<b>Report Date</b> 9/18/2003	e:		B	O R I	NG LOG	ſ			ring No.: B1		
Company N	ame:	mental C	Consultants	, Inc.				_	rface Ele	vation:	
Site Name: CSMRI				,				1	<b>tal Depth</b> 0 feet	1:	
	School of Mi	nes						1	a <b>rt:</b> /27/03 at	0955	
Logged By: DWM/JAT									<b>nish:</b> /27/03 at	1100	
Contractor: Layne-Wes	-								uipment ercussion	Type: hammer d	rill rig
Conditions:								Sa	mple Hai	nmer Toro	que:
unshielded CR - amou Boring coo		ing. covered i 400361.:	in split spo 531, E4802	oon, in ind	nd downhole gamma	a reading. I	Probe was	S S N	egment		iameter - 2 ft m drill rig
Graphical Log	Top Depth (feet)	Thick. (feet)	Bt.Elev. (feet)	Strata Code	Material Description	Sample No.	Sampling Method		Penet Type	ration Rate	Remarks
# # # # # #	0.0	1.0	-1.0		Brown silty clay with yellow and rust colored streaks - some tan to olive clay	CB1-1					17320 Sample collected @ 1105
* * * * * *	1.0	1.0	-2.0		Same as above with additional sand and lighter color						5490 CR: 16
	2.0	1.0	-3.0		Same as above with more olive/tan color - lighter color than above - Iron colored 'nodules' and white powdery streaks throughout - less silty than above.						3433
# # # #	3.0	1.0	-4.0		Same as above - more white powdery streaks						3403 CR: 16
* * * * * *	4.0	1.0	-5.0		Same as above	CB1-5					3817 Sample collected @ 1110
+ + + + + +	5.0	1.0	-6.0		Same as above with intermittent black streaks						3942 CR: 21
											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
+ + + + + + + +	6.0	1.0	-7.0		Same as above					4525
++++++++++++++++++++++++++++++++++++++	7.0	1.0	-8.0		Red/brown sandy clay with small mica(?) flakes. Sandier near bottom of sample zone.					6555 CR: 18
+ + + + + + + +	8.0	1.0	-9.0		Red/brown sandy clay - more mica/ metallic flakes.					7520
# #	9.0	0.5	-9.5		Red/brown sand with some clay					
# # 10.0 feet T.E	9.5 ).	0.5	-10.0		Orange/red-brow n clayey sand - white/gray streaks throughout	CB1-10				11104 Sample collected ( 1115 CR: 20

Report Date 9/18/2003	2:		B	O R I	NG LOC	т Г		Boring No.: CB2		
Company N			N 1.	T				Surface Eleva	ation:	
New Horize ite Name:	ons Environ	mental C	onsultants	s, Inc.				Total Depth:		
CSMRI								10 feet		
Location:	chool of Mi	nos						Start: 1/27/03 at 11	115	
Logged By:		nes						<b>Finish:</b>	115	
DWM/JAT								1/27/03 at 12	-	
Contractor: Layne-Wes								Equipment T Percussion h		rill rig
Conditions:								Sample Ham		
Comments:								Sampling Me		
	f the remark for this read		contains a	a 10 secoi	nd downhole gamma	a reading.	Probe was	Split spoon - segment	2 inch d	iameter - 2 ft
	nt of core re		in split spo	oon, in inc	ches.			Material col	lected fro	m drill rig
	rdinates: N4 e 13 North, '			331.970				'cyclone'.		
	Top Depth			Strata	Material	Sample		Penetr		Domonica
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
<sup>~</sup> ##]	0.0	1.0	-1.0		Mottled brown/olive clay					4879 Material
#					- traces of silt					color scale :
`##]					and sand. White					5Y 6/2
* # # * # # #					'nodules', iron colored 'nodules'					
** * * * * * * * * * * *										
* # # * # # *	1.0	1.0	-2.0		Same as above					3412 CR: 15
#										010.15
"##]										
#										
<del>* # + +</del> +	2.0	1.0	-3.0		Same as above	CB2-3	Split spoon			3402
* # * # # *	2.0	1.0	-5.0		with white	CD2-3	2 inch	-		Sample
*###					powdery streaks		diameter - 2	ft		collected @
** # # # # #							segment			1255
# # # #										
**** ***	3.0	1.0	-4.0		Same as above					3568
* <sup>#</sup>	010	110								CR: 20
*###										
* * * *										
*****										
<sup>#</sup> # <sup>#</sup> <sup>#</sup>	4.0	1.0	-5.0		Same as above -					3545
ŧ # # ŧ					a little more silt					
*###										
* # # # *										
* <u>#</u> # *										
* # # *	5.0	1.0	-6.0		Same as above					3604
<sup>+</sup> <sup>+</sup> <sup>+</sup> <sup>+</sup> <sup>+</sup>										CR: 22
* <sup>#</sup> ##										
+ # <sup>#</sup> +										
#										

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	-	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
(# #	6.0	1.0	-7.0		Same as above with mix of some dark gray clay					4642 Material very hard
<u>++</u> +, -] -  +  +  +  +  +	7.0	1.0	-8.0		Red/brown clayey sand mixed with mica and metallic flakes, quartz. More white powder streaks.	CB2-7	Split spoon - 2 inch diameter - 2 ft segment			5854 Sample collected @ 1250 Material color scale: 2.5YR 5/6 CR: 15
では、1970日 1月1日 1月1日 1月1日 1月1日 1月1日 1月1日 1月1日 1月	8.0	1.0	-9.0		Same as above					7702 Material color scale: 5YR 5/8
	9.0	0.5	-9.5		Orange/reddish brown fine clayey sand					CR: 17
10.0 feet T.I	9.5 ).	0.5	-10.0		Cobble zone material (pinkish sand mixed with large flat cobbles) - core could not be recovered but fractured cobbles in cyclone					7824 Cobble zone information established during test pit excavation.

Report Date 9/18/2003	e:		B	O R I	NG LOG	۲ ۲		Boring No.: CB3		
Company N New Horiz	lame: cons Environ	mental C	onsultante	Inc				Surface Elev	ation:	
ite Name:			susatuilte	.,				Total Depth:	:	
CSMRI								10 feet Start:		
Colorado S	School of Mi	nes						1/27/03 at 1	300	
ogged By: DWM/JAT								<b>Finish:</b> 1/27/03 at 1	350	
ontractor								Equipment 7		
Layne-West conditions:								Percussion I Sample Ham		
								_		1
unshielded CR - amou Boring coo		ling. covered : 400358.0	in split spo 664, E480	oon, in inc	nd downhole gamma	a reading.	Probe was	Sampling Me Split spoon segment Material col 'cyclone'.	- 2 inch di	ameter - 2 ft m drill rig
	Top Depth			Strata	Material	Sample	Sampling	Penetr	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
+ + + + + + + + + + + + + + + + + + +	0.0	1.0	-1.0		Olive/tan/brown clay with some sand and silt. Yellow streaks in first 6 inches - some red staining, mottled black, dark gray.					7801
* * * * * * * * * * * * * * * * * * *	1.0	1.0	-2.0		Mottled olive tan, dark gray clay with trace of red/brown sand, purple 'nodules', iron colored nodules.	CB3-2	Split spoon 2 inch diameter - 2 segment			5803 Sample collected @ 1400 CR: 15
· <sup>#</sup> # •	2.0	0.5	-2.5		Same as above					
* # # * * # # * <u>* # # *</u> * # # *	2.5	0.5	-3.0		Olive to grayish/green clay - some silt, trace of sand.					4269 Material color scale: 5Y 4/2
; # # # # # # ; # # # ; # # #	3.0	1.0	-4.0		Same as above					3503 CR: 22
· · · · · · · · · · · · · · · · · · ·	4.0	1.0	-5.0		Same as above with black staining, iron colored 'nodules', and trace of white powdery nodules - a little darker green/tan					3401
# # # # # # # # # # # #	5.0	1.0	-6.0		Same as above - lower 6 inches more brown in color					3900 CR: 20
					0101					Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
+ + + + + + + + + + + + + + + +	6.0	0.5	-6.5		Same as above	CB3-6.5	Split spoon - 2 inch diameter - 2 ft segment			Sample collected @ 1405
#	6.5	0.5	-7.0		Red/brown clayey sand					4894
# # #	7.0	1.0	-8.0		Same as above with additional silt, quartz, mica					6217 CR: 17
# # #	8.0	1.0	-9.0		Same as above					7371
0.0 feet T.E	9.0	1.0	-10.0		Orange/red/brow n fine sand with some clay - cobble zone begins somwewhere between 9 and 10 feet.					7672 CR: 16 Core materia lost at cobble zone interface

:		B	O R I	NG LOG	T T		Boring No.: CB4		
			-				-	ation:	
ons Environ	mental C	Consultants	, Inc.				Total Donths		
							Start:		
chool of Mi	nes							410	
								520	
tern									rill rig
							Comer Per or Ma	41	
the remark	s column	contains a	a 10 secor	d downhole gamma	a reading. I	Probe was			iameter - 2 ft
for this read	ling.						segment		
it of core re	covered	in split spo	oon, in inc	hes.				lected from	m drill rig
			330.486				cyclone.		
Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
0.0	0.5	-0.5		Gravel, asphalt.					
0.0	0.5	0.5		miscellaneous					
				roadbed material					
0.5	0.5	-1.0		Olive/tan-brown					21980
				clay with some					
				dark gray mottling	; 				
1.0	0.5	-1.5		Same as above	CB4-1.5		-		Sample
							£,		collected @ 1530
				,			11		1550
				nodules, and		U			
۱.									
`									
1.5	0.5	-2.0		Same as above					24595
`									24595 CR: 8
1.5 2.0	0.5	-2.0		Same as above Same as above	· · ·		·		
`				Same as above	· ·		·	·	
2.0	0.5	-2.5		Same as above Same as above with black	· · ·				CR: 8
2.0	0.5	-2.5		Same as above Same as above with black asphalt(?)					CR: 8
2.0	0.5	-2.5		Same as above Same as above with black asphalt(?) powder, ash/wood					CR: 8
2.0	0.5	-2.5		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?)					CR: 8
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material.				· · · · · · · · · · · · · · · · · · ·	CR: 8
2.0	0.5	-2.5		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan	CB4-3.5	Split spoon - 2 inch		· · · · · · · · · · · · · · · · · · ·	CR: 8 7010 Sample
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material.	CB4-3.5	Split spoon - 2 inch diameter - 2		·	CR: 8
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white	CB4-3.5	2 inch		·	CR: 8 7010 Sample collected @
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white streaks, black	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white streaks, black clay streaks,	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @
2.0	0.5	-2.5 -3.0		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white streaks, black clay streaks, trace of silt and	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @
2.0 2.5	0.5 0.5	-2.5 -3.0 -3.5		Same as above Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white streaks, black clay streaks, trace of silt and sand	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @ 1535 3636
2.0 2.5 3.0	0.5 0.5 0.5	-2.5 -3.0 -3.5 -3.5		Same as above with black asphalt(?) powder, ash/wood burned(?) material. Olive/tan mottled brown/gray clay with white streaks, black clay streaks, trace of silt and sand Same as above	CB4-3.5	2 inch diameter - 2			CR: 8 7010 Sample collected @ 1535 3636 CR: 18
	chool of Mi tern tern the remark for this reac nt of core re rdinates: N4 > 13 North, Top Depth (feet) 0.0 0.5	chool of Mines tern tern tern tern tern tor this reading. to f core recovered rdinates: N4400368. 13 North, WGS 199 Top Depth (feet) 0.0 0.5 0.5 0.5	chool of Mines         chool of Mines         tern <sup>c</sup> the remarks column contains a for this reading.         nt of core recovered in split spot         rdinates: N4400368.937, E4800         > 13 North, WGS 1984         Top Depth (feet)         0.0       0.5         0.0       0.5         0.5       0.5	chool of Mines         tern         The remarks column contains a 10 second for this reading.         nt of core recovered in split spoon, in inconditionates: N4400368.937, E480330.486         chool of Mines         Top Depth (feet)         Thick. (feet)       Bt.Elev. (feet)         0.0       0.5         0.5       0.5	Instruction       Instruction         chool of Mines       Image: state sta	tern The remarks column contains a 10 second downhole gamma reading. If for this reading. It of core recovered in split spoon, in inches. rdinates: N4400368.937, E480330.486 E 13 North, WGS 1984 Top Depth Thick. Bt.Elev. Strata Material Description 0.0 0.5 -0.5 Gravel, asphalt, miscellaneous roadbed material 0.5 0.5 -1.0 Olive/tan-brown clay with some dark gray mottling 1.0 0.5 -1.5 Same as above CB4-1.5 with white 'nodules', red/brown nodules, and trace of silt and	bins Environmental Consultants, Inc. chool of Mines tern The remarks column contains a 10 second downhole gamma reading. Probe was for this reading. tt of core recovered in split spoon, in inches. rdinates: N4400368.937, E480330.486 13 North, WGS 1984 <b>Top Depti</b> Thick. Bt.Elev. Strata Code Description No. Sample (feet) (feet) Code Code Constraints 0.0 0.5 -0.5 Gravel, asphalt, miscellaneous roadbed material 0.5 0.5 -1.0 Olive/tan-brown clay with some dark gray mottling 1.0 0.5 -1.5 Same as above CB4-1.5 Split spoon - with white 2 inch 'nodules', diameter - 2 red/brown segment nodules, and trace of silt and	ons Environmental Consultants, Inc.	Total Depth: 10 feet         Total Depth: 1/27/03 at 1410         Finish: 1/27/03 at 1520         Equipment Type: Percussion hammer di Sampling Methods: for this reading. it of core recovered in split spoon, in inches.         Sampling Methods: Split spoon - 2 inch di segment Material collected fro 'cyclone'.         Top Depth (feet)       Bt.Elev. (feet)       Strata Code       Material Description       Sampling No.       Penetration Method         0.0       0.5       -0.5       Gravel, asphalt, miscellaneous roadbed material       Sampling kethods: Split spoon - 2       Type       Rate         0.0       0.5       -1.5       Same as above vith white       CB4-1.5       Split spoon - vith white       Split spoon - vith white       10         1.0       0.5       -1.5       Same as above vith white       CB4-1.5       Split spoon - vith white       2 inch 'nodules', red/brown segment       2 inch 'nodules', red/brown segment       Jinch 'nodules', red/brown segment

