

Gulf Pittsburg-Midway

HOLE NO.

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG	1. PROJECT NENENW	SHEET OF
	2. LOCATION (coordinates or Station) NENENW 13/32S/22E	
	3. DRILLING AGENCY P+M Coal Co. (Gulf Minerals)	

4. HOLE NO. (As shown on drawing title and title No.) P+M # 21	5. NAME OF DRILLER
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6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN	8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL			

10. SIZE AND TYPE OF BIT	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	12. MANUFACTURER'S DESIGNATION OF DRILL
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13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE	
DISTURBED	UNDISTURBED			STARTED	COMPLETED

17. ELEV. TOP OF HOLE 880	18. TOTAL CORE RECOVERY FOR BORING (%) 100%	19. SIGNATURE OF INSPECTOR J.W. Harris
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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water logs, depth of weathering, etc., if significant)
	10					
	15		Top of Core			
			Clayshale - dkgy (N3), hard, parallel fracs, micaceous, thin hor. laminae, no fossils found, calcareous concretion 0.6' thick, sharp lower contact.		# 1	
				3.4'		
			Clayshale - ltgy (N7) mod. hard, parallel fracs, micaceous, thin horizontal laminae →			
	20					

13-32-22c

DEPARTMENT OF THE ARMY		1. PROJECT _____		SHEET _____ OF _____	
DIVISION _____		2. LOCATION (coordinates or Station) _____			
INSTALLATION _____		3. DRILLING AGENCY _____			
DRILLING LOG			5. NAME OF DRILLER _____		
4. HOLE NO. (As shown on drawing title and file No.) _____			6. DIRECTION OF HOLE		
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL _____		7. THICKNESS OF OVERBURDEN _____	8. DEPTH DRILLED INTO ROCK _____
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		9. TOTAL DEPTH OF HOLE _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____	
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	20		Clayshale - H94(N7), nonfossiliferous, brown Fe oxide stains, sharp lower contact, uniform color & comp.	4.0'		
			Coal - blk (N1) banded, mod. bright sulfid. bloom, sharp contacts	0.8'	# 1	Fleming coal
			Mudstone - H94(N7), soft, blocky fracture, silty, micaceous, massive, plant frags, clay ironstone nodules & veins, brown Fe oxide stains, gradational lower contact.	9.8'	# 2	
	25+					
	30					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____			
		2. LOCATION (Coordinates or Station) _____					
4. HOLE NO. (As shown on drawing title and file No.) _____		3. DRILLING AGENCY _____					
6. DIRECTION OF HOLE		7. THICKNESS OF OVERBURDEN _____		8. DEPTH DRILLED INTO ROCK _____			
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		5. NAME OF DRILLER _____		9. TOTAL DEPTH OF HOLE _____			
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____			
DISTURBED _____ UNDISTURBED _____		16. DATE HOLE		STARTED _____ COMPLETED _____			
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	40		Clayshale - dkgy (N3) at base to med Hgy (N6) at top, hard, parallel frags, micaceous, thin horizontal laminae, few brachs + other marine fossil frags at base, calcareous cement at base, clay ironstone bands to 0.1' thick in upper portion, sharp lower contact w/coal.	13.6'	# 3		
	45+	T			45'	# 4	
		T			2.1'		Mineral coal
		T		Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.			
	50		Mudstone - same as below.	4.1'			

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DIVISION _____		2. LOCATION (Coordinates or Station)				
INSTALLATION _____		3. DRILLING AGENCY				
DRILLING LOG		5. NAME OF DRILLER				
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE	
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL				
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED					
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE		
DISTURBED		UNDISTURBED		STARTED	COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	50	---	Mudstone - dk gy (N3) at base to med lt gy (N6) at top, soft, blocky frags, silty, micaceous, massive, plant frags, sulfate bloom & brown Fe oxide stains, abruptly gradational lower contact.	4.1'	#4	Unnamed coal
		■	Coal, blk (N1), banded, mod. bright, sharp contacts.	0.8'		
	55	---	Mudstone - lt gy (N7) at base to med gy (N5) at top, soft, blocky fracture, silty, micaceous, massive, plant frags, clay ironstone veins & brown Fe oxide stains, gradational lower contact.	8.6'	#5	
	60	---				

