

VENDOR

RFQ COPY

TYPE NAME/ADDRESS HERE

State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

# Request for Quotation

SH-P

DEFK11029

ADDRESS CORRESPONDENCE TO ATTENTION OF

TARA LYLE 304-558-2544

DIV ENGINEERING & FACILITIES ARMORY BOARD SECTION

1707 COONSKIN DRIVE CHARLESTON, WV

25311-1099

304-341-6368

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB:	FREIGHTTERMS
04/04/2011				
BID OPENING DATE: 04/:	26/2011	BID (	PENING TIME 01	30PM
LINE QUANTITY	UOP CAT. NO	ITEM NUMBER	UNIT PRICE	AMOUNT
•	ADDE	NDUM NO. 2		
TEST BORII	NG LOGS AND LO	ECHNICAL ENGINER CATION MAP.	RING REPORT D. THIS DOCUMENT	A
\$HOULD BE	SIGNED AND RE ND RETURN MAY	TURNED WITH YOUR RESULT IN DISQUA	BID. FAILURE	·
OF YOUR B				
	END	OF ADDENDUM NO.	2	
0001	JB , 96	68-20		
CONSTRUCTI	ON OF THE MORO	GANTOWN READINES	S CENTER	
***** TH	IIS IS THE END	OF RFQ DEFK110	29 ***** TOTAL:	
			•	
		·		
SIGNATURE	SEE REVI	ERSE SIDE FOR TERMS AND CON TELEPHONE	IDITIONS DATE	
TITLE	FEIN		ADDRESS CHANGES	TO BE NOTED ABOVE

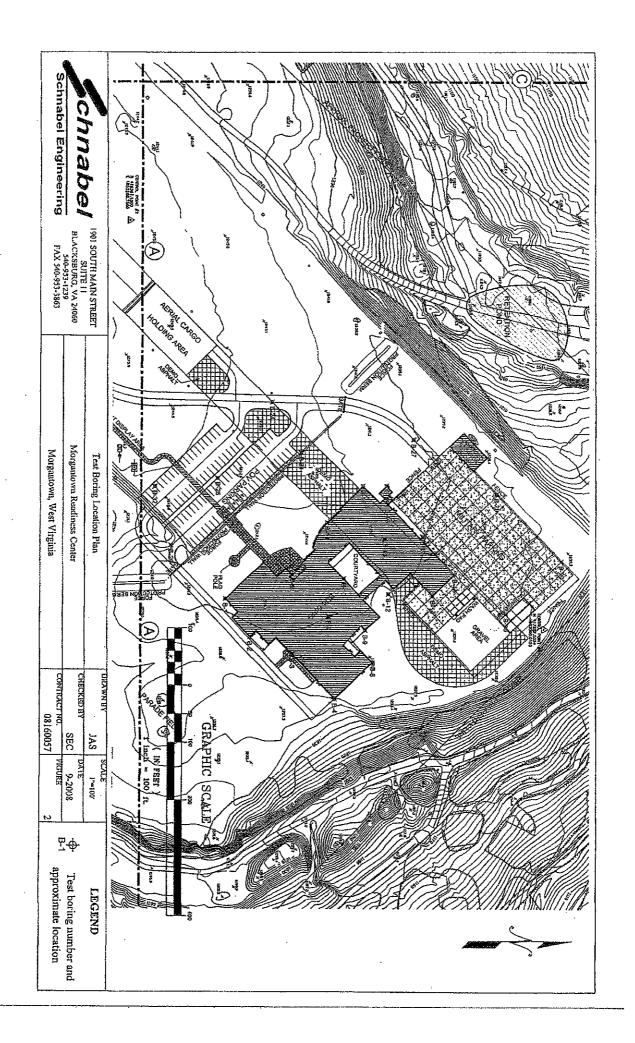
## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

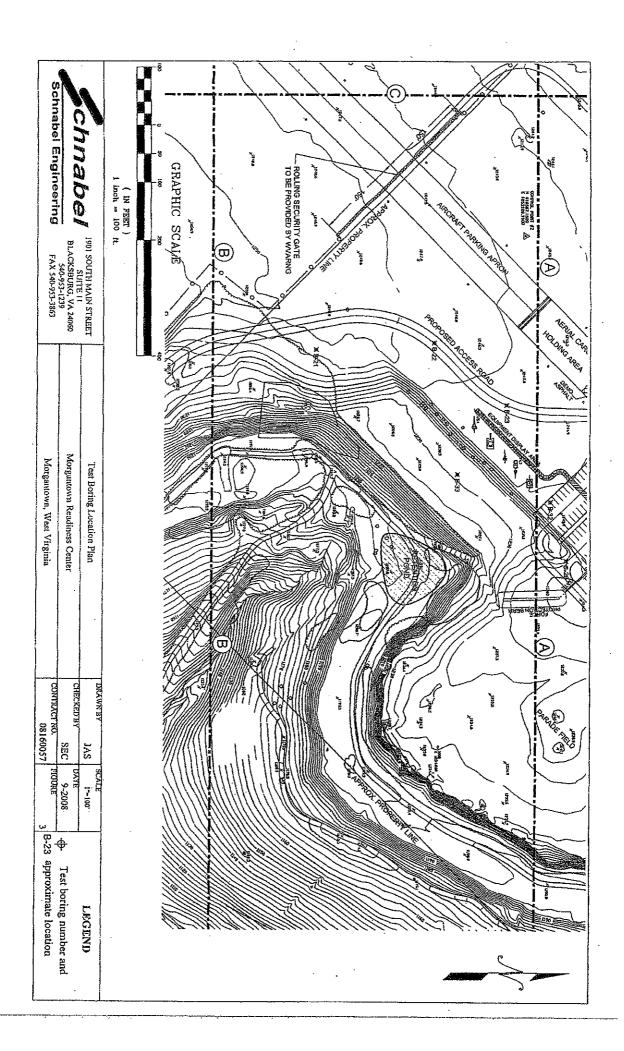
- 1. Awards will be made in the best interest of the State of West Virginia.
- 2. The State may accept or reject in part, or in whole, any bid.
- 3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
- 4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
- 5. Payment may only be made after the delivery and acceptance of goods or services.
- 6. Interest may be paid for late payment in accordance with the West Virginia Code.
- 7. Vendor preference will be granted upon written request in accordance with the West Virginia Code.
- 8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
- 9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
- 10. The laws of the State of West Virginia and the Legislative Rules of the Purchasing Division shall govern the purchasing process.
- 11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
- 12. BANKRUPTCY: In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
- 13. HIPAA BUSINESS ASSOCIATE ADDENDUM: The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
- 14. CONFIDENTIALITY: The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.
- 15. LICENSING: Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
- 16. ANTITRUST: In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

### INSTRUCTIONS TO BIDDERS

- 1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
- 2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as EQUAL to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
- 3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
- 4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
- 5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).





Schnabel Engineering FAX 540 953-3863	BLACKSBURG, VA 24060	1991 SOUTH MAIN STREET	( IN FEET ) 1 inch = 100 ft.	100	PHIC SCALE	IRRORT SCURITY FENCE	Junear Junear Junear July Control of the Control of	+ Fillman - Command - Comm		B of the state of
Morgantown, West Virginia	Morgantown Readiness Center	Test Boring Location Plan								
FIGURE 4	SUDC-6	JAS 1"=(00"								
B-20 approximate location	Test boring number and	LECEND								

## **Descriptive Criteria for Rock Core Logging**

Rock is defined as natural subsurface material yielding SPT blow counts of  $N \ge 100/2$  inches (Martin, 1977). Rock descriptions may include the following descriptive elements, as applicable, generally in the order indicated. Supplemental descriptors may also be used, depending on project performance objectives and available information.

ROCK TYPE, strength, weathering, fracturing, color, recovery, RQD

**Rock Type** General terms are used following the NRCS (2001) rock type classification chart based on visual identification. Some of the NRCS rock types common to our geographic area of practice are listed below. Mineralogical modifiers may be added where they help define distinct units (e.g., Gamet-Muscovite Schist).

Sedimentary:

Conglomerate, Sandstone, Mudstone, Siltstone, Claystone, Shale, Limestone, Dolomite, Coal, Chert

Igneous:

Pegmatite, Granite, Diorite, Gabbro, Diabase, Rhyolite, Monzonite, Andesite, Basalt

Metamorphic:

Gneiss, Schist, Phyllite, State, Quartzite, Marble, Amphibolite, Hornfels

**Strength** (modified from Hoek, 2001) The estimated Uniaxial Compressive Strength associated with each rock strength term is based on the field strength index test for intact rock samples as follows.

Extremely Strong	>36,000 psi	Specimen can only be chipped with a geological hammer.
Very Strong	15,000 - 36,000 psi	Specimen requires many blows of a geological hammer to fracture it.
Strong	7,500 - 15,000 psi	Specimen requires more than one blow of a geological hammer to fracture it.
Medium Strong	3,500 - 7,500 psi	Specimen cannot be peeled with a pocketknife, can be fractured with one blow from a geological hammer.
Weak	700 - 3,500 psi	Specimen can be peeled with a pocketknife with difficulty, shallow indentation made by firm blow with point of a geological hammer.
Very Weak	150 - 700 psi	Material crumbles under firm blows with point of a geological hammer, can be peeled with a pocket knife.

#### Weathering (modified from ACOE, 1994; and USBR, 2001)

Fresh	Mineral crystals appear bright and show no discoloration. Fractures show little or no staining
	on their surfaces. Discolaration does not extend into Intact rock.

Slightly Weathered Rock is generally fresh except along fractures. Some fractures are stained and discoloration

may extend up to 0.5 inches into rock.

Moderately Weathered Significant portions of rock appear dull and discolored. Rock may be significantly weaker than

in its fresh state near fractures. Soil zones of limited extent may occur along some fractures.

Highly Weathered Rock appears dull and discolored throughout. Majority of rock mass is significantly weaker

than in its fresh state. Isolated zones of stronger rock and/or soll may occur throughout.

Severely Weathered Significant portions of rock mass essentially weathered to soil. Rock fabric may still be discernable (i.e., saprolite). Isolated zones of stronger rock may occur locally. Quartz may be

present as hard, fractured dikes or veins.

## Fracturing (from ACOE, 1994)

Very Slightly Fractured > 6.5 ft
Slightly Fractured 2 ft - 6.5 ft
Moderately Fractured 8 in - 2 ft
Hightly Fractured 2.5 in - 8 in
Intensely Fractured < 2.5 in

Color (from Munsell Color System; and GSA, 1995) Color descriptions include a primary color and up to two shade or secondary color modifiers, and may also include a color pattern term to define the relationship between multiple colors.

Shade: Light, Dark

Secondary: Blackish, Brownish, Grayish, Greenish, Reddish, Yellowish, Orangeish

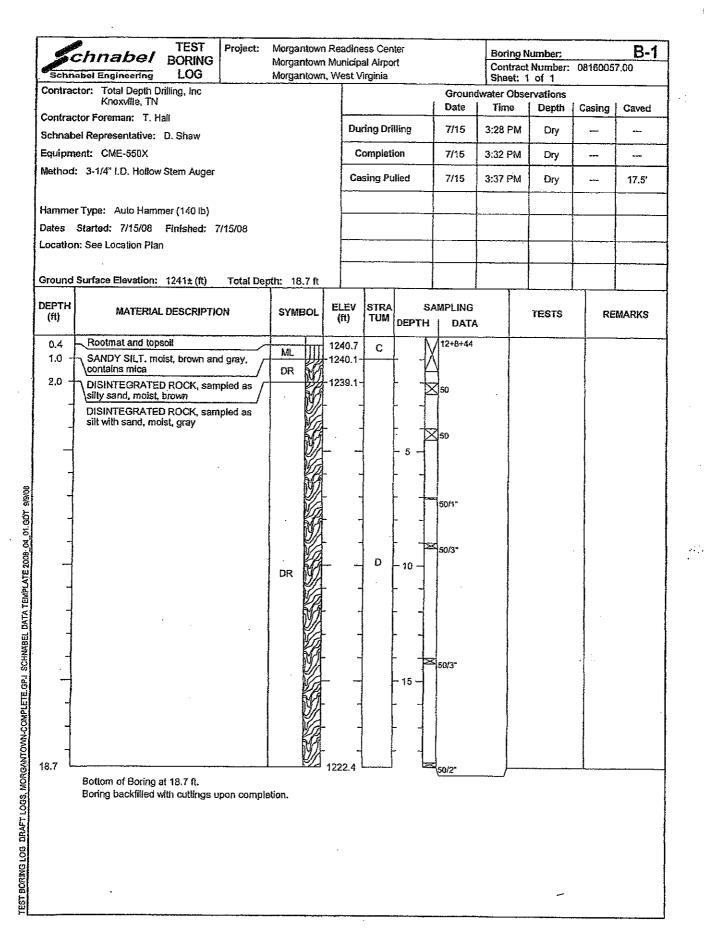
Primary: Black, Brown, Gray, Green, Red, Yellow, Orange, White

Pattern: and, to, with mottles of, with speckles of, with streaks of, with bands of

Recovery is defined as the total length of recovered core in a core run divided by the total length of the core run, times 100 percent. A core run may be any depth interval of concern. Only natural fractures are considered for determining the length of core pieces. Mechanical breaks formed during or after coring do not count against the length determination. The length of recovered core pieces is measured along the core axis, between fracture midpoints.

