

Gulf Pittsburg-Midway

Strat Well PM-18

HOLE NO.

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	
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			17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)	
19. SIGNATURE OF INSPECTOR			20. CORE BOX OR SAMPLE NO.		REMARKS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	RECOVERY	SAMPLE NO.	REMARKS
40						(logged by John Harris)
			Top of Core	43'		
		T	Mud-shale dk		#	
		T	gy (N3) at base		1	
		T	grading to			
		T	med H gy (N6) at			
		T	top, hard, brittle,			
		T	parallel fracture,			
45		T	slightly silty,			
		T	thin horizontal			
			laminae, brachs,			
			crinoid stems			
			and other marine	12.5'		
			fossils and			
			calcareous cement			
			at base and top			
			(43-44.5') + (51-49.5')			
			clay ironstone bands			
			to 0.1' thick,			
			sharp lower			
			contact w/coal.		#	
					1	
50						

28-32-22c

DEPARTMENT OF THE ARMY				HOLE NO. _____			
DIVISION _____				1- PROJECT _____			
INSTALLATION _____				SHEET _____ OF _____			
DRILLING LOG				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			
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____				7- THICKNESS OF OVER-BURDEN _____			
10- SIZE AND TYPE OF BIT _____				8- DEPTH DRILLED INTO ROCK _____			
11- DATUM FOR ELEVATION SHOWN (TBM or MSL) _____				9- TOTAL DEPTH OF HOLE _____			
13- TOTAL NO. OF OVERBURDEN SAMPLES TAKEN _____				12- MANUFACTURER'S DESIGNATION OF DRILL _____			
14- TOTAL NO. CORE BOXES _____				15- ELEV. GROUND WATER _____			
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)	
	50	T	Mud-shale, same unit as above.		# 1		
		T					
		T					
		T					
		T					
		T					
		T					
		T					
		T					
		T					
	55		Coal, blk (N1), banded, mod. bright, brittle, hard, blocky fracture, sulfate bloom & calcareous cement in vertical fracs, sharp contacts.	2.0'		Mineral coal?	
			Mud-stone, ltgy (N7), soft, blocky fracture, slightly silty, micaceous, massive, abundant plant fragments, irregular clay ironstone bands near base, gradational lower contact.	3.6'	# 2	Underclay	
	60						

DEPARTMENT OF THE ARMY				HOLE NO. _____	
DIVISION _____		INSTALLATION _____		1- PROJECT _____	
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	
☐ VERTICAL ☐ 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		17- ELEV. TOP OF HOLE		18- TOTAL CORE RECOVERY FOR BORING (%)	
19- SIGNATURE OF INSPECTOR		20- REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.
	60		Mud-shale, dk gy (N3) at base to med ltgy (N6) at top, hard-mod. hard, parallel-blocky fracture, slightly silty, micaceous, thin horizontal laminae, few zones of fossil hash at base, calcareous cement at base, irregular clay ironstone concretions increasing in abundance upwards, sharp lower contact w/coal.		# 2
					62'
					# 3
					18.7'
	65				
					# 3
	70				

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____				1. PROJECT _____		
INSTALLATION _____				SHEET _____ OF _____		
DRILLING LOG				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		
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____				7. THICKNESS OF OVER-BURDEN _____		
10. SIZE AND TYPE OF BIT _____				8. DEPTH DRILLED INTO ROCK _____		
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____				9. TOTAL DEPTH OF HOLE _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN _____				12. MANUFACTURER'S DESIGNATION OF DRILL _____		
14. TOTAL NO. CORE BOXES _____				15. ELEV. GROUND WATER _____		
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 NO. SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	70		Mud-shale, same unit as above.		# 3	
					72'	
					# 4	
				18.7'		
	75	T				
		T				
		T				
		T			# 4	
		T				
			Coal, blk (M), banded, mod. bright, sulfate bloom, sharp contacts,	0.3'		Scammon coal
			Mudstone - same unit as below.	3'		
	80					