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____		
		2. LOCATION (Coordinates or Station) _____				
4. HOLE NO. (As shown on drawing title and file No.) _____		3. DRILLING AGENCY _____				
6. DIRECTION OF HOLE		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK		
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____				9. TOTAL DEPTH OF HOLE _____		
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER _____		
DISTURBED _____ UNDISTURBED _____				16. DATE HOLE STARTED _____ COMPLETED _____		
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	70	XXXX	Clayshale - dk gy (N3) at base to med gy (N5) at top, hard, parallel frac, micaceous, thin horizontal laminae, few brachs, gastropods & crinoid frags at base, calcareous cement near base, abundant clay ironstone nodules to 0.1' dia, sharp lower contact w/ limestone.		# 6	
	75	XXXX	Argillaceous limestone - dk gy (N7), hard, wackestone, brachs, crinoids, other fossil frags, massive, sharp lower contact.	0.8'	77'	
		T	Coal, blk (N1), banded mod. bright, sulfate bloom, sharp contacts.	0.8'	# 7	Scammon coal
		T	Mudstone - same unit as below.	5.5'		
	80	-----				

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		2. LOCATION (Coordinates or Station) _____				
4. HOLE NO. (As shown on drawing title and file No.) _____				3. DRILLING AGENCY _____		
5. NAME OF DRILLER _____				6. DIRECTION OF HOLE		
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL _____		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	
9. TOTAL DEPTH OF HOLE _____		10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		
12. MANUFACTURER'S DESIGNATION OF DRILL _____		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		
DISTURBED _____		UNDISTURBED _____		15. ELEV. GROUND WATER _____		
16. DATE HOLE STARTED _____		16. DATE HOLE COMPLETED _____		17. ELEV. TOP OF HOLE _____		
18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	80	--	mudstone - H ₉₄ (N7) at base to medgy(N5) at top, soft, blocky frags, silty, micaceous, massive, plant frags, abundant irregular siderite veins, brown Fe oxide stains, gradational lower contact.	5.5'	# 7	
	85		mudshale - same unit as below.	15'	# 8	
	90					

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DIVISION _____		2. LOCATION (coordinates or Station) _____				
INSTALLATION _____		3. DRILLING AGENCY _____				
DRILLING LOG		5. NAME OF DRILLER _____				
4. MOLE NO. (As shown on drawing title and file No.) _____		7. THICKNESS OF OVER-BURDEN _____		8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL _____				
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED					
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE MOLE		
DISTURBED _____		UNDISTURBED _____		STARTED _____	COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
90			Mudshale - medgy (N5) at base to med lt gy (N6) at top, hard, silty, qtz, micaceous, lenticular bedded w/ thin lenses, abundant plant material, clay ironstone bands to 0.1' thick, few burrows, brown Fe oxide staining gradational lower contact.	15'	# 8	
95					98'	
100			Clayshale - same unit as below.	19.2'	# 9	

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG	1. PROJECT _____ SHEET _____ OF _____ 2. LOCATION (Coordinates or Station) _____ 3. DRILLING AGENCY _____
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4. HOLE NO. (As shown on drawing title and file No.) _____	5. NAME OF DRILLER _____
--	--------------------------

6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL _____	7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____
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10. SIZE AND TYPE OF BIT _____	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____
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13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____	UNDISTURBED _____	14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____	
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17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____
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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	100		Clayshale - Same as below.			
	105			19.2'	#9	
	110				108'	
					#10	

