water N/A Date/Time N/A Inspector B. Herries Logger B. Herries Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID CME 85#2, #951 Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Depth N Overdrill Tooling (Type and Size) N/A Overdrill Depth N Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A Approved By A. Welshans N/A Lithology Overburden: Sample ¹² Depth Ft ³ Rec. Ft 0 0.0 716.2 Top of Hole Imposed Action Imposed Ac	/A Blows/PSI Rec. %
Inspector B. Herries Logger B. Herries Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID_CME 85#2, #951 Drill Rig Type and ID_CME 85#2, #951 Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Tooling (Type and Size) N/A Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A M.McDonald Approved By A. Welshans Lithology Description Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft 0 0.0 716.2 Top of Hole Image: Composition of the composition	/A Blows/PSI Rec. %
Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID_CME 85#2, #951 Overburden Drilling and Sampling Tools (Type and Size) 4-7/8" 3-Wing Updraft Bit, 2" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Tooling (Type and Size) N/A Overdrill Tooling (Type and Size) N/A Sampler Hammer Type Automatic Weight 140 lb Drop Borehole Azimuth N/A Reviewed By M. McDonald Lithology Overburden: Sample ^{1,2} Depth Ft ³ Elevation Graphic O 716.2 Top of Hole 0 0.5 715.7 TOPSOIL, 7.5YR 6/3 (light brown), stiff, dry to moist, 0 0.5 715.7 TOPSOIL, 7.5YR 6/3 (light brown), stiff, dry to moist, SS01G 0.0 - 1.5	/A Blows/PSI Rec. %
Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Tooling (Type and Size) N/A Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A Reviewed By M. McDonald Approved By A. Welshans Lithology Overburden: Sample ^{1,2} Depth Ft ³ Reviewed By Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Implementation 0 0.5 715.7 TOPSOIL, 7.5YR 6/3 (light brown), stiff, dry to moist, SS01G 0.0 - 1.5 1.2	/A Blows/PSI Rec. %
Overdrill Tooling (Type and Size) N/A Overdrill Depth N Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By M. McDonald Approved By A. Welshans Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core in the image: C	Blows/PSI Rec. %
Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency 89.9% Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By M. McDonald Approved By A. Welshans Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core in the image: Cor	Blows/PSI Rec. %
Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By M. McDonald Approved By A. Welshans Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core in the image: Cor	Rec. %
Reviewed By M. McDonald Approved By A. Welshans Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core in the	Rec. %
Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole Image: Core in the image: Core	Rec. %
Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft 0 0.0 716.2 Top of Hole 1	Rec. %
0.0 716.2 Top of Hole 0.5 715.7 TOPSOIL, 7.5YR 6/3 (light brown), stiff, dry to moist,	
0.5 715.7 TOPSOIL, 7.5YR 6/3 (light brown), stiff, dry to moist,	
	4-7-8
ELASTIC SILT WITH SAND, MH, 7.5YR 5/4 (brown)	
- 2 and 7.5YR 7/8 (reddish yellow), medium plasticity,	
stiff, dry, [FILL]	
- 3 SS02G 2.5 - 4.0 5 1.4	5-9-9
4.0 712.2 4.0	
SILT, ML, 7.5YR 2.5/1 (black), non-plastic, very soft,	_
- 5 moist to wet, [CCR]	-
SS03G 5.0 - 6.5	1-WH-WH
	-
	-
	-
- 9 ST01G 7.5 - 10.0 2.1	200
	_
	-
12 ST02G 11.0 - 13.5	200
ST02G 11.0 - 13.5 2.2	200
	-
t 15.5 700.7 SS04aG 14.5 - 15.5 t 1.5 t 1	WR-5-16
10.0 700.7 SILTY SAND, SM, 7.5YR 2.5/1 (black), fine to	
coarse, loose to dense, moist to wet, [CCR]	-
	-
10 11 <td< td=""><td>11-12-12</td></td<>	11-12-12



Cli	ent E	Borehole	ID N/A	ι	Stantec Boring No. WBF-B21							
Cli	ent		Tennes	see Valley Authority	Boring Location							
Pro	oject	Number	175668	050	Surface Elevation 716.2 ft Elevation Datum			Datum_	NGVD29			
		_ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Depth	ı Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %	
- 18 - 19 - 20 - 21	22.0	694.2		SILTY SAND, SM, 7.5YR 2.5/1 (black coarse, loose to dense, moist to wet, (<i>Continued</i>)			SS06G	19.5 - 21.0	19.5 - 21.0	1.0	- - 3-2-3	
- 22 - - 23 - 24	22.0	004.2		POORLY GRADED GRAVEL LITTLE 7.5YR 2.5/1 (black), coarse, medium wet, some roots, [CCR]			SS07G	22.0 - 23.5	22.0 - 23.5	1.0	- 2-5-10 _ -	
- 25 - 26	27.0	689.2					ST03G	24.5 - 27.0	24.5 - 27.0	0.9	200 _	
- 27 - - 28				FAT CLAY, CH, 7.5YR 5/3 (brown) w (gray), high plasticity, stiff, moist	ith 7.5YR 5/1		SS08G	27.0 - 28.5	27.0 - 28.5	1.4	5-6-9	
- 29 - 30							SS09G	28.5 - 30.0	28.5 - 30.0	1.5	3-5-6 -	
- 31 - 32 - 33	33.5	682.7					ST04G	31.0 - 33.5	31.0 - 33.5	1.9	300 -	
- 34				LEAN CLAY, CL, 7.5YR 5/3 (brown) (gray), medium plasticity, firm to stiff,			SS10G	33.5 - 35.0	33.5 - 35.0	1.5	1-4-6	
- 35 - 36 - 37							SS11G	35.0 - 36.5	35.0 - 36.5	1.3	WH-1-4 _	
- 38 - 39 - 40	37.5	678.7		SANDY LEAN CLAY, CL, 7.5YR 5/1 plasticity, very soft, moist to wet	(gray), medium		ST05G	37.5 - 40.0	37.5 - 40.0 40.0	2.1	- 300 _ _	
							SS12G	40.0 - 41.5) - 41.5	0.6	WH-WH-WH	



Page: 3 of 3

Client E	Borehole IDN/A	A	Stantec Boring No. WBF-B21							
Client	Tennes		Boring Location 444,650.23 N; 2,362,824.28 E NAD27 Plant Local							
Project	Number 175668	3050 5	Surface Elevation 716.2 ft Elevation Datum			n Datum_	NGVD29			
L	_ithology		Overburden:	Sample ^{1,2}	2 Depth Ft ³	Rec. Ft	Blows/PSI			
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
43.0	673.2			SS130		41.5	WH-WH-WH			
- 43 - 44		SILTY SAND WITH CLAY, SM, 7.5YR 5 non-plastic, loose, moist to wet	/1 (gray),	SS14G	6 43.0 - 44.5	1.1 43.0 43.0 - 44.5	1-WH-3 _			
- 45 - 46 - 47 - 48 <u>48.2</u>	668.0			ST06G	6 45.5 - 48.0	45.5 - 48.0	300 _			
- 49	((Shale, bluish gray, soft, thin bedded, we	athered, dry	SS15G	6 48.2 - 49.7	48.2 - 49.7	5-8-13 –			
- 50 - ⁵¹ 51.3	664.9			SS16G	G 50.0 - 51.3	50.0 - 51.3	 20-35-50/4" 			
		Refusal / Bottom of Hole at 51.3 Ft.					_			

Top of Rock = 48.2 Ft. Top of Rock Elevation = 668.0 Ft.

1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody

- 2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples
- 3: Depths are reported in feet below ground surface



CI	ient E	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B22			
	ient	_		see Valley Authority	Boring Locatio).88 E	E NAD27	Plant Local
Pr	oject	Number	175668	050	Surface Eleva						
	•			DEC Order	Date Started		6/23/21	 Comple			
				ea Co, Spring City, Tennessee	Depth to Wate						
	-			Logger B. Herries	Depth to Wate					N/A	
	-			ntec Consulting Services Inc.	Drill Rig Type	_					
	•		-	Sampling Tools (Type and Size	• • •				Shel	by Tubes	;
			-	ling Tools (Type and Size) N/A							
0	verdri	II Tooling	(Type	and Size) N/A				Overdril	l De	pth _!	N/A
Sa	ample	er Hamme	er Type	Automatic Weight 140	b Drop <u>3</u>	80"		Efficiency	_8	39.9%	
		le Azimu		N/A	Borehole Inclin	nati	ion (from	Vertical)	N/A	4	
Re	eview	ed By _	M. Mo	Donald	Approved By		A. Welshan	S			
	l	_ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:	 	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	700.5	റക്റക്റക്റ	Top of Hole							
- 1				CRUSHED LIMESTONE GRAVEL, 10 gray), moist, angular to subangular, w [FILL]			SS01G	0.0 - 1.5	0.0 - 1.5	1.1	8-21-42
- 2 - 3	3.0	697.5					SS02aG	2.5 - 3.0	2		-
				POORLY GRADED SAND WITH CLA GRAVEL, SP-SC, 7.5YR 2.5/2 (very d			SS02bG	3.0 - 4.0	.5 - 4.0	1.3	40-17-13
- 4 - 5	5.4	695.1		2.5YR 3/6 (dark red), medium to coars to moist	,		ST01G	5.0 - 5.2		0.2	- 360 —
- 6	<u> </u>	033.1		POORLY GRADED SAND, SP, 7.5YR brown) with 7.5YR 5/1 (gray), medium dense, moist	(0		SS03aG SS03bG	5.2 - 5.4 5.4 - 6.7	5.2 - 6.7	0.9	8-7-6 -
- 7 - 8	8.5	692.0									- -
- 9	0.0	002.0		SILTY CLAYEY SAND, SC-SM, 7.5YF with 7.5YR 5/1 (gray), medium to coar plasticity, loose, moist			SS04G	8.5 - 10.0	8.5 - 10.0	1.3	WH-2-4
- 11											
- 12 - 13							ST02G	11.0 - 13.5	.0 - 13.5	2.5	220
- 14 - 15	14.5	686.0		SANDY LEAN CLAY, CL, 7.5YR 4/3 (I plasticity, very soft, moist	brown), low		SS05G	14.5 - 16.0	14.5 -	1.5	
- 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17				,,,,					6.0		-
18											



Page: 2 of 2

Client E	Borehole	IDN/A		Stantec Boring	g No. WBF	-B22		
Client		Tennes	see Valley Authority	Boring Locatio		13 N; 2,363,030.8	38 E NAD27	Plant Local
Project	Number	175668	050	Surface Elevat	tion <u>700.5 ft</u>	Elevatior	n Datum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
· 18 · 19			SANDY LEAN CLAY, CL, 7.5YR 4/3 plasticity, very soft, moist <i>(Continue</i>		ST03G	17.0 - 19.5	2.5	230
· 20 · 21 · 22	680.0		SANDY LEAN CLAY, CL, 7.5YR 4/3 7.5YR 5/1 (gray), medium plasticity, f		SS06G	20.5 - 22.0	 	2-2-3
· 23 23.5 · 24 · 25 · 26	677.0		SILTY CLAYEY SAND, SC-SM, 7.5Y low plasticity, firm, moist	'R 4/3 (brown),	ST04G	23.0 - 25.5	2.5	320
· 27 · 28 29.0	674.0		LEAN CLAY WITH SAND, CL, 7.5YF 7.5YR 4/1 (dark gray), fine to mediun plasticity, very soft, moist to wet		SS07G	26.5 - 28.0	1.5	WH-WH-WH
- 30 - 31 - 32			SILTY SAND, SM, 7.5YR 5/1 (gray) (dark gray), fine to medium, non-plas		ST05G	29.0 - 31.5	2.5	220
32.5 33 34 34.0	668.0 666.5		POORLY GRADED SAND, SP, 7.5Y 7.5YR 4/1 (dark gray), fine to mediun moist to wet, stratified		SS08G	32.5 - 34.0	3 	WH-WH-1
35 35.2	665.3	\rightarrow	Shale, bluish gray, soft, thin bedded, damp	weathered,	SS09G	34.0 - 35.2	1.2	25-31-50/2
		· · · · · ·	Refusal / Bottom of Hole at 35.2 Ft.			ľ		
			Top of Rock = 34.0 Ft. Top of Rock Elevation = 666.5 Ft.					
		3.34-in	ch (85mm) DGSI inclinometer casing in	stalled to 34.0 feet fo	or nuclear mag	netic resonance o	downhole te	esting.
		G = 2: a,b,o	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su	nvironmental and Ge	•		ble)	

Stantec Consulting Services Inc.



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Client I	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B23			
Client			see Valley Authority	Boring Locatio				5.82 I	E NAD27	Plant Local
	Number			Surface Eleva			Elevatio			
-	Name			Date Started		6/24/21	Comple			
			ea Co, Spring City, Tennessee	Depth to Wate			Date/Ti		N/A	
-			Logger B. Herries	Depth to Wate					N/A	
Drilling	Contract	or Sta	Intec Consulting Services Inc.	Drill Rig Type	and	d ID CME	85#2, #951			
Overbu	urden Drill	ling and	I Sampling Tools (Type and Size) 4-7/8" 3-Wing U	Jpdra	aft Bit, 2" S	S w/o liners, 3"	Shel	by Tubes	
Rock D	Drilling and	d Samp	ling Tools (Type and Size)	ι						
	-		and Size) <u>N/A</u>				Overdrill		•	J/A
		• •	Automatic Weight 140				Efficiency		39.9%	
	ole Azimut		N/A	Borehole Incli		•	,	N//	4	
Review	ved By _	M. MC	cDonald	Approved By		A. Welshan	S			
	Lithology			Overburden:	U)	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft	<u> </u>	Rec. Ft	Rec. %
- 0 0.0	700.3	০৬০৬০৬০	Top of Hole			0001-0	00.05			
0.5	699.8	<u> </u>	CRUSHED LIMESTONE GRAVEL, 10 \gray), moist, angular to subangular, [F	, e –		SS01aG	0.0 - 0.5	0.0 -	1.3	8-13-15
^{- 1} 1.5	698.8	•••••	¬ POORLY GRADED SAND WITH GRA			SS01bG	0.5 - 1.5	1.5		
- 2			7.5YR 2.5/1 (black) and 7.5YR 2.5/2 (-
			brown), medium to coarse, dense, dry	to moist,						
- 3			[CCR]]		SS02G	2.5 - 4.0	2.5 - 4	1.2	2-5-6
4.0	696.3		FAT CLAY LITTLE GRAVEL, CH, 2.5 → with 7.5YR 6/6 (reddish yellow), mediu	. ,						-
			plasticity, firm, dry to moist, [FILL]							
- 5			SANDY SILT, ML, 7.5YR 4/3 (brown),	fine to				5		_
- 6			medium, non-plastic, firm, moist			SS03G	5.0 - 6.5	.0 - 6.5	1.0	4-4-4
- 7										-
- 8								IP		-
						ST01G	7.5 - 10.0	7.5 -	2.3	150
- 9								10.0		
- 10								IE		-
- 11								1		-
- 12						SS04G	11.0 - 12.5	0 - 12.	1.4	1-3-3
								5		
- 13										-
- 14										-
						ST02G	13.5 - 16.0	13.5 -	2.2	220
- 15						01020	10.0 10.0	16.0		
- 16										-
17.0	602.2									
-10 -11 -12 -13 -14 -15 -16 -17 17.0 10	683.3		LEAN CLAY SOME SAND, CL, 7.5YF	3 4/3 (brown)				17.0 -		-
10		///	with 7.5YR 5/1 (gray), medium plastic			SS05G	17.0 - 18.5	. 18.5	1.2	WH-3-4

Stantec Consulting Services Inc.





Client I	Borehole ID <u>N/A</u>		Stantec Boring	No. WBF	-B23		
Client	Tennes	see Valley Authority	Boring Location		77 N; 2,363,005.8	32 E NAD27	Plant Local
Project	Number 175668	050	Surface Elevat	ion <u>700.3 ft</u>	Elevatior	n Datum_	NGVD29
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
· 18 · 19 · 20		LEAN CLAY SOME SAND, CL, 7.5Y with 7.5YR 5/1 (gray), medium plasti (<i>Continued</i>)					
· 21 · 22 · 23 <u>23.0</u>	677.3			ST03G	19.5 - 22.0	2.5	200
· 24 · 25 25.5	674.8	POORLY GRADED SAND SOME C 4/3 (brown) and 7.5YR 5/1 (gray), fir very loose, moist to wet		SS06G	23.0 - 24.5	1.5	WH-WH-W
· 26 · 27 · 28		SILTY SAND, SM, 7.5YR 5/1 (gray) (dark gray), fine to medium, moist to graded		ST04G	25.5 - 28.0	2.5	210
29 29 30 31 31.5	671.3 671.3	POORLY GRADED SAND WITH SII 5/1 (gray), fine to medium, very loos		SS07G	29.0 - 30.5	1.5	WH-WH-W
· 32 · 33 33.2	667.1	SILTY SAND, SM, 7.5YR 5/1 (gray) (dark gray), fine to medium, non-play moist to wet, stratified		SS08G	31.5 - 33.0	³¹⁵ -330	1-WH-1
334	666.9	Shale, bluish gray, soft, thin bedded moist to wet Refusal / Bottom of Hole at 33.4 Ft. Top of Rock = 33.2 Ft. Top of Rock Elevation = 667.1 Ft.	, weathered,	SS09G	33.2 - 33.4	0.2	50/2"
	1: E = G = 2: a,b,t	ch (85mm) DGSI inclinometer casing in Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between B ths are reported in feet below ground s	plit Spoons may be re Environmental and Ge	quired to obta	in sufficient samp		esting.



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Clie	ent B	Borehole	ID N/A	N	Stantec Boring	g No	b. WBF	-B24			
	ent			see Valley Authority	Boring Locatio				3.87 I	E NAD27	Plant Local
Prc	oject	Number			Surface Eleva		-				
Prc	oject	Name	WBF TI	DEC Order	Date Started		6/22/21	 Comple	eted	6/23/2	21
			רRhe	ea Co, Spring City, Tennessee	Depth to Wate		N/A	 Date/Ti		N/A	
Ins	pect	or <u> </u>	erries	Logger _B. Herries	Depth to Wate	er _	N/A	Date/Ti	me	N/A	
Dri	lling	Contract	or <u>Sta</u>	ntec Consulting Services Inc.	Drill Rig Type	and	ID CME	85#2, #951			
			-	Sampling Tools (Type and Size		Jpdra	ft Bit, 2" S	S w/o liners, 3"	Shel	by Tubes	3
		-	•	ling Tools (Type and Size)/	A						
		-		and Size) <u>N/A</u>				Overdril			N/A
	•		• •	Automatic Weight 140				Efficiency		39.9%	
		le Azimut		N/A	Borehole Inclin		on (from A. Welshan		N//	4	
Re	view	ed By _			Approved By			5			
		ithology			Overburden:		ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth		Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0 -	0.0	700.5	ඉතුරුතුරුතුර	Top of Hole							
			6262626	CRUSHED LIMESTONE GRAVEL, 10 gray), dry to moist, angular to subang			SS01G	0.0 - 1.5	0.0 - 1	1.3	11-12-37
- 1					, L J				σ		-
- 2			0404040								-
	2.5	698.0		SANDY LEAN CLAY, CL, 7.5YR 5/4 (brown) low to						
- 3				medium plasticity, hard, dry to moist			SS02G	2.5 - 4.0	2.5 - 4.	1.2	15-10-9
- 4											-
- 5									12		-
- 6									5.0		
							ST01G	5.0 - 7.5	- 7.5	2.5	240
- 7									E		-
- 8											-
	8.5	692.0	I A		un) fun en t						
- 9				CLAYEY SAND, SC, 7.5YR 5/4 (brow medium, very loose, moist	n), fine to		SS03G	8.5 - 10.0	8.5 - 10.0	1.4	WH-WH-WH
- 10				meanin, very loose, molec					0.0		_
- 11									1		-
- 12											_
2000							ST02G	11.0 - 13.5	0-13.	2.1	190
- 13			//								-
- 14									ľ		_
	14.5	686.0									-
b − 15				SANDY SILTY CLAY, CL-ML, 7.5YR plasticity, very soft, moist	5/4 (brown), low		SS04G	14.5 - 16.0	14.5 -	1.5	WH-WH-WH
100000				piasuoly, very soil, moisi			220-0	1	16.0		
≚ − 16											-
100 11 11 12 11 13 11 13 11 14 11 15 11 16	17.0	683.5	[/]]		1						-
±			///	SANDY LEAN CLAY, CL, 7.5YR 5/4 (plasticity, very soft, moist	prown), IOW				ΙĽ	4	

Stantec Consulting Services Inc.



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Client	Borehole ID	N/A		Stantec Boring	g N	o. WBF	-B24			
Client	Te	enness	ee Valley Authority	Boring Location			03 N; 2,363,028	3.87 E	NAD27	7 Plant Local
Projec	t Number	756680	50	Surface Eleva	atior	700.5 ft	Elevati	on D	atum_	NGVD29
	Lithology			Overburden:	5	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Gra	aphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19			SANDY LEAN CLAY, CL, 7.5YR 5/4 (plasticity, very soft, moist <i>(Continued</i>			ST03G	17.0 - 19.5	17.0 - 19.5	2.5	210 -
- 20 20.5	680.0									
- 21 21.0	111		SILTY SAND, SM, 7.5YR 4/3 (brown) (dark gray), fine to medium, very loose	/		SS05aG SS05bG	20.5 - 21.0 21.0 - 22.0	20.5 - 22	1.5	WH-WH-WH
- 22 - 23 23.0	677.5		POORLY GRADED SAND SOME SIL 4/3 (brown) with 7.5YR 5/1 (gray), fine very loose, moist to wet					0		_
- 23			LEAN CLAY WITH SAND, CL, 7.5YR medium plasticity, soft, moist to wet	4/1 (dark gray),		ST04G	23.0 - 25.5	23.0 - 25.5	2.3	200
- 25 - 26										-
- 27 - 28						SS06G	26.5 - 28.0	26.5 - 28.0	1.5	
- 29 29.0 - 30 - 31 - 32	671.5		POORLY GRADED SAND, SP, 7.5YF to medium, moist to wet	8 5/1 (gray), fine		ST05G	29.0 - 31.5	29.0 - 31.5	2.5	320 -
- 33			POORLY GRADED SAND, SP, 7.5YF 7.5YR 4/1 (dark gray), fine to medium wet, stratified			SS07G	32.5 - 34.0	32.5 - 34.0	1.4	WH-2-3 –
34.9			Shale, gray to black, soft, moderately	weathered,		SS08G	34.5 - 34.9	34.5 -	0.4	50/5"
2291 - 34 34.5 34.5 34.5	1	1: E = E G = 0 2: a,b,c	\damp Refusal / Bottom of Hole at 34.9 Ft. Top of Rock = 34.5 Ft. Top of Rock Elevation = 666.0 Ft. th (85mm) DGSI inclinometer casing ins Environmental Sample Custody (two Spl Geotechnical Sample Custody denote Split Spoon divided between Er hs are reported in feet below ground su	it Spoons may be r ivironmental and G	requ	ired to obtai	in sufficient sar		nhole te	 >sting.



	lient F	Borehole	ID N/A	λ	Stantec Boring	a Ni	o. WBF	-B25			
	lient			ssee Valley Authority	Boring Locatio				8.82 E	E NAD27	Plant Local
		Number			Surface Eleva						
	-			DEC Order	Date Started		6/12/21	Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Wate	 >r	N/A	Comple Date/Ti		N/A	
	-			Logger B. Herries	Depth to Wate					N/A	
	•			intec Consulting Services Inc.	Drill Rig Type	_			me		
	-		-	I Sampling Tools (Type and Size)	• • •				Shel	by Tubes	
			-	ling Tools (Type and Size) N/A				,		,	
		-	•	and Size) N/A				Overdrill	De	pth N	I/A
		-		Automatic Weight 140	b Drop 30	60"		 Efficiency		9.9%	
	•	le Azimu	• •	5	Borehole Inclir				N/A	4	
R	Review	ed By _	M. Mo	cDonald	Approved By		A. Welshan	·			
		Lithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	oth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	711.2		Top of Hole							
	0.5	710.7		_ CRUSHED LIMESTONE GRAVEL, 10	· • /						
- 1				\gray), moist, angular to subangular, [F							-
- 2				LEAN CLAY LITTLE SAND, CL, 7.5YF low plasticity, firm, dry to moist, [FILL]	R 4/4 (brown),						_
2											
- 3											-
- 4	4.5	706.7									-
- 5				LEAN CLAY LITTLE SAND, CL, 2.5YF					E		_
				reddish gray), low to medium plasticity	, moist, [FILL]		ST01G	4.5 - 7.0	4.5 -	2.2	500
- 6							01010	4.0 7.0	7.0	2.2	
- 7											-
- 8											-
- 9									8.		
							ST02G	8.0 - 10.5	0 - 10.5	2.2	750
- 10									Ĩ		-
ge − 11	11.5	699.7									-
5 – 12				POORLY GRADED SAND TRACE CL	AY, SP, 7.5YR				E		-
6000 D			$ \cdots $	5/4 (brown), very fine to fine, moist			ST03G	11.5 - 14.0	11.5 -	2.5	650
– 13							0.000	11.0 - 14.0	14.0	2.0	
- 14	14.0	697.2									-
				SANDY LEAN CLAY, CL, 5Y 4/1 (dark	c gray), low to						
- 15			$\langle / / \rangle$	medium plasticity, moist							-
500000											
≗ – 16											-
ZZ94 - 10 ZZ94 - 11 1 - 12 - 13 - 13 - 14 - 15 - 15 - 16 - 17 - 17											-
									1 1		



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Client I	Borehole	ID N/A		Stantec Boring	g N	o. WBF	-B25					
Client			see Valley Authority	Boring Locatio				2,968	.82	E NAD27	Plant Loca	- 1
Project	Number	175668	050	Surface Elevat	tior	711.2 ft	Ele	vatio	n D	atum_N	IGVD29	-
	Lithology			Overburden:	S	Sample ^{1,2}	Depth	Ft ³		Rec. Ft	Blows/PS	31
Depth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run	Ft		Rec. Ft	Rec. %	
- 18		///	SANDY LEAN CLAY, CL, 5Y 4/1 (darl	k grov) low to								-
- 19			medium plasticity, moist (Continued)									-
- 20												_
- 21												-
- 22												-
- 23												-
- 24 - 25												_
- 26												_
- 27												-
- 28												-
- 29												-
- 30												_
- 31												-
- 32 32.5	678.7											-
- 33			SANDY LEAN CLAY, CL, 10Y 3/2 (ve olive) to 5GY 3/2 (very dark grayish gr						32.			-
²⁷ – 34			plasticity, moist			ST04G	32.5 - 3	5.0	5 - 35.0	2.5	230	-
¹⁰ . 												_
220нг 10000506002 - 35 - 36 - 36 - 37												-
												-
гар – 38 - 39 - 39 - 40												-
- 40												_
90 90 91 - 41												-
40 413 413 414 42												