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.)				5. NAME OF DRILLER			
6. DIRECTION OF HOLE				7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL		☐ 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)	
80			<u>mudstone</u> , Hg4(N7), mod-hard to soft, blocky fracture, silty, micaceous, plant fragments sulfate bloom, clay ironstone nodules, gradational lower contact,	3'	# 4	Under clay	
			<u>Silt-stone</u> , Hg4(N7), hard, blocky fracture, abundant mud matrix, thinly laminated, rippled, micaceous, upper 2' burrowed, few small clay ironstone nodules and sand sized authigenic siderite crystals, gradational lower contact.	58'	# 5	Chelsea S.S.	
85			<u>Mud-shale</u> , same unit as below.	8.7'	# 5		
90							

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____		1. PROJECT _____		SHEET _____ OF _____		
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 OVER-BURDEN _____		8. DEPTH DRILLED INTO ROCK _____	
☐ VERTICAL ☐ 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 _____		
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	—	—	<u>Mud-shale</u> - H 94 (N7), mod. hard, parallel fracture, slightly silty, micaceous, thin horizontal laminae, few, small plant fragments, irregular clay ironstone concretions in upper 1.5', intercalating lower contact.	#5	97	
	—	—		#6		
	—	—		87'		
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
95	—	—	<u>Mud-shale</u> , same unit as below.	#6		
	—	—		22'		
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
100	—	—				

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		
☐ VERTICAL ☐ 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)	
150		T	Clay-shale, same unit as above.		# 11		
		T				151'	
		T				# 12	
		T					
		T					
		T					
		T					
		T					
		T					
		T					
155		T	Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.2'		Weir- Pittsburg Coal	
		T	Mudstone, Hgy (N7) at base to med gy (N5) at top, slightly silty, soft, blocky fracture, massive, abundant plant fragments, gradational lower contact.	3.9'	# 12		
		T					
		T					
		T					
		T					
		T					
		T					
		T					
		T					
160		T					

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 ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			3. DRILLING AGENCY _____		5. NAME OF DRILLER _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		7. THICKNESS OF OVERBURDEN _____		8. DEPTH DRILLED INTO ROCK _____
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		9. TOTAL DEPTH OF HOLE _____
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
16. DATE HOLE 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)
170			Mud-shale, med dk gy (N4) at base to lt gy (N7) at top, H gy silty laminae increase upwards, mod. hard, parallel fracture, micaceous, few plant frags along bedding planes, localized calcareous cement near base, clay ironstone bands to 0.1' thick, some zones appear burrowed, gradational lower contact, sand sized authigenic siderite crystals in upper 4'.	18'	# 13	
175					# 14	
180			Clay-Shale, same unit as below.	8.5'	# 14	

DEPARTMENT OF THE ARMY			HOLE NO.			
DIVISION		1. PROJECT		SHEET OF		
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 OVER-BURDEN	8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE		
☐ VERTICAL	☐ 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)	5. CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	190		Shale, dk gy (N3), claystone, hard, parallel fracture, thin horizontal laminae, calcareous nodules and cement near base, clay ironstone bands in upper portion to 0.1' thick, fossil wash near base, sharp lower contact.		# 16	
					192'	
				6'	# 16	
	195		Mudstone, lt gy (N7) at base to med gy (N5) at top, soft, blocky fracture, slightly silty, massive, abundant plant fragments, gradational lower contact.	2.4'		
						B' Bluejacket coal horizon Underclay but no coal.
			Siltstone, lt gy (N7), hard, abundant mud matrix, few small plant frags, bedding destroyed by bioturbation, abundant sand sized authigenic siderite crystals, gradational lower contact.	5'	# 16	
	200					

