FORM-SM-23 (REVISED)

MR 85-6

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM 1/

-KX 85-112
MR-85-6

DIAMOND DRILL HOLE LOG

Buffalo Area

Project: 805
Hole No.: 1
Elevation at collar: 1016.0
Dip: -45°
Date begun: 11/17/42

4th Copy

Location of hole: 11766.4 N; 21097.1
Depth: 618
Bearing: N 52° W
Core size: Standpipe to 28', Nx to 41', Bx to 469', Ax to 618'.
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	28.0	28.0									Overburden			
28.0	53.0	25.0					19.7	79		100	Shale			
53.0	63.3	10.3					10.3	100		95	Sandstone			
63.3	64.3	1.0					1.0	100		95	Shale			
64.3	70.6	6.3					5.8	92		95	Sandstone			
70.6	76.6	6.0					5.5	92		95	Sandy shale			
76.6	80.4	3.8					3.1	81		95	Shale			
80.4	81.4	1.0					.8	80		95	Shaly Sandstone			
81.4	83.4	2.0					1.6	81		95	Banded shale			
83.4	90.4	7.0					5.7	80		95	Grey shale			
90.4	102.3	11.9					11.2	95		95	Bluish shale			
102.3	108.8	6.5					5.3	80		95	Grey shale			
108.8	109.6	.8					.6	80		95	Sandstone			
109.6	122.0	12.4					10.2	82		95	Shale			
122.0	122.2	.2					1.4	71		95	Coal			
122.2	127.0	4.8					3.4	71		95	Coal			
127.0	128.0	1.0					.7	71		95	Coal			
128.0	132.9	4.9					2.9	57		95	Shale			
132.9	135.8	2.9 2/					1.7	57		95	Clean Coal			
135.8	136.2	.4					.2	57		95	Shale parting			
136.2	138.3	2.1 2/					1.2	57		95	Coal			
138.3	139.4	1.1					.6	57		95	Coal & shale			
139.4	159.5	20.1					18.3	91		95	Shale			
159.5	162.0	2.5					1.9	76		95	Sandstone			
162.0	169.6	7.6					5.8	76		95	Shale			
169.6	174.1	4.5					4.3	95		95	Shale & coal			
174.1	176.9	2.8					2.6	96		95	Shale			
176.9	203.0	26.1					25.6	98		95	Bituminous shale.			

2/ Limits of all coal beds determined by drill performance and return water.

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

Form SM-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 805
Hole No.: 1
Elevation at collar: 1016.0
Dip: -45°
Date begun: 11/17/42

Buffalo Area
Location of hole: 11766.4 N; 21097.1
Depth: 618'
Bearing: N 52° W
Core size: Standpipe to 28', Nx to 41', Bx to 469', Ax to 618'.
Theoretical weight sludge per foot hole:
Date finished: 12/16/42

Footage		Distance drilled	Sample numbers		Weights, grams		Core obtained feet	Recovery percentage			Formation	Analyses								
												Core			Sludge			Adjusted average		
From	To		Core	Sludge	Core	Sludge		Core	Sludge	Water										
203.0	203.8	.8					.3	39		95	Coal									
203.8	207.0	3.2					1.3	39		95	Brown shale									
207.0	208.0	1.0					.4	39		95	Chalky shale									
208.0	211.3	3.3					1.3	39		95	Shale									
211.3	211.9	.6					.2	39		95	Coal									
211.9	220.0	8.1					3.2	40		95	Shale									
220.0	221.0	1.0					.9	92		95	Sandstone									
221.0	247.0	26.0					24.7	95		95	Shale									
247.0	249.0	2.0					1.9	95		95	Carbonaceous shale									
249.0	250.0	1.0					.7	73		95	Coal									
250.0	254.8	4.8					3.5	73		95	Carbonaceous shale									
254.8	255.1	.3					.2	73		95	Coal									
255.1	255.4	.3					.2	73		95	Shale									
255.4	257.4	2.0					1.4	73		95	Coal									
257.4	259.4	2.0					1.4	73		95	Shale									
259.4	265.8	6.4					4.7	73		95	Coal									
265.8	268.3	2.5					1.8	73		95	Shale									
268.3	285.0	16.7					15.4	92		95	Carbonaceous shale									
285.0	301.2	16.2					15.4	95		95	Sandy shale									
301.2	309.1	7.9					6.9	88		95	Sandstone									
309.1	311.7	2.6					2.3	88		95	Shaly sandstone									
311.7	348.5	36.8					36.1	98		95	Sandstone (2" coal at 334')									
348.5	353.8	5.3					4.5	85		95	Shale									
353.8	358.0	4.2					4.2	100		95	Sandstone									
358.0	386.0	28.0					26.0	93		95	Sandstone									
386.0	387.0	1.0					.9	93		95	Sandstone	(1" of coal at 363.8', also thin band at 380.0' and 385.0')								
387.0	437.8	50.8					47.2	93		95	Sandstone	(Two thin seams of coal between 387 & 390'.)								

1/ To be submitted [illegible] office in duplicate on completion of hole; one copy will be mailed [illegible]

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/

DIAMOND DRILL HOLE LOG

Project: 805
Hole No.: 2
Elevation at collar: 1019.8
Dip: -45°
Date began: 12/17/42

Buffalo Property
Location of hole: 12190.4 N; 21226.9 E
Depth: 567.3
Bearing: N 49° 54' W
Core size: 4¾" standpipe to 41.2; NX to [illegible]
Date finished: 1/20/43. 55.2; Bx to 567.3

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, assay Core	Weights, assay Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	41.2	41.2					0.0	0		-	Overburden			
41.2	62.3	21.1					15.9			95	Shale			
62.3	63.5	1.2					.8	72		95	Sandstone			
63.5	67.5	4.0					2.9	72		95	Shale			
67.5	67.7	.2					.1	72		95	Sandstone			
67.7	74.0	6.3					4.5	72		95	Sandy shale			
74.0	77.5	3.5					2.5	72		95	Sandstone			
77.5	117.3	39.8					38.6	97		95	Sandstone			
117.3	120.3	3.0					2.6	87		95	Shale			
120.3	127.0	6.7					5.8	87		95	Coal			
127.0	127.3	.3					.2	87		95	Shale			
127.3	128.2	.9					.7	87		95	Coal			
128.2	130.0	1.8					1.7	95		95	Shale			
130.0	134.8	4.8					4.6	95		95	Sandy shale			
134.8	155.1	20.3					19.3	95		95	Sandstone			
155.1	164.5	9.4					8.9	95		95	Shale			
164.5	169.8	5.5					5.3	96		95	Sandy shale			
169.0	180.7	11.7					10.6	91.1			Shale			
180.7	183.6	2.9					2.8	89.2		95	Sandstone			
183.6	185.0	1.4					1.2	89.2		95	Shale			
185.0	197.3	12.3					10.3	82.9		95	Shale			
197.3	198.4	1.1					.9	83.4		95	Sandstone			
198.4	198.7	.3					.25	83.4		95	Shale			
198.7	199.8	1.1					.9	83.4		95	Sandstone			
199.8	204.0	5.2					4.3	83.4		95	Sandy shale			
204.0	206.5	2.5					2.1	83.4		95	Med. grain sandstone			
206.5	210.0	3.5					2.9	88.4		95	Sandy shale			
210.0	212.8	2.8					2.4	88.4		95	Bituminous shale			
212.8	213.4	.6					.5	88.4		95	Coal			
213.4	214.0	.6					.5	88.4		95	Bituminous shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/
DIAMOND DRILL HOLE LOG

Project: 805
Hole No.: 2
Elevation at collar:
Dip:
Date begun:

PAGE NO. 2

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
214.0	220.0	6.0					5.3	88.4		95	Sandy shale			
220.0	230.1	10.1					8.4	83.5		95	Bituminous shale			
230.1	231.5	1.4					1.1	83.5		95	Coal			
231.5	234.6	3.1					2.5	83.5		95	Bit. shale			
234.6	238.5	3.9					3.0	77.0		95	Coal			
238.5	240.0	1.5					1.1	74.4		95	Shale			
240.0	244.0	4.0					2.9	74.4		95	Sandstone			
244.0	246.1	2.1					1.5	74.4		95	Bit. shale			
246.1	247.7	1.6					1.1	74.4		95	Shale			
247.7	257.1	9.4					7.0	74.4		95	Bit. shale			
257.1	259.0	1.9					1.3	69.1		95	Bit. shale			
259.0	266.8	7.8					5.0	64.3		95	Shale			
266.8	267.1	.3					.2	64.3		95	Bit. shale			
267.1	269.5	2.4					1.5	64.3		95	Coal			
269.5	272.5	3.0					1.9	64.3		95	Bit. shale			
272.5	272.7	.2					.1	64.3		95	Coal with calcite (?) veinlets			
272.7	275.0	2.3					1.5	64.3		95	Shale			
275.0	277.9	2.9					2.3	80.8		95	Coal			
277.9	284.9	7.0					6.2	89.5		95	Bit. shale			
284.9	285.6	.9					.8	89.5		95	Sandstone			
285.6	295.5	9.9					9.2	92.9		95	Shale			
295.5	330.0	34.5					31.1	90.2		95	Sandstone			
330.0	335.6	5.6					5.1	91.5		95	Med. grain sandstone			
335.6	416.0	80.4					75.7	94.2		95	Coarse grain sandstone			
416.0	418.4	2.4					2.3	96.5		95	Coarse grain sandstone			
418.4	420.5	2.1					2.0	96.5		95	Coarse sandstone			
420.5	422.5	2.0					1.9	96.5		95	Very coarse grained material			
422.5	426.0	3.5					3.4	96.5		95	Shale			
426.0	433.3	7.3					7.1	96.7		95	Shale			
433.3	446.5	13.2					12.8	97.5		95	Shaly sandstone			

1/ To be submitted Denver office in duplicate on completion of hole; one copy will be relied Washington

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 805
Hole No.: 2
Elevation at collar:
Dip:
Date begun:

PAGE NO. 3

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers: Core	Sample numbers: Sludge	Weights, grams: Core	Weights, grams: Sludge	Core obtained feet	Recovery percentage: Core	Recovery percentage: Sludge	Recovery percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
446.5	448.5	2.0					1.8	94.3		95	Shale			
448.5	453.5	5.0					4.7	94.3		95	Fine sandstone			
453.5	457.1	3.6					2.9	81.7		95	Shale			
457.1	459.5	2.4					1.9	79.9		95	Coal			
459.5	465.4	5.9					4.1	70.0			Shale			
465.4	465.7	.3					.22	73.4			Dirty coal			
465.7	475.5	9.8					5.1	52.0			Shale			
475.5	480.0	4.5					2.0	45.1			coal			
480.0	515.7	35.7					18.5	51.7		95	Shale			
515.7	527.3	12.6					12.3	97.5		95	Fine grained sandstone			
527.3	529.3	2.2					2.0	90.0		95	Sandstone			
529.3	541.0	11.5					10.1	87.8		95	Shale			
541.0	541.7	.7					.5	72.7		95	Dirty coal			
541.7	567.3	25.6					20.4	79.0		95	Sandstone			

Hole terminated at 567.3'

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

FORM BM-15 (REVISED)

PAGE NO. 1

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Buffalo Area

Project: 805
Hole No.: 3
Elevation at collar: 1034.1
Dip: -45
Date begun: Jan. 20, 1943

Location of hole: 12499.4 N; 21816.3 E
Depth: 560.5'
Bearing: N 49° 57' W
Core size: 4¾" standpipe to 29'; Hx
Theoretical weight sludge per foot hole:
Date finished: March 16, 1943

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	59.6	59.6					0.0	—		—	Overburden			
59.6	99.2	39.6					27.2	68.7		90	Shale			
99.2	100.2	1.0					0.9	86.8		90	Sandy shale			
100.2	106.8	6.6					5.7	86.8		90	Shale			
106.8	137.7	30.9					26.8	86.7		90	Sandy shale			
137.7	151.1	13.4					11.6	86.6		90	Shale			
151.1	154.3	3.2					2.8	86.6		90	Sandy shale			
154.3	161.7	7.4					6.6	89.7		90	Brown shale			
161.7	170.1	8.4					7.6	90.6		90	Sandy shale			
170.1	174.1	4.0					3.6	90.6		90	Blue shale			
174.1	186.8	12.7					11.5	90.6		90	Sand stone			
186.8	207.3	20.5					18.9	92.5		90	Sandy shale			
207.3	219.6	12.3					11.4	92.9		90	Black shale			
219.6	220.4	0.8					.7	92.9		90	Dirty coal			
220.4	222.0	1.6					1.3	81.4		90	Blue shale			
222.0	224.0	2.0					1.6	81.4		90	Dirty coal			
224.0	225.6	1.6					1.3	81.4		90	Clean coal			
225.6	230.5	4.9					3.9	81.4		90	Dirty coal			
230.5	231.1	0.6					0.5	81.4		90	Clean coal			
231.1	231.4	0.3					0.2	81.5		90	Dirty coal (bone)			
231.4	234.0	2.6					2.1	81.5		90	Clean coal			
234.0	235.0	1.0					0.8	81.5		90	Black shale			
235.0	240.0	5.0					4.1	81.5		90	Coal			
240.0	240.3	0.3					0.2	81.5		90	Coal			
240.3	242.3	2.0					1.6	81.5		90	Dirty coal (bone)			
242.3	243.2	0.9					0.7	81.5		90	Black shale			
243.2	244.5	1.3					1.1	81.5		90	Clean coal			
244.5	246.6	2.1					1.9	90.0		90	Dirty coal (bone)			
246.6	247.1	0.5					0.4	90.0		90	Clean coal			

1/ To be submitted Tucson office in duplicate on completion of hole: one copy will be mailed Washington.

Form SM-1B (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/

DIAMOND DRILL HOLE LOG

Project: 804
Hole No.: 3
Elevation at collar: 1034.1
Dip: -45
Date begun: Jan. 20, 1943

Buffalo Area
Location of hole: 12499.4 N; 21816.3 E
Depth: 560.5
Bearing: N49°57' W
Core size: 4½" standpipe to 29; Nx
Theoretical weight sludge per foot hole:
Date finished: March 16, 1943

Footage From	Footage To	Distance drilled	Sample numbers: Core	Sample numbers: Sludge	Weights, grams: Core	Weights, grams: Sludge	Core obtained feet	Recovery percentage: Core	Recovery percentage: Sludge	Recovery percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
247.1	249.3	2.2					2.0	90.0		90	Dirty coal			
249.3	249.9	0.6					0.5	90.0		90	Gray shale			
249.9	250.4	0.5					0.4	90.0		90	Clean coal			
250.4	250.5	0.1					0.1	90.0		90	Gray shale			
250.5	250.8	0.3					0.3	90.0		90	Black shale			
250.8	253.5	2.7					2.4	90.0		90	Clean coal			
253.5	254.3	0.8					0.7	90.0		90	Black shale			
254.3	254.5	0.2					0.2	90.0		90	Sandstone			
254.5	256.4	1.9					1.7	90.0		90	Clean coal			
256.4	256.6	0.2					0.2	90.0		90	Black shale			
256.6	259.5	2.9					2.6	90.0		90	Coal			
259.5	260.5	1.0					0.9	90.0		90	Dirty Coal			
260.5	262.0	1.5					1.3	90.0		90	Black shale			
262.0	267.3	5.3					4.8	90.0		90	Clean coal			
267.3	267.5	0.2					0.1	68.4		90	Black shale			
267.5	268.1	0.6					0.4	68.4		90	Sandy shale			
268.1	271.3	3.2					2.2	68.4		90	Black shale			
271.3	271.4	0.1					0.1	68.4		90	Brown shale			
271.4	273.9	2.5					1.7	68.4		90	Coal			
273.9	274.5	0.6					0.4	68.4		90	Black shale			
274.5	276.0	1.5					0.9	68.4		90	Coal			
276.0	289.3	13.3					10.7	80.3		90	Black shale			
289.3	290.1	0.8					0.6	80.3		90	Coal			
290.1	293.3	3.2					2.6	80.3		90	Black shale			
293.3	301.4	8.1					6.5	80.1		90	Coal			
301.4	302.0	0.6					0.5	80.0		90	Dirty coal			
302.0	306.8	4.8					3.8	80.0		90	Black shale			
306.8	307.2	0.4					0.3	80.0		90	Coal			
307.2	310.5	3.3					2.6	80.0		90	Black shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

Form 3B-15 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

PAGE NO. 3

Project: 805
Hole No.: 3
Elevation at collar: 1034.1
Dip: -45
Date begun: Jan. 20, 1943

Buffalo Area
Location of hole: 2499.4N;
Depth: 560.5
Bearing: S49 57'W
Core size:
Theoretical weight sludge per foot hole:
Date finished: March 16, 1943

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
310.5	312.0	1.5					1.2	80.0		90	Coal			
312.0	312.9	0.9					0.7	80.0		90	Brown shale			
312.9	314.6	1.7					1.4	80.0		90	Coal			
314.6	315.4	0.8					0.6	80.0		90	Black shale			
315.5	318.0	2.6					2.2	82.7		90	Coal			
318.0	318.9	0.9					0.7	82.7		90	Brown shale			
318.9	342.0	23.1					19.1	82.7		90	Blue shale			
342.0	371.0	29.0					21.3	73.4		90	Shale			
371.0	417.5	46.5					36.1	77.7		90	Blue shale			
417.5	419.0	1.5					1.3	84.6		90	Brown shale			
419.0	437.8	18.8					16.8	85.9		90	Blue shale			
437.8	441.8	4.0					3.6	90.0		90	Sandy shale			
441.8	459.0	17.2					15.9	92.7		90	Blue shale			
459.0	464.0	5.0					4.7	95.3		90	Sandy shale			
464.0	468.0	4.0					3.8	95.3		90	Blue shale			
468.0	473.0	5.0					4.7	95.3		90	Sandy shale			
473.0	490.8	17.8					16.2	91.3		90	Grey shale			
490.8	498.4	7.6					6.9	91.3		90	Black shale			
498.4	498.6	0.2 [illegible]					.18 [illegible]	91.3		90	Fine sandstone			
498.6	499.4	0.8					0.7	91.3		90	Sandy shale			
499.4	503.1	3.7					3.4	92.9		90	Black shale			
503.1	505.7	2.6					2.5	96.4		90	Fault gouge			
505.7	509.7	4.0					3.8	96.4		90	Fine sandstone			
509.7	511.0	1.3 X					1.0	79.6		90	Blue shale			
511.0	516.7	5.7					4.5	79.6		90	Grey shale			
516.7	518.9	2.2					1.7	79.6		90	Black shale			
518.9	525.6	6.7					5.3	79.6		90	Blue shale			
525.6	526.6	1.0					.7	69.2		90	Dirty coal			
526.6	527.6	1.0					.7	69.2		90	Black shale			
527.6	529.2	1.6					1.1	69.2		90	Blue shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

Form BM-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/

DIAMOND DRILL HOLE LOG

Buffalo area 13783.1/22793.8

Project: 805
Hole No.: 4
Elevation at collar: 1112.1
Dip: 60°
Date begun: 3-17-43

Location of hole:
Depth: 416.4
Bearing: N 40° W
Core size: 3" standpipe to 50.1'; Bx to 416.4
Theoretical weight sludge per foot hole:
Date finished: 5-11-43

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	66.6	66.6									Overburden			
66.6	94.5	27.9					6.4	23		85	Grey shale			
94.5	100.6	6.1	1				.6	10.9		85	Coal			
00.6	100.8	.2					.08	40.9		85	Grey shale			
00.8	100.9	.1					.04	40.9		85	Bone			
00.9	106.8	5.9	2				2.4	40.9		85	Coal			
06.8	107.1	.3					.1	40.9		85	Black Shale			
07.1	107.6	.5					.2	58.3		85	Grey shale			
07.6	109.5	1.9					1.1	63.0		85	Bony coal			
09.5	109.9	.4					.2	70.8		85	Brown shale			
09.9	112.8	2.9	3				1.6	58.3		85	Bony coal			
12.8	112.9	.1					.05	58.3		85	Black shale			
12.9	113.1	.2					.1	58.3		85	Blue shale			
13.1	113.8	.7					.4	58.3		85	Bone			
13.8	122.2	8.4					1.3	15.5		85	Black shale			
22.2	124.7	2.5					.7	31.2		85	Brown shale			
24.7	132.0	7.3	4				1.8	25.2		85	Coal			
32.0	139.6	7.6					2.4	32.1		85	Black shale			
39.6	145.9	6.3					2.4	38.7		85	Black shale			
45.9	146.5	.6					.2	38.7		85	Brown shale			
46.5	151.9	5.4					2.0	38.7		85	Blue shale			
51.9	154.0	2.1	5				.5	26.1		85	Coal			
54.0	155.3	1.3					1.0	79.0		85	Bone			
55.3	156.3	1.0					.7	79.0		85	Black shale			
56.3	157.3	1.0					.7	72.4		85	Bone			
57.3	157.4	.1					.07	72.4		85	Coaly shale			
57.4	164.8	7.4	6				6.3	86.0		85	Coal			
64.8	172.0	7.2					6.1	85.0		85	Black shale			
72.0	174.0	2.0	7				1.0	53.2		85	Coal			
74.0	175.9	1.9					.9	52.7		85	Black shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

Form SM-18 (revised)

Hole 4, PAGE 2

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
175.9	176.4	.5					.2	53.2		85	Brown shale			
176.4	179.6	3.2					1.7	53.2		85	Black shale			
179.6	183.1	3.5	8				3.0	87.0		85	Coal			
183.1	187.5	4.4					2.8	64.2		85	Boney shale			
187.5	193.0	5.5					3.5	64.2		85	Black shale			
193.0	197.8	4.8					2.5	53.9		85	Greysshale			
197.8	203.4	5.6					5.3	96.0		85	Grey shale			
203.4	203.9	.5					.4	96/0		85	Sandstone			
203.9	212.0	8.1					2.4	30.0		85	Sandy shale			
212.0	217.0	5.0					2.2	47.2		85	Sandshonn			
217.0	222.7	5.7					5.0	88.8		85	Grey shale			
222.7	223.9	1.2					1.0	88.8		85	Grey shale			
223.9	248.4	24.5					23.0	94.0		85	Grey shale			
248.4	248.9	.5					.4	94.0		85	Coaly shale			
248.9	253.0	4.1					4.1	100.0		85	Grey shale			
253.0	254.0	1.0					1.0	100.0		85	Black shale			
254.0	259.0	5.0	9				3.9	78.0		85	Coal			
259.0	259.6	.6					.6	100.0		85	Bone			
259.6	260.2	.6					.5	87.0		85	Fault gouge			
260.2	293.4	33.2					27.5	83.0		85	Grey shale			
293.4	293.6	.2					.17	84.2		85	Coal			
293.6	302.4	8.8					5.5	63.0		85	Grey shale			
302.4	307.7	5.3					3.3	63.0		85	Black shale			
307.7	325.4	17.7					9.3	53.1		85	Grey shale			
325.4	327.5	2.1					1.1	53.1		85	Sandstone			
327.5	330.0	2.5					2.1	85.4		85	Grey shale			
330.0	332.0	2.0					1.2	61.8		85	Grey shale			
332.0	340.4	8.4					5.1	61.8		85	Black shale			
340.4	341.0	.6					.5	93.0		85	Black shale			
341.0	348.5	7.5					7.2	93.0		85	Grey shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy [illegible]

Form SM-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
349.5	356.5	7.0					5.2	75.0		85	Brown shale			
356.5	358.8	2.3					1.6	73.6		85	Black shale			
358.8	361.0	2.2					1.6	73.6		85	Coal			
361.0	365.3	4.3					4.3	100/0		85	Blackmshale			
365.3	367.3	2.0	10				1.6	84.0		85	Coal			
367.3	369.1	1.8					1.8	100.0		85	Bony shale			
369.1	416.4	47.3					41.1	87.0		86	Grey shale			
							Hole terminated at 416.4'							

Form SM-18 (revised)

PAGE NO. 4

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/

DIAMOND DRILL HOLE LOG

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers: Core	Sample numbers: Sludge	Weights, grams: Core	Weights, grams: Sludge	Core obtained feet	Recovery percentage: Core	Recovery percentage: Sludge	Recovery percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
529.2	530.4	1.2					.8	69.2		90	Shale badly shattered			
530.4	537.0	6.6					4.6	69.2		90	Coaly material badly shattered			
##########							##########			####	(Poor core recovery)			
537.0	542.0	5.0					3.5	69.2		90	Black shale			
542.0	545.0	3.0					2.1	69.2		90	Dirty coal			
545.0	547.0	2.0					2.0	99.0		90	Shaly coal			
547.0	560.5	13.5					13.5	99.0		90	Shale			

Hole terminated March 16, 1943 at 560.5'

1/ To be submitted Denver office in duplicate on completion of hole; one copy will be mailed Washington

Form 5M-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Page 1 hole 5

Project: 805
Hole No.: 5
Elevation at collar: 982.0
Dip: -45°
Date begun: 4-3-43

Buffalo ore
12478.8/
Location of hole: 20884.5
Depth: 635.6
Bearing: N 50° W
Core size: 4" standpipe to 18.4; Nx to 27.8; Bx to 425.7 Ax to 635.6
Theoretical weight sludge per foot hole:
Date finished: 5-8-43

Footage From	Footage To	Distance drilled	Sample numbers: Core	Sample numbers: Sludge	Weights, grams: Core	Weights, grams: Sludge	Core obtained feet	Recovery percentage: Core	Recovery percentage: Sludge	Recovery percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
0.0	18.4									85	Overburden			
18.4	43.8	25.4					20.29	79.9		85	Sandstone			
43.8	45.8	2.0					1.65	82.8		85	Conglomerate			
45.8	49.6	3.8					3.2	83.3		85	Sandstone			
49.6	54.0	4.4					3.8	83.3		85	Sandstone			
54.0	57.0	3.0					2.3	77.2		85	Sandy shale			
57.0	57.6	.6					.4	77.2		85	Brown shale			
57.6	59.9	2.3					1.7	77.2		85	Sandy shale			
59.9	66.1	6.2					5.5	90.0		85	Sandstone			
66.1	66.5	.4					.3	79.1		85	Sandy shale			
66.5	69.2	2.7					1.5	57.0		85	Coal			
69.2	76.9	7.7					3.8	49.5		85	Bone & coal			
76.9	84.9	8.0					2.1	27.0		85	Blue shale			
84.9	86.8	1.9					.9	52.2		85	Clean coal			
86.8	89.8	3.0					1.3	46.1		85	Carb. shale			
89.8	90.1	.3					.1	46.1		85	Bone			
90.1	93.4	3.3					1.4	45.0		85	Coal			
93.4	94.0	.6					.2	39.3		85	Bone			
94.0	97.1	3.1					1.2	39.3		85	Car. shale			
97.1	97.8	.7					.4	67.1		85	Brown shale			
97.8	99.8	2.0					1.3	67.1		85	Blue shale			
99.8	102.1	2.3					1.2	56.2		85	Bone			
102.1	104.5	2.4					1.3	56.2		85	Clean coal			
104.5	104.6	.1					.05	56.2		85	Bone			
104.6	107.6	3.0					1.5	52.6		85	Carb. shale			
107.6	108.8	1.2					.6	52.6		85	Coal			
108.8	115.4	6.6					2.9	45.0		85	Carb shale			
115.4	116.8	1.4					.4	35.7		85	Clean coal			
116.8	119.0	2.2					.9	44.8		85	Cabb. shale			
119.0	119.4	.4					.1	44.8		85	Brown shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

Form SM-1B (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Hole 5, Page 2

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
119.4	123.5	4.1					2.4	60.2		85	Carb. shale			
123.5	128.2	5.3					4.7	89.0		85	Clean coal			
128.8	130.1	1.3					1.3	100.0		85	Carb. shale			
130.1	130.6	.5					.5	100.0		85	Brown shale			
130.6	133.6	3.0					3.0	100.0		85	Sandstone			
133.6	142.9	9.3					8.9	96.3		85	Grey shale			
142.9	153.3	10.4					8.9	86.0		85	Grey shale			
153.3	155.9	2.6					1.4	56.2		85	Black shale			
155.9	158.4	2.5					2.2	89.0		85	Coaly shale			
158.4	166.8	8.4					6.3	75.0		85	Sandy shale			
166.8	168.8	2.0					1.5	77.0		85	Black shale			
168.8	201.9	33.1					30.5	92.3		85	Grey shale			
201.9	213.9	12.0					10.4	87.0		85	Black shale			
213.9	218.2	4.3					3.5	82.8		85	Grey shale			
218.2	227.1	8.9					8.9	100.0		85	Sandstone			
227.1	234.0	6.9					6.9	100.0		85	Sandstone			
234.0	239.8	5.8					5.4	93.3		85	Grey shale			
239.8	241.5	1.7					1.5	93.3		85	Clean coal			
241.5	258.0	16.5					11.8	71.8		85	Carb. shale			
258.0	261.5	3.5					3.5	100.0		85	Dirty coal			
261.5	272.6	11.1					10.5	95.0		85	Grey shale			
272.6	289.6	17.0					15.0	88.8		85	Carb. shale			
289.6	292.8	3.2					2.8	89.8		85	Grey shale			
292.8	301.6	8.8					7.5	86.0		85	Sandstone			
301.6	302.2	.6					.4	80.6		85	Grey shale			
302.2	302.7	.5					.4	80.6		85	Clean coal			
302.7	307.0	4.3					2.8	66.0		85	Grey shale			
307.0	318.5	11.5					6.2	54.0		85	Carb. shale			
318.5	319.6	1.1					.8	77.3		85	Clean coal			
319.6	323.6	4.0					3.0	75.0		85	Carb. shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy [illegible]

Form SM-18 (revised)

Hole 5, Page 3

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers: Core	Sample numbers: Sludge	Weights, grams: Core	Weights, grams: Sludge	Core obtained feet	Recovery percentage: Core	Recovery percentage: Sludge	Recovery percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
323.6	346.3	22.7					15.7	69.6		85	Gray shale			
346.3	346.8	.5					.3	75.0		85	Clean coal			
346.8	349.2	2.4					1.8	75.0		85	Grey shale			
349.2	350.7	1.5					1.1	77.0		85	Clean coal			
350.7	358.0	7.3					5.5	76.1		85	Carb. shale			
358.0	358.4	.4					.3	66.6		85	Clean coal			
358.4	365.3	6.9					4.8	69.7		85	Grey shale			
365.3	375.7	10.4					9.8	95.1		85	Sandy shale			
375.7	376.8	1.1					1.0	97.2		85	Fault gouge			
376.8	380.9	4.1					3.6	88.0		85	Gray shale			
380.9	404.0	23.1					14.6	63.4		85	Gray shale			
404.0	405.2	1.2					1.1	92.7		85	Fault gouge			
405.2	411.0	5.8					5.3	92.7		85	Grey shale			
411.0	412.4	1.4					1.2	92.7		85	Fault gouge			
412.4	435.6	23.2					15.5	67.0		85	Grey shale			
435.6	439.5	3.9					3.6	92.7		85	Fault gouge			
439.5	443.1	3.6					3.5	98.2		85	Grey shale			
443.1	448.2	5.1					5.1	100.0		85	Fault gouge			
448.2	460.3	12.1					9.5	79.3		85	Grey shale			
460.3	461.9	1.6					1.6	100.0		85	Fault gouge			
461.9	573.3	111.4					93.3	83.8		85	Blue shale			
573.3	585.3	12.0					10.5	88.1		85	Red shale			
585.3	601.2	15.9					13.4	84.7		85	Blue shale			
601.2	605.2	4.0					3.1	78.0		85	Red shale			
605.2	635.6	30.4					29.4	96.9		85	Blue shale			
							Hole terminated at 635.6'							

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 805
Hole No.: 6
Elevation at collar: 800.8
Dip: Vertical
Date begun: 5-8-43

Premier; Consd:
Location of hole: 7684.5/14765.0
Depth: 805
Bearing: Vertical hole
Core size: Bx and Ax
Theoretical weight sludge per foot hole:
Date finished: 7-16-43

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	19.0	19.0					0.0	—		90	Overburden			
19.0	25.7	6.7					0.0	00		90	Shale			
25.7	26.4	0.7					0.5	75		90	Grey shale			
26.4	28.9	2.5					1.8	72.0		90	Coal, dirty			
28.9	36.5	7.6					2.4	31.6		90	Shale, carb.			
36.5	39.1	2.6					1.9	72.2		90	Coal and shale			
39.1	40.1	1.0					1.0	100.0		90	Shale, grey carb.			
40.1	41.0	0.9					0.9	100.0		90	Coaly shale			
41.0	48.0	7.0					6.0	86.0		90	Coal			
48.0	51.0	3.0					2.6	86.0		90	Shale, grey			
51.0	66.0	15.0					12.8	85.3		85	Sandstone, fine to medium			
66.0	72.0	6.0					4.5	76.0		85	Shale, grey			
72.0	131.5	59.5					48.4	81.3		85	Shale, grey to brown			
131.5	148.0	16.5					15.7	94.5		85	Sandstone, fine to medium			
148.0	161.4	13.4					10.4	77.6		85	Shale, sandy			
161.4	164.4	3.0					2.4	81.0		80	Shale, black, carb.			
164.4	167.3	2.9					2.3	81.0		80	Coal			
167.3	170.7	3.4					2.3	67.0		80	Shale, black			
170.7	177.0	6.3					4.2	67.0		85	Coal, dirty			
177.0	177.2	0.2					0.2	100.0		75	Shale marker			
177.2	178.0	0.8					0.7	88.7		75	Shale, sandy			
178.0	195.5	17.5					14.0	80.0		75	Sandstone, medium			
195.5	206.0	10.5					9.0	85.7		80	Shale			
206.0	207.0	1.0					0.5	54.0		80	Coal, dirty			
207.0	283.7	76.7					64.5	84.1		75	Shale, sandy			
283.7	307.0	23.3					18.9	81.1		75	Shale, smooth			
307.0	314.0	7.0					6.1	86.1		90	Shale, grey			
314.0	323.0	9.0					8.3	92.3		75	Shale, smooth			
323.0	336.7	13.7					12.0	88.0		95	Shale, tan, hard			
336.7	369.5	32.8					25.5	77.7		95	Shale, brown			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be [illegible]

Form SM-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
369.5	378.3	8.8					8.0	90.9		95	Shale, sandy			
378.3	407.0	28.7					24.3	84.7		75	Shale, banded			
407.0	415.0	8.0					6.3	79.1		75	Shale, dark grey			
415.0	423.0	8.0					1.9	23.0		75	Shale, some coal			
423.0	426.8	3.8					3.5	93.1		95	Shale, sandy			
426.8	427.3	0.5					0.5	93.1		95	Sandstone, fine grained			
427.3	467.0	39.7					35.7	90.0		80	Shale, grey to black			
467.0	468.0	1.0					0.9	89.0		90	Coal - dirty			
468.0	474.3	6.3					5.5	87.0		90	Shale, grey			
474.3	476.5	2.2					1.5	70.0		90	Brown clay gouge			
476.5	477.6	1.1					1.1	100.0		90	Grey clay gouge			
477.6	479.6	2.0					2.0	100.0		90	Shale, gray			
479.6	484.4	4.8					4.8	100.0		90	Gouge, clay			
484.4	484.8	0.4					0.4	100.0		80	Shale, carb.			
484.8	494.0	9.2					1.3	14.5		80	Shaly coal			
494.0	496.2	2.2					0.6	26.7		80	Coal and shale			
496.2	499.7	3.5					0.9	26.7		80	Shale, black			
499.7	502.7	3.0					1.2	40.9		100	Coal, clean			
502.7	503.0	0.3					0.3	93.0		100	Shale, brown			
503.0	514.5	11.5					10.7	93.0		100	Shale, sandy			
514.5	517.1	2.6					2.4	93.0		80	sandstone and shale			
517.1	590.0	72.9					67.5	92.6		80	Sandstone, fine to medium			
590.0	594.3	4.3					3.8	89.5		90	Sandstone, shale inclusions			
594.3	650.0	55.7					48.8	87.6		90	shale, grey			
650.0	665.1	15.1					14.1	93.3		90	Shale, banded			
665.1	667.5	2.4					2.2	93.3		90	Sandstone, finegrained			
667.5	678.2	10.7					4.4	41.0		90	Shale, grey			
678.2	680.2	2.0					0.8	41.0		90	Bone			
680.2	681.0	0.8					0.3	41.0		90	Shale, grey			
681.0	685.5	4.5					1.8	41.0		50	Bone and shale			

1/ To be submitted Tucson office in duplicate on completion of hole: one copy will be mailed Washington.

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

P.3 (Hole 6 cont.)

Project: 805
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
685.5	686.6	1.1					0.5	41.0		50	Bone			
686.6	691.4	4.8					2.0	41.0		50	Shale, smooth			
691.4	694.0	2.6					1.1	41.0		85	Bony coal			
694.0	696.3	2.3					0.9	41.0		85	Shale, carb.			
696.3	699.7	3.4					1.7	50.0		85	Coal, dirty			
699.7	701.0	1.3					0.7	50.0		85	Bone and shale			
701.0	714.7	13.7					9.1	66.4		85	Shale, black			
714.7	716.0	1.3					1.0	80.0		85	Coal, dirty			
716.0	721.0	5.0					4.0	80.0		85	Shale, black			
721.0	727.8	6.8					2.6	38.7		85	Shale and coal			
727.8	733.3	5.5					2.1	38.7		85	Shale, black			
733.3	734.0	0.7					0.5	75.0		85	Coal, dirty			
734.0	735.2	1.2					0.9	75.0		85	Coaly shale			
735.2	749.8	14.6					9.9	68.0		85	Shale, carb.			
749.8	750.5	0.7					0.5	68.0		85	Coal, dirty			
750.5	753.0	2.5					1.1	44.8		85	Shale, carb.			
753.0	753.5	0.5					0.2	44.8		85	Coal, plain			
753.5	756.5	3.0					0.3	0.9		85	Sandstone, fine grained			
756.5	762.5	6.0					4.0	66.6		85	Shale, light grey			
762.5	805.0	42.5					32.6	76.6		85	Shale, sandy bands.			

To be submitted Tucson office in duplicate on completion of hole; one copy will be [illegible]

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM
1/

DIAMOND DRILL HOLE LOG

Project: 805
Hole No.: 7
Elevation at collar: 838.0
Dip: -45°
Date begun: 5-11-43

Location of hole: 9324.9/16471.7 - Coord.
Depth: 494.1
Bearing: S 19° 45' E
Core size: Bx and Ax
Theoretical weight sludge per foot hole:
Date finished: 8-1-43

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	12.0										Overburden			
12.0	22.0	10.0					4.1	41.0		95	SS, fine grained, gray			
22.0	37.6	15.6					12.5	80.1		95	Shale, sandy, gray			
37.6	41.4	3.8					3.6	95.0		90	SS, fine grained, gray			
41.4	42.0	0.6					0.5	86.0		90	Shale, soft, gray			
42.0	51.0	9.0					7.5	83.0		90	SS, fine to medium grained			
51.0	64.3	13.3					11.5	86.5		90	Shale, gray, sandy			
64.3	74.9	10.6					9.2	86.8		90	SS, gray, fine grained			
74.9	98.0	23.1					22.2	96.1		90	Shale, gray, sandy			
98.0	98.1	0.1					0.1	100.0		95	SS, medium grained			
98.1	199.0	100.9					75.0	74.3		95	Shale, sandy to smooth, gray to black			
199.0	206.0	7.0					0.2	20.0		90	Coal			
206.0	213.7	7.7					1.5	20.0		90	Coal and gray shale interbedded			
213.7	215.0	1.3					1.2	95.2		90	SS, fine grained			
215.0	260.8	45.8					35.5	77.5		90	Shale, sandy to smooth, gray			
260.8	263.0	2.2					1.7	75.0		90	Coal, clean			
263.0	263.4	0.4					0.3	75.0		90	Shale, carbonaceous, black			
263.4	270.4	7.0					5.3	75.7		90	SS, fine grained			
270.4	275.5	5.1					4.1	80.0		90	Shale, smooth, dark brown			
275.5	277.3	1.8					2.0	66.0		90	Coal, clean			
277.3	283.0	5.7					5.7	100.0		90	Shale, sandy, gray			
283.0	296.0	13.0					12.4	95.0		90	SS, fine to medium grain			
296.0	309.1	13.1					13.1	100.0		90	Shale, sandy, gray			
309.1	312.3	3.2					0.5	15.0		90	Clay gouge			
312.3	387.0	74.7					74.0	99.0		90	SS, gray, fine to medium grained			
387.0	388.2	1.2					1.0	83.0		90	Bone			
388.2	388.5	0.3					0.3	100.0		95	Shale, light brown			
388.5	398.8	10.3					8.6	83.5		95	Shale and bone			
398.8	399.0	0.2					0.2	100.0		95	Coal, dirty			
399.0	411.5	12.5					10.8	86.4		95	Bone and shale			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
411.5	438.0	26.5					15.7	59.2		90	SS, gray, fine to medium grained			
438.0	438.4	0.4					0.4	100.0		85	Shale, black, smooth			
438.4	446.0	7.6					7.6	100.0		90	SS, fine to medium grained, gray			
446.0	449.0	3.0					3.0	100.0		90	Shale, sandy, soft, gray			
449.0	453.9	4.9					4.9	100.0		90	SS, fine grained, dark gray			
453.9	478.0	24.1					19.4	80.5		90	Shale, dark gray, very sandy			
478.0	494.1	16.1					15.7	97.5		90	Shale, smooth, dark gray.			

Bottom of hole at 494.1'

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed [illegible]

Form 24-18 (revised)

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 805
Hole No.: 8
Elevation at collar: 895.7
Dip: -45°
Date begun: June 24. 1943

Location of hole: Coordinated: 10742.0
Depth: 735.5 18333.2
Bearing: S 26° 04' E
Core size: Bx
Theoretical weight sludge per foot hole:
Date finished: July 26, 1943

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0.0	19.0	19.0					0.0				Overburden			
19.0	20.0	1.0					.3	30		85	Shale, gray-brown			
20.0	23.9	3.9					.5	13		80	Shale, dark gray			
23.9	29.9	6.0					2.0	33		85	Shale, gray, sandy			
29.9	33.1	3.2					.3	10		80	Shale, black			
33.1	35.1	2.0					.6	33		80	Coal, fair quality			
35.1	42.3	7.2					3.1	40		80	Shale, black			
42.3	44.8	2.5					1.0	40		80	Shale, grayish			
44.8	47.4	2.6					1.3	50		85	Shale, light gray			
47.4	51.2	3.8					1.9	50		85	Shale, black			
51.2	53.0	1.8					.9	50		85	Shale, light gray to brown			
53.0	59.7	6.7					2.7	40		85	Shale, gray to black			
59.7	60.3	.6					.2	40		85	Coal, fairly clean			
60.3	63.7	3.4					1.7	50		85	Shale, black			
63.7	66.3	2.6					1.3	50		85	Shale, dark gray			
66.3	68.9	2.6					2.0	75		90	Shale, black			
68.9	77.7	8.8					6.6	75		90	Shale, dark gray			
77.7	79.1	1.4					1.0	75		90	Coal, bony			
79.1	86.8	7.7					1.5	20		80	Shale, black			
86.8	101.4	14.6					5.9	40		85	Shale, gray to black			
101.4	117.4	16.0					1.6	10		80	Shale, gray			
117.4	123.0	5.6					.5	10		80	Shale, gray to black			
123.0	124.5	1.5					.9	65		85	Sandstone, light gray, medium grained			
124.5	130.7	6.2					3.9	65		85	Sandstone, light gray, coarse grained			
130.7	136.7	6.0					5.6	92		90	Sandstone, light gray, medium grained			
136.7	139.7	3.0					2.7	92		90	Sandstone, dark gray, medium to fine grained			
139.7	147.0	7.3					6.9	95		90	Shale, gray, sandy			
147.0	154.4	7.4					.3	04		80	Shale, grayish black			
154.4	154.6	.2					.1	50		80	Sandstone, gray, medium grained			
154.6	176.8	22.2					7.0	32		80	Shale, gray, somewhat sandy			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
176.8	181.0	4.2					1.3	32		80	Coal, Clean			
181.0	181.5	.5					.2	32		80	Shale, black			
181.5	187.0	5.5									Core lost			
187.0	191.9	4.9					3.7	75		80	Shale, gray			
191.9	193.5	1.6					1.2	75		80	Shale, brownish black			
193.5	194.0	0.5					0.3	60		80	Shale, light brown			
194.0	196.5	2.5					1.5	60		80	Shale, dark gray			
196.5	203.0	6.5					3.9	60		80	Shale, gray, sandy			
203.0	211.3	8.3					2.4	28		80	Shale, hard and soft interbedded			
211.3	219.5	8.2					5.7	70		80	Shale, dark gray			
219.5	220.1	0.6					0.4	70		80	Shale, brownish gray			
220.1	222.3	2.2					1.1	50		80	Shale, gray, smooth			
222.3	223.8	1.5					0.7	50		80	Shale, light gray			
223.8	228.2	4.4					2.2	50		80	Shale, very dark gray to black			
228.2	229.4	1.2					0.2	15		80	Shale, very light gray			
229.4	236.5	7.1					1.5	21		80	Shale, dark brown to black			
236.5	239.1	2.6					1.3	50		80	Shale, black, bony			
239.1	245.0	5.9					2.9	50		80	Shale, black			
245.0	251.3	6.3					4.6	73		85	Shale, brown to black, smooth			
251.3	268.5	17.2					5.3	30.8		80	Shale, black, carbonaceous			
368.5	276.0	7.5					4.8	64		80	Shale, hard, calcareous			
276.0	296.7	20.7					18.9	91.3		85	Shale, dark gray, smooth			
296.7	301.0	4.3					3.2	74.4		85	Shale, smooth, black			
301.0	305.5	4.5					2.3	51		85	Shale, light gray, sandy			
305.5	315.5	10.0					6.6	66		80	Shale, black			
315.5	319.0	3.5					3.0	85.7		85	Coal (Sampled)			
319.0	319.5	0.5					0.5	100		85	Shale marker			
319.5	321.0	1.5					0.8	53.3		85	Coal			
321.0	322.0	1.0					0.5	50		80	Shale, carbonaceous, black			
322.0	337.0	16.0					7.4	46		80	Shale, brown to black			
337.0	349.1	12.1					9.5	78		85	Shale, dark gray			

1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mailed Washington.

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project:
Hole No.:
Elevation at collar:
Dip:
Date begun:

Location of hole:
Depth:
Bearing:
Core size:
Theoretical weight sludge per foot hole:
Date finished:

Footage From	Footage To	Distance drilled	Sample numbers Core	Sample numbers Sludge	Weights, grams Core	Weights, grams Sludge	Core obtained feet	Recovery percentage Core	Recovery percentage Sludge	Recovery percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
349.1	351.6	2.5					2.0	80		90	Shale, dark brown			
351.6	361.7	11.1					8.6	78		90	Shale, gray, sandy			
361.7	393.7	32.0					11.5	36.0		80	Shale, gray and brown, shattered zone			
393.7	394.7	1.0					.6	60		80	Coal			
394.7	399.0	4.4					1.3	30.0		80	Shale, carbonaceous, gray to brown			
399.0	399.6	.6					.5	83.3		80	Coal, dirty			
399.6	402.6	3.0					1.1	36.6		80	Shale, gray, carbonaceous			
402.6	410.5	7.9					5.0	63.3		80	Coal, clean (sample)			
410.5	432.0	21.5					6.5	30.2		80	Shale, black			
432.0	446.0	14.0					5.4	38.6		80	Shale, dark gray, shattered, sandy			
446.0	473.5	27.5					27.3	100		90	Shale, black, to dark gray, smooth			
473.5	507.1	33.6					33.5	100		90	Shale, black to dark gray, smooth, rather soft			
507.1	508.5	1.4					1.4	100		90	Shale, light gray, hard, calcarious			
508.5	521.0	12.5					11.2	90		90	Shale, gray to black, smooth			
521.0	527.5	6.5					2.2	45.0		85	Coal, shattered, somewhat dirty (sample)			
527.5	534.0	6.5					3.9	60		85	Shale, coaly, black			
534.0	536.5	2.5					2.1	84		85	Coal, fairly clean (sample)			
536.5	540.0	3.5					3.5	100		90	Shale, dark gray, smooth			
540.0	560.0	20.0					20.0	100		90	Shale, very sandy and gray			
560.0	564.0	4.0					4.0	100		90	Shale, very light gray, smooth, highly calcarious			
564.0	586.0	22.0					22.0	100		90	Shale, gray, sandy			
586.0	643.5	57.5					57.5	100		90	Shale, dark gray to black, soft and smooth			
643.5	645.5	2.0					1.8	90		90	Shale, light gray, calcarious			
645.5	653.4	7.9					5.5	70		90	Shale, smooth, dark gray			
653.4	663.5	10.1					8.1	80		90	Shale, brownish to black, smooth			
663.5	682.2	18.7					18.7	100		90	Shale, dark gray and smooth			
682.2	704.5	22.3					22.3	100		90	Shale, black, mottled with tan calcarious material			
704.5	706.7	2.2					2.2	100		90	Shale, dark gray to black, smooth			
706.7	716.0	9.3					9.3	100		90	Shale, gray, very sandy			
716.0	724.5	8.5					8.5	100		90	Shale, very light gray, polished slickensides			
724.5	735.5	11.0					11.0	100		90	Shale, gray, sandy.			

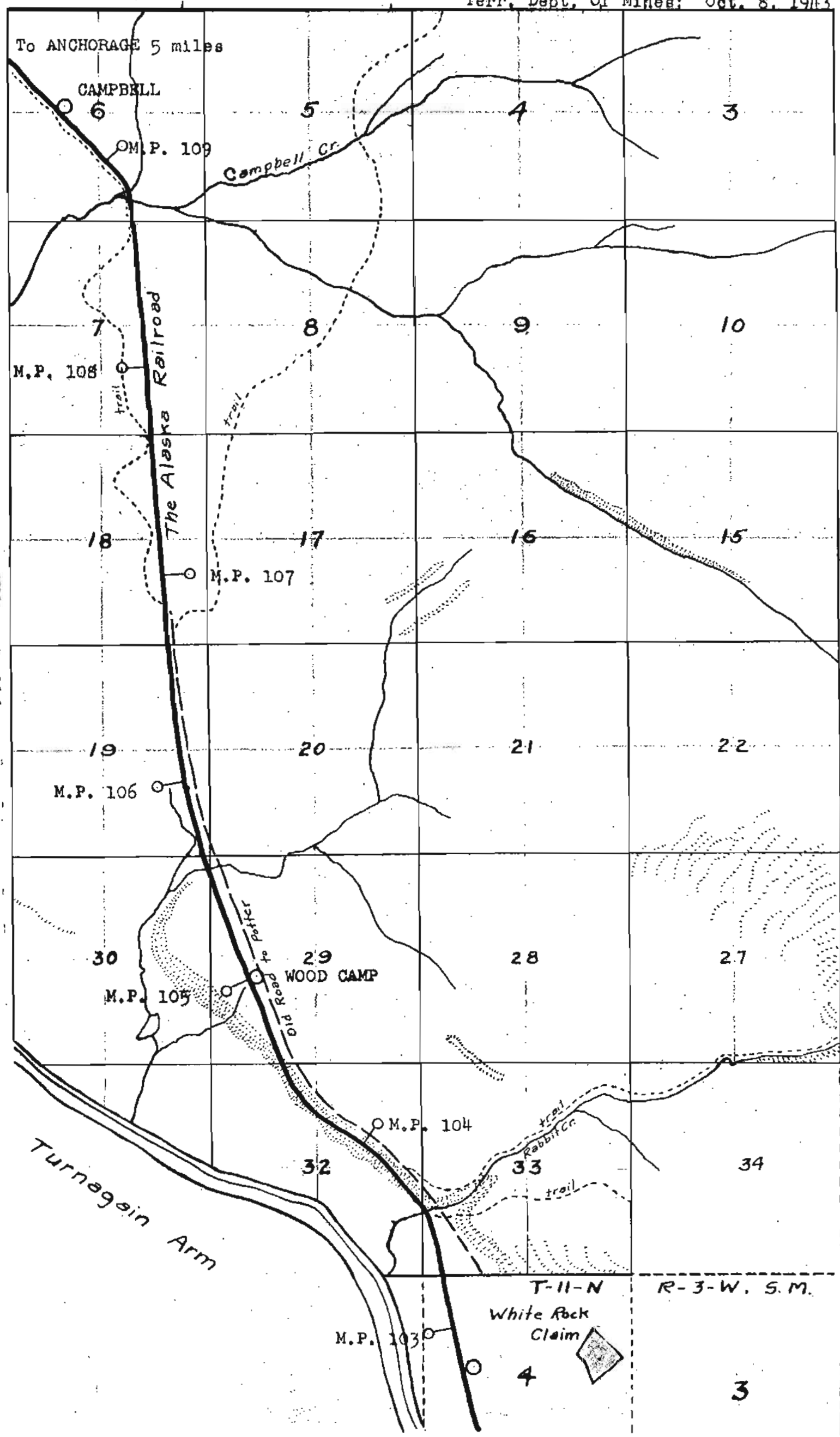
1/ To be submitted Tucson office in duplicate on completion of hole; one copy will be mai[illegible]

MR 85-6

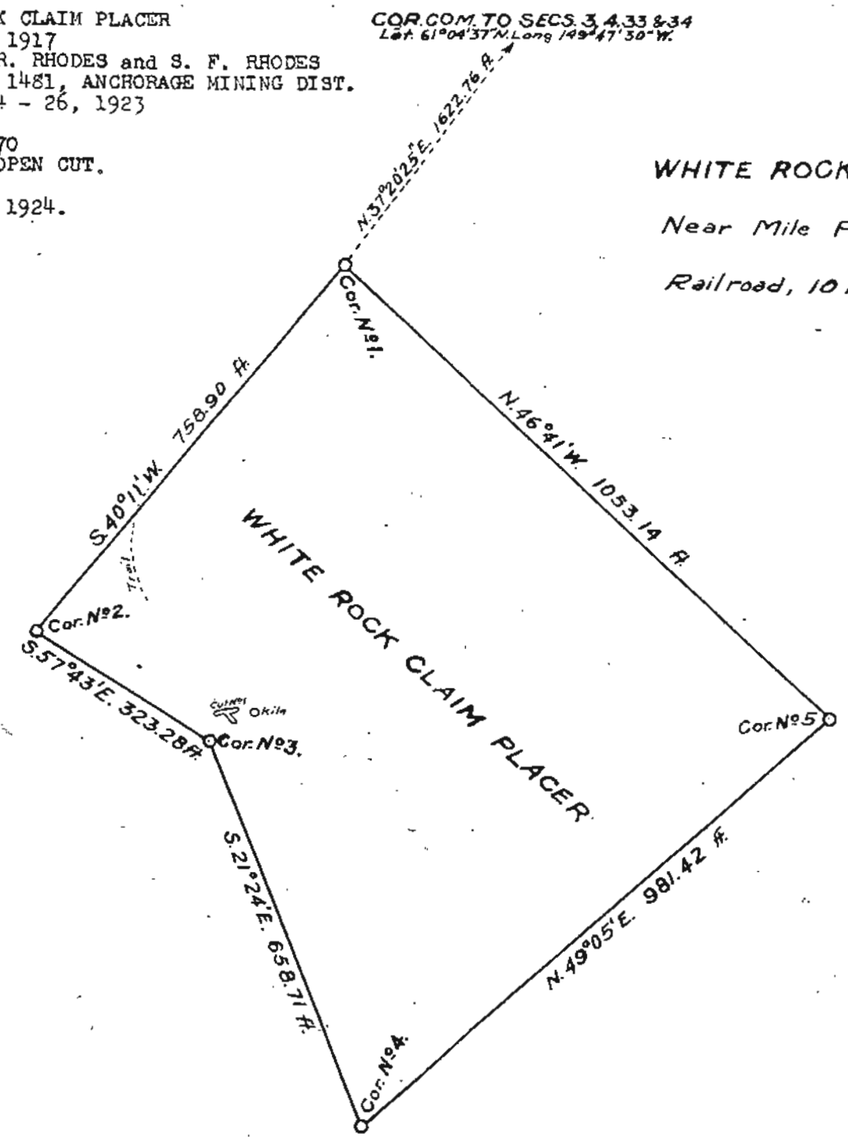
TERRITORY OF ALASKA
Department Of Mines
B.D.Stewart, Commissioner

General Map Showing Location
Of White Rock Claim Placer
Limestone Deposit near Anchorage

Map Traced from U.S. Land Office Map,
and revised by C.R.Garrett, Jr.
Terr. Dept. Of Mines: Oct. 8, 1943



PLAT OF: WHITE ROCK CLAIM PLACER
LOCATED: APRIL 10, 1917
PARTIES: CLARENCE R. RHODES and S. F. RHODES
MINERAL SURVEY No. 1481, ANCHORAGE MINING DIST.
SURVEYED: AUGUST 24 - 26, 1923
AREA: 18.193 ACRES
EXPENDITURE: $794.70
IMPROVEMENTS: ONE OPEN CUT.
SCALE: 1" - 200'
PATENTED: APRIL 1, 1924.



WHITE ROCK CLAIM PLACER

Near Mile Post 102 on Alaska Railroad, 10 Miles S.E. of Anchorage

Sec. 4
T.11N., R.3W. S.M.
(Unsurveyed)

TERRITORIAL DEPARTMENT OF MINES
B.D.STEWART, COMMISSIONER

MAP OF WHITE ROCK PLACER CLAIM

Traced and Copied From U.S.Land Office Map

Scale 1" - 200' Oct. 7, 1943
By: C.R.Garrett, Jr.
Associate Mining Engineer
Terr. Dept. of Mines

MR 85-6

MR 85-6

IN ANSWERING REFER TO No. .....

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

FROM Weekly Reports of Gideon A. Apell)

PROJECT NO. 805 - Moose Creek Hole No. 10

Date of - July 23 - 31, 1944

DRILLING. The drill was moved and set up on Hole No. 10. Co-ordinates: 15,346.3 N, 24,788.7 E, Elevation of collar 1335.2; dip - 45° Bearing of hole N 29° 24' W. The site has been levelled off by the dozer and lowered approximately 5 ft. below the original surface. About 1600 ft. of pipe-line was laid to bring water to the drill. Standpiping started on July 27 and passed through about 30' of detrital material followed by about 3' of mud (clay) or decomposed shale bed-rock. A 4' bed of coal was cut at 38' - 42' and shale from 42' to the bottom of the hole at 56 feet. The rock is much altered and broken due to surface conditions making core recovery very poor - about 30%. However, core recovery and drilling in general will improve greatly below the weathered zone.

Date of - Aug. 1 - 5, 1944

DRILLING. Hole 10 was down 56 feet at the end of July. A 4 foot bed of coal was encountered at 38 to 42 feet depth. At midnight, August 5th, the depth was 252.5 feet. During this period 196.5 feet of hole was drilled in 14 drill shifts or an average of 14 feet a shift. Three shifts a day were started on August 2 and continued through the period. After the first coal bed (38 to 42 feet) the drill ran through 63½ feet of shale to 105.5 feet. Interbedded coal and shale continued to 183 feet; gray shale to 210 feet; sand stone to bottom - 252.5 feet. The angle that the beds or bands make with the core axis varies from 30° to 50°, which would make the beds either flat-lying or steeply pitching, the latter being most likely the case as no flat-lying beds occur along Moose Creek. The hole has not yet been plotted, but the appearance of the coal in the core together with thickness and distance between beds seems to indicate the "upper" or Jonesville series which lies about 350 feet stratigraphically above the Buffalo series.

(Aug?)

Date of - July 6 - 12, 1944

DRILLING. During the week the drill made from 252.2 374.5, a depth of 122 feet. Sixteen shifts were worked, of which 12 shifts

were used in actual drilling, averaging 10 feet a shift. Loss of time was due to the rods sticking in the hole and then slipping through the clamp and falling back in the hole. There was no work on August 10 and one shift on August 11, this time was lost in waiting for a tap to be made for fishing out the rods. Drilling was resumed on the third shift of August 12.

The run was in sandstone from 252.2 to 287; then in shale to 374.5. In the lower part of the run the shale is becomming increasingly sandy indicating a change to sandstone. No coal was encountered in this week's drilling.

Date of - Aug. 13 - 19, 1944

DRILLING. Hole 10. During the week the drill made from 374.5 to 542.5 or 168.0 feet in 16 shifts of actual drilling, an average of 10.5 feet per shift. The walls of the hole had been caving at various depths causing lost time through stuck rods in pulling and drilling or driving through obstacles in lowering; therefore, it was deemed advisable to case the hole to 542 feet and proceed with AX bit. A total of 18 drill shifts were consumed Aug. 13-16, inclusive, and 2 a day from 17-19 inclusive. A driller and helper quit on Aug. 17. The hole bottomed in shale having been in shale from 450 feet depth. It seems apparent from the banding in the cores that the drill hole is not in the place normal to the beds. A determined effort is being made to bulldoze cut No. 2 to bed rock to obtain dips and strikes of the beds in order to get the true thickness of the beds in Hole 10.

Date of - Aug. 20-26, 1944.

DRILLING. Hole No. 10 advanced from 542.5 to 628 feet in depth. The casing job and assmbling and cleaning the AX rods were finished on the second shift August 20 when a 6 foot run with AX bit was made. A total of 85.5 feet was drilled in 14 drill shifts making 6.1 feet average per shift. Interbedded coal and shale was encountered at 555 feet and ended at 598 feet. The angle between the axis of the core and the bands or beds varied from 28° to 43° indicating very steeply pitching beds with consequent exaggerated thickness. These beds do not seem to be the Buffalo series.

Date of - August 1944.

DRILLING. Hole 9 was finished to a depth of 657 feet on July 19. Hole 10 has attained a depth of 717 feet on midnight of August 31. The total drilling to date is 1374 feet in two holes. Hole 10 cut coal beds at 38 to 42.7; 105 to 107; 122 to 129; 147 to 150; 152 to 157; 175 to 183.5; 549 to 555; 559 yo 562; 564 to 569; 571 to 580 (coal and bone interbedded); 593 to 595; 698 to 704 coal and shale interbedded. When corrected for angle of the hole none of these coal beds appear to correlate with the Buffalo series. It was necessary to case Hole 10 to 542 feet and proceed with AX bit. Core recovery is none too good in coal with BX bit and worse with AX.

Date of - Sept. 1 - 9, 1944

DRILLING. Hole 10 advanced from 692 to 788 feet. There were strong indications of coal in the last pull. There was coal from 715' to 721'; and 743.5' to 744'. Fault gouge occurred from 739 to 743'. The significance of this fault has not been established, however, that kind of rock occurs on each side of the fault. (Error in previous report depth of hole 10 should have been 692' instead of 717'.)Of 18 drill shifts 3½ shifts were used in making repair adjustments, etc., and 14½ were devoted to drilling making an average of 6.6 feet per shift for 96 feet drilled. Although numerous coal beds have been cut in this hole none of them seem to correlate with the known beds. It was not the intention to go so deep but we continue to cut coal. It is hoped that one bed or series can finally be identified. Not much greater depth can be attained with this drilling equipment. It is likely that the next hole will be set 50 to 100 feet northwest of the present location and the drill pointed under the hill - opposite to the bearing of hole 10. This will enable us to figure dips and bearings of the formations lapped in the two holes. The geological information thus gained will be of great value. This set up will be particularly useful if bed rock is not reached in dozer cut No. 2.

Date of - Sept. 10 - 16,1944.

DRILLING. Hole 10 advanced from 788 feet to 820.8 feet, making a total of 32.8 feet for the week. It was stopped at 821 feet on Sept. 14 in gray, sandy shale having no coal indications. Coal was cut from 793.9 to 796.7 feet. It was required to case the BX hole to 541 feet and drill AX to bottom. Seven core samples were taken. The contract cost of the hole was $7094.40. There were no shifts put in on Sunday, September 10. A total of 8 shifts were put in on hole 10 up through September 14, of which 3½ were used in overhauling the drill engine and other repairs. At the start of the hole there was 600 feet of BX casing on hand in pulling casing 190 feet was lost in the hole leaving only 400 feet on hand. Since none of the beds in Hole 10 seemed to correlate with the Buffalo series it was deemed advisable to locate hole 11 about 50 feet northwest (down hill) from No. 10 and point the drill in the opposite direction, viz., N 30° E at a dip of -- 45°.

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

(FROM Weekly Reports of Gideon A. Apell)

Date of - Sept. 17 - 23, 1944

PROJECT NO. 814 - Moose Creek Hole No. 11

DRILLING. Coordinates of Hole No. 11 are 15356.5 N and 24717.6 E; elevation 1,326.1; bearing S 32° 21' E; dip - 45°. Driving through overburden started on day shift Sept. 20; bed rock (shale) was reached at 15 feet on the following shift. Drilling in rock started on day shift of Sept. 21. Coal was cut at 23 feet; coal and carbonaceous shale, with coal predominating, continued to 71 feet. The hole was in soft, gray shale at 74 feet at the end of the night shift Sept. 23. In six shifts 59 feet was drilled making an average of 9.8 feet a shift.

Date of - Sept. 24 - 30, 1944

DRILLING. Hole No. 11 went from 74 to 199 feet during the week. The 125 feet were drilled in 12 shifts, averaging 10.4 feet a shift. One and a half shifts were used in working on the supply pump assembly and on the drill engine. One 18 inch coal bed was cut at 82 feet; a 5 inch seam at 90 feet; and a 12 inch bed at 172.5 feet. A very friable, gritty, light gray, mudlike gouge was cut at 97 feet and continued to 109 feet. This gouge interferes with the raising and lowering by squeezing and binding the rods. It is necessary to wash the rods down and up; it is likely that this hole will have to be cased. A pebble conglomerate was cut at 193 feet; the bit was still in it at 199.

Date of - Oct. 1 - 7, 1944

DRILLING. Drilling has been the only activity during the week. Hole No. 11 went from 199' to 327' or a distance of 128' during the week of 14 drill shifts. It was necessary to case the BX hole to 214 feet and drill AX. The average progress per shift including the time used in casing was 9.1 feet a shift. The hole was in conglomerate at 199'; the conglomerate continued to 264' then sandstone to 289.4'; then gray sandy shale to 298'; then red shale to 310', and gray smooth shale to 327'. From the appearance of this shale it looks like we may be coming into coal or some radical change in the rock. It is not expected that this hole will go much over 400' in depth.

Date of - Oct. 8 - 14, 1944.

DRILLING. Hole No. 11 advanced from 327 to 418 feet depth, in 12 drill shifts; averaging 7.6 feet a shift. The run was all in shale. This rock exhibited no banding, bedding or other structural features. The color changed from dark gray to a chocolate brown at 392' and back to dark gray at 403' which continued to the bottom. The shale is a consolidated dark gray clay or mud, and rather soft; it often muds up the bit necessitating frequent pulls, slowing up the drilling progress. In this hole we have encountered carbonaceous shale, coal beds, coal and shale interbedded, fault gouge, sandstone, conglomerate (32') and shale of varying color and texture, indicating that the hole is cross-cutting the formations. The last coal encountered was at 83.5 feet. The shale we are in now does not show any indications of coal, however, frequently in this ground the hole goes from a dead-pan shale into coal.

Date of - Oct. 15 - 21, 1944.

DRILLING. Hole No. 11 advanced from 418 to 490 feet depth. The hole was stopped at 490 feet on October 19, 1944. The contract cost of the hole was $4024.00. A great amount of caving gave trouble for several days, so it was deemed advisable to stop before the hole was lost with the danger of losing rods and bit. The last 200 feet was in massive soft shale having no banding or bedding planes to give an idea of the dip of the formation, however changes in color and texture in the shale indicated that the hole was crosscutting the formation. The contractor lost 190' of AX casing in hole #10 and 150' of AX casing in Hole #11.

MR 85-6

Sheet No. 1
Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Moose Creek, Alaska
Project: ~~905 - Alaska Coal~~
Hole No. 9
Elevation at collar 1039.1
Depth 657.0

Dip: Vertical
Date began June 2, 1944
Location of hole ~~12378.8N,~~ 21965E
Bearing Vertical

Core size: EX throughout
Theoretical weight sludge per foot hole
Date finished July 19, 1944

Footage From	Footage To	Distance Drilled	Weight, grams Core	Weight, grams Sludge	Core obtained, feet	Recovery, percentage Core	Recovery, percentage Sludge	Recovery, percentage Water	Formation	Analyses Core	Analyses Sludge	Analyses Adjusted average
0	64.0	64.0	-	-	None	-	-	-	Overburden			
64.0	159.1	95.1			81.5	85.2		95	Shale, Gray			
159.1	167.2	8.1			7.9	98.0		95	SS. med, gray			
167.2	203.0	35.8			34.2	95.5		50	Shale, sandy			
203.0	320.5	117.5			115.9	98.6		25	SS. fine gr.			
320.5	351.5	31.0			30.5	98.4		60	Shale, Carbonaceous			
351.5	352.5	1.0			1.0	100		90	Shale, coaly			
352.5	354.0	1.5			1.4	93.3		90	Coal, (thin)			
354.0	354.7	.7			.7	100		90	Shale, Cart.			
354.7	357.7	3.0			2.4	80.3		90	Shale, cart.			
357.7	362.7	5.0			4.2	85.0		90	Coal & shale			
362.7	377.7	15.0			13.8	89.4		90	Shale & coal			
377.7	380.3	2.6			2.2	84.6		90	COAL SAMPLE # 1.			
380.3	380.7	.4			.4	100		85	Coaly shale			
380.7	384.7	4.0			3.8	93.75		70	COAL SAMPLE # 2.			
384.7	403.0	18.3			16.2	88.6		20	Coaly shale			
403.0	407.3	4.3			2.1	48.1		10	COAL SAMPLE # 3			
407.3	409.5	2.2			1.0	45	45	20	Shale			
		409.5			323.9							
					319.2							

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

Sheet No. 2

Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: Moose Creek, Alaska
Hole No.: No. 805; Alaska Coal 9
Elevation at collar: 1039.1
Depth: 657 feet

Dip: Vertical
Date began: June 2, 1944
Location of hole: 1257.3N, 2196E
Bearing: Vertical

Core size: BX throughout
Theoretical weight sludge per foot hole
Date finished: July 19, 1944

Footage From	Footage To	Distance Drilled	Weight, grams Core	Weight, grams Sludge	Core obtained, feet	Recovery, percentage Core	Recovery, percentage Sludge	Recovery, percentage Water	Formation	Analyses Core	Analyses Sludge	Adjusted average
		409.5			323.9 (forward from Sheet #1)							
409.5	411.4	1.9			.9	47.4		75	COAL			
411.4	412.0	.6			.3	50		75	Shale Carbonaceous			
412.0	415.3	3.3			1.8	57.8		10	COAL	SAMPLE # 4		
415.3	419.0	3.7			1.75	46.2		85	Shale, carb.			
419.0	423.5	4.5			1.5	33.3		75	COAL	SAMPLE # 5		
423.5	434.5	11.0			6.8	61.4		85	Shale, carb.			
434.5	440.5	6.0			2.25	37.5		85	COAL	SAMPLE # 6		
440.5	448.1	7.6			4.25	55.4		85	Shale, carb.			
448.1	456.3	8.2			3.9	47.6		90	COAL	SAMPLE # 7		
456.3	467.0	10.7			4.6	43		90	Shale, carb.			
467.0	481.3	14.3			7.6	52.9		90	COAL	SAMPLE # 8		
481.3	565.0	83.7			57.9	69.2		90	Shale, coaly			
565.0	618.8	53.8			51.1	95		90	SS. med. grained			
618.8	622.0	3.2			2.2	66.7		90	Shale			
622.0	629.8	7.8			2.6	33.3		90	COAL	SAMPLE # 9		
629.8	657.0	27.2			25.3	93.0		90	Shale, dark			
		652.0 (includes overburden)			498.6							

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Sheet No. 1

Form Sm-18

Copy

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814
Hole No. 10
Elevation at collar 1335.2
Depth 881 feet

Dip: --45°
Date began July 20,1944
Location of hole 15346.5N/A 24788.7E
Bearing N 39° 24' W.

Core size: EK (1 5/8") and AX (1 1/8")
Theoretical weight sludge per foot hole
Date finished September 14, 1944

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Adjusted average
0	35	35.0							Overburden (gravel & clay)			
35.0	38.0	3.0			2.7	54.0			Shale, sandy			
38.0	42.3	4.3			1.1	25.6		100	COAL, good quality		(Sample No. 1)	
42.3	105.5	63.2			30.5	48.3		80	Shale, sandy			
105.5	107.5	2.0			1.3	65.0		80	COAL, fair quality			
107.5	111.0	3.5			2.3	65.7		80	Shale, smooth, gray			
111.0	122.6	11.6			4.1	35.3		80	Shale, smooth, dark gray			
122.6	126.7	4.1			1.0	24.4		80	COAL, clean, good			
126.7	127.6	0.9			0.6	66.7		80	COAL, shaly		(Sample No. 2	
127.6	129.4	1.8			1.2	66.7		80	COAL, fair quality			
129.4	130.4	1.0			0.7	70.0		80	Shale, carbonaceous, dark gray			
130.4	141.0	10.6			8.6	81.1		90	Shale, smooth, gray			
141.0	147.4	6.4			1.4	21.9		80	Shale, carbonaceous, smooth			
147.4	150.3	2.9			1.0	34.5		90	COAL, fair quality			
150.3	151.3	1.0			0.3	30.0		90	Shale, carbonaceous			
151.3	152.0	0.7			0.3	42.9		90	Sandstone, carbonaceous, dark gray			
152.0	157.0	5.0			2.7	54.0		90	COAL, good clean		(Sample No. 3)	
157.0	170.8	13.8			5.3	38.4		80	Shale, dark, carbonaceous			
170.8	174.9	4.1			1.2	29.2		80	Shale, coaly, black			

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Sheet No. 2

Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814 — Dip: --45° — Core size: EX and AX
Hole No. 10 — Date began July 20, 1944 — Theoretical weight sludge per foot hole ____
Elevation at collar 1335.2 — Location of hole 15546.3N/24788.7E — Date finished September 14, 1944
Depth 821 feet — Bearing N 39° 24' E

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
174.9	176.5	1.6			0.5	31.25		80	COAL, clean		( )	
176.5	176.6	0.1			0.1	100.0		80	Shale parting		(Sample No. 4)	
176.6	183.5	6.9			4.1	60.0		80	COAL, fair quality		( )	
183.5	187.0	3.5			3.4	97.1		80	Shale, gray, banded			
187.0	206.7	19.7			9.5	48.2		75	Shale, smooth, gray			
206.7	287.0	80.3			76.6	95.4		75	Sandstone, medium grain, gray			
287.0	381.0	94.0			79.4	83.6		80	Shale, sandy			
381.0	446.0	65.0			52.6	80.9		80	Sandstone, medium to coarse grain			
446.0	542.8	96.8	(End of EX)		80.1	82.7		75	Shale, dark, sandy			
542.8	547.0	4.2			3.3	78.6		90	Shale, smooth, dark			
547.0	549.0	2.0			1.7	85.0		90	Shale, calcareous (limestone?)			
549.0	549.3	0.3			0.1	33.3		80	Shale, smooth, dark brown			
549.3	555.3	6.0			1.4	23.3		80	COAL, fair quality			
555.3	559.0	3.7			2.4	64.9		80	Shale, carbonaceous, black			
559.0	562.0	3.0			1.8	60.0		90	COAL, fair		( )	
562.0	562.4	0.4			0.3	75.0		90	Shale, coaly		( )	
562.4	563.5	1.1			0.7	63.6		90	COAL, fair quality		(Sample No.5)	
563.5	563.8	0.3			0.2	66.7		90	Shale, bony		( )	
563.8	569.3	5.5			2.8	50.9		90	COAL, fair quality		( )	

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

Sheet No. 3

Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814
Hole No. 10
Elevation at collar 1335.2
Depth

Dip: --45°
Date began July 20, 1944
Location of hole 15346.5N, 24788.7E
Bearing N 39 24' W

Core size: BX and AX
Theoretical weight sludge per foot hole
Date finished September 14, 1944

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
569.3	570.7	1.4			0.9	64.3		80	Bony COAL		( )	
570.7	572.2	1.5			1.0	66.7		80	COAL, dirty		(Sample No.5	
572.2	573.9	1.7			1.1	64.7		80	COAL, clean		(continued	
573.9	575.1	1.2			0.5	41.7		90	COAL, bony		( )	
575.1	576.5	1.4			0.6	42.9		90	COAL, fair quality		( )	
576.5	580.2	3.7			1.0	27.0		90	COAL, bony		( )	
580.2	581.2	1.0			0.4	40.0		90	Shale, smooth, calcareous			
581.2	588.5	7.3			5.4	74.0		80	Shale, sandy			
588.5	593.0	4.5			2.2	49.8		80	Shale, Calcareous			
593.0	595.0	2.0			0.7	35.0		90	COAL, clean			
595.0	597.8	2.8			2.0	71.4		80	Shale, smooth, gray			
597.8	598.3	0.5			0.3	60.0		80	COAL			
598.3	675.2	76.9			76.0	98.8		80	Shale, sandy			
675.2	698.2	23.0			23.0	100.0		80	Sandstone			
698.2	702.5	4.3			2.5	58.2		80	Shale, black, carbonaceous			
702.5	703.5	1.0			0.3	30.0		80	COAL, clean			
703.5	715.2	11.7			5.3	45.3		80	Shale, coaly			
715.5	720.8	5.6			2.2	39.3		80	COAL, clean		(Sample No. 6	
720.8	723.1	2.3			1.8	78.3		80	Shale, carbonaceous			

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

Sheet No. 4

Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814
Hole No. 10
Elevation at collar 1355.2
Depth 821 feet

Dip: -45°
Date began July 20, 1944
Location of hole 1534.6N/ 24788.7E
Bearing N 39° E ± W

Core size: AX and BX
Theoretical weight sludge per foot hole
Date finished September 14, 1944

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
723.1	738.9	15.8			11.9	75.3		80	Shale, carbonaceous			
738.9	742.2	3.3			2.2	66.7		80	Shale, sandy			
742.2	743.0	0.8			.6	75.0		80	Fault gouge			
743.0	743.5	0.5			.4	80.0		80	Shale, sandy			
743.5	743.9	0.4			.3	70.0		80	COAL, dirty			
743.9	745.2	1.3			.7	53.8		80	Shale, coaly			
745.2	792.5	47.3			41.7	88.2		80	Shale, sandy			
792.5	792.8	0.3			0.2	66.7		80	COAL, dirty			
792.8	793.9	1.1			0.9	81.8		80	Shale, carbonaceous	( )		
793.9	795.3	1.4			1.2	85.7		80	COAL, clean	(Sample No. 7)		
795.3	796.7	1.4			1.2	85.7		80	COAL. dirst	( )		
796.7	799.7	3.0			2.5	83.3		80	Shale, carbonaceous			
799.7	814.5	14.8			14.3	98.18		90	Shale, dark gray			
814.5	820.8	6.3			5.7	90.7		80	Shale, sandy			

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

Form Sm-18

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814 Moose Creek, Ana. Dip: -45° Core size: EX to 214', AX 214 to 490
Hole No. 11 Date began Sept. 15, 1944 Theoretical weight sludge per foot hole ____
Elevation at collar 1326.12 Location of hole, 18556.8N/ Date finished October 19, 1944
Depth 490 feet Bearing S 52° 21' E 24717.6E

Footage From	Footage To	Distance Drilled	Weight, grams Core	Weight, grams Sludge	Core obtained, feet	Recovery, percentage Core	Recovery, percentage Sludge	Recovery, percentage Water	Formation	Analyses Core	Analyses Sludge	Adjusted average
0.0	15.0	15.0			- - - -	- -		- -	Overburden, gravel			
15.0	22.6	7.6			3.2	42.1		100	Shale, gray, smooth			
22.6	23.7	1.1			0.7	63.6		100	Shale, Carbonaceous			
23.7	28.3	4.6			1.5	32.6		100	COAL, clean		Sample #1.	
28.3	28.8	0.5			0.5	100		100	Coaly shale marker		(excluded from sample)	
28.8	29.8	1.2			1.2	100		100	COAL, fairly good		Sample #1.	
29.8	30.0	0.2			0.2	100		100	Shale marker		(excluded from sample)	
30.0	32.0	2.0			2.0	100		100	COAL, good		Sample #1.	
32.0	32.5	0.5			0.5	100		100	Shale marker		(excluded from sample)	
32.5	34.5	2.0			1.4	70.0		100	COAL, fair		Sample #1.	
34.5	34.8	0.3			0.3	100		100	Shale marker		(excluded from sample)	
34.8	37.0	2.2			2.0	90.9		100	COAL, fair		Sample #1.	
37.0	37.5	0.5			0.5	100		100	Coaly shale		(excluded from sample)	
37.5	39.0	1.5			1.5	100		100	COAL, fair quality		Sample #1.	
39.0	50.0	11.0			4.1	37.3		100	Shale, carbonaceous			
50.0	53.1	3.1			1.8	58.7		100	Shale, coaly			
53.1	54.2	1.1			0.4	36.4		100	Gouge, dark brown, probably a fault.			
54.2	61.2	7.0			1.75	25.0		100	COAL, shaly			
61.2	65.1	3.9			1.0	25.6		100	COAL, good		Sample #1.	

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Form Sm-18

Sheet #2

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: 814, Moose Creek, Ann.
Hole No. 11
Elevation at collar 1526.12
Depth 490 feet

Dip: -45°
Date began Sept. 15, 1944
Location of hole 15256.5N
Bearing S 32° 21' E. 24717.6E

Core size: EX to 214'; AX 214' to 490'
Theoretical weight sludge per foot hole
Date finished October 19, 1944

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
65.1	69.0	3.9			1.25	32.1		90	Fault gouge			
69.0	82.0	13.0			7.2	55.4		90	Shale, soft, plastic			
82.0	83.5	1.5			0.4	26.7		85	COAL, clean			
83.5	90.0	6.5			0.9	13.8		85	Shale			
90.0	90.8	0.8			0.2	25.0		80	COAL, clean			
90.8	92.5	1.7			0.5	29.4		80	Shale, Carbonaceous			
92.5	95.0	2.5			2.5	100		90	Shale, sandy			
95.0	97.8	2.8			1.2	42.9		85	Shale, gray			
97.8	98.8	1.0			0.4	40.0		90	Mud gouge, greenish tint			
98.8	109.3	10.5			6.5	61.9		90	Mud gouge, light gray			
109.3	112.5	3.2			1.5	46.9		80	Gouge, slightly harder			
112.5	138.6	26.1			20.1	77.0		90	Sandstone, fine grained			
138.6	157.3	18.7			15.0	80.2		90	Shale			
157.3	164.0	6.7			6.2	91.0		80	Sandstone, fine grained			
164.0	172.7	8.7			6.7	77.0		90	Shale			
172.7	174.2	1.5			0.4	26.7		90	COAL, fair quality			
174.2	175.0	0.8			0.3	37.5		90	Shale, Carbonaceous			
175.0	192.6	17.6			16.9	96.0		80	Sandstone			
192.6	263.7	71.1			13.2	18.6		90	Conglomerate			

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

Form Sm-18

Sheet #3

BUREAU OF MINES
STRATEGIC MINERALS PROGRAM

DIAMOND DRILL HOLE LOG 1/

Project: **814, Moose Creek, Ana.** Dip: **-45°** Core size: **HX to 214'; AX 214' to 490'.**
Hole No. **11** Date began **Sept. 15, 1944** Theoretical weight sludge per foot hole ____
Elevation at collar **1326.12** Location of hole **15356.5N, 24717.6E** Date finished **October 19, 1944**
Depth **490 feet** Bearing **S 32° 21' E.**

Footage From	Footage To	Distance Drilled	Weight, grams: Core	Weight, grams: Sludge	Core obtained, feet	Recovery, percentage: Core	Recovery, percentage: Sludge	Recovery, percentage: Water	Formation	Analyses: Core	Analyses: Sludge	Analyses: Adjusted average
263.7	288.4	25.7			24.2	94.2		90	Sandstone			
288.4	293.8	4.4			4.3	97.7		100	Shale, gray			
293.8	307.0	15.2			8.3	62.9		95	Shale, red, sandy			
307.0	386.7	79.7			64.7	81.2		95	Shale, dark gray			
386.7	397.6	10.9			7.5	68.8		95	Shale, dark brown			
397.6	428.3	30.7			27.6	89.9		100	Shale, dark gray			
428.3	454.2	25.9			20.3	78.4		95	Shale, light gray, soft			
454.2	463.6	9.4			3.6	38.3		95	Fault gouge, light greenish tint			
463.6	490.0	26.4			8.6	32.6		95	Shale, dark gray, smooth.			
	490.0	Bottom of hole No. 11.										

1/ To be submitted in duplicate to the District Engineer at the completion of each hole. District Engineer send one copy to the Regional Engineer.

MR 85-6

Holes No. 10 + 11 are about
500 ft [illegible] from
Buffalo property East boundary
per Apell - (B.S.)

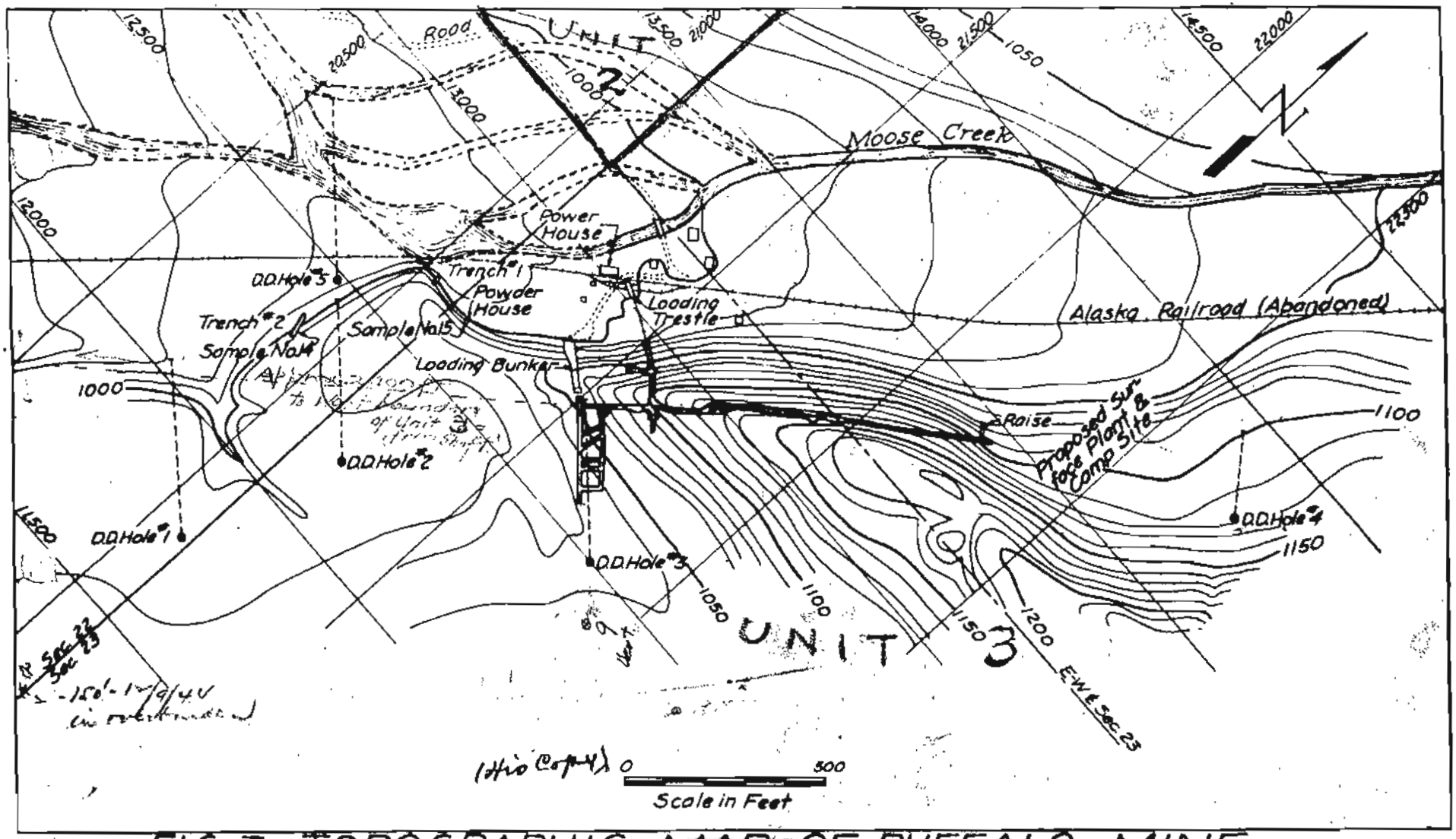

FIG 3 - TOPOGRAPHIC MAP OF BUFFALO MINE

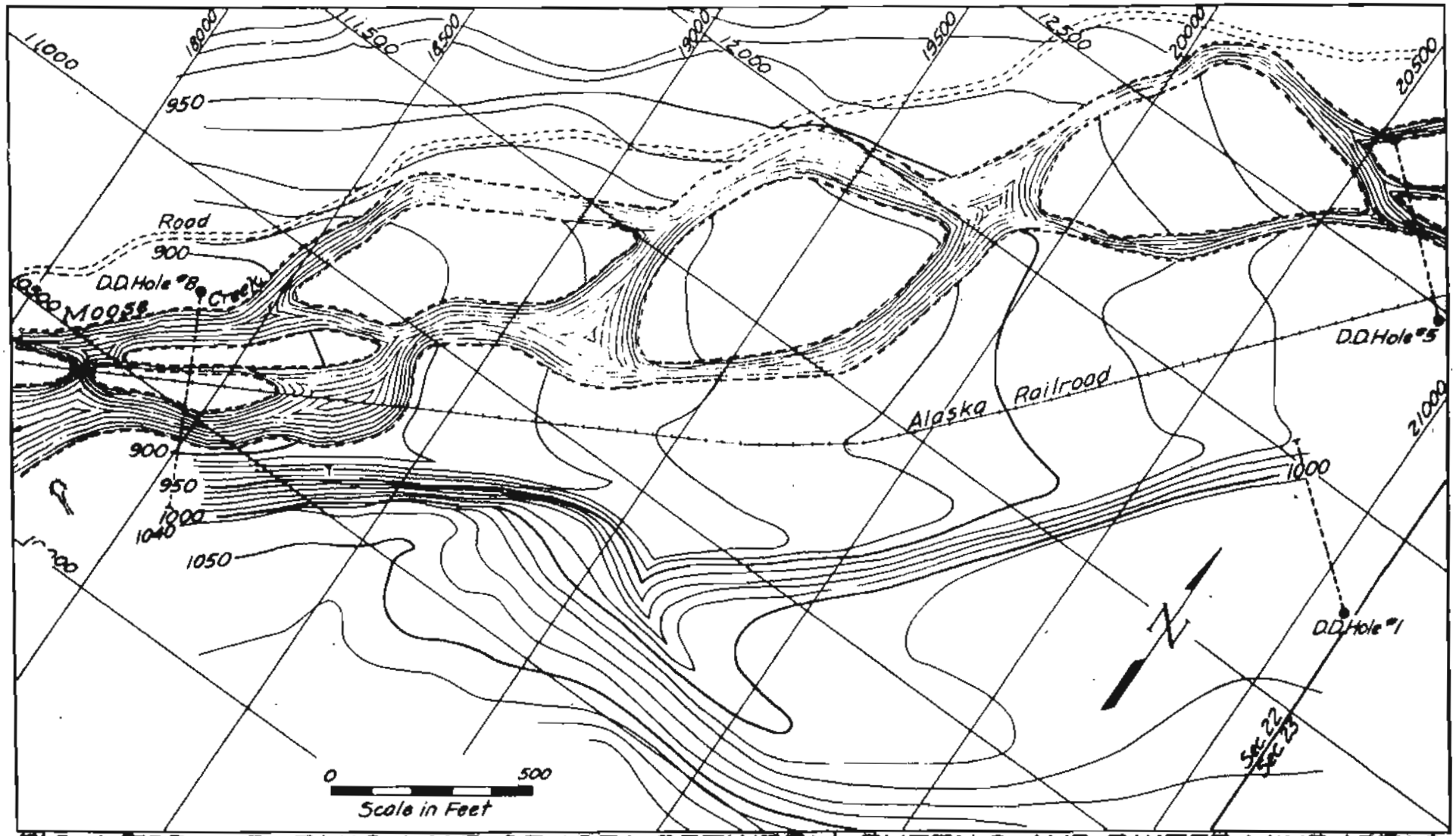

FIG. 4-TOPOGRAPHIC MAP OF AREA BETWEEN BUFFALO AND BAXTER MINE AREAS

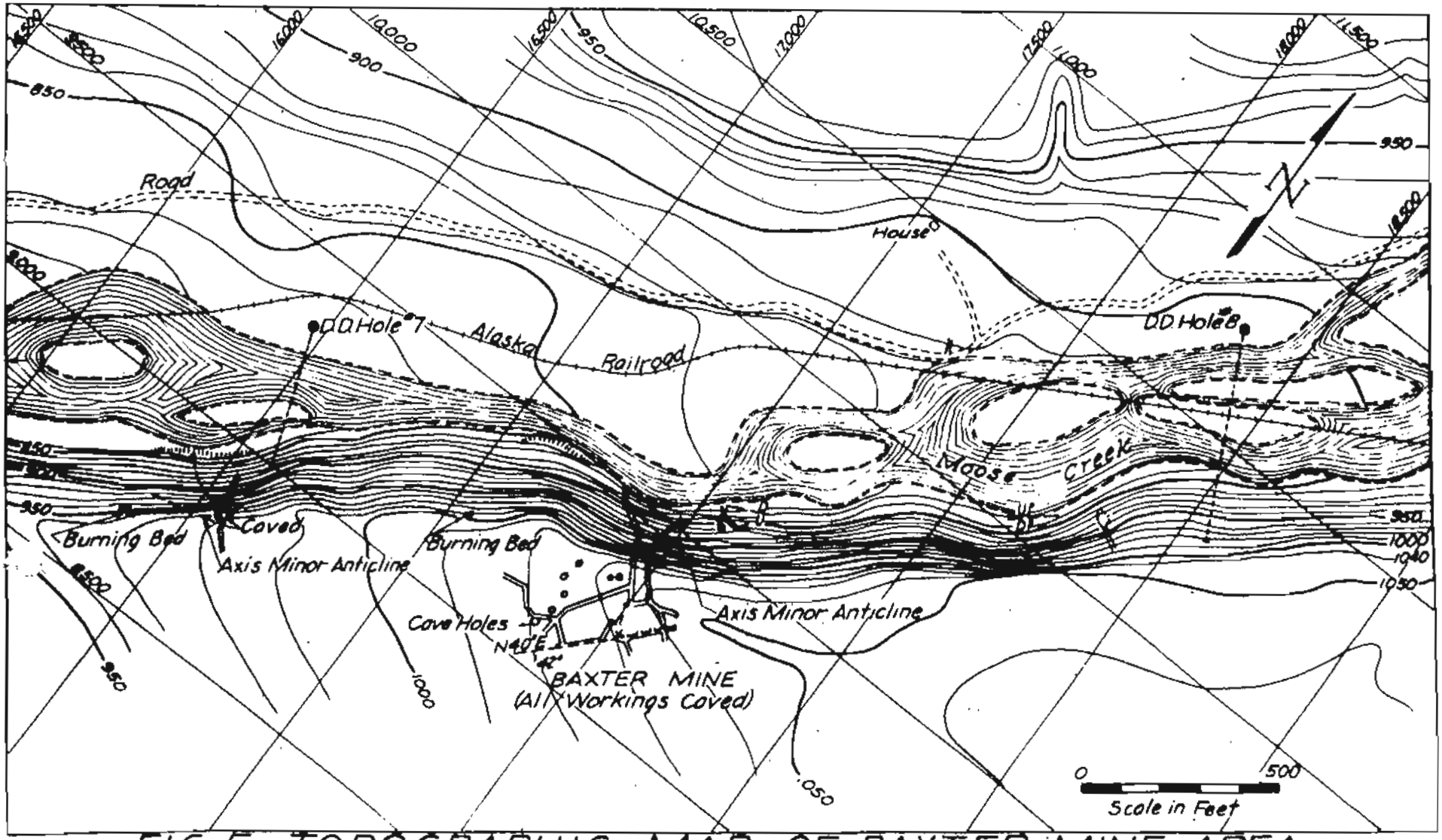

FIG. 5 - TOPOGRAPHIC MAP OF BAXTER MINE AREA

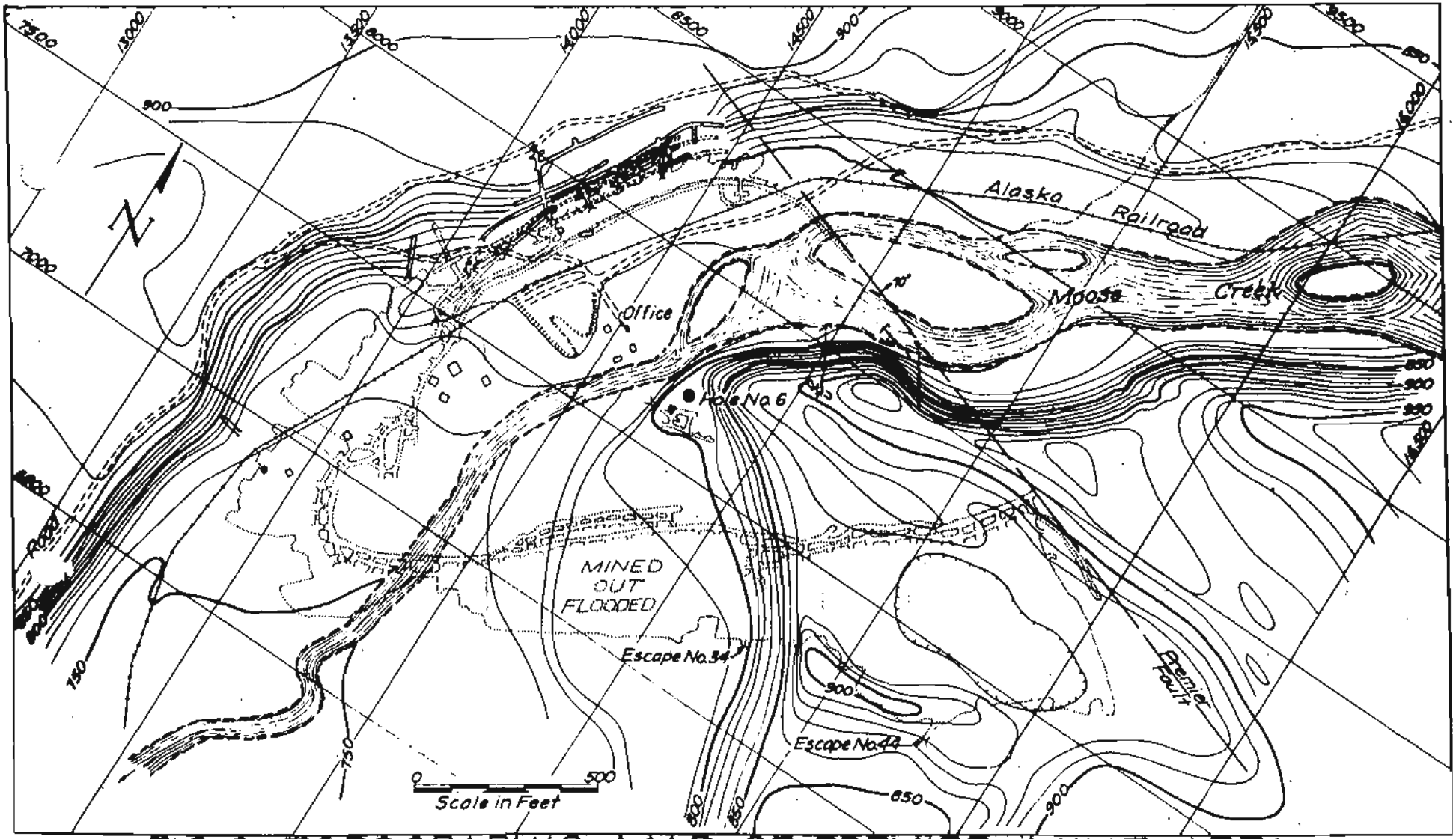

FIG. 6 - TOPOGRAPHIC MAP OF PREMIER MINE AREA

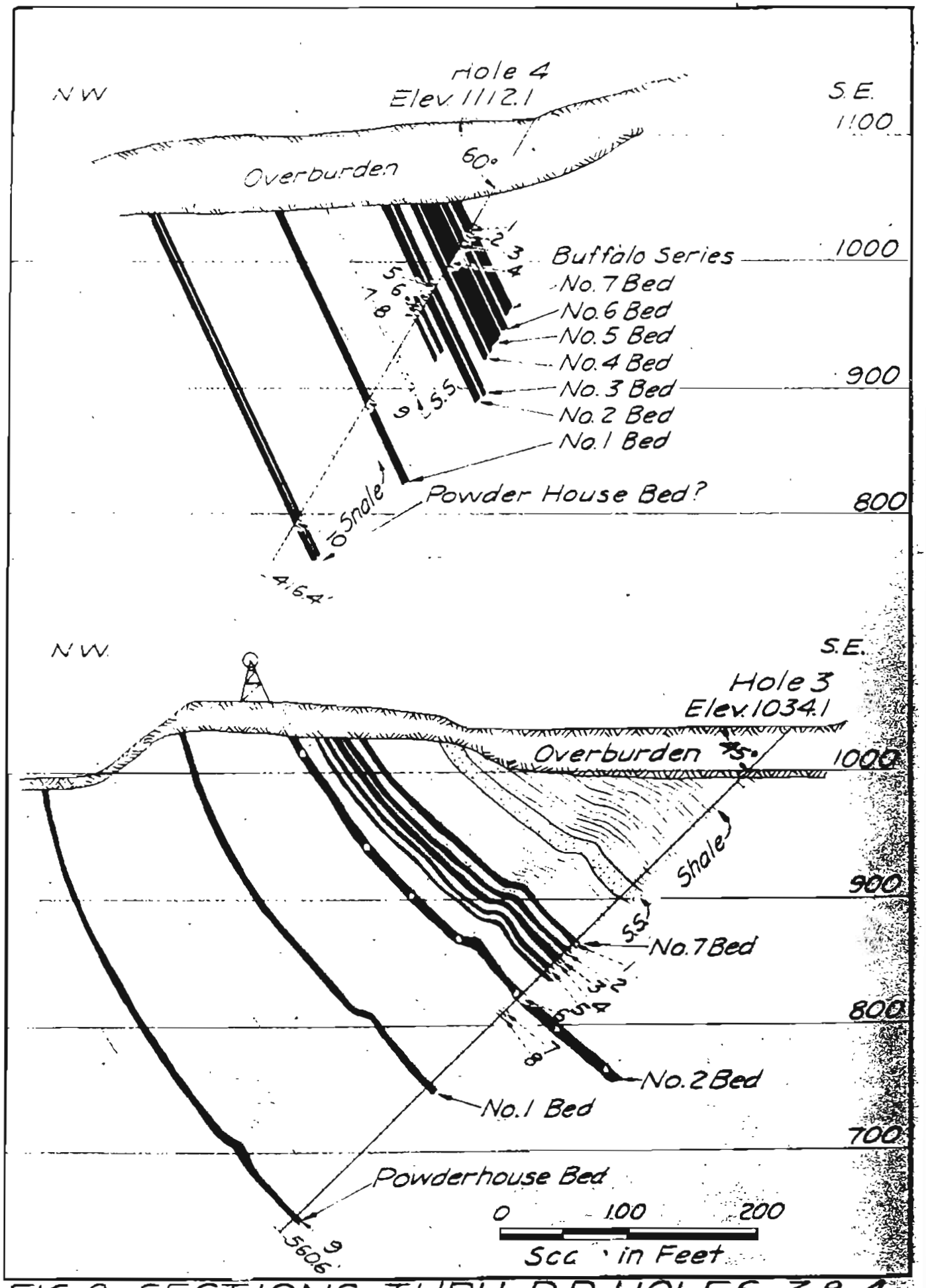

FIG. 8 - SECTIONS THRU D.D. HOLES 3 & 4

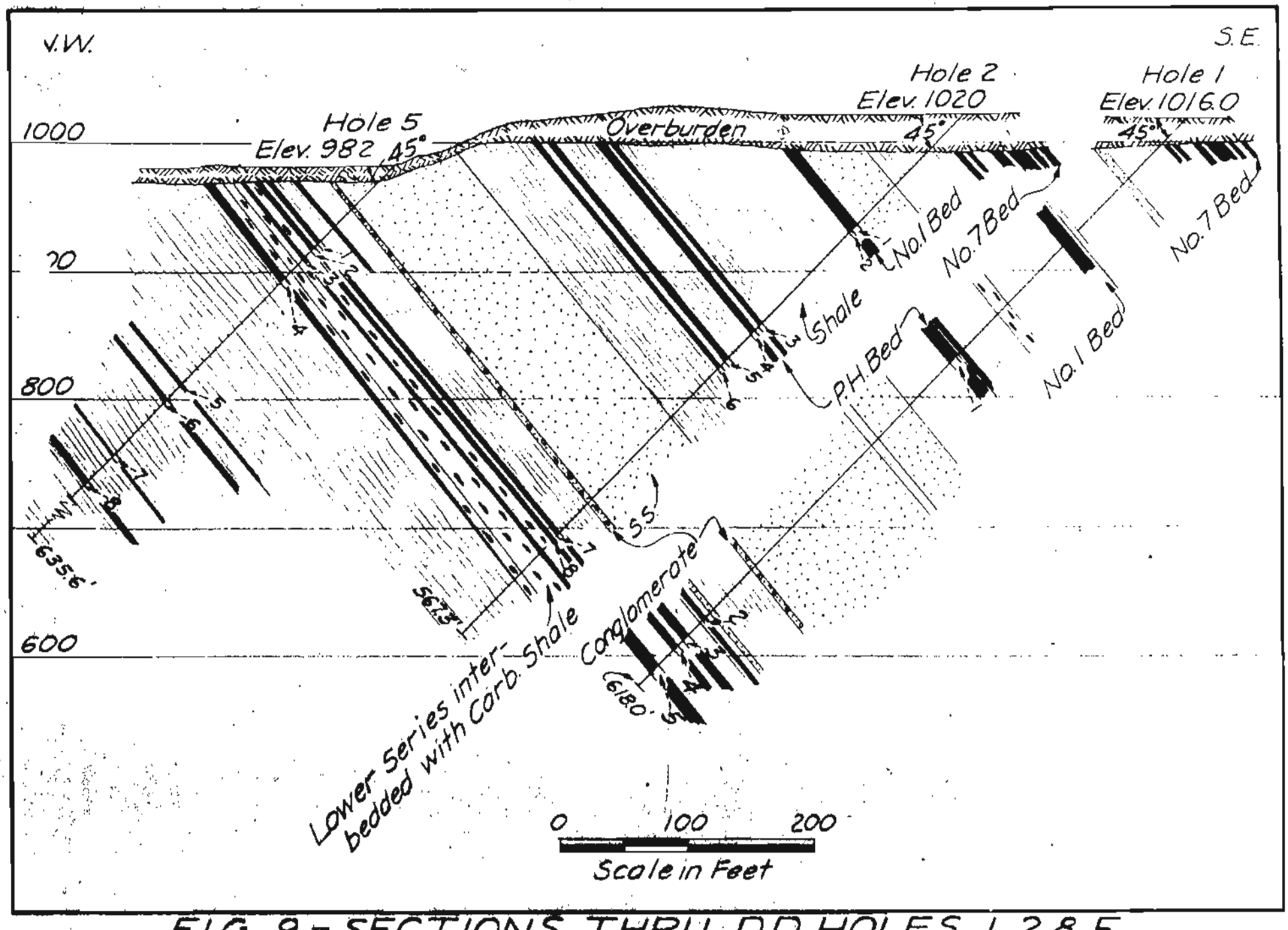

FIG. 9 - SECTIONS THRU D.D. HOLES 1, 2 & 5

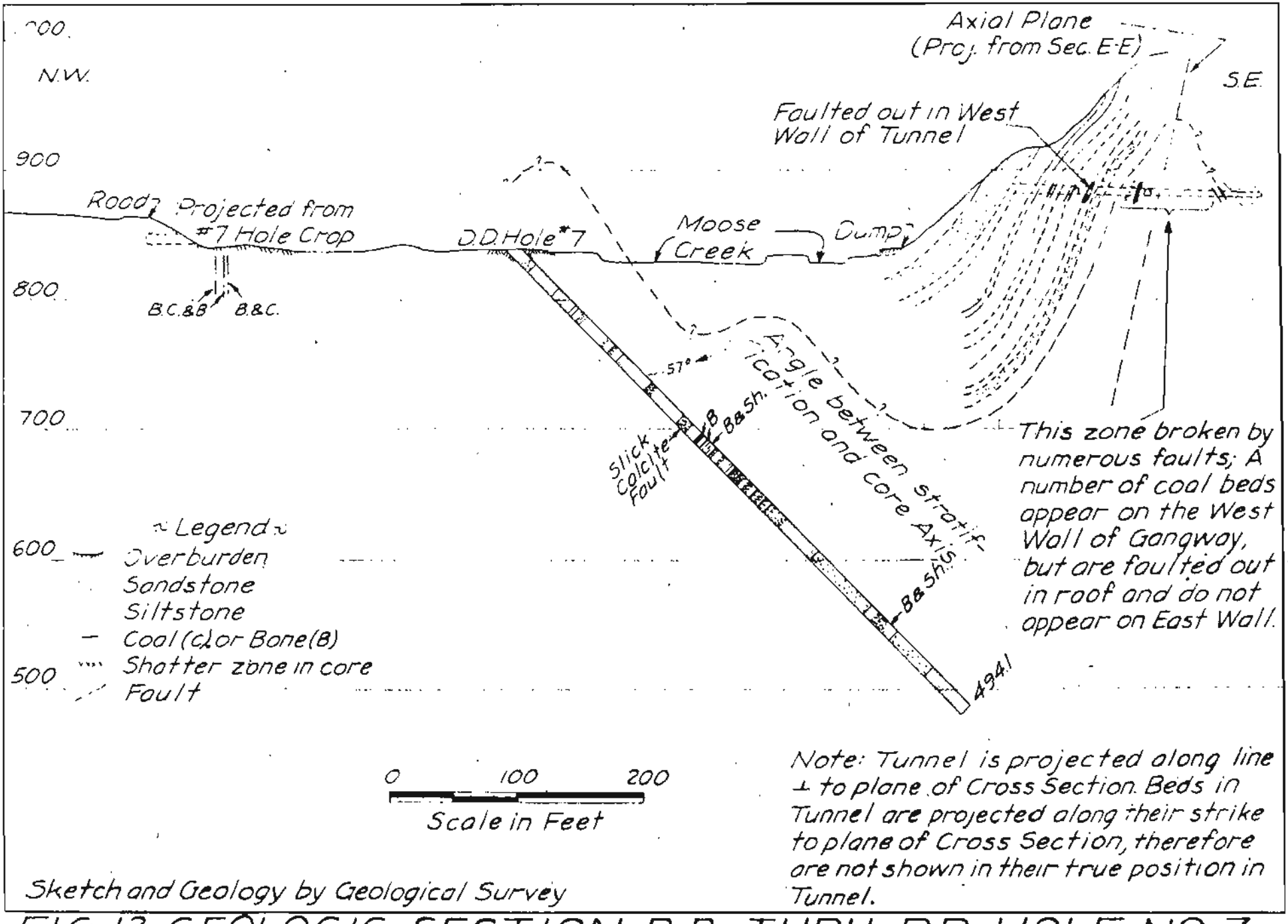

FIG. 12-GEOLOGIC SECTION B-B THRU D.D. HOLE NO. 7

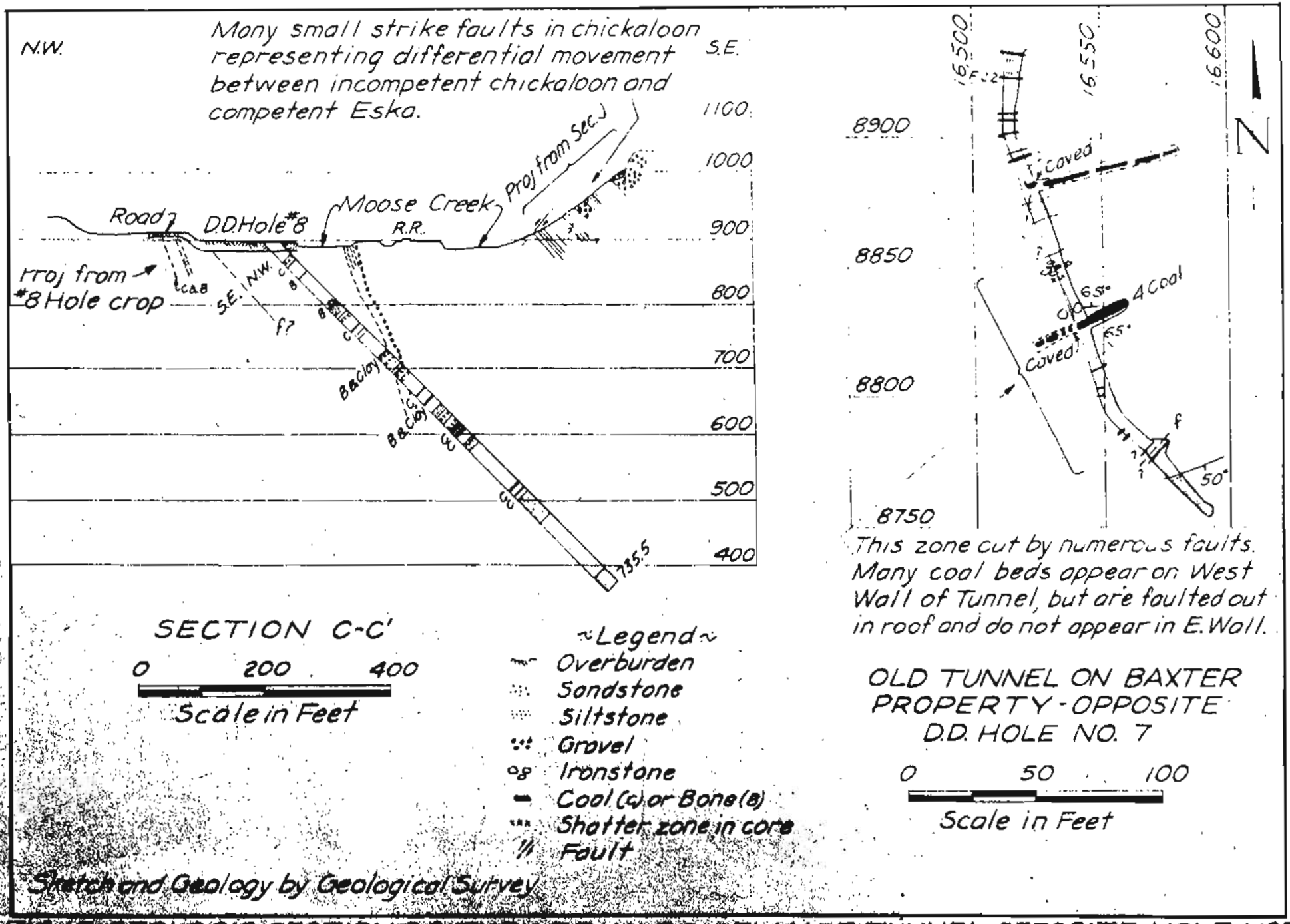

FIG. 11 GEOLOGIC SECTION C-C' THRU DD HOLE 8 & PLAN OF TUNNEL OPPOSITE HOLE NO. 7

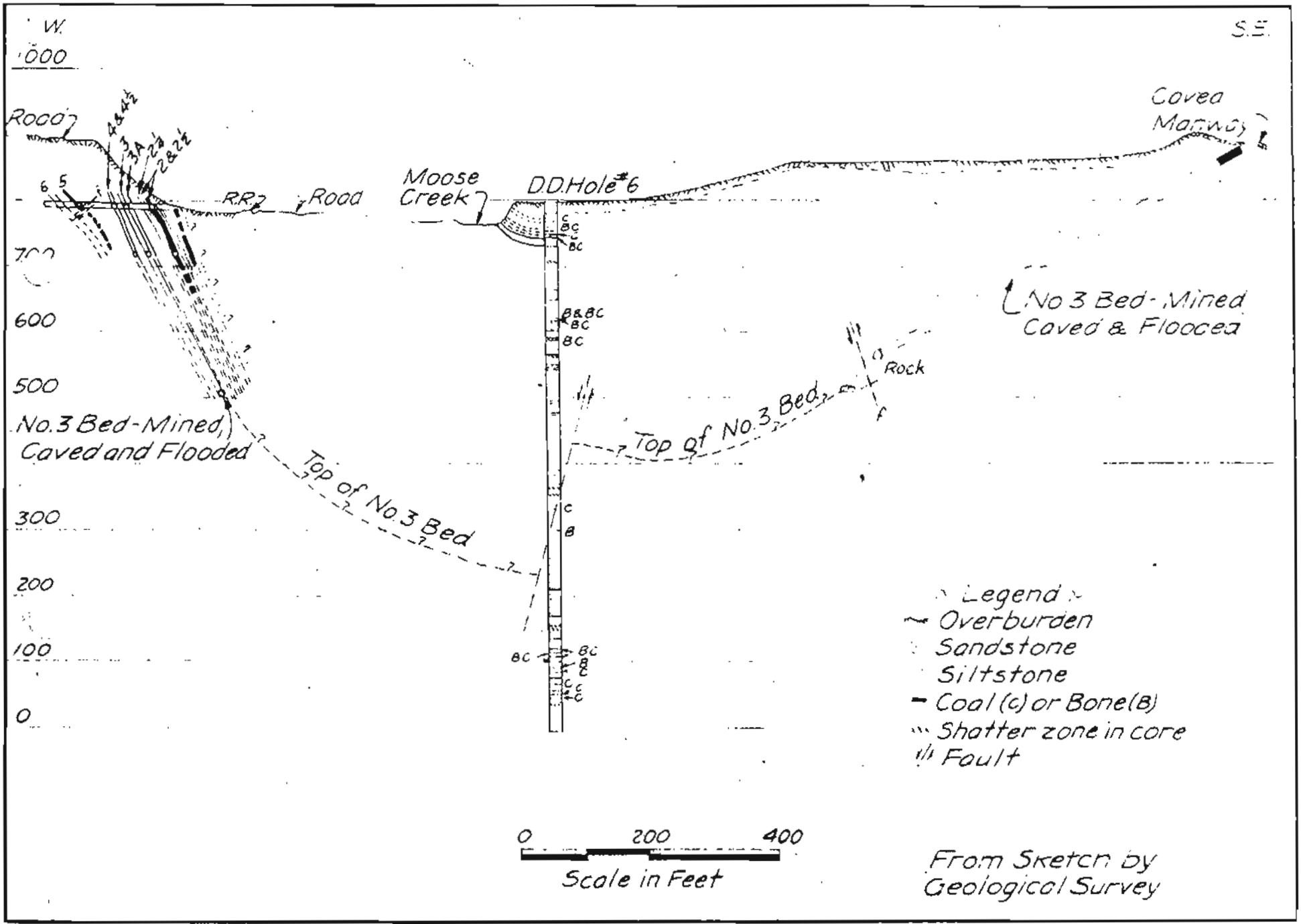

FIG. 14 - GEOLOGIC SECