Strat Well PM-11

Gulf Pittsburg-Midway

HOLE NO. _____

DEPARTMENT OF THE ARMY

DIVISION _____

INSTALLATION _____

DRILLING LOG

1. PROJECT (DRL) 36-32-21E — SHEET _____ OF _____

2. LOCATION (Coordinates or Station) NE NE NE ~~NE~~ - 32S - 21E

3. DRILLING AGENCY P & M (Gulf Minerals)

4. HOLE NO. (As shown on drawing title and file No.) P+M # 11

5. NAME OF DRILLER P+M

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
est. 825		

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					(logged by John Harris)
			Top of Core		43	
			Mudstone - same unit as described below.		# 1	
	45			24'		
	50					

36-32-21e

HOLE NO. _____

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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 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
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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		Mud-stone, lt gy (N7) - med gy (N5), soft, blocky to parallel fracture, slightly silty, micaceous, massive, abundant plant debris & zones containing brachs and other marine fossils, localized calcareous cement, abundant irregular clay ironstone concretions, gradational lower contact.	24'	# 1 53' # 2	
	55					
	60					

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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)
	60		Mud-stone, same unit as above		# 2	
					63	
				24'		
		T			# 3	
	65					
		T				
			Mud-shale - same unit as below.	14.0'		
	70					

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

PROJECT _____ HOLE NO. _____

HOLE NO. _____

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DRILLING LOG

1. PROJECT		SHEET OF
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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)
	70		mud-shale, med lt gy (N6), mod. hard, parallel fracture, silty, micaceous, thin horizontal laminae, some wavy bedding, few small plant fragments along bedding planes, few sand sized authigenic siderite crystals, intercalating		# 3	
					73'	
				14.0'	# 4	
	75		lower contact.			
	80					

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

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2. LOCATION (Coordinates or Station)

3. DRILLING AGENCY

4. HOLE NO. (As shown on drawing title and file No.)

5. NAME OF DRILLER

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DISTURBED	UNDISTURBED			STARTED	COMPLETED

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	80		Mud-shale, same unit as above.	14.0'		
					# 4	
			Clay-shale, same unit as described below.			
					83'	
					# 5	
	85			24.6'		
	90					

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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)
	90		Clay-shale, dk gy(N3) at base to med gy(N5) at top, mod. hard, parallel fracs, upper portion slightly silty, thin horizontal laminae, few pyritized plant fragments along bedding planes, few thin clay ironst. bands ≈ 1cm, concentric Fe oxide stains, may be around plant frags, small amount of burrowing, sharp lower contact with coal.		# 5 93'	
	95			24.6'	# 6	
	100					

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

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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	T	Clay-shale, same unit as above.		# 6	
		T				
				24.6	103'	
		T				
					# 7	
	105					
			Coal, blk (N1), banded, mod. bright; sulfate bloom, calc. cement in cleats; sharp contacts.	0.4'		Tebo coal
			Silt-stone - same unit as below.			Unnamed S.S.
				7.5'		
	110					

ENG FORM 1836 1 JUN 87 (TRANSLUCENT) (EM 1110-2-1801) PREVIOUS EDITIONS ARE OBSOLETE

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2. LOCATION (Coordinates or Station)

3. DRILLING AGENCY

4. HOLE NO. (As shown on drawing title and file No.)

5. NAME OF DRILLER

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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)
	110		Silt-stone, lt gy (N7) at base to med lt gy (N6) at top, abundant mud matrix, mod. hard, blocky fracture, abundant plant material in upper portion, few sand sized authigenic siderite crystals, gradational lower contact.	7.5'	# 7	
					113	
			Sandstone, lt gy (N7), very fine grained, qtz, mica, abundant mud matrix, convolute lamination, gradational lower contact.	1.3'	# 8	Unnamed Sandstone
	115		Silt-stone, lt gy (N7), mod, hard, blocky fracture, abundant mud matrix, thinly laminated, some ripples, abundant plant & wood fragments, gradational lower contact.	7.0'		
	120					