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1- PROJECT _____		SHEET _____ OF _____				
		2- LOCATION (Coordinates or Station) _____						
3- DRILLING AGENCY _____				5- NAME OF DRILLER _____				
4- HOLE NO. (As shown on drawing title and file No.) _____				7- THICKNESS OF OVER-BURDEN _____				
6- DIRECTION OF MOLE		DEGREES WITH VERTICAL _____		8- DEPTH DRILLED INTO ROCK _____	9- TOTAL DEPTH OF MOLE _____			
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED							
10- SIZE AND TYPE OF BIT _____		11- DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12- MANUFACTURER'S DESIGNATION OF DRILL _____				
13- TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14- TOTAL NO. CORE BOXES _____	15- ELEV. GROUND WATER _____	16- DATE MOLE				
DISTURBED _____		UNDISTURBED _____		STARTED _____	COMPLETED _____			
17- ELEV. TOP OF MOLE _____		18- TOTAL CORE RECOVERY FOR BORING (%) _____		19- SIGNATURE OF INSPECTOR _____				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		
	110		Clayshale - dkgy (N3) at base to med gy N5 ↑, hard, parallel frac, micaceous, thin horizontal laminae, few small brachs, crinoid stems & other marine fossil frags near base, calcareous cement, clay ironstone bands to 0.1' thick in upper portion, sharp lower contact w/ coal.	19.2'	# 10			
	115	T						
		T						
		T						
		T						
		T						
		T						
		T						
		T						
		T						
			Coal - blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.75	# 11	Tebo coal		
	120		Mudstone - same unit as below.	7.9'				

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____	SHEET _____ OF _____
		2. LOCATION (Coordinates or Station) _____	
		3. DRILLING AGENCY _____	
4. HOLE NO. (As shown on drawing title and file no.) _____		5. NAME OF DRILLER _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____
		9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____	14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____
17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
120			<u>Mudstone</u> - med H94(N6) - H94(N7), soft, crumbled, blocky fracture, silty, micaceous, massive, plant & root frags, brown Fe oxide stains, sharp lower contact w/ coal.	7.9'	# 11	
125						
			<u>Coal</u> , blk(N1), banded, mod. bright, sharp contacts.	0.6'	# 12	Tebo "B" coal
			<u>Mudstone</u> - H94 (N7), soft, blocky fracs, silty, micaceous, qtz, massive, plant frags, sand sized auth. siderite xls, brown Fe oxide stain, gradational lower cont.	3.5'		
130						

DEPARTMENT OF THE ARMY		1. PROJECT		SHEET OF	
DIVISION _____		2. LOCATION (Coordinates or Station)			
INSTALLATION _____		3. DRILLING AGENCY			
DRILLING LOG		5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
6. DIRECTION OF HOLE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL			
10. SIZE AND TYPE OF BIT		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER
DISTURBED	UNDISTURBED			16. DATE HOLE	
				STARTED	COMPLETED
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (description)	% CORE RECOVERY	BOX OR SAMPLE NO.
	130	---	<u>Mudstone</u> - same unit as above.	3.5'	
		---	<u>Clay shale</u> - dk gy (N3) hard, brittle, parallel frags, micaceous, thin horizontal laminae, nonfossiliferous, calcareous nodules to 0.075' thick, calcareous cement near base, clay ironstone bands to 0.1' thick, sharp lower contact w/coal,	11.5'	# 12
	135	---			137
		---			# 13
	140	---			

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____ SHEET OF _____	
4. HOLE NO. (As shown on drawing title and file No.) _____		2. LOCATION (Coordinates or Station) _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		3. DRILLING AGENCY _____	
10. SIZE AND TYPE OF BIT _____		5. NAME OF DRILLER _____	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		7. THICKNESS OF OVERBURDEN _____	8. DEPTH DRILLED INTO ROCK _____
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____	9. TOTAL DEPTH OF HOLE _____
15. ELEV. GROUND WATER _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____	
17. ELEV. TOP OF HOLE _____		16. DATE HOLE STARTED _____	16. DATE HOLE COMPLETED _____
18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
140			Clay shale - same unit as above.	11.5'		Weir-Pittsburg coal
		T	Coal blk (W1), banded, mod. bright, sharp cont.	0.2'		
		T	Mudstone - lt gy (W7) soft, crumbled, blocky fracture silty, qtz, micaceous, massive, plant frags, brown Fe oxide stains, gradational lower contact.	4.2'	# 13	
145					146'	
			Siltstone - same unit as below	7.1'	# 14	Unnamed S.S.
150						