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_		Borehole	ID N/A		Stantec Boring	No. WBF	-B25		
C	lient		Tennes	see Valley Authority	Boring Location	n <u>443,695.</u>	75 N; 2,362,968.8	2 E NAD27	7 Plant Loca
Pı	roject	Number	175668	050	Surface Elevati	ion <u>711.2 ft</u>	Elevation	Datum_	NGVD29
	l	_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43 44 45				SANDY LEAN CLAY, CL, 10Y 3/2 (olive) to 5GY 3/2 (very dark grayish plasticity, moist <i>(Continued)</i>		ST05G	43.0 - 44.6 43.0 - 44.6	1.6	375
46 47	46.3 46.8 47.4	664.9 664.4 663.8		SANDY WELL GRADED GRAVEL, \(very dark gray), very dense, moist		SS01	46.3 - 47.4	1.1	29-34-50/
1			· ·	Shale, dark blue gray with white, so weathered, moist	ft to hard,		<u>حد</u> ۱		
				Refusal / Bottom of Hole at 47.4 Ft.					
				Top of Rock = 46.8 Ft.					
				Top of Rock Elevation = 664.4 Ft.					
			logging 1: E =	ich (85mm) DGSI inclinometer casing i g, and compression and Seismic Wave Environmental Sample Custody (two S	Crosshole Testing.				ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance
			logging 1: E = G = 2: a,b,c	g, and compression and Seismic Wave Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between	crosshole Testing. Split Spoons may be rea Environmental and Ge	quired to obta	in sufficient sampl		ance



С	lient F	Borehole	ID N/A	λ	Stantec Borin	a No	WBF	-B26			
	lient			see Valley Authority	Boring Location				4.39	E NAD27	Plant Local
		Number		· · · ·	Surface Eleva						
	-			DEC Order	Date Started		6/9/21	Comple			
	-			ea Co, Spring City, Tennessee	Depth to Wate		N/A	·		N/A	<u> </u>
	-			Logger B. Herries	Depth to Wate		N/A			N/A	
	•			intec Consulting Services Inc.	Drill Rig Type				me		
	-			Sampling Tools (Type and Size)	• • • •				She	bv Tubes	
			-	ling Tools (Type and Size) N/A			,	, _			
		-	-	and Size) N/A				Overdril	l De	pth N	N/A
		-		Automatic Weight 140 I	b Drop 3	30"		Efficiency		39.9%	
	-	le Azimu		N/A 5	Borehole Incli			-	N/	Ą	
R	eview	ed By	M. Mo	cDonald	Approved By		. Welshan				
	l	ithology			Overburden:	Sa	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %
	0.0	711.0		Top of Hole	1						
- 0	0.7	710.3	000000000000000000000000000000000000000	CRUSHED LIMESTONE GRAVEL, 10					0.0		
- 1	0.1	110.0		│ gray), moist, angular to subangular, C │[FILL]	rushed stone,		SS01G	0.0 - 1.5	0 - 1.5	1.4	7-3-3 _
- 2				SANDY LEAN CLAY, CL, 7.5YR 4/4 (-
				medium plasticity, firm, dry to moist, [f	FILL]						
- 3							SS02G	2.5 - 4.0	.5 - 4.0	1.4	2-3-4
- 4											-
- 5	5.5	705.5					SS03aG	5.0 - 5.5	ŗ		-
- 6				LEAN CLAY, CL, 2.5YR 3/1 (dark red	dish gray),		SS03bG	5.5 - 6.5	0 - 6.5	1.5	6-8-12
				medium plasticity, hard, moist, [FILL]							
- 7											-
- 8									7		_
ľ							SS04G	7.5 - 9.0	.5 - 9.0	1.3	3-5-8
- 9											-
51122			$\langle / / \rangle$								
₩ - 10									10.0		_
- 11			$\langle / / \rangle$				SS05G	10.0 - 11.5	9 - 11.5	1.3	4-7-10 _
4F DT 20											
Hosens – 12	12.5	698.5	///								-
See 13				LEAN CLAY LITTLE SAND, CL, 5YR		1	SS06aG	12.5 - 13.5	12.5		-
ER.GPJ	13.5	697.5	///	red), low to medium plasticity, firm, mo	oist, [FILL]				5 - 14.0	1.3	3-4-4
ອື່– 14				SANDY LEAN CLAY, CL, 5Y 4/1 (darl	k gray), low to		SS06bG	13.5 - 14.0			-
				medium plasticity, firm, moist							
∰ – 15 ‱									15.0		
³⁹⁹⁵ ⊢ 16			$\langle / / \rangle$				SS07G	15.0 - 16.5) - 16.5	1.3	2-2-3
ING LOC											
TAVE EIP BORNOCTOR 126000000 ANE THEC ONDER OF THE CANADACTOR AT 112 12 13 14 15 15 16 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 14 15 16 17 12 12 13 15 16 17 12 12 13 15 16 17 12 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 12 13 15 16 17 13 15 15 16 17 13 15 15 16 15 17 13 15 15 15 15 15 15 15 15 15 15 15 15 15	17.5	693.5	\Box								-
[₹] 1 8			\vee								





С	lient E	Borehole	ID N/A		Stantec Boring	g No. V	VBF	-B26			
c	lient		Tennes	see Valley Authority	Boring Locatio			63 N; 2,362,954	4.39	E NAD27	Plant Local
Pi	roject	Number	175668	050	Surface Eleva	tion <u>711</u>	.0 ft	Elevati	on E	Datum_	NGVD29
	l	ithology			Overburden:	Sampl	e ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:	RQD	%	Run Ft		Rec. Ft	Rec. %
- 18 - 19				LEAN CLAY SOME SAND, CL, 7.5YR low to medium plasticity, very soft to fir		sso)8G	17.5 - 19.0	17.5 - 19.0	1.2	2-2-1
- 20				(Continued)					20		-
- 21						sso)9G	20.0 - 21.5	.0 - 21.5	1.2	WH-2-3
- 22 - 23									22.1		-
- 24						SS1	0G	22.5 - 24.0	5 - 24.0	1.5	WH-WH-WH
- 25						SS1	1G	25.0 - 26.5	25.0 - 2	1.5	– WH-WH-WH
- 26 - 27									26.5		-
- 28						SS1	2G	27.5 - 29.0	27.5 - 29.0	1.5	WH-WH-WH
- 29 - 30											-
- 31						SS1	3G	30.0 - 31.5	30.0 - 31.5	1.5	WH-WH-WH
- 32 - 33	33.0	678.0				SS1	4aG	32.5 - 33.0	32.		
				SANDY LEAN CLAY, CL, 7.5YR 3/3 (or low plasticity, very soft, moist to wet	ark brown),	SS1	4bG	33.0 - 34.0	32.5 - 34.0	1.5	WH-WH-2 -
- 35	35.0	676.0		LEAN CLAY SOME SAND, CL, 10Y 3/ grayish olive) to 5GY 3/2 (very dark gra		SS1	5G	35.0 - 36.5	35.0 - :	1.5	– WR-WR-WR
- 36				low to medium plasticity, very soft, moi			·		36.5		
- 38	38.5	672.5				SS1		37.5 - 38.5	37.5 - 39.(1.5	WR-WH-WH
- 39 - 40	40.0	671.0		SILTY SAND, SM, 10Y 3/2 (very dark g to 5GY 3/2 (very dark grayish green), f non-plastic, very loose, moist to wet		SS1	DDG	38.5 - 39.0			_
711 - 34 711 - 35 <t< td=""><td></td><td></td><td></td><td>SANDY LEAN CLAY, CL, 2.5Y 3/1 (ve low plasticity, very soft to firm, moist, s</td><td></td><td>SS1</td><td>7G</td><td>40.0 - 41.5</td><td>40.0 - 41.5</td><td>1.5</td><td>WH-WH-1</td></t<>				SANDY LEAN CLAY, CL, 2.5Y 3/1 (ve low plasticity, very soft to firm, moist, s		SS1	7G	40.0 - 41.5	40.0 - 41.5	1.5	WH-WH-1
- 42			V/A								



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	Borehole	IDN/A	ι	Stantec Boring	No. WBF	-B26		
Client		Tennes	see Valley Authority	Boring Locatior		63 N; 2,362,954.	39 E NAD27	Plant Loca
Projec	t Number	175668	050	Surface Elevati	ion <u>711.0 ft</u>	Elevation	n Datum_N	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43 14			SANDY LEAN CLAY, CL, 2.5Y 3/1 (low plasticity, very soft to firm, moist (Continued)		SS18G	42.5 - 44.0	42.5 - 44.0	WH-1-4
45.0 45.9	666.0 665.1		POORLY GRADED GRAVEL WITH 2.5Y 3/1 (very dark gray), fine to coa		SS19G	45.0 - 45.9	45.0 - 45.0	25-50/5
		3.34-ir loggin	Bottom of Hole at 45.9 Ft. Top of Rock = 45.9 Ft. Top of Rock Elevation = 665.1 Ft. nch (85mm) DGSI inclinometer casing in g, and compression and Seismic Wave	nstalled to 45.0 feet for Crosshole Testing.	r deviation sur	rvey, nuclear ma	gnetic resona	ance
		G = 2: a,b,	Environmental Sample Custody (two S Geotechnical Sample Custody c denote Split Spoon divided between R ths are reported in feet below ground s	Environmental and Ge			ple)	
		G = 2: a,b,	Geotechnical Sample Custody c denote Split Spoon divided between I	Environmental and Ge			ple)	



Client Borehole IDN/A Stantec Boring NoWBF-B27											
C C	lient		Tennes	see Valley Authority		ation 443,687.96 N; 2,362,955.53 E NAD27 Plant Loca					
P	roject	Number	175668	3050	Surface Eleva	tion 710.7 ft	Elevatio	on D	atum N	IGVD29	
P	roject	Name	WBF T	DEC Order	Date Started	6/10/21	Comple	eted	6/12/2	!1	
	-			ea Co, Spring City, Tennessee	Depth to Wate	·					
	-			Logger B. Herries	Depth to Wate				N/A		
				Intec Consulting Services Inc.	Drill Rig Type						
	-			Sampling Tools (Type and Size)) 4-7/8" 3-Wing U	pdraft Bit, 2" S	S w/o liners, 3"	Shell	by Tubes		
R	ock D	rilling and	d Samp	ling Tools (Type and Size) N/A							
0	verdri	II Tooling	(Type	and Size) N/A			Overdrill	De	pth _N	I/A	
s	ample	er Hamme	er Type	Automatic Weight 140 I	b Drop <u>3</u>	0"	Efficiency	8	9.9%		
В	oreho	le Azimu	th	N/A	Borehole Inclin	nation (from	Vertical)	N/A	4		
R	eview	ed By _	M. Mo	Donald	Approved By	A. Welshan	IS				
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %	
- 0	0.0	710.7	୦୫୦୫୦୫୦	Top of Hole							
	0.7	710.0		Crushed stone							
- 1				LEAN CLAY LITTLE SAND, CL, 7.5YF	R 4/4 (brown),					-	
- 2				low plasticity, dry to moist, [FILL]						_	
						ST01G	1.0 - 3.5	0 - 3.5	2.1	450	
- 3										-	
- 4	4.5	706.2								-	
- 5				LEAN CLAY, CL, 7.5YR 5/6 (strong br	rown), medium	00040		4.5			
				plasticity, very stiff, moist, [FILL]		SS01G ST02G	4.5 - 6.0 4.5 - 7.0	- 6.0	1.1 0.0	N/A 450	
- 6										-	
- 7										-	
- 8								8		-	
- 9						ST03G	8.0 - 9.2	0-9.2	1.1	300	
^{4/5} /1										-	
0530.GL											
06107 L0	11.5	699.2								-	
urr 12				LEAN CLAY TRACE SAND, CL, 5Y 4	/1 (dark gray),	ST04G	11.5 - 12.5	11.5 -	1.0	300 -	
DECSUE			///	low plasticity, dry to moist				12.5			
무 13 급										-	
и - 14			///							_	
TDEC	45.0	005 -									
^歯 – 15	15.0	695.7	H		(drav) low to					-	
7566805			$\langle / / \rangle$	SANDY LEAN CLAY, CL, 5Y 4/1 (dark medium plasticity, moist	s gray, iow lo			15			
≝ – 16						ST05G	15.0 - 17.5	.0 - 17.	2.4	350 -	
I/V EIF BORING FOOD 125000020 MBE TDEC_OKDEK CPJ TDEC SUBSRIENT DT 20108200 CDT 421/122 I/V EIF BORING FOOD 125000020 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000020 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 1250000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 125000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122 I/V EIF BORING FOOD 1250000000 MBE TDEC OKDEK CPJ 125020 CDT 421/122000000000000000000000000000000000			$\langle / / \rangle$					5		-	
VA EIP											
- 40-		1						1		1/21/22	



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Client Borehole ID N/A Stantec Boring No. WBF												
C	lient		Tennes	see Valley Authority	Boring Location 443,687.96 N; 2,362,955.53 E NAD27 Plant Local							
P	roject	Number	175668	050	Surface Eleva	tion <u>710.7 ft</u>	Elevation I	Datum_N	IGVD29			
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 18	18.5	692.2	///						-			
- 19 - 20				LEAN CLAY SOME SAND, CL, 7.5YR low to medium plasticity, moist	2 5/4 (brown),	ST06G	18.5 - 21.0	2.5	- 300 _			
- 21									-			
- 22 - 23						ST07G	22.0 - 24.5 - 24.5	2.5	200			
- 24 - 25									-			
- 26 - 27						ST08G	25.5 - 28.0	2.5	200			
- 28									-			
- 29 - 30 - 31						ST09G	29.0 - 31.5	2.5	- 180 -			
- 32 - 33	32.5	678.2		SILTY SAND, SM, 10Y 3/2 (very dark to 5GY 3/2 (very dark grayish green), moist to wet		ST10G	32.5 - 35.0 32.5 - 35.0	2.5	- 60 _			
- 35	36.0	674.7							-			
- 34 - 35 - 36 - 37 - 38 - 39 - 40 - 41				SANDY LEAN CLAY, CL, 10Y 3/2 (ve olive) to 5GY 3/2 (very dark grayish gr plasticity, moist		ST11G	36.0 - 38.5	2.5	200			
– 39 – 40	39.5	671.2		SANDY ORGANIC SILT, OH, 10Y 3/2 grayish olive) to 5GY 3/2 (very dark gr					-			
- 41			<pre>////////////////////////////////////</pre>	high plasticity, moist	ayısı green),	ST12G	39.5 - 42.0	2.5	220			



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Client Borehole IDN/A Stantec Boring NoWBF-B27 Client	7 Plant Local			
Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft				
Lithology Overburden: Sample ^{1,2} Depth Ft ³ Rec. Ft Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft				
Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft				
	Rec. %			
43 43.0 667.7 CLAYEY SAND, SC, 10Y 3/2 (very dark grayish olive) to 5GY 3/2 (very dark grayish green), fine to medium, moist 51136 43.0 - 45.5 11.1 45 45.5 665.2 52 53026 45.5 - 46.4 11.1 46 46.4 664.3 53026 45.5 - 46.4 11.1 46 46.4 664.3 53026 45.5 - 46.4 10.9 Refusal / Bottom of Hole at 46.4 FL Top of Rock = 46.4 FL Top of Rock Elevation = 664.3 FL Split spoon sample SS01G was obtained following attempted Shelby Tube ST02 with no recovery 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody 2: a.b.c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface	Blows/PSI Rec. % 300 46-50/5"			
V EID BORING LOG 1	-			



SUBSURFACE LOG

C	lient F	Borehole	ID N/A	A	Stantec Boring No. WBF-B28							
	lient	20101010		ssee Valley Authority	Boring Location 443,683.09 N; 2,362,976.13 E NAD27 Plant Local							
		Number			Surface Eleva	-						
	•			DEC Order	Date Started 6/8/21 Completed 6/9/21							
	-			ea Co, Spring City, Tennessee	Depth to Water N/A Date/Time N/A							
	-			Logger B. Herries	Depth to Wate		Date/Time	-				
	•	-		intec Consulting Services Inc.	, Drill Rig Type							
0	verbu	ırden Dril	ling and	I Sampling Tools (Type and Size) 5-7/8" 3-Wing U	pdraft Bit, 2" S	S w/o liners, 3" ST					
R	ock D	rilling an	d Samp	ling Tools (Type and Size) <u>N/A</u>	4							
0	verdri	ill Tooling	g (Type	and Size) <u>N/A</u>			Overdrill D	epth _^	N/A			
	•		• •	Automatic Weight 140 I			Efficiency _	89.9%				
		le Azimu		N/A	Borehole Inclin	•		I/A				
R	eview	ed By	M. Mo	cDonald	Approved By	A. Welshan	IS					
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 0	0.0	711.3	০হতহতহত	Top of Hole								
	0.6	710.7	6868686	CRUSHED LIMESTONE GRAVEL, 10 \gray), moist, angular to subangular, [F	、 u							
- 1				Observations from auger cuttings. Get					-			
- 2				sampling was not performed from 0.0'					-			
				LEAN CLAY, CL, 2.5YR 3/1 (dark red	dish gray), low							
- 3				plasticity, moist, [FILL]					-			
- 4									-			
- 5									_			
- 6									-			
- 7									-			
- 8									-			
- 9									-			
²⁷² – 10									_			
0.GDT 3												
50190230	11.5	699.8							-			
년 방 - 12				Observations from auger cuttings. Geo					-			
C SUBSI				sampling was not performed from 0.0								
≝– 13 ≩				LEAN CLAY, CL, 2.5YR 3/1 (dark red plasticity, moist	dish gray), low				-			
0402 - 10 - 11 - 12 - 12 - 12 - 13 - 13 - 1402 - 14				-					-			
MBF_TDEC_0												
- 15									_			
1122088020									_			
									_			
BORING LOG									-			
TVA EIP												
- 10					ting Sonvicos In				3/16/22			



С	lient E		Stantec Boring No. WBF-B28									
С	lient		Tennes	see Valley Authority	Boring Location 443,683.09 N; 2,362,976.13 E NAD27 Plant Local							
P	roject	Number	175668	050	Surface Elevation 711.3 ft Elevation Datum NGVD29							
	I	ithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %	
- 18 - 19	20.0	691.3		LEAN CLAY, CL, 2.5YR 3/1 (dark red plasticity, moist <i>(Continued)</i>	dish gray), low						-	
- 20 - 21 - 22	22.5	688.8		SANDY LEAN CLAY, CL, 7.5YR 5/4 (low plasticity, very soft, dry to moist	brown), fine,		SS01G	20.0 - 21.5	20.0 - 21.5	1.5		
- 23 - 24		000.0		LEAN CLAY WITH SAND, CL, 7.5YR brown), low to medium plasticity, very			SS02G	22.5 - 24.0	22.5 - 24.0	1.5	WH-WH-WH	
- 25 - 26 - 27							SS03G	25.0 - 26.5	25.0 - 26.5	1.5	– WH-WH-WH_	
- 28 - 29	28.1 	683.2 		POORLY GRADED SAND, SP, 7.5YF brown), fine, very loose, moist	R 3/3 (dark		SS04G	27.5 - 29.0	27.5 - 29.0	1.5	WH-WH-WH	
- 30 - 31				LEAN CLAY WITH SAND, CL, 7.5YR brown), low to medium plasticity, very			SS05G	30.0 - 31.5	30.0 - 31.5	1.5	— wh-wh-wh_	
- 32 - 33 ²³⁹⁴⁶							SS06G	32.5 - 34.0	32.5 - 34.0	1.3	- WH-WH-1	
: SUBSURF DT 20190530.GDT - 32 - 32 - 32 - 32 - 32 - 32 - 32 - 32	35.0	676.3		CLAYEY SAND, SC, 7.5YR 3/3 (dark very loose, moist to wet	brown), fine,		SS07G	35.0 - 36.5	35.0 - 36.5	1.5	— WH-WH-1 _	
- 37 - 37 - 38 - 38 - 39 - 39 - 39 - 39 - 39 - 39	37.5	673.8		SANDY LEAN CLAY, CL, 7.5YR 4/4 (medium plasticity, very soft, moist	brown), low to		SS08G	37.5 - 39.0	37.5 - 39.0	1.5	- WH-WH-WH -	
- 40 - 40 - 41 - 41 - 42	40.5	670.8		SILTY SAND, SM, 7.5YR 4/2 (brown), non-plastic, very loose, wet	fine,		SS09aG SS09bG	40.0 - 40.5 40.5 - 41.5	40.0 - 41.5	1.4	– WH-WH-WH_ -	



Client Borehole ID	N/A	Stantec Boring	No. WBF	-B28						
	ennessee Valley Authority		Boring Location 443,683.09 N; 2,362,976.13 E NAD27 Plant Local							
Project Number _1	75668050	Surface Elevation 711.3 ft Elevation Datum NGVD29								
Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI				
Depth Ft ³ Elevation Gr	aphic Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %				
43 43.5 667.8 44 45 45.0 666.3 46 46.0 665.3	SILTY SAND, SM, 7.5YR 4/2 (bro non-plastic, very loose, wet <i>(Cor</i> POORLY GRADED SAND SOME 3/1 (very dark gray), fine, loose, w POORLY GRADED SAND LITTLE 3/1 (very dark gray), fine, dense, r	CLAY, SP, 2.5Y ret E CLAY, SP, 2.5Y	SS10aG SS10bG SS11aG	42.5 - 43.5 43.5 - 44.0 45.0 - 46.0	1.2	1-2-4 - - 5-13-17				
47 47.8 663.5	POORLY GRADED SAND WITH GRAVEL, SP-SM, 2.5Y 4/2 (dark medium to coarse, very dense	SILT AND	SS11bG SS12G	46.0 - 46.5 47.2 - 47.8	475 0.6	47-50/1"				
	Bottom of Hole at 47.8 Ft. Top of Rock = 47.7 Ft. Top of Rock Elevation = 663.6 Ft. Three vibrating wire piezometers installed. 1: E = Environmental Sample Custody (two G = Geotechnical Sample Custody 2: a,b,c denote Split Spoon divided betwee 3: Depths are reported in feet below ground	See installation log for b Split Spoons may be re n Environmental and Ge	quired to obtai	in sufficient samp						

APPENDIX B.3 TEMPORARY WELLS

Table of Contents

Subsurface Boring Legend	1
WBF-TW01	2
WBF-TW02	4
WBF-TW03	6
WBF-TW04	8
WBF-TW05	10

Subsurface Boring Legend

Lithology Graphics

Symbol	Lithology
	Fill
	Top Soil
070707070 00000000 07000000 07070700	Gravel
0 0 0 0 0 0 0 0 0 0 0 0	Well Graded Gravel (GW)
0 0 0 0 9 9 0 0 0 0 0	Poorly Graded Gravel (GP)
	Silty Gravel (GM)
	Silty, Clayey Gravel (GC-GM)
	Clayey Gravel (GC)
	Well Graded Gravel with Silt (GW-GM)
	Well Graded Gravel with Clay (GW-GC)
	Poorly Graded Gravel with Silt (GP-GM)
	Poorly Graded Gravel with Clay (GP-GC)
••••	Well Graded Sand (SW)
	Poorly Graded Sand (SP)
	Silty Sand (SM)
	Silty, Clayey Sand (SC-SM)
	Clayey Sand (SC)
	Well Graded Sand with Silt (SW-SM)
$\overline{\cdots}$	Well Graded Sand with Clay (SW-SC)
	Poorly Graded Sand with Silt (SP-SM)
	Poorly Graded Sand with Clay (SP-SC)
	Silt (ML)
	Silty Clay (CL-ML)
	Lean Clay (CL)
	Organic Silt (OL)
	Elastic Silt (MH)
	Fat Clay (CH)
	Organic Clay (OH)
	Non-Durable Shale
	Durable Shale
	Coal
	Limestone
· · · · · · · · · · · · · · · · · · ·	Sandstone

Other Graphics

Symbol	Description
	Denotes environmental analytical sample interval
	Denotes SS sample interval
	Denotes ST sample interval
	Denotes DP sample interval
	Denotes RS sample interval
	Denotes RC sample interval
Ā	First water level reading
Ţ	Second water level reading
Go	mmon Abbreviations

Common Abbreviations

Abbreviation	Definition				
DP	Direct Push				
HA	Hand Auger				
HSA	Hollow Stem Auger				
N/A	Not Applicable				
NR	Not Recorded				
RC	Rock Core				
RQD	Rock Quality Designation				
RS	Rotary Sonic				
SS	Split Spoon				
ST	Shelby Tube				
WH	Weight of Hammer				
WR	Weight of Rod				

General Notes

The boring logs include sample numbering used during drilling. For assigned Environmental Analytical Sample ID numbers, see relevant Environmental Chain-of- Custody forms from the drilling date range listed on each log.

For pH readings and additional field data, see applicable field documentation (e.g., Soil pH Data Form) from the drilling date range listed on each log.

Lithology Graphics are based on TVA drafting standards.



С	Client Borehole IDN/A						Stantec Boring No. WBF-TW01						
	lient					see Valley Authority				.36 N; 2,362,52	2.711	E NAD27	Plant Local
		Number				· · · · · · · · · · · · · · · · · · ·	Surface Elevation 713.1 ft Elevation Datum NGVD29						
	-					DEC Order	Date Starte			Comple			
	•					ea Co, Spring City, Tennessee	Depth to W						9 07:26
	-					Logger G. Budd	Depth to W					7/10/1	
	-					ntec Consulting Services Inc.	-			E 850XR, #953			
	-					Sampling Tools (Type and Size)					5		
				-		ling Tools (Type and Size) N/A							
		-			•	and Size) N/A				Overdril	ll De	pth_ Ւ	۱/A
s	ample	er Hamme	er	Ту	ре	Automatic Weight 140	b Drop	30	"	Efficiency	1	N/A	
В	oreho	le Azimu	th			N/A	Borehole In	clin	ation (from	NVertical)	N//	4	
R	eview	ed By		E.	Sm	ith	Approved E	у_	C. Kocka				
		Lithology					Overburde	n:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	G	rapl	nic	Description	Rock Core	e:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	713.1		<u></u>		Top of Hole							
	0.5	712.6	Ð	ij	ij	Topsoil		\neg	SS01G	0.0 - 1.5	0.0 -	1.4	2-6-5
- 1			1			FAT CLAY WITH SAND, CH, 5YR 4/6				0.0 - 1.0	1.5		2-0-0 -
- 2	2.0	711.1				red), high plasticity, very soft to firm, d fragments of limestone and chert, [FIL		1.5/			-		-
						SANDY SILT, ML, 5YR 2.5/1 (black), r	-	3.5-201	SS02E	1.5 - 3.0	5 - 3.0	0.8	5-6-10
- 3						to firm, dry to moist, with trace fragment		90709	SS03aE	3.0 - 3.5			-
						gravel-sized CCR and minor amounts	of lean clay,	Ĩ			3.0 - 4	1.3	7-8-10
- 4						[CCR]			SS03bG	3.5 - 4.5	.5		-
- 5									00040	45.00	4.5		
						Lean clay (CL) lens, 7.5YR (brown), m	oist from 5.2'		SS04G	4.5 - 6.0	- 6.0	1.5	7-10-13
- 6						to 5.3'			SS05aG	6.0 - 6.5	6		-
- 7								6.5/8	SS05bE	6.5 - 7.5	.0 - 7.5	1.5	6-8-10
								.5-201					
- 8								90709	SS06aE	7.5 - 8.5	7.5 - 9	1.5	3-3-4
- 9					$\left \right \right $				SS06bG	8.5 - 9.0	.0		-
						Silt with Sand (ML) from 9.0' to 10.5'			SS07G	9.0 - 10.5	9.0 - 10.5	1.5	2-3-5
100 - 101 - 111 - 120 - 12000 0000 12000 - 12001 - 10001 - 120	10.8	702.3			$\left \right \right $				800000	105 100).5		_
0 <u>000</u> - 11	10.0		abla	\nearrow	\mathbb{Z}	LEAN CLAY, CL, 7.5YR 4/3 (brown), I	ow plasticity.	\neg	SS08aG SS08bG	10.5 - 10.8 10.8 - 11.5	10.5 -	1.5	6-5-7
RF DT 2	11.7	701.4	K	$\langle -$	$\langle $	\neg firm, moist, hydrocarbon staining, with	• •			11.5 - 12.0	- 12.0	1.5	0-0-7
- 12					$\left \right \right $	CCR, trace limestone gravel, [CCR]		1.5/13.5-20190			12		-
- 13					$\left \right \right $	SILT, ML, 5YR 2.5/1 (black), non-plast		20190	SS09E	12.0 - 13.5	.0 - 13.	1.5	4-6-7
JEK.GP.					$\left \right \right $	soft, moist, with trace fragments of gra and minor amounts of lean clay, [CCR		709			5		
b 14					$\left \right \right $				SS10G	13.5 - 15.0	13.5 - 1	1.5	1-2-2
≣ ≣ – 15					$\left \right \right $						- 15.0		_
A_06080					$\left \right \right $						15		
- 16					$\left \right \right $				ST01G	15.0 - 17.0	5.0 - 17	1.9	500 -
					$\left \right \right $						ľ		
Bandaria 17 17					$\left \right \right $						17.0 - 1		-
≸ L_₁₈									SS11E	17.0 - 18.5	8.5	1.5	WH-1-1



Page: 2 of 2

Client I	Borehole IDN/A	Stantec Boring No. WBF-TW01							
Client	Tennes	ssee Valley Authority Bo	oring Locatio	on	443,411.3	36 N; 2,362,522.	71	E NAD27	Plant Local
Project	Number <u>175668</u>	3050 Si	Surface Elevation 713.1 ft Elevation Datum NGVD29						
	Lithology		Overburden:	ę	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Graphic	Description	Rock Core:			Run Ft		Rec. Ft	Rec. %
- 18		SILT, ML, 5YR 2.5/1 (black), non-plastic, v	very soft to	17.0/					-
- 19		soft, moist, with trace fragments of gravel- and minor amounts of lean clay, [CCR] (sized CCR Continued)	19.0-20190709	SS12aE SS12bG	18.5 - 19.0 19.0 - 20.0	18.5 - 20.0	1.0	WH-1-2 -
- 20 - 21 21.5	691.6				SS13G	20.0 - 21.5	20.0 - 21.5	1.5	 1-2-3
- 22 22.1	691.0	SILTY SAND, SM, 5YR 2.5/1 (black), very loose, moist, [CCR]	/ fine, very		SS14aG SS14bG	21.5 - 22.1 22.1 - 23.0	21.5 - 23.0	1.5	1-3-9
- 23 - 24		FAT CLAY, CH, 7.5YR 4/4 (brown), high p soft to firm, moist	plasticity,		ST02G	23.0 - 25.0	23.0 - 25	1.4	- 700 -
25.0	688.1								

No Refusal / Bottom of Hole at 25.0 Ft.

Boring backfilled with 30% solids bentonite grout.

- 1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample) G = Geotechnical Sample Custody
- 2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples 3: Depths are reported in feet below ground surface



С	lient E	ID		N/A	S	Stantec Boring No. WBF-TW02							
c	lient		٦	Гепі	nes		Boring Location 443,688.39 N; 2,362,820.92 E NAD27 Plant Local						
P	roject	Number	1	1756	568	5050 S	Surface Elevation 714.3 ft Elevation Datum NGVD2					NGVD29	
	-						ate Started	Completed 7/12/19					
		Location					Date Started 7/10/19 Depth to Water N/A			Date/Time N/A			
	, ispect		_			Depth to Water N/A Date/Time N/A							
	•					00	Drill Rig Type and ID CME 850XR, #953						
	-					Sampling Tools (Type and Size)					;		
R	ock D	rilling an	d S	Sar	np	ling Tools (Type and Size)							
0	verdri	ll Tooling) (1	Тур	e	and Size)8-1/4" HSA overdrill of boring	oring			Overdrill Depth 23.0 ft			
S	ample	er Hamme	er	Ту	be	Automatic Weight 140 lb	Drop _3	Efficiency N/A					
В	Borehole Azimuth N/A						Borehole Inclination (from Vertical)N/A						
R	eview	ed By		C.	Ko	cka A	pproved By		L. Price				
		_ithology					Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Gr	rapł	nic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	714.3		an e s		Top of Hole							
	0.5	713.8	Ë	ij	J	Topsoil		$\left \right $	SS01G	0.0 - 1.5	0.0 -	1.4	1-3-3
- 1						FAT CLAY WITH SAND, CH, 5YR 4/6 (ye			00010	0.0 1.0	1.5		
- 2	2.0	712.3				red), high plasticity, soft, dry, with abunda fragments of limestone and chert, [FILL]	ini	1.5/3			1		-
						SILT WITH SAND, ML, 5YR 2.5/1 (black)	/	3.5-201	SS02E	1.5 - 3.0	5 - 3.0	1.5	3-14-29
- 3						non-plastic, hard to firm, dry, with trace fra		90710	SS03aE	3.0 - 3.5			-
						gravel-sized CCR, [CCR]			SS03bG	3.5 - 4.5	3.0 - 4	1.5	24-17-22
- 4									5503DG	3.5 - 4.5	·σ		-
- 5									SS04G	4.5 - 6.0	4.5	1.5	9-12-16
									33040	4.5 - 0.0	. 6.0	1.5	9-12-10
- 6									SS05aG	6.0 - 6.5			-
- 7								6.5/8.	SS05bE	6.5 - 7.5	0 - 7.5	1.5	5-7-9
								5-2019					
- 8								0710	SS06aE	7.5 - 8.5	7.5 - 9	1.5	6-7-8
- 9									SS06bG	8.5 - 9.0	0		-
						Density decreases with depth from 9.0'			SS07G	9.0 - 10.5	9.0 -	1.5	3-3-5
5 – 10	10.5	703.8	$\ $			Abundant organics from 10.0' to 10.5'			33076	9.0 - 10.0	10.5	1.5	J-J-J _
							firm to vorv	1	SS08aG	10.5 - 11.5	10.		-
107 10			$\ $			SILT, ML, 5YR 2.5/1 (black), non-plastic, soft, moist to wet, with trace amounts of fi					5 - 12.0	1.5	3-4-7
- 12			$\ $			and gravel-sized CRR, [CCR]		1.5/13.	SS08bE	11.5 - 12.0			-
DECISI								5-2019	SS09E	12.0 - 13.5	12.0 - 1	1.5	2-3-4
– 13)0710			3.5		-
- 14									00400	405 450	13.5		
- IDEC									SS10G	13.5 - 15.0	- 15.0	1.5	2-2-3
m – 15													_
									ST01G	15.0 - 17.0	15.0 -	0.6	400 -
e LOG											17.0		
- 17											17.0		-
									SS11E	17.0 - 18.5	- 18.5	1.5	WR-WR-WH



Onone E	Borehole	ID_N/A		Stantec Boring	g No. WBF	-TW02		
Client		Tennes	see Valley Authority	Boring Location			2 E NAD27	7 Plant Local
Project	Number	175668	050	Surface Eleva	tion 714.3 ft	Elevation	Datum_	NGVD29
L	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
18 19 20 21 21.7 22 23 24 25	693.5 692.6 689.3		SILT, ML, 5YR 2.5/1 (black), non-pla soft, moist to wet, with trace amounts and gravel-sized CRR, [CCR] <i>(Cont</i> SANDY LEAN CLAY, CL, 10YR 4/2 (brown), low plasticity, firm, moist, witt with some fine CCR and organics, [C LEAN CLAY, CL, 10YR 3/3 (dark bro 4/1 (dark gray), medium plasticity, firn No Refusal / Bottom of Hole at 25.0 Ft.	dark grayish very fine sand, CR] wn) and 10YR	SS12E SS13aG SS13bG SS14G ST02G	18.5 - 20.0 20.0 - 20.8 20.8 - 21.5 21.5 - 23.0 23.0 - 25.0	1.5	WH-WH-W WH-WH-6 7-10-15 700
		1: E = G = 2: a,b,o	orary well installed. See well installation Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su	lit Spoons may be r nvironmental and G	equired to obta		le)	



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Client B	Borehole	ID_N/A	A	Stantec Boring	g No WBF	-TW03			
Client		Tennes	see Valley Authority	Boring Location			9.94	E NAD27	Plant Local
Project	Number	175668	3050	Surface Eleva	tion 717.0 ft	Elevatio	on D)atum I	NGVD29
Project	Name	WBF T	DEC Order	Date Started	7/18/19	Comple	eted	7/30/-	19
-			ea Co, Spring City, Tennessee	Depth to Wate	er 13.2 ft			-	19 09:12
			Logger G. Budd	Depth to Wate			me	N/A	
			intec Consulting Services Inc.	Drill Rig Type					
Overbu	rden Drill	ling and	Sampling Tools (Type and Size)						
Rock D	rilling and	d Samp	ling Tools (Type and Size) <u>N/A</u>						
Overdri	ll Tooling	(Type	and Size)8-1/4" HSA overdrill of bo	oring		Overdrill	De	pth _2	28.5 ft
Sample	r Hamme	er Type	Automatic Weight 140	b Drop <u>3</u>	0"	Efficiency	1	N/A	
Boreho	le Azimu	th	N/A	Borehole Inclin	nation (from	Vertical)	N//	4	
Review	ed By _	E. Sm	nith	Approved By	C. Kocka				
	ithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0 0.0	717.0		Top of Hole						
0.5	716.5		Topsoil		SS01G	0.0 - 1.5	0.0 -	1.3	3-5-5
- 1		$\langle / / \rangle$	SANDY LEAN CLAY WITH GRAVEL,	<i>'</i>		0.0 1.0	1.5		
- 2			(yellowish red), medium plasticity, soft with fragments of siltstone and sandsto		1.5/3		1.5		-
			Trace CCR from 1.5' to 3.5'		3.5-201 SS02E	1.5 - 3.0	5 - 3.0	1.3	3-4-6
- 3 3.5	713.5				90718 SS03aE	3.0 - 3.5			-
4.0	713.0		_ LEAN CLAY, CL, 10YR 6/6 (brownish	vellow) and	SS03bG	3.5 - 4.0	3.0 - 4	1.5	3-6-5
4			10YR 6/1 (gray), fine, medium plasticit	y, firm, moist,	SS03cG	4.0 - 4.5	5		
- 5			with some fine sand, with fragments of sandstone, [FILL]	f siltstone and	SS04G	4.5 - 6.0	4.5 -	1.5	3-4-4
			SILT WITH SAND, ML, 10YR 2/1 (blac		00040	4.0 - 0.0	6.0	1.0	0-4-4
- 6			very soft to soft, dry to moist, [CCR]	к), поп-ріазцо,			6.0		-
- 7					SS05E	6.0 - 7.5) - 7.5	1.5	2-1-1
			Trace lean clay from 7.0' to 7.5'		0-2019				
- 8					0718 SS06E	7.5 - 9.0	7.5 - 9.	1.5	WH-1-1
- 9									-
/20					SS07G	9.0 - 10.5	9.0 -	1.5	WH-1-WH
⁸ − 10						5.0 - 10.5	10.5	1.0	·····
^{0.} 2007 2007 2007 2007 2007 2007 2007 200					SS08aG	10.5 - 11.5	10.5		-
= DT 20.					SS08bE		5 - 12.0	1.5	WH-1-WH
- 12			Trace lean clay from 12.0' to 13.5'		5508DE	11.5 - 12.0			-
			11ace lean day 110111 12.0 10 13.3		5-2010 SS09E	12.0 - 13.5	2.0 - 1;	1.5	WH-WH-WH
	703.5				3718		3.5		-
ਸ਼ ਨ_– 14			SILT, ML, 10YR 2/1 (black), non-plasti	c, very soft,	SS10G	13.5 - 15.0	13.5 -	1.5	WH-WH-WH
			moist to wet			10.0 - 10.0	15.0	1.5	••••••••••••••••••••••••••••••••••••••
[™] – 15			Wet at 15.0'				15.(-
⁸⁸ – ¹⁶ 16.3	700.7				SS11G	15.0 - 16.5	<u>)</u> - 16.5	1.5	WH-WH-5
NGLOO			WELL GRADED SAND, SW, 10YR 2/	1 (black) and	SS12E	16.5 - 17.2	5 16.	0.7	WR-50/2"
โช๊ <u>-</u> 17			10YR 6/8 (brownish yellow), fine to co	arse, very	3312E	10.0 - 17.2	5 - 17.	0.7	WIX-30/2
			loose to dense, wet, subangular, [CCF	۲J	SS13E	17.5 - 18.0	2	0.5	50

Stantec Consulting Services Inc.



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Client I	Borehole	ID _N/A		Stantec Borin	ng N	lo. WBF	-TW03			
Client		Tennes	see Valley Authority	Boring Locati	on	444,293.5	51 N; 2,362,769	9.94 E	E NAD27	Plant Local
Project	Number	175668	050	Surface Eleva	atio	n <u>717.0 ft</u>	Elevatio	on D	atum 1	NGVD29
	Lithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18			WELL GRADED SAND, SW, 10YR 2/1 (black) and	16.5/			17.5		-
- 19 - 20			10YR 6/8 (brownish yellow), fine to coar loose to dense, wet, subangular, [CCR]	se, very	20.5-20190718	SS14E	19.0 - 20.5	- 18.0 19.0 - 20.	1.5	_ 24-30-33 _
- 21	696.5		WELL GRADED SAND WITH SILT, SW 2/1 (black), very fine to coarse, medium subangular, [CCR]	,		SS15G	20.5 - 22.0	5 20.5 - 22.0	1.5	17-22-23
- 22 - 23 23.5	693.5		Subangular, [CON]		22.0/25.0	SS16E	22.0 - 23.5	22.0 - 23.5	1.5	_ 14-16-20 _
- 24			WELL GRADED SAND WITH GRAVEL, 2/1 (black), fine to coarse, medium dens subangular, [CCR]	,	-20190718	SS17E	23.5 - 25.0	23.5 - 25.0	1.5	16-37-23 _
- 26						SS18G	25.0 - 26.5	25.0 - 26.5	1.5	17-12-6 _
- 27	690.4					SS19aG	26.5 - 27.6	26.5	1.5	16-11-11
- 28	689.4		FAT CLAY, CH, 7.5YR 3/4 (dark brown) 5/1 (gray), high plasticity, firm, moist, wit			SS19bG	27.6 - 28.0	28.0		-
- 29			organics			ST01G	28.0 - 30.0	28.0 - 30.0	1.4	900 -
30.0	687.0							ľ		

No Refusal / Bottom of Hole at 30.0 Ft.

Temporary well installed. See well installation log for backfill details.

1: E = Environmental Sample Custody (two Split Spoons may be required to obtain sufficient sample)

G = Geotechnical Sample Custody
2: a,b,c denote Split Spoon divided between Environmental and Geotechnical Samples
3: Depths are reported in feet below ground surface



СІ	ient E	Borehole	ID	_ N/#	A	Stantec Borin	g١	lo. WBF	-TW04			
	ient	_			ssee Valley Authority	Boring Location			38 N; 2,362,524	4.31 E	E NAD27	' Plant Local
Pr	oject	Number	1	75668	8050	Surface Eleva			Elevatio	on D	atum	NGVD29
	-				DEC Order	Date Started		7/11/19	 Comple			
	-	Location			ea Co, Spring City, Tennessee	Depth to Wate	-	N/A	Date/Ti		N/A	
	-	or G. Bi			Logger G. Budd	Depth to Wate					N/A	
	•				antec Consulting Services Inc.	Drill Rig Type	_					
	-				Sampling Tools (Type and Size)	• • •		-		;		
R	ock D	rilling and	d S	Samp	ling Tools (Type and Size)NA							
0	verdri	ll Tooling) (T	уре	and Size)8-1/4" HSA overdrill of bo	oring			Overdril	l De	pth	20.5 ft
Sa	ample	er Hamme	er 7	Гуре	Automatic Weight 140 II	Drop 🔅	30"		Efficiency	N	N/A	
Bo	oreho	le Azimu	th		N/A	Borehole Incli	nat	tion (from	Vertical)	N/A	4	
Re	eview	ed By _		C. Ko	ocka	Approved By		L. Price				
		ithology				Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Gra	aphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	715.3		<u></u>	Top of Hole		\square					
	0.5	714.8	訶	Ţ	Topsoil			SS01G	0.0 - 1.5	0.0 -	1.5	4-11-12
- 1			\mathbb{V}	[]]	SANDY LEAN CLAY WITH GRAVEL,			00010	0.0 - 1.0	.1.5	1.5	
- 2	2.2	713.1	\mathbb{Z}		(yellowish brown) and 10YR 6/1 (gray) plasticity, soft to firm, dry, with abunda		1.5/			_ _		-
	2.2	710.1	ľΓ	ΠΠ	sandstone, [FILL]		3.5-20	SS02E	1.5 - 3.0	5 - 3.0	1.2	9-13-16
- 3					SILT WITH SAND, ML, 10YR 2/1 (blac	k), non-plastic,	190711	SS03aE	3.0 - 3.5	-		-
					firm to very soft, moist to wet, with trac					3.0 - 4	1.5	7-9-9
- 4					and organics, [CCR]			SS03bG	3.5 - 4.5	5		-
- 5								00040	45 00	4.5	10	4.0.4 -
								SS04G	4.5 - 6.0	4.5 - 6.0	1.3	4-2-4
- 6								SS05aG	6.0 - 6.5	6		-
- 7							6.5/8	SS05bE	6.5 - 7.5	0 - 7.5	1.5	1-1-1
							.5-2019				-	
- 8							90711	SS06aE	7.5 - 8.5	7.5 - 9	1.5	WH-1-1
- 9								SS06bG	8.5 - 9.0	ō		-
								66070	00 405	9.0 -		
- 10								SS07G	9.0 - 10.5	.0 - 10.5	1.5	WH-WH-1_
10000000-00000000000000000000000000000					Wet at 10.5'			SS08aG	10.5 - 11.5	10		
na − 11										10.5 - 12.0	1.5	WR-WR-WR
- 12							1.5/13.	SS08bE	11.5 - 12.0			-
							.5-2019	SS09E	12.0 - 13.5	12.0 -	1.5	WH-WH-1
- 13	13.5	701.8					90711			13.5		-
– 14				[SILT, ML, 10YR 3/1 (very dark gray) a		$\left \right ^{-}$		40 -	13.5		
					(dark gray), non-plastic, very soft, wet,	[CCR]		SS10G	13.5 - 15.0	3.5 - 15.0	1.5	1-2-2
ban and − 15												-
 								ST01G	15.0 - 17.0	15.0 -	1.3	500 -
									10.0 - 17.0	17.0	1.5	000
- 17										17.0		-
								SS11E	17.0 - 18.5) - 18.5	1.5	WH-WH-WH
- 10					Stantec Consul							2/10/20



Page: 2 of 2

-	Number		see Valley Authority 050	Stantec Borin Boring Locatio Surface Eleva	on	444,739.3	8 N; 2,362,524		
Depth Ft ³		175668	050	•					
Depth Ft ³	Lithology					n <u>715.3 ft</u>	Elevatio	n Datum_N	IGVD29
				Overburden:		Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
18	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft	Rec. Ft	Rec. %
19 <u>19.2</u> 20 21 22 <u>22.0</u>	<u>696.1</u> 693.3		SILT, ML, 10YR 3/1 (very dark gray) (dark gray), non-plastic, very soft, we (<i>Continued</i>) LEAN CLAY WITH SAND, CL, 10YR brown) and 10YR 5/1 (gray), medium moist, iron oxide staining, mottled, wi coarse rounded sandstone pebbles	t, [CCR] 5/6 (yellowish plasticity, firm,	17.0/19.0-20190711	SS12aE SS12bG SS12cG ST02G	18.5 - 19.0 19.0 - 19.2 19.2 - 20.0 20.0 - 22.0	185-200 200-220	WR-1-5 800
		1: E = G = 2: a,b,o	orary well installed. See well installation Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su	olit Spoons may be invironmental and G	requ			ple)	



Page: 1 of 2

Client Tennessee Valley Authority Boring Location 445.258.05 N; 2.362.872.96 E NAD27 Plant L Project Number 175668050 Surface Elevation 714.5 ft Elevation Datum NGVD21 Project Name WBF TDEC Order Date Started 7/16/19 Completed 7/16/19 Project Location Rhea Co. Spring Clty, Tennessee Depth to Water 8.9 ft Date/Time 7/17/19.08:16 Inspector G. Budd Logger G. Budd Depth to Water N/A Date/Time 7/17/19.08:16 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes N/A Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A N/A N/A Pepth Ft ² Elevation Graphic Description Rock Core: ROD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Store Store Store 1.5 4-7 2 Ithology Graphi	Client E	Borehole ID) N/A		Stantec Borin	g N	o. WBF	-TW05			
Project Number 175668050 Surface Elevation 714.5 ft Elevation Datum NGVD22 Project Name WBF TDEC Order Date Started 7/16/19 Completed 7/16/19 Project Location Rhea Co. Spring City, Tennessee Date Started 7/16/19 Completed 7/16/19 Inspector 6. Budd Logger Genetation Depth to Water 8.9 ft Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID_CME 850XR, #953 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Reviewed By C. Kocka Approved By L. Price 1.5 4-7 0 0.0 714.5 Top of Hole 5 5 1.5 4-7 1 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 SS03E 3.0 - 3.5 5 1.5 4-7 2 Iron stained from 4.5' to 7.3' SS04G									2.96	E NAD27	Plant Local
Project Name WBF TDEC Order Date Started 7/16/19 Completed Project Location Rhea Co, Spring City, Tennessee Depth to Water 8.9 ft Date/Time Inspector G. Budd Logger G.Budd Depth to Water N/A Date/Time Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID_CME 850/R, #953 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L. Price Uepth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.5 714.0 Top of Hole Sso36 3.0 - 3.5 1.5 4.7 1 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 Sso366 6.0 - 6.5 5 5.5 1.5 </td <td>Project</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Project				-						
Project Location Rhea Co. Spring City. Tennessee Depth to Water 8.9 ft Date/Time 7/17/19.08:16 Inspector G. Budd Logger G. Budd Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services inc. Drill Rig Type and ID CME 850XR. #953 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA.3" SS w/o liners.3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) MA Overdrill Tooling (Type and Size) N/A Overdrill Tooling (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L. Price 1 Uepth Ft ² Elevation Graphic Description Overburden: Sample ¹² Depth Ft ³ Rec. Ft Rec. 0 0.5 714.0 Top of Hole 1 1.5 4.7.4 SS036 3.5 - 4.5 1.5 1.5 5.5 3	-										
Inspector G. Budd Logger G. Budd Depth to Water N/A Date/Time N/A Drilling Contractor Stantec Consulting Services Inc. Drill Rig Type and ID_CME 850XR, #953 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L. Price Lithology Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Intro stained from 4.5' to 7.3' SS034G 3.5 - 4.5 1.5 1.5 4.7-4 3 Iron stained from 4.5' to 7.3' WELL GRADED SAND WITH SILT AND GRAVELL, Stofe 4.5 - 6.0 SS056E 6.5 - 7.5 5 1.5 5-7-7 8 WELL GRADED SAND WITH SILT AND GRAVELL, SW-SM, 10'YR 4/1 (dark gray) and 10'YR 2/1 (black),	-									-	
Drilling Contractor Statec Consulting Services Inc. Drill Rig Type and ID_CME 850XR, #963 Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) M/A Overdrill Tooling (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L Price N/A Depth Ft ² Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Infm. dry, with abundant fragments of sandstone and sittstone, [FILL] SS01G 0.0 - 1.5 1.5 4-7-7 2 Ifon stained from 4.5" to 7.3" SS04G 4.5 - 6.0 6 6.5 - 7.5 1.5 5-7 4 Ifon stained from 4.5" to 7.3" WELL GRADED SAND WITH SILT AND GRAVEL, SS05aG 6.0 - 6.5 1.5 5-7 8 WELL GRADED SAN	-				•	_					
Overburden Drilling and Sampling Tools (Type and Size) 4-1/4" HSA, 3" SS w/o liners, 3" Shelby Tubes Rock Drilling and Sampling Tools (Type and Size) N/A Overdrill Tooling (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L Price Lithology Description Reck Ft Blows 0 0.0 714.5 Top of Hole 0 1.5 4-7 1 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 SS01G 0.0 - 1.5 1.5 1.5 4-7 2 Image: Site Site of the Site of Time Site of Ti	•				•						
Overdrill Tooling (Type and Size) 8-1/4" HSA overdrill of boring Overdrill Depth 23.0 ft Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L. Price Lithology Depth Ft ³ Rec. Ft Blows 0 0.0 714.5 Top of Hole Image: Standard	-				0 11						
Sampler Hammer Type Automatic Weight 140 lb Drop 30" Efficiency N/A Borehole Azimuth N/A N/A Borehole Inclination (from Vertical) N/A N/A Reviewed By C. Kocka Approved By L. Price N/A N/A Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Image: Source of Hole Image	Rock D	rilling and s	Sampl	ing Tools (Type and Size)							
Borehole Azimuth N/A Borehole Inclination (from Vertical) N/A Reviewed By C. Kocka Approved By L. Price Lithology Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Image: Solution of the solution	Overdri	ill Tooling (Туре а	and Size)8-1/4" HSA overdrill of bor	ring			Overdrill	l De	pth _2	23.0 ft
Reviewed By C. Kocka Approved By L. Price Lithology Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Image: Solution of the context in the	Sample	er Hammer	Туре	Automatic Weight 140 lb	·					N/A	
Uthology Overburden: Sample ¹² Depth Ft ³ Rec. Ft Blows Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Blows 0 0.0 714.5 Top of Hole Image: Colspan="6">Colspan="6"Colspan	Boreho	le Azimuth					-	Vertical)	N//	A	
Depth Ft ³ Elevation Graphic Description Rock Core: RQD % Run Ft Rec. Ft Rec. 0 0.0 714.5 Top of Hole Image: Solution of the solution	Review	ved By	C. Ko	cka	Approved By		L. Price				
0 0.0 714.5 Top of Hole 1 0.5 714.0 Topsoil SS01G 0.0 - 1.5 1.5 4-7- 2 3 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 (yellowish brown) and 10YR 5/1 (gray), low plasticity, firm, dry, with abundant fragments of sandstone and siltstone, [FILL] SS02E 1.5 - 3.0 1.5 1.5 10-12 -3 -4 -4 -4 -4 -4 -4 -4 -5 SS03aE 3.0 - 3.5 1.5 5-5 -5 -7 7.3 707.2 Iron stained from 4.5' to 7.3' SS05aG 6.0 - 6.5 5 5-7- 8 -7 7.3 707.2 WELL GRADED SAND WITH SILT AND GRAVEL, SW-SM, 10YR 4/1 (dark gray) and 10YR 2/1 (black), SS06aE 7.5 - 8.5 1.5 8-6										<u> </u>	Blows/PSI
0 0.5 714.0 Topsoil Topsoil 1.5 4.7- 1 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 SS01G 0.0 - 1.5 1.5 4.7- 2 GRAVELLY SILT WITH SAND, ML, 10YR 5/1 (gray), low plasticity, firm, dry, with abundant fragments of sandstone and siltstone, [FILL] SS02E 1.5 - 3.0 5 1.5 10-12 3 -4 -4 -4 -5 -5 SS03aE 3.0 - 3.5 5 1.5 5-5 -5 -6 -7 7.3 707.2 Iron stained from 4.5' to 7.3' SS05aG 6.0 - 6.5 5 5.5			Braphic		Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 1 GRAVELLY SILT WITH SAND, ML, 10YR 5/6 (yellowish brown) and 10YR 5/1 (gray), low plasticity, firm, dry, with abundant fragments of sandstone and siltstone, [FILL] SS01G 0.0 - 1.5 1.5 4-7- - 3 - 4 - 5 - 6 - 5 - 6 - 6 - 6 - 6 - 7.3 707.2 - 1.5 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 7.3 707.2 - 7 - 7.3 - 707.2 - 7 - 7.3 - 707.2 - 6 - 5 - 5 - 6 - 5 - 6 - 6 - 6 - 6 - 7 - 7.3 - 707.2 - 7 - 7.3 - 707.2 - 7 - 7.3 - 7.5 - 8.5 - 5 <t< td=""><td></td><td></td><td></td><td>•</td><td></td><td>\square</td><td></td><td></td><td></td><td></td><td></td></t<>				•		\square					
- 2		714.0					SS01G	0.0 - 1.5	0.0 - 1	1.5	4-7-11
- 2 - 3 -	1								σ		
-3 -3 SS03aE 3.0 - 3.5 -4 -5 SS03bG 3.5 - 4.5 -5 -5 -5 SS03bG 3.5 - 4.5 -5	2			firm, dry, with abundant fragments of sa		1.5/3.5	5502E	15-30	1.5	1.5	10-12-12
- 4 - 4 - 4 - 5 -				siltstone, [FILL]		6-20190	3302L	1.5 - 5.0	3.0	1.5	10-12-12
-4 -4 SS03bG 3.5 - 4.5 5 -5 Iron stained from 4.5' to 7.3' SS04G 4.5 - 6.0 5 -6 SS05aG 6.0 - 6.5 5 1.5 6-10 -7 7.3 707.2 WELL GRADED SAND WITH SILT AND GRAVEL, SW-SM, 10YR 4/1 (dark gray) and 10YR 2/1 (black), SS06aE 7.5 - 8.5 5 1.5 8-6	3					0716	SS03aE	3.0 - 3.5	3.		-
3 3 5 5 1.5 6-10 6 5 6 5 6 1.5 6-10 7 7.3 707.2 707.2 1.5 5-7 8 •••• ••• ••• 5 6.5 - 7.5 5 8 ••• ••• ••• ••• 1.5 5-7 5 ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• ••• 1.5 8-6	4						SS03bG	3.5 - 4.5	0 - 4.5	1.5	5-5-5
3 3 5 5 1.5 6-10 6 5 6 5 6 1.5 6-10 7 7.3 707.2 707.2 1.5 5-7 8 •••• ••• ••• 5 6.5 - 7.5 5 8 ••• ••• ••• ••• 1.5 5-7 5 ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• ••• 1.5 5-7 8 ••• ••• ••• ••• ••• ••• ••• 1.5 8-6				Iron stained from 4.5' to 7.2'					١H		
- 7 7.3 707.2 WELL GRADED SAND WITH SILT AND GRAVEL, SW-SM, 10YR 4/1 (dark gray) and 10YR 2/1 (black), SS05aG 6.0 - 6.5 6.5 6.5 6.5 7.5 6.5 1.5 5-7- - 8 • • • • • • • • • • • • • • • • • • •	5			non stalled non 4.5 to 7.5			SS04G	4.5 - 6.0	4.5 - 6.	1.5	6-10-14
- 7 7.3 707.2 WELL GRADED SAND WITH SILT AND GRAVEL, SW-SM, 10YR 4/1 (dark gray) and 10YR 2/1 (black), SS05bE 6.5 - 7.5 5/5 1.5 5-7- - 8 - 9 - 9 - 9 - 9 - 9 - 7.5 - 8.5 - 6/5 1.5 5-7-	3									-	
7 7.3 707.2 1 1 WELL GRADED SAND WITH SILT AND GRAVEL, 5 6.5 - 7.5 6 8 • • • • • • • • • • • • • • • • • • •						0		6.0 - 6.5	6.0 -	15	5-7-11
- 8	7.3	707.2	┊╵╷╷╷╷			5/8.5-2	SS05bE	6.5 - 7.5	7.5	1.0	0711
	3		•		,	01907	SS06aE	7.5 - 8.5	7.5		
very fine to coarse, loose to dense, dry to wet, [CCR] SS06bG 8.5 - 9.0	\downarrow		•			16		85-90	- 9.0	1.5	8-6-7
	, ₽		•				000000	0.0 0.0	9		
SS07G 9.0 - 10.5	10						SS07G	9.0 - 10.5	0 - 10.	1.3	9-13-7
Wet at 10.0'			•	Wet at 10.0'							
- 11 SS08aG 10.5 - 11.5 6 1.4 4-3	11		•				SS08aG	10.5 - 11.5	10.5 - 1	1.4	4-3-3
11.5 - 12.0	12		•			11.5/	SS08bE	11.5 - 12.0	12.0		
	-					13.5-20	00005	40.0 40.5	12.0	4.5	0.0.4
13 SS09E 12.0 - 13.5 5 SS09E 12.0 - 13.5	13		•			19071	5509E	12.0 - 13.5	- 13.5	1.5	3-3-4
- 10 1.3 9-13 - 11 1.3 9-13 - 12 1.4 4-3 - 12 1.4 4-3 - 13	14		•			6			13		
SS10G 13.5 - 15.0 5 11-24	14		•				SS10G	13.5 - 15.0	.5 - 15.	1.5	11-24-33
	15	•••	·								-
16.0 698.5 ••• 14. 1.5 23-46	16.0	698.5	•				SS11aG	15.0 - 16.0	5.0 - 1	1.5	23-46-46
SANDY WELL GRADED GRAVEL WITH CLAY,	0			SANDY WELL GRADED GRAVEL WIT	TH CLAY,	16.5/1			6.5		-
² / ₂ − 17 <u>17.1 697.4</u> GW-GC, 10YR 4/1 (dark gray), fine to coarse, GW-GC, 10YR 4/1 (dark gray), fine to coarse,	17 17.1	697.4 6 97.4				8.5-20	SS12aE	16.5 - 17.1	16.5 -	1.5	19-13-14
medium dense to dense, wet, subrounded to rounded, [CCR]						1907-	SS12bE	17.1 - 18.0	. 18.0	1.5	19-10-14

Stantec Consulting Services Inc.



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CI	ient E	Borehole	ID_N/A	١	Stantec Boring	No. WBF	-TW05		
Cl	ient		Tennes	see Valley Authority	Boring Locatio		05 N; 2,362,872.	96 E NAD27	Plant Local
Pr	oject	Number	175668	050	Surface Elevat	tion 714.5 ft	Elevation	n Datum_r	NGVD29
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Deptl	h Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
19 -	18.2 19.0	696.3 695.5		SILT WITH SAND, ML, 10YR 3/1 (ve low plasticity, firm, moist to wet, hydro staining, trace fragments of sandston (<i>Continued</i>)	ocarbon	SS13aE SS13bG	18.0 - 18.5 18.5 - 19.5	180-195	5-7-11
20				LEAN CLAY, CL, 10YR 4/2 (dark gra plasticity, firm, moist, with very fine sa and organics, [CCR]		ST01G	19.5 - 21.5	1.5	800
22				LEAN CLAY, CL, 10YR 3/4 (dark yell and 10YR 4/1 (dark gray), low to mee firm to hard, moist		SS14G		1.5	5-9-13
24	24.5	690.0				SS15G	23.0 - 24.5	1.5	14-18-19
			1: E = G = 2: a,b,	brary well installed. See well installation Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E oths are reported in feet below ground su	lit Spoons may be re nvironmental and Ge	equired to obta		ble)	

APPENDIX B.4 PIEZOMETERS

Table of Contents

WBF-B02	
WBF-B03	4
WBF-B04	7
WBF-B05	
WBF-B12	
WBF-B13	
WBF-B14	
WBF-B15	
WBF-B16A	23
WBF-B28	25



	liont F	Borehole			Stantec Boring	a N	o WBF	-B02			
	lient		-	see Valley Authority	Boring Locatio			61 N; 2,362,444	1 20	= NAD27	Plant Local
		Number		· · · ·	Surface Eleva		-	Elevatio			
	-						7/31/19				
	-			DEC Order ea Co, Spring City, Tennessee	Date Started			Comple		8/1/19 N/A	
	•	Location or G. B			Depth to Wate	_		Date/Ti		N/A	
	•			Logger <u>G. Budd</u> ntec Consulting Services Inc.	Depth to Wate Drill Rig Type			Date/Ti	me	IN/A	
	-		-	Sampling Tools (Type and Size			-				
			-		Q-2 Wireline, Solid B				•		
		-		and Size) N/A				Overdril		nth N	J/A
		-		Automatic Weight 140	lb Drop 3	0"		Efficiency		V/A	
	•	le Azimu	• •	N/A	Borehole Inclin		ion (from	,	N//		
		ed By			Approved By		A. Welshan		,		
		_ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	719.1		Top of Hole							
	0.5	718.6		Topsoil			SS01G	0.0 - 1.5	0.0 -	1.4	3-3-5
- 1				SANDY LEAN CLAY WITH GRAVEL (yellowish red) to 5YR 6/1 (gray), me					5		-
- 2				soft to firm, dry to moist, with fragmer							_
	2.7	716.4		and sandstone, [FILL]			SS02aG	2.5 - 2.7			
- 3				SILT, ML, 10YR 2/1 (black), non-plas	tic, soft, moist,		SS02bG	2.7 - 4.0	2.5 - 4	1.5	5-8-9
				trace organics, [CCR]			000200	2.7 - 4.0	4.0		
- 4											-
- 5											_
							SS03G	5.0 - 6.5	5.0 -	1.5	3-2-2
- 6								0.0 0.0	6.5		
- 7											_
	7.7	711.4					SS04aG	7.5 - 7.7			
- 8				WELL GRADED SAND WITH SILT, S					7.5 -	1.5	5-6-5
				2/1 (black) and 10YR 3/6 (dark yellow to coarse, loose, moist, [CCR]	vish brown), fine		SS04bG	7.7 - 9.0	9.0		
- 9			· ·								-
²⁰¹⁶ – 10			· ·								_
30.GDT	10.9	708.2					SS05aG	10.0 - 10.9	10.0 -	1.5	3-3-1
11 - 1302				SILTY SAND, SM, 10YR 2/1 (black),	very fine to fine,		SS05bG	10.9 - 11.5	11.5	1.0	
12 12			IIIIIII	very loose, moist to wet, [CCR]	-						_
	12.5	706.6	╟┇┥┇┥┇	Wet at 11.0'							
<u> </u>			.	WELL GRADED SAND WITH SILT, S			SS06G	12.5 - 14.0	12.5 -	0.3	- 3-1-WH
DER.G				2/1 (black), very fine to coarse, very I [CCR]	oose, wet,		00000	12.5 - 14.0	14.0	0.5	5-1-0011
ຮ_– 14			•••	[00.1]							-
₽ ₩ - 15	15.0	704.1	╷╴								_
			╟╁╂╁╿	SILTY SAND, SM, 10YR 3/1 (very da			SS07G	15.0 - 16.5	15.0 -	1.5	WR-WH-1
[₩]				10YR 2/1 (black), very fine to fine, ve with trace medium to coarse sand, [C			33076	10.0 - 10.0	- 16.5	(1.5	VVIC-VVII-I
					· J						
TVA EIP BORINGLOOS 175680900 WBF. TDEC ORDER/GPJ TDEC SUBSURF DT 2019020 GAD 40002 10002											-
≸ <mark>18</mark>			<u> </u>								



С	lient E	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B02			
C	lient		Tennes	see Valley Authority	Boring Location			61 N; 2,362,444	1.29	E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleva	atior	n <u>719.1 ft</u>	Elevatio	on E	Datum_	NGVD29
		ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19 - 20				SILTY SAND, SM, 10YR 3/1 (very dat 10YR 2/1 (black), very fine to fine, ver with trace medium to coarse sand, [Cr (Continued)	y loose, wet,		SS08G	17.5 - 19.0	17.5 - 19.0	1.5	- WH-WH-1
- 21	20.9 21.5	698.2 697.6		LEAN CLAY, CL, 10YR 4/2 (dark gray ∖ plasticity, soft, moist, hydrocarbon sta			SS09aG SS09bG	20.0 - 20.9 20.9 - 21.5	20.0 - 21.5	1.5	2-2-2 _
- 22 - 23 - 24	23.5	695.6		LEAN CLAY WITH SAND, CL, 10YR brown) and 10YR 5/1 (gray), very fine firm, moist	5/6 (yellowish		ST01G	21.5 - 23.5	21.5 - 23.5	1.6	- 800 -
- 25 - 26				SANDY LEAN CLAY, CL, 5YR 4/6 (ye and 5YR 6/1 (gray), low plasticity, firm with trace organics			SS10G	25.0 - 26.5	25.0 - 26.5	1.5	
- 27 - 28 - 29							SS11G	27.5 - 29.0	27.5 - 29.0	1.5	- 6-9-13 -
- 30 - 31 - 32							SS12G	30.0 - 31.5	30.0 - 31.5	1.5	
- 33	<u>32.5</u> 34.0	<u>686.6</u> 685.1		CLAYEY SAND, SC, 5YR 4/6 (yellow 5YR 6/1 (gray), fine, loose, moist, with			SS13G	32.5 - 34.0	32.5 - 34.0	1.5	3-4-5
- 34 - 35 - 35 - 35 - 36 - 37 - 37 - 37 - 37 - 37 - 37 - 37 - 37				CLAYEY SAND, SC, 7.5YR 4/4 (brow loose, moist to wet	n), fine, very		SS14G	35.0 - 36.5	35.0 - 36.5	1.5	- 1-3-4 _
115608050 WeF TPEC_ORDER.OPJ TPECSUBS - 32 - 38 - 38 - 39 - 40	36.5	682.6		Wet at 36.0' SANDY SILT, ML, 7.5YR 4/4 (brown), very soft, wet	non-plastic,		SS15G	37.5 - 39.0	37.5 - 39.0	1.5	- WR-WR-WH
- 40 - 41 - 41 - 42	40.0	679.1		CLAYEY SAND, SC, 7.5YR 4/4 (brow loose, moist	'n), fine, very		SS16G	40.0 - 41.5	40.0 - 41.5	1.5	2-3-3 _



Page: 3 of 3

0	ehole ID <u>N/A</u>		Stantec Boring	No. WBF	-002		
Client	Tenness	see Valley Authority	Boring Location	n <u>444,557.</u> 6	61 N; 2,362,444.2	29 E NAD2	7 Plant Local
Project Nu	mber 1756680	050	Surface Elevat	ion <u>719.1 ft</u>	Elevation Datum NGVD29		
Lithc	ology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³ Ele	vation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43	76.6	Shale, very dark gray brown, so moist to dry, iron oxide staining	ft to hard, weathered,	SS17G	42.5 - 43.6	435 5	15-34-50/ [,] Began Cor
45		Shale (90%) With Limestone (1 Shale, dark gray, soft, laminated iron oxide staining,		0	44.2 - 46.4 2.2	⁴⁴ 2- 1.6	73
47 48 49		Limestone, light gray, hard, thin Shale bedding breaks and mech throughout the length of the reco associated with the very soft, we bedding	nanical breaks overed core	0	46.4 - 49.0 2.6	464 4.490	65
50 51 52 53		Fracture, 45°, rough, at 49.9' Fracture, 15°, rough, matte surfa shale, limestone bedding contac Fracture, 15°, calcite coating, ca to striated, polished surface, at \$	ct, at 50.0' alcite infilling, smooth	0	49.0 - 54.0 5.0	490. 490. 4.6	92
₅₄ 54.0 6	65.1	Bottom of Hole at 54.0 Ft. Top of Rock = 42.5 Ft. Top of Rock Elevation = 676.6 F Begin Core = 44.2 Ft.				11	
	1: E = I G = 0 2: a,b,c	ng Wire Piezometers installed. See Environmental Sample Custody (tv Geotechnical Sample Custody c denote Split Spoon divided betwe ths are reported in feet below grou	vo Split Spoons may be re een Environmental and Ge	quired to obta		ole)	



Cli	ient E	Borehole	ID N/A	A	Stantec Boring	g No. WBF	-B03		
	ient			see Valley Authority	Boring Location			92 E NAD27	Plant Local
Pr	oject	Number	175668	050	Surface Eleva	ition 699.9 ft	Elevatio	n Datum	NGVD29
Pr	oject	Name	WBF T	DEC Order	Date Started	8/26/19	Complet	ed 8/28/	19
Pr	oject	Location	n Rhe	ea Co, Spring City, Tennessee	Depth to Wate	er N/A	Date/Tin	ne N/A	
Ins	spect	or G. B	udd	Logger _G. Budd	Depth to Wate	er N/A	Date/Tin	ne N/A	
	-		-	ntec Consulting Services Inc.	Drill Rig Type	-			
			-	Sampling Tools (Type and Size					
		-	•	J () /	-3 Wireline, Split Ba	arrel, Surface S			
		-		and Size) <u>N/A</u>		0.1		•	N/A
	•		• •	Automatic Weight 140		0"	Efficiency	N/A N/A	
		le Azimu ed By			Borehole Incli Approved By	•	·	N/A	
	eview	eu by _			,				
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth		Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 0 -	0.0	699.9	8 8 8 9 8 8 8 9	Top of Hole					
	0.5	699.4		POORLY GRADED GRAVEL, GP, 10 √ gray), very dense, dry, angular to sub		SS01G	0.0 - 1.5	. 1.4	6-10-21
- 1				crushed limestone gravel, [FILL]	.			5	
- 2				SANDY LEAN CLAY WITH GRAVEL,					
	2.8	697.1		(brown), low plasticity, firm to hard, dr	y, [FILL]	0000-0	05.00		
- 3	2.8	697.1		SILTY SAND WITH GRAVEL, SM, 7.	5YR 2 5/1	SS02aG	2.5 - 2.8	2.5	-
			 	(black) and 7.5YR 4/4 (brown), very fi		SS02bG	2.8 - 4.0	1.5	10-12-6
- 4				very dense, dry, trace CCR, [FILL]				-	-
			 						
- 5	5.5	694.4	╟┇┝┇┝┇			SS03aG	5.0 - 5.5	5	_
- 6				POORLY GRADED SAND WITH CLA		SS03bG	5.5 - 6.5	້ອ ອີງ	3-3-5
			\cdots	10YR 4/6 (dark yellowish brown), fine loose, moist	, very loose to				
- 7				10030, 110130					-
- 8						SS04G	7.5 - 9.0	7.5 1.1	- 1-2-2
1/27/21								9.0	
									-
5019023	46.1						10.0 10.1		_
100 – 10 – 10 – 10 – 10 – 10 – 10 – 10	10.4	689.5		SANDY LEAN CLAY, CL, 10YR 4/6 (dark vellowich	SS05aG	10.0 - 10.4	10.0	040
			$\langle / / \rangle$	brown), low to medium plasticity, very		SS05bG	10.4 - 11.5	1.3	2-1-2
PJ TDE								H	
ожрек ^о			$\langle / / \rangle$						-
° 	13.0	686.9				SS06aG	12.5 - 13.0	12	-
				SILTY SAND, SM, 10YR 5/6 (yellowis	sh brown), fine,	SS06bG	13.0 - 14.0	1.5	1-1-2
⁰⁵⁰⁸⁹⁹⁵ – 14			╟┇┠┇┝	very loose, moist					-
	45.0	004.0							
2 15 -	15.0 15.5	684.9 684.4		SANDY LEAN CLAY, CL, 10YR 5/6 (vellowish	SS07aG	15.0 - 15.5	15.0 -	-
LVA EIP	10.0	004.4		brown), low plasticity, very soft, moist				 	1-2-1
10					liting Services Ir	· · ·			1/27/21

Stantec Consulting Services Inc.





Client Tennesse Valley Authonty Boring Location 44.612.30.K.2.363.046.92 E.NAD27 Plant Local Value Surface Elevation Gene Plant Elevation Datum NSVD29 Litholog Description Rock Care Rock C	Client	Borehole IDN/A		Stantec Boring No. WBF-B03							
Lithology Depth Ft ² Elevation Graphic Description Overburden: Sample '7 Depth Ft ² Rue, Ft Rec, Ft BiowaPSI 16	Client	Tennes	see Valley Authority				92 E NAD27	Plant Local			
Depth FI ² Elevation Graphic Description Rock Core: RQD % Run FI Rec. FI FI Rec. FI	Project	Number <u>175668</u>	050	Surface Elevat	tion <u>699.9 ft</u>	Elevatior	n Datum_	NGVD29			
16 POORLY GRADED SAND WITH CLAY, SP-SC, 107R 5/6 (pallowish brown), fine, very loose, wet (Continued) SS07bG 15.5 - 16.5 17		Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
17 POORLY GRADED SAND WITH CLAY, SP-SC, 107R 56 (ejelowish brown), fine, very loose, wet (Continued) ISO/RG	Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
19 20 20.3 679.6 SANDY LEAN CLAY, CL. 10YR 4/4 (dark yellowish brown) and 10YR 6/1 (gray), non-plastic to low plasticity, very soft, wet SS08aG 20.0 - 20.3 1.5 1.5 1.1-1-1 22 22.5 677.4 SANDY LEAN CLAY, CL. 10YR 4/4 (dark yellowish brown), fine, very loose, wet SS08aG 20.0 - 20.3 1.5 1.4 200 23 22.5 677.4 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic to low plasticity, very soft, wet ST02G 22.5 - 24.5 1.4 200 24 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet ST02G 22.5 - 24.5 1.4 200 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet ST02G 25.0 - 26.5 1.5 WH-WH-1 28 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 0.0 500 31 S3.3 666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose, wet SS11aG 32.5 - 33.3 1.5 WH-8-12 34 S511aG 35.3 - 664.6 Shale, soft, weathered, wet to dry, glauconitic SS11aG 35.3 - 36.5	- 17		10YR 5/6 (yellowish brown), fine, very		SS07bG	15.5 - 16.5		-			
203 0/30 0/30 1 SANDY LEAN CLAY, CL, 10YR 4/4 (dark yellowish prown) and 10YR 6/1 (gray), non-plastic to low plasticty. very soft, wet 500aG 20.3 - 21.5 1					ST01G	17.5 - 19.5	0.0	 200			
21 brown) and 10YR 6/1 (gray), non-plastic to low plasticity, very soft, wet SS08bG 20.3 - 21.5 1.4 20 22 22.5 677.4 1.1 SILTY SAND, SM, 10YR 5/6 (yellowish brown), fine, very loose, wet ST02G 22.5 - 24.5 1.4 200 24 25 25.0 674.9 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet SS09G 25.0 - 26.5 1.4 200 26 27 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 29 33 666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 0.0 500 33 366.6 S513 666.4 S5126 S513G 33.3 - 34.0 1.5 WH-8-12 34 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.3 - 36.5 1.2 8-23-21 35 Shale, soft, weathered, wet to dry, glauconitic SS12aG 36.5 - 36.7 1.2 8-23-21	- 20 20.3	679.6			SS08aG	20.0 - 20.3		_			
22.5 677.4 677.4 SILTY SAND. SM. 10YR 5/6 (yellowish brown), fine, very loose, wet 24 25.0 674.9 1.4 200 25 25.0 674.9 1.4 200 26 25.0 674.9 1.4 200 26 25.0 674.9 1.4 200 27 28 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 29 31 33.3 666.6 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 33 3666.6 POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, corarse, medium dense, wet SS11aG 32.5 - 33.3 511aG 32.5 - 33.3 511aG 33.3 - 34.0 1.5 WH-8-12 36 35.3 664.6 4 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.3 - 36.5 5 1.2 8-23-21 37 Shale, soft, weathered, wet to dry, glauconitic SS13G 36.5 - 36.7 5 0.2 50/2*			brown) and 10YR 6/1 (gray), non-plas		SS08bG	20.3 - 21.5	1.5	1-1-1 _			
23 SANDY SILT, ML, 10YR 5/6 (yellowish brown), non-plastic, very soft, wet Sand lens from 25.5' to 25.8' SS09G 25.0 - 26.5 1.5 WH-1-2 -26 -27 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 -28 -31 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 -33 33.3 666.6 For early proper to loose, wet POORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 0.0 500 34 S5.3 664.6 For early proper to loose, wet SS11bG 33.3 - 34.0 1.5 WH-8-12 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.0 - 35.3 1.2 8-23-21 36 Shale, soft, weathered, wet to dry, glauconitic SS13G 36.5 - 36.7 1.2 8-23-21	- 23	677.4		h brown), fine,	ST02G	22.5 - 24.5	225-245	- 200 -			
- 28 - 28 - 29 Color change to 10YR 5/1 (gray) at 27.5' SS10G 27.5 - 29.0 1.5 WH-WH-1 - 30 - 31	- 25	674.9	non-plastic, very soft, wet	h brown),	SS09G	25.0 - 26.5	1.5	— WH-1-2 _			
31 32 32.5 667.4 0.0 500 33 33.3 666.6 900 PORLY GRADED SAND, SP, 10YR 5/1 (gray), fine, very loose to loose, wet SS11aG 32.5 - 33.3 1.5 WH-8-12 34 900 RAVEL, SP-SM, 10YR 5/1 (gray), very fine to coarse, medium dense, wet SS11bG 33.3 - 34.0 1.5 WH-8-12 35 35.3 664.6 Shale, soft, weathered, wet to dry, glauconitic SS12aG 35.0 - 35.3 1.2 8-23-21 36 36 36.5 - 36.7 90 0.2 50/2"	- 28		Color change to 10YR 5/1 (gray) at 27	7.5'	SS10G	27.5 - 29.0	1.5	- WH-WH-1 -			
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	- 30 - 31 - 31 - 32				ST03G	30.0 - 32.0	0.0	 500 –			
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	32.5	667.4		E/1 (area) free							
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	₽ - 33 <u>33.3</u>	666.6		or r (gray), line,	SS11aG	32.5 - 33.3	5 	WH-8-12			
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	напос - 34 - 35 - 25 остан - 35 - 25 остан	664.6	GRAVEL, SP-SM, 10YR 5/1 (gray), ve				40 	-			
$\begin{bmatrix} SS12bG & 35.3 - 36.5 & \\ SS13G & 36.5 - 36.7 & \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	5.50		Shale, soft, weathered, wet to dry, gla	uconitic			35 0- 10	8_03_01			
	04ING - 36						วั	-			
		662.6					5	Began Core			



Client I	Borehole IDN/A		Stantec Boring No. WBF-B03						
Client	Tenness	see Valley Authority	Boring Locatio		30 N; 2,363,046.	92 E NAD27	Plant Local		
Project	t Number1756680	050	Surface Elevat	tion 699.9 ft	Elevation	n Datum_I	NGVD29		
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS		
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
38		Limestone (80%) With Shale (20%) Limestone, light gray, hard, weathere	d, oolitic,	0	37.3 - 38.7 1.4	373 - 1.4	100		
39 40		Shale, dark gray, soft, highly weather Fractured throughout recovered core	-	0	38.7 - 40.9 2.2	38.7 - 1.7	77		
41		limestone/shale bedding contacts, ab observed within fractures, and numer breaks along previously calcite-filled healed fractur	ous mechanical			40			
43				0	40.9 - 43.7 2.8	¹⁹ -43.7	43		
14 15		Artesian flow observed at 43.7'		0	43.7 - 45.6 1.9	43.7 O.6	32		
46 47 47.5	652.4			0	45.6 - 47.5 1.9	45.6 - 47.5	32		
		Bottom of Hole at 47.5 Ft. Top of Rock = 35.3 Ft. Top of Rock Elevation = 664.6 Ft. Begin Core = 37.3 Ft.							
	Vibratir	ng Wire Piezometers installed. See inst	allation log for backfil	ll details.					
	G = 2: a,b,c	Environmental Sample Custody (two Sp Geotechnical Sample Custody : denote Split Spoon divided between E hs are reported in feet below ground su	nvironmental and Ge			ole)			



	lient F	Borehole		A	Stantec Boring	No WBF	-B04					
	lient	5001010		see Valley Authority	Boring Location			.46 F	NAD27	Plant Local		
		Number		<u> </u>	Surface Elevat	-						
	-			DEC Order	Date Started	8/6/19	Comple					
	-			ea Co, Spring City, Tennessee	Depth to Water		Oomple Date/Tir		N/A	·		
	-	or G.B	-		Depth to Water N/A Date/Time N/A							
	•	-		intec Consulting Services Inc.	Drill Rig Type a	-						
	-		-	Sampling Tools (Type and Size	0 11							
			•		Q-3 Wireline, Split Ba							
0	verdri	II Tooling	(Type	and Size) N/A			Overdrill	Dep	oth _N	I/A		
s	ample	er Hamme	er Type	Automatic Weight 140	Ib Drop 30	"	Efficiency	N	/A			
В	oreho	le Azimu	th	N/A	Borehole Inclin	ation (from	Vertical)	N/A				
R	leview	ed By	K. Bla	akley	Approved By	A. Welshan	s					
		_ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	l	Rec. Ft	Blows/PSI		
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %		
- 0	0.0	713.4		Top of Hole								
	0.5	712.9		Topsoil		SS01G	0.0 - 1.5	0.0	1.2	5-6-6		
- 1				SANDY LEAN CLAY WITH GRAVEL	, , ,	33010	0.0 - 1.5	.5	1.2			
				(yellowish red) and 5YR 5/1 (gray), m firm, dry, with fragments of siltstone a								
- 2				[FILL]						-		
- 3								2		_		
Ŭ						SS02G	2.5 - 4.0	5 - 4.0	1.5	4-4-6		
- 4										-		
		700 4										
- 5	5.0 5.3	708.4 708.1	///	LEAN CLAY WITH SAND, CL, 5YR 5		SS03aG	5.0 - 5.3					
			•••••	red) and 10YR 2/1 (black), low plastic		SS03bG	5.3 - 6.5	5.0 - 6	1.5	14-12-10		
- 6				[CCR]]	000000	5.5 - 0.5	σ		-		
- 7			••••	WELL GRADED SAND, SW, 10YR 3/						_		
	7.5	705.9		grayish brown) and 10YR 2/1 (black),								
- 8				fragments of glassy CCR, [CCR]		SS04G	7.5 - 9.0	7.5	1.2	3-5-9		
9/10/20			••• +	WELL GRADED SAND WITH SILT, S	SW-SM, 10YR	5504G	7.5 - 9.0	- 9.0	1.2	3-5-9		
^{GDT 9/}				3/6 (dark yellowish brown) and 10YR	· · · ·					-		
190530.	10.0	703.4	••• +	very fine to coarse, very loose to loos iron oxide staining, with fine to coarse								
9 0 0 0 0 0 0 0 0 0 0 0 0 0								10.		_		
unsans - 11				WELL GRADED SAND, SW, 10YR 4/		SS05G	10.0 - 11.5	0 - 11.3	1.2	6-8-11 _		
TDEC				brown) and 10YR 2/1 (black), fine to o medium dense, moist to wet, with fine				5				
^{GEY:CED} – 12				glassy CCR, [CCR]						-		
EC_ORL				Wet at 11.0 feet								
₽ - 13						SS06G	12.5 - 14.0	12.5 - 1	1.1	4-6-5		
68050_\								4.0				
14 90								$ \square$		-		
or NI NI NI NI NI NI NI NI NI NI NI NI NI	15.0	698.4								_		
A EIP BC						SS07G	15.0 - 16.3	5.0 - 16	1.3	11-27-50/4"		
[≵] _ 10			.• . • •	Stantec Consu				ω. ω	-	9/10/20		



Client E	Borehole IDN/A	A	Stantec Boring No. WBF-B04							
Client	Tennes	see Valley Authority	Boring Locatio		39 N; 2,362,922.4	6 E NAD27	Plant Local			
Project	Number <u>175668</u>	050	Surface Eleva	tion <u>713.4 ft</u>	Elevation	Datum_N	NGVD29			
	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 16 - 17 - 18 - 19 - 20	694.6	WELL GRADED SAND WITH SILT A SW-SM, 10YR 2/1 (black) and 10YR 3 grayish brown), fine to coarse, mediur dense, wet, with medium to coarse gla [CCR] <i>(Continued)</i> LEAN CLAY, CL, 10GY 5/1 (greenish plasticity, firm, dry, glauconitic	3/2 (very dark n dense to very assy CCR,	SS08aG SS08bG	17.5 - 18.8 18.8 - 19.0	1.5	- - 11-7-5 -			
- 21 - 22		LEAN CLAY WITH SAND, CL, 10YR yellowish brown) and 10YR 5/1 (gray) firm, moist		ST01G	20.0 - 22.0 20.0 - 22.0	1.8	800 -			
- 23 - 24		Trace organics from 22.5' to 24.0'		SS09G	22.5 - 24.0 ;24.0 ;24.0	1.0	6-8-12 - -			
- 25 - 26 - 27				SS10G	25.0 - 26.5 25.0	1.5				
- 28				SS11G	27.5 - 29.0 27.5 - 29.0	1.4				
- 30 - 31 - 31 - 32 - 32		With manganese concretions from 30	.0' to 31.5'	SS12G	30.0 - 31.5	1.5	2-4-7			
220- 30 220-6 Loo 0000000000000000000000000000000000	680.9	LEAN CLAY WITH SAND, CL, 10YR vellowish brown) and 10YR 5/1 (gray) soft to firm, moist		SS13G	32.5 - 34.0	1.5	2-3-5 - -			
BA 000000000000000000000000000000000000	676.9	LEAN CLAY WITH SAND, CL, 10YR	4/1 (dark gray),	ST02G	35.0 - 37.0	2.0				

Stantec Consulting Services Inc.



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С	lient E	Borehole	IDN/A		Stantec Boring No. WBF-B04							
C	lient		Tennes	see Valley Authority	Boring Location			39 N; 2,362,922	2.46	E NAD27	' Plant Local	
Pi	roject	Number	175668	050	Surface Eleva	atio	n <u>713.4 ft</u>	Elevatio	on E	Datum_	NGVD29	
		ithology			Overburden:	;	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI	
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %	
- 38 - 39				LEAN CLAY WITH SAND, CL, 10YR 4 low plasticity, soft to very soft, moist			SS14	37.5 - 39.0	37.5 - 39.0	1.5	- WR-WH-WH	
- 40 - 41 - 42							SS15G	40.0 - 41.5	40.0 - 41.5	1.5	WR-WR-WH_	
- 42 - 43 - 44	42.5	670.9		SILTY SAND, SM, 10YR 4/1 (dark gra loose, wet Wood fragments at 44.0'	y), fine, very		SS16G	42.5 - 44.0	42.5 - 44.0	1.4	WR-WR-WR	
- 45 - 46	45.0 46.0	668.4 667.4		SANDY WELL GRADED GRAVEL, G (dark gray), fine to coarse, loose to me wet, rounded, alluvial sand and multic Fragments of wood from 45.2' to 45.3'	edium dense, olored gravel /	-	SS17aG SS17bG	45.0 - 46.0 46.0 - 46.5	45.0 - 46.5	1.5		
- 47 - 48	48.0	665.4		Shale, very dark green gray, soft to m weathered to highly weathered, moist glauconitic, with some calcite	oderately hard,		SS18G	47.5 - 47.7	47.5 - 4	0.2	- 50/2" Began Core _	
- 49 - 50 - 51				Shale (90%) With Limestone (10%)Shale, dark gray and light gray, soft to weathered to moderately weathered,Limestone, light gray, thin bedded, ha with evidence of calcite filled, healed,	rd, weathered		0	48.0 - 52.0 4.0	7.7 48.0 - 52.0	0.0	- 0 -	
или – 52 – 53 – 53 – 54 – 55 – 55 – 56 – 57							0	52.0 - 57.0 5.0	52.0 - 57.0	0.7	- 14	
- 56 - 57 - 58							0	57.0 - 59.2	57.0	0.3	- 14 -	
								2.2	- 59.2	0.0	14	



TVA EIP BORING LOG 175668050_WBF_TDEC_ORDER.GPJ TDEC SUBSURF DT 20190530.GDT 9/10/20

SUBSURFACE LOG

Page: 4 of 4

		Borehole	-		Stantec Borin				40.1		
	lient			see Valley Authority	Boring Locatio			39 N; 2,362,922			
P	rojeci	Number	175668	050	Surface Eleva		Π <u>/13.4 π</u>	Elevatio			GVD29
		Lithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
Dep - 59 - 60 - 61 - 62 - 63	th Ft ³ 59.2 63.8		1: E = G = 2: a,b,	Description Limestone (90%) With Shale (10%) Limestone, light gray, hard, thin bedded Shale, dark gray, laminated, soft, with a calcite filled, healed fractures Fractures, 15° - 30°, healed, calcite and from 59.3' to 62.8' Vertical fracture, open, weathered, with surface from 59.7' to 60.3' Fractures, 15°, along limestone/shale to contact at 60.6', 60.7', 60.8', 61.0' Fracture zone, fresh from 61.4' to 61.8' Fracture zone, weathered, with calcite from 62.1' to 62.4' Bottom of Hole at 63.8 Ft. Top of Rock = 46.0 Ft. Top of Rock Elevation = 667.4 Ft. Begin Core = 48.0 Ft. ng Wire Piezometers installed. See install Environmental Sample Custody (two Split Geotechnical Sample Custody c denote Split Spoon divided between Enviths are reported in feet below ground surf	Rock Core: d, weathered, abundant d quartz filled, o calcite on redding on surfaces	fill d	RQD %	Run Ft 59.2 - 63.8 4.6	59.2-63.8	3.6	
											_
											-
											-



С	lient F	Borehole	ID	N/A	ι	Stantec Boring	a N	o. WBF	-B05			
	lient		_			Boring Locatio				9.29 I	E NAD27	Plant Local
		Number				Surface Eleva		-				
	-					Date Started		8/8/19	 Comple			
	-	Location				Depth to Wate		N/A	Date/Ti		N/A	
	-	or G. Bi				Depth to Wate			 Date/Ti		N/A	
D	rilling	Contract	or _	Sta		Drill Rig Type			850XR, #953			
0	verbu	rden Drill	ling	and	Sampling Tools (Type and Size)_	4-1/4" HSA, 2" S	SS w	v/o liners, 3'	" Shelby Tubes	6		
R	ock D	rilling and	d Sa	mpl	ling Tools (Type and Size)HQ-3	Wireline, Split Ba	arrel	, Surface S	et Bit			
		-		•	and Size) <u>N/A</u>				Overdril		•	N/A
	•		-	•	Automatic Weight 140 lb				Efficiency		N/A	
		le Azimu	-			Borehole Inclir			·	N//	۹	
R	eview	ed By _	K	. Bla	kley	Approved By		A. Welshan	S			
		ithology				Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Grap	ohic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	717.2			Top of Hole					+		
	0.5	716.7		폣	Topsoil			SS01G	0.0 - 1.5	0.0 -	0.9	5-4-5
- 1			\mathbb{Z}	\square	LEAN CLAY WITH SAND, CL, 5YR 5/6 red) and 5YR 6/1 (gray), low plasticity, f					1.5		
- 2				\square	fragments of siltstone and sandstone, [F	-						-
				\square	-	_						
- 3	3.5	713.7		\square				SS02aG	2.5 - 3.5	2.5 - 4	1.2	2-6-8
- 4			ΠĤ	ĺΠ	SILT, ML, 10YR 2/1 (black), non-plastic	, very soft,		SS02bG	3.5 - 4.0	Ō		-
					moist, [CCR] With glassy CCR fragments at 3.7'							
- 5					With glassy CON hagments at 3.7					(7)		-
- 6								SS03G	5.0 - 6.5	5.0 - 6.5	1.0	2-3-3
Ŭ												
- 7												-
- 8										.7		_
								SS04G	7.5 - 9.0	5 - 9.0	1.5	WR-1-WH
- 9												-
8/21												
⁸ 7 − 10										10.0		_
- 11								SS05G	10.0 - 11.5) - 11.5	1.5	WR-WH-WH
IRF DT 2												
insens:												-
 					Some clay with fragments of siltstone and	nd sandstone		66000	105 110	12.5		-
DER.GP					from 12.5' to 14.0'			SS06G	12.5 - 14.0	- 14.0	1.5	1-1-1
ਸ਼ ਗ਼ ਗ਼												-
^모 병 – 15												_
668050										15.		
9 ² - 16								ST01G	15.0 - 17.0	0-17.0	NR	800 -
										ľ		-
A EIP B	17.5	699.7										
≤ <mark>L_18</mark> _			111	111	Stantec Consulti							2/8/21



Client Borehole ID N/A Stantec Boring No. WBF-B05										
Client	Tenn	essee Valley Authority	Boring Location 444,830.68 N; 2,362,709.29 E NAD27 Plant Local							
Project	Number 1756	68050	Surface Elevat	ion <u>717.2 ft</u>	Elevation	Datum_	NGVD29			
	_ithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI			
Depth Ft ³	Elevation Graphi	c Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
- 18 - 19 20 20.0	697.2	SILTY SAND, SM, 10YR 3/2 (very da brown), very fine to fine, very loose, n (<i>Continued</i>)		SS07G	17.5 - 19.0	1.5	 1-WH-WH 			
- 21 - 22		WELL GRADED SAND WITH SILT A SW-SM, 10YR 2/1 (black) and 10YR grayish brown), very fine to coarse, ve loose, wet, [CCR] Wood fragments at 21.0'	3/2 (very dark	SS08G	20.0 - 21.5	1.0	 1-3-4			
- 23	694.4	<u>}</u>		SS09aG	22.5 - 22.8	3	_			
- 24		SANDY LEAN CLAY WITH GRAVEL, (yellowish brown) and 10YR 5/1 (gray coarse, low plasticity, soft, wet		SS09bG	22.8 - 24.0	1.0	2-4-5			
- 25 <u>25.0</u> - 26	692.2	LEAN CLAY, CL, 10YR 4/2 (dark gray firm, moist, with organics	vish brown),	SS10G	25.0 - 26.5	1.4				
- 27	689.7	LEAN CLAY, CL, 10YR 5/4 (yellowish	brown) and		7		_			
- 28 - 29		10YR 5/1 (gray), low to medium plast moist, mottled, with some fine sand a fragments of sandstone, trace organio	city, firm to soft, nd weathered	SS11G	27.5 - 29.0	1.5	4-6-7 –			
- 30 - 31		Some iron staining from 30.0' to 40.0'		SS12G	30.0 - 31.5	1.0	2-3-5			
- 32 - 33 - 34				ST02G	32.5 - 34.5	1.3	- 700 -			
- 35 - 36				SS13G	35.0 - 36.5	1.5				
- 37 - 38 - 39		Sand content increasing at 37.5'		SS14G	37.5 - 39.0	1.5	- 4-6-6 -			
- 40 <u>40.0</u> - 41	677.2	SANDY LEAN CLAY, CL, 10YR 5/6 (and 10YR 5/1 (gray), low to medium p moist to wet		SS15G	40.0 - 41.5	1.5	2-4-3			



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Client Borehole ID N/A Stantec Boring No. WBF-B05											
C	lient		Tennes	see Valley Authority	Boring Location			68 N; 2,362,709	9.29	E NAD27	Plant Local
P	roject	Number	175668	050	Surface Eleva	itio	n <u>717.2 ft</u>	Elevatio	on l	Datum_	NGVD29
		ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 43 - 44	42.5	674.7		LEAN CLAY WITH SAND, CL, 10YR 4 low plasticity, very soft, wet	I/1 (dark gray),		SS16G	42.5 - 44.0	42.5 - 44.0	1.5	1-1-1 -
- 45 - 46 - 47	47.5	669.7					ST03G	45.0 - 47.0	45.0 - 47.0	2.0	
- 48 - 49				SILTY SAND, SM, 10YR 4/1 (dark gra to medium dense, wet, with some fine subrounded, alluvial gravel			SS17G	47.5 - 49.0	47.5 - 49.0	1.5	1-1-1 -
- 50 - 51	<u>50.6</u> 51.6	<u>666.6</u> 665.6		Siltstone, light gray brown to dark gray moderately hard, highly weathered, dr			SS18aG SS18bG	50.0 - 50.6 50.6 - 51.2	50.0 - 51.2	1.2	– 21-38-50/2" Began Core
- 52 - 53 - 54 - 55 - 56 - 56	57.2	660.0		No recovery			0	51.6 - 57.2 5.6	51.6 - 57.2	0.0	0 -
- 57 - 58 - 58 - 59 - 59 - 59 - 59 - 60 - 61 - 61 - 62	51.2	000.0		Shale (70%) With Limestone (30%) Shale, dark green gray, very soft, high place to clay, limited recovery Limestone, dark green gray and dark g moderately hard to very soft, highly we fractured, staining and calcite on fract	gray, eathered, highly		0	57.2 - 62.2 5.0	57.2 - 62.2	2.0	40
C74 EID BOKING FO2 14260600 MBF TDEC							0	62.2 - 67.2 5.0	62.2 - 67.2	1.1	22



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Client Borehole	ID _N/A	A	Stantec Boring	No. WBF	-B05		
Client	Tennes	ssee Valley Authority	Boring Locatio		8 N; 2,362,709.29	E NAD27	' Plant Local
Project Number	175668	8050	Surface Elevat	ion <u>717.2 ft</u>	Elevation	Datum_	NGVD29
Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 67 67.2 650.0		Bottom of Hole at 67.2 Ft.					
		Top of Rock = 50.6 Ft. Top of Rock Elevation = 666.6 Ft. Begin Core = 51.6 Ft.					-
	Vibrati	ing Wire Piezometers installed. See insta	allation log for backfil	l details.			-
			lit On some were b	and the state of		-)	-
	G = 2: a,b,	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between E	nvironmental and Ge			9)	-
	3: Dep	oths are reported in feet below ground su	nace				-
							_
							_
							_
							-
							_
							-
_							-
0.6DT 2/8/2							-
E DT 2019053							-
EC SUBSURF							_
ER.GPJ TDE							-
трес_окр							-
368050_WBF							-
6 L06 175							-
TVA EIP BORING LOG 175688050, WBF, TDEC, ORDER GPJ TDEC SLIBS UFF DT 20196530 GDT 28821							_
2		Stantec Consu	Ilting Services In	C.			2/8/21



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Client Boreho	e ID N/	A	Stantec Boring	No. WBF	-B12				
Client		ssee Valley Authority	Boring Location		64 N; 2,363,054.9	4 E NAD27	Plant Local		
Project Numb	er 17566	8050	Surface Elevat						
Project Name			Date Started	6/10/20	Complete				
Project Locat		ea Co, Spring City, Tennessee	Depth to Water	- 13.0 ft	Date/Tim		20 10:05		
Inspector T			Depth to Water 6.1 ft Date/Time 6/11/20 08:37						
· · -		antec Consulting Services Inc.	Drill Rig Type a						
-		d Sampling Tools (Type and Size							
Rock Drilling	and Samp	bling Tools (Type and Size)	A						
Overdrill Tool	ng (Type	and Size) N/A			Overdrill	Depth _	N/A		
Sampler Ham	mer Type	Automatic Weight 140	lb Drop <u>30</u>	"	Efficiency	N/A			
Borehole Azir	nuth	N/A	Borehole Inclin	ation (from	Vertical)	N/A			
Reviewed By	K. Bl	akley	Approved By	A. Welshan	S				
Lithology	,		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI		
Depth Ft ³ Elevati	on Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
0.0 699.4		Top of Hole							
- 1		GRAVELLY LEAN CLAY WITH SANE	1	SS01G	0.0 - 1.5	1.4	3-5-9		
- 2		\[FILL] SILTY SAND, SM, 7.5YR 3/4 (dark br		SS02G	1.5 - 3.0	1.3	3-9-10		
- 3		to fine, medium dense, dry, trace clay	′, [FILL]				-		
- 4 4.5 694.9				SS03G	3.0 - 4.5	1.0	6-5-6		
- 5		CLAYEY SAND, SC, 7.5YR 4/3 (brow (strong brown), very fine to fine, loose	·	SS04G	4.5 - 6.0	1.3	4-3-4		
- 6 <u>6.5</u> 692.9				SS05aG	6.0 - 6.5	1.4			
- 7		POORLY GRADED SAND WITH CLA 7.5YR 6/4 (light brown), fine to mediu		SS05bG	6.5 - 7.5		· · · · ·		
^{- 8} 8.3 691.1		SILT WITH SAND, ML, 7.5YR 4/3 (bro	own),	SS06aG SS06bG	7.5 - 8.4 8.4 - 9.0	1.5	3-3-2		
- 9 ₈₈ - 10		non-plastic, soft, moist		SS07G	9.0 - 10.5	1.3	2-2-4		
12 15 15 15 15 15 11 11 12				SS08G	10.5 - 12.0	1.5	2-3-2		
⁸ ⊢ 12 				SS09aG	12.0 - 12.8		-		
- 13 +		SILTY SAND, SM, 10YR 5/6 (yellowis		SS09bG	12.8 - 13.5	1.5	2-2-2		
ല 27 – 14 26339000 090 – 15		7.5YR 4/3 (brown), very fine to mediu loose, thin seams of brown clayey san throughout	-	SS10G	13.5 - 15.0	1.5	1-2-2		
og− 15 		Wet at 13.0'		SS11G	15.0 - 16.5	1.5	1-2-2		
989954 - 17 901 50				SS12G	16.5 - 18.0	1.5	2-1-2		
				SS13G	18.0 - 19.5	1.5	- 1-2-2		



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С	ient E	Borehole	ID N	I/A		Stantec Borin	g N	lo. WBF	-B12			
С	ient		Tenn	esse	ee Valley Authority	Boring Location			64 N; 2,363,054	4.94	E NAD27	Plant Local
Pi	oject	Number	1756	680	50	Surface Eleva	atio	n <u>699.4</u> ft	Elevatio	on E)atum_1	NGVD29
		ithology	1			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphi	ic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 19 - 20 - 21	- <u>19.</u> 2-				SILTY SAND, SM, 10YR 4/4 (dark yell fine to coarse, very loose, moist to wet sandstone and shale fragments			SS14G	19.5 - 21.0	19.5 - 21.0	1.5	
- 22 - 23 - 24	22.6	676.8		•	SANDY SILT, ML, 2.5Y 4/1 (dark gray) very soft, wet, trace angular rock fragm			SS15aG SS15bG	22.0 - 22.6 22.6 - 23.5	22.0 - 23.5	1.5	- 2-2-1 _ -
- 25 - 26 - 27					Split spoon sample obtained from 25.5 following attempted shelby tube with no			ST01G	25.5 - 27.5	25.5 - 27.5	0.0	
- 28 - 29 - 30								SS16G	28.0 - 29.5	28.0 - 29.5	1.5	- WH-WH-2 _
- 31 - 32	32.5	666.9						SS17G	30.5 - 32.0	30.5 - 32.0	1.5	WH-WH-1 - -
- 33 - 34 - 35					SILTY SAND, SM, 2.5Y 5/1 (gray) and olive brown), fine to medium, medium of Increasing gravel content below 34.2 fe	dense, moist		SS18G	33.0 - 34.5	33.0 - 34.5	1.5	- WH-11-15 _
10/22/20	35.9 36.8	663.5 662.6			Weathered shale bedrock		_	SS19G	35.5 - 36.8	35.5 - 36.8	1.2	3-19-50/4" ⁻
DER.GPJ TDEC SUBSURF DT 2019(Refusal / Bottom of Hole at 36.8 Ft. Top of Rock = 35.9 Ft. Top of Rock Elevation = 663.5 Ft.							-
EP BORING LOG 175669050_WEF_TDEC_ORDER GPJ TDEC SUBSURF DT 20196590 GDT			1: E G	= E = G	g wire piezometers installed. See installa nvironmental Sample Custody (two Spli Seotechnical Sample Custody	t Spoons may be r	requ	uired to obta		nple)	1	-
TVA EIP BORIN			2: a	b,c	denote Split Spoon divided between En s are reported in feet below ground sur	vironmental and G face	Geot	echnical Sa	mples			



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Clie	ent P	Borehole	ID N/A	λ	Stantec Boring	No. WBF	-B13			
	ent	5.510101		see Valley Authority	Boring Locatio			.56 F	NAD27	Plant Local
		Number		· · · ·	Surface Eleva	-				
	-			DEC Order	Date Started		Comple			
	-			ea Co, Spring City, Tennessee	Depth to Wate					0 07:30
	-		-	Logger T. Greenwell	Depth to Wate					0 10:29
	-			ntec Consulting Services Inc.	Drill Rig Type	-		ne		
	-			Sampling Tools (Type and Size)						
			-	ling Tools (Type and Size) N/A		. , -	,			
		-	•	and Size) N/A			Overdrill	Dei	oth N	I/A
		-		Automatic Weight 140 I	b Drop 3	0"			I/A	
		le Azimut			Borehole Incli			N/A	١	
		ed By _			Approved By	•				
	L	ithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth	Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
	0.0	699.6		Top of Hole						
			000000000000000000000000000000000000000	Auger Without Sampling - Crushed sto	one and riprap					
- 1	1.5	698.1								-
- 2		000.1	A & A	CLAYEY GRAVEL, GC, 5YR 5/2 (red	dish gray), fine					_
	2.6	697.0		to medium, medium dense, dry, [FILL]		SS01G	1.5 - 3.0	.5 - 3.0	1.3	4-8-9
- 3			•••	WELL GRADED SAND WITH SILT, S	W-SM, 7.5YR					-
- 4				2.5/1 (black), medium to coarse, medi	um dense, dry,	SS02G	3.0 - 4.5	3.0 - 4.5	1.2	5-13-12
	4.9	694.7	•••	trace gravel, [CCR]		000000	4.5 - 4.9	σ		-
- 5	4.9	094.7	┇╻┇╻ <u></u> ┇╻	SILTY SAND, SM, 5YR 3/2 (dark redd	lish brown)	SS03aG		4.5 - 6.0	1.4	3-4-4
- 6				very fine to fine, loose, dry to moist, tra	'	SS03bG	4.9 - 6.0	6.0		-
			┢┇┢┇┝┇╎	with brown lean clay, [FILL]		00040	00 75	6.0 -		0.4.0
- 7						SS04G	6.0 - 7.5	- 7.5	1.4	3-4-3
- 8	8.2	691.4	┟┇┟┇┟┇╎			SS05aG	7.5 - 8.2	7.1		_
				SANDY LEAN CLAY, CL, 7.5YR 4/3 (brown), low	SS05bG	8.2 - 9.0	7.5 - 9.0	1.5	1-1-2
- 9 -	9.0	690.6	fififi	→ plasticity, soft to firm, moist, slight organization	anic odor, trace /					-
s− 10			╏┥╏┥╏┥╎	fine roots	/	SS06G	9.0 - 10.5	9.0 - 10.5	1.4	2-2-2
10/22/01			┟┆ ┟┇┊	SILTY SAND, SM, 7.5YR 4/3 (brown),				σ		
5 - 11 ⊥			╽┫┥┫	fine, loose, moist to wet, iron oxide sta clay crontent decreasing with depth	aming, trace	SS07G	10.5 - 12.0	10.5 - 12.0	1.0	2-2-3
- 12			₩ <u>₩</u> ₩₩₩	Trace dark brown staining from 9.0' to	9.5'		-	12.0	-	-
			╟┼┼┼╎			60000	120 125	12.0 -	1 4	222
⁸⁰ – 13			┰ ╁ <u>┰</u> ╁╁╽			SS08G	12.0 - 13.5	2.0 - 13.5	1.1	2-3-2
R – 14			╟┇┝┇┝					13.5		_
			┇┼┇┼┇┼ ┆			SS09G	13.5 - 15.0	3.5 - 15.0	1.2	1-2-2
b u - 15			╟┇╽┇			SS10aG	15.0 - 15.8			-
- - - 16	15.8	683.8	ŀi i i j j		× 05 00			15.0 - 16.5	1.4	2-2-2
	16.5	683.1		POORLY GRADED SAND WITH CLA √ 10YR 3/4 (dark yellowish brown), very		SS10bG	15.8 - 16.5	5		
<u></u> – 17			╟┇┝┇┝┇╎	loose, wet		SS11G	16.5 - 18.0	16.5 - 18.0	1.3	- WH-2-3
			┇┼┇┽┇┽┆	SILTY SAND, SM, 10YR 4/3 (brown),	very fine to			18.0 18	-	-
	10.0	<u></u>	╟┇┝┇┝	fine, loose, wet	-	SS12aG	18.0 - 19.0	18.0 - 19	10	104
≧ L_1 9⊥́	19.0	680.6						9.5	1.3	1-2-4

Stantec Consulting Services Inc.





Client E	Borehole ID	N/A		Stantec Boring	No. WBF	-B13			
Client	Te	enness	ee Valley Authority	Boring Locatio		96 N; 2,363,057	7.56	E NAD27	7 Plant Loca
Project	Number 17	56680	050	Surface Elevat	tion <u>699.6 ft</u>	Elevatio	on D	atum_	NGVD29
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PS
Depth Ft ³	Elevation Gra	phic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
19 20 21			CLAYEY SAND, SC, 10YR 5/6 (yellov 10YR 6/4 (light yellowish brown), very loose, moist		SS12bG	19.0 - 19.5			
22 23 23.5	676.1				ST01G	21.5 - 23.5	21.5 - 23.5	1.6	400
24 25			SANDY SILT, ML, 7.5YR 5/4 (brown) (light gray), non-plastic, soft, wet, trac Split spoon sample obtained from 23. following attempted shelby tube with r	e clay 5 to 25.0	ST02G	23.5 - 25.5	23.5 - 25.5 25	0.0	400
26 27					SS13G	25.0 - 26.5	5.0 - 26.5	1.4	WH-3-4
28 29	670.1				SS14G	27.5 - 29.0	27.5 - 29.0	0.3	WH-1-1
29.5 29.5 30 31 32	670.1		SILTY SAND, SM, 10YR 4/1 (dark gra medium, very loose, wet, Laminated, With clay from 30.0' to 30.7'		SS15G	30.0 - 31.5	30.0 - 31.5	1.4	WH-WH-V
33 34			With trace clay, wood from 33.6' to 34	.0'	SS16aG SS16bG	32.5 - 33.6 33.6 - 34.0	32.5 - 34.0	1.5	WH-1-1
35 35.0 36 36.1	664.6 [] 663.5		Shale, light gray green to gray, very s bedded, completely weathered to high \75° bedding angle		SS17G	35.0 - 36.1	35.0 - 36.1	1.0	10-26-50/
			Refusal / Bottom of Hole at 36.1 Ft. Top of Rock = 35.0 Ft.	/					
	1	: E = E G = (Top of Rock Elevation = 664.6 Ft. g wire piezometers installed. See instal Environmental Sample Custody (two Sp Geotechnical Sample Custody	lit Spoons may be re	equired to obtai		nple)		
	2	G = (: a,b,c		nvironmental and Ge			nple)		



Page: 1 of 2

С	lient E	Borehole	ID N/A	A	Stantec Boring	g N	o. WBF	-B14			
	lient			see Valley Authority	Boring Locatio			59 N; 2,363,044	4.22	E NAD27	Plant Local
		Number			Surface Eleva			Elevatio			
	-			DEC Order	Date Started		6/16/20	Comple			
	-	Location		ea Co, Spring City, Tennessee	Depth to Water 19.4 ft Date/Time 6/16/20 12:30				20 12:30		
				Logger T. Greenwell	Depth to Wate						
	•			intec Consulting Services Inc.	Drill Rig Type						
0	verbu	rden Drill	ling and	Sampling Tools (Type and Size)							
R	ock D	rilling and	d Samp	ling Tools (Type and Size) <u>N/A</u>							
0	verdri	ll Tooling	(Type	and Size) N/A				Overdril	l De	pth _	I/A
S	ample	er Hamme	er Type	Automatic Weight 140 lt	Drop <u>3</u>	0"		Efficiency		N/A	
		le Azimu		N/A	Borehole Inclin		•	·	N/.	A	
R	eview	ed By _	K. Bla	ikley	Approved By		A. Welshan	S			
		ithology			Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	700.9	റുറുറു	Top of Hole							
				Auger Without Sampling - Crushed sto	ne and riprap						
- 1			0202020								-
- 2	2.0	698.9									-
				CLAYEY GRAVEL, GC, 5YR 5/2 (redd to medium, medium dense, dry, [FILL]	lish gray), fine		SS01aG	2.0 - 3.2	2.0 - :	1.5	12-14-18
- 3	3.2	697.7		WELL GRADED SAND WITH SILT AN			SS01bG	3.2 - 3.5	3.5		-
- 4			••••	SW-SM, 7.5YR 2.5/1 (black), medium	,		SS02G	3.5 - 5.0	3.5	1.2	3-6-8
				medium dense, dry, [CCR]			33029	5.5 - 5.0	. 5.0	1.2	5-0-0
- 5			••• 						5.0		-
- 6							SS03G	5.0 - 6.5	- 6.5	1.2	4-9-10
- 7	7.0	693.9					SS04aG	6.5 - 7.0	6.	1	-
ľ	0.0	<u></u>		LEAN CLAY WITH GRAVEL, CL, 5YR			SS04bG	7.0 - 8.0	5 - 8.0	1.4	3-2-3
- 8	8.0	692.9		red) to 10YR 6/2 (light brownish gray),	low to medium						-
- 9			 	SILTY SAND, SM, 10YR 2/2 (very darl	k brown) fine		SS05G	8.0 - 9.5	.0 - 9.5	1.2	3-8-8
1			╟┇┝┇┝┇╎	medium dense to loose, moist							
- 10			║╂╂╏╂╏┤	Yellowish - brown poorly graded sand 8.4'	from 8.2' to		SS06G	9.5 - 11.0).5 - 11	1.0	3-3-4
- 11			╟┇┝┇┝	0.4					Ö		-
	11.8	689.1	╢┼╏┼┇ ┼║				SS07aG	11.0 - 11.8	11.0 - 1	1.2	3-2-3
- 12	12.5	688.4	₩ ₩₩₩₩	SILTY SAND, SM, 7.5YR 5/4 (brown),	fine to		SS07bG	11.8 - 12.5	12.5		-
- 13					0/0 /		SS08G	12.5 - 14.0	12.5 -	1.3	WH-3-2
	44.5	000 0		SILTY CLAYEY SAND, SC-SM, 10YR brown), fine, very loose to loose, moist					14.0	1.5	₩11- 0- 2
<u> </u>	14.3	686.6		Mottled gray	,		SS09aG	14.0 - 14.3	14.0		100
- 15			║╡┥┇┥╏╽	SILTY SAND, SM, 7.5YR 5/4 (brown),			SS09bG	14.3 - 15.5	- 15.5	1.4	1-2-3 _
- 16			╟┇╏┇	medium, loose, wet, poorly graded, tra	ce clay				15.5	1	-
			║┇┥┇┥┇┥┆				SS10G	15.5 - 17.0	5 - 17.(1.3	2-3-3
- 17			╟┇╏┇						0 17		-
10^{-10}			║╡┥┇┥┇┥╎				SS11G	17.0 - 18.5	.0 - 18	1.3	1-3-2
			╟┇╏┇						σ		
L-49-											



Page: 2 of 2

Client E	Borehole ID N/A		Stantec Boring	g No. WBF	-B14		
Client	Tenness	see Valley Authority	Boring Locatio		59 N; 2,363,044.	22 E NAD27	Plant Local
Project	Number 1756680	050	Surface Eleva	tion <u>700.9 ft</u>	Elevatio	n Datum_ t	NGVD29
L	Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 19 <u>¥</u> - 20		SILTY SAND, SM, 7.5YR 5/4 (brown), medium, loose, wet, poorly graded, tra <i>(Continued)</i>		SS12G SS13G	18.5 - 20.0 20.0 - 21.5	18.5 - 20.0 20.0 - 2	2-3-3 - 2-2-2
- 21 - 22 - 23				SS14G	22.5 - 24.0	21.5	2-3-3
- 24 - 25 <u>25.3</u> - 26	675.6	LEAN CLAY WITH SAND, CL, 10YR 4 grayish brown) with 7.5YR 6/3 (light b		SS15aG SS15bG	25.0 - 25.3 25.3 - 26.5	25.0 - 26.5	- 3-5-7
- 27 - 28 <u>28.0</u>	672.9	medium plasticity, hard, moist, iron ox Mottled with gray silt SILTY SAND, SM, 10YR 5/2 (grayish fine to fine, loose, wet, poorly graded	ide staining,	SS16aG SS16bG	27.5 - 28.0 28.0 - 29.0	27.5 - 29.0	3-4-4
- 29 - 30 - 31		Lens of lean clay with sand from 30.0	to 30.3'	SS17aG SS17bG	30.0 - 30.3 30.3 - 31.5	30.0 - 31.5 1.4	
- 32 - 33		Wood fragments (less than 1/2" diame and 33.8'	eter) at 31.5'	SS18G	32.5 - 34.0	32.5 - 34.0	WH-1-4
- 34 - 35 - 35 - 35.6	666.4 •	Shale, gray, fine grained, very soft, co weathered to highly weathered	mpletely	SS19G	35.0 - 35.6	35 0.6	- 13-50/1"
905301.G D1 W 10-04	· · · · · · · · · · · · · · · · · · ·	Refusal / Bottom of Hole at 35.6 Ft.				- G 35 .0	
		Top of Rock = 34.5 Ft. Top of Rock Elevation = 666.4 Ft.					
IDEC_ONVERVEN	Vibratir	ng wire piezometers installed. See instal	lation log for backfil	l details.			-
	G = 2: a,b,c	Environmental Sample Custody (two Spl Geotechnical Sample Custody c denote Split Spoon divided between Er ths are reported in feet below ground su	vironmental and G			ple)	
2 2 2							



Client Borehole ID N/A		Stantec Boring	No. WBF	-B15		
	see Valley Authority	Boring Location			93 E NAD27	7 Plant Local
Project Number 1756680)50	Surface Elevati	ion 714.7 ft	Elevatio	ו Datum	NGVD29
Project Name WBF TD		Date Started	6/18/20	 Complet	ed 6/18/	20
Project Location Rhea		Depth to Water		Date/Tin		20 14:17
		Depth to Water		Date/Tin	ne N/A	
Drilling Contractor Stan		Drill Rig Type a				
Overburden Drilling and	Sampling Tools (Type and Size)	4-1/4" HSA, 2" S	S w/o liners			
Rock Drilling and Sampli	ng Tools (Type and Size) <u>N/A</u>					
Overdrill Tooling (Type a	•			Overdrill	Depth _	N/A
Sampler Hammer Type	Automatic Weight 140 lb		"		N/A	
	N/A	Borehole Inclin	•		N/A	
Reviewed By K. Blak	kley	Approved By	A. Welshan	S		
Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	
Depth Ft ³ Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
0.0 714.7	Top of Hole					
	Topsoil	/	SS01G	0.0 - 1.5		3-3-4
	FAT CLAY WITH SAND, CH, 5YR 4/6 to 5YR 3/2 (dark reddish brown), high				ώn	-
- 2	moist, slight organic odor, trace fine ro			4 5 0 0		-
			SS02G	1.5 - 3.0	0.8	4-4-3
					ω	-
			SS03G	3.0 - 4.5	1.0	2-2-3
					_	
- 5						-
			SS04G	5.0 - 6.5	50 60 1.4	2-3-3
					сл	
- 7						-
7.8 706.9			SS05aG	7.5 - 7.8	~	
- 8	SILT, ML, 5YR 2.5/1 (black), non-plast plasticity, very soft, wet, occasional rec		SS05bG	7.8 - 9.0	5- 	1-1-1
- 9 🕁	brown Fat clay intermixed with silty CC					-
ଳ 10	Reddish brown clay layer from 10.0' to	10.6'	SS06aG	10.0 - 10.6		_
			SS06bG	10.6 - 11.5	1.4	WH-WH-WH
						-
					12.1	-
			SS07G	12.5 - 14.0	1.4	1-1-1
କ୍ଟି– 14						-
изана — 10 — 11 — 112 — 13 — 14 — 15 — 16						_
				150 15-	15.0	
⁹⁹ - 16			SS08G	15.0 - 16.5	1.2	3-1-1
					Ħ	
r̃g – 17 ≞					Ц	-
[≜] L_ ₁₀						



Client E	Borehole	IDN/A		Stantec Boring	No. WBF	-B15		
Client		Tennes	see Valley Authority	Boring Location			3 E NAD27	Plant Local
Project	Number	175668	050	Surface Elevat	ion <u>714.7 ft</u>	Elevation	Datum_	NGVD29
I	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
· 18 · 19 · 20			SILT, ML, 5YR 2.5/1 (black), non-plas plasticity, very soft, wet, occasional re brown Fat clay intermixed with silty Co (Continued)	ddish-brown to	SS09G SS10aG	17.5 - 19.0 20.0 - 21.1		1-1-1
21 21.1	693.6	and the second s			SS10bG	21.1 - 21.5	1.5	1-3-12
· 22 · 23	691.8		CLAYEY GRAVEL, GC, 10YR 7/3 (ve and 10YR 5/2 (grayish brown), fine to medium dense, wet, with CCR intermi	medium,	SS11aG	22.5 - 22.9	0.9	9-46-50/5"
23.9	690.8	\sim	Shale, gray, very fine grained, soft, the highly weathered, 60° bedding angle	n bedded,	SS11bG	22.9 - 23.9	0.9	9-40-30/3
			Refusal / Bottom of Hole at 23.9 Ft.					
			Top of Rock = 22.9 Ft. Top of Rock Elevation = 691.8 Ft.					
		Vibrati	ng wire piezometers installed. See instal	lation log for backfill	details.			
		G = 2: a,b,	Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between Er ths are reported in feet below ground su	nvironmental and Ge			le)	



	lient F	Borehole		Α	Stantec Boring	n No WBF	-B16A			
	lient	Dorenole		see Valley Authority	Boring Locatio			.891	E NAD27	Plant Local
		Number		· · ·	Surface Eleva					
	-			DEC Order	Date Started					
				ea Co, Spring City, Tennessee	Depth to Wate	-	Date/Ti			20 14:48
	-		-	Logger T. Greenwell	Depth to Water N/A Date/Time N/A					
	•			intec Consulting Services Inc.	Drill Rig Type					
	-			Sampling Tools (Type and Size						
R	lock D	rilling and	d Samp	ling Tools (Type and Size)	A					
c	verdri	ill Tooling	ј (Туре а	and Size) N/A			Overdrill	De	pth _N	N/A
s	ample	er Hamme	er Type	Automatic Weight 140	lb Drop 3	0"	Efficiency	1	N/A	
В	oreho	le Azimu	th	N/A	Borehole Incli	•	·	N//	Ą	
R	leview	ed By _	K. Bla	ikley	Approved By	A. Welshar	IS			
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	713.6		Top of Hole						
	0.8	712.8		Topsoil		SS01G	0.0 - 1.5	0.0 -	1.1	4-5-4
- 1				LEAN CLAY WITH SAND, CL, 7.5YR	· •			1.5		
- 2				brown) to 7.5YR 6/3 (light brown), me firm, dry, trace fine roots, [FILL]	dium plasticity,			1.5		
	3.0	710.6				SS02G	1.5 - 3.0	- 3.0	0.8	3-4-4
- 3	3.0	710.0		LEAN CLAY WITH SAND, CL, 7.5YR	5/4 (brown) to					-
- 4				7.5YR 6/1 (gray), low to medium plas	ticity, firm to	SS03G	3.0 - 4.5	5.0 - 4.5	0.9	3-3-2
				soft, moist, trace CCR streaks, interm trace fine roots, [FILL]	ixed soil fill,					
- 5										-
- 6						SS04G	5.0 - 6.5	5.0 - 6.	0.5	2-2-2
ľ								5		
- 7						SS05G	6.5 - 8.0	6.5 -	1.3	2-3-3
	8.0	705.6					0.0 0.0	8.0		200
8 -	Į.			LEAN CLAY, CL, 2.5Y 4/1 (dark gray)			o o	8.0		-
- 9				soft to firm, moist, moderate organic or sand, trace fine roots, occasionally mi	,	SS06G	8.0 - 9.5	8.0 - 9.5	1.2	2-1-2
8/20			$\langle / / \rangle$	sand, trace fine roots, occasionally mi clay, [FILL]	ixed with red tat					
5 – 10						SS07G	9.5 - 11.0	1.5 - 11	1.5	2-3-2
- 11	11.3	702.3	$\langle / / \rangle$					Ö		-
RF DT 20	11.0	102.0	///	LEAN CLAY, CL, 2.5Y 7/3 (pale brow	n) to 2.5Y 6/2	SS08G	11.0 - 12.5	11.0 -	1.4	2-2-2
Hosens – 12				(light brownish gray), medium plastici			11.0 12.0	12.5		
			$\langle / / \rangle$	[FILL] Mottled orange, dark gray lean clay fr	om 12 5' to	SS09aG	12.5 - 13.2	12.5		-
ER.GPJ	14.0			13.2'	0 12.0 10	SS09bG	13.2 - 14.0	5 - 14.0	1.5	1-2-3
5 – 14	14.0	699.6		FAT CLAY WITH SAND, CH, 2.5Y 7/3	3 (nale brown)					-
≝ - 15				to 2.5Y 6/2 (light brownish gray), high		SS10G	14.0 - 15.5	4.0 - 16	1.5	1-2-4
N_06088				to very hard, moist, mottled orange, tr				5.5		
- 16				lenses with iron oxide staining		SS11G	15.5 - 17.0	15.5 -	1.0	3-6-8
							10.0 - 11.0	17.0		0-0-0
100 - 10 111 - 11 112 - 13 113 - 14 114 - 15 115 - 16 117 - 17								17.0 - 1		-
≸ L_₁₀_						SS12G	17.0 - 18.5	18.5	1.5	2-12-22



Client E	Borehole	IDN/A		Stantec Boring No. WBF-B16A						
Client		Tennes	see Valley Authority	Boring Locatio		444,673.23 N; 2,362,147.89 E NAD27 Pla				
Project	Number	1756680	050	Surface Eleva	tion <u>713.6 ft</u>	23 N; 2,362,147.89 E NAD27 Elevation Datum n Depth Ft ³ Rec. Ft Run Ft Rec. Ft 18.5 - 20.0 1.2 20.0 - 21.5 1.3 21.5 - 22.8 1.2 18.5 1.2 18.5 1.2 Rec. Ft 1.3 21.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.2 1.5 1.3 1.5 1.3 1.5 1.3 1.5 1.3 1.4 1.4	NGVD29			
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/P		
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %		
18 19 20 <u>20.7</u>	692.9		FAT CLAY WITH SAND, CH, 2.5Y 7/ to 2.5Y 6/2 (light brownish gray), high to very hard, moist, mottled orange, t lenses with iron oxide staining (Con	n plasticity, firm race shale	SS13G SS14G		, I I I I I I I I I I I I I I I I I I I	2-12-26 9-22-30		
21 22 22.8	690.8		Shale, light gray brown to gray, fine of bedded, highly weathered, damp, iro 60° bedding angle		SS15G	N		16-46-50/		
			Refusal / Bottom of Hole at 22.8 Ft. Top of Rock = 20.7 Ft. Top of Rock Elevation = 692.9 Ft.		<u> </u>	· I				
		2: a,b,c	Geotechnical Sample Custody c denote Split Spoon divided between E ths are reported in feet below ground su	invironmental and G urface	eotechnical Sa	mples				



SUBSURFACE LOG

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	Client F	Borehole		Α	Stantec Boring	No WBF	-B28		
	Client	20101010	-	see Valley Authority	Boring Locatio			BENAD27	Plant Local
		Number			Surface Eleva				
	•			DEC Order	Date Started	6/8/21	Complete		
	-			ea Co, Spring City, Tennessee	Depth to Wate		Date/Time		
			-	Logger B. Herries	Depth to Wate		Date/Time		
	•			intec Consulting Services Inc.	Drill Rig Type				
	Overbu	ırden Dril	ling and	I Sampling Tools (Type and Size) 5-7/8" 3-Wing U	pdraft Bit, 2" S	S w/o liners, 3" ST		
	Rock D	rilling an	d Samp	ling Tools (Type and Size)	۱				
	Overdri	ill Tooling	g (Type	and Size) N/A			Overdrill D	epth _^	N/A
	•		• •	Automatic Weight 140			Efficiency _	89.9%	
		le Azimu	-	N/A	Borehole Inclin	•		I/A	
	Review	ed By	M. Mo	cDonald	Approved By	A. Welshan	IS		
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
De	epth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	711.3	රුදුරුදුරුදුර	Top of Hole					
	0.6	710.7		CRUSHED LIMESTONE GRAVEL, 10 \gray), moist, angular to subangular, [F					
- 1				Observations from auger cuttings. Ge					-
- 2				sampling was not performed from 0.0'	- 20.0'.				-
				LEAN CLAY, CL, 2.5YR 3/1 (dark red	dish gray), low				
- 3				plasticity, moist, [FILL]					-
- 4									-
- 5									_
- 6									-
- 7									-
- 8									-
- 9									-
²²⁷ – 10	,								_
.GDT 3/									
0190530	11.5	699.8							-
окрев. свл трес subsure of 2016/2 - 11 - 12 - 12 - 13 - 14 - 14 - 14			///	Observations from auger cuttings. Ge	otechnical				-
nsans				sampling was not performed from 0.0'	- 20.0'.				
일 - 13	3		$\langle / / \rangle$	LEAN CLAY, CL, 2.5YR 3/1 (dark red plasticity, moist	dish gray), low				-
RDER.GF									
									-
BM - 15	5								-
5668050			$\langle / / \rangle$						
16 – 12 10	j								-
SORING LOG	,		$\langle / / \rangle$						-
VA EIP E									
⊢ ⊑_ 18	<u> </u>	1	<u>× / / /</u>		Iting Sonvicos In				3/16/22



С	lient E	Borehole	ID N/A		Stantec Boring	g No	o. WBF	-B28			
С	lient		Tennes	see Valley Authority	Boring Locatio			09 N; 2,362,976	6.13	E NAD27	' Plant Local
P	roject	Number	175668	050	Surface Elevat	tion	711.3 ft	Elevatio	on E	Datum_	NGVD29
	I	ithology			Overburden:	S	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description	Rock Core:	ŀ	RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19	20.0	691.3		LEAN CLAY, CL, 2.5YR 3/1 (dark red plasticity, moist <i>(Continued)</i>	dish gray), low						-
- 20 - 21 - 22	22.5	688.8		SANDY LEAN CLAY, CL, 7.5YR 5/4 (low plasticity, very soft, dry to moist	brown), fine,		SS01G	20.0 - 21.5	20.0 - 21.5	1.5	
- 23 - 24		000.0		LEAN CLAY WITH SAND, CL, 7.5YR brown), low to medium plasticity, very			SS02G	22.5 - 24.0	22.5 - 24.0	1.5	WH-WH-WH
- 25 - 26 - 27							SS03G	25.0 - 26.5	25.0 - 26.5	1.5	– WH-WH-WH_
- 28 - 29	28.1 	683.2 		POORLY GRADED SAND, SP, 7.5YF brown), fine, very loose, moist	R 3/3 (dark		SS04G	27.5 - 29.0	27.5 - 29.0	1.5	WH-WH-WH
- 30 - 31				LEAN CLAY WITH SAND, CL, 7.5YR brown), low to medium plasticity, very			SS05G	30.0 - 31.5	30.0 - 31.5	1.5	— wh-wh-wh __
- 32 - 33 - 34							SS06G	32.5 - 34.0	32.5 - 34.0	1.3	- WH-WH-1 -
2 SUBSURF DT 20190530.GDT - 30190530.GDT - 301905300.GDT - 301905300.GDT - 301905300.GDT - 301905300.GDT - 301905300.GDT - 3019050000000000000000000000000000000000	35.0	676.3		CLAYEY SAND, SC, 7.5YR 3/3 (dark very loose, moist to wet	brown), fine,		SS07G	35.0 - 36.5	35.0 - 36.5	1.5	
- 37 - 38 - 38 - 38 - 39 - 39	37.5	673.8		SANDY LEAN CLAY, CL, 7.5YR 4/4 (medium plasticity, very soft, moist	brown), low to		SS08G	37.5 - 39.0	37.5 - 39.0	1.5	- WH-WH-WH -
- 40 - 41 - 41 - 42	40.5	670.8		SILTY SAND, SM, 7.5YR 4/2 (brown), non-plastic, very loose, wet	fine,		SS09aG SS09bG	40.0 - 40.5 40.5 - 41.5	40.0 - 41.5	1.4	– WH-WH-WH_ -



	ID N/A		Stantec Boring	No. WBF	-B28		
Client		see Valley Authority	Boring Location		9 N; 2,362,976.	13 E NAD27	Plant Local
Project Number	175668	050	Surface Elevat			n Datum_I	
Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
43 43.5 667.8 44 45 45.0 666.3 45 46.0 665.3		SILTY SAND, SM, 7.5YR 4/2 (brown) non-plastic, very loose, wet <i>(Continu</i> POORLY GRADED SAND SOME CL 3/1 (very dark gray), fine, loose, wet POORLY GRADED SAND LITTLE CI 3/1 (very dark gray), fine, dense, mois	AY, SP, 2.5Y -AY, SP, 2.5Y	SS10aG SS10bG SS11aG	42.5 - 43.5 43.5 - 44.0 45.0 - 46.0	425- 440 450 1.5	1-2-4 - - 5-13-17
46 40.0 000.0 47 47.8 663.5		POORLY GRADED SAND WITH SIL GRAVEL, SP-SM, 2.5Y 4/2 (dark gray medium to coarse, very dense	T AND	SS11bG SS12G	46.0 - 46.5 47.2 - 47.8	46.5 0.6	47-50/1"
	1: E = G = 2: a,b,c	Bottom of Hole at 47.8 Ft. Top of Rock = 47.7 Ft. Top of Rock Elevation = 663.6 Ft. vibrating wire piezometers installed. See Environmental Sample Custody (two Sp Geotechnical Sample Custody c denote Split Spoon divided between El ths are reported in feet below ground su	lit Spoons may be re nvironmental and Ge	equired to obtai		ble)	-

APPENDIX B.5 PERMANENT WELLS

Table of Contents

Subsurface Boring Legend	1
MW-1	2
MW-2	4
MW-3	6
WBF-100	8
WBF-101	10
WBF-102Alt2 (Sonic)	12
WBF-103	14
WBF-104	
WBF-105	18
WBF-106	20

Subsurface Boring Legend

Lithology Graphics

Symbol	Lithology
	Fill
	Top Soil
070707070 00000000 07000000 07070700	Gravel
0 0 0 0 0 0 0 0 0 0 0 0	Well Graded Gravel (GW)
0 0 0 0 9 9 0 0 0 0 0	Poorly Graded Gravel (GP)
	Silty Gravel (GM)
	Silty, Clayey Gravel (GC-GM)
	Clayey Gravel (GC)
	Well Graded Gravel with Silt (GW-GM)
	Well Graded Gravel with Clay (GW-GC)
	Poorly Graded Gravel with Silt (GP-GM)
	Poorly Graded Gravel with Clay (GP-GC)
••••	Well Graded Sand (SW)
	Poorly Graded Sand (SP)
	Silty Sand (SM)
	Silty, Clayey Sand (SC-SM)
	Clayey Sand (SC)
	Well Graded Sand with Silt (SW-SM)
	Well Graded Sand with Clay (SW-SC)
	Poorly Graded Sand with Silt (SP-SM)
	Poorly Graded Sand with Clay (SP-SC)
	Silt (ML)
	Silty Clay (CL-ML)
	Lean Clay (CL)
	Organic Silt (OL)
	Elastic Silt (MH)
	Fat Clay (CH)
	Organic Clay (OH)
	Non-Durable Shale
	Durable Shale
	Coal
	Limestone
· · · · · · · · · · · · · · · · · · ·	Sandstone

Other Graphics

Symbol	Description						
	Denotes environmental analytical sample interval						
	Denotes SS sample interval						
	Denotes ST sample interval						
	Denotes DP sample interval						
	Denotes RS sample interval						
	Denotes RC sample interval						
Ā	First water level reading						
Ţ	Second water level reading						
Go	Common Abbreviations						

Common Abbreviations

Abbreviation	Definition				
DP	Direct Push				
HA	Hand Auger				
HSA	Hollow Stem Auger				
N/A	Not Applicable				
NR	Not Recorded				
RC	Rock Core				
RQD	Rock Quality Designation				
RS	Rotary Sonic				
SS	Split Spoon				
ST	Shelby Tube				
WH	Weight of Hammer				
WR	Weight of Rod				

General Notes

The boring logs include sample numbering used during drilling. For assigned Environmental Analytical Sample ID numbers, see relevant Environmental Chain-of- Custody forms from the drilling date range listed on each log.

For pH readings and additional field data, see applicable field documentation (e.g., Soil pH Data Form) from the drilling date range listed on each log.

Lithology Graphics are based on TVA drafting standards.

		WELL LO	DG NO. IVIVV-1		Pag	ge 1 of 2
PR	OJECT: Watts Bar Monitoring W	ell Installation	CLIENT: Wright Brothe Charleston, T	ers Constructi N	on Compa	ny
SIT	E: 6868 Watts Bar Highway Spring City, Tennessee					
GRAPHIC LOG	LOCATION: See Exhibit A-2 Latitude: 35.60561° Longitude: 84.78114°	Stantec Survey 02/ N35 36 20.05, W84 Top of Well Casing Ground Surface Ele	46 52.26 (NAD83) Elev 711.92'		LLATION TAILS	DEPTH (Ft.) WATER LEVEL OBSERVATIONS SAMPLE TYPE
<u>/////////////////////////////////////</u>	DEPTH 0.5 TOPSOIL					
	0.7 <u>GRAVEL</u> , (limestone) <u>LEAN CLAY (CL)</u> , reddish-brown, lime 7.5 <u>FAT CLAY (CH)</u> , reddish-brown 9.0 <u>LEAN CLAY (CL)</u> , brown, with rock fra		noist			 5
	- sandy below 10' - moist below 15.3' - watertable at 16'	Initial water	45 minutes during development level 9.22' during development Water level 11' at 20 gallons er level at 11.15' at 13.5 gallons Water level 12' at 9 gallons	8/21/14 s purged Sch. 40 v s purged riser	f e was	10 -
Holl Aband	Stratification lines are approximate. In-situ, the trac cement Method: ow Stem Augers onment Method: itoring Well Installed	nsition may be gradual.	Notes: No sample cuttings w Difficult dri Start Time Surface co	Type: Automatic s collected below 15. ere recovered. Iling/increased down 9:35am, Finish Time mpletion includes 4" s into boring, 5%5 sg.	5' due to saturati pressure at 29' (Drilling) 10:25ar square aluminum	m covers
	WATER LEVEL OBSERVATIONS			el bollards as pad cori		1.7/05/0011
\bigtriangledown	Encountered groudwater at 16'				Well Completed	
\square	Water level during development activities	51 Lost Mound	Drive, Suite 135 a, Tennessee Project No.:		Driller: C. Pento Exhibit: A-4	

		WELL LO	DG NO.	MW-1		Pa	age 2	of 2
	OJECT: Watts Bar Monitoring Well Ins	tallation		Vright Brothers Cor Charleston, TN	nstruction (
SIT	IE: 6868 Watts Bar Highway Spring City, Tennessee				1			
GRAPHIC LOG	LOCATION: See Exhibit A-2 Latitude: 35.60561° Longitude: 84.78114°	<u>Stantec Surve</u> N35 36 20.05, Top of Well C Ground Surfa	W84 46 52. asing Elev.	26 (NAD83) - 711.92'			DEPTH (Ft.)	WATER LEVEL OBSERVATIONS
	DEPTH LEAN CLAY (CL), brown, with rock fragment			- · · ·		0H0		- 0
		_ (2" diameter Sch, 40 well screen		 30 -	
	33.4 Boring Terminated at 33.37 Feet				1' sand filter below well base			
	Stratification lines are approximate. In-situ, the transition ma	ay be gradual.		Hammer Type: Auto	omatic			
	icement Method: Iow Stem Augers			Notes:				
	lonment Method: nitoring Well Installed	-						
	WATER LEVEL OBSERVATIONS			Well Started: 7/25/201	4 Well	Complet	ed: 7/25/	/2014
	Encountered groudwater at 16' Water level during development activities 8/21/14	51 Lost Mound	Drive, Suite 135			r: C. Per		
Advan Holl Aband Mor		Cnattanoog	ja, Tennessee	Project No.: E2144503	Exhib	oit: A	~ +	

BORING LOG NO. MW-2

						Pa	age 1	of 2	
	OJECT: Watts Bar Monitoring Well In	stallation	CLIENT: Wrigh Charl	nt Brothers Con eston, TN	structi	on Compa	any		
SIT	E: 6868 Watts Bar Highway Spring City, Tennessee								
GRAPHIC LOG	LOCATION: See Exhibit A-2 Latitude: 35.60325° Longitude: 84.77917°	Stantec Survey N35 36 15.01, W Top of Well Cas Ground Surface	/84 46 43.71 (NA sing Elev 696.2			LATION TAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
$\overline{\mathbf{v}}$	DEPTH 0.5 GRAVEL								
	0.5 GRAVEL LEAN CLAY (CL), dark brown to medium b medium brown, below 8.5' 15.5 - higher sand content below 15'	Surge blocked i Initial water I	th rock fragments, sa 30 minutes during de evel 20.27' during de Water level 21.4' at Water level at 21.5' a Water level 21.25' at	velopment 8/21/14 velopment 8/21/14 4.5 gallons purged at 9 gallons purged	-2" diamet Sch. 40 v riser		 5 10 115		
	CLAYEY SAND (SC)				4 bags of Bentonite used - 8 bags o Filter Sar was used	• was	 20 - 225 -		
	Stratification lines are approximate. In-situ, the transition	nay be gradual.		Hammer Type: Auto	matic				
Holl Aband	cement Method: low Stem Augers lonment Method: nitoring Well Installed	_		Notes: Start Time 11:30am Finish Time (Drilling) Surface completion in extending 3' into borin and 4" steel bollards a	cludes 4" s a, 5'X5' sa	uare reinforced			,
	WATER LEVEL OBSERVATIONS			Boring Started: 7/25/20	14	Boring Comple	eted: 7/2	5/2014	ı I
∇	No Free Water Encountered During Drilling Water level during development activities 8/21/1	4	Drive, Suite 135	Drill Rig: D009-Simco		Driller: C. Per			
			a, Tennessee	Project No.: E2144503		Exhibit: A	-5		

		BORING LC	DG NO. MW-2		Pa	age 2	of 2	
PR	OJECT: Watts Bar Monitoring Well	nstallation	CLIENT: Wright Brothers Charleston, TN	Constructio	n Comp	any		
SIT	E: 6868 Watts Bar Highway Spring City, Tennessee							
GRAPHIC LOG	LOCATION: See Exhibit A-2 Latitude: 35.60325° Longitude: 84.77917°	<u>Stantec Survey (</u> N35 36 15.01, Wa Top of Well Casi Ground Surface	84 46 43.71 (NAD83) ng Elev 696.22			DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH CLAYEY SAND (SC) (continued)						0	
	- very moist below 27'			2" diamete Sch. 40 we screen			-	
	33.8			1' sand filte below well base		30 - 	-	
	Boring Terminated at 33.82 Feet			Dase				
	Stratification lines are approximate. In-situ, the transition	n may be gradual.	Hammer Type:	Automatic				
Advan	cement Method:		Notes:					
Holl	ow Stem Augers							
	onment Method: itoring Well Installed							
	WATER LEVEL OBSERVATIONS	75	Boring Started: 7/	25/2014 E	oring Compl	eted: 7/2	25/2014	ļ
∇	No Free Water Encountered During Drilling Water level during development activities 8/21				oriller: C. Per	nton		
		51 Lost Mound	I Drive, Suite 135 ja, Tennessee Project No.: E214	4503 E	xhibit: A	-5		-

BORING LOG NO. MW-3

				<u> </u>		Pa	ige 1	of 2	
	OJECT: Watts Bar Monitoring Well Ins	tallation	CLIENT: Wrigh Charle	it Brothers Con eston, TN	structio	on Compa	any		
SIT	E: 6868 Watts Bar Highway Spring City, Tennessee								
GRAPHIC LOG	Latitude: 35.60406° Longitude: 84.77872°	Stantec Survey N35 36 11.66, W Fop of Well Cas Ground Surface	84 46 44.88 (NA ing Elev 704.2	D83) 9		LATION AILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
<u>, 1, 1, 1</u>	DEPTH 0.7 TOPSOIL							_	
	 <u>LEAN CLAY (CL)</u>, dark brown, sandy, moist - very moist at 9' <u>13.0</u> - greater sand content at 12.5' <u>CLAYEY SAND (SC)</u>, brown - wet below 13.5' 	Initial water le	30 minutes during de evel 12.81' during de Water level 14' at 4 /ater level at 13.75' a Water level 13.6' at	velopment 8/21/14 4.5 gallons purged at 9 gallons purged	4 bags of Bentonite used 2" diamete Sch. 40 w riser	er (1)			
	Stratification lines are approximate. In-situ, the transition m	ay be gradual.		Hammer Type: Autor	natic		25 -		
		1							
Holl Aband	cement Method: ow Stem Augers onment Method: itoring Well Installed	-		Notes: Start Time 2:05pm Finish Time (Drilling) / Surface completion in extending 3' into borin and 4" steel bollards a	cludes 4" so g, 5'X5' squ	are reinforced	n covers concret	s e pads	5,
	WATER LEVEL OBSERVATIONS			Boring Started: 7/25/20	14	Boring Comple	eted: 7/2	5/2014	4
	No Free Water Encountered During Drilling	llerr	acon	Drill Rig: Geoprobe		Driller: C. Pen		5 1-	
<u> </u>	Water level during development activities 8/21/14	 51 Lost Mound 	Drive, Suite 135						
		Chattanooga	a, Tennessee	Project No.: E2144503		Exhibit: A-	6		

BORING LOG NO. MW-3

				-5		P	age 2	of 2			
	OJECT: Watts Bar Monitoring Well In	nstallation	CLIENT: Wright Brothers Construction Company Charleston, TN								
SIT	E: 6868 Watts Bar Highway Spring City, Tennessee							1			
GRAPHIC LOG	Latitude: 35.60406° Longitude: 84.77872° N	<u>tantec Survey 02</u> 135 36 11.66, W84 op of Well Casing Ground Surface E	4 46 44.88 (NAD) g Elev 704.29	83)			DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE		
	<u>CLAYEY SAND (SC)</u> , brown <i>(continued)</i> light brown, below 25' 32.8				-8 bags of - Filter Sand was used 2" diameter Sch. 40 wel screen 1' sand filte below well base		 30 - 	-			
	Boring Terminated at 32.78 Feet										
	Stratification lines are approximate. In-situ, the transition	may be gradual.		Hammer Type: Auto	matic				<u> </u>		
Holl Aband	cement Method: ow Stem Augers onment Method: nitoring Well Installed			Notes:							
	WATER LEVEL OBSERVATIONS			Boring Started: 7/25/20	14 B	oring Comp	eted: 7/2	25/201	4		
∇	No Free Water Encountered During Drilling		acon	Drill Rig: Geoprobe	D	riller: C. Pei	nton				
	Water level during development activities 8/21/	51 Lost Mound	Drive, Suite 135 a, Tennessee	Project No.: E2144503			-6				
		Jiananoogi			15		-				



Page: 1 of 2

Project Number 175565303				Location	N	I35°36'13.	99", W84°4	6'54.12" (NAD83)	
Project Name TVA - WBF Well Installations			Boring No. WBF-100 Total Depth 58.5 ft				h 58.5 ft		
County Rhea, TN					Surface Elev	vation	737	7.4 ft (NGVI	D29)
Project Type		Well Installations			Date Started	1 t	1/9/16	Completed	11/9/16
Supervis	sor	B. Bryant Dri	iller G. Tho	mpson	Depth to Wa	ater 4	4.0 ft	Date/Time	11/9/16
Logged	Ву	C. Sutherland			Depth to Wa	ater 4	1.0 ft	Date/Time	11/9/16
Litholo	ogy		Overburden	Sample #	Depth	Rec. Ft.	Blows	Mois.Cont. %	
Elevation	Depth	Description	Rock Core	RQD	Run	Rec. Ft.	Rec. %	Run Depth	Remarks
737.4	0.0	Top of Hole							
-		Clayey Sand, light damp, medium de		SPT-1	0.0 - 1.5	0.0	13-9-9		4" Monitoring - Well Installed _
- - 732.4	5.0			SPT-2	2.5 - 4.0	0.0	8-5-3		-
- 729.9	7.5	Sandy Lean Clay, gray, damp, medit (Fill)		SPT-3	5.0 - 6.5	1.0	6-4-6		-
-	7.5	Lean Clay with Sa orange-brown with	n gray	SPT-4	7.5 - 9.0	0.5	2-2-4		-
- - 725.9	11.5	mottling, damp, m stiff (Fill)	edium	SPT-5	10.0 - 11.5	1.4	2-3-3		-
-		Clayey Sand, gray medium dense (Fi		SPT-6	12.5 - 14.0	0.8	3-3-3		-
_ 722.4	15.0	Sandy Lean Clay,			150 105	0.1	455		-
- - 719.9	17.5	orange-brown, da medium stiff (Fill)		SPT-7	15.0 - 16.5	0.1	4-5-5		-
-		Clayey Sand, orange-brown, da moist, medium de		SPT-8	17.5 - 19.0	1.3	2-3-4		-
-				SPT-9	20.0 - 21.5	1.3	3-6-6		-
-				SPT-10	22.5 - 24.0	1.7	2-2-4		-
	07.5			SPT-11	25.0 - 26.5	1.6	4-3-5		-
- 709.9 - -	27.5	Sandy Lean Clay, red-orange to		SPT-12	27.5 - 29.0	1.5	2-3-6		-
		orange-brown, da moist, medium sti		SPT-13	30.0 - 31.5	1.5	WH-2-3		-
NIFICIARSNI, LEGACY WBF, PROJECTARY				SPT-14	32.5 - 34.0	1.5	2-6-21		-
				SPT-15	35.0 - 36.5	1.3	6-20-10		-

Stantec Consulting Services Inc.



Project	Number	175565303			Location	N	35°36'13.	.99", W84°4	6'54.12" (NAD83)
Project I	Name _	TVA - WBF Well In	stallations		Boring No.	V	VBF-100	Total Dept	h58.5 ft
Lithold	рду		Overburden	Sample #	Depth	Rec. Ft.	Blows	Mois.Cont. %	
Elevation	Depth	Description	Rock Core	RQD	Run	Rec. Ft.	Rec. %	Run Depth	Remarks
- - - <u>- 696.9</u>	40.5	Sandy Lean Clay, red-orange to orange-brown, dar moist, medium stif (<i>Continued</i>)			37.5 - 39.0	0.6	13-17-17		
-		Clay Sand, orange to brown, moist to medium dense to	o wet,		40.0 - 41.5 42.5 - 44.0	1.4	5-8-10 5-10-11		- - -
-				SPT-19	45.0 - 46.5	1.2	5-7-7		-
-				SPT-20	47.5 - 49.0	1.4	11-17-19		Analytical . Sample (SPT-20)
-				SPT-21	50.0 - 51.5	1.5	2-1-1		Analytical Sample (SPT-21)
-		- Gravels and cobble	bles 53.5	SPT-22	52.5 - 54.0	1.5	7-6-22		Analytical . Sample (SPT-22)
- - -		- 58.5		SPT-23	55.0 - 56.2	1.2	41-35- 50+(1.2')		-
- 678.9 58.5									-
<u>- 678.9 58.5 </u> - -		Auger Refusal / Bottom of Hole							_



С	lient F	Borehole	ID N/A	λ	Stantec Boring No. WBF-101						
	lient	2. 511010		see Valley Authority	Boring Locatio				7.15	E NAD27	Plant Local
		Number		<u> </u>	Surface Eleva		-				
	-			DEC Order	Date Started		6/11/19	 Comple			
	-			ea Co, Spring City, Tennessee	Depth to Wate						9 12:30
	-		-	Logger G. Budd	Depth to Wate						
				Intec Consulting Services Inc.	Drill Rig Type						
0	verbu	rden Dril	ling and	Sampling Tools (Type and Size)	4-1/4" HSA, 2" \$	SS w/	o liners				
		-									
				and Size)8-1/4" HSA overdrill of bo				Overdrill		·	34.0 ft
			• •	Automatic Weight 140 I	•			Efficiency		N/A	
		le Azimu			Borehole Incli		•	Vertical)	N//	Α	
R	eview	ed By _	C. Ko	ска	Approved By		. Price				
		_ithology			Overburden:	Sa	ample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	F	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	698.7	ඉතුරුතුරුතුර	Top of Hole							
	0.7	698.0		Crushed stone, grass and topsoill, [FII Limestone gravel from 0.0' to 0.4'	_L]		SS01aG	0.0 - 0.7	0.0 - 1	0.9	12-8-7
- 1	1.5	697.2		☐ LEAN CLAY, CL, 7.5YR 5/6 (strong b)	rown) and		SS01bG	0.7 - 1.5	5		-
- 2				7.5YR 6/1 (gray), stiff to medium stiff, limestone and chert gravel, [FILL]			SS02G	1.5 - 3.0	1.5 - 3.0	1.1	6-5-7
- 3	3.5	695.2		SANDY LEAN CLAY, CL, 7.5YR 5/6 (o ,.		SS03aG	3.0 - 3.5			-
- 4				─ low plasticity, very stiff, dry, with sands \[FILL]	stone gravel,		SS03bG	3.5 - 4.5	3.0 - 4.5	1.2	3-4-5
				LEAN CLAY, CL, 7.5YR 3/4 (dark brow			000000	0.0 1.0			
- 5				medium plasticity, soft, moist, with sor sand, with organics			SS04G	4.5 - 6.0	4.5 - 6.0	1.5	3-4-4
- 6 - 7							SS05G	6.0 - 7.5	6.0 - 7.	1.3	- 3-2-4
									5		
- 8 - 9							SS06G	7.5 - 9.0	.5 - 9.0	1.4	2-2-3
	710.5	688.2					SS07G	9.0 - 10.5	9.0 - 10.5	1.5	2-2-3
4F DT 20190530.GL	/ 10.0	000.2		SANDY LEAN CLAY, CL, 7.5YR 4/6 (low to medium plasticity, very soft to s			SS08G	10.5 - 12.0	10.5 - 12.0	1.5	2-1-3
- 12 - 13 - 13							SS09G	12.0 - 13.5	12.0 - 13.5	1.5	- 1-2-2
				Clayey sand lens, wet from 13.5' to 14	l.0'		SS10G	13.5 - 15.0	13.5 - 15.0	1.4	WH-1-1
— 15 				Trace organics from 15.0' to 16.5'			SS11G	15.0 - 16.5	15.0 - 16.5	1.5	 1-2-2
V = 17	18.0	680.7					SS12G	16.5 - 18.0	16.5 - 18.0	1.5	1-1-2
L _18_	10.0	000.7									



С	lient Borehole IDN/A				Stantec Boring	g١	lo. WBF	-101			
С	lient		Tennes	see Valley Authority	Boring Location			99 N; 2,362,987	7.15	E NAD27	' Plant Local
Pi	roject	Number	175668	050	Surface Eleva	atio	n <u>698.7 ft</u>	Elevatio	on [Datum_	NGVD29
		_ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	h Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19				CLAYEY SAND, SC, 10YR 5/6 (yellow fine, very loose, wet	vish brown),		SS13G	18.0 - 19.5	18.0 - 19.5	1.5	
- 20				Sandy clay lenses from 19.5' to 21.0'			SS14G	19.5 - 21.0	19.5 - 21.0	1.5	WH-WH-1
- 21 - 22							SS15G	21.0 - 22.5	21.0 - 22.5	1.5	WH-1-1
- 23 - 24							SS16G	22.5 - 24.0	22.5 - 24.0	1.2	WH-1-1
- 25				With fragments of sandstone from 23. Color change to 10YR 5/1 (gray) at 24			SS17G	24.0 - 25.5	24.0 - 25.5	1.5	wн-wн-w <u>н</u>
- 26 - 27				Color change to 10YR 5/6 (yellowish b sandy clay at 25.5'	prown), with		SS18G	25.5 - 27.0	25.5 - 27.0	1.0	WH-WH-WH
- 28							SS19G	27.0 - 28.5	27.0 - 28.5	1.5	WH-WH-1
- 29	29.5	669.2		SILTY SAND, SM, 10YR 5/1 (gray), fir			SS20aG SS20bG	28.5 - 29.5 29.5 - 30.0	28.5 - 30.0	1.5	WH-1-1
- 30 - 31				wet	ie, very loose,		SS21G	30.0 - 31.5	30.0 - 31.5	1.5	 1-1-4
- 32	32.7	666.0		Abundant wood fragments from 31.3' t Sandy clay lens at 32.0'	o 32.7'		SS22aG	31.5 - 32.7	31.5 - 33.0	1.5	2-4-9
- 33 _{07/61/1} - 34	34.0	664.7		WELL GRADED SAND WITH GRAVE 5/1 (gray), very fine to coarse, medium gravel subangular to subrounded			SS22bG SS23aG	32.7 - 33.0 33.0 - 34.0	33.0 - 34.5	1.5	3-24-19
0190530.GDT	34.5	664.2		Shale, green gray, moderately hard, c Weathered	alcareous,		SS23bG	34.0 - 34.5			
C SUBSURF DT 2				No Refusal / Bottom of Hole at 34.5 Ft.							-
TDEC_ORDER.GPJ TDE(Top of Rock = 34.0 Ft. Top of Rock Elevation = 664.7 Ft.							-
A EP BORING LOG 175668060 WBF_ITDEC_ORDER.GPJ TDEC SUBSURF DT 20190530 GDT			G = 2: a,b,e	Environmental Sample Custody (two Spl Geotechnical Sample Custody c denote Split Spoon divided between En ths are reported in feet below ground sur	vironmental and G				nple)	-



	Client E	Borehole	ID N/A	A la	Stantec Boring	g N	o. WBF	-102Alt2 (S	onic)	
	Client			see Valley Authority				53 N; 2,362,237.49		Plant Local
F	Project	Number		· · · · ·	Surface Eleva					
	-	Name		DEC Order	Date Started		6/21/19	Complete		
	•	Location		ea Co, Spring City, Tennessee	Depth to Wate	er —		Date/Time		
	-	or E. Sr		Logger E. Smith	Depth to Water N/A Date/Time N/A					
	•	-		W Drilling (Subcontractor); Stantec	•			probe GV5 Sonic; (-	R, #953
	-			Sampling Tools (Type and Size)	0 71					
			-	ling Tools (Type and Size) N/A						
		-	•	and Size) N/A				Overdrill D	epth I	N/A
5	Sample	er Hamme	er Type	_N/A WeightN/A	Drop _N	J/A		Efficiency _	N/A	
E E	Boreho	le Azimu	th	N/A	Borehole Inclin	nati	ion (from	Vertical)	/A	
F	Review	ed By	B. Eva	ans	Approved By		L. Price			
		_ithology			Overburden:	5	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
De	pth Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft	Rec. Ft	Rec. %
- 0	0.0	719.2		Top of Hole						
				8-1/4" HSA was used on 6/21/19 to bli to 10.0' for the installation of a permar	Ũ					
- 1				PVC surface casing. Boring was later						-
- 2				depth through the installed surface ca	asing using					_
				sonic drilling methods. Refer to the bo adjacent boring WBF-102Alt1 for desc						
- 3				material between 0-11.0' in the vicinity						-
				WBF-102Alt2.						
- 4										-
- 5										_
- 6										-
- 7										_
- 8										-
- 9										_
20										
¹² / ₆ – 10										_
11 - 11	11.0	708.2								_
DT 2015				POORLY GRADED GRAVEL WITH S	-					-
⁴ 12	12.0	707.2		_ CLAY, GP-GM, 7.5YR 5/2 (brown), ve ∖non-plastic, loose, wet	ry fine to fine, /					-
DECSU					/					
⊢ 13				SANDY FAT CLAY, CH, 5YR 5/4 (red very fine, high plasticity, very firm, mo	<i>,</i> .		RS01	11.0 - 16.0	4.2	N/A
- 14	14.0	705.2	///	homogeneous, well graded	,		1.001		7.2	
TDEC				GRAVELLY WELL GRADED SAND, S	SW, 5YR 6/3					
[₩] / ₉ – 15				(light reddish brown), very fine to fine,						_
- 16	16.0	703.2	•	loose, moist, homogeneous, weak cer ~ poorly graded gravel	nentation,					_
9019				GRAVELLY POORLY GRADED SAN						
NING 17	17.0	702.2		\sim 5/4 (reddish brown), very fine to fine, I						_
T A EP			8 8 8 9 8 8 8 9	dense, moist, homogeneous, moderat						
					Iting Services Ir					9/21/20