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	5.5	0.5	-6.0		Red/brown sandy clay with some silt - mica and small quartz throughout					3784 CR: 17
#	6.0	1.0	-7.0		Same as above					4754
# # # #	7.0	0.5	-7.5		Darker red/brown to gray sandy clay					
#	7.5	0.5	-8.0		Orange/red/brow n clayey sand					5665 CR: 20
# # # #	8.0	0.5	-8.5		Darker red/brown to gray sandy clay					
#	8.5	0.5	-9.0		Orange/red/brow n clayey sand					6414
#	9.0	0.5	-9.5		Same as above					
10.0 feet T.I	9.5	0.5	-10.0		Cobble zone - pink/reddish sand mixed with large flat cobbles					6336 CR: 16 Cobble zone information established during test pit excavation. Cobble zone material onl

recovered from cyclone.

9/18/2003	e:		B	O R I	NG LOG	ι Γ		Boring No CB5	).:	
Company N	Name: cons Environ	montel C	ongenle	Inc				Surface E	levation:	
ite Name: CSMRI	cons Environ	mental	onsultants	s, Inc.				Total Dep 10 feet	th:	
ocation:	School of Mi	nes						Start: 1/27/03 a	ut 1535	
ogged By: DWM/JAT								<b>Finish:</b> 1/27/03 a	at 1610	
ontractor: Layne-Wes								Equipmer Percussio	nt Type: on hammer o	drill rig
onditions:	:							Sample H	ammer Toi	que:
unshielded CR - amou Boring coo		ling. covered : 400371.	in split spo 709, E480	oon, in inc	d downhole gamma	ı reading. l	Probe was	segment	on - 2 inch o collected fro	liameter - 2 ft om drill rig
	Top Depth (feet)			Strata Code	Material Description	Sample No.	Sampling Method	Pen Type	etration Rate	Remarks
++++, (	0.00	0.50	-0.50		Gravel, asphalt, miscellaneous roadbed material - mixed with brown/tan clay					
++++ +++++++++++++++++++++++++++++++++	0.50	0.50	-1.00		Mottled olive/tan-brown clay - trace of sand					44601
	1.00	0.50	-1.50		Same as above					
**************************************	1.50	0.50	-2.00		Yellow/orange clayey sand mixed with black ash(?) and a white powdery material.	CB5-2	Split spoon 2 inch diameter - 2 segment			55576 Sample collected @ 1625 CR: 16
+++ ++++++++++++++++++++++++++++++++++	2.00	0.50	-2.50		Mottled olive/brown gray clay with some black					
	2.50	0.25	-2.75		Yellow/orange					
*****	`` ``				clayey sand					
# # # # # # #	2.75	0.25	-3.00		clayey sand Black clay					25537
	2.75	0.25	-3.00 -4.00			CB5-4				25537 10962 Sample collected @ 1630 CR: 18
	<u>\</u>				Black clay Mottled olive/tan/brown/ gray clay with black, white, and rust colored	CB5-4				10962 Sample collected @ 1630

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	5.00	1.00	-6.00		Mottled olive/tan/brown/ gray clay with some silt and iron colored nodules.					6669 CR: 16 Sticky clay
	6.00	0.50	-6.50		Same as above					
#\#	6.50	0.50	-7.00		Red/brown sandy clay with some silt.					4175 Sticky clay
₩ . ₩ . ₩ . ₩	7.00	1.00	-8.00		Same as above					5220 CR: 10
# # # # # #	8.00	1.00	-9.00		Same as above					6070
#	9.00	0.50	-9.50		Orange/red/brow n clayey sand					
0.00 feet T.	9.50 D.	0.50	-10.00		Cobble zone - pinkish/red sand mixed with large flat cobbles.					7090 CR: 15 Cobble zor information established during test pit excavat

Report Dat 9/18/2003	e:		B	O R I	NG LOG	۱ ۲		Bor Cł	<b>ing No.:</b> 36		
Company N	lame:	. 1.0	, <u>1</u> , .					Sur	face Elev	ation:	
New Horiz ite Name:	ons Environ	mental C	consultants	s, Inc.				Tot	al Depth:	•	
CSMRI									feet	•	
ocation:								Sta			
Colorado S <b>.ogged By:</b>	School of Mi	nes						1/2 Fini	28/03 at 0	r/50	
DWM/JAT									28/03 at 0	850	
Contractor	:							Equ	ipment 7	Гуре:	
Layne-We										hammer d	
Conditions:								San	iple Ham	nmer Tor	que:
unshielded CR - amou Boring coc		ling. covered i 400374.2	in split spo 383, E4802	oon, in inc	nd downhole gamma	a reading. I	Probe was	Sp seg M	gment	- 2 inch d	iameter - 2 ft m drill rig
Crophical	Top Depth	Thiek	Dt Flow	Strata	Material	Sample	Sampling	<u> </u>	Penetr	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method		Туре	Rate	Remarks
	0.00	0.50	-0.50		Gravel - roadbed material	<u></u>					
* # # * * # # # * # # *	0.50	0.50	-1.00		Mottled brown clay mixed with orange powdery substance	CB6-1	Split spoon 2 inch diameter - 2 segment				19284 Sample collected @ 0855
	1.00	1.00	-2.00		Mix of red/brown sand, brown clay, and black ashy substance						14730 CR: 12
* # # * * # # *	2.00	1.00	-3.00		Olive/tan/brown clay with some silt and sand - some rust colored 'nodules'						3497 Material was moist
* * * * * * * * *	3.00	1.00	-4.00		Same as above						1708 CR: 17
+ + + + + + + + + + + + + + + + + + +	4.00	1.00	-5.00		Same as above with trace of white powdery nodules	CB6-5					1432 Sample collected @ 0900
<u>+ + + +</u> + + + + + + + + + + + + + + + +	5.00	1.00	-6.00		Same as above with additional red/brown sand						1778 CR: 17
# # 1 # # # #											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
* # # * * # # *	6.00	1.00	-7.00		Same as above					2373
* * * * * * * * * * * * * * * *	7.00	0.50	-7.50		Same as above					
<u>+</u> 7. <b>#. 4</b> ₩. #. #	7.50	0.50	-8.00		Red/brown sandy clay with quartz and mica particles throughout					2886 CR: 9
#*************************************	8.00	1.00	-9.00		Orange/red/brow n clayey sand					3406
, <b>-, ⊾</b> , O 0 , O 0 0 , O 0 0 , O 0 , O 0 , E 0	9.00	0.50	-9.50		Red sandy clay with gravel					
0.00 feet T.	9.50 D.	0.50	-10.00		Cobble zone - pinkish/red sand mixed with large flat cobbles.					3930 CR: 13 Cobble zone characteristi determined from test pir excavations

<b>Report Date</b> 9/18/2003	:		B	O R I	NG LOG	r		<b>Bori</b> CB	<b>ng No.:</b> 7					
ompany Na		mont-1 C		Inc				Surf	ace Elev	ation:				
New Horizo ite Name:	ons Environ	mental C	onsultants	s, Inc.				Tota	l Depth:					
CSMRI								10	feet					
o <b>cation:</b> Colorado So	chool of Mi	nes						Star	t <b>:</b> 8/03 at 0'	905				
ogged By:		nes						Finis		705				
DWM/JAT									8/03 at 1					
ontractor: Layne-West	tern								pment T cussion h	ammer d	rill rig			
onditions:								Sam	ple Ham	mer Tor	que:			
unshielded t CR - amour Boring coor	irst line of the remarks column contains a 10 second downhole gamma reading. Probe washielded for this reading. R - amount of core recovered in split spoon, in inches. oring coordinates: N4400376.534, E480325.066 TM, Zone 13 North, WGS 1984 raphical Top Depth Thick. Bt.Elev. Strata Material Sample Sampli									Sampling Methods: Split spoon - 2 inch diameter - 2 ft segment Material collected from drill rig 'cyclone'.				
raphical <sup>7</sup>	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling		Penetr	ation				
og	(feet)	(feet)	(feet)	Code	Description	No.	Method		Туре	Rate	Remarks			
	0.00	0.50	-0.50		Mix of gravel, sand and brown clay - roadbed material									
# # # # # # # # # # # #	0.50	0.50	-1.00		Olive/tan/brown clay mixed with orange powder and some sand						9478			
# <u>"</u>	1.00	0.50	-1.50		Orange and pink clay with gravel									
*** *** **** ***	1.50	0.50	-2.00		Orange/rust brown sand mixed with black and white powder	CB7-2	Split spoon 2 inch diameter - 2 segment				21814 Sample collected @ 1015 CR: 18			
	2.00	0.50	-2.50		Pink/purple clay and gravel									
**************************************	2.50	0.50	-3.00		Mottled olive/tan clay with orange staining - transitioning to more orange sandy material						6180			
	3.00	1.00	-4.00		Mottled olive/gray with some black layer/streaks						2289 CR: 16			
+++ +++ ++++	4.00	0.25	-4.25		Pink gravel - orange sand (sluff?)									
<del>****</del> **** ***	4.25	0.75	-5.00		Olive/tan/brown clay						1559			
***** ****	5.00	1.00	-6.00		Same as above						1566 CR: 18			
<sup>™</sup> # ±											Page 1 of			

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Peneti	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # # # * # # # # # # # # # # # # # # # #	6.00	1.00	-7.00		Same as above					1867
# # # # # # # # # # _	7.00	0.50	-7.50		Same as above					
# #	7.50	0.50	-8.00		Fine orange clayey sand	CB7-8	Split spoon - 2 inch diameter - 2 ft segment			3003 Sample collected @ 1010
40.40. 0.40. 40.40. 0.40.	8.00	1.00	-9.00		Cobble zone??					3115
	9.00	1.00	-10.00		Cobble zone??					3395 CR: no corr recovered

<b>Report Date</b> 9/18/2003			B	O R I	NGLOG	r		CB8			
Company N New Horiz	l <b>ame:</b> ons Environ	mantal C	oncultoria	Inc				Surfa	ce Elev	ation:	
New Horiz	OUS EUVITON	mental C	onsultants	s, mc.				Tatal	Depth:	:	
CSMRI								10 f			
	chool of Mi	nes						Start 1/28	<b>:</b> 5/03 at 1	100	
Logged By: DWM/JAT	-							Finis		155	
Contractor:									03 at 1 000 at 1		
Layne-Wes	stern							Perc	ussion l	nammer d mer Tor	
Comments: First line o unshielded CR - amou Boring coo UTM, Zon	ι reading.∃	Probe was	Spli segr Mat	nent	- 2 inch d	iameter - 2 ft m drill rig					
			Bt.Elev.	Strata	Material	Samula	Compling		Penetr	etion	
Graphical Log	Top Depth (feet)	(feet)	(feet)	Code	Description	Sample No.	Sampling Method	,	Гуре	Rate	Remarks
# #	0.00	0.25	-0.25		Brown/tan sandy clay						
+++++++++++++++++++++++++++++++++++++	0.25	0.75	-1.00		Olive/tan/brown clay with rust orange sand - grades into a zone of black clay/ashy material, discolored zone, red/brown, rust orange sand	CB8-1					2870 Sample collected @ 1210
**************************************	1.00	0.75	-1.75		See above description						
"## \ ###!	1.75	0.25	-2.00		Olive/tan/brown clay						1725 CR: 22
* * * * * <u>* * * *</u> * * * * * * * *	2.00	1.00	-3.00		Same as above with trace sand and rust colored nodules						1354
* # # # # # # # # # # # # # #	3.00	1.00	-4.00		Same as above						1310 Sticky clay.
* # # * * * # # *	4.00	1.00	-5.00		Same as above						1414
	5.00	1.00	-6.00		Grading to red/brown sandy/silty clay						2070 CR: 23
											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
٥g	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	6.00	0.75	-6.75		Same as above					
▼ L O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6.75	0.25	-7.00		Cobble zone - pinkish/reddish sand mixed with large flat cobbles					2927 Characteristic s of cobble zone determined during test pit excavation
	7.00	1.00	-8.00		Same as above					3154 CR: 12 - pulverized cobbles and sand
0.0 ° ⊾0 ⊕ ⊾ 0 0	8.00	1.00	-9.00		Same as above					3230
0.00 feet T.	9.00 D.	1.00	-10.00		Same as above	CB8-10	Material collected from drill rig 'cyclone'.			5037 Sample collected @ 1205 CR: 4 Pulverized cobbles and sand collected from cyclone

Report Date 9/18/2003	e:		B	O R I	NG LOG	י ד		Boring No.: CB9		
Company N	lame:		<b>.</b> .	T				Surface Elev	ation:	
New Horiz ite Name:	ons Environ	mental C	Consultants	, Inc.				Total Depth:	•	
CSMRI								15 feet	•	
Aocation: Colorado S	chool of Mi	nes						Start: 1/28/03 at 1	215	
ogged By: DWM/JAT								<b>Finish:</b> 1/28/03 at 1	255	
Contractor:								Equipment		
Layne-Wes	stern							Percussion	hammer di	-
Conditions:								Sample Han	nmer Toro	que:
unshielded CR - amou Boring coo		ling. covered 400372.	in split spo 188, E4803	oon, in inc	nd downhole gamma	a reading. I	Probe was	Sampling M Split spoon segment Material co 'cyclone'.	- 2 inch di	iameter - 2 ft m drill rig
Graphical Log	Top Depth (feet)	Thick. (feet)	Bt.Elev. (feet)	Strata Code	Material Description	Sample No.	Sampling Method	Peneta Type	ration Rate	Remarks
 #	0.00	1.00	-1.00		Roadbed material - gravel mixed with brown silty/sandy clay	CB9-1	Split spoon 2 inch diameter - 2 segment	-		5527 Sample collected @ 1340
* * * * * * * * * * * * * * * * * * *	1.00	1.00	-2.00		Grades to olive/tan/brown clay					2953 CR: 13 Hard clay
• <u>+</u> + + + + + + + + + + + + + + + + + +	2.00	1.00	-3.00		Same as above with white powdery streaks					2219
* # # * * * # # # * * # # # * * # # # * * # # # * * # # *	3.00	1.00	-4.00		Same as above with trace sand and no white streaks					2091 CR: 22
<u>+ + + + +</u> + + + + + + + + + + + + + + +	4.00	1.00	-5.00		Same as above					2154
* * * * * * * * * * * * * * * * * * *	5.00	0.75	-5.75		Same as above					
<u>+ # ₩</u> = # ₩ # #	LITHOLO	GY DATA I	PRINTED ON	NEXT PAC	GE					Page 1 of

	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penet	ration	1
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
++++++++++++++++++++++++++++++++++++++	5.75	0.25	-6.00		Red/brown sandy clay	CB9-6				2435 Sample collected @ 1345 CR: 23
# # \ +	6.00	0.50	-6.50		Yellowish olive tan clay mixed with bright orange/yellow sand					
	6.50	0.50	-7.00		Red/brown sandy clay with white nodules					2842
	7.00	1.00	-8.00		Same as above					3728
#**#*	8.00	1.00	-9.00		Same as above					4961
	9.00	0.50	-9.50		Same as above					
# #	9.50	0.50	-10.00		Orange/red/brow n clayey sand - start of cobbles at 10 feet					4489 CR: 13
	10.00	1.00	-11.00		Large flat cobbles mixed with pink/reddish sand					4329 Cobble zone characteristic determined during test pit excavations. Material collected from cyclone for sampling
, <b>→ ⊾</b> O 0 , <b>→ ⊾</b> O 0 , <b>→ ⊾</b> O 0 , <b>→ ↓</b> O 0	11.00	1.00	-12.00		Same as above					4179 CR: no recovery
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	12.00	1.00	-13.00		Same as above					4336
v L O 0 O 0 0 V L O 0	13.00	1.00	-14.00		Same as above					4247 CR: 1
0 0 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 0 0 0 4 0 0 0	14.00	1.00	-15.00		Same as above	CB9-15	Material collected from drill rig 'cyclone'.			4184 CR: no recovery Sample collected @ Page 2 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
Frank State and										

Report Date 9/18/2003	*		В	O R I	NG LOG	ſ		Boring CB10			
Company N								Surface		ation:	
New Horiz ite Name:	ons Environ	mental C	Consultants	s, Inc.				TatalT	)		
CSMRI								Total E 10 fee			
ocation:								Start:			
Colorado S ogged By:	chool of Mi	nes						1/28/0		410	
DWM/JAT	,								)3 at 1	600	
Contractor:								Equipr			
Layne-Wes										nammer d mer Tor	
unshielded CR - amour Boring coo	f the remarks for this read nt of core read rdinates: N4 e 13 North, V	ing. covered : 400374.:	in split spo 339, E4802	oon, in inc	nd downhole gamma	a reading. I	Probe was	segme	spoon - ent ial col	- 2 inch d	iameter - 2 ft m drill rig
	Top Depth			Strata	Material	Sample	Sampling		Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	T	уре	Rate	Remarks
######################################	0.00	0.50	-0.50		Gray/brown sandy clay mixed with gravel - includes 1 inch 'pink' gravel layer						
* # # * * # # * * # # * * # # *	0.50	0.50	-1.00		Black powdery clay with intermingled white nodules						7553
* # # * * # # * * # # * * # # * * # # *	1.00	1.00	-2.00		Olive/tan/brown clay with trace of sand	CB10-2	Split spoon 2 inch diameter - 2 segment				3631 CR: 20 Sample collected @ 1510
* # # * * # # * * # # * * # # *	2.00	1.00	-3.00		Same as above - with some black mottling and rust colored nodules.						2968
* # * # # * * # # * * # # * * # # * * # # *	3.00	1.00	-4.00		Same as above with some gray mottling						2358 CR: 18
* <u>+ + + + +</u> * + + + + + + + + + + + + + + + + + + +	4.00	1.00	-5.00		Same as above						2594
* # # * * # # * * # # # * * # # # *	5.00	0.50	-5.50		Same as above - transitioning to red/brown silty clay						
	LITHOLO	GY DATA I	PRINTED ON	N NEXT PAC	θE						Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # +	5.50	0.50	-6.00		Red/brown silty clay with trace of sand					3033 CR: 23
+ + + +	6.00	1.00	-7.00		Same as above with more sand					3473
* * * * * *	7.00	1.00	-8.00		Same as above with fine to medium gravel					4181 CR: 20
+ + + + + + + +	8.00	1.00	-9.00		Same as above					4830
	9.00	1.00	-10.00		Orange/red/brow n clayey sand - fine grained sand	CB10-10				5271 CR: 18 Sample collected 1515

Report Dat 9/18/2003	e:		B	O R I	NG LOG	r		Bori CB	ng No.: 11		
ompany N	Name:		<b>.</b> .	T				- 1	ace Elev	ation:	
New Horiz ite Name:	zons Environ	mental C	onsultants	s, Inc.				Tota	l Depth:		
CSMRI								10			
ocation:	~							Star			
Colorado S ogged By:	School of Mi	nes						1/2 Finis	8/03 at 1	600	
DWM/JA									8/03 at 1	700	
Contractor									pment 7		
Layne-We										nammer di	
Conditions	:							Sam	ple Ham	mer Toro	que:
unshielded CR - amou Boring coo	the remark for this react for this react for this react for the react for the react for the react for the react for the react for the remark for the react for the remark for the r	in split spo 009, E480	Probe was	Spl seg Ma	ment	- 2 inch di	iameter - 2 ft m drill rig				
	Ton Donth	Thield	Dt Flow	Strata	Material	Sample	Sompling		Penetr	eation	
Graphical Log	Top Depth (feet)	(feet)	(feet)	Strata Code	Description	No.	Sampling Method		Туре	Rate	Remarks
	0.00	0.50	-0.50								
	0.50	0.50	-1.00		Orange sandy clay mixed with pink gravel						3183
₩ # # # # # # # # # # # # #	1.00	1.00	-2.00		Same as above with yellow nodules and streaks up to 4 cm across						2909 CR: 5
************************************	2.00	1.00	-3.00		Pink and orange sluff grading to olive/tan- gray/brown clay mixed with white needle shaped material	CB11-3	Split spoon 2 inch diameter - 2 segment	-			2836 Sample collected @ 1615
<sup>#</sup> # <sup>#</sup> <sup>*</sup>	3.00	0.90	-3.90		Same as above						
# # # # # # # # # # # # # # # # # # _											
# # # # # # # # # # # # # # # # #	3.90	0.10	-4.00		Same as above with intermixed pink nodules						3083 CR: 20
	4.00	1.00	-5.00		Olive/tan- gray/brown clay mixed with white streaks less than 1 centimeter long						3290
# # # #	5.00	1.00	-6.00		Transitioning to red/brown sandy clay with some silt						3538 CR: 24
											Page 1 of

Graphical Log	Top Depth (feet)	Thick. (feet)	Bt.Elev. (feet)	Strata Code	Material Description	Sample No.	Sampling Method	Penetr Type	ation Rate	Remarks
+ + + + + + + + + + + + + + + + + + +	6.00	1.00	-7.00		Same as above	CB11-7	Split spoon - 2 inch diameter - 2 ft segment			4087 Sample collected @ 1620
+ + + +	7.00	0.50	-7.50		Same as above					Slight silvery metallic sheen on outside of core
#```	7.50	0.50	-8.00		Transition to reb/brown clayey sand					4550 CR:19
#	8.00	0.50	-8.50		Same as above					
	8.50	0.50	-9.00		Orange/red/brow n clayey sand					6056
+	9.00	0.75	-9.75		Same as above					
10.00 feet T.	9.75 D.	0.25	-10.00		Cobble zone - large flat cobbles mixed with pinkish/reddish sand					5383 CR: 19 Cobble zone characteristics determined during test pit excavations

:		B	O R I	NG LOG	r T			ing No.: 312		
ame:			т.				- 1		vation:	
ons Environ	mental C	onsultants	s, Inc.				Tot	al Denth	:	
							10	feet		
chool of Mi	nes								700	
							Fini	ish:		
							_			
tern							Pe	rcussion	hammer d	
							San	iple Han	nmer Tor	que:
for this read nt of core re- rdinates: N4	ling. covered i 400378.0	in split spo 032, E4802	oon, in inc		a reading. l	Probe was	Sp seg Ma	lit spoon gment aterial co	- 2 inch d	
Top Depth	Thick.	Bt.Elev.	Strata Code	Material Description	Sample No.	Sampling Method				Remarks
0.00	1.00	-1.00		Brown clayey sand and gravel		Split spoon 2 inch				3112 Sample collected @ 1715
1.00	0.60	-1.60		Same as above with some orange sand at the bottom of core section						
1.60	0.40	-2.00		Mottled olive/tan/brown clay						2920 CR: 18
2.00	1.00	-3.00		Same as above with some rust orange sand in places						2564
3.00	1.00	-4.00		Same as above with white nodules						2556 CR: 24
4.00	1.00	-5.00		Same as above						2704
	ame: ons Environ chool of Min tern tern tern tern Top Depth (feet) 0.00 1.00 1.00 3.00	ame: ons Environmental C chool of Mines term term term the remarks column for this reading. at of core recovered is redinates: N4400378.4 e 13 North, WGS 198 <b>Top Depth</b> (feet) <b>Top Depth</b> (feet) 0.00 1.00 1.00 0.60 1.00 0.60 1.00 0.40 1.00 1.00	ame:         ons Environmental Consultants         chool of Mines         tern         The remarks column contains a for this reading.         at of core recovered in split sport         rdinates: N4400378.032, E480.         e 13 North, WGS 1984         Top Depth (feet)         0.00       1.00         0.00       1.00         1.00       0.60         1.00       0.60         1.60       0.40         2.00       1.00         3.00       1.00         -4.00	B O K I         ame:         ons Environmental Consultants, Inc.         chool of Mines         tern         The remarks column contains a 10 secor         for this reading.         at of core recovered in split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split spoon, in inc         rdinates: N4400378.032, E480342.592         and the split s	BORTING LOC         ame: ons Environmental Consultants, Inc.         chool of Mines         chool of Mines         term         The remarks column contains a 10 second downhole gamma for this reading.         to for crecovered in split spoon, in inches.         rdinates: N4400378.032, E480342.592         13 North, WGS 1984         Top Depth Thick. Bt.Elev. Strata Code Description         0.00       1.00       -1.00       Brown clayey sand and gravel         1.00       0.60       -1.60       Same as above with some orange sand at the bottom of core section         1.60       0.40       -2.00       Mottled olive/tan/brown clay         2.00       1.00       -3.00       Same as above with some rust orange sand in places         3.00       1.00       -4.00       Same as above with white nodules	BORTING LOG         ame: ons Environmental Consultants, Inc.         chool of Mines         chool of Mines         tern         tern         for this reading.         at of core recovered in split spoon, in inches.         rdinates: N4400378.032, E480342.592         13 North, WGS 1984         Top Depth Thick.       Bt.Elev. fcet)       Strata Material Description       Sample No.         0.00       1.00       -1.00       Brown clayey sand and gravel       CB12-1 sand and gravel       CB12-1 sand and gravel         1.00       0.60       -1.60       Same as above with some orange sand at the bottom of core section       Core section         1.60       0.40       -2.00       Mottled olive/tan/brown clay       Clay         2.00       1.00       -3.00       Same as above with some rust orange sand in places       Sano al above with white nodules	ame: ms Environmental Consultants, Inc. chool of Mines tern tern tern tern The remarks column contains a 10 second downhole gamma reading. Probe was for this reading. at of core recovered in split spoon, in inches. rdinates: N4400378.032, E480342.592 913 North, WGS 1984 <b>Top Depth</b> <b>Thick. Bt.Elev. Strata</b> <b>Material</b> <b>Description</b> 0.00 1.00 -1.00 Brown clayey sand and gravel 1.00 0.60 -1.60 Same as above with some orange sand at the bottom of core section 1.60 0.40 -2.00 Mottled 0.00 1.00 -3.00 Same as above with some rust orange sand in places 3.00 1.00 -4.00 Same as above with white nodules	BORTING LOG       Ct         ame:       Survision         nns Environmental Consultants, Inc.       Tot         chool of Mines       Stat         chool of Mines       Stat         tern       Finin         tern       Equ         for this reading.       San         to for crecovered in split spoon, in inches.       Mitor         registration       Stat         diates: N4400378.032, E480342.592       Material         13 North, WGS 1984       Description         No.       Sampling         (feet)       (feet)         0.00       1.00         0.00       -1.00         Brown clayey       CB12-1         Split spoon - 2 indicates:         1.00       0.60         -1.00       Brown clayey         Same as above with some orange sand at the bottom of core section         1.00       -3.00         Same as above with some rust orange sand in places         3.00       1.00         -4.00       Same as above with some rust orange sand in places         3.00       1.00	BORTING LOG       CB12         ame:       Surface Election         ns. Environmental Consultants, Inc.       Total Depth 10 feet         chool of Mines       Jistic Titon         file       Sampling M         start:       Sampling M         Jistic Titon       Sampling M         Split spoon, in inches.       Sampling M         ringer       Sampling M         split spoon, in inches.       Sampling M         ringer       Start:         13 North, WGS 1984       Sampling M         Top Depth       Thick.       Bt.Elev.         Start       Code       Description       No.         No.       Material Description       No.       Sampling M         0.00       1.00       -1.00       Brown clayey sand and gravel       CB12-1       Split spoon - 2 inch diameter - 2 ft segment         1.00       0.60       -1.60       Same as above with some orange sand at the bottom of core section       -2 inch diameter - 2 ft segment	BOKTING LOG     CB12       ame:     Surface Elevation:       nns Environmental Consultants, Inc.     Total Depth: 10 feet       chool of Mines     Start: 1/2803 at 1700       chool of Mines     Start: 1/2803 at 1745       Equipment Type:     Equipment Type:       term     Procession hammer display spoon, in inches.       "the remarks column contains a 10 second downhole gamma reading. Probe was for this reading."     Sampling Methods: Split spoon - 2 inch disement Material collected fro cyclone!       Top Depth (feet)     Thick. Bt.Elev. Code     Strata Description     Sample No.     Sampling Method     Penetration Type       0.00     1.00     -1.00     Brown clayey sand and gravel     CB12     Split spoon - 2 inch diameter - 2 ft segment       1.00     0.60     -1.60     Same as above with some orange sand at the bottom of core section     Same as above with some rust orange sand in places     Same as above with white nodules

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	5.50	0.50	-6.00		Transition to red/brown sandy clay with some silt	CB12-6	Split spoon - 2 inch diameter - 2 ft segment			2729 CR: 21 Sample collected @ 1710
	6.00	0.50	-6.50		Olive/tan/brown clay with black 'veins'					
₩.#.\ ₩.#.	6.50	0.50	-7.00		Red/brown sandy clay with some silt					3100
<u>+</u> ,	7.00	1.00	-8.00		Same as above with intermixed quartz and mica - metallic sheen on outside of core					3424 CR: 19
<u>#</u> 、	8.00	0.75	-8.75		Same as above					
<u>)</u> () () () () () () () () () () () () ()	8.75	0.25	-9.00		Red/maroon sandy clay					4401
	9.00	0.25	-9.25		Same as above					
₩ ₩ ₩ ₩	9.25	0.75	-10.00		Orange/red/brow n clyey sand					4287 CR: 19

Report Date 9/18/2003	e:		B	O R I	NG LOG	T T		Boring No.: CB13		
Company N								Surface Elev	ation:	
New Horiz ite Name:	ons Environ	mental C	Consultants	s, Inc.				Total Depth:		
CSMRI								10 feet		
<b>location:</b> Colorado S	chool of Mi	nes						<b>Start:</b> 1/29/03 at 0	750	
ogged By:								Finish:	015	
DWM/JAT								1/29/03 at 0 Equipment 7		
Layne-Wes								Percussion h		rill rig
Conditions:								Sample Ham	mer Tor	que:
unshielded CR - amou Boring coo		ling. covered : 400379.	in split spo 161, E480	oon, in inc	nd downhole gamma	a reading. ]	Probe was	Sampling Me Split spoon segment Material col 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
,	Top Depth			Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
* # <sup>#</sup> *	0.00	0.25	-0.25		Light brown clay					
<u>+</u> # · · ] · · ] · · · ] · · ] ·	0.25	0.75	-1.00		Large pieces of brick mixed with					2236
					clay					
	1.00	1.00	-2.00		Very loose debris. Black carbon (?) powder mixed with ash (?)					1699 CR: 14
-	2.00	0.30	-2.30		Same as above					
+ + + + + + + + + + + + + + + + + + +	2.30	0.70	-3.00		Olive/brown/tan clay with trace of sand and some iron colored nodules	CB13-8	Split spoon 2 inch diameter - 2 segment			1618 Sample collected @ 0910
* # # # # * # # # * # # # * # # # *	3.00	1.00	-4.00		Same as above					1704 CR: 21
++++++++++++++++++++++++++++++++++++++	4.00	1.00	-5.00		Same as above transitioning to red/brown sandy clay with black nodules and laboratory crucible debris - possible sluff					1902
* * * *	5.00	0.50	-5.50		Same as above					
<u>+</u> + -	LITHOLO	GY DATA I	PRINTED ON	NEXT PAC	 GE					
#225开始										Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # \ +	5.50	0.50	-6.00		Red/brown sandy clay with some silt - fine to medium grained sand					1979 CR: 16
#*_# #	6.00	1.00	-7.00		Same as above with black nodules - more sand content					2375
# # #	7.00	1.00	-8.00		Same as above with some mica - metallic sheen on outside of core	CB13-8	Split spoon - 2 inch diameter - 2 ft segment			2686 CR: 18 Sample collected @ 0915
#*************************************	8.00	1.00	-9.00		Orange/red/brow n clayey sand - fine grained sand					3607
+ + + +	9.00	1.00	-10.00		Same as above					3531 CR: 16

Report Dat 9/18/2003	e:		B	O R I	NG LOG	r		Boring No.: CB14		
Company N	Name:	mont-1 C	angult	Inc				Surface Elev	vation:	
New Horiz ite Name:	zons Environ	mental C	onsultants	s, inc.				Total Depth	:	
CSMRI								10 feet		
ocation:	School of Mi	nec						Start: 1/29/03 at (	030	
ogged By:		lies						<b>Finish:</b>	1930	
DWM/JA	Г							1/29/03 at 1		
Contractor Layne-We	•							Equipment Percussion		rill rig
Conditions								Sample Han		-
unshieldec CR - amou		ing. covered	in split spo	oon, in in	nd downhole gamma	reading. ]	Probe was	Sampling M Split spoon segment Material co 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
	ne 13 North, V g was done to			oil under	the soil stockpile					
 Graphical	Top Depth	Thick	Bt.Elev	Strata	Material	Sample	Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # #	0.00	1.00	-1.00		Orange/brown clayey sand with pebbles					3183
	1.00	0.75	-1.75		Same as above					
* # # # # # #	1.75	0.25	-2.00		Tan/brown clay with some sand and black nodules					3411 CR: 20
# * *	2.00	0.75	-2.75		Orange/brown clayey sand with pebbles - sluff?					
* # # * * * # # # * * # # # * * # # # *	2.75	0.25	-3.00		Olive/tan/brown clay with some sand, pebbles, gravel, black nodules	CB14-3	Split spoon 2 inch diameter - 2 segment			3491 Sample collected @ 1040
* # # * # # # *	3.00	1.00	-4.00		Same as above					3572
$ \begin{array}{c}                                     $	4.00	1.00	-5.00		Same as above with additional pebbles and sand. More mottled coloration with some purple, orange, yellow, maroon, and quartz					3765
* # # *	LITHOLO	GY DATA I	PRINTED ON	N NEXT PA						Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # # # # # # # # # # # # # # # # # # #	5.00	1.00	-6.00		Same as above with additional gravel - some rust colored nodules					3541 CR: 22
** ** * * * * * * * * * * * * *	6.00	1.00	-7.00		Same as above - pebbles, no gravel - hard clay					3482
* # # * * # # * _ # # .	7.00	0.50	-7.50		Same as above					
# # # #	7.50	0.50	-8.00		Olive/tan/brown silty clay with white streaks					3612 CR: 22
# # # #	8.00	0.50	-8.50		Same as above					
# #	8.50	0.50	-9.00		Red/brown clayey sand - fine to medium grained sand					4040
#* #	9.00	1.00	-10.00		Same as above					4408 CR: 15