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____		
		2. LOCATION (Coordinates or Station) _____				
3. DRILLING AGENCY _____				5. NAME OF DRILLER _____		
4. HOLE NO. (As shown on drawing title and file no.) _____				7. THICKNESS OF OVER-BURDEN _____		
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED					
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE MOLE		
DISTURBED _____	UNDISTURBED _____			STARTED _____	COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	150	—	Siltstone - U H gy (N8) - H gy (N7), hard, parallel frac, qtz, micaceous, wavy bedded, abundant plant frags, abundant sand sized authigenic siderite crystals near base, sharp lower contact	7.1'	# 14	
	155	—	Mud shale - same unit as below.	18.9'	# 15	
	160	—		156'		

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INSTALLATION _____		3. DRILLING AGENCY			
DRILLING LOG		5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
6. DIRECTION OF HOLE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL			
10. SIZE AND TYPE OF BIT		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER
DISTURBED	UNDISTURBED			16. DATE HOLE STARTED	COMPLETED
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
170		T	Mudshale - same unit as above			
		T		18.9'		
			Coal - blk(N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.55	# 16	Bluejacket "A" coal
			Mudstone - med Hgy (N6), soft, blocky frags, silty, micaceous, massive, plant frags, irregular clay ironstone nodules, gradational lower contact.			
175				2.0'		
			Clayshale - dk gy(N3), hard, brittle, parallel fracture, micaceous, thin horizontal laminae, few small brachs + other marine fossil frags at base, calcareous cement at base, clay ironstone bands to 0.1' thick near top, sharp lower contact w/coal.			
				5.4'	# 17	
180						

DEPARTMENT OF THE ARMY		1. PROJECT		SHEET OF	
DIVISION _____		2. LOCATION (Coordinates or Station)			
INSTALLATION _____		3. DRILLING AGENCY			
DRILLING LOG		5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file no.)		7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL			
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISTURBED _____ UNDISTURBED _____				16. DATE HOLE	
				STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
190			Siltstone - same unit as above.			
			Sandstone - vlt gy (N8), very fine - fine gr, qtz, micaceous comp, flaser bedded at base, rippled at top, few small plant frags, mod. oil stn at base, sand sized auth. siderite, grad. lower contact.		# 18	Upper Bluejacket S.S.
195				2.4'		
					# 19	
			Siltstone - alternating vlt gy (N8) & med gy (N5) laminae, hard, parallel fracture, qtz, micaceous comp, leniticular bedded at base to wavy bedded ↑, few small plant frags, some convolute bedding, sand size authigenic siderite crystals, clay ironstone bands →			
200						

DEPARTMENT OF THE ARMY		1. PROJECT		SHEET OF	
DIVISION _____		2. LOCATION (Coordinates or Station)			
INSTALLATION _____		3. DRILLING AGENCY			
DRILLING LOG		5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL			
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISBURBED		UNDISTURBED		16. DATE HOLE	
				STARTED	
				COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	200	---	Siltstone (cont), to 0.1' thick, sharp, non scoured, lower contact.			
		---		6.9'		
		XXX	Clayshale - dkgy(N3) hard, brittle, parallel frags, micaceous, thin horizontal laminae, nonfossiliferous clay ironstone band at top, sharp lower contact w/ limestone.		# 19	
	205	---		2.8'	205	
		---	Argillaceous limestone - ltgy(N7), dkgy(N3) med. matrix, hard, massive, brachs, crinoid stems, sharp lower contact.	0.6'	# 20	
		---	Coal - blk, (N1), banded, mod. bright, sulfate bloom.	0.2'		Bluejacket "C" coal
		---	Mudstone - med ltgy (N6), mod. hard, blocky frags, silty, micaceous, massive, plant frags, clay ironstone nodules & veins, gradational lower contact.	1.6'		
		---	Mud shale - same unit as below.	15.6'		
	210	---				

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____		1. PROJECT _____	SHEET _____ OF _____
DRILLING LOG		2. LOCATION (coordinates or Station) _____	
		3. DRILLING AGENCY _____	
4. HOLE NO. (As shown on drawing title and file No.) _____		5. NAME OF DRILLER _____	
6. DIRECTION OF HOLE		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL _____		
10. SIZE AND TYPE OF BIT _____	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____
DISTURBED _____	UNDISTURBED _____		
		STARTED _____	COMPLETED _____
17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
220			Mudshale - same as above.	15.6'		
			Coal, blk (N1), banded med. bright, sharp cont.	0.2'	# 21	Bluejacket "D" coal
			Mudstone - med gy (N5), soft, crumbled, massive, silty, plant frags, gradational lower contact.	0.8'		
225			Mudshale - med gy (N5) w H gy (N7) lenses, hard, blocky frags, qtz, micaceous, lenticular bedded, abundant bioturbation, abundant organic material, clay ironst. nodules to 0.1' thick, gradational lower contact.	2.4'	# 22	
			Clayshale - dk gy (N3), hard, parallel frags, micaceous, thin horizontal laminae, nonfossiliferous, small amount of calcareous cement at base, clay ironstone bands to 0.1' thick, sharp lower contact.	3.4'		
230						

DEPARTMENT OF THE ARMY		1. PROJECT _____		SHEET _____ OF _____	
DIVISION _____		2. LOCATION (Coordinates or Station) _____			
INSTALLATION _____		3. DRILLING AGENCY _____			
DRILLING LOG		5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____		7. THICKNESS OF OVER-BURDEN _____		8. DEPTH DRILLED INTO ROCK _____	
6. DIRECTION OF HOLE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		9. TOTAL DEPTH OF HOLE _____	
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		10. SIZE AND TYPE OF BIT _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____	
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	230		Clay shale - same as above.	3.4'		Unnamed coal
			Coal blk(N1) smut.	0.1'		
			Siltstone - ltgy(N7) & medgy(N5), hard, blocky frags, qtz, micaceous comp, wavy bedded at base to massive at top, top burrowed, plant & root frags, abruptly gradational lower contact.	2.7'	# 22	
			Sandstone - vltgy(N8), hard, blocky frags, qtz, micaceous comp, massive at base to rippled at top, with muddy layers to 0.2' thick, abundant plant fragments, convolute bedding, brown Fe oxide stains, sharp lower contact.	5.9'	# 23	
	235			2.4'		
			Interbedded sandstone & shale - same as below.	4.2'		Lower Bluejacket S.S.
	240					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____	
		2. LOCATION (coordinates or Station) _____			
3. DRILLING AGENCY _____		5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____		7. THICKNESS OF OVER-BURDEN _____		8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	240	—	Interbedded sandstone & shale - same as below except very fine sand beds, at base to 0.5' thick grade upwards into lenticular bedded shale. sharp lower content. 30-70 sand/shale		4.2' # 23	
		—	Interbedded siltstone & shale - alternating v. lt. gy. (N8) & med dk gy (N4) laminae, hard parallel fracture, qtz, micaceous comp, wavy bedded at base to lenticular bedded at top with thick & thin lenses, silty lenses may contain some very fine sand, abundant plant material, brown Fe oxide stains, sharp lower contact. 20-80 sand/shale ratio.		244' # 24	
	245	—			13.4'	
	250	—				

DEPARTMENT OF THE ARMY		1. PROJECT _____		SHEET OF _____
DIVISION _____		2. LOCATION (Coordinates or Station) _____		
INSTALLATION _____		3. DRILLING AGENCY _____		
DRILLING LOG		5. NAME OF DRILLER _____		
4. HOLE NO. (As shown on drawing title and file no.) _____		7. THICKNESS OF OVERBURDEN _____		
6. DIRECTION OF HOLE		8. DEPTH DRILLED INTO ROCK _____		9. TOTAL DEPTH OF HOLE _____
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL _____		
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		STARTED _____
				COMPLETED _____
19. SIGNATURE OF INSPECTOR _____				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
260			Sandstone - vlt gy (N8) w/ med dk gy (N4) laminae, hard, fractures along muddy laminae, qtz, micaceous, wavy bedded at base to flaser bedded at top, rippled, plant debris, some brown Fe oxide stains, small amount of calcareous cement in muddy laminae.	5.2'	# 25	
					# 26	
265			Interbedded s.s. + shale - alternating med. dk gy (N4) & v. Hgy (N8) laminae, hard, blocky frags, silty, qtz, micaceous, comp, wavy bedded, sand layers up to 0.05' thick, 60% mud, 40% sand, sand v fine gr., rippled, small amt. plant material, brown Fe oxide stains, gradational lower contact. calcareous cement in muddy laminae.	40'		
270			Interbedded s.s. + shale - alternating vlt gy (N8) & med dk gy (N4) laminae, hard, blocky frags,	3.1'		

