Gulf - Pittsburg - Midway

Strat Well PM-19
HOLE NO.

DEPARTMENT OF THE ARMY
DIVISION
INSTALLATION

DRILLING LOG

1. PROJECT | SHEET OF

2. LOCATION (Coordinates or Station) SE SESE Sec. 15 T32S R22E

3. DRILLING AGENCY P+M (Gulf Minerals)

4. HOLE NO. (As shown on drawing title and file No.) P+M # 19

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
895		

15 - 32 - 22 e

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	15		Shale med H gy (N6), mudstone, silty, burrowed, calc. cement, grad. lower contact.	1'	1	(logged by John Harris)
	16		Limestone, H gy (N7), hard, mudstone, massive, few brach, crinoid stems and other fossil frags, calc. cement, gradational lower contact.	2'		Verdigris L.S.
	18					
18' ↓ 22'			4' of core missing N.C.R., probably shale below	4'		numbers skip from 18'-22' in this interval
	22					
	23		Shale, dk gy (N3), claystone, hard, brittle, thinly laminated, non-fossiliferous, calcareous cement, few fossils at top as it grades into L.S., sharp lower contact w/ coal.	9'		
	24					
	25					
	26					
	27		Coal blk (N1), hard, banded, med. bright sulfate bloom, sharp contacts	0.6'		Croweburg
	28		Mudstone same unit as below	3.5'		"Underclay"
	29					

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

PROJECT _____ HOLE NO. _____

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15. ELEV. GROUND WATER
16. DATE HOLE: STARTED | COMPLETED
17. ELEV. TOP OF HOLE
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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)
	28		Mudstone, ltgy(N7), slightly silty, soft, crumbled w/ blocky fracture, no evidence of bedding, plant frags common, small clay ironstone nodules and calc. cement, gradational lower contact.	3.5'	2	
	29					
	30					
	31		Limestone, ltgy(N7), hard, massive, calcareous, no fossils found, broken up, sharp contacts	0.8'		
	32		Shale, dkgy(N3), claystone, thin horiz. laminae, very small fossil frags near base, calc. cement, sharp lower contact w/ coal.	2.5'		
	33					
	34		Coal, blk(N1), hard, banded, mod. bright sulfate bloom, sharp contacts.	.1' .2' .4'		Small split near top 0.5" total coal thickness
	35		Mudstone, same unit as below, described on next page.	8.3'		Fleming fossils found in shale parting,
	36					
	37					
	38					

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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)
	39		Mudstone Hgy(N7) soft, crumbled, blocky fracture, slightly silty, abundant root & plant frags, small clay ironstone nodules, brown staining, lower contact not observed.	8.3'	3	"Underclay"
	40					
	41					
	42					
	43					
	44					
	45		N.C.R. 9' of core lost probably mudstone	9'		
	46					
	47					
	48					
	49					

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	49		N.C.R.		3	
	50		9' of core lost, probably mudstone			
	51			9'		
	52					
	53					
	54		Mudstone, med lt gy (N6), silty, soft, crumbled, blocky fracture, non-fossiliferous, no evidence of bedding, some brown stains, gradational lower contact			
	55					
	56			5'		
	57					
	58					
	59					

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	59		Shale, dk gy (N3), claystone, thin horizontal laminae, abundant marine fossil frags near base as well as calcareous cement., thin clay ironstone bands & nodules, small pyrite nodules,, sharp lower contact w/coal.	6.3'	4	
	60					
	61					
	62					
	63					
	64					
	65					
	66		Coal blk (N1), hard, banded, mod. bright, yellow & white sulfate bloom, sharp contacts,	0.9'		mineral coal
	67		Mudstone, Hgy (N7), silty, no evidence of bedding, soft, blocky fracture, abundant plant & root frags, some brown stains, gradational lower contact.	2.9'		"Underclay"
	68					
	69					

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	69		Mudstone, next page;		5	
			Limestone, ltgy(N7), mudstone, calcareous, massive, no fossils found, hard, gradational lower contact.	1.8'		(1) argillaceous L.S."
	71		Mudstone- med lt gy(N6), silty, soft micaceous, blocky frac. original bedding destroyed by diagenetic features, non-fossiliferous, abundant clay ironstone concretions up to 2" dia., authigenic siderite crystals, gradational lower contact, much softer than lower unit.	4.8'		Unnamed coal horizon
	76		Shale, same unit as below, described on next page.	8'		
	77					
	78					
	79					

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

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	79		Shale, med lt gy (N6), claystone, micaceous, mod. hard, thin horiz. laminae, few very small fossil frags near base, calc. cement localized, clay ironstone bands 1" thick and irregular clay ironstone concretions, sharp lower contact.	8'	6	
	80					
	81					
	82					
	83					
	84		Mudstone, med lt gy (N6), slightly silty, micaceous, soft, blocky fracture, no evidence of bedding, abundant root & plant frags, small clay ironstone nodules to 0.5" dia., gradational lower contact.	3.2'		possibly an underclay with too much detrital influx for coal formation Scammon coal horizon
	85					
	86					
	87					
	88		Silt-shale, same unit as below, described on next page.	6.1'		
	89					

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	89		Silt-shale, lt gy(N7), micaceous, hard, thin, horizontal laminae, small woody plant frags, few authegenic siderite crystals, sharp lower contact w/ S.S.	6.1'	7	
	90					
	91					
	92					
	93		Sandstone, v lt gy(N8), very fine grained, qtz, micaceous, abund. mud matrix, appears massive, non-foss., few small clay ironstone nodules, sharp lower contact.	1.9'		Chelsea S.S.
	94					
	95		Silt-shale, same unit as below, described on next page			
	96					
	97			7.2'		
	98					
	99					

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	99		Silt-shale – lt gy (N7), micaceous, hard, thinly laminated, lenticular bedded, non-fossiliferous, few authigenic siderite crystals (sand size), gradational lower contact.		8	
	100					
				7.2'		
	101					
	102					
			Shale, same unit as below, described on next page.			
	103					
	104					
	105			22'		
	106					
	107					
	108					
	109					

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	109		Shale med brownish gray (5 YR 5/1), clay stone, thin horizontal laminae, a few silty lenses near top, non-fossiliferous, small pyrite nodules with concentric brown rings, uniform color + comp throughout, gradational lower contact marked by dark brown stains.		9	
	110					
	111					
	112					
	113					
	114			22'		
	115					
	116					
	117					
	118					
	119					

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	119		Shale, same unit as above.		10	
	120					
	121			22'		
	122					
	123					
	124		Shale dk gy(N3), claystone, thinly laminated, non-fossiliferous, clay ironstone band at top, sharp lower contact	1.4'		
	125		Coal, blk (N1), hard, banded, mod. bright, sulfate bloom, sharp contacts.	.5'		Tebo coal
	126		Mudstone, lt gy(N7) at base grading to med gy(N5) at top, soft, blocky frac, root & plant frags, authigenic siderited clay iron stone concretions, grad. lower contact.	2'		"Underclay"
	127					
	128		Silt-shale, same unit as below, on next page	13.8'		
	129					

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	129		Silt-shale, 1+gy(N7), hard, micaceous, wavy to lenticular bedded, shows some ripple x-lamination, small woody plant frags, abundant authigenic siderite crystals and brown stains, gradational lower contact.		11	
	130					
	131					
	132					
	133					
				138'		
	134					
	135					
	136					
	137					
	138					
	139					

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	139		Silt-shale, same unit as above.		12	
	140					
				13.8'		
	141					
	142					
	143		Mudstone, med Hgy(N6), slightly silty, soft crumbled, blocky frac, no bedding evident, may have been burrowed, sharp lower contact w/ coal.	2.5'		
	144					
	145		Coal, blk(N1), hard, banded, mod. bright, sulfate bloom and calcite in fracs, sharp contacts.	0.8'		Tebo "B" coal ~~of unnamed coal~~
	146		Mudstone - med Hgy(N6), slightly silty, soft, blocky fracture, no evidence of bedding, abundant plant & root fragments, gradational lower contact.	2.6'		"Underclay"
	147					
	148					
	149		Shale, same as below,	4.5'		

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	149		Shale, med dk gy (N4), claystone, soft, thin horizontal laminae, few silty lenses near top, sediment has been mixed either by burrowing or by soft sediment deformation or injection, calcareous cement and few sideritic zones, gradational lower contact.	4.5'	13	
	150					
	151					
	152					
	153					
	154		Shale dk gy (N3), claystone, hard, thin horizontal lams, few very small fossil frags near base, calcareous concretions and calc. cement, nodules up to 2" dia, sharp lower contact w/coal, slightly lighter color near top of unit.	5'		
	155					
	156					
	157					
	158					
			Coal, blk (N1), hard, banded, mod bright, sulfate bloom sharp contacts.	0.3'		Weir-Pittsburg
	159		Mudstone — on next page	2.2'		"Underclay"

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DEPARTMENT OF THE ARMY
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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
☐ 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)
	159		Mudstone, v ltgy (N8) at base to med ltgy (N6) at top, silty, no evidence of bedding, soft / blocky fracture, abundant plant frags, gradational lower contact.	2.2'	14	"Underclay"
	160					
	161		Siltstone, v ltgy (N8), contains some v fine sand, qtz micaceous, hard, thinly bedded with ripple cross laminae, some flaser bedding, authigenic siderite crystals and clay ironstone nodules 0.5" dia., sharp lower contact.	4.2'		
	162					
	163					
	164					
	165					
	166		Silt-shale, ltgy (N7), qtz, micaceous comp, wavy bedded, non fossiliferous, some soft sediment deformation, clay ironstone concretions and authgenic siderite crystals, gradational lower contact.	3.7'		
	167					
	168					
	169					

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	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)
	170		Shale, med gy (N5), mudstone, micaceous, soft, thin horizontal laminae, few small plant frags, few clay ironstone bands up to 2" thick, lower portion lenticular bedded, gradational lower contact.	7.6'	15	
	175					
	180		Shale, med dk gy (N4) w/ H gy (N7) silty lenses, micaceous, hard, lenticular bedded, few small plant frags, thin clay ironstone bands, gradational lower contact.	3.9'		→ mudstone;

HOLE NO. _____

DEPARTMENT OF THE ARMY
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DRILLING LOG

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)
	180		Shale, same as above.	3.9'	16	
	185		Shale, meddkgy (N4), claystone, thin horizontal laminae, non-fossiliferous, few pyritized woody plant frags, thin clay ironstone bands to 0.5" thick, sharp lower ~~contact~~ w/coal, uniform color & comp.	7.7'		
						"A" Bluejacket coal
			Coal blk (N1), hard, banded, mod. bright, sulfate bloom, .4' mud parting exists .4' above base, sharp contacts.	0.3 0.4 0.4		(total coal thickness -0.7') Bluejacket Coal .4' shale parting .4' above base
	190		Mudstone - same as below.	2.8'		"Underclay"

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

PROJECT _____ HOLE NO. _____

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	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		Mudstone, med gy(N5), silty near top, soft, crumbled, blocky fracture, abundant woody plant frags, becoming harder near top, gradational lower contact.	2.8'	17	"Underclay"
			Shale, dk gy(N3), clay st., micaceous, thin horiz-ontal laminae, few woody plant frags, clay ironstone bands & nodules up to 1" thick, sharp lower contact.	3'		
	195		Coal, blk, (N1), hard, banded, mod, bright, sulfate bloom, sharp cont.	0.25'		"B" B.J. coal
			Mudstone, med ltgy(N6), slightly silty, soft, blocky fracture, abundant woody plant fragments, gradational lower contact.	1.7'		"Underclay"
			Siltstone, same unit as below, described on next page.	5.5'		
	200					

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

PROJECT _____ HOLE NO. _____

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
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)
	200		Siltstone, lt gy(N7), qtz, micaceous comp, wavy bedded, appears to have been burrowed, few authigenic siderite crystals, gradational lower contact.	5.5'	18	
	205		Sandstone, lt gy (N7), very fine grained, abundant mud matrix, hard, fractures along bedding planes, qtz, micaceous comp, ripple cross laminated, some flaser bedding, non-fossiliferous, few small plant frags near top, few authigenic siderite crystals, oil staining in more permeable zones, gradational lower contact.	6.6'		Upper Bluejacket S.S.
	210		Siltstone, same unit as below.	4'		

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

PROJECT _____ HOLE NO. _____

HOLE NO. _____

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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 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		Siltstone, lt gy(N7), hard, qtz, micaceous, wavy bedded, silty laminae show ripple cross laminae, non-fossiliferous, few authigenic siderite crystals near top, sharp lower contact.	4'	19	
	215		Shale, dk gy(N3), clay stone, hard, micaceous, thin horizontal laminae, non-fossiliferous, clay ironstone bands to 1" thick, gradational lower contact.	2.3'		
			Impure L.S., lt gy(N7) - med gy(N5), hard, abund. marine fossil frags, calc. cement, brown stains, sharp lower contact.	1'		"Shaly L.S."
			Coal blk(N1), banded mod. bright, hard, sulfate bloom, sharp contacts	0.2'		"C" Bluejacket B.J. coal
			Mudstone, lt gy(N7), slightly silty, soft, blocky fracture, no evidence of bedding, non-fossiliferous, few authigenic siderite crystals, brown stains, gradational lower contact.	2.7'		"Underclay"
	220					

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

PROJECT _____ HOLE NO. _____

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	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)
	220		Shale medgy(N5), mudstone, few ltgy (N8) silty lenses, thin horizontal laminae & lenticular bedding, micaceous, hard, non-fossiliferous, middle portion burrowed, thin clay ironstone bands at base, 0.5" thick, very small ltgy nodules, small pyrite concretions, some brown stains, sharp lower contact w/coal.	13'	20	
	225					
	230					

HOLE NO. _____

DEPARTMENT OF THE ARMY
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INSTALLATION _____

DRILLING LOG

1. PROJECT	SHEET OF
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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)
	230		Shale, same as above.	13'	21	
			Coal, blk(N1), hard, banded, mod. bright, white & yellow sulfate bloom, calc., sharp contacts	0.3'		"D" Bluejacket coal
			Mudstone, lt gy(N7), silty, micaceous, soft, blocky fracture, no evidence of bedding, abundant plant frags, gradational lower cont.	1.2'		"Underclay"
	235		Silt-stone, v lt gy(N8), qtz, micaceous comp, flaser bedded, non-fossiliferous, few sand sized authigenic siderite crystals, gradational lower contact.	5.4'		Lower Bluejacket S.S. Interval
	240					

HOLE NO. _____

DEPARTMENT OF THE ARMY

DIVISION: _____

INSTALLATION: _____

DRILLING LOG

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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: ☐ 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)
	240		Silt-shale ltgy(N7), qtz, micaceous, lenticular bedded at base to wavy bedded at top, non-fossiliferous abundant authigenic siderite crystals, gradational lower contact.	8'	22	
	245					
			Shale, same unit as below, described on next page	13.2'		
	250					

ENG FORM 1836 (TRANS) 1 JUN 57 PREVIOUS EDITIONS ARE OBSOLETE PROJECT _____ HOLE NO.

HOLE NO. _____

DEPARTMENT OF THE ARMY

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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
☐ 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		Shale, med dk gy (N6), mudstone, slightly silty, micaceous, thin horizontal laminae, few small plant frags, few very thin clay ironstone bands near base, some brown stains, sharp lower contact with coal		23	
		XXX		132'		
	255					
	260					

ENG FORM 1 JUN 57 1838 (TRANSLUCENT) PREVIOUS EDITIONS ARE OBSOLETE PROJECT HOLE NO.

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.) PdM #19	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 — 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		Shale med lt gy (N6), same unit as above.	13.2'	24	
			Coal blk (N1),	0.7'		Drywood coal
	265		Mudstone, med lt gy (N6), silty, micaceous, no evidence of bedding, abundant woody plant frags, authigenic siderite crystals, clay ironstone concretions, sharp lower contact.	2.1'		Underclay
	270		Shale dk gy (N3), clay stone, hard, brittle, thin horizontal laminae, non-fossiliferous, small amounts of calcareous cement, few thin clay ironstone bands.	6.6		

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)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	270		Shale, dk gy(N3), same as above	6.6'	25	
			Coal, blk(N1), hard, banded, mod. bright, sulfate, sharp angular lower contact	.4'		Rowe coal
			Mudstone, lt gy(N7), soft, silty, blocky - conchoidal fracture, abundant woody plant frags, few irregular clay ironstone concretions, as well as authigenic siderite crystals, some pyrite, gradational lower contact.	7'		
	275					
	280					

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

PROJECT _____ HOLE NO. _____

HOLE NO. _____

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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

9. TOTAL DEPTH OF HOLE

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (IBM 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		Shale lt gy (N7), mudstone, silty, lenticular bedded, silty lenses lighter in color, few very small plant frags, few authigenic siderite crystals, small brown stains, gradational lower contact.	3'	26	
	285		Shale, med dk gy (N4), mudstone, slightly silty with a few very thin silty lenses, non-fossiliferous, clay ironstone bands up to .2' thick, gradational contacts.	5'		
	290		Mudstone, med lt gy (N6), same unit as below, described on next page.	4.5'		

ENG FORM 1838 (TRANSLUCENT) 1 JUN 57 (EM 1110-1-1901) PREVIOUS EDITIONS ARE OBSOLETE

PROJECT _____ HOLE NO.