DEPARTMENT OF THE ARMY						
DIVISION _____		PROJECT _____				
INSTALLATION _____		SHEET ____ OF ____				
DRILLING LOG						
HOLE NO. (As shown on drawing title and file No.)		LOCATION (Coordinates or Station)				
		DRILLING AGENCY				
NAME OF DRILLER						
DIRECTION OF HOLE		THICKNESS OF OVERBURDEN		DEPTH DRILLED INTO ROCK		
VERTICAL INCLINED DEGREES WITH VERTICAL				TOTAL DEPTH OF HOLE		
SIZE AND TYPE OF BIT		DATUM FOR ELEVATION SHOWN (TBM or MSL)		MANUFACTURER'S DESIGNATION OF DRILL		
TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		TOTAL NO. CORE BOXES		ELEV. GROUND WATER		
DISTURBED UNDISTURBED				DATE HOLE STARTED COMPLETED		
ELEV. TOP OF HOLE		TOTAL CORE RECOVERY FOR BORING (%)		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	---	Silt-stone, same unit as above.	5'	# 16	
		o o o	Sandstone, med gy (NS), very fine grained, abundant mud matrix and muddy laminae, non-fossiliferous, moderate to heavy oil staining, gradational lower contact. Sed. structures obscured by oil staining.	6.4'	# 17	Upper Bluejacket S.S.
	205	V / \	Interbedded siltstone & shale, same unit as below.	5.2'	# 17	
	210					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			HOLE NO. _____			
			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 ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			7. THICKNESS OF OVERBURDEN _____	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)
	210		<u>Intercalating siltstone & shale</u> , thin (1-5mm) alternating lt gy(N7) and dk gy(N3) laminae, hard, thinly laminated, micaceous, non-fossiliferous, sharp lower contact.	5.2'	# 17	
	215		<u>Clay-shale</u> , dk gy(N3), hard, brittle, parallel fracture, thin horizontal laminae, non-fossiliferous, localized calc. cement, clay ironstone band oil thick, sharp lower contact.	2.4'	# 18	
			<u>Calcareous shale</u> , abundant crinoid stems, brachs and marine fossils with dk gray clay matrix, calcareous cement, sharp lower contact	1.0'		
			<u>Coal</u> , blk, (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.3'		"C" Bluejacket coal
			<u>Mudstone</u> , med H gy(N6), mod. hard, blocky fracture, silty, massive, plant fragments, gradational lower contact.	1.7'		
			<u>Mud-shale</u> , same unit as below.	13.9'	# 18	
	220					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			HOLE NO. _____				
			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 ☐ VERTICAL ☐ 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 _____ 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)	
	220	T	Mud-shale, med dk gy (N4), with brown mottling, hard, parallel fracture, slightly silty, micaceous, thin horizontal laminae, few burrowed zones, some pyritized plant fragments, localized calcareous cement, sharp lower contact w/ coal.		# 18		
						221'	
						# 19	
		S					
		T					
	225						
		S					
		T					
		S					
		T					
					# 19		
	230						

DEPARTMENT OF THE ARMY				HOLE NO. _____			
DIVISION _____			1. PROJECT _____		SHEET _____ OF _____		
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		
☐ VERTICAL ☐ 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)	
	230	—	<u>Mud-shale</u> , same unit as above.	13.9'	#20	"D" Bluejacket coal	
		—	<u>Coal</u> , blk (N), banded mod bright, sulfate bloom, sharp contacts.	0.3'			
		—	<u>Mudstone</u> , ltgy (N7) mod. hard, blocky fracture, massive, abundant silt, up to 50% in lower part, abundant plant fragments, sand sized authigenic siderite crystals, gradational lower contact.	4.0'			
		—	<u>Mud-shale</u> , same unit as below.	22.2'			
	240	—			#20		

[illegible]

DEPARTMENT OF THE ARMY				HOLE NO. _____		
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 ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			7. THICKNESS OF OVER-BURDEN _____		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 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)
	260	---	<u>Mudstone</u> , ltgy(N7), mod. hard, blocky fracture, 40-50% silt, massive, abundant plant fragments, few sand-silt sized authigenic siderite crystals near base, gradational lower contact.	4.3'	#23	260'

	265	T	<u>Clay-shale</u> , dkgy(N3), hard, brittle, parallel fracture, micaceous, no silt, thin horizontal laminae, non-fossiliferous, localized calcareous cement, few clay ironstone bands to .05' thick, sharp lower contact w/coal.	7.5'	#23	
		T				
		T				
		T				
		T				
		T				
		T				
		T				
		T				
		T				
	270	---				

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 ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____				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)	
270			Clay-shale same unit as above.	7.5'	# 23	Rowe coal	
			Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts,	0.4'	# 24		
			Mudstone, Hgy (N7), soft, blocky-Conchoidal fracture, slightly silty, massive, abundant plant fragments, few irregular clay ironstone nodules, gradational lower contact.	3.0'			
275			Mud-shale, alternating thin laminae of med dk gy (N4) and lt gy (N7), mod. hard, parallel fracture, 20-30% silt, thin horizontal laminae, few small plant fragments along bedding planes, abundant sand sized authigenic siderite crystals, gradational lower contact.	5.4'			
280					# 24		

DEPARTMENT OF THE ARMY

DIVISION

INSTALLATION

DRILLING LOG

1. PROJECT

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

VERTICAL

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

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)
280			Clay-shale, dk gy (N3), hard, brittle, parallel fracture, micaceous, no silt, non-fossiliferous, thin horizontal laminae, few clay ironstone bands in upper 3', up to 1 cm thick, sharp lower contact.		# 24	
					# 25	
				14.6'		
285						
					# 25	
290						

ENG FORM 1 JUN 57 1836 (TRANSLUCENT) PREVIOUS EDITIONS ARE OBSOLETE (EM 1110-2-1801)

PROJECT

HOLE NO.

DEPARTMENT OF THE ARMY				HOLE NO. _____			
DIVISION _____			1. PROJECT _____				
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 OVER-BURDEN		8. DEPTH DRILLED INTO ROCK		
☐ VERTICAL ☐ 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>Clay-shale</u> , same unit as above.		# 25		
					# 291		
					# 26		
				14.0'			
	295		<u>Mudstone</u> , med Hgy (N6), mod. hard, blocky fracture, slightly silty, non-fossiliferous, abundant irregular clay ironstone concretions and sand sized authigenic siderite crystals probably destroyed bedding, gradational lower contact.		3.5'	Neutral coal horizon resembles underclay	
			<u>Mud shale</u> , same unit as below		10.5'		
	300				# 26		

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.)			9. TOTAL DEPTH OF HOLE			
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ 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)
	300		Mud-shale, dk gy (N3), hard, parallel fracture, 10% silt, occasional silty lenses up to 5 mm thick, non-fossiliferous localized calcareous cement, few clay ironstone bands to 0.1' thick, Sharp lower contact.	105'	#26 301'	
	305		Sandstone, med gy (N5) with brown mottling, very fine grained, abundant mud matrix, poorly sorted, quartz, micaceous, no apparent structures, abundant small plant fragments, sharp, scoured lower contact.	23'	#27	Upper Warner S.S.
	310		Claystone, med lt gy (N6), soft, blocky frac, no silt, few plant frags, gradational lower contact.	1.1'		Underclay but no coal, unnamed coal horizon

HOLE NO. _____

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 ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____				7- THICKNESS OF OVER-BURDEN _____		8- DEPTH DRILLED INTO ROCK _____	
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)	
	310		<u>Mud shale</u> , med gy (N5) with lt brown mottling, hard, parallel fracture, slightly silty, micaceous, abundant pyritized plant fragments along bedding planes, 1 foot zone from 317'-318' contains brachiopods, bivalves and crinoid stems with calcareous cement, 0.1' dia clay ironstone nodules common, brown stains, sharp lower contact w/ coal.		# 28		
	315						
	320				# 28		

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.)				9. TOTAL DEPTH OF HOLE			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL		☐ 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)	
320			Mud-shale, same unit as above.		# 29		
				12.6'			
			Coal, blk(N1), banded, mod. bright, small amt. sulfate bloom, sharp contacts.	0.5'		"A" coal	
			Mudstone, med H gy (N6), mod. hard, blocky fracture, slightly silty, massive, abundant plant fragments, gradational lower contact.	2.5'		Underclay	
325			Interbedded silt & shale - alternating H gy (N7) & dk gy (N3) laminae, mod. hard, blocky - parallel fracture, subequal amount of silt & clay, wavy bedded, soft sediment deformation, gradational lower contact.	2.2'			
			Clay-shale, dk gy (N3) hard, brittle, parallel fracture, micaceous, no silt, few pyritized plant fragments along bedding planes, small clay ironstone bands, sharp lower contact.	3.0'	# 29		
330							

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.)				9. TOTAL DEPTH OF HOLE			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ 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)	
330			Clay-shale - same unit as above,	3.0'	#30	"B" coal	
			Coal, blk(N1), banded, mod. bright, brittle, sulfate bloom, sharp contacts.	0.9'			
			Mudstone, med H gy (N6), mod. hard, blocky fracture, slightly silty, massive, abundant plant fragments, authigenic siderite crystals at base, gradational lower contact.	4.3'			
			Clay shale, same unit as below,	14.6'	#30		

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____		INSTALLATION _____		1. PROJECT _____		
DRILLING LOG				2. LOCATION (Coordinates or Station) _____		
4. HOLE NO. (As shown on drawing title and file No.) _____				3. DRILLING AGENCY _____		
6. DIRECTION OF HOLE				5. NAME OF DRILLER _____		
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL		7. THICKNESS OF OVER-BURDEN	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	12. MANUFACTURER'S DESIGNATION OF DRILL		
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		16. DATE HOLE 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)
340	—	—	Clay-shale, med dk gy (N3), hard, brittle, parallel fracture, micaceous, mostly clay, thin horizontal laminae, localized calcareous cement, few clay ironstone concretions to 0.3' thick, sharp lower contact with underclay.	14.6'	# 31	340'
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
345	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
350	—	—			# 31	

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.)			5. NAME OF DRILLER			
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ 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)
	350	—	Clay shale, same unit as above	14.6'	# 32	350' "C" coal horizon
		—	Mud-stone, med dk gy (N4) at base to med H gy (N6) at top, soft, blocky fracture, massive, few plant fragments, abundant sand sized authigenic siderite crystals at base, gradational lower contact.	3.2'		Underclay but no coal.
	355	—	Clay-shale, dk gy (N3) at base to med dk gy (N4) at top. hard, brittle, parallel fracture, micaceous, non-fossiliferous, thin horizontal laminae, calcareous cement at base with clay ironstone bands in upper portion. Sharp, scoured lower contact overlain by small rip-up clasts and a few fossil fragments.	8.5'	# 32	
	360	T				

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	
☐ VERTICAL ☐ 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)
360		T	Clay shale, same unit as above.		#32	
		T	scour surface overlain by small ripup clasts and fossiliferous shale.	8.5'	#33	"D" coal horizon
			mud-shale, lt gy(N7), moderately hard, parallel fracture, clay with up to 10% silt, thin horizontal laminae, non-fossiliferous, few small clay ironstone nodules, <5mm dia, gradational lower contact.	16.6'		
365			Mud-shale, same unit as below			
				20'		
370					#33	370'

HOLE NO. _____

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	
☐ VERTICAL ☐ 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			
K							
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	—	Mud-shale, same unit as above.		# 35		
		—					
		—					
		—					
		—					
		—					
		—					
		—					
		—					
		—					
	385	—	Clay-shale, med dkgy (N4), (dry), hard, brittle, parallel fracture, mostly clay, thin horizontal laminae, few small plant fragments along bedding planes, small amount of white sulfate bloom, abundant brown stains, sharp lower contact w/ coal.	20'			
		—					
		—					
		—					
		—					
		—					
		—					
		—					
		—					
		—					
		—		7.4'	# 35		
		—			389'		
		—			# 36		
	390	—					