Client E	Borehole	ID N/A	Ν	Stantec Boring	No. WBF	-102Alt2 (S	onic)	
Client			see Valley Authority	Boring Locatior		53 N; 2,362,237.49		Plant Loca
	Number			Surface Elevati		Elevation		
	Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
18 19 20 20.0 21 21.0	700.2 699.2 698.2		SANDY POORLY GRADED GR/ (dark reddish gray), fine to coarse loose, moist, homogeneous (Co SANDY POORLY GRADED GR/ (reddish brown), fine to coarse, n loose, moist, homogeneous, wea SILTY POORLY GRADED GRAN (reddish brown), fine to coarse, lo wet, homogeneous, weak cemen No Refusal / Bottom of Hole at 21.0 Ft.	e, low plasticity, ontinued) AVEL, GP, 5YR 5/4 non to low plasticity, ak cementation VEL, GP, 5YR 5/3 ow plasticity, loose,	RS02E	16.0 - 21.0	5.0	N/A
		G = 2: a,b,o	Environmental Sample Custody (tw Geotechnical Sample Custody c denote Split Spoon divided betwee ths are reported in feet below grour	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	
		G = 2: a,b,o	Geotechnical Sample Custody c denote Split Spoon divided between	en Environmental and Ge			e)	

Stantec 🚺

SUBSURFACE LOG

Page: 1 of 2

С	Client Borehole ID <u>N/A</u>				Stantec Boring	g N	o. WBF	-103			
C	lient		Tennes	see Valley Authority	Boring Locatio				3.22	E NAD27	Plant Local
P	roject	Number	175668	3050	Surface Eleva	itio	n 721.1 ft	Elevatio	on E)atum №	IGVD29
P	roject	Name	WBF T	DEC Order	Date Started		6/6/19	Comple	eted	6/11/1	9
	-			ea Co, Spring City, Tennessee	Depth to Wate	er –	10.0 ft				9 12:28
	-		-	Logger _G. Budd	Depth to Wate				me	N/A	
				Intec Consulting Services Inc.	Drill Rig Type	_					
0	verbu	rden Dril	ling and	Sampling Tools (Type and Size)	4-1/4" HSA, 3" S	SS۱	w/o liners				
R	ock D	rilling and	d Samp	ling Tools (Type and Size)							
0	verdri	II Tooling	(Type	and Size)8-1/4" HSA overdrill of bo	pring			Overdrill	De	pth 1	8.5 ft
S	ample	er Hamme	er Type	Automatic Weight 140	b Drop <u>3</u>	80"		Efficiency		N/A	
B	oreho	le Azimu	th	N/A	Borehole Inclin	nat	ion (from	Vertical)	N//	A	
R	eview	ed By _	C. Ko	cka	Approved By		L. Price				
		_ithology			Overburden:		Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	721.1		Top of Hole							
	0.3	720.8		─_Topsoil, grass			SS01G	0.0 - 1.5	0.0 -	1.5	8-11-9
- 1				LEAN CLAY WITH GRAVEL, CL, 7.5Y	(0		00010	0.0 1.0	1.5	1.0	-
- 2				brown), medium stiff, dry, limestone gr fragments of siltstone, [FILL]	avel and		SS02aG	1.5 - 2.6			-
-	2.6	718.5							5 - 3.0	1.4	8-6-10
- 3	3.5	717.6		Limestone gravel, 7.5YR 5/1 (gray), [F	ILL]		SS02bG SS03aG	2.6 - 3.0 3.0 - 3.5	3.0		-
- 4	4 5	740.0		LEAN CLAY, CL, 7.5YR 5/8 (strong br			SS03bG	3.5 - 4.5) - 4.5	1.4	25-21-24
	4.5	716.6	\square	_ moist, with limestone and siltstone gra ∖manganese, [FILL]	vel, organics,						
- 5	5.6	715.5		LEAN CLAY SOME SAND, CL, 7.5YR	5/8 (strong		SS04aG	4.5 - 5.6	4.5 - 6.	1.5	10-14-15
- 6	6.0	715.1	\Box	_ hrown) and 7.5YR 5/2 (brown), stiff, m	oist, with fine		SS04bG	5.6 - 6.0			-
				sand, siltstone gravel, manganese, an	d organics,		SS05G	6.0 - 7.5	6.0 -	1.5	4-7-8
- 7							00000	0.0 7.0	7.5	1.0	
- 8				LEAN CLAY, CL, 7.5YR 3/2 (dark brow abundant organics	vn), moist, with				7.5		-
			$\langle / / \rangle$	SANDY LEAN CLAY, CL, 10YR 5/4 (y	ellowish		SS06G	7.5 - 9.0	.5 - 9.0	1.2	3-5-6
- 9				brown), low plasticity, soft to medium s					6		-
- 10	Z		$\langle / / \rangle$	fine sand			SS07G	9.0 - 10.5	.0 - 10	1.5	5-6-7
				Color change to 10YR 6/8 (brownish y 10YR 6/1 (gray), low to medium plastic	,				5		
- 11			$\langle / / \rangle$	still to very stiff, with fragments of sand	lstone, angular		SS08G	10.5 - 12.0	10.5 -	1.5	14-19-26
	10.0	700.0		to subangular, increasing with depth a	t 9.0'			10.0 12.0	12.0		11 10 20
- 12	12.2	708.9	·	POORLY GRADED SAND, SP, 10YR	6/8 (brownich				12.0		-
- 13				yellow), fine to medium, medium dense	``	12.0/15	SS09E	12.0 - 13.5	0 - 13.6	1.2	9-11-10
5.22			· · · ·	fragments of weathered sandstone		.0-201					
5 – 14				Color change to N 2.5/ (black) at 12.9' Color change to 10YR 5/6 (yellowish b	rown), loose to	90606	SS10E	13.5 - 15.0	3.5 - 15	1.0	9-11-16
ē 15	15.0	706.1		medium dense at 13.5', weathered sar					5.0		_
nenoog				\fragments from 14.7' to 15.0'	/		SS11G	15.0 - 16.5	15.0 -	1.5	21-36-32
² – 16	16.5	704.6	$\langle / / \rangle$	LEAN CLAY, CL, 10YR 5/6 (yellowish			00110	10.0 - 10.0	16.5	1.5	21-30-32
10^{-1} - 10 - 10 - 11 - 12 - 13 - 13 - 14 - 15 - 16 - 17	17.0	704.1	I/I	stiff to hard, dry to moist, iron oxide standard highly weathered siltstone			SS12aG	16.5 - 17.0	16.1	1	-
LEF BC				CLAYEY SAND, SC, 10YR 5/6 (yellow	/ish brown)		SS12bG	17.0 - 18.0	5 - 18.0	1.5	14-32-48
L ₁₈			Y / / /						0		

Stantec Consulting Services Inc.



Client Borehole IDN/A Stantec Boring No. WBF-103						
Client Tennessee V	Valley Authority	Boring Location		9 N; 2,361,678.22	E NAD27	Plant Local
Project Number 175668050		Surface Elevati	on <u>721.1 ft</u>	Elevation [Datum_N	IGVD29
Lithology		Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevation Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
	e to medium, wet					_
stif	AN CLAY, CL, 10YR 5/6 (yellowish ff to hard, dry to moist, iron oxide sta ghly weathered siltstone <i>(Continued</i>	ining, with				_
No	o Refusal / ottom of Hole at 18.5 Ft.					_
						-
						_
G = Geot	ronmental Sample Custody (two Split technical Sample Custody)	_
2: a,b,c den 3: Depths ar	note Split Spoon divided between En re reported in feet below ground surf	vironmental and Geo face	otechnical Sar	nples		_
						_
						_
						_
						_
						_
						_
77770						_
2 196530 GPT 5						_
105.04F 012						_
1 DEC S						-
DEC. ORDER						_
19W 0008995						_
EIP BORING LOG 175688050, WBF_TDEC_ORDER GPJ TDEC SUBSURF DT 20198530 GDT 9/17/20						_
TVA EIP BK						-



С	lient E	Borehole	ID N/A	A	Sta	ntec Boring	g N	o. WBF	-104			
	lient			see Valley Authority					57 N; 2,363,103	3.76 I	E NAD27	7 Plant Local
		Number		· · · ·	-	face Eleva						
	-			DEC Order	-	te Started				eted	6/13/	19
	-			ea Co, Spring City, Tennessee	Dep	oth to Wate	er –	10.2 ft	 Date/Ti			19 13:20
In	spect	or G. Bu	bbu	Logger G. Budd	-	oth to Wate			Date/Ti	me	N/A	
	-			Intec Consulting Services Inc.	Dril	I Rig Type	and	d ID CME	850XR, #953			
0	verbu	rden Drill	ling and	Sampling Tools (Type and Size	e)4-1	1/4" HSA, 2" S	SS v	v/o liners				
		-	•	ling Tools (Type and Size) <u>N</u>								
				and Size)8-1/4" HSA overdrill of					Overdril	l De	pth	27.7 ft
	-			•	0 lb	_ • _			Efficiency		N/A	
		eviewed By C. Kocka						•	Vertical)	N//	Ą	
R	eview	ed By _	C. Ko	cka	Арр	proved By		L. Price				
		_ithology			(Overburden:	S	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dept	th Ft ³	Elevation	Graphic	Description		Rock Core:	_	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	694.1	୦୫୦୫୦୪୦	Top of Hole								
				Crushed stone, grass, topsoil, limest chert, [FILL]	tone gra	avel,		SS01G	0.0 - 1.5	0.0 - 1	0.5	3-7-5
- 1	1.5	692.6								1.5		-
- 2				SANDY LEAN CLAY, CL, 10YR 2/2		ark		00000	4 5 . 0 0	1.5		
				brown), soft to very soft, moist to we	et			SS02G	1.5 - 3.0	- 3.0	0.5	5-3-2
- 3				Wet from 3.0' to 4.5'						ω		-
- 4								SS03G	3.0 - 4.5	.0 - 4.5	0.8	WH-WH-WH
	5.0	690.1						SS04aG	4.5 - 5.0			
- 5	5.0	689.1		CLAYEY SAND, SC, 10YR 4/4 (dark	k vellow	ish				4.5 - 6	1.2	1-1-2
- 6			[]]]	brown), fine, very loose, moist	, yenen			SS04bG	5.0 - 6.0	ö		_
								SS05G	6.0 - 7.5	6.0	0.7	WH-1-1
- 7			[]]]					33056	0.0 - 7.5	- 7.5	0.7	VVII-I-I
- 8										7		_
Ű		005 (SS06G	7.5 - 9.0	5 - 9.0	1.0	1-WH-1
- 9	9.0	685.1		SANDY LEAN CLAY, CL, 10YR 4/4	(dark w	ollowich						-
²⁷ / ⁶⁷ – 10 T	7			brown), low plasticity, very soft, mois		ellowish		SS07G	9.0 - 10.5	9.0 - 10	0.9	WH-WH-WH
0.GDT	10.5	683.6		Sand lens, fine from 9.3' to 9.5'				0000-0	10 5 11 0	5	-	
⁵⁹⁰⁶⁰² - 11	11.0	683.1		SILTY SAND, SM, 10YR 4/4 (dark y				SS08aG	10.5 - 11.0	10.5 -	1.2	1-1-1
12	12.0	682.1		│ and 10YR 2/1 (black), very fine to fin _ ∖wet	ne, very	loose,		SS08bG	11.0 - 12.0	12.0		_
TVA EIP BORNOLOOD 7760000 WEF, TOEC, CADER, CAP, TDEC, SUBSURF DT 20192500 79027 - 10 - 11 - 12 - 1302 - 14 - 15 - 16 - 12 - 16 - 17 - 16 - 10 - 12 - 10 - 10 - 10 - 10 - 10 - 10			\langle / \rangle	SANDY LEAN CLAY, CL, 10YR 4/3	(brown)) and		00000	10.0	12.0		-
unit - 13				10YR 5/1 (gray), low plasticity, very				SS09G	12.0 - 13.5	- 13.5	1.0	WH-1-1 _
RDER.G				CLAYEY SAND, SC, 10YR 4/3 (brov	wn) and	10YR 5/1				13		
ю — 14				(gray), fine, very loose, moist, with o	organics			SS10G	13.5 - 15.0	1.5 - 15	1.1	WH-1-1
≝15				gravel, fine, subangular to subround	led					0		_
5668050								SS11G	15.0 - 16.5	15.0 -	1.0	1-1-1
⁴² – 16										16.5		
า ภาพ พาพ								00466	40 5 40 5	16.5		
A EIP E	18.0	676.1						SS12G	16.5 - 18.0	- 18.0	0.5	2-4-4
- <mark>- 18 -</mark>	10.0	070.1		Stantec Cons								2/9/20



Client B	orehole l	IDN/A		Stantec Boring	Stantec Boring No. WBF-104						
Client		Tenness	see Valley Authority	Boring Location		57 N; 2,363,103.7	76 E NAD27	Plant Loca			
Project	Number	1756680	050	Surface Elevati	on <u>694.1 ft</u>	Elevation	Datum_I	NGVD29			
L	ithology			Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PS			
Depth Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %			
18 19 19.5	674.6		POORLY GRADED SAND, SP, 10Y yellowish brown), fine, very loose, we	et	SS13G	18.0 - 19.5	0.9	2-1-1			
20 21			CLAYEY SAND, SC, 10YR 4/4 (dark brown), fine, very loose, wet	s yellowish	SS14G	19.5 - 21.0	0.9	1-1-2			
²² 22.5 23	671.6		Color change to 10YR 4/4 (dark yello 10YR 5/1 (gray) at 22.0'	owish brown) and	SS15G SS16aG	21.0 - 22.5 22.5 - 23.5	1.5	WH-1-			
23.5 24	670.6		SANDY LEAN CLAY, CL, 10YR 4/6 brown) and 10YR 5/1 (gray), very so		SS16bG	23.5 - 24.0	1.5	WH-1-2			
25 25.5	668.6		SILTY SAND, SM, 10YR 4/1 (dark g loose, wet	ray), fine, very	SS17G	24.0 - 25.5	0.5	1-1-3			
26			GRAVELLY WELL GRADED SAND, (dark gray), very fine to coarse, very gravel, fine to medium, multicolored,	loose, wet, with	SS18G	25.5 - 27.0	0.6	2-1-2			
27.5 28 28.5	666.6 665.6		Shale, green gray, soft to moderately weathered, moist to dry	y hard, highly	SS19aG SS19bG	27.0 - 27.5 27.5 - 28.5	1.2	8-12-29			
			No Refusal / Bottom of Hole at 28.5 Ft. Top of Rock = 27.5 Ft. Top of Rock Elevation = 666.6 Ft.								
		G = 0 2: a,b,c	Environmental Sample Custody (two S Geotechnical Sample Custody : denote Split Spoon divided between E hs are reported in feet below ground s	Environmental and Geo			le)				

2/9/20



Client Borehole I	ID N/A	A	Stantec Boring	No. WBF	-105			
Client		see Valley Authority	Boring Locatio		70 N; 2,363,041	.85 E	E NAD27	Plant Local
Project Number		· · · ·	Surface Elevat	-				
Project Name			Date Started	6/24/19	 Comple			
		ea Co, Spring City, Tennessee	Depth to Wate	r N/A	Date/Ti		N/A	
Inspector G. Bu			Depth to Wate				N/A	
		intec Consulting Services Inc.	Drill Rig Type a	-				
-		Sampling Tools (Type and Size)	• • •	-				
Rock Drilling and	d Samp	ling Tools (Type and Size)N/A	,					
Overdrill Tooling	(Type a	and Size) 8-1/4" HSA overdrill of bo	oring		Overdrill	De	pth	18.0 ft
Sampler Hamme	er Type	Automatic Weight 140	b Drop <u>30</u>)"	Efficiency	N	N/A	
Borehole Azimut	:h	N/A	Borehole Inclin	•	Vertical)	N/A	4	
Reviewed By _	C. Ko	cka	Approved By	L. Price				
Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³ Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
0.0 699.8	০৯০৯০৯০	Top of Hole						
		Crushed stone, limestone gravel with	some clay	SS01G	0.0 - 1.5	0.0 -	1.5	7-15-12
- 1 1.5 698.3	0000000 000000000000000000000000000000				0.0 1.0	1.5		
- 2	• • • •	WELL GRADED SAND TRACE CLAY	′, SW, 10YR			1		-
		2/1 (black), very fine to coarse, mediu	m dense to	SS02G	1.5 - 3.0	5 - 3.0	1.4	13-14-13
- 3	•	loose, dry, [CCR]						-
- 4				SS03G	3.0 - 4.5	3.0 - 4.	1.5	6-8-10
	•					5	-	
- 5				SS04G	4.5 - 6.0	4.5 -	1.5	7-7-13
	••••					6.0	1.0	1110
- 6 <u>6.2 693.6</u> 6.8 693.0	///	SANDY LEAN CLAY, CL, 5YR 4/4 (re	ddish brown)	SS05aG SS05bG	6.0 - 6.2 6.2 - 6.8	6.0		-
- 7		and 10YR 5/4 (yellowish brown), stiff,	· _	SS05cG	6.8 - 7.5	- 7.5	1.5	10-11-11 _
7.8 692.0		with fragments of siltstone, [FILL]	/	SS06aG	7.5 - 7.8			
- 8		WELL GRADED SAND, SW, 10YR 5/		SS06bG	7.8 - 9.0	7.5 - 9.	1.1	6-4-3
9.0 690.8	44	│brown), very fine to coarse, medium d □ ∖[FILL]	ense, moist,					-
20		LEAN CLAY, CL, 10YR 3/2 (very dark	aravish	SS07G	9.0 - 10.5	9.0 -	1.5	WH-WH-WH
2007 - 10 - 10.5 - 689.3		brown), soft, moist, with very fine sand				10.5		<u> </u>
- 11		fragments of CCR, [FILL]	/ [10.5		
	╅┇╋┇┝┇╎	SANDY LEAN CLAY, CL, 10YR 3/3 (c	lark brown), low	SS08G	10.5 - 12.0	- 12.0	1.5	WH-WH-2
10.5 689.3 10.5 687.8 10.5 687.8 10.5 689.3 10.5 687.8 10.5 6		plasticity, very soft, moist				12		-
	///	SILTY SAND SOME CLAY, SM, 10YF	R 4/3 (brown),	SS09G	12.0 - 13.5	2.0 - 13	1.5	WH-1-1
ER.GPJ	//	CLAYEY SAND, SC, 7.5YR 4/6 (stron	a brown) fing			5		
ອື່ອ 14	///	very loose, moist to wet		SS10G	13.5 - 15.0	13.5 -	1.3	1-2-4
^멷 第 - 15	//	Wet from 12.5' to 13.5'				15.0		
99020 v						15.0		-
الله المراجعة ال مراجعة المراجعة المراجع	//			SS11G	15.0 - 16.5	- 16.5	1.3	2-3-3
NGL	1//	SANDY LEAN CLAY, CL, 7.5YR 4/6 (strong brown)			16		
rcg − 17 tu		and 7.5YR 5/1 (gray), low to medium		SS12G	16.5 - 18.0	5 - 18	1.5	1-2-3
		soft, moist	Iting Services In			0		2/9/20

Stantec Consulting Services Inc.



SUBSURFACE LOG

	N1/A			105		
		Stantec Boring				Diant Lagal
Project Number 1756	nessee Valley Authority	Boring Locatior Surface Elevati	-	70 N; 2,363,041.85 Elevation		
						NGVD29
Lithology	_	Overburden:	Sample ^{1,2}	Depth Ft ³	Rec. Ft	Blows/PSI
Depth Ft ³ Elevation Graph	nic Description	Rock Core:	RQD %	Run Ft	Rec. Ft	Rec. %
- 18 - 19 19.5 680.3			SS13G	18.0 - 19.5	1.5	
	No Refusal / Bottom of Hole at 19.5 Ft.					-
of 1 Rot	e boring was overdrilled to 18.0' bgs and 10 I9.4' bgs. Advancement of the boring to de to-sonic drilling methods. E = Environmental Sample Custody (two Sp	pth will continue to de	epth through th	ne permanent casi	ng using	- a depth _
2: a	G = Costody (two Sp G = Geotechnical Sample Custody a,b,c denote Split Spoon divided between E Depths are reported in feet below ground su	nvironmental and Ge			-)	-
						-
						-
6590 GDT 299.20						-
suesure DT 2019						-
ROBER LOPU TOEC						-
090 WRF TDEC.						-
TVA EP BORING LOG 178888090, WEF_TDEC_ORDER.GP1 TDEC SUBSURF DT 20196301 GDT 20420						-
TVA EIP BC						



	lient F	Borehole	ID N/A	A	Stantec Boring	No WBF	-106			
	lient			see Valley Authority	Boring Locatio			2.26	E NAD27	Plant Local
_		Number			Surface Elevat					
	-			DEC Order	Date Started					
	-			ea Co, Spring City, Tennessee	Depth to Wate					19 12:35
	-			Logger <u>G. Budd</u>	Depth to Wate					
				intec Consulting Services Inc.	Drill Rig Type					
	-		-	I Sampling Tools (Type and Size)	0,11					
			•	ling Tools (Type and Size) N/A						
		-	•	and Size) 8-1/4" HSA overdrill of bo			Overdrill	De	pth 🗧	34.5 ft
				Automatic Weight 140 II)"	Efficiency	1	N/A	
В	oreho	le Azimu	th	N/A	Borehole Inclin	nation (from	Vertical)	N/A	4	
R	leview	ed By	C. Ko	cka	Approved By	L. Price				
		Lithology			Overburden:	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Dep	th Ft ³	Elevation	Graphic	Description	Rock Core:	RQD %	Run Ft		Rec. Ft	Rec. %
- 0	0.0	701.7		Top of Hole						
	-0.2	701.5		Grass and topsoil		SS01G	0.0 - 1.5	0.0 -	0.6	1-2-2
- 1				LEAN CLAY, CL, 5YR 5/8 (yellowish re			0.0 1.0	1.5	0.0	
- 2				plasticity, very soft, moist, with siltston sandstone gravel, trace CCR, [FILL]	e and			1.5		_
				5, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,		SS02G	1.5 - 3.0	5 - 3.0	1.0	1-1-1
- 3								-		-
- 4						SS03G	3.0 - 4.5	3.0 - 4	0.3	WH-WH-WH
4	4.8	696.9				SS04aG	4.5 - 4.8	5		
- 5		000.0	///	SANDY LEAN CLAY, CL, 10YR 2/2 (v	ery dark			4.5 -	1.0	WH-1-3
				brown), low plasticity, very soft, moist,		SS04bG	4.8 - 6.0	6.0	1.0	WII-1-0
- 6	6.8	694.9		organics, CCR, [FILL]		SS05aG	6.0 - 6.8	6.0		-
- 7	0.0	094.9	///	CLAYEY SAND, SC, 10YR 4/4 (dark y	ellowish	SS05bG	6.8 - 7.5) - 7.5	1.1	1-2-2
				brown), fine, very loose, moist to wet		SS06aG	7.5 - 8.3			
- 8				Trace CCR from 6.8' to 7.5' Sandstone fragments at 7.5'				7.5 - 9.	0.5	2-1-2
- 9				Sanusione nagments at 1.5		SS06bG	8.3 - 9.0		-	-
20						SS07G	9.0 - 10.5	9.0 -	1.2	2-2-2
% - 10								0.5		
⁵⁰⁰²³⁰ – 11								10.5		
F DT 20	10.0	689.7				SS08G	10.5 - 12.0	- 12.0	1.5	1-2-2
^M - 12	<u>7</u> 12.0	089.7		LEAN CLAY, CL, 10YR 4/4 (dark yello	wish brown)					_
				low to medium plasticity, soft to mediu	,	SS09G	12.0 - 13.5	2.0 - 13	1.5	2-3-5
L GP J								5.5	-	
⁸ 0 − 14						SS10G	13.5 - 15.0	13.5 -	1.5	1-4-5
- 10 - 11 - 11 - 11 - 12 - 13 - 14 - 14 - 15 - 15 - 16							10.0 10.0	15.0		
[®] − 15								15.0		_
						SS11G	15.0 - 16.5) - 16.5	1.5	2-4-6
ING LOC			$\langle / / \rangle$							
VA EIP BORING LOG						SS12G	16.5 - 18.0	3.5 - 18	1.4	2-3-4
^ĭ ≱ <u>18</u>			\square					0		



Client E		Stantec Boring No. WBF-106								
Client	see Valley Authority	Boring Location 445,872.50 N; 2,362,862.26 E NAD27 Plant Local								
Project	050	Surface Elevation 701.7 ft Elevation Datum NGVD29								
Lithology				Overburden:	3	Sample ^{1,2}	Depth Ft ³		Rec. Ft	Blows/PSI
Depth Ft ³	Elevation 0	Graphic	Description	Rock Core:		RQD %	Run Ft		Rec. Ft	Rec. %
- 18 - 19 <u>19.5</u>	682.2		LEAN CLAY, CL, 10YR 4/4 (dark yellowish brown), low to medium plasticity, soft to medium stiff, moist <i>(Continued)</i> Some very fine sand, manganese at 19.0'			SS13G	18.0 - 19.5	18.0 - 19.5	1.5	2-2-4
- 20 - 21			FAT CLAY, CH, 10YR 4/4 (dark yellow 10YR 6/1 (gray), medium to high plasti	ish brown) and		SS14G	19.5 - 21.0	19.5 - 21.0	1.5	2-4-7
- 22			medium stiff, moist, with manganese a fine sand, increasing with depth			SS15G	21.0 - 22.5	21.0 - 22.5	1.5	2-4-4
- 23 - 24						SS16G	22.5 - 24.0	22.5 - 24.0	1.5	1-2-4
- 25 25.5	676.2					SS17G	24.0 - 25.5	24.0 - 25.5	1.5	2-3-4 _
- 26	674.7		SANDY LEAN CLAY, CL, 10YR 4/1 (da plasticity, soft to very soft, moist	ark gray), low		SS18G	25.5 - 27.0	25.5 - 27.0	1.3	4-1-2
- 27 - 28	01111		CLAYEY SAND, SC, 10YR 4/1 (dark g loose, moist to wet Wet at 28.0'	ray), fine, very		SS19G	27.0 - 28.5	27.0 - 28.5	1.5	WH-WH-WH
- ₂₉ 29.1	672.6					SS20aG	28.5 - 29.1	28.5 -	1.5	WH-WH-1
- 30	•		POORLY GRADED SAND WITH CLA' 10YR 4/1 (dark gray), fine, very loose, Organics from 30.0' to 31.5'			SS20bG	29.1 - 30.0	30.0 30.0		-
- 31 31.5	670.2					SS21G	30.0 - 31.5	- 31.5	1.5	WH-WH-WH
- 32 - 33 <u>33.0</u>	668.7		POORLY GRADED SAND WITH SILT 10YR 4/1 (dark gray), fine, very loose,			SS22G	31.5 - 33.0	31.5 - 33.0	1.2	WH-1-1
- 34	667.2 °	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WELL GRADED GRAVEL WITH SAND 4/1 (dark gray), very fine to coarse, we to rounded, multi colored			SS23G	33.0 - 34.5	33.0 - 34.5	1.5	2-10-19
			No Refusal / Bottom of Hole at 34.5 Ft.							-
04.0										
		G = 2: a,b,c	Environmental Sample Custody (two Spli Geotechnical Sample Custody c denote Split Spoon divided between En ths are reported in feet below ground surf	vironmental and G				nple))	-