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.) P+M # 19	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)
	289		Mudstone med ltgy (N6), slightly silty, hard, micaceous, .2' clay ironstone band at base appears to contain small fossil frags, abundant irregularly shaped clay ironstone concretions and authigenic siderite crystals, sharp lower contact.	4.5'	27	
	290					
	291					
	292		Shale, dk gy (N3), claystone, micaceous, hard, thin horizontal laminae, non-fossiliferous, small amt. calcareous cement, gradational lower contact, uniform color + comp. throughout.			
	293					
	294					
	295			6'		
	296					
	297					
	298		Mudstone med dkgy (N4), slightly silty, blocky fracture, soft, abundant brown stains, grad. contacts. Calc. remnant	2.5'		
	299					

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	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)
	300		Mudstone, same as above.	2.5'	28	
	301					
	302		Shale, med gy (N5) mudstone, hard, lt gy silty laminae, lenticular bedded, abundant ~~woody plant frags~~, thin (.5") clay ironstone bands, abundant brown stains, sharp lower contact with coal.			
	303					
	304					
	305			8.7'		
	306					
	307					
	308					
	309					
	310					

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.) P+M # 19	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)
	310		Coal, blk (N1) hard, banded mod. bright, sulfate bloom, sharp contacts,	.7'	29	Neutral
			mudstone, med dk gy (N4), soft, abundant plant frags, grad. contact	.3'		Underclay
	311		Shale, med dk gy (N4), claystone, hard, micaceous, thin horizontal laminae, non-fossiliferous, abundant thin (.5") clay ironstone bands and brown stains, gradational lower contact			
	312					
	313					
	314					
	315					
	316			7.5'		
	317					
	318					
	319		Shale med gy (N5), mudstone, hard, abundant brachs, crinoid stems + fossil frags, abundant brown stains, gradational lower contact,	3.0'		
	320					

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 / 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)
	320		Shale dk gy(N3) same unit as above.	3'	30	
	321					
	322		Silt shale, med lt gy(N6) with v lt gy (N8) silty laminae, wavy bedded, silty lenses show ripple x-lamination, non-fossiliferous, thin clay ironstone banding, brown stains, shows some soft sediment deformation, lower contact not observed.	3.6'		
	323					
	324					
	325					
	326		2.4' of core missing from this interval resulting from re-arrangement of core in the boxes.	2.5'		N.C.R.
	327					
	328		Mudstone, med Hgy(N6), slightly silty, soft, blocky fracture, abundant plant frags, gradational lower contact.	3.2		Resembles Underclay but no coal. "A" coal horizon
	329					
	330					

HOLE NO. _____

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DRILLING LOG

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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: ☐ 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)
	330		Mudstone, same as above.	3.2'	31	
			Shale, med gy (N5), mudstone, few silty lenses, lenticular bedding, micaceous, non-fossiliferous, few authigenic siderite crystals, sharp lower contact.	2.5'		
			Shale, dk gy (N3), claystone, hard, thin horiz. laminae clay ironstone bands 1" thick, sharp lower contact.	1.6'		
			Coal, blk (N1), hard banded, mod. bright, white & yellow sulfate bloom, sharp contacts.	0.7'		"B" coal
	335		Mudstone, H gy (N7), silty lenses at base, decreasing upwards, no evidence of bedding, fairly hard, blocky fracture, woody plant frags, few authigenic siderite crystals, gradational lower contact.	5'		"Underclay"
	340					

HOLE NO. _____

DEPARTMENT OF THE ARMY

DIVISION _____

INSTALLATION _____

DRILLING LOG

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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: ☐ 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)
	340		Mudstone, same as above,	5'	32	
	341		Shale dk gy (N3), same unit as below, described on next page.			
	342					
	343					
	344					
	345			14.0'		
	346					
	347					
	348					
	349					
	350					