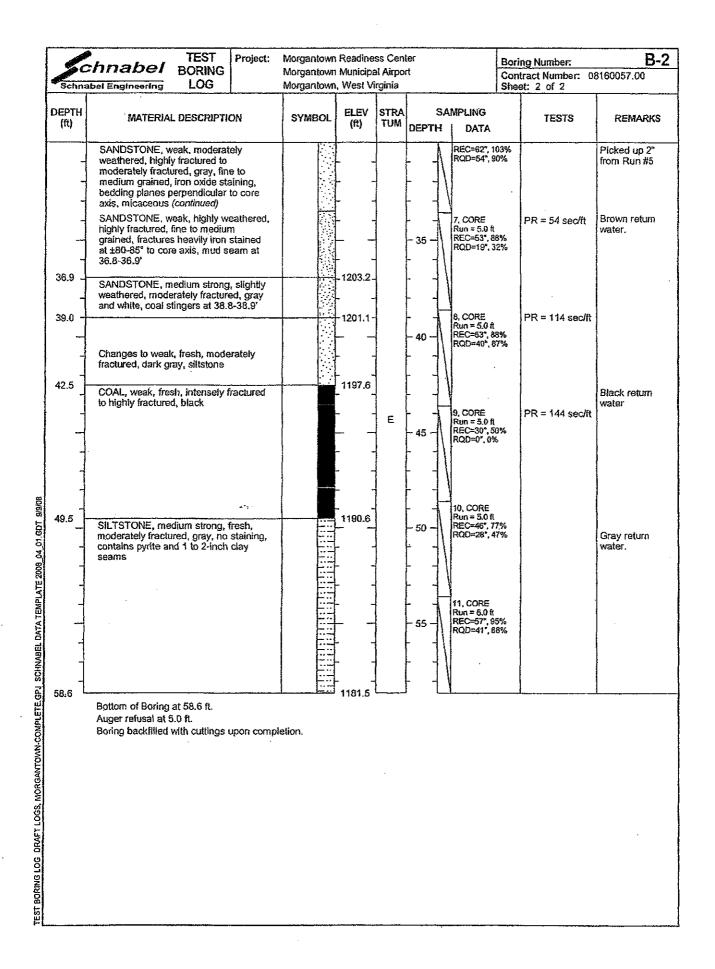
RQD (ASTM D-6032, Deere & Deere, 1988, 1989) is defined as the total length of core pieces at least four inches long recovered from a core run divided by the total length of the core run, times 100 percent. A core run may be any depth interval of concern. Only natural fractures are considered for determining the length of core pieces. Mechanical breaks formed during or after coring do not count against the length determination. The length of recovered core pieces should be measured along the core axis, between fracture midpoints. Core pieces that are highly to severely weathered, very weak, or contain numerous pores should not count toward RQD.





4	chnabel BOP	ST Project:	Morgan	itown	Readine Municipa	al Airpoi			Con	ing Nur tract N	umber:	0816005	<b>B-2</b>
		DG	Morgar	itown,	West V	rginia			<del></del>	et; 1 c			
Contrac	tor: Total Depth Drilling, Knoxville, TN	Inc						Gro	oundwater of the second		ations Depth	Casing	Caved
Contrac	tor Foreman: T. Hall					ina Puil	Hina	7/1					
Schnab	el Representative: D. Sh	aw			Dui	ing Drii	mng	"	0.09	AUVI			
Equipm	ent: CME-550X												<u> </u>
Method	: 3-1/4" I.D. Hollow Stem NO Double Barrel	Auger,				····		-					
Hamme	r Type: Auto Hammer (14	40 lb)						ļ					
Dates	Started: 7/15/08 Finis	hed: 7/16/08											
Locatio	n: See Location Plan												
					-					$\neg \uparrow$			1
Ground	Surface Elevation: 1240	± (ft) Total De	epth: 58	.6 ft			<del></del>	<u></u>					<u> </u>
DEPTH (ft)	MATERIAL DES	CRIPTION	SYM	3OL	ELEV (ft)	STRA TUM	DEPTH	SAMPL	ING IATA	Т	ESTS	RE	EMARKS
0.4	Rootmat and topsoil			1,,,,	1239.7			3+5+	·6	PP =	1.50 tsf		
	SANDY SILT, moist, gr weathered rock fragme		MŁ		· ·	С		<u> </u>	16+50/2°				
2.5	DISINTEGRATED RO	CK, sampled as	<b>—</b>		1237.6	ļ	-	X '```		ļ			1. ***
_	silt, moist, gray		DR		. ,	D	ļ -	<b>.</b>					
5.0-		· · · · · · · · · · · · · · · · · · ·		Va	-1235.1-	ļ	L 5 L	50/3	-			0	
	SANDSTONE, weak, n weathered, highly fracti moderately fractured, g medium grained, iron o bedding planes perpen axis, micaceous	ured to gray, fine to exide staining.			- ·	7		Run	DRE = 3.6 ft =40", 93%  =36", 83%			Wate for co	ole @ 5 ft. r introduce ring.
<u>-</u>	Changes to fresh to sit no staining	ghtly weathered,					- 10 -	{  REC	ORE = 5.0 ft :≈56", 93% )=28", 47%			Gray water	return
_	·				- -								
					_ · · · -		- 15 -	Run	ORE = 5.0 ft :=60", 100% )=35", 58%				
_						E	-		ORE				
·	Changes to medium st fractured to moderately 21.8'					-	- 20 -	Run	= 5.0 ft :=56", 93% )=56", 93%				
<u></u>					-		-		ORE	PD -	51.6		
_			}		- - -		- 25 -	Run	= 5.0 ft ≥58", 97% ≥58", 97%	sec/f			
_					-	1	-		ODE	5	.ca - '		
-			}	1: :1	-	1	r -	\  Run	ORE = 5.0 ft	ורא ≖	60 sec/	"	

(continued)



	chnabel BORING  abel Engineering LOG	Morgantow Morgantow Morgantow	m Muni	cipal Airp			Cor	itract	lumber: Number: of 2	0816005	<b>B-</b> -
Contrac	ctor: Total Depth Drilling, Inc					Grou			ervations	***	
Confee	Knoxville, TN ctor Foreman: T. Hall		Ĺ		····	Date	Tin	ne	Depth	Casing	Caveo
				During Dr	illing	7/16	10:28	AM	Dry		-
	pel Representative: D. Shaw		-				-				
	ent: CME-550X		_				<u> </u>				
Method	: 3-1/4" I.D. Hollow Stem Auger, NQ Double Barrel				-						
Hamme	r Type: Auto Hammer (140 lb)					ļ	_				
Dates	Started: 7/16/08 Finished: 7/16/08										
Location	n: See Location Plan			<del></del>							
Ground	Surface Elevation: 1239± (ft) Total D	epth: 53.5 ft									
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELE (ft)		DEPTH	SAMPLING			TESTS	RE	MARKS
0.4	Rootmat and topsoil		1238	.2		3+2+4	· · · · · · · · · · · · · · · · · · ·	MC	= 14.5%	<del></del>	·
-	SILTY SAND, moist, brown, contains rock fragments, and mica				-	X .					
-		SM				7+6+10		МС	= 10.3%		
4.		1 1		_ c		_					
4.0	SANDY SILT, moist, dark gray and		1234	.6⊣	r 1	11+17+1	22	мс	= 13.3%		
$\dashv$	brown, contains mica		-		- 5 -	$\bigvee$					
4		ML	-	4	1						
]			L			_}					
7.5	DISINTEGRATED ROCK, sampled as		1231	.1	<u> </u>	20+35+5	50/4"				
4	silt, moist, dark gray and brown	M	j	1 .	† ½	<u>\</u>					
-			}	-	} +	× 25+50/2					•
			1		10 -	25-50/2					
			]		"						
. 1	•	DR //	1	( p	† 1						
-		M	}	4	┡ ┤						
4			1		[ ]						
			Á								
1			Ī	1	<u>†</u>	<b>≤</b> 50/4"		1			
15.0	SANDSTONE, weak, highly weathered,	- W	1223.	.6	15	1, CORE				Da. h-	10 @ 45
_	highly fractured, gray, fine to enarge	1 廖	1		Ļ _∫	Run = 3. REC=33	5 ft			Water	le @ 15 introdu
1	grained, Iron oxide staining, bedding planes perpendicular to core axis,	1 (3)				RQD=5"				for cori	
1	contains coal stingers		Ť	1	† 1	$\setminus$				water.	. GIGITI
18.2			]   1220.	4	<b>├</b>	V					
_ ]	SHALE, weak, slightly weathered, highly fractured, black, iron oxide		1			2, CORE					
	staining					Run = 5.0 REC=50	. 83%			Drilling	
20.5			- 1218.	- E	- 20 -	RQD=24				slower	ation rai
-~~ <u> </u>	SANDSTONE, weak to medium strong, highly weathered to moderately		1 1218.	<b>'</b>			1				
]	weathered, moderately fractured, gray,		L				i				
7	fine to coarse grained, iron oxide staining, intensely fractured and		ſ	1							
4	heavily iron stained at 23.5-23.9' and		F	-	+ +	1					
1	25.6-25.7', few coal stringers		-	_	1 1	3, CORE					
		1 [33]	1	1	1	Run ≈ 5.0 REC=55'				ĺ	

	tenabel BORING	Project:	Morgantown Morgantown Morgantown,	Municipa	al Airpoi			Boring Numb Contract Nun Sheet: 2 of	nber: 08160057.00
EPTH (ft)	MATERIAL DESCRIPT		SYMBOL	ELEV (ft)	STRA	S DEPTH	AMPLING DATA	·····	STS REMARKS
	SANDSTONE, weak to medite highly weathered to moderate weathered, moderately fracturine to coarse grained, Iron or staining, intensely fractured a heavily iron stained at 23.5-23.5-25.7, few coal stringers (continued)	in strong, ly ed, gray, ide nd					ROD=48", 8		Gray return water.
				_ ·		- 30 -	Run = 5.0 ft REC=58*, 9 RQD=48*, 8	7%	Orilling penetration rate faster.
				- ·		35 -	5, CORE Run = 5.0 ft REC=58*, 9 RQD=40*, 0	17%	Brown return water.
38.2	SILTSTONE, weak, fresh, interpretation of the fractured to highly fractured, of	ensely ark gray		1200.4	E	- 40	6, CORE Run = 5.0 ft REC=30", 5 RQD=0", 05	50% %	Drilling penetration rat slower.
12.0	COAL, intensely fractured to he fractured, black	righly		-1196.6	,	45	7, CORE Rus = 5.0 ft REC=36*, 6* RQD=0*, 0*	30% }	Black return water No return wate
48.5	SILTSTONE, medium strong, moderately fractured, gray, no bedding plane fractures at ±11 core axis, few are clay filled	staining.		1190.1		50	8, CORE Run = 5.0 ft REC=47, RQD=47*	78%	
53.5	Bottom of Boring at 53.5 ft. Auger refusal at 15.0 ft. Boring backfilled with cuttings	upon compl	etion.	_ 1185.1	<u> </u>	} -			

	chnabel Bo	TEST Project DRING LOG	t: Morgantow Morgantow Morgantow	n Municip	al Airpo			Cont	ng Number: ract Number: t: 1 of 1	0816005	<b>B-</b> 5
	tor: Total Depth Drilling	L	Morganion	11, 11651 0	идика		Grouns	1	bservations	<del></del>	
-	Knoxville, TN	,				1	Date	Time		Casing	Caved
	etor Foreman: T. Hall		·	Du	ring Dri	llina	7/14	3:03 F	M Dry		
•	el Representative; D. S	Shaw		-						ļ	
	ent: CME-550X			·	sing Pu	illea	7/14	3:14 F	M Dry		
Method:	: 3-1/4" I.D. Hollow Ster	m Auger		C	ompleti	ion	7/14	3:19 F	M Dry		
Hamme	r Type: Auto Hammer (	140 lb)					<u> </u>	ļ		<u> </u>	
		ished: 7/14/08		1				1		}	1
Location	n: See Location Plan										
Ground	Surface Elevation: 124	12± (ft) Total	Depth: 8.6 ft			~			•		
DEPTH (ft)	MATERIAL DE	SCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	S/ DEPTH	AMPLING	ļ	TESTS	RE	MARKS
0.3	Rootmat and topsoil			1241.7	A		6+50/5"	-		<del> </del>	
0.7	FILL, sampled as silly brown, contains rock	sand, moist, fragments, and	FILL	1241.3	<del>  ^</del>						
-	DISINTEGRATED RO sandy silt, moist, brov	OCK, sampled as					30+50/5"		MC = 6.7%		
-			DR V		D		50/5.5"				
					1	5 -					
_							50/1.5"				
8.6	Changes to gray		V.	1. 1 <sub>233.4</sub>						Auger	
0.0	Bottom of Boring at 8. Auger refusal at 8.5 ft Boring backfilled with		mpletion.	1200.1		•	50/1"	<i></i>		/grinaii	ng/scrap
	·										
					÷				,		
,	•										-
						•					
				÷							

	TEST Project; BORING BORING LOG	Morgantown Morgantown Morgantown	Municip:	al Airpo			Boring N Contract Sheet:	l Number:	0816005	<b>B-</b> 7.00
Contrac	tor: Total Depth Drilling, Inc Knoxville, TN						dwater Obse	ervations		
Contrac	tor Foreman: T. Hall			·		Date	Time	Depth	Casing	Cavec
	el Representative: D. Shaw		Dui	ring Dri	lling	7/14	3:31 PM	Dry	-	
	ent: CME-550X		C	ompleti	on	7/14	3:40 PM	Dry		
Method:	3-1/4* I.D. Hollow Stem Auger	٠	Ca	sing Pu	lled	7/14	3:47 PM	Dry		10.8'
Hammer	Type: Auto Hammer (140 lb)						ļ			
Dates	Started: 7/14/08 Finished: 7/14/08						ļ		ĺ	
Location	n: See Location Plan									
Ground	Surface Elevation: 1242± (ft) Total De	pth: 11.5 ft								
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	S. DEPTH	AMPLING		TESTS	RE	MARKS
0.2	Rootmat and topsoil	733	1241.4		V	4+5+7				
1	SILTY SAND, moist, brown and gray, contains mica, and rock fragments	SM	 	С			1			
2.5	DISINTEGRATED ROCK, sampled as sandy silt, moist, brown		1239.1 - - -		5	19+50/3* ≤ 50/4*	7 1		No rea	covery
-	Changes to gray	DR W		D		≤ 50/5°				
	Changes to black		- ~			≤ 50/3"				
1					- 10 -					
11.5 L	Bottom of Boring at 11.5 ft.		1230,1	L	l L.	2011	}			
	Auger refusal at 11.4 ft.  Boring backfilled with cuttings upon complete.	letion.								
			_	•						
	•									
		•			•					

Schnabel Engineering LOG Project:	Morgantown Morgantown Morgantown	Municipa	al Airpo			Contr	g Number: act Number: : 1 of 1	0816005	B-7
Contractor: Total Depth Drilling, Inc Knoxville, TN					Groun Date	dwater Ol Time	servations Depth	Casing	Caved
Contractor Foreman: T. Hall		Dui	ing Dri	lling	7/15	2:14 P	и		
Schnabel Representative: D. Shaw Equipment: CME-550X		C	ompleti	ion	7/15	2:16 PI	VI Dry		
Method: 3-1/4" I.D. Hollow Stem Auger			sing Pu		7/15	2:19 PI			6.1'
•		Ca	5111 <b>9</b> F0		- 7713	2.1311			0.7
Hammer Type: Auto Hammer (140 lb)					ļ	<del> </del>			
Dates Started: 7/15/08 Finished: 7/15/08			<del></del>		<u> </u>	ļ			
Location: See Location Plan						ļ		ļ <u>.</u>	
Ground Surface Elevation: 1241± (ft) Total (	Depth: 6.1 ft							<u> </u>	
DEPTH MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING	- 1	TESTS	RE	EMARKS
0.3 Rootmat and topsoil	+	1240.3	<del> </del> -	1	3+7+8			+	
FILL, sampled as silty sand, moist,	FILL 🛞		Α	+ -	Δ				
fragments	/ a. //	1238.9	С	}	14+50/3				
2.5 LEAN CLAY WITH SAND, moist, brown and gray		1230.1	-	<del> </del>				ŀ	
DISINTEGRATED ROCK, sampled as silt, moist, gray	DR V		D	-	≤ <sub>50/3"</sub>			No re	covery
DISINTEGRATED ROCK, sampled as sand, moist, brown	DR MA	-1235. <del>6</del>	1	-5-					
Auger refusal at 6.0 ft. Boring backfilled with cuttings upon cor	npletion.				•				
						-			
								,	-
			٠						