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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)
	120		Silt-stone, same unit as above.	7.0'	# 8	
			Mudstone, med H gy (N6), soft, blocky fracture, non-fossiliferous,	1.0'	123'	
	125		Sandstone, lt gy (N7), very fine grained, abundant mud matrix, qtz, micaceous comp. abundant ripples, <1cm, wavy bedded at base to flaser bedded at top, non-fossiliferous, abundant sand sized authigenic siderite crystals, gradational lower contact.	4.2'	# 9	May represent progradation of delta. Slab this one! Unnamed Sandstone
			Siltstone, med H gy (N6) mostly silt & mud, some ripples <1cm, convolute lamination, non-fossiliferous, intercalating lower contact.	1.5'		
			Clay-shale - same unit as below.	12'		
	130					

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	130		Clay-shale, dkgy (N3), to gy blk (N2), hard, parallel fracture, becomes slightly silty near top, thin horizontal laminae, few thin zones w/marine fossil debris, bracked small crinoid stems, localized calcareous cement, sharp lower contact w/coal.		# 9	
		T				
					132'	
		T		12'	# 10	
		T				
	135					
		T				
		⊥				
	140					

ENG FORM 1836 1 JUN 87 (TRANSLUCENT) (EM 1110-2-1801) PREVIOUS EDITIONS ARE OBSOLETE

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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)
	140		Clay shale, same unit as above.	12'	#10	
			Coal, blk (N1), hard, brittle, banded, mod. bright, sulfate bloom, sharp contacts	0.2'	#12	Weir-Pittsburg Coal
			Mudstone, lt gy (N7), soft, blocky fracture slightly silty, massive plant & root fragments, gradational lower contact.		#11	Underclay
	145			7.2'		
			Mud-shale same unit as described below.	6.6'		
	150					

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

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7. THICKNESS OF OVER-BURDEN
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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)
	150		Mud-shale, alternating lt gy (N7) & med gy (N5) laminae, mod. hard, parallel fracture, 20% silty, wavy bedded, non-fossiliferous, few sand sized authigenic siderite x-tals, gradational lower contact	6.6'	# 11	
	155		Mud-shale, med dk gy (N4), mod. hard, parallel frac. silty, micaceous, thinly laminated, plant fragments, may be burrowed, clay ironstone bands to 0.1' thick, gradational lower contact.	5.3'	154' # 12	
	160					

ENG FORM 1 JUN 87 1836 (TRANSLUCENT) (EM 1110-2-1801) PREVIOUS EDITIONS ARE OBSOLETE

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4. HOLE NO. (As shown on drawing title and file No.)

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DISTURBED	UNDISTURBED			STARTED	COMPLETED

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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)
	160		Mud-shale, same unit as described above.	5.3'		
			Mud-shale alternating ltgy(N7) & meddkgy(N4) laminae, 40% silt, qtz, micaceous comp, hard, parallel fracture, wavy bedded, plant fragments, bioturbated, gradational lower contact. conudute bedding	4.0'	# 12	
	165		Clay-shale, same unit as described below.	11.3'	166' # 13	
	170					

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

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	170		Clay-shale, dk gy (N3), mod. hard, parallel fracture, no silt, micaceous, thin horizontal laminae few pyritized plant frags, clay ironstone bands to 0.1' thick, localized calcareous cement, sharp lower contact w/ coal.	11.3'	# 13	
	175		Coal, blk(N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.3'	175 # 14	"A" Upper B.J. Coal
			Mud-stone, med Hgy (N6) – Hgy (N7), soft, blocky frac, slightly silty, micaceous, massive, plant frags, irregular clay ironstone concretions, gradational lower contact,	2.2'		
			Clay-shale – same unit as described below.	6.1'		
	180					

ENG FORM 1 JUN 57 1836 (TRANSLUCENT) (EM 1110-2-1601) PREVIOUS EDITIONS ARE OBSOLETE

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	180		Clay-shale – gy blk (N2) to dk gy (N3), mod. hard, parallel frac., micaceous, thin horizontal laminae, may be burrowed, small pyrite concretions, few zones w/ marine fossil debris (crinoids etc.) & calc. cement, sharp lower contact.	6.1'	# 14	
	185		Mudstone, med gy (N5), massive, soft, blocky frac., abundant plant material, gradational lower cont.	1.3'	185'	Upper B.J. coal horizon Underclay but no coal!! "B" B.J. horizon
			Siltstone, lt gy (N7) hard, blocky fracture, sub-equal silt & mud, massive, bioturbated, authigenic siderite crystals, gradational lower contact.	3.8'	# 15	
	190					

HOLE NO. _____

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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
☐ 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)
	190		Sandstone, ltgy(N7) w/ brown mottling, very fine grained, abundant mud matrix, massive, abundant bioturbation oil stains in more permeable zones, authigenic siderite crystals, gradational lower contact.	3.5'	# 15	Upper Bluejacket Sandstone
					193	
			Siltshale, ltgy(N7), hard, parallel fracture, micaceous, thinly laminated, few small plant fragments, authigenic siderite crystals, intercalating lower contact.	4.9'	# 16	
	195					
					# 16	
			Sandstone, same unit as described below.	5.0'		
	260					

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4. HOLE NO. (As shown on drawing title and file No.)
5. NAME OF DRILLER
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7. THICKNESS OF OVER-BURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE
10. SIZE AND TYPE OF BIT
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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
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		Sandstone, med brownish gy, (5YR 5/1), very fine - fine grained, rippled, few thin muddy laminae, few plant fossils, oil stained lightly, sharp, scoured lower contact.	5.0'	# 16	Upper Bluejacket Sandstone
					203'	
			Siltstone, lt gy(N7) hard, parallel fracture, thin wavy laminae, rippled, non-foss., sand sized authigenic siderite crystals, sharp lower contact.	2'	# 17	
	205					
		T	Clay shale - dk gy(N3) hard, parallel laminae, no silt, thin horizontal laminae, non-fossiliferous, Clay ironstone bands to 0.1' thick, sharp lower contact.	2.7'		
		T				
		T (T) T	Calcareous mudshale - med gy(N5), abundant marine fossil frags, calcareous cement sharp lower contact.	1.0'	# 17	
		(T) T	Coal, blk(N1), banded, mod. bright, sulfate bloom, sharp contacts	0.3'		Lower Bluejacket coal ("C")
			Mudstone - same unit as described below.	3.7'		
	218					

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

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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 / 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		mud-stone, med ltgy(N6), mod. hard, blocky fracture, slightly silty, massive, abundant plant fragments, irregular clay ironstone concretions, gradational lower contact.	3.7'	# 17 213'	Underclay
	215	T	mud-shale, med dkgy(N4), mod. hard, parallel fracture, slightly silty, micaceous, thin horizontal laminae, plant fragments along bedding planes, some bioturbation, localized calcareous cement, some brown Fe oxide stains, sharp lower contact w/ coal,	12.4'	# 18	
	220	T			# 19	

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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)
	220	T	Mud-shale, med dk gy (N4) same unit as described above,		# 18	
		T		12.4'	# 19	
		T				
		T	Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.3'		Lower Bluejacket "D" coal
			Mudstone - lt gy (N7) mod. hard, blocky frac, silty, micaceous, massive, abundant plant frags, gradational lower contact.	1.3'		
	235		Siltstone lt gy (N7), mod. hard, blocky fracture, subequal silt & mud, thinly laminated, probably was wavy bedded, extensively bioturbated, authigenic siderite crystals, gradational lower contact.	4.0'	# 19	Lower Bluejacket Sandstone
			Mud shale - same unit as described below.	19'		
	230					

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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)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	230		Mud shale, med ltgy (N6), same unit as described below.		# 19	
					231'	
					# 20	
	235			19'		
					# 20	
	240					

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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
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7. THICKNESS OF OVERBURDEN
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9. TOTAL DEPTH OF HOLE
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12. MANUFACTURER'S DESIGNATION OF DRILL
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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		Mud-Shale, med dk gy (N4) at base to med lt gy (N6) at top., mod. hard, parallel fracture, slightly silty, micaceous, thinly laminated, few small plant frags along bedding planes, small vert. & horizontal burrows, clay ironstone bands at base to 0.1' thick, finely disseminated pyrite, authigenic siderite, sharp lower contact.	19'	# 20 241' # 21	
	245		Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts,	0.4'	# 21	Drywood coal
			Mudstone, same unit as described below.	4.6'		Underclay
	250					

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1. PROJECT	SHEET OF
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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)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	250		Mudstone, H gy(N7) mod. hard, blocky fracture, slightly silty, massive, abundant plant & root fragments, abundant fine sand sized authigenic siderite crystals, gradational lower contact.	4.6'	# 21 251' # 22	
	255	T	Clay-shale, dk gy (N3) hard, brittle, parallel fracture, no silt, micaceous, thin horizontal laminae, non-fossiliferous, clay ironstone bands to 0.1' thick, localized calcareous cement, sharp lower contact.	7.6'	# 22	
		T				
		T				
	260					

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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
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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)
	260		Clay-shale, dk gy(N3) same as above.	7.6'	# 22	Rowe coal
			Coal, blk(N1), banded, mod. bright, sharp cont.	0.1'	261	
			Mudstone - lt gy(N7) soft, blocky - conchoidal fracture, slightly silty, massive, abundant plant frags., sulfate bloom, gradational lower contact.	2.4'	# 23	
			Mudshale - med dk gy (N4) - med lt gy(N6) hard, parallel frac, silty, qtz, micaceous comp., thinly laminated, lenticular bedded at base to wavy bedded at top, few small plant frags, authigenic siderite crystals & irregular clay ironstone concretions, gradational lower contact, few small burrows	8'	# 23	
	265					
	270					

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4. HOLE NO. (As shown on drawing title and file No.)	5. NAME OF DRILLER	

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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		mud-shale, med gy(N5), same unit as described above.	8'	# 23	
					271'	
			Clay-Shale, dkgy(N3), hard, parallel frac, no silt, thin horizontal laminae, non-fossiliferous, Clay ironstone bands to 0.4' thick, yellowish brown stains, sharp lower contact.		# 24	
				11.6'		
	275					
					# 24	
	280					

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7. THICKNESS OF OVER-BURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE
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15. ELEV. GROUND WATER
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17. ELEV. TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING (%)
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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)
	280		Clay-shale - dKgy(N3), same unit as described above.	11.6'	# 24 281' # 25	
	285		Mudstone, med H gy(N6), soft - mod. hard, blocky - conch. frac, slightly silty, micaceous, massive, abundant plant frags, sand sized authigenic siderite crystals, gradational lower contact.	3.7'		Underclay but no coal, Neutral coal horizon
			Mudshale, med dk gy (N4), mod. hard, parallel frac., thinly laminated, lent. bedded, plant fragments, pyrite nodules, gradational lower contact.	2'	# 25	
	290		Siltstone, med gy(N5), hard, blocky frac, plant frags, vertical & horizontal burrows, thin bedded, gradational lower cont.	3.6'		

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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		Siltstone, medlt gy(N6) same unit as described above.	3.6'	# 25 291'	
			Sandstone, med dk gy(N6), very fine grained, mod. sorted, qtz, micaceous comp, thinbedded, rippled, abundant clay chips, coal & plant frags, Convolute laminae, authigenic siderite & clay ironstone bands, intercalating lower contact.	10.2'	# 26	Upper Warner Sandstone
	300				# 26	

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13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE	
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	300		Sandstone, med lt gy (N6), very fine grained, same unit as above.	10.2'	#27	Upper Warner Sandstone
			Mud-shale, med dk gy (N4), mod. hard, parallel frac, slightly silty, micaceous, plant frags, thin horizontal burrows, sharp lower contact.	1.8'		
			Mudstone, med lt gy (N6), soft, blocky frac, massive, plant frags, clay ironstone, gradational lower cont.	1.3'		Underclay but no coal, Unnamed coal horizon
	305		Mud-shale, med dk gy (N4) same unit as described below.			
		T				
		T		16.1'		
		T				
		T				
		T				
	310					

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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
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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
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		Mud-shale - med dk gy (N4), hard, parallel fracture, slightly silty, micaceous, thinly laminated, few very thin silty lenses, few bryozoa and other marine fossil fragments, localized calcareous cement. small pyrite nodules, few very small plant frags along bedding planes. sharp lower contact.	16.1'	# 28	
	315					
	320					

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13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE	
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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.	16.1'	# 29	
			Coal, blk(N1), banded mod. bright, sulfate bloom, sharp contacts.	1.4'		"A" coal
			Mudstone, med lt gy(N6), soft, blocky fracture, massive, plant frags, silty, gradational lower contact.	2.2'		Underclay
	325		Mud-shale, dk gy (N3), hard, parallel fracture, slightly silty, qtz, micaceous comp, thinly laminated, lenticular bedded, 10% silt, silty lenses increase upwards, few pyritized plant fragments, few small horizontal burrows, finely disseminated pyrite crystals, clay ironstone bands to 0.1' thick, sharp lower contact w/ coal.	6.4'		
	330					

HOLE NO. _____

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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
☐ 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		Mud-shale - dk gy (N3)	6.4'	# 30	
			Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.9'		"B" coal
			Mud-stone - med lt gy (N6), soft, blocky - conchoidal fracture, massive, plant fragments, irregular clay ironstone conc. gradational lower cont.	1.8'		
			Clay-shale - same unit as described below.			
	335			2.9'		
	340					

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4. HOLE NO. (As shown on drawing title and file No.)	5. NAME OF DRILLER	

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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	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		Clay-shale, dk gy (N3) hard, parallel fracs, no silt, micaceous, thin horizontal laminae, few horizontal burrows, clay ironstone bands to 0.1' thick, localized calcareous cement, sharp lower contact w/coal.		# 31	
				21.9'		
	345					
	350					

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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
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, dkgy (N3), same unit as described above.	21.9'	# 32	
			Coal, blk (N1), banded, mod. bright, sulfate bloom, sharp contacts,	1.2'		"C" coal
	355		Mudstone, med Hgy (N6), mod. hard, blocky fracture, slightly silty, micaceous, massive, abundant plant material, irregular clay ironstone concretions, authigenic siderite crystals, gradational lower contact.	4.0'		
			Mud-shale - same unit as descr. bed below.	14.4'		
	360					

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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)
	360		Mud-shale, dkgy(N3)		# 33	
			same unit as described below.			
	365			14.4'		
	370					

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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)
	370		Mudshale, dkgy(N3) hard, parallel fracture, silty, thinly laminated, few very thin silty lenses, abundant brachs + other marine fauna, few small plant frags, sharp lower contact w/coal, localized calc. cement	11.4'	#34	
			Coal, blk(N1), banded, mod. bright, sulfate bloom, calc. cement in fractures, 0.2' clay parting near middle, sharp contacts.	1.4'		"D" Coal
	375		Mudstone, Hgy(N7), mod. hard, blocky fracture, silty, qtz, micaceous comp, massive, abundant plant fragments, abundant brown-orange Fe oxide stains, irregular clay ironstone concretions, gradational lower contact.	4'		Underclay
			mud-shale - same unit as described below.	5.4'		
	380					

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4. HOLE NO. (As shown on drawing title and file No.)	5. NAME OF DRILLER	
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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		Mud-shale, med dk gy (N4), mod. hard, parallel frac, silty, quartz, micaceous comp, thinly laminated, lenticular bedded, abundant plant frags, horizontal burrows, sharp lower contact w/ coal. probably marine some authigenic siderite xtals.	5.4'	# 34	
	385		Coal, blk (N1), banded, mod. bright, abundant white & yellow sulfate bloom, calc. cement in vertical fracs, sharp contacts.	1.5		Riverton coal
			Mudstone, med gy (N5), soft, blocky fracture, slightly silty, massive, root marked, abundant plant frags, gradational lower contact,	2.2		
			Mudshale - same unit as described below.	7.5'		
	390					

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	390		Mud-shale, dkgy(N3) hard, parallel frac., slightly silty, micaceous, thinly laminated, lenticular bedded, silty lenses all less than 1cm thick, silty lenses increase upwards, small plant fragments along bedding planes, few small pyrite nodules, clay ironstone nodules, sharp lower contact,	7.5'	#36	
	395		Coal, blk(N1), sulfate bloom, sharp contacts	0.1		Unnamed lower Coal.
			Clay-shale, dkgy(N3), hard, parallel fracture micaceous, thin horizontal laminae, few small pyritized plant fragments along bedding planes, abundant pyrite nodules, sharp, unconformable lower contact w/ Chert & l.s. clasts.	6.8'		
	400					

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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)
	400		Clay-shale, dk gy(N3)	68'	# 37	
			Limestone, V, H gy (N8) - white(N9), mudstone, massive, hard, blocky fracture, non-fossiliferous, extensively fractured, abundant pyrite concretions & Fe stains in fracs, lower contact not observed.			Mississippian L.S.
	405			8.8'		
	410					

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