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	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)
	349		Shale, dk gy (N3), claystone, hard, brittle, thin horizontal laminae, few thin clay ironstone bands, brown stains, localized calcareous cement, sharp lower contact w/ underclay.	14'	33	"C" coal horizon Resembles Underclay but no coal developed.
	353		Mudstone med lt gy (N6) at base to lt gy (N7) at top, slightly silty, soft, blocky fracture, abundant plant frags, no evidence of bedding, few authigenic siderite crystals, gradational lower contact.	4.9'		
	358		Shale, same as below, described on next page	4.3'		
	359					

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HOLE NO. _____

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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
☐ 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			

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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)
	359		Shale med dk gy (N4), mudstone, silty, micaceous, thin horizontal laminae, small plant frags, abundant brachs, crinoid stems and fossil frags at base, calcareous cement throughout, some brown stains, sharp lower contact with coal.	4.3'	34	
	360					
	361					
	362		Coal blk (N1), hard, banded mod. bright, sulfate bloom, sharp contacts.	0.3'		"D" coal
	363		Mudstone, lt gy (N7) silty, micaceous, no evidence of bedding, abundant woody plant frags, authigenic siderite crystals, few brown stains, gradational lower contact.	4.2'		"Underclay"
	364					
	365					
	366					
	367		Sandstone, med gy (N5) very fine grained, abundant mud matrix, qtz, micaceous comp, ripple x-laminated, authigenic siderite crystals, gradational lower contact.	1.6'		Lower Warner S.S.
	368					
	369		Shale, same as below, on next page.	7.3'		

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PROJECT

HOLE NO.

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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
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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)
	368		Shale, med dk gy(N4), mudstone, few very thin silty lenses, thin horizontal laminae, micaceous, hard, few pyritized plant frags, small pyrite nodules, gradational lower contact	7.3'	35	
	369					
	370					
	371					
	372					
	373					
	374					
	375		Silt-shale, med gy(N5), abundant H gy silty lenses, originally wavy bedded, but original bedding destroyed by burrowing and soft sediment deformation, few authigenic siderite crystals, gradational lower contact.	5.7'		
	376					
	377					
	378					

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.) P&M #19

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)
	378		Shale same as above.		36	
	379			5.7'		
	380					
	381		Shale, med dk gy(N4), mudstone, silty, with lt gy silty laminae, thin horizontal laminae, appears to be burrowed, few clay ironstone bands up to .2' thick. gradational lower contact.			
	382					
	383			6.1'		
	384					
	385					
	386					
	387		Shale, same unit as below, described on next page.	4.5'		
	388					

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HOLE NO. _____

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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.) R&M # 19

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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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)
	388		Shale dkgy (N3) at base grading to med dk gy N4 at top. Claystone, micaceous, hard, thin horizontal laminae, non-fossiliferous,	4.5'	37	
	389					
	390		thin clay ironstone bands up to .5" thick, sharp lower contact with coal.			
	391					
	392		Coal, blk (N1), hard, banded, mod. bright, abundant sulfate bloom, a 0.3' shale parting exists 0.2' above base of coal, sharp contacts	2.0'		Riverton Coal
	393					
	394		Claystone, med dk gy (N4), hard, abundant plant frags, pyrite, gradational lower contact.	1'		"Underclay"
	395		Shale, same unit as below, described on next page			
	396			7.6'		
	397					
	398					

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.) P+M #19	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			

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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)
	398		Shale, med dk gy (N4), claystone, hard, thin horizontal laminae, very thin light grey laminae near top, non-fossiliferous, small lenticular lt gy nodules, thin clay ironstone bands .5" thick, gradational lower contact, this unit is lighter colored than lower unit,	7.6'	38	
	399					
	400					
	401					
	402		Shale, dk gy (N3), claystone, mod. hard, non-fossiliferous, thin, horizontal laminae, abundant pyrite concretions 1" in dia., sharp erosional lower contact,	3.1'		
	403					
	404					
	405		Limestone, v. lt gy (N8), wackestone, hard, calcareous, small crinoid stems and other fossil frags, lower contact not observed,	3'		Mississippian Limestone
	406					
	407					
	408					

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