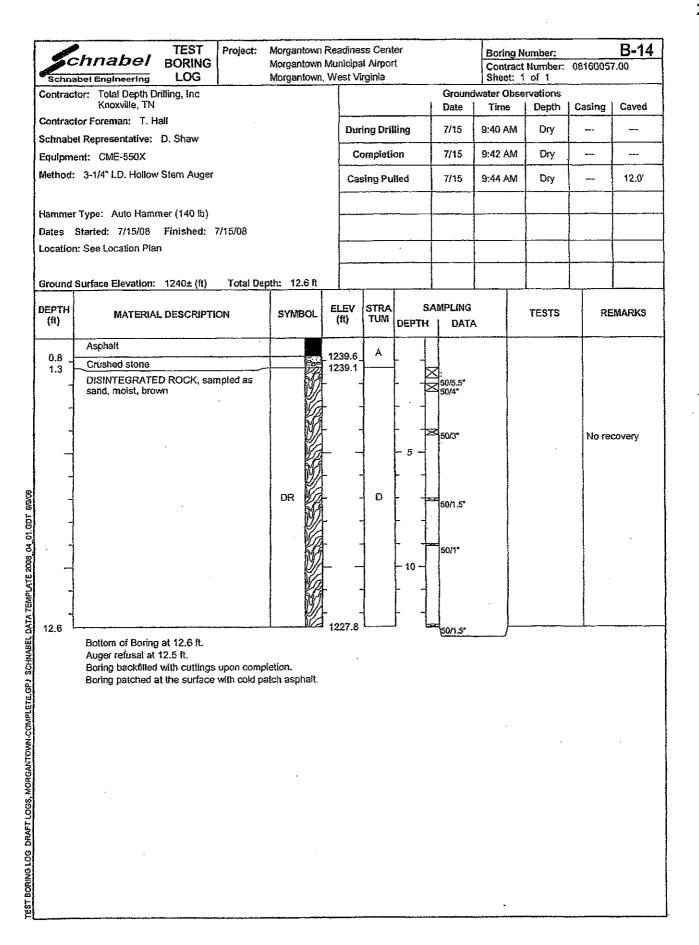
	TEST Project: BORING BORING LOG	Morgantown Morgantown Morgantown	Municipa	al Airpo			Cont	ng Number: ract Number: t: 1 of 1	0816005	<b>B-</b> 7.00
Contrac	tor: Total Depth Drilling, Inc							bservations		
Contrac	Knoxville, TN tor Foreman: T. Hall					Date	Time	Depth	Casing	Caved
	el Representative: D. Shaw		Dui	ring Ori	lling	7/15	1:41 P	M Dry		-
	ent: CME-550X		C	ompleti	on	7/15	1:43 P	M Dry		
Method:	: 3-1/4" I.D. Hollow Stem Auger		Ca	sing Pu	illed	7/15	1:45 P	M Dry		8.0'
Hammo	r Type: Auto Hammer (140 lb)							<u> </u>		
	Started: 7/15/08 Finished: 7/15/08									
	n: See Location Plan									
Ground	Surface Elevation: 1240± (ft) Total Dep	oth: 8.1 ft			···					
DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING DAT	į	TESTS	RE	EMARKS
0.3	Rootmat and topsoil		1239.2	<del>                                     </del>	1	4+4+6		MC = 10.4%		
1.5	FILL, sampled as sandy silt, moist, brown, contains mica, and rock	FILL	1238.0	A	+	4				
2.5	\fragments \tag{SANDY SILT, moist, brown, contains} \tag{mica}	ML	1237.0	C		10+43+5	10/31			
_	DISINTEGRATED ROCK, sampled as silt, moist, brown			-		≤50/5.5*				
-		DR M			5 -	300,535				
-					+ 1					
-					-	50/3*			No re	covery
8.1 -			1231.4	4	} <del> </del>	50/1	}			
	Bottom of Boring at 8.1 ft.  Auger refusal at 8.0 ft.  Boring backfilled with cuttings upon compl	letion,								-
		•								
	•									
						,				

<i></i>	chnabel	TEST Project: BORING LOG	Morgantov Morgantov Morgantov	vn Mu	ınicipa	al Airpoi			Con	tract	umber: Number: of 1	0816005	<b>B-9</b> 7.00
	tor: Total Depth Dr	rilling, Inc	<u>-</u>	····		<del></del>		Ground			rvations		
^	Knoxville, TN tor Foreman: T. Ha	_ If						Date	Tim	e	Depth	Casing	Caved
	el Representative:			-	Dur	ing Dri	ling	7/15	1:161	PM			_
	ent: CME-550X	D. Shaw			C	ompleti	on	7/15	1:18	PM	Dry		
-	: 3-1/4" I.D. Hollow	Stem Auger			<del></del>								40.01
					Cas	sing Pu	lled	7/15	1:21	PIM			10.0'
Hammei	r Type: Auto Hamn	ner (140 lb)											<u> </u>
	Started: 7/15/08	Finished: 7/15/08											
Location	n; See Location Plan	ì											
Ground	Surface Elevation:	1240± (ft) Total D	Depth: 10.0 f	1	<u> </u>	ri		· · · · · · · · · · · · · · · · · · ·		اـــا			<u> </u>
DEPTH (ft)	MATERIAL	. DESCRIPTION	SYMBOI		LEV (ft)	STRA TUM	SA Depth	MPLING DATA	L.		TESTS	RE	MARKS
0.3	Rootmat and tops	soil	<del>/                                      </del>	X 12	40.0		N	3+3+5		МС	= 16.3%		
2.0 -	FILL, sampled as brown, contains r fragments	sandy silt, moist, nica, and rock	FILL	X	238.3	A							
-	<del></del>	O ROCK, sampled as			-			26+50/5"		MC	= 7.1%		
-				2	-	Ì	- +=	50/2"				Mr. re	covery
_				2	_		- 5 -					14010	004019
			DR		_	D							
			] M										
7				4				50/3"					
7				7	-		† †						
-				4	-			50 <i>1</i> 2*					
10.0-		· · · · · · · · · · · · · · · · · · ·			30.3-	<u> </u>	L 10 L	ــــــــــــــــــــــــــــــــــــــ		<u>.                                    </u>			
	Bottom of Boring Auger refusal at 1 Boring backfilled		npletion.							,			
									-				

	tes Chnabel BOR	Project:	Morgan						Bori	ng N	umber:		B-10
	chnabel BOR				Municipa West Vi		π		Con She	tract et: 1	Number: of 1	081600	57.00
Contract	tor: Total Depth Drilling, In Knoxville, TN	nc					-	Groun Date	dwater (		rvations Depth	Casing	Caved
Contract	tor Foreman: T. Hall					ing Dril	lling	7/14	4:04		Dry		
Schnabe	el Representative: D. Sha	w			-				<del> </del>		<u> </u>	<del> </del>	<del> </del>
	ent: CME-550X				Ç	ompleti	on	7/14	4:10	PM .	Dry		ļ <del></del>
Method:	3-1/4" I.D. Hollow Stem A	\uger			Cas	sing Pu	illed	7/14	4:15	PM	Dry		12.7'
Hammer	Type: Auto Hammer (140	0 <b>lb</b> )			-			<del> </del>	<del> </del>			<del> </del>	-
	Started: 7/14/08 Finish	ed: 7/14/08										ļ	ļ
Location	n: See Location Plan								<u> </u>	<u></u>			
Ground	Surface Elevation: 1241±	: (ft) Total De	pth: 12	.5 ft		<del>,</del>	<del></del>			<del></del>		<u> </u>	<u> </u>
DEPTH (ft)	MATERIAL DESC	RIPTION	SYME	BOL	ELEV (ft)	STRA		AMPLING DAT			TESTS	R	EMARKS
0.3	Rootmat and topsoil	/	<del> </del>	₩.	1240.7			2+3+7					
2.0	FiLL, sampled as slity so brown, contains rock fra mica	and, moist, gments, and	FILL		1239.0	A			-		نديد سد		
	DISINTEGRATED ROC silt, moist, brown	K, sampled as						28+50#	•	MC	= 7.6%		
	Changes to gray				 		5 -	13+50/3	п				
-													
]			DR			D		50/4*					
-					- · · 		- 10 -	⊠ <sub>50/4.5*</sub>					•
7			<u> </u> 		-		-						
4				M		-	<u> </u>						
12.5 L	Bottom of Boring at 12.5			_1111	1228.5			50/0*			······································		
	Auger refusal at 12.5 ft. Boring backfilled with cu		oletion.										
								•					
									•				
		•									•		

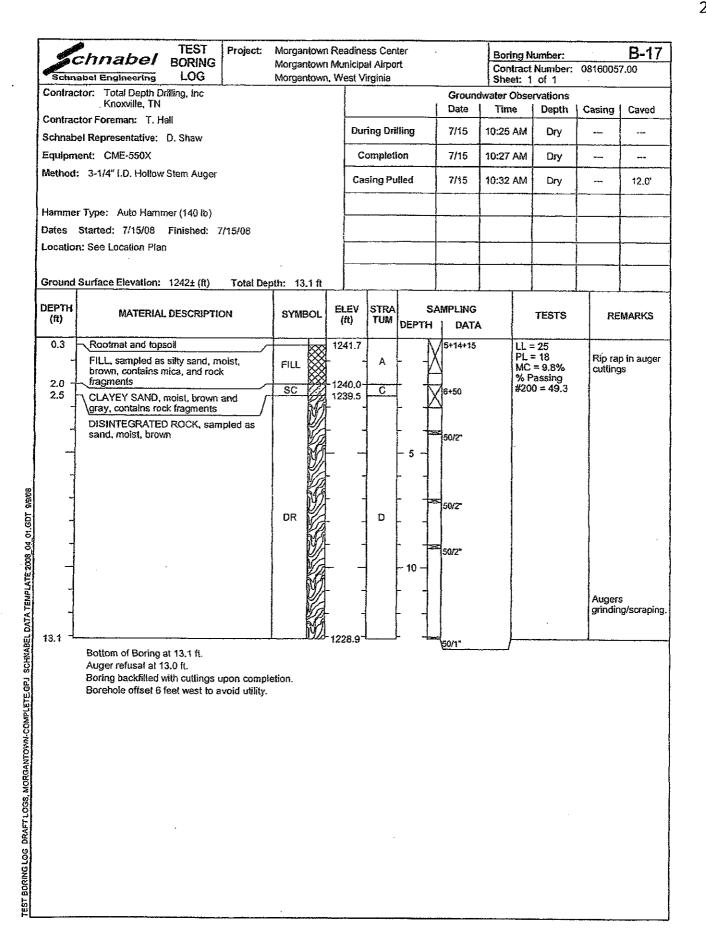
	thnabel BORING Projection LOG	Morg	gantow	i Readine i Municipa i, West V	al Airpo			Cont	ng Numbe tract Numl et: 1 of 1	ber: 0	816005	<b>B-1</b> 1 7.00
	or: Total Depth Drilling, Inc	<u></u>					Groun	dwater C	)bservatio	กร		
^	Knoxville, TN						Date	Tim	e Der	oth (	Casing	Caved
	tor Foreman: T. Hall			Dui	ring Dri	lling	7/14	5:07 F	PM Dr	ry		
	ent: CME-550X			С	ompleti	on	7/14	5:13 F	M Dr	γ.		
	3-1/4" I.D. Hollow Stem Auger			-			714.8	5.40.5	<del></del>		~	6.51
				Ca	sing Pu	nea	7/14	5:18 9	PM Dr	Ty		6.5'
Hammer	Type: Auto Hammer (140 lb)							<del> </del>				
Dates :	Started: 7/14/08 Finished: 7/14/08	3										
Location	: See Location Plan											
Ground S	Surface Elevation: 1242± (ft) Total	al Depth:	9.1 ft								•	
DEPTH				ELEV	STRA	s	AMPLING					
(ft)	MATERIAL DESCRIPTION	SY.	MBOL	(ft)	TUM	DEPTH	DAT		TES'	TS	RE	MARKS
0.4	Rootmat and topsoil		- KXX	1241.8		١	7+6+6					
4	FILL, sampled as silty gravel, moist, brown, contains mica				1	† 1/	7					
+		FII	. 💥		A	├ <del> </del>	7+4+6		MČ = 3.1	1%	Rip ra	p in auge gs
4		""	∸ 🞇		1	<u> </u>	$\langle  $					-
]		-		Ĺ			1					
4.5	DISINTEGRATED ROCK, sampled	as		1237.7			8+31+50	10.5"				
$\exists$	sandy slit, moist, brown					5 -						
4		]	10	·	-{		≤  <sub>50/3"</sub>				No re	covery
		D	R M	} .	P	}						
4	Changes to gray				-	}						
9.1	Changes to gray		K	1233.1		<u> </u>	50/1.5*				<u> </u>	
	Bottom of Boring at 9.1 ft. Auger refusal at 9.0 ft. Boring backfilled with cuttings upon	completion										

4	hnabel	TEST BORING LOG		Morganto Morganto Morganto	wn (v	funicipa	il Airpoi			Cont	ng Nur tract N et: 1 (	umber:	0816005	B-12
	tor: Total Depth D Knoxville, TN	rilling, Inc							Grou Date	ndwater C		rations Depth	Cásing	Caved
Contrac	tor Foreman: T. H	all				<u> </u>			<del> </del>					Gaveu
Schnabe	el Representative:	D. Shaw				Dur	ing Dri	lling 	7/14	4:24 F	-M	Dry		
Equipme	ent: CME-550X					C	ompleti	on	7/14	4:30 F	PM	Dry		
Method:	3-1/4" I.D. Hollow	Stem Auger		•		Cas	sing Pu	illed	7/14	4:35 F	PM	Dry		4.0'
Hammer	r Type: Auto Hamr	ner (140 lb)							ļ					
Dates	Started: 7/14/08	Finished:	7/14/08											
Location	n: See Location Pla	n												
Ground	Surface Elevation:	1241± (ft)	Total Dep	oth: 4.2 f	t t		1 <del></del>	г	<u> </u>			<del></del>		
DEPTH (ft)	MATERIA	L DESCRIPTI	ON .	SYMBO	)L	ELEV (ft)	STRA TUM	DEPTH	AMPLIN DA		1	TESTS	RE	MARKS
0.2	Rootmat and top	soil			<b>XX</b>	1240.7		1	5+7+14					
1.5	PROBABLE FILE sand, moist, brow	., sampled as	slity nica, and	FILL	<b>፠</b>	- 1239.4	A		4					
1	rock fragments DISINTEGRATE	D ROCK, sar	npled as	DR		•	D		24+274	50/4*				
1	sand, moist, brow	wn			P									
	Boring backfilled Boring offset 12			Stort.										
	·					•								
				-										
								•						
			•											



	hnabel	TEST BORING LOG	Project:	Morganto Morganto Morganto	wn M	unicipa	al Airpo				Cont	ract	umber: Number: of 1	0816005	<b>B-1</b> 5
Contrac	tor: Total Depth D	rilling, Inc							_			_	rvations		
Contract	Knoxville, TN tor Foreman: T. H	lati				-			D	ate	Time	e	Depth	Casing	Caved
	el Representative:					Dur	ing Dri	lling	7.	/14	5:31 F	M	Dry	_	
	ent: CME-550X	<b>3</b> , 31,311				C	ompleti	on	7	/14	5:34 F	M-	Dry		
Method:	3-1/4" i.D. Hollow	Stem Auger				Cas	sing Pu	illed	7	/14	5:39 F	PM	Dry		8.3'
Hammer	r Type; Auto Hami	mer (140 lb)							_						
Dates	Started: 7/14/08	Finished:	7/14/08							1				{	
Location	n: See Location Pla	n													
Ground	Surface Elevation:	1242± (ft)	Total Dep	oth: 9.1 f	t							,			
DEPTH (ft)	MATERIA	L DESCRIPTION	ON	SYMBO	AL E	ELEV (ft)	STRA TUM	DEPTI	SAMP	LING DATA			TESTS	RE	MARKS
0.3	Rootmat and top	soil		1	<del>20</del> 1	241.8			7+	9+9					
-	FILL, sampled as brown, contains mica			FILL	▓	-	A	<u> </u>	Д						
2.0	DISINTEGRATE silt, moist, yellow	D ROCK, san	npled as			240.1- -		-	N <sub>33</sub>	+23+44		MC	= 8.8%		
-						_	]	-	₩ 250	<i>1</i> 4"					
-				DR	//-			- 5 -							
-						-	D	-							
1						-	-	-	50	<i>l</i> 5"					
4					A	-		ļ -					,		
8.5 9.1	DISINTEGRATE	D ROCK, san	npled as	DR	F71	233.6 233.0									
9.1	sandy silt, moist, Bottom of Boring	brown				233.0			<b> 50</b>	/1"		1			
	Auger refusal at Boring backfilled	9.0 ft.	upon comp	letion.											
				,						٠					

	test chnabel BORING			town Mu	ınicipa	il Airpor			Con	tract		0816005	B-16
	abel Engineering LOG	<u> </u>	Morgan	town, W	est Vi	rginia		0	She		of 1		· · · · · · · · · · · · · · · · · · ·
Contrac	tor: Total Depth Drilling, Inc Knoxville, TN				ļ			Date	Tim		Depth	Casing	Caved
Contrac	tor Foreman: T. Hall				Darr	ing Dril	 lina	7/15	11:00	AM	Dry	_	
Schnab	el Representative: D. Shaw				<b>!</b>							-	
• •	ent: CME-550X				C	ompleti	on 	7/15	11:04		Dry		
vlethod:	: 3-1/4" I.D. Hollow Stem Aug	er			Cas	sing Pu	lied	7/15	11:06	AM	Dry		8.3'
-lammei	r Type: Auto Hammer (140 lb	)			-			ļ ——				<b></b>	<u> </u>
Dates	Started: 7/15/08 Finished:	7/15/08	-	-				<u> </u>					<u></u>
Location	n: See Location Plan												
Sround	Surface Elevation: 1242± (ft)	Total Dep	oth: 8.5	5 ft									
DEPTH (ft)	MATERIAL DESCRIP		SYM	- E	LEV (ft)	STRA TUM	S DEPTH	AMPLIN			TESTS	RE	MARKS
(**)			<del> </del>	<del>-  </del>		<u> </u>	DEF 13	/5+20+		-			
0.4	Rootmat and topsoil FILL, sampled as silty sand	moiet		₩ <sup>1:</sup>	241.1	Α		X 13+20+	14				•
1	brown, contains mica, and t	ock	FILL					$\stackrel{\sim}{\rightarrow}$					
2.0	fragments DISINTEGRATED ROCK, s	ompled as	1		239.5		† †	<b>⊠</b> 50				Į	
4	sand, moist, brown	ampieu as				1	- 1					Ì	
إ			DR	100	,	-	- 4	<b></b> 50/5"					
				$M_{\perp}$	_		_ 5 _	2,3003				-	
						D		Ì					
6.0	DISINTEGRATED ROCK,	sampled as	1	1	235.5·	1						}	
_	silt, moist, dark gray		DR		-			27+50.	5"				
8.3 8.5	DISINTEGRATED ROCK, s	sampled as /	- DR	1	233.2 233.0	1	<b>「</b>	50/0.5					
			ē										
	Bottom of Boring at 8.5 ft.												
	Auger refusal at 8.5 ft. Boring backfilled with cuttin	as upon comp	ietion.										
		3p											•
	·						•						
	•								•				



C	hnabel BORING	Project:	Morgan Morgan							g Number: act Numbe	r: 0816005	B-18
Schna	abel Engineering LOG	<u> </u>	Morgan	town, V	est Vi	rginia			Sheet	t: 1 of 3		
Contract	tor: Total Depth Drilling, Inc Knoxville, TN								dwater O Time	bservations Depth		Caved
Contract	tor Foreman: T. Hall				-	<del> </del>		Date	1		Casing	Caved
	el Representative: D. Shaw				Dur	ing Dril	ling	7/16	4:44 P	M Dry		
	ent: CME-550X											
• •	: 3-1/4" I.D. Hollow Stem Auge	Γ.										1
	NQ Double Barrel								<del> </del>			
	r Type: Auto Hammer (140 lb)											
	Started: 7/16/08 Finished:	7/17/00										
	n: See Location Plan	111100			-			<del>                                     </del>	<del>                                     </del>		-	<del> </del>
.vcativi	i. See Locadon Flan							<u> </u>	<u> </u>	$\overline{}$	<del></del>	ļ
	Surface Elevation: 1240± (ft)	Total Der	aths 68	e e				ļ				
- DINDOIC	Surface Elevation. 1240± (it)	Total be	1	.0 1		}		ـــــــــــــــــــــــــــــــــــــ	<del>'</del>		<u> </u>	
(ft)	MATERIAL DESCRIPT	TON	SYME	3OL E	LEV (ft)	STRA TUM	S DEPTH	AMPLING		TESTS	R	EMARKS
	Asphalt		<del>                                     </del>		239.5	-		1				
0.6	Crushed stone				239.5 23 <mark>9.</mark> 01	1		9+7+6			1	
	FILL, sampled as silty sand,				_	A	<u> </u>	XI			[	
	brown, contains mica, and re fragments	UK.	FILL				L #					
3.5				₩ 1	- 236.6	<u> </u>			Ī			
-	DISINTEGRATED ROCK, sa sand, dry, brown	mpled as		M	•			<b></b> 50/5°	}		1	
	25010, 417, 5701111					Ì	- 5 -		[			
			OR	P		D		}				
7					-	1	[ ]		-			
				W.	232. <del>6</del>	-	} †	1, COR	E		Dry i	ole @ 7 ft
7.5	SANDSTONE, very weak to	weak,		'	232.0	-	┞╶┤	50/2°  Run = 0				er introduc oring.
	moderately weathered, mode fractured, brown, fine to coar	se			_	]	<u> </u>	RQD=0	5°, 750% '', 0%			vg.
7	grained, iron oxide staining, if	najority of						2, COR	.0 ft		Brow wate	yn return
- 1	perpendicular to core axis, rr	anganese		1 -	_		- 10 -	REC=5	2", 87% 9", 32%		Mod	erately rap
4	stained joints at 45" to core a ±15.0', 15.4', 17.1' and 18.6'	exis at		1::1		-	├ ┤	1]			pene	etration rat
1	Changes to medium strong							<b>\</b>			.	
1								╢				
-{					•	1	† 1	V			1	
4				1.1		-	-	3, COR			ļ	
				1:1	_	<u> </u>	- 15 -	REC=5				
٦							'	1	-,			
1					•	E	1					
_						-	} ┤			l İ	-	
							<u> </u>	\	i			
1								<b>-</b>  ,	<u>.</u>		ł	
4						1	1	4, COR	5.0 ft			
_				1	-	-	20 -	REC=5	5", 92% 8 <b>", 80</b> %		Gray wate	y return
	Changes to moderately wear	hered,				]					wate	.,
1	gray		1			7						
4						1	} -	}				
						1	<u> </u>					
7				[::]				5, COF	ıc			
4						1	r 1	\  Run = !	5.0 ft	}		
ļ	<b>.</b>		<u> </u>	<u> </u>				VKEC=6	0", 100%	<u> </u>		

	thnabel BORING Project:	Morgantown					Boring Number:	B-18
	bel Engineering LOG	Morgantown Morgantown	-		11		Contract Number: Sheet: 2 of 3	08160057.00
EPTH (ft)	MATERIAL DESCRIPTION	SYMBOL.	ELEV (ft)	STRA	DEPTH	SAMPLING	теятя	REMARKS
26.4	SANDSTONE, weak to medium strong, highly weathered, brown, fine to medium grained, bedding plane fractures perpendicular to core axis, iron stained fracture parallel to core axis from 26.3-27.9';clay seam at ±28.7-28.9'		1213.7		- 30 -	6, CORE Run = 5.0 ft REC=59", 9 RQD=31.5"	8%	Brown return water.
34.9	Changes to highly fractured, gray, with coal stringers Changes to iron stained vertical fracture at 32.6-33.2'  SILTSTONE, weak, slightly weathered, moderately fractured to slightly fractured, dark gray, no staining,		1205.2		35 —	7, CORE Run = 5,0 ft REC=50°, 8 RQD=50°, 8	33%	
	contains sandstone laminations, clay seam at ±38.7-38.9'	100		Ε	40	8, CORE Run = 5.0 f RECE-56°, S RQD=59°, S	8%	Disking along bedding faminations fro 43-43.6'
			1192.7		45 —	9, CORE Run = 5,0 1 REC=57", RQD=57",	1 15% 95%	
17.4	SANDSTONE, strong, slightly weathered, moderately fractured to slightly fractured, gray, fine to medium grained, contains coal stringers, layer of dark gray siltstone at ±47.1-49.8', iron stained fracture at ±10.0' to core axis at 53.5-53.8'; siltstone laminations at ±58.36-59.4' and 60-63'		-		- 50	10, CORE Run = 5.01 REC=80", RQD=48.5	100%	
-				7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	55 -	11, CORE Run = 5.0 ( REC=80". RQD=46".	100%	Partial loss of return water.

	hnabel	TEST BORING LOG	Project:	Morgantown Morgantown Morgantown	Municipa	al Airpoi			Contra	Number: act Number: 00 3 of 3	B-18 8160057.00
DEPTH (ft)	MATERIA	L DESCRIPTI	ON	SYMBOL	ELEV	STRA TUM	SA DEPTH	MPLING DATA		TESTS	REMARKS
63.0	SANDSTONE, sweathered, mod slightly fractured grained, contain of dark gray silts iron stained frac axis at 53.5-53.8 at ±58.36-59.4 silts of salts	erately fractural, gray, fine to scool stringer stone at ±47.1-ture at ±10.0' at; siltstone larand 60-63' (coeak, fresh, higherately fractural, contains sar	ed to medium s, layer -49.8', to core ninations ntinued) 		1177.1-	E	- 65 -	12, CORE Run = 5.0 ft RCC=60°, 16 RQD=40°, 6° 13, CORE Run = 5.0 ft RCC=57°, 90 RQD=57°, 90	7% 5%		

Bottom of Boring at 68.6 ft.

Auger refusal at 7.0 ft,

Boring backfilled with cultings upon completion.

Boring patched with cold patch asphalt at the surface.

	chnabel BORING		ntown N	Nunicipa	ss Cent al Airpor irginia			Con	iract	umber: Number: of 3	0816005	B-19 7.00
	tor: Total Depth Drilling, Inc	worgar	itowii,	TVEST VI	i gii ii d		Groun	idwater (				
	Knoxville, TN						Date	Tim	e	Depth	Casing	Caved
	tor Foreman: T. Hall			Dur	ing Dri	lling	7/17	9:52	AΜ	Dry		
	el Representative: D. Shaw			}			<del>                                     </del>	1			<del></del>	
	ent: CME-550X : 3-1/4" l.D. Hollow Stem Auger,			-			<del> </del>	<u> </u>		-		
wetnoa:	NQ Double Barrel			-	··							
łammei	r Type: Auto Hammer (140 lb)						-	<del> </del>			<del></del>	<del> </del>
	Started: 7/17/08 Finished: 7/17/08				<del></del>			<u> </u>			····	ļ
.ocatio	n: See Location Plan											<u></u>
Bround	Surface Elevation: 1241± (ft) Total Dep	th: 68	.7 ft		1				1		1	
EPTH (ft)	MATERIAL DESCRIPTION	SYM	BOL	ELEV (ft)	STRA TUM	DEPTI	SAMPLING			TESTS	RE	EMARKS
0.3	Rootmat and topsoil	C-N-3	III	1241.1	С		9+20+5	0		= 23		
1.0 -	SILTY SAND, moist, brown, contains mica	SM	000	1240.4-	<del>                                     </del>	† {	$\Delta$		% F	= 18 Passing 10 = 35.9		
2.0 -	DISINTEGRATED ROCK, sampled as sand, moist, brown		M	1239.4	-		30+50/6	5 <b>"</b>	#20	W = 30.8		
-	DISINTEGRATED ROCK, sampled as		W	•	]							
-	silty sand, moist, brown			•	1	f -	50/6°					
			<i>V/</i> -		a	- 5						
_		DR	M		_	ļ _						
	į.		M									
7	•			•	]		50/3"					ole at 7 ft r introduc
7			M		1	-			1		for co	
9.0	SANDSTONE; medium strong,	-	17/	1232.4	-	┼ -	1, COR	E			Brow	n return
	moderately weathered to highly				1	10 -	Run≂¢	1.7 ft 0", 89%	İ		water	•
	weathered, moderately fractured to highly fractured, brown, fine to coarse						RQD≈2	11, 37%				
1	grained, Iron oxide staining, majority of fractures and bedding planes						$  \cdot  $				1	
-	perpendicular to core axis, contains				1	<b>-</b>						
-	coal lenses and stringers, spotty iron staining along bedding plane fractures		-  -		-							
					]		2, COR	£				0 - 1 -
					-		Run = !				steep	cally to My dipping
				-	1	15 -	RQD=3	0", 50%				stained ure at
-					$\dashv$	-						14.2' and 19.8'
_	Changes to very weak to weak,		1		E	-					13.4	10.0
	severely weathered, at 16.8'				]	L .						
•						1	$\coprod_{\underline{}}$					
4	Changes to medium strong, slightly weathered to moderately weathered,	1	1: 1		1	:	3, COR Run = 1	5.0 ft	}			
-	gray, fine to medium stained; silty			-	-	- 20 -	REC=6	0*, 100% 7*. 78%				
_	micuceous laminations/partings from ±20.5-24.6'	1			1	ļ.						
		ļ										
		}			1		1 \					
4		1			1	} -						
_					1	ļ.	4, COF	ĶΕ				
ī		1			1		\  Run = :	5.0 ft 5", 92%			- 1	

_	thnabel BORING bel Engineering LOG	Project	Morgantown Morgantown Morgantown	Municipa	al Airpo					B-19 08160057.00
Sehna DEPTH (ft)	MATERIAL DESCRIPT	ION	SYMBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING		TESTS	REMARKS
	Changes to weak to very weat weathered to severely weather intensely fractured to highly fibrown SANDSTONE, medium stron moderately weathered to high weathered, moderately fracturing highly fractured, brown, fine the grained, iron oxide staining, or fractures and bedding planes perpendicular to core axis, or coal lenses and stringers, spistaining along bedding plane (continued) Changes to medium strong, weathered, slightly fractured moderately fractured, gray Changes to medium strong to fresh, moderately fractured to fractured  Changes to highly fractured, ±37.0-37.4'	ered, actured, g, nly red to o coarse najority of entains otty fron fractures slightly to o strong, o slightly		4400.6	TI	36 -	5, CORE Run = 5.0 REC=56", ROD=50", RCD=50", RCD=50", RCD=50", RQD=50", RQD=50", RQD=50",	t 55% 83% ft 97% 83%		Gray return water.
42.5	SILTSTONE, weak, fresh, si fractured to moderately fract gray, no staining	ightly ured, dark		1198.9	The state of the s	- 45 -	8, CORE Run = 5.0 REC:=57" RQD=57*	95%		Drilling penetration rate slower.
- - -						- 50 -	9, CORE Run = 5.0 REC=58* RQD=58*	.97%		Discing along laminations froi 50.0-51.5
54.0	SANDSTONE, medium stro slightly fractured to moderat fractured, gray, fine to coars contains numerouse coal str SILTSTONE, weak, fresh, s fractured to moderately frac gray, no staining, contains s laminations	ely e grained, ingers lightly tured, dark	/	1187.		- 55	10, COR Run = 5.1 REC=54'	) ft ', 90%		

	chnabel	TEST Project: BORING LOG	Morgantown Morgantown Morgantown	Municipa	l Airpoi	ter rt		Cont	ng Number: tract Number: et: 3 of 3	B-19 08160057.00
EPTH (ft)		L DESCRIPTION	SYMBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING DAT		TESTS	REMARKS
	SILTSTONE, we fractured to mod gray, no staining laminations (cor	eak, fresh, slightly derately fractured, dark g, contains sandstone atinued)			E	65	11, COF Run = 5. REC=56 ROD=56 12, COF Run = 5 REC=52 RQD=53	8E .0 ft		
67.5	SHALE, weak,	fresh to slightly		1173.9						
68.7	weathered, sligh	ntly fractured, dark gray		1172.7	L		<u> </u>		1	

Schriz	chnabel	TEST BORING LOG	-	Morgan Morgan Morgan	town h	/lunicipa	al Airpo			Co		umber: Number: of 1	0816005	B-20
	tor: Total Depth Dri								Grou			rvations		
	Knoxville, TN								Date	Tir	ne	Depth	Casing	Caved
	tor Foreman: T. Ha					Dur	ing Dri	lling	7/18	11:55	5 AM	Dry		
	el Representative:	D. Shaw				-				44.5				
	ent: CME-550X					C	ompleti	ion	7/18	11:5	7 AM	Dry		_
Viethod:	: 3-1/4" I.D. Hollow :	Stem Auger				Cas	sing Pu	illed	7/18	12:03	PM	Dry		8.0′
łammei	r Type: Auto Hamm	er (140 ib)				<u> </u>			<del> </del>					<u> </u>
		Finished: 7/	/18/08							1				}
_ocatio	n: See Location Plan									<b>-</b>				
						-		<del></del>	-	+			-	<b> </b>
Ground	Surface Elevation:	1241± (ft)	Total Dep	th: 10	.0 ft				1				L.,,	<u> </u>
DEPTH (ft)	MATERIAL	DESCRIPTIO	)N	SYME	BOL	ELEV (ft)	STRA TUM	DEPTI	SAMPLIN			TESTS	RE	MARKS
			<del></del>		15:14	1240.2	ļ		A6+5+4		DD	- 2 25 tof	<del>-  </del>	
0.3	Crushed stone SANDY LEAN CL	AV maint he				£240.2 -	A					= 3.25 tsf		
آ	SAIND! LEAN OL	AT, 1801SL, DR	GWII	FILL		·	^		<u> </u>					
2.0	CLAYEY SAND,	noist, brown a	and gray		W	1238.5-		† -	6+8+9		МС	= 13.6%		-
				sc	1	-	-		X					
4.0				<u> </u>		1236.5-							ł	
4.0	LEAN CLAY WITI	H SAND, mois	st, gray			120010			5+7+9			= 25.3% = 1.50 tsf	.	
				CL				- 5 -	$\square$				-	
6.0	SILTY SAND, mo	ist, oravish br	nwn	-		1234.5-	С	-						
-	and black, contain	is coal	~				-	ļ		4.4				
				SM	ML	_	]		12+14+	14	SVIC	= 21.7%	1	
7								İ	12+14+	-30				
9.5				<u> </u>	Ш	- 1231 <i>.</i> 0		<u> </u>	IXI'				-	
10.0	DISINTEGRATED	ROCK, sam	pled as	DR		1230.5	l D	ــ 10 ـــ	<i>V</i> V					
10.0	Bottom of Boring : Boring backfilled v	n at 10.0 ft. with cutlings u	upon compl	etion.					. = drilled	location				

	hnabel	TEST BORING LOG	Project:	Morgantown F Morgantown Morgantown,	viunicipa	al Airpor			Contra	Number: act Number: 1 of 1	0816005	<b>B-</b> 2
<del></del>	tor: Total Depth D		<u> </u>			<u> </u>		Ground		servations		
1	Knoxville, TN							Date	Time	Depth	Casing	Cave
1	tor Foreman: T. H			· · .	Dur	ing Dril	lino	7/18	11:16 A	M Dry		_
1 × 100 × 200	el Representative:	D. Shaw	ر. معرف می این این این این این این این این این ای		<b> </b>		·				<u> </u>	
Equipm	ent CME-550X				C	ompleti	on, .	7/18	11:20 A	M Dry		
Method	3-1/4" J.D. Hollow NQ Double Barre			·	Ca	sing Pu	lled	7/18	11:22 A	M Dry	_	5.0
L	r Type: Auto Hami						,	· · · · · · · · · · · · · · · · · · ·		+		
	Started: 7/18/08		7718/08									
Locatio	n: See Location Pla	ก									·	
Ground	Surface Elevation:	1247± (ft)	Total De	pth: 6.1 ft							<u> </u>	
DEPTH (ft)	MATERIA	L DESCRIPTION	ON	SYMBOL	ELEV (ft)	STRA TUM	S/ DEPTH	AMPLING	1	TESTS	RE	MARI
<u> </u>	Rootmat and top		<del></del>		1047 D	-	<del>                                     </del>	/2+7+50/5	·	L = 22		
0.4 1.0 -	SILTY CLAYEY		brown. r	SC-SM	1247.0 1246.4-	C	<b>├</b>	<b>\</b>	li li	PL = 17 VIC = 9.8%		
	contains rock fra	gments, and	mica /			]				% Passing		
-	DISINTEGRATE sand, moist, bro		npled as		•	]		<b>≤</b> 60/5″	]	#200 = 36.8	]	
-	Sand, molec, 575	****		1 KA	•	1	<b>†</b> †		-			
-				DR D		D		≤ <sub>50/3*</sub>	,		-	
_					_ ~	]	5 -	อยเจ			1	
-				I M							-	
6.1	Bottom of Boring Auger refusal at	6.0 ft.			1241.3	٠						
5	Boring backfilled	with cuttings	upon comp	letion.								
W.												
<b>}</b>												
	·											
מיני בין מיני אין מיני	·						·					
	·											
ברסמי ווייניסאון סייניסאון בר ברסמי שבר ברסמי ממוניסטיים ביוויר ביוויר ביוויר ביוויר ביוויר ביוויר ביוויר ביוויר												
יינין די מיינין אייני איינין אייני איינין איין אי												

School	hnabel	TEST BORING LOG	Project:		town	Readine Municipa West V	al Airpo			ſ	Conti	ract	umber: Number: of 1	0816005	B-22 7.00
	tor: Total Depth D			incigar.		1, 1,100,11		· · ·	Gro				rvations		·····
Cantraa	Knoxville, TN tor Foreman: T. H	الم				<u> </u>			Date		Time	-	Depth	Casing	Caved
	tor r oreman: 1. n el Representative:					Dui	ing Dri	lling	7/14	1	:44 P	М	Dry		
	ent: CME-550X	U. SIRW					ompleti	ion	7/14	1 1	:51 P	м	Dry		
_	3-1/4" I.D. Hollow	Stem Auger				<b> </b>		<del></del>	7						
mourou.	3-114 1.D. 110110W	Gran Augur				Ca	sing Pu	ılled	7/14	1	:55 P	M	Dry		9:0'
Hammer	Type: Auto Hamr	ner (140 lb)				-						_			
Dates	Started: 7/14/08	Finished: 7	/14/08												
Location	n: See Location Plan	n													
Ground	Surface Elevation:	1248± (f1)	Total De	pth: 8.7	ft		1	1	<u> </u>		<del></del>				
DEPTH (ft)	MATERIA	L DESCRIPTION	ON	SYMB	OL	ELEV (ft)	STRA TUM	S DEPTH	AMPLII D	NG ATA			TESTS	RI	EMARKS
0.3	Rootmat and top	soil		-	XX	1247.3		١	4+4+	;	1			$\neg$	
-	FILL, sampled as moist, brown, cor- and mica	s lean clay wit ntains rock fra	h sand, igments,	FILL		- -1245.6-		t 1							
2.0	FILL, sampled as	s silt with sand	1, moist.			1240.6	A	1	9+6+	Į.		MC	= 14.2%		
4	brown, contains i	rock fragment	s, and	FILL	₩		1	1 1/	<u>\</u>						
4	RICO				燹			+	/16433	3+67/4"					
4.5	DISINTEGRATE	D ROCK, san	pled as			1243.1 		- 5 -							
ļ	sand, moist, brov	γn							7		ļ				
1				DR	1/2		D								
. 🚽					M		1		≤ 100/3	(t					
ال					V		1	+ +							
• 7				<u> </u>		1238.9	L	) tz	100/2	hr	}				oler refuse
8.7														Sam	Diet Feinze
8.7	Bottom of Boring		ноол сатр	letion.										Sam	pier reiusa
8.7	Bottom of Boring Boring backfilled		ирол сатр	letion.										Samı	pjer reiusa
8.7			ирол сатр	letion.										Samp	oles reidsc
8.7			ирол сотр	letion.										Samp	ores reids:
8.7			ирол сатр	letion.									-	\Sam <sub> </sub>	ples reluse
8.7			ироп сатр	letion.					-			,		\Sam <sub> </sub>	DET FOLDS:
8.7			ироп сотр	letion.									<b>-</b> .	\Sam <sub> </sub>	JET FOLUSE
8.7			ироп сотр	letion.							-		÷ .	\Sam <sub> </sub>	JET FOLUSE
8.7			ирол сотр	letion.							-	·	•• .	\Sam <sub>l</sub>	JET FOLUSE
8.7			ироп сатр	letion.							-	•	~ .	\Sam <sub>l</sub>	JES FEIGSE
8.7			ироп сотр	letion.							-	·		\ <u>Sam</u>	
8.7			ирол сотр	letion.									<del>-</del> .	\Sam <sub>l</sub>	
8.7			ироп сатр	letion.									~ .	\Sam <sub>l</sub>	JES FEIGS-
8.7			ироп сатр	letion.										\Sam <sub>1</sub>	ner reluse
8.7			ирол сотр	letion.									<del>-</del>	\Sam <sub>l</sub>	
8.7			ироп сатр	letion.									~ .	\Sam <sub>l</sub>	SET FOLISE
8.7			ироп сатр	letion.									·	\Sam <sub>1</sub>	JEST PERIOSE
8.7			ироп сотр	letion.										\Sam <sub> </sub>	
8.7			ирол сотр	letion.										\Sam <sub> </sub>	JUEN PERIODE

Contractor: Total Depth Drilling, Inc Knoxville, TN  Contractor Foreman: T. Hall  Schnabel Representative: D, Shaw  Equipment: CME-550X  Contractor Foreman: Total Depth Drilling	3-23		0816	nber:	Nun	tract	Borin Cont Shee					Airpo	ınicipa	n M	ntov	Morgar Morgar Morgar	ł	Projec	est Ring Og	BO			7/18		50
Contractor Foreman: T. Hall Schnabel Representative: D, Shaw Equipment: CME-550X Method: 3-1/4" I.D. Hellow Stem Auger  Casing Pulled  T/14 2:20 PM Dry  Casing Pulled  T/14 2:20 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:26 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:25 PM Dry  Casing Pulled  T/14 2:26 PM Dry  Casing Pulled  T/1								ound	Gr									L	inc	illing,	th Dri	l Dep	: Tota		
Schnabel Representative: D, Shaw Equipment: CME-550X  Method: 3-1/4* I.D. Hollow Stem Auger  Casing Pulled  7/14 2:20 PM Diy —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:25 PM Dry —  Casing Pulled  7/14 2:20 PM	aved	ig (	Cas	epth	De	e	Time	te	Da				ļ							. 11					
Completion 7/14 2:20 PM Dry —  Method: 3-1/4" I.D. Hellow Stem Auger  Casing Pulled 7/14 2:25 PM Dry —  Hammer Type: Auto Hammer (140 lb)  Dates Started: 7/14/08 Finished: 7/14/08  Location: See Location Plan  Sround Surface Elevation: 1246± (ft) Total Depth: 10.0 ft  DEPTH (ft) MATERIAL DESCRIPTION SYMBOL ELEV (ft) TUM DEPTH DATA  Remains and topsoil Fill. sampled as sitly sand, moist, brown, contains rock fragments, and mica  Fill. sampled as sitly sand, moist, brown, contains mica, and rock fragments  Fill. sampled as sitly sand, moist, brown, contains mica, and rock fragments  Bottom of Boring at 10.0 ft.	-		-	Dry		PM°	2:10 F	14	7/1		lling	ng Dri	Dori												
Method: 3-1/4" I.D. Hollow Stem Auger  Casing Pulled 7/14 2:25 PM Dry  Hammer Type: Auto Hammer (140 lb)  Dates Started: 7/14/08 Finished: 7/14/08  Location: See Location Plan  Sround Surface Elevation: 1246± (ft) Total Depth: 10.0 ft  MATERIAL DESCRIPTION SYMBOL ELEV STRA TUM DEPTH DATA  Casing Pulled 7/14 2:25 PM Dry  Rootinat and topsoli FILL, sampled as sitty sand, moist, brown, contains rock fragments, and mica  FILL, sampled as sitty sand, moist, brown, contains rock fragments, and mica  FILL, sampled as sitty sand, moist, brown, contains mica, and rock fragments  FILL sampled as sitty sand, moist, brown, contains mica, and rock fragments  Bottom of Boring at 10.0 ft.				Dry	T <sub>C</sub>	-M	2:20 F	14	711		on	molet	GC						aw	D, 5n			-		
Hammer Type: Auto Hammer (140 lb) Pates Started: 7/14/08 Finished: 7/14/08 -ocation: See Location Plan  Sround Surface Elevation: 1246± (ft) Total Depth: 10.0 ft  DEPTH MATERIAL DESCRIPTION SYMBOL ELEV STRA SAMPLING TUM DEPTH DATA  Reofmal and topsoil FILL, sampled as sitty sand, moist, brown, contains rock fragments, and mica Fill, sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  1243.6  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  1245.3  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments  1245.6  Fill sampled as sitty sand, moist, brown, contains mica, and rock fragments		+			╁					1									Axeor	Ctam					-
Dates Started: 7/14/08 Finished: 7/14/08  Docation: See Location Plan  Dround Surface Elevation: 1246± (ft) Total Depth: 10.0 ft  DEPTH MATERIAL DESCRIPTION SYMBOL ELEV STRA TUM DEPTH DATA  Remark 1245.3  FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL, sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL STRA SAMPLING DEPTH DATA  TESTS REMARK  1245.3  FILL STRA SAMPLING DEPTH DATA  FILL STRA SAMPLING D	8.0'	-		Jry	1		2:25 }	14	717		lied	ing Pt	Cas						Augei	Stein	JIRC VV	.D. Fit	3-114 1	ou.	herr
Dates Started: 7/14/08 Finished: 7/14/08  Docation: See Location Plan  Dround Surface Elevation: 1246± (ft) Total Depth: 10.0 ft  DEPTH MATERIAL DESCRIPTION SYMBOL ELEV STRA TUM DEPTH DATA  Remark 1245.3  FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL, sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL STRA SAMPLING DEPTH DATA  TESTS REMARK  1245.3  FILL STRA SAMPLING DEPTH DATA  FILL STRA SAMPLING D		+											<u> </u>						40 lb)	ner (1	(amm	luto H	ype: A	ner i	łam
DEPTH MATERIAL DESCRIPTION SYMBOL ELEV STRA SAMPLING TESTS REMA  O.3 Rootmat and topsoil  FILL, sampled as silty sand, moist, brown, contains mica, and rock fragments  Fill, sampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments  Fill Strampled as silty sand, moist, brown, contains mica, and rock fragments													ļ					7/14/08							
MATERIAL DESCRIPTION  SYMBOL  (ft)  STRA  TUM  DEPTH  DATA  TESTS  REMA  1245.3  FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FilL, sampled as silty sand, moist, brown, contains mica, and rock fragments  Fill STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  1243.6  FILL  FILL  1243.6  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM																				1	Plan	cation	See Lo	tion:	.oca
MATERIAL DESCRIPTION  SYMBOL  (ft)  STRA  TUM  DEPTH  DATA  TESTS  REMA  1245.3  FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FilL, sampled as silty sand, moist, brown, contains mica, and rock fragments  Fill STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  1243.6  FILL  FILL  1243.6  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  FILL  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM  DEPTH  DATA  MC = 11.5%  STRA  TUM					+		<b></b>	$\neg$		1			ļ												
MATERIAL DESCRIPTION  SYMBOL  (ft)  TUM DEPTH DATA  Rootmat and topsoil  FILL, sampled as sitty sand, moist, brown, contains rock fragments, and mica  FiLL, sampled as sitty sand, moist, brown, contains mica, and rock fragments  FILL  SYMBOL  (ft)  TUM DEPTH DATA  MC = 11.5%  FILL  5+11+10  MC = 8.1%  FILL  FILL  A - 5 - 4+9+2  MC = 7.0%  Bottom of Boring at 10.0 ft.			<u> </u>		1	<del></del>	<u>L</u>						1	<u> </u>	).0 f	th: 10	Dept	Tota	6± (ft)	1246	ion:	levat	urface E	nd S	roi
FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FilL, sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL sampled as silty sand, moist, brown, contains mica, and rock fragments  MC = 8.1%  FILL Sampled as silty sand, moist, brown, contains mica, and rock fragments  MC = 8.1%  FILL Sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL Sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL Sampled as silty sand, moist, brown, contains rock fragments  MC = 8.1%  MC = 7.0%  MC = 6.9%  10.0  Bottom of Boring at 10.0 ft.	ARKS	REM		STS	TE		4				1			-   "	BO	SYM		ON	CRIPT	. DES	RIAL	MATE			
FILL, sampled as silty sand, moist, brown, contains rock fragments, and mica  FILL, sampled as silty sand, moist, brown, contains mica, and rock fragments  FILL  Sempled as silty sand, moist, brown, contains mica, and rock fragments  FILL  Sempled as silty sand, moist, brown, contains mica, and rock fragments  FILL  Sempled as silty sand, moist, brown, contains mica, and rock fragments  MC = 8.1%  MC = 7.0%  Settom of Boring at 10.0 ft.			+	1.5%	C = 1	MC	<del></del>	3+9	/3+3	1	<del> </del>		245.3	0 1	<b>J</b>		ᅱ			s <b>o</b> il	tons	at and	Reotm	-	0
brown, contains rock fragments, and mica  Fil.L, sampled as slity sand, moist, brown, contains mica, and rock fragments  Fil.L  Fil.L  Fil.L  Fil.L  Bottom of Boring at 10.0 ft.									V	4	-		-	X .		FILL	~	noist,	sand, r	silty	ed as	ample	FILL. 5	1	٠.
Fil.L, sampled as slity sand, moist, brown, contains mica, and rock fragments  Fil.L sampled as slity sand, moist, brown, contains mica, and rock fragments  Fil.L Sampled as slity sand, moist, brown, contains mica, and rock fragments  Fil.L Sampled as slity sand, moist, brown, contains mica, and rock fragments  MC = 7.0%  MC = 6.9%  10.0  Bottom of Boring at 10.0 ft.				40/	~ ~			موريو <u>ا</u>	] .	1	-		243.6-	Х 1				ts, and	ragmen	ock fr	ains r	conta	brown,	, 1	2
fragments    A   5   5+4+2   MC = 7.0%				.1%	J=8	MC		11+10	/  <sup>5+1</sup>	$\rfloor\rangle$	L			X				noist,	sand,	silty	ed as	ampl	FILL, s		۷.
Fil.L A 5 - 3+5+10 MC = 6.9%  10.0 Bottom of Boring at 10.0 ft.									4	1				Χ			l	*	and ro	nica,	ins n			1	
Fil.L 3+5+10 MC = 6.9%  10.0 Bottom of Boring at 10.0 ft.				.0%	C = 7	MC		+2	7 5+4	T	<u> </u>		-	X-									•	+	
10.0 Bottom of Boring at 10.0 ft.									1	-V	- 5	Α		്}−	×									4	
10.0 Bottom of Boring at 10.0 ft.										-	-		-	8-		FILL								4	
10.0 Bottom of Boring at 10.0 ft.									_	1	_		_	8	×										
10.0   10.0   1235.6   10   10   10   10   10   10   10   1				5.9%	C = 6	IMC		5+10	/  <sup>3+5</sup>	- 1				8	8									1	
10.0 Bottom of Boring at 10.0 ft.								1.1	¥.,	7			-	X	8									1	
Bottom of Boring at 10.0 ft.								3TZ	<b>( **</b> *	1)	-		-	<b>X</b>	8									+	
Bottom of Boring at 10.0 ft. Boring backfilled with cuttings upon completion.				···		<u> </u>			Α	, <u>/</u>	ا الـ	<u> </u>	235.6-	XI	_R	<u> </u>							<del></del>	ـــــر	10.
											-					etion.	omple.	: upon c	cuttings	with o	Rifed	back	Boring		

	chnabel TEST BORING Bott Engineering LOG		Morgan	town Re town Mu town, W	nicipa	l Airpor					Number: t Number: 1 of 1	0816005	B-24
	tor: Total Depth Drilling, Inc	<u> </u>						Gro	ındw	ater Obs	ervations	_	
	Knoxville, TN							Date	-	Time	Depth	Casing	Caved
	tor Foreman: T. Hall				Dur	ing Dril	ling	7/15	; ] .	7:40 AM	Dry		
٠.	el Representative: D. Shaw					mpleti		7/15	.	7:44 AM	Dry		
	ent: CME-550X					mbien	UI 1		<u>'</u>	1.77 7.101	-		
Wethod:	3-1/4" I.D. Hollow Stern Auger				Cas	ing Pu	lled	7/15		7:49 AM	,Dry		6.3
	r Type: Auto Hammer (140 lb)	74500											
	Started: 7/15/08 Finished:	7/15/08						<del> </del>	$\dashv$		<del> </del>	-	<u> </u>
.ocatior	n: See Location Plan										<u> </u>		
) a constant	Surface Elevation: 1244± (ft)	Total Dep	sth: 0.2	) ft									
DIBOIE	Surface Elevation. 12441 (it)	TOTAL DES	1 3.2	· · · ·	L						· · · · · · · · · · · · · · · · · · ·	1	
OEPTH (ft)	MATERIAL DESCRIPTI	ON	SYME		LEV (ft)	STRA TUM	DEPTH	SAMPLII I D	NG ATA		TESTS	Rí	EMARKS
0.3	Rootmat and topsoll		<del> </del>	XXX 12	43.7			2+10-	+17	LL	. = 30		
4	FILL, sampled as silty sand, n	noist,	_		-	-	┝╶┤	N		1%	_ = 21 Passing		
_	brown, contains mica, and roc fragments	k			-					i i	200 = 43.3		
	, <b>~</b>	•						V 9+12	+10	IV.	C = 5.9%	-	
٦			FILL			Α		$\Box$			*		
4				₩	-	1	-	2+2+	2	М	C = 7.1%		
_				<b>X</b> -	-	-	- 5	M					
					_	1				ļ			
				<b>₩</b>	27.0								
7.0 ~	SILTY SAND, moist, brown, c		SM	M'	37.0-	С		6+8+	13	М	C = 15.7%		
8.5			<u> </u>	12	35.5	<u> </u>	7	/\      41+5	00#				
9.2	DISINTEGRATED ROCK, sar slity sand, moist, brown	npled as	DR	MA 12	34.8	_D	<u>-</u>	M****			· · · · · · · · · · · · · · · · · · ·		
	Battom of Boring at 9.2 ft. Boring backfilled with cuttings	upon comp	letion.										

	chnabel BORING  abel Engineering LOG	_	Morgan	itown Re itown Mu itown, W	niclpa	l Airpor			Cont	tract	umber: Number: of 1	0816005	B-25
Contrac	ctor: Total Depth Drilling, Inc	····						Groun			rvations		
^	Knoxville, TN ctor Foreman: T. Hall			-				Date	Tim	9	Depth	Casing	Caved
	pel Representative: D. Shaw				Dur	ing Dril	lling	7/14	2:27 F	M	Dry		
	nent: CME-550X				C	ompleti	מס	7/14	2:28 F	PM	Dry		
	: 3-1/4" I.D. Hollow Stem Auger				<del> </del>	<u> </u>		<del> </del>	<del>                                     </del>				
metrica	. 5-114 I.D. Hollow Otem Auger		-		Cas	sing Pu	lled	7/14	2:38 F	-M	Dry		6.0'
Hamme	er Type: Auto Hammer (140 lb)								<u> </u>				
	Started: 7/14/08 Finished:	7/14/08										j - [	
Locatio	n: See Location Plan							<u> </u>	1				
Ground	Surface Elevation: 1244± (ft)	Total Dep	oth: 10	.0 ft	<u> </u>		<del></del>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>
DEPTH (ft)	MATERIAL DESCRIPTI	DN .	SYM		LEV (ft)	STRA TUM	S DEPTH	AMPLING DAT			TESTS	RE	MARKS
0.3	Rootmat and topsoil			XX 12	43.2		1	3+5+8					
-	FILL, sampled as sandy silt, no brown, contains rock fragment	ioist,	FILL	$\bigotimes$	-	{ ;	├ ┤	Δ					
2.0 -	mica mica			12	41.5-		┡	12+11+4		MO	= 7.8%		
_	FILL, sampled as silty sand, no brown, contains rock fragment	noist, s. and	ŀ	<b>X</b>	_			X			110.11		
_	mica						L	_					
_							_	2+2+1		MO	= 7.8%		
	<u>.</u>		FILL		_	A	- 5 -	Ά					
	_			<b>₩</b> -	-	1	<u> </u>						
-				<b>₩</b>	-		┞╶╁	2+2+4		MC	= 5.5%	Lown	ecovery
8.0 -				12	235.5-	-	<u> </u>	X					
_	FILL, sampled as silty sand, n brown, contains rock fragment mica	ost, s, and	FILL		-			10+9+6	,				
10.0	Bottom of Boring at 10.0 ft.		1	- KXXI-12	233.5	L	10 10			ــــــــــــــــــــــــــــــــــــــ	·············		
	Boring backfilled with cuttings	opon comp	Suon.										

	TEST Chnabel BORING Bell Engineering LOG	Project:	Morgan	town	Readine: Municipa , West Vi	ıl Airpo			Con			0816005	B-26
Contract	tor: Total Depth Drilling, Inc								ndwater (				1.0
Contract	Knoxville, TN tor Foreman: T. Hall							Date	Tim	e	Depth	Casing	Caved
	el Representative: D. Shaw				Dur	ing Dri	lling	7/15	4:48	PM	Dry		
	ent: CME-550X				C	ompleti	on	7/15	4:52	PM	Dry	-	
	3-1/4" I.D. Hollow Stem Auger				Cas	sing Pu	lleid	7/15	5:00	PM	Dry		8.7'
								· ·	+			ļ <del></del>	<del> </del> -
Hammer	Type: Auto Hammer (140 lb)								1	$\dashv$		<del> </del>	<u> </u>
	Started: 7/15/08 Finished:	7/15/08							<u> </u>				<u> </u>
Location	n: See Location Plan												}
Ground 5	Surface Elevation: 1238± (ft)	Total De	pth: 8.8	3 ft			· · · · · · · · · · · · · · · · · · ·					<u> </u>	<u> </u>
DEPTH (ft)	MATERIAL DESCRIPTI	ON	SYMI	BOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLIN			TESTS	RI	EMARKS
0.4	Rootmat and topsoil	<del></del>		Ţ,,	1237.9	<del>                                     </del>	1	3+4+5		LL =	28		
V7 -	CLAYEY SAND, moist, yellow	ish .				1	F = 1/	$\langle  $		PL=	: 20 assing		
4	brown		sc			1			core es	#200	) = 49.2		
4			30			С		(  11+10*	50/5.5*				
4.0	CLAYEY SAND, moist, brown	<del>~</del>	<del> </del>		-1234.3-		}	119+28+	36				
5,0			sc		-4233.3-		L 5 - 1					-	
	DISINTEGRATED ROCK, sar sand, moist, brown	npled as	'	M			}	-					
			DR			D					•		
1		•		M				50/4*				Ì	
1	·					1	1	-					
8.B L	Bottom of Boring at 8.8 ft.				1229.5	L	J 1,2	50/4*		<i></i>			
	Boring backfilled with cultings	upon comp	oletion.										
											•	• •	
				-								•	
	•												
			•										

	TEST HORACE BORING	Project:	Morgan	itown R itown M itown, V	unicipa	l Airpor		,		Cont	ract	umber: Number: of 1	0816005	<b>B-27</b>
	or: Total Depth Drilling, Inc			· · · · · · · · ·	T				Ground			rvations	<del></del>	
	Knoxville, TN								Date	Tim	e	Depth	Casing	Caved
	or Foreman: T. Hall				Dur	ing Dril	lling		7/15	7:19 A	λM	Dry		
	Representative: D. Shaw				- C	mpleti		╁	7/15	7:23	MA	Dry		<b></b>
	ent: CME-550X				$\vdash$			+						<del> </del>
Methoa:	3-1/4" I.D. Hollow Stem Auger				Cas	ing Pu	lied	-	7/15	7:28 A	AM	Dry		12.8'
Hammer	Type: Auto Hammer (140 lb)				$\vdash$			+-						
Dates 9	Started: 7/15/08 Finished:	7/15/08												
Location	: See Location Plan													
								T		•			· · · · · ·	
Ground 8	Surface Elevation: 1241± (ft)	Total De	pth: 15	.5 ft		ı			l		r	Ĺ	<u>.                                    </u>	Ĺ
DEPTH (ft)	MATERIAL DESCRIPTI	ON	SYM	BOL	ELEV ·(ft)	STRA TUM	DEPTI		PLING DATA			TESTS	R	EMARKS
0.3	∼ Rootmat and topsoil		<del> </del>	XX 1	240.5	<del>                                     </del>	ļ	1/2	+3+4			· · · · · · · · · · · · · · · · · · ·	-	
	FILL, sampled as silt with san	d, molst,			-		<u> </u>	ΝÍ		•	[			
	brown, contains rock fragmen	ts		<b>₩</b> -	_									
							ļ	Νŕ	1+3+3	;	MC	= 16.3%		
1			FILL		_	]	_	$\mu$						
-	45'		' ''	₩-	-			₩.	1+1+2			= 18.2%		
4				₩-	_	ł	- 5 -	M			PP	= 0.75 tsf		
					_	Α		П						
				₩.	233.8-									
7.0	FILL, sampled as lean clay wi moist, brown, contains rock from	th sand,						M	3+2+2			= 15.3% = 1.00 tst		
1	HOISE DIOWIL COLIDERS LOCK IN	agmenta	FILL		-	1	-	И			(			
9.0	FILL, sampled as sandy silt, n	noist.	+	<del>                                      </del>	231.8-	-	-		2+2+2		MC	= 9.2%		
4	brown, contains rock fragmen	ts		₩-			- 10 -	ΙXI						
ا			FILL	<b>XX</b>		ļ	L.	П			-			
				$\bowtie$										
12.0	SANDY SILT, moist, brown, c	ontains			228.8-		Ϊ.	1						
4	mica				-	1	-	1						
4			ML	$\parallel\parallel\parallel$		С		H,	9+9+13					
					_		  - 15 -	ĮΧľ	3.0.10		ļ			
15.5 L			<u> </u>		225.3	L	]	<u> </u>	· <del></del>		<u>.                                    </u>	<del></del>		
	Bottom of Boring at 15.5 ft. Boring backfilled with cuttings		Intion											

	<i>chnabel</i> B	TEST Project: ORING LOG	Morganto Morganto Morganto	wn A	/lunicipa	l Airpor			Conf	ract	umber: Number: of 1	081600	<b>B-28</b> 57.00
	tor: Total Depth Drillir		Worgonie			9.110		Ground			rvations	······································	
	Knoxville, TN	· · · ·						Date	Time		Depth	Casing	Caved
Contrac	tor Foreman: T. Hall				Dur	ing Dril	ling	7/15	8:14	ΔM	Dry		
Schnab	el Representative: D.	Shaw			-				0.47				<del>- </del> -
	ent: CME-550X				Co	mpleti	on	7/15	8:17	AIVI	Dry		
Method:	3-1/4" I.D. Hollow Ste	em Auger			Cas	ing Pu	lled	7/15	8:21 /	ΔM	Dry		13.8'
Hammei	r Type: Auto Hammer	(140 lb)										ļ	<del> </del>
	Started: 7/15/08 Fit												
	n: See Location Plan												1
	-				<del> </del>		••				<u> </u>		+
Ground	Surface Elevation: 12	239± (ft) Total De	epth: 15.0	ft			<del></del>			1		l	_]
DEPTH (ft)	MATERIAL DI	ESCRIPTION	SYMBO		ELEV (ft)	STRA TUM	DEPTH	SAMPLING	ı		TESTS	E	REMARKS
			<del></del> ,	1		<u> </u>	1	3+4+3	- 	-	<del></del>	-	
0.3	Rootmat and topsoil FILL, sampled as sil			<b>X</b>	1238,5 _			X					
	brown, contains mic	a, and rock		▓				4					
- 1	fragments			▓	-	Ì		4+2+1		MO	= 12.5%		
4			8	ቖ	_			N .					
4				₩.	_						- 47 000		
1			FILL	$\boxtimes$	_	]	- 5 -	1+2+7		MC	= 17.8%		
				▓				$\Delta$					
Ħ			{	₩-	-	A	-						
-				፠-			-	1+2+2		MC	= 10.5%		
				▓₋	_			X		""	, , , , , , , ,		
				<b>XX</b>	4000.0			/ \ / 2+2+1					
9.0	FILL, sampled as sa	and with silt, moist,		$\boxtimes$	1229.8-	]	[	ΙXΙ					
-	brown, contains man fragments	iganese, and rock	FILL	▓		1	- 10 -						
4			1,	₩-	-	1	<u> </u>						
12.0				▓.	1226.8								
12.0	LEAN CLAY WITH S brown and gray	BAND, moist,											
7	,		CL	M	•	С		/ <sub>5+6+6</sub>			= 3.75 ts		•
Ļ					-	1	-	X		1	- 3.75 (8	"	
15.0					1223.8-	<u>.                                    </u>	L 15 -	<u> </u>		1_			
	Bottom of Boring at	15.0 ft.											
	Boring backfilled wit	h cultings upon com	pletion.										
		•											
												•	
	•												

	TEST BORING LOG	Project:	Morgantown R Morgantown N Morgantown, 1	iunicipa	l Airpor			Cont	ract	umber: Number: of 1	08	160057	<b>B-29</b>
	ctor: Total Depth Orilling, Inc	<u> </u>								rvations			
· 4	Knoxville, TN			<u> </u>			Date	Time	B 	Depth	Ca	sing	Caved
	ctor Foreman: T. Hall bel Representative: D. Shaw			Dur	ing Drit	ling	7/15	8:35 A	M	Dry			
	·			C	ompleti	on.	7/15	8:38 A	M	Οгу			
	nent: CME-550X I; 3-1/4" I.D. Hollow Stem Auge										_		
Metrod:	; 3-1/4 I.D. Honow Stell Auge	:(		Ca	sing Pu	lled	7/15	8:42 A	₩.	Dry	_		6.2'
Hamme	er Type: Auto Hammer (140 lb)			ļ				·					
Dates	Started: 7/15/08 Finished:	7/15/08										;	
Locatio	n: See Location Plan												
Ground	l Surface Elevation: 1238± (ft)	Total De	pth: 10.0 ft										
DEPTH (ft)	MATERIAL DESCRIP	TION	SYMBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING	<b>\</b>		TESTS	İ	RE	MARKS
0.3	Rootmat and topsoil			1237.9			3+5+5		LL:	= 26	-		
 	FILL, sampled as sandy silt,	molst.	₩			├ ┤	XI		PL	= 18 = 13.7%	į		
	dark brown, contains rock fra	agments			]	LI			% F	assing 00 = 54.3	ĺ		
~			FILL 💥				V <sup>2+3+3</sup>			= 2.00 tsi	,		
-	1		₩	•	A	r 1	$\triangle$						
4.0 -	FILL, sampled as silty sand,	moist	┼ 💥	1234.2	1	}	2+2+4				Ì		
	brown, contains mica, and re	ock	FILL X		-	- 5 -	XΙ		]		-		
	fragments			4000 0	l								
6.0 -	SAND WITH SILT, moist, br			1232.2			V 24+15+12	2			}		
-	contains mica, and rock frag probable RESIDUAL materia	3i 3i			1		$\triangle$		1	5.0			
_	<u> </u>		SP-SM		C	┡. ┤			1				
_					1		D+3+4						
				1000 2	<u>.</u>	- 10	Λ		<u> </u>				
10.0 —	Bottom of Boring at 10.0 ft.			1228.2	··	10							
	Boring backfilled with cutting	s upon comp	oletion.										
	•												
							-						
	•												
										•			
	•												

	chnabel	TEST BORING LOG	Project:	Morgan	itown l	Readines Vunicipa West Vi	I Airpor				Cont	ract	umber: Number: of 1	0816005	<b>B-30</b>
	otor: Total Depth D		<del></del>			1	<u></u>		Gr	ound			rvations	······································	
	Knoxville, TN	7							Da	ite	Time	,	Depth	Casing	Caved
	tor Foreman: T. H					Duri	ing Dril	ling	7/	15	9:09 A	M	Dry		
Schnab	el Representative:	D. Shaw							<del></del>						
Equipm	ent: CME-550X					Co	mpleti	on	7/	15	9:11 A	M.	Dry		
Viethod	: 3-1/4" I.D. Hollow	Stem Auger				Cas	ing Pu	fled	7/	15	9:15 A	M	Dry		8.3'
Jammo	r Type: Auto Hami	mer (1/10 lb)									·				
	-	Finished: 7	7/15/08							Ì					
	n: See Location Plan		.,,,,,,,									_		<u> </u>	<b></b>
						ļ <u>.</u>			<del> </del>						
Sround	Surface Elevation:	1239± (ft)	Total De	pth: 8.3	8 ft										
			··· ·	T					~						
EPTH (ft)	MATERIA	L DESCRIPTION	ON	SYM	BOL	ELEV (ft)	STRA	DEPTI	SAMPI H   I	JNG DATA			TESTS	RE	EMARKS
0.3	Rootmat and top	soil		1	TXX	1238.6		<del>-</del>	9+8	+6					
	FILL, sampled a	s silty sand, m	rolst,			_		} -	X						
_	brown, contains fragments	mica, and roc	k	]	$\bigotimes$		Α	ļ <u>-</u>	Ħ	_					
				FILL	₩				M <sup>2+4</sup>	H-5		MC	= 6.7%	Rip ra   flights	ip in auge i
-	1			]		-	j .	<u> </u>	И					-	
4.0 -	DISINTEGRATE	D ROCK, san	nnled as	-		1234.9-		-	127+	-36+32	:				
	sand, moist, light		.,p.,ou ao	1	M		<u> </u>	<b>-</b> 5 -	IXI						
					M		ļ	L	H						
-			•	DR	M	- -	D								
-				ĺ			1	-	<b>⊠</b> 50/	5"					
_					Z/A	-	-		1					-	
8.8		<del> </del>	•••	1	MO	1230,1		]	\(\frac{50/}{2}\)	4"		J			
	Bottom of Boring Boring backfilled	g at 8.8 ft. I with cuttings	upon comp	letion.											
							•								

<u> </u>	chnabel	TEST BORING LOG	Project:	Morgan Morgan Morgan	town M	unicipa	il Airpor				Borin Contr Sheet	act	umber: Number: of 1	0816005	<b>B-31</b>
	tor: Total Depth D		L	- 5-1		T		· · · · · · · · · · · · · · · · · · ·		Ground	water O				
, CHILLES	Knoxville, TN	. பாது எம							1	Date	Time		Depth	Casing	Caved
ontrac	tor Foreman: T. H	iall				Dur	ing Dril	lina	1	7/17	5:27 P	м	Dry		
Schnab	el Representative:	D. Shaw							+				•		
	ent: CME-550X					C	mpleti	on ·	$\perp$	7/17	5:28 P	IVI	Dry		
lethod:	NQ Double Barre					Cas	ing Pu	lled	$\perp$	7/17	5:31 P	M	Dry	-	
iamme	r Type: Auto Hamr	mer (140 lb)				1									
	Started: 7/17/08		7/17/08												
ocatio:	n: See Location Plan	n													
									+						<b> -</b>
round	Surface Elevation:	1244± (ft)	Total De	pth: 9.8	B ft		<b>,</b>	<b>.</b>	$\perp$		<u> </u>			<u> </u>	<u> </u>
HT93(	MATERIA	L DESCRIPTI	ON	SYM	BOL 1	ELEV (ft)	STRA	DEPT		MPLING DATA	,		TESTS	RI	EMARKS
	A	·		<del> </del>					$\dashv$				<del></del>		
0.7	Asphalt Crushed stone			+	SE2	243.3	]		U						
1.2	FILL, sampled a	s sitty sand m	noist	1	₩ <sup>1</sup>	242.8			M	10+13+1	·	MC	= 7.3%		
_	brown, contains fragments	mica, and roc	k	FILL			]		$\mathbb{X}$	10+1+2		МС	= 7.3%		
							A		X		]				·
4.0 -	FILL, sampled a	s fat clay, moi		1	₩-1	240.0-		-	M	2+3+2		PP	= 1.00 ts	f	
_	brown, trace san				<b>W</b> -	_	-	- 5 -	ł۸					ŀ	
_				FILL	₩	-	1	-							
					₩.	^a~ ^					İ				
7.0 ~	SILTY SAND, m	oist, brown, c	ontains		11111111111111111111111111111111111111	237.0		Γ -	M	7+10+25					
-	mica			SM		•	C	t .				i			
					444		-		$\bigvee$	25+25+5	0/4"				
9.5 9.8	DISINTEGRATE		npled as /	DR		234.5 234.2	D	)	$ \wedge $						
<b>ಆ.</b> ೮	sand, moist, bro		/		'	£07.4									
	Bottom of Boring		UDOS COM	detion									•		
	Boring backfilled Boring patched a														
	<b>@</b> p														
			•												
		•													

~ ~ 1 (1 L)	chnabel BORING abel Engineering LOG			Municipa , West V				Con	tract	umber: Number: of 1	0816005	<b>B-3</b> ;
Contrac	tor: Total Depth Drilling, Inc		901110111	1	9	<del></del>	Ground			vations	·	
<b>^</b>	Knoxville, TN						Date	Tim	ie	Depth	Casing	Caved
	ctor Foreman: T. Hall cl Representative: D. Shaw			Dui	ring Dri	gaill	7/18	7:11	AM	Dry		
	ent: CME-550X			C	ompleti	On.	7/18	7:14	AM	Dry		
-	: 3-1/4" I.D. Hollow Stem Auger,						<del> </del> -		$\dashv$			
	NO Double Barrel			Ca	sing Pu	lied	7/18	7:23	AM	Dry		13.6
Hammei	r Type: Auto Hammer (140 lb)											
Dates	Started: 7/17/08 Finished: 7	/18/08									_	
Location	n: See Location Pian											
Ground	Surface Elevation: 1245± (ft)	Total Depth:	15.0 ft			y*************************************						
DEPTH (ft)	MATERIAL DESCRIPTION	N SY	/MBOL	ELEV (ft)	STRA TUM	S DEPTH	AMPLING DATA			TESTS	RE	MARKS
0.4	Rootmat and topsoil			1244.6		١	7+13+13		₽P	= 3.25 tsf		
4	FILL, sampled as sandy elastic	silt,		-	1	} -√	$\bigvee$					
4	mejst, brown, contains rock fra	Jinenis	₩		1	<u> </u>	/18+22+34					
		ļ			]	L ])	X   18+22+3°	•			}	
		FIL	-∟ 💥				4					•
7						$\uparrow$	/11+3+3				-	
7	·					├ 5 <u>-</u> /	<u> </u>					
											Į.	
6.5	FILL, sampled as silty sand, m	oist,		1238.5	ļ							
	brown, contains rock fragments mica	, and			Α							
1							13+2+2	÷				
1					1	[ ])	ζ]					
$\dashv$					1	- 10 +	1					
4		FIL	-∟ 💥		1							
1												
ĺ		į		_								
1								,				
†			₩			† †)	(	,			1	
15.0—			<del> </del>	<b>-1230.0</b> -	i	- 15 - V			L			
	Bottom of Boring at 15.0 ft. Boring backfilled with cuttings u	aan camalatica				·						
	Bonnig Dacklines with Cultings t	pon compietton	•									•

	TEST		Morgantown						g Num			B-33
	chnabel BORING abel Engineering LOG		Morgantown Morgantown,			t		Cont		mber:	0816005	57.00
	tor: Total Depth Drilling, Inc		11.0.94110		3		Ground	lwater 0				
	Knoxville, TN						Date	Time	-   -	Depth	Casing	Caved
	tor Foreman: T. Hall			En	counte	ređ 💆	7/18	8:31 A	м   а	28.0'		
	el Representative: D. Shaw			C	mpleti	on 💯	7/18	9:31 A	м :	26.0*		
	ent: CME-550X											05.01
ethod;	3-1/4" I.D. Hollow Stem Auger, NQ Double Barrel			Cas	sing Pu	lled 🕎	7/18	10:03 /	AM :	25.0'		25.0'
ammei	r Type: Auto Hammer (140 lb)			-								<del>                                     </del>
	Started: 7/18/08 Finished:	7/18/08										<del> </del>
ocatio	n; See Location Plan											
round	Surface Elevation: 1231± (ft)	Total Dep	oth: 59.1 ft								<u> </u>	<u> </u>
EPTH (ft)	MATERIAL DESCRIPTI	ON	SYMBOL	ELEV (ft)	STRA TUM	S. DEPTH	AMPLING	1	TI	ESTS	R	EMARKS
	Deatmat and tangel			4220 C	-		/3+5+6			<del></del> _	_	<u> </u>
0.4	Rootmat and topsoil FILL, sampled as clayey sand	, moist.		1230.6	1	ļ - J)	(				}	
	brown, contains rock fragmen	s				<u> </u>	<b>_</b>					
-							/14+13+1! X	5				
-				-	]	T 7	7					
-					1	1 1	<b>7</b> 26+30+2	В				
					-	F 5 →	XI			-	•	
_			│		4	<u> </u>	7					
i							_					
_			│				15+19+2	1	1			
			│	•	1	1	$\simeq$					
-			│		-	<u> </u>	15+20+1	5	ļ			
_			│	-	4	10 -	XΙ					
		•		_			7					
_			FILL 🛞		A							
-	4				7							
-				t .	1	t 1					+	
-				-	-	+ +	7+24+29	i				
_					4	15 -	χΙ					
				L	]				Ì			
-					1				[			
-	1			+	1	† 1						
-				}	4	+ +			1		1	
	]			1	1						j	
•				1			M6+6+14					
-			│			20	4					
-	<u> </u>			1	1	<b>†</b> 1		-				
_				<b>X</b>	-	1			-			
			<u> </u>	1208.0								•
23.0 -	SANDY LEAN CLAY, moist,			1200.0	1	]						
-	brown, contains rock fragmer	KS.	CL	1	<b>→</b> B	j. 1	1+3+9		PP =	≃ 0.25 t	sf Ro	ots rising u
	I .		1 1///	8	i	4 1	$\Lambda$		1		211/	jer flights.

MATERIAL DESCRIPTION  SANDY LEAN CLAY, moist, grayish prown, contains rock fragments (continued)  CLAYEY SAND, moist, brown, contains rock fragments  CLAYEY SAND, wet, brown, contains rock fragments	SYMI		ELEV (ft)	STRA	- 30 -	5+1	LING DATA	TESTS	REMARKS
SANDY LEAN CLAY, moist, grayish prown, contains rock fragments  Continued)  CLAYEY SAND, moist, brown, contains rock fragments  CLAYEY SAND, wet, brown, contains rock fragments	CL	BOL	- 1203.0-	TUM	- 30 -	5+1	DATA 12+13	TESTS	REMARKS
CLAYEY SAND, moist, brown, contains rock fragments  CLAYEY SAND, moist, brown, contains rock fragments  CLAYEY SAND, wel, brown, contains rock fragments	SC		 	æ					
rock fragments	sc		-1199.0-  			14+	nian		
a.s.		1///		С	35 		8+10		
DISINTEGRATED ROCK, sampled as sand, wet, brown	DR		1191.5	D	- 40 -	15	+50/3 <b>"</b>		
LEAN CLAY WITH SAND, moist, prown, contains mica, and rock ragments	CL	***************************************	-1189.0-		- 45 -	2+	2+2	LL = 28 PL = 20 % Passing #200 = 72.2 PP = 0.50 tsf	
COAL, black			1180.8	C	- 50 -	9+	<b>5</b> +3		
SANDY LEAN CLAY, moist, brown, contains mica, and rock fragments	CL		-1179.0 - -1177.0		-  -  -  -				A
DISINTEGRATED ROCK, sampled as silt, moist, gray	DR		_	0	- 55 - -	X 27	±20/3°		Augers grinding/scrap
	OAL, black  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  ISINTEGRATED ROCK, sampled as iit, moist, gray	CAL, black  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CL  SISINTEGRATED ROCK, sampled as iit, moist, gray  DR	CL  COAL, black  CANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CL  CL  CL  CL  CL  CL  CL  CL  CL  C	CL 1180.8  COAL, black 1180.8  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments CL 1177.0  ISINTEGRATED ROCK, sampled as iit, moist, gray	CL 1180.8  COAL, black 1180.8  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CL 1177.0  ISINTEGRATED ROCK, sampled as iit, moist, gray  DR D	CL  CAL, black  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CI  CI  1177.0  DR  D  D  D  O  A 5 - C  A 5 - C  A 5 - C  A 5 - C  A 7 - C	CL  CL  1180.8  CAL, black  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CL  1177.0  DR  DR  DR  DR	CL  CL  9+8+3  I180.8  ANDY LEAN CLAY, moist, brown, ontains mica, and rock fragments  CL  1177.0  DR  DR  2+2+2  2+2+2  2+3+50/3*	CL 2+2+2 LL = 28 PL = 20 % Passing #200 = 72.2 PP = 0.50 isf  CAL, black

	hnabel	TEST BORING LOG	Project:	Morgantown Morgantown		al Airpo	rt		Contra	Number: ct Number: 3 of 3	B-3:
PTH (ft)	MATERIA	L DESCRIPTION	DΝ	SYMBOL	ELEV (ft)	STRA TUM	SAI DEPTH	MPLING DATA		TESTS	REMARKS
9.1	Bottom of Boring Boring terminate Boring backfilled	ed at sampler r	efusal. upon comp		1171.9			50/1°			Sampler refusa
							-			· .	
						•					
			,								
•											

## APPENDIX A

## Soil Laboratory Test Data

Summary of Soil Laboratory Tests (1)
Gradation Curves (6)
Moisture Density Relationships (6)
California Bearing Ratio Curves (6)
Sulfur Fractionation (1)

	Z.			מ	α	<b>3</b>	. 0	g .	6	,		<b>5</b>	G	<b>.</b>	·	8	
	Notes:		0.20	20	8-20	8	10.75	) >	D-21	2	G G	Ď	D*   7	<u>.</u>	No.	ring 	Sc
	<ol> <li>Soil tests in ge</li> <li>Soil classification.</li> <li>classification.</li> <li>Key to abbrevia</li> </ol>		1238.2-1236.7	0.0-1.5	1238.3-1236.8	0.0-1.5	1244.0-1242.5	0.0-1.5	1247.4-1246.0	0.0-1.4	1241.4-1239.9	0.0-1.5	1241.0-1239.5	0.0-1.5	Elevation	Sample Depth ft	mmary
	neral accorda ons are in ger ations: NP=Na			Bi ill	BUR	<b>9</b>	DGIA	р,  -	QC S	7	COS	D	DEE		Туре	Sample	9
	Soil tests in general accordance with ASTM standards. Soil classifications are in general accordance with ASTM D2487(as applicable), based on testing indicated and visual assification. sesfication. Key to abbreviations: NP=Non-Plastic, indicates no test performed			SANDY LEAN CLAY (CL), fine to coarse, contains rock fragments - brown	Spiritually 12 day 1 wg/1 vy 1 vy 1	CLAYEY SAND (SC), fine to coarse, contains rock fragments - tan		CLAYEY SAND WITH GRAVEL (SC), fine to coarse - dark brown	o	SILTY CLAYEY SAND (SC-SM), fine to	·	SILTY CLAYEY SAND (SC-SM), fine to coarse, contains rock fragments - brown	Q	SILTY CLAYEY SAND (SC-SM), fine to	Specimen	Description of Soil	Summary Of Laboratory lests
	le), based		1	<b>3</b> 6	20	3	ę		2	3	£	3	8	3	Liquid Lim	it	
	on testing i		ā	1	20		<u> </u>	<u>.</u>	5	,	ō	à	č	ò	Plastic Lin	nit .	
	ndicated a		c	æ	0	٥	ď	o S	c	7	O	h	,	7	Plasticity I	ndex	
	end visual		4	л Д	7.65		į	သိ သ	0,00	3	33.8		48.5		% Passing No. 200 Si		
			ā	7.8	0.0	ວ ນ	1,0	n n	7.0	2	0.8	» >	į	4 0	% Retained No. 4 Sieve		
Projec			00.	122	123.0	) 0	7.02	i n o	102,0		131.1	4	130.0	3	Maximum Density (p	Dry cf)	
t: Morga	φ <b>λ</b>		1.0	3.5	11.1	<u>.</u>	10,7	<b>1</b> 0 <b>7</b>	0.3		ن ،	•	0.0	D D	Optimum I Content (%	Moisture 6)	7
Morgantown Readiness Cente Morgantown Municipal Airport	C.5	:	200	15578	A/GGI	16874	1307	15570	2		1007	75.77	1937 0	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Proctor Te Method	st	roject N
Readine Municipa	Schnabel Engineering			8.5		24.6		37.6		36.9		20.0		6'6	CBR Value	<b>1</b>	umber:
Project: Morgantown Readiness Center Morgantown Municipal Airport	ring			100		100	-	100		100	,	100		100	CBR Surci Pressure (		Sheet 1 of 1 Project Number: 08160057.00
er				0.3		1.0		1.2		0.6		1.7		2.4	CBR Perce	nt Swell	of 1

EXHIBIT 10
REQUISITION NO.:
ADDENDUM ACKNOWLEDGEMENT
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.
ADDENDUM NO.'S:
NO. 1
NO. 2
NO. 3
NO. 4
NO. 5
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.
SIGNATURE
COMPANY ·
DATE

REV. 11/96