Report Date 9/18/2003	e:		B	O R I	NG LOG	י ד			<b>ing No.:</b> 315		
Company N	ame: ons Environ	mental C	onsultante	s. Inc				- 1	face Elev	ation:	
Site Name: CSMRI			Jonsunality	, m.					al Depth:		
Location:	chool of Mi	nec						Sta		115	
Logged By:		lies						Fin	ish:		
DWM/JAT									29/03 at 1 1111111111111111111111111111111111		
Layne-Wes									rcussion h		
unshielded CR - amou Boring coo	f the remark for this read nt of core re rdinates: N4 e 13 North, V	ling. covered : 400433.	in split spo 834, E480	oon, in ind	nd downhole gamma	a reading. 1	Probe was	Sp se M	gment	- 2 inch di	iameter - 2 ft m drill rig
Graphical Log	Top Depth (feet)	Thick. (feet)	Bt.Elev. (feet)	Strata Code	Material Description	Sample No.	Sampling Method		Penetr Type	ation Rate	Remarks
	0.00	0.50	-0.50	L	Brown topsoil						<u></u>
# #	0.50	0.50	-1.00		Light brown to medium brown clayey sand	CB15-1	Split spoon 2 inch diameter - 2 segment				8667 Sample collected @ 1220 Soil color scale 7.5YR5
# *	1.00	1.00	-2.00		Same as above with some gravel						7344 CR: 20 Soil color scale 7.5YR6
# # #	2.00	1.00	-3.00		Red/brown sandy clay - fine to medium grained and with some pebbles and gravel	CB15-3	Split spoon 2 inch diameter - 2 segment				4052 Sample collected @ 1225
# # # # # #	3.00	1.00	-4.00		Same as above with slight yellow staining - hard clay						3379
+ + + + + + + +	4.00	1.00	-5.00		Yellow/tan sandy clay with some silt and yellow, orange fine grained sand - hard clay						2851 Soil color code: 7.5YR 6/6
+ # +	5.00	1.00	-6.00		Same as above with intermixed pebbles and gravel - hard clay						2742 CR: 17
											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
+ + + + + + + + + + + + + + + + + + +	6.00	1.00	-7.00		Same as above with more pebbles and gravel					2763
++++++++++++++++++++++++++++++++++++++	7.00	1.00	-8.00		Same as above	CB15-8	Split spoon - 2 inch diameter - 2 ft segment			2795 CR: 24 Sample collected @ 1225
+ + + + + + + + + + + + + + + + + + +	8.00	1.00	-9.00		Same as above					3086
++++++++++++++++++++++++++++++++++++++	9.00	1.00	-10.00		Same as above					3298 CR: 20

Report Date: 9/18/2003			B	O R I	NG LOO	ר ד ד		Boring No.: CB16		
Company Na New Horizo	me:	mantal C	oncultor	Inc				Surface Ele	vation:	
ite Name:	ns Environ	mental C	onsultants	s, Inc.				Total Depth	1:	
CSMRI								10 feet Start:		
Colorado Sc	hool of Mi	nes						1/29/03 at	1230	
ogged By: DWM/JAT								<b>Finish:</b> 1/29/03 at	1320	
Contractor:								Equipment	Туре:	
Layne-West	ern							Percussion Sample Har		
Comments: First line of unshielded f CR - amoun Boring coord UTM, Zone	or this read t of core re dinates: N4	ling. covered 400436.	in split spo 824, E480	oon, in inc	nd downhole gamm	a reading. I	Probe was	Sampling M Split spoon segment Material cc 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
Graphical 7	Fop Depth	Thick.	Bt.Elev.	Strata	Material	Sample			ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
· · · · · ·	0.00	0.30	-0.30		Brown topsoil - sandy					
# # # * * * * * * * * * * * * * * * * *	0.30	0.70	-1.00		Brown sandy clay with some silt, mottled orange, yellow, gray with some white powdery nodules and pebbles					3292
	1.00	1.00	-2.00		Same as above					3576 CR: 20
₩	2.00	0.50	-2.50		Same as above - hard clay					
# # *	2.50	0.50	-3.00		Turning redder in color - mixed with light turquoise/blue pieces of rock (breakable)					3925
#`# #`\	3.00	0.50	-3.50		Same as above with increasing sand content	CB16-3.5	Split spoon 2 inch diameter - 2 segment			Sample collected @ 1325
	3.50	0.50	-4.00		Same as above					3248 CR: 20
	4.00	1.00	-5.00		Light tan/brown sandy clay					3029
# # #	5.00	1.00	-6.00		Red/brown sandy clay with yellow and orange mottling - trace of gravel					2965
Tale ( n la										Page 1 of

## Boring No.: CB16

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	6.00	1.00	-7.00		Same as above with some gravel, white spots, yellow mottling	CB16-7	Split spoon - 2 inch diameter - 2 ft segment			3097 Sample collected @ 1330
# # # #	7.00	1.00	-8.00		Same as above					3567 CR: 18
# # # #	8.00	1.00	-9.00		Same as above with some black mottling					3954
+ + + + + + + + + + +	9.00	1.00	-10.00		Same as above					3587 CR: 14

<b>Report Date:</b> 9/18/2003			B	O R I	NG LOG	ſ		Boring No.: CB17		
Company Na								Surface Elev	ation:	
New Horizon	ns Environ	mental C	Consultants	s, Inc.						
<b>ite Name:</b> CSMRI								Total Depth: 10 feet		
Location:								Start:		
Colorado Scl	hool of Mi	nes						1/29/03 at 1	335	
Logged By:								Finish:		
DWM/JAT								1/29/03 at 1	455	
Contractor:								Equipment 7		
Layne-Weste	ern							Percussion l		
onations:								Sample Ham	imer 10r	que:
Comments:								Sampling M	ethods:	
	the remark	s column	contains a	a 10 secor	nd downhole gamma	a reading. I	Probe was	Split spoon		iameter - 2 ft
unshielded for								segment		
CR - amount	t of core re	covered	in split spo	oon, in inc	ches.			Material col	lected fro	m drill rig
Boring coord	linates: N/	400445	079 E180	488 555				'cyclone'.		
UTM, Zone				100.333						
Of the first 1	7 borings,	this loca	tion had th	ne least an	nount of clay					
Graphical T	on Denth	Thick	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	0.00	0.50	-0.50		Gravel mixed					
0.0 6.					with red/brown sand - medium					
<u></u> # <u>+</u> .					to coarse grained					
"## ^ ``										
# <sup>#</sup> # <sup>‡</sup>	0.50	0.50	-1.00		Mottled brown, dark brown, and					5232
<u>ŧ</u> ́" <u></u> ⋕					black clay					
## `` ####										
* * <b>#</b> ]	1.00	1.00	-2.00		Same as above					4198
<sup>#</sup> # <sup>#</sup> <sup>#</sup>										CR: 16
# # <del>"</del> #										
####										
# # # #	2.00	1.00	-3.00		A 14					4125
# # # # # # #	2.00	1.00	-3.00		Alternating brown clay and					4135
+ + + ·					red/brown sandy					
<sup>#</sup> # <sup>#</sup> <sup>#</sup>					clay - some mica					
# # <del>"</del> #					flakes and black					
# <sup>#</sup> # #					nodules - gravel					
# # # # #					in core probably sluff					
###↓``										
# #	3.00	1.00	-4.00		Same as above					5020
<sup>#</sup> # <sup>#</sup> <sup>#</sup>										CR: 14
# <sup>#</sup> # <sup>#</sup>										
# <sup>#</sup> # #										
<del>****</del>	4.00	0.50	-4.50		Brown to					
+ + + + + + + + + + + + + + + + + + +	4.00	0.50	-4.50		red/brown clay					
` <b>#</b> # ]					with some sand					
<u>ŧ</u> ŧ_ <u>ŧ</u>										
	4.50	0.50	-5.00		Light gray, very	CB17-5	Split spoon	-		6793 Samula
" <b>#</b> ]					hard clay with		2 inch diameter - 2			Sample

4.500.50-5.00Light gray, very<br/>hard clay with<br/>pebblesCB17-5Split spoon -<br/>2 inch<br/>diameter - 2 ft<br/>segment6793<br/>Sample<br/>collected @<br/>14305.001.00-6.00Red/brown<br/>clayey sand7668<br/>CR: 12

# # \_\_\_\_\_\_

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Page 1 of 2

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# #	6.00	1.00	-7.00		Same as above					7639
	7.00	0.50	-7.50		Tan sand mixed with some gravel					

Report Date 9/18/2003	e:		B	O R I	NG LOG	۲ T		Boring No.: CB18		
Company N	lame:							Surface Elev	vation:	
New Horiz Site Name:	ons Environ	mental C	Consultants	s, Inc.				Total Depth		
CSMRI								24 feet	•	
Location: Colorado S	chool of Mi	nes						<b>Start:</b> 1/29/03 at 1	510	
Logged By:								Finish:		
DWM/JAT	-							1/29/03 at 1	620	
Contractor								Equipment '		
Layne-Wes								Percussion		
Conditions:								Sample Han	mer Tor	que:
unshielded CR - amou Boring coo UTM, Zon	for this read nt of core re ordinates: N4 e 13 North, 7	ling. covered 400291. WGS 193	in split spo 456, E480 84	oon, in ind 310.716	nd downhole gamma ches. en for monitoring we	-		segment Material co 'cyclone'.		iameter - 2 ft m drill rig
-	Top Depth			Strata	Material	Sample	Sampling	Penet		
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
<u>क</u> ार व	0.00	0.25	-0.25		Brown topsoil with vegetation					
* * * * * *	0.25	0.75	-1.00		Mottled olive/tan/brown silty clay with a trace of sand and some rust colored nodules					1558
#	1.00	1.00	-2.00		Same as above	CB18-2	Split spoon 2 inch diameter - 2			1651 CR: 15
# # # #	<						segment	It		Sample collected @ 1518

# # #	3.00	1.00	-4.00	Same as above	CB18-4	Split spoon - 2 inch diameter - 2 ft segment	1678 1678 CR: 18 Sample collected @ 1523	
	4.00	1.00	-5.00	Same as above			1604	

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	Top Depth		Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	-	_
og	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
## #### ### ##########################	5.00	1.00	-6.00		Medium gray clay with hydrocarbon odor - sticky and moist	CB18-6	Split spoon - 2 inch diameter - 2 ft segment			1693 CR: 14 Sample collected @ 1535 Separate sample collected for hydrocarbo analysis.
# # <sup>\$ `</sup> ` # # <sup>\$ `</sup> ` # # <sup>\$</sup>	6.00	0.50	-6.50		Brown to red/brown soft clay					
"#1 #	6.50	0.50	-7.00		Mottled gray clay					1802
+;;; +;;; +;;;; +;;;;;;;;;;;;;;;;;;;;;	7.00	1.00	-8.00		Same as above with some yellowish-brown mottling. Hydrocarbon odor and stain	CB18-8	Split spoon - 2 inch diameter - 2 ft segment			1824 CR: 20 Sample collected @ 1550
### ###	8.00	1.00	-9.00		Same as above					1897
x + + + + + + + + + + + + + + + + + + +	9.00	1.00	-10.00		Same as above with darker gray swirls	CB18-10	Split spoon - 2 inch diameter - 2 ft segment			1971 CR: 24 Sample collected @ 1600 Second sample collected fe hydrocarbo analysis
# # # # # # # # # # # # # # # # # #	10.00	1.00	-11.00		Same as above - less hydrocarbon stain, some light brown, yellowish mottling					2152
# # <sup>*</sup> `	11.00	0.50	-11.50		Same as above					
# # # # # # # # # # # #	11.50	0.50	-12.00		Same as above with some red/brown/maroo n swirls					2445 CR: 24
# # # # # # # # # # # # # # #	12.00	1.00	-13.00		Same as above					2953
	13.00	1.00	-14.00		Red/brown clayey sand with hydrocarbon odor	CB18-14	Split spoon - 2 inch diameter - 2 ft segment			2757 CR: 16 Sample collected @ 1645 Second sample collected fe hydrocarbo analysis

	Top Depth			Strata	Material	Sample	Sampling		ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	14.00	1.00	-15.00		Red/brown					2885
#					clayey sand					
#										
	15.00	1.00	-16.00		Same as above					2955
#										
#										
	16.00	1.00	-17.00		Same as above					2760
#										
#										
	17.00	1.00	-18.00		Same as above					2842
	17.00	1.00	-10.00		Same as above					2042
#										
<b>#</b>										
	18.00	1.00	-19.00		Same as above					2882
#\;										
<b>#</b>										
	19.00	1.00	-20.00		Same as above					2777
#										
<b>#</b> `\`										
	20.00	1.00	-21.00		Same as above					2858
#										
<b>#</b>										
	21.00	1.00	-22.00		Same as above					3378
#										
₩. 										
#										
₀ ở ⊾ O 0 ₄ O 0 ° °	22.00	1.00	-23.00		Cobble zone -					4201
0.0					large flat cobbles mixed with					
0.0.0.0 4.0.0.0					pinkish/red sand					
0.0										
<u>0</u>										
0 🗠 (A : O : V)	23.00	1.00	-24.00		Same as above					4212

Graphical	Top Depth	th Thick. Bt.Ele	Bt.Elev. Strata	Material	Sample	Sampling	Penetration			
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks

<b>Report Date:</b> 9/18/2003		В	O R I	NG LOG	r		Boring No.: CB19		
Company Name New Horizons I		tal Consultants	, Inc.				Surface Eleva	ation:	
Site Name: CSMRI							<b>Total Depth:</b> 43.5 feet		
Location: Colorado Schoo	ol of Mines						<b>Start:</b> 1/30/03 at 08	825	
Logged By: DWM/JAT							<b>Finish:</b> 1/30/03 at 1	100	
Contractor: Layne-Western							Equipment T Percussion h		rill rig
Conditions:							Sample Ham	mer Toro	que:
<b>Comments:</b> First line of the unshielded for t CR - amount of Boring coordina UTM, Zone 13 This boring was	his reading. core recove ates: N44002 North, WGS	ered in split spo 278.779, E4803 5 1984	oon, in inc 320.752		ı reading. l	Probe was	Sampling Me Split spoon - segment Material col 'cyclone'.	- 2 inch di	ameter - 2 ft m drill rig
Graphical Top			Strata	Material	Sample	Sampling	Penetr	1	
Log (f	eet) (fe	et) (feet)	Code	Description	No.	Method	Туре	Rate	Remarks

Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
गः गः गः	0.00	0.50	-0.50		Topsoil, vegetation, some gravel					
* * * * * *	0.50	0.50	-1.00		Olive/tan/brown silty clay with pebbles and trace of red/brown mottling					
# # # #	1.00	1.00	-2.00		Same as above					CR: 16
# # # = # # # # = # # # # = # # # # = # # # #	2.00	1.00	-3.00		Olive/tan/brown clay with trace of rust colored nodules - moist clay					
* # # * * # # # * * # # # * * # # # * * # # * * # # * * # # *	3.00	1.00	-4.00		Same as above					CR: 20
* # # * * # # # * * # # # * * # # # * * # # * * # # * * # # *	4.00	1.00	-5.00		Same as above					
# # # #	5.00	1.00	-6.00		Transition to red/brown sandy clay - trace of pebbles					CR: 20
										Daga 1 of

## 9/18/2003

Boring	No.:	CB19
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Graphical	<b>Top Depth</b>	Thick.		ration						
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
0.0000-0			11		L		I	1	1	1
###										
# # # #		1.00	7.00		Ol:					
	6.00	1.00	-7.00		Olive/tan/brown clay					
#					ciay					
# <sup>#</sup> ##										
# # # # #										
#										
# # # # # # # #										
	7.00	1.00	-8.00		Red/brown					CR: 16
·· + +					sandy clay - medium grained					
# # #					sand					
** # # ** # *					Sund					
"# ]										
# ** #										
****	8.00	1.00	-9.00		???					No split
# # # # #										spoon on thi
****										interval
++ ``										
"# <b>#</b> ]										
# # #										
# # # #	9.00	1.00	-10.00		???					No split
# <sup>#</sup> # <sup>!</sup>										spoon on thi
										interval
"##										
**** **										
# <sup>#</sup> # #										
ŧ.	10.00	1.00	-11.00		Red/brown					
					clayey sand -					
#					redder than					
₩					above - medium					
					to coarse grained sand					
#										
	11.00	1.00	-12.00		Same as above					CR: 24
#										
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)										
#										
04.000	12.00	13.00	-25.00		Split spoon not					
4.0.0.°°  40.*					used for this					
O * 0 * 6 *					interval - cobble					
0 ♥ ► 0 ° ° 4 0 0 ° ° °					zone					
					encountered at					
0 <b>0</b> ° ∿ °					this depth - color change from					
4.0.0.0					material out of					
0.0					cyclone					
04°⊾O 0					-					
0.10										
4.0.0.0.0.1										
0.040										
0.0° 0.0° 0.000										

Log     (feet)     (feet)     Code     Description     No.     Method     Type     Rate     Remarks	Graphical	Graphical Top Depth Th		hick. Bt.Elev. Strata Material				Sampling	Penetr		
	Log	(feet)				Description	No.	Method			Remarks
						_					1
	4.0.0.0										
	0.0000										
	· · · · · · ·										
	0.0**40*										
	о — осторительно осторительно										
	0.01401										
	о — осторительно осторительно										
	0 V V V V										
	0.00.40.										
	о Стори у Балана О Стори и Стори и Палана (Палана)										
	0.01401										
	0.01401										
	····										
	0_**40*										
	0. 										
	0.0101										
	. О 0 										
	.O.o. ⊾o. 										
	0.000										
	.0										
	0_**40*										
	.O.00										
	0 <b>∀</b> ⊾O.										
	<b>4</b> .0.0 0_°° 40°										
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	. O : + 0 . • •										
	0 <del>0</del> • 0 • 0										
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	⊿.O.0.*`` ∩_**4O*										
	.O.00										
4 CA1 85-1	₀⊸°⊾O 0										
	4 CM 854										Page 3 of

	Top Depth	Thick.		Strata	Material	Sample	Sampling	Penetr		_
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
÷⊾0 0										
0.0.0										
0.0 0.										
<b>₽</b> ⊾O 0										
0.0.0										
0.0° 0.0° ⊾∘										
<b>₽</b> ⊾0 0										
0.0.00										
D.0										
~°⊾O 0										
0.0.0										
D.+0										
<u> </u>										
÷⊾0.0	25.00	14.00	-39.00		Split spoon not					
					used for this					
2000 <u>1</u> .0					interval - water					
0.000					encountered at					
o*.40*					this depth					
0.0.0										
0.040.										
O 0										
0.0.0										
<b>~</b> ⊾⊙ 0										
0.0.0										
0.00.00										
÷∗0°										
0.0.0										
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⊖ • • • •										
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_** <b>4</b> 0*										
- o 0										
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0.0.0										
0.0 10										
÷⊳0										
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D.00										
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0.0.0										
O.⊹0 ⊾°:										
÷∗0°										
0.00										
<b>∀</b> ⊾0,0										
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K.(1197										

Log     (feet)     (feet)     Code     Description     No.     Method     Type     Rate     Remarks       39.00     1.00     -40.00     Split speen not used for this interval     Split speen not bis depth     Split speen not used for this interval     Split sp	Graphical	Graphical Top Depth Thi		ick. Bt.Elev. Strata Material			Sample Samp	Sampling Penetration			
39.00 1.00 -40.00 Split spoon not used for this interval - Pierre Shale found at this depth 40.00 2.00 -42.00 Split spoon not CB19-42 Material used for this interval - Dierre Shale found at this depth	Log	(feet)	(feet)			Description	No.	Method		-	Remarks
40.00       2.00       -42.00       Split spoon not CB19-42 Material sample used for this collected collected @ interval from drill rig       Sample 1100					Code	Split spoon not used for this interval - Pierre	No.	Method	Type	Kate	Kemarks
used for this collected collected @ interval from drill rig 1100		40.00				Shale found at this depth					
		40.00	2.00	-42.00		used for this	CB19-42	collected from drill rig			collected @

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	42.00	1.50	-43.50		Split spoon not					
					used for this interval - well					
					completed to this					
					depth					

43.50 feet T.D.

Report Dat 9/18/2003 Company N			B	ORI	NG LOG	r		Boring No.: CB20 Surface Elev	vation:	
New Horiz	zons Environ	mental C	Consultants	s, Inc.						
Site Name:								Total Depth	:	
CSMRI								20 feet		
Location: Colorado S	School of Mi	nes						<b>Start:</b> 1/30/03 at 1	400	
Logged By:								Finish:		
DWM/JA Contractor								1/31/03 at 0 Equipment 7		
Layne-We								Percussion		rill rig
Conditions								Sample Han		
unshielded CR - amou Boring coo UTM, Zor		ling. covered 400394. WGS 19	in split spo 883, E480 84	oon, in inc 286.374	nd downhole gamma	reading. 1	Probe was	Sampling M Split spoon segment Material co 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
	-		1		Nf - 4 1	G	G	Penet	ration	
Graphical Log	Top Depth (feet)	(feet)	feet)	Strata Code	Material Description	Sample No.	Sampling Method	Туре	Rate	Remarks
# # #	0.00	1.00	-1.00		Brown clayey sand with gravel and pebbles - medium to coarse sand	CB20-1	Split spoon 2 inch diameter - 2 segment			6599 Sample collected @ 1430
# # # # # #	1.00	1.00	-2.00		Red/brown mottled sandy clay with pebbles - very hard (roadbed material)					9062 CR: 16
4 - 0 0 4 0 0 5 0 0 4 0 5 0 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0	2.00	1.00	-3.00		Cobble zone - large flat cobbles mixed with pinkish/red sand					7771
40.00 40.00 0.00 0.00 0.00 0.00 40.00 40.00 0.00 0.00 0.00	3.00	1.00	-4.00		Same as above					7272
	4.00	1.00	-5.00		Same as above					5777
<u>,                                    </u>	5.00	1.00	-6.00		Same as above					5902
										Page 1 o

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
					± -		1	• £ -	1	
, <b></b> - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0										
0.014011										
0.0°. 0.0°°	6.00	1.00	-7.00		Same as above					7287
4.0.0.0	0.000	1.00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							/20/
0.00 6.0										
4.0 0.0										
0.0										
.֥00										
0. ↓ 0. 0 <u>.</u> 0. ↓ • 0. 0										
	7.00	1.00	-8.00		Same as above					7944
_°°40°										
O.00 k.0										
₀∀°⊾O										
4.0.0.0.0										
O:00 . E 0										
₀ →° ⊾ O _0										
0 \$ ⊾ O 0	8.00	1.00	-9.00		Same as above					7185
4.0.0.**	0.00	1.00	-9.00		Same as above					/105
0.00										
.÷⊾O0										
4.0 0.0										
0.00										
0 <del>0</del> ∿ 6 0 0										
0.	9.00	1.00	-10.00		Same as above	CB20-10				7166
										Sample
0.00										collected @
₀.⇒°.⊾O.0										1450
a.O.0.*° 										1120
Ö.0 4										
₀										
₀ ở ⊾ O 0	10.00	1.00	11.00							
4.0.0.0	10.00	1.00	-11.00		Same as above					6895
0.00										
.÷.00										
0 <del>\</del> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \										
),°°40°										
O * 0 • •										
0 0 • 0 •										
₀⊸°⊳0	11.00	1.00	-12.00		Same as above					6164
40.000 00.000										
O + 0 • • •										
₀ v≎ ⊾ O 0										
4.0.0.**										
0.00										
	10.00	1.00	12.00		C 1					
4.0.0.0	12.00	1.00	-13.00		Same as above					5975
сорона в Халана Стория и стория и стори Стория и стория и сто										
0,∀:*:0:% 4 O.:0 &S.:										
<u>`</u> •° 40°										
O.+0 F.+										
₀ →° ⊾ (O : 0										
₀ ⇔° ⊾ O :0	13.00	0.50	-13.50		Same as above					
4.0.0.	15.00	0.50	15.50		24110 40 400 10					
0.00										
<u></u>										
	13.50	0.50	-14.00		Brown sand					6194
<u></u>										
1. Sec. 1. Sec. 3.	14.00	0.50	-14.50		Same as above					

Log         (feet)         (feet)         Code         Description         No.         Method         Type         Rate         Remarks # # # # # # #		Top Depth			Strata	Material	Sample	Sampling	Penetr		
		(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
$\begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	* # # 1 # # # # 	14.50	0.50	-15.00							5327
15.750.25-16.00Pierre shale461816.004.00-20.00Same as aboveCB20-10Material collected from drill rigSample collected @ 1450	# # # # # # # # #	15.00	0.75	-15.75		Same as above					indications of
collected collected @ from drill rig 1450		15.75	0.25	-16.00		Pierre shale					4618
							CB20-10	collected from drill rig			Sample collected @

Report Dat 9/18/2003			B	O R I	NG LOG	T T		Boring No.: CB21		
Company 1		mental C	onsultante	Inc				Surface Eleva	ation:	
Site Name:			Jonsultants	s, mc.				Total Depth:		
CSMRI Location:								10 feet Start:		
Colorado	School of Mi	nes						1/31/03 at 10	015	
Logged By DWM/JA	<b>у:</b> Т							<b>Finish:</b> 1/31/03 at 1	105	
Contractor	r:							Equipment <b>T</b>	ype:	
Layne-We								Percussion h		
Conditions	5.							-		que:
unshielded CR - amo Boring co		ling. covered 400366.	in split spo 268, E480	oon, in inc	nd downhole gamma	a reading. I	Probe was	Sampling Me Split spoon - segment Material col 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # # *	0.00	0.50	-0.50		Mottled brown to red/brown sandy clay					
# # # # # #	0.50	0.50	-1.00		Red/brown sandy clay	CB21-1	Split spoon 2 inch diameter - 2 segment			20012 Sample collected @ 1055 Soil color scale: 5YR 3/4
	1.00	1.00	-2.00		Same as above					8592 CR: 15
# #	2.00	0.50	-2.50		Same as above					
# # #	2.50	0.50	-3.00		Light orange/brown clayey silt - very fine grained	CB21-3	Split spoon 2 inch diameter - 2 segment			8390 Sample collected @ 1100 Soil color scale: 2.5YR 5/6
	`\3.00	0.50	-3.50		Same as above					
#* **	3.50	0.50	-4.00		Red clayey sand with gravel - medium to coarse grained sand					7346 CR: 18 Soil color scale: 10R 4/8
#	4.00	1.00	-5.00		Same as above					7145
	5.00	1.00	-6.00		Cobble zone - large flat cobbles mixed with pinkish/red sand					7609 CR: 6 Cobble zone characteristics determined during test pit excavation

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Peneti	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6.00	1.00	-7.00		Same as above					7736
0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.00	1.00	-8.00		Same as above					7780
↓ 0 0 0 0 0 0 0 0 0 0 0 0 0	8.00	1.00	-9.00		Same as above					13707
↓ 0 0 ↓	9.00	1.00	-10.00		Same as above	CB21-10	Material collected from drill rig 'cyclone'.			8904 Sample collected @ 1050

Report Date 9/18/2003	*		B	O R I	NG LOG			Boring CB2			
Company N	ame: ons Environ	mental C	onsultants	Inc				Surfa	e Eleva	ation:	
Site Name:			onsultants	, me.					Depth:		
CSMRI								10 fe Start:	et		
Colorado S	chool of Mi	nes						1/31/	03 at 11	120	
Logged By: DWM/JAT	,							<b>Finish</b> 1/31/	: 03 at 12	225	
Contractor:								Equip	ment T	ype:	
Layne-Wes										nammer di mer Toro	
unshielded CR - amoun Boring coor	f the remarks for this read nt of core re- rdinates: N4 e 13 North, V	ing. covered 400356.0	in split spo 081, E4802	oon, in inc	nd downhole gamma	reading.	Probe was	Split segm	ent rial coll	- 2 inch di	ameter - 2 ft m drill rig
Graphical Log				Strata Code	Material Description	Sample No.	Sampling Method		Penetra Type	ation Rate	Remarks
*****	0.00	1.00	-1.00		Mottled brown/red sandy clay - fine grained sand						6497
# # #	1.00	0.50	-1.50		Same as above						
# # # # # *	1.50	0.50	-2.00		Red/brown sandy clay - fine to medium grained sand	CB22-2	Split spoon 2 inch diameter - 2 segment				6440 CR: 19 Sample collected @ 1200 Soil color scale: 5YR 3
<b>#</b> ``	2.00	0.50	-2.50		Same as above						
#``` #```	2.50	0.50	-3.00		Red clayey sand with some gravel and pebbles						6278 Soil color scale: 10R 4
# 	3.00	0.75	-3.75		Same as above						
# # # # , # # , ∀ & O 0	3.75	0.25	-4.00		Moist red clay - same color as clayey sand above						7426 CR: 18
O.0 €. Ø.0 0 O.0 0	4.00	1.00	-5.00		Pinkish/red sand mixed with small cobbles - top of cobble zone						7499
0 0	5.00	1.00	-6.00		Cobble zone - pinkish/red sand mixed with large cobbles						8243 CR: 0
2.0°0											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
• • • • • • • • • • • • • • • • • • •	6.00	0.25	-6.25		Tan to light brown sand - fine, medium, and coarse grained sand					
	6.25	0.75	-7.00		Cobble zone - pinkish/red sand mixed with large cobbles	CB22-7	Material collected from drill rig 'cyclone'.			7967 Sample collected @ 1205
0	7.00	1.00	-8.00		Same as above					7642
	8.00	1.00	-9.00		Red sand - fine, medium, and coarse					7442
	9.00	1.00	-10.00	_	Same as above					7244

Report Date 9/18/2003	e:		B	O R I	NG LOG			Boring No.: CB23		
Company N								Surface Elev	vation:	
New Horiz ite Name:	ons Environ	mental C	Consultants	s, Inc.				Total Depth	•	
CSMRI								13 feet	li	
Location:	1 1 CM							Start:	1240	
Logged By:	School of Mi	nes						1/31/03 at 1 <b>Finish:</b>	1240	
DWM/JAT	[							1/31/03 at	-	
Contractor: Layne-Wes								Equipment Percussion		rill rig
Conditions:								Sample Har		
unshielded CR - amou Boring coo		ling. covered 400373.	in split spo 246, E480	oon, in inc	nd downhole gamma	reading.	Probe was	Sampling M Split spoon segment Material co 'cyclone'.	- 2 inch d	iameter - 2 ft m drill rig
	Top Depth			Strata	Material	Sample	Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# #	0.00	1.00	-1.00		Red clayey sand mixed with gravel and cobbles		Split spoor 2 inch diameter - 2 segment			11988 Sample collected @ 1245
# ****	1.00	1.00	-2.00		Same as above					7937 CR: 8
	2.00	1.00	-3.00		Tan sand mixed with pebbles, gravel, and cobbles - fine, medium, and coarse sand					6608
	3.00	1.00	-4.00		Same as above	CB23-4	Material collected from drill rig 'cyclone'.	y 2		5761 CR: 0 Sample collected @ 1345
	4.00	1.00	-5.00		Same as above					5999
	5.00	1.00	-6.00		Same as above					5922
260 NG 1414										Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
+ + + + + + + + + +	6.00	1.00	-7.00		Mix of fine to medium tan sand and dark olive clay - moist	CB23-7	collected from drill rig 'cyclone'.			6445
+ + + + + +	7.00	1.00	-8.00		Same as above					6501
# # /	8.00	0.50	-8.50		Same as above					
	8.50	0.50	-9.00		Weathered Pierrie Shale - light gray					6310
	9.00	0.50	-9.50		Tan sand					
	9.50	0.50	-10.00		Weathered Pierre shale (moist) - some clay with rust colored stain - hard	CB23-10	Material collected from drill rig 'cyclone'.			6841 CR: 8 Sample collected @ 1330
	10.00	1.00	-11.00		Same as above					6329
	11.00	1.00	-12.00		Gray to olive greeen shale - hard	d				6831
	12.00	1.00	-13.00		Same as above					5067

E

Report Dat 9/18/2003			B	O R I	NG LOG	r			ring No.: B24		
Company I New Hori	Name: zons Environ	mental C	onsultants	Inc				Su	rface Eleva	ation:	
Site Name:			Silbaltante	, 1110.					tal Depth:		
CSMRI									1 feet		
Colorado	School of Mi	nes						1,	/31/03 at 14	425	
Logged By DWM/JA									<b>ish:</b> /31/03 at 15	515	
Contractor	•							Eq	uipment T	ype:	
Layne-We								_	ercussion h mple Ham		~
Conditions	•							Sa	прие папі	mer for	lue:
unshielded CR - amor Boring co		ling. covered i 400354.4	in split spo 489, E480	oon, in inc	nd downhole gamma	reading. I	Probe was	S Se N	mpling Me plit spoon - egment faterial coll yclone'.	2 inch di	ameter - 2 ft m drill rig
	Top Depth			Strata	Material	Sample			Penetra		
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method		Туре	Rate	Remarks
	0.00	1.00	-1.00		Disturbed horizon - gravel, tan clay, sand, pebbles						6908
YA.	1.00	0.50	-1.50		Same as above						
* * * * * * *	1.50	0.50	-2.00		Mottled dark olive, light & dark brown clay - with rust colored nodules, hard caly	CB24-2	Split spoon 2 inch diameter - 2 segment				8548 CR: 9 Sample collected @ 1525
<del># # </del> # <del>*</del> *	2.00	0.50	-2.50		Same as above						
# # # # # # # # # # # #	2.50	0.50	-3.00		Same as above - but very hard - some silt						4520
# # # # # # # # # # # # # # # # # # # #	3.00	1.00	-4.00		Same as above						4488 CR: 12
	4.00	1.00	-5.00		Mottled gray to gray brown clay with rust and black colored nodules - trace of sand -very hard clay						5089 Soil color scale: 5GY 4
# # # # # # # #	5.00	1.00	-6.00		Mottled gray and light red clay with some silt and sand - very hard clay						5994 CR: 16 Soil color scale: 10R 7/
± ++ ‡											Page 1 of

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
# # # # =	6.00	0.25	-6.25		Same as above					
	6.25	0.75	-7.00		Light red clayey sand with some silt - very fine grained					6189
# #	7.00	1.00	-8.00		Same as above					6414 CR: 20
** **	8.00	1.00	-9.00		Same as above					7141
	9.00	1.00	-10.00		Transition to tan sand - fine grained - to of cobble zone	CB24-10	Material collected from drill rig 'cyclone'.			7413 CR: 0 Sample collected @ 1510
	10.00	1.00	-11.00		Same as above					6739

9/18/2003	e:		B	O R I	NG LOG	r		Boring No.: CB25	:	
Company N								Surface Ele	evation:	
New Horiz ite Name:	ons Environ	mental C	onsultants	s, Inc.				Total Deptl	h:	
CSMRI								10 feet		
Aocation: Colorado S	chool of Mi	nes						<b>Start:</b> 1/31/03 at	1530	
ogged By: DWM/JAT								Finish:	1610	
Contractor:								1/31/03 at <b>Equipment</b>		
Layne-We	stern							Percussion	hammer d	
Conditions:								Sample Ha	mmer Tor	que:
unshielded CR - amou Boring coc		ling. covered 400371.	in split spo 698, E480	oon, in inc	d downhole gamma	a reading. I	Probe was	segment		iameter - 2 ft m drill rig
Fraphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample			tration	
Jog	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
* # # * * # # *	0.00	0.25	-0.25		Dark brown clay mixed with gravel					
# (#) # (#) # (#) # (#) # (#)	0.25	0.75	-1.00		Mottled red/brown sandy clay - fine grained sand - moist					4858
₩ ₩ ₩ ₩ ₩ ₩ ₩	1.00	1.00	-2.00		Red/brown clayey sand with some silt - fine grained sand - moist					5027 CR: 20
+	2.00	1.00	-3.00		Same as above					6935
	3.00	0.75	-3.75		Orange/red/brow n clayey sand with some silt - fine grained sand - moist					
# # \ + .	3.75	0.25	-4.00		Red/brown clayey sand with some silt - fine grained sand - moist	CB25-4	Split spoon 2 inch diameter - 2 segment			7266 CR: 24 Sample collected @ 1615
# . #	4.00	1.00	-5.00		Orange/red/brow nsandy clay - very hard clay -					6986

Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	5.00	1.00	-6.00		Transition to gray/tan sand - fine grained sand mixed with gravel and pebbles					7355 CR: 4
0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	6.00	1.00	-7.00		Cobble zone - pinkish/red sand mixed with large cobbles					7771 Cobble zone characteristic determined during test pit excavatio
	7.00	1.00	-8.00		Same as above	CB25-8	Material collected from drill rig 'cyclone'.			7259 CR: 0 Sample collected @ 1620
40.0.° 0.0*40* 0.0* ⊾*	8.00	1.00	-9.00		Same as above					6884
	9.00	1.00	-10.00		Same as above					6652

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Report Date 9/18/2003	e:		B	O R I	NG LOG	r T		Boring No.: CB6				
Company N		. 1 6	<b>N 1</b>					Surface Elevation:				
New Horiz ite Name:	ons Environ	mental C	Consultants	s, Inc.				Total Depth	1:			
CSMRI								10 feet				
Location:	1 1 CM	Start:	200									
Colorado S Logged By:	School of Mi	nes						2/1/03 at 0 Finish:	800			
DWM/JAT								$\frac{2}{1/03}$ at 0	840			
Contractor	•							Equipment				
Layne-Wes								Percussion Sample Har				
.onunuons:	•							Sample Hai	inner 101	que:		
unshielded CR - amou Boring coo		ling. covered 400384.	in split spo 083, E480	oon, in inc	nd downhole gamma	a reading. I	Probe was	Sampling M Split spoor segment Material co 'cyclone'.	n - 2 inch d	iameter - 2 ft om drill rig		
,	,			~			~			1		
Graphical Log	Top Depth (feet)	Thick. (feet)	Bt.Elev. (feet)	Strata Code	Material Description	Sample No.	Sampling Method	Type	tration Rate	Remarks		
		(1000)	(ieet)									
* * * * * * * * * * * * # *	0.00	0.50	-0.50		Dry light brown clay mixed with gravel							
***# #**** # # # # *	0.50	0.50	-1.00		Red/brown clayey sand - medium grained sand	CB26-1	Split spoon 2 inch diameter - 2 segment			7501 Sample collected @ 0825		
# # # # # # # # # # # # # # # #	1.00	0.50	-1.50		Black clay mixed with asphalt, gravel, and pebbles							
# # • *****	1.50	0.50	-2.00		Hard red/brown clay					7080 CR: 16		
0 <sup>4</sup> 0. ,↓ 0.0 ,0 <sup>4</sup> 0. 0 <sup>4</sup> 0.	2.00	1.00	-3.00		Cobble zone - pinkish/red sand mixed with large flat cobbles					6058		
<pre></pre>	3.00	1.00	-4.00		Same as above					6153		
	4.00	1.00	-5.00		Fine grained tan sand with trace of clay, cobbles, gravel	CB26-5	Material collected from drill rig 'cyclone'.	g		6864 Sample collected @ 0845		
	5.00	1.00	-6.00		Same as above					6269		

Graphical	Top Depth	Thick.	Bt.Elev.	Strata		Sample	Sampling Method	Penetration		
Log	(feet)	(feet)	(feet)	Code		No.		Туре	Rate	Remarks
	6.00	1.00	-7.00		Same as above					5898
	7.00	1.00	-8.00		Same as above					5898
	8.00	1.00	-9.00		Same as above					5660
	9.00	1.00	-10.00		Same as above					5579

Report Date 9/18/2003	e:		B	O R I	NG LOG	r			<b>ing No.:</b> B27					
Company Name: New Horizons Environmental Consultants, Inc.										Surface Elevation:				
New Horiz	ons Environ	mental C	Consultants	s, Inc.										
ite Name:									al Depth:					
CSMRI								-	feet					
L <b>ocation:</b> Colorado S	chool of Mi	nes						Star 2/	<b>rt:</b> 1/03 at 08:	55				
logged By:								Fin						
DWM/JAT									1/03 at 09:					
Contractor: Layne-Wes									<b>upment T</b> ercussion h		rill rig			
Conditions:								San	nple Ham	mer Tor	que:			
unshielded CR - amou Boring coo	f the remark for this read nt of core re rdinates: N4 e 13 North, V	ling. covered i 400396.9	in split spo 944, E4802	oon, in inc	nd downhole gamma	reading. I	Probe was	Sp se M	gment	- 2 inch d	iameter - 2 ft m drill rig			
Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling		Penetr	ation				
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method		Туре	Rate	Remarks			
	0.00	1.00	-1.00		Red/brown to red fine sand mixed with clay and some gravel - has yellow staining	CB27-1	Split spoon 2 inch diameter - 2 segment				41539 Sample collected @ 0915			
↓ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00	1.00	-2.00		Cobble zone - pinkish/red sand mixed with large flat cobbles						17630 CR: 12			
<pre></pre>	2.00	1.00	-3.00		Same as above with coarser sand						9951			
<pre></pre>	3.00	1.00	-4.00		Tan/gray sand with gravel - material from cyclone						6976 CR: 0			
<pre></pre>	4.00	1.00	-5.00		Same as above with cobbles and gravel						6793			
	5.00	1.00	-6.00		Same as above						7095			

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Graphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	6.00	1.00	-7.00		Same as above - finer sand	CB27-7	Material collected from drill rig 'cyclone'.			8702 Sample collected @ 0950
0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0.0 0.0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.00	1.00	-8.00		Same as above					8311
0.000 0.0000 0.0000 0.0000 0.0000 0.000000	8.00	1.00	-9.00		Same as above					5812
0 0 0 0 0 0 0 0 0 0 0 0 0 0	9.00	1.00	-10.00		Same as above					6284

ort Date 18/2003	**		B	O R I	NG LOG	T T		Boring No.: CB28		
npany N	ame:							Surface Elev	ation:	
w Horiz	ons Environ	mental C	Consultants	s, Inc.						
Name: SMRI								Total Depth: 18 feet		
ation:		Start:								
	chool of Mi	nes						2/1/03 at 10	05	
ged By:								Finish:	•	
WM/JAT								2/1/03 at 11 Equipment T		
yne-Wes								Percussion h		rill rig
ditions:								Sample Ham		
								C	41	
nments: st line of	f the remark	s columr	contains a	a 10 secoi	nd downhole gamma	a reading.]	Probe was	Sampling Mo		ameter - 2 ft
shielded	for this read	ling.				reading.		segment		
R - amou	nt of core re	covered	in split spo	oon, in inc	ches.			Material col	lected from	m drill rig
	rdinates: N4 e 13 North, <sup>7</sup>			)8.643				'cyclone'.		
aphical	Top Depth	Thick.	Bt.Elev.	Strata	Material	Sample	Sampling	Penetr	ation	
g	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
	0.00	0.50	-0.50		Dry brown sandy clay with some gravel					
	0.50	0.50	-1.00		Black material - remains of asphalt roadbed(?)					25803
## ## ## ##	1.00	0.25	-1.25		Crushed asphalt(?) with intermixed yellow powdery substance					
	1.25	0.75	-2.00		Olive/tan/brown clay with significant crust of rust colored staining - moist	CB28-2	Split spoon 2 inch diameter - 2 segment			20950 CR: 24
······································	2.00	0.50	-2.50		Brown clay mixed with some gravel					
	2.50	0.25	-2.75		Yellow fine grained clayey sand					
## 	2.75	0.25	-3.00		Red/brown sandy clay mixed with mica, quartz, and trace of gravel					8458
0.0 0.0 0.6 0.6	3.00	1.00	-4.00		Same as above					7185 CR: 20
	4.00	1.00	-5.00		Cobble zone - pinkish/red sand mixed with large flat cobbles	CB28-5				7326 Cobble zor characteris determined during test

Graphical	cal Top Depth Th		Bt.Elev.	Strata	Material	Sample	Sample Sampling	Penet	ration	
Log	(feet)	(feet)	(feet)	Code	Description	No.	Method	Туре	Rate	Remarks
~~~~~	5.00	1.00	-6.00		Same as above					7156
4.0.0.0	`									
0.0	6.00	1.00	-7.00		Same as above					6791
0 √ ° • 0 • 0										
0.040										
₀										
0 ↔ ⊾ O 0 4 O 0 ↔ °	7.00	1.00	-8.00		Same as above					6978
.÷.0°										
4.0.0.0										
0.00										
0 ♥ ⊾ O 0 0 ♥ ⊾ O 0										
4.0.0.0	8.00	1.00	-9.00		Same as above					7409
0.0 10										
0										
0.00										
₀ ቍ ⊾ O 0										
0 <del>7</del> ⊾ O 0 4 O 0 * °	9.00	1.00	-10.00		Same as above					7911
0.00										
4.0.0.** 0.***40*										
0.00										
0 <del>0</del> 2 ⊾ 0 0 0 <del>0</del> 2 ⊾ 0 0	10.00	1.00	11.00							
4.0.0.	10.00	1.00	-11.00		Same as above					6841
0.0 50										
0										
0.0.0										
0 - 0 - 0 - 0										
	11.00	1.00	-12.00		Same as above					7571
0.040										
0. <b>0</b> . ∿ ≎0										
⊿ O 0 0 0 0 0 ° <sup>2</sup> O °										
0 <u>√</u> +.0.0	12.00	1.00	-13.00		Same as above					7862
⊿.O.0.*° ∩_**⊿O.*	12.00	1.00	-15.00		Same as above					7802
.O										
4.0.0.0										
0.0°.0°.										
<u>0                                    </u>										
	13.00	0.50	-13.50		Fine to medium					
					grained olive sand (moist) -					
					some cobbles					
					mixed with sand					
	ί.				but distinct color/material					
					color/material change					
$\sim$	13.50	0.50	14.00							6402
	`				Same as above					6492
	14.00	1.00	-15.00		Same as above					6697
										Page 2 of 3

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Graphical	Top Depth	p Depth Thick.	Bt.Elev.	Strata	StrataMaterialCodeDescription	Sample	Sampling Method	Penetr	ation	
Log	(feet)	(feet)	(feet)			No.		Туре	Rate	Remarks
	15.00	1.00	-16.00		Same as above					5766
-	16.00	1.00	-17.00		Silty fine sand	CB28-16				Soil color scale: 5YR 5/8
										Sample collected @ 1108
	17.00	1.00	-18.00		Weathered Pierre Shale - rust orange on weathered material - fissle	CB28-18				Sample collected @ 1110