DEPARTMENT OF THE ARMY		1. PROJECT		SHEET OF		
DIVISION _____		2. LOCATION (Coordinates or Station)				
INSTALLATION _____		3. DRILLING AGENCY				
DRILLING LOG		5. NAME OF DRILLER				
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE	
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL				
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED					
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE		
DISTURBED		UNDISTURBED		STARTED	COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	270		<u>Interbedded S.S. & Shale</u> - (cont), approx. 3:1 S.S. - shale ratio, sandstone beds up to 0.6' thick, very fine - fine gr, qtz, micaceous, rippled & flaser bedded, abund. plant debris, convolute bedding, & load structures, some authigenic siderite, sharp lower contact.		3.1'	Calcareous cement in muddy laminae.
			<u>Mudshale</u> - same unit as below, small amount of localized calcareous cement at top.		# 26	
					273'	
					# 27	
	275					
					283'	
	280					

DEPARTMENT OF THE ARMY			1. PROJECT _____		SHEET _____ OF _____		
DIVISION _____ INSTALLATION _____			2. LOCATION (Coordinates or Station) _____				
DRILLING LOG			3. DRILLING AGENCY _____				
4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____				
6. DIRECTION OF HOLE			7. THICKNESS OF OVERBURDEN _____		8. DEPTH DRILLED INTO ROCK _____		
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL _____			9. TOTAL DEPTH OF HOLE _____		
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE	
DISTURBED _____		UNDISTURBED _____		STARTED _____		COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
	290		<u>Mud shale - same unit as above.</u>		# 28		
						292'	
						# 29	
						283'	
	295						
	200			Coal, same as below.	13'		"A" coal

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____	SHEET _____ OF _____
4. HOLE NO. (As shown on drawing title and file No.) _____		2. LOCATION (Coordinates or Station) _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		3. DRILLING AGENCY _____	5. NAME OF DRILLER _____
7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____	14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE MOLE STARTED _____ COMPLETED _____
17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
300			Coal blk (N1), banded, mod. bright, broken, sulfate bloom, sharp contacts	1.3'	# 29	"A" coal
			Mudstone - med Hgy (N6), mod. hard, blocky frags, slightly silty, micaceous, massive, abundant plant & root frags, few sand sized, authigenic siderite crystals & veins, gradational lower contact.	3.0'	# 30	Drillers skipped from 292' - 312' with no evidence of core loss. Footage markers from 312' to 391' are all 10' off. 312' = 302' 322' = 312' etc.
305			Mudshale - dk gy (N3), hard, parallel fracture, silty, qtz, micaceous, lenticular bedded w/ thin lenses, few burrows, few small plant fragments, clay ironstone concretions to 0.1' dia, sharp lower contact	4.0'		
			Coal - (blk) (N1), banded, mod. bright, sulfate bloom, sharp contacts	0.6'		"B" coal
			mudstone - lt gy (N7), mod. hard, blocky frags, silty, micaceous, massive, plant fragments →	3.4'		
310						

DEPARTMENT OF THE ARMY		1. PROJECT _____		SHEET OF _____
DIVISION _____		2. LOCATION (Coordinates or Station) _____		
INSTALLATION _____		3. DRILLING AGENCY _____		
DRILLING LOG		5. NAME OF DRILLER _____		
4. HOLE NO. (As shown on drawing title and file No.) _____		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____				
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____
17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
320			<u>Clay shale</u> - med dk gy (N4), hard, parallel fracture, micaceous, thin horizontal laminae, few small plant fragments along bedding planes, clay ironstone band 0.1' thick at base, few small pyrite nodules less than 1 cm dia, brown Fe oxide stains, sharp lower contact w/ under clay. upper 1' becomes silty + lenticular bedded w/ thin lenses, + few burrows	16.2'	# 31 # 32	
325						
330			XXX <u>Mudstone</u> - med Hgy (N6) soft, blocky fracture, silty, micaceous, massive, plant + root frags, few sand sized authigenic siderite crystals →	3.3'		Underclay but no coal. "C" coal horizon

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____	SHEET _____ OF _____
4. HOLE NO. (As shown on drawing title and file No.) _____		2. LOCATION (Coordinates or Station) _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		3. DRILLING AGENCY _____	
10. SIZE AND TYPE OF BIT _____		5. NAME OF DRILLER _____	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		9. TOTAL DEPTH OF HOLE _____	
14. TOTAL NO. CORE BOXES _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____	
15. ELEV. GROUND WATER _____		16. DATE MOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	330	-	<u>mudstone</u> -(cont) irregular clay ironstone band at top. gradational lower contact.	3.3	# 32	
		-	<u>mudshale</u> -dk gy (N3) at base to med lt gy(N6) at top, hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae, brachiopods crinoid stems & other marine fossils at base, few small plant frags, calcareous cement at base, brown Fe oxide stains, sharp lower contact.	4.9'	# 33	
	335	T	<u>Coal</u> , blk(N1) smut sharp contacts	0.1'		"D" coal
		-	<u>mudstone</u> - lt gy (N7), mod. hard, blocky - concoidal fracture, silty, micaceous, plant & root fragments, few sand sized authigenic siderite crystals, brown Fe oxide stains, gradational lower contact.	4.9'		
	340	-				

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____		
		2. LOCATION (coordinates or Station) _____				
3. DRILLING AGENCY _____				5. NAME OF DRILLER _____		
4. HOLE NO. (As shown on drawing title and file No.) _____						
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL _____				
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE		
				STARTED _____ COMPLETED _____		
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	340	---	<u>mudstone</u> - same as above.	4.9'	# 33	
		XXX	<u>mudshale</u> - med dk gy (N4), hard, brittle, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base, to wavy bedded at top, silty zones show abundant bioturbation, few pyritized plant fragments, Clay ironstone bands to 0.4' thick with calcareous cement in vertical fractures, Sharp lower contact w/ coal.	25'	# 34	
	345	XXX				
	350	---				

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____	SHEET _____ OF _____
4. HOLE NO. (As shown on drawing title and file No.) _____		2. LOCATION (coordinates or Station) _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		3. DRILLING AGENCY _____	5. NAME OF DRILLER _____
7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____	12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____	14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____
17. ELEV. TOP OF HOLE _____	18. TOTAL CORE RECOVERY FOR BORING (%) _____	19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
360			<u>mudshale</u> - same unit as above.		# 35	
					# 36	
				25'		
365			<u>Coal</u> , blk(N1), banded mod. bright, sulfate bloom, 0.2' mud parting near base, sharp contacts, some zones crumbled.	1.7'		Riverton coal
			mudstone parting	0.2'		
			<u>Coal</u> - blk(N1), sharp contacts.	0.3'		
			mudstone - med dk gray(N4), massive plant frags, gradual lateral lower cont.	0.5'		
			<u>Mudshale</u> - same as below.	9.0'		
370						

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____	SHEET _____ OF _____
4. HOLE NO. (As shown on drawing title and file No.) _____		2. LOCATION (coordinates or Station) _____	
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL _____		3. DRILLING AGENCY _____	
10. SIZE AND TYPE OF BIT _____		5. NAME OF DRILLER _____	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		9. TOTAL DEPTH OF HOLE _____	
14. TOTAL NO. CORE BOXES _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____	
15. ELEV. GROUND WATER _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		19. SIGNATURE OF INSPECTOR _____	
18. TOTAL CORE RECOVERY FOR BORING (%) _____			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
370			Mudshale - dk gy (N3), hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base, upper 6' lenticular bedded w/ very thin lenses, pyritized plant fragments, pyrite concretions to 0.1' dia, sharp, disconformable lower contact.	9.0'	# 36 371' # 37	
375						
			Limestone - H gy (N7), hard, blocky frags. massive, no fossils found, extensively fractured, mod. oil stains, abundant pyrite crystals, lower contact at 370'	3.0'		Mississippian Limestone
370						

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			1. PROJECT _____		SHEET _____ OF _____	
			2. LOCATION (Coordinates or Station) _____			
			3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL _____				
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE		
DISTURBED _____ UNDISTURBED _____				STARTED _____	COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	380		Limestone - same as above.	3.0'	# 37	Mississippian Limestone
			Bottom of core		381	
	385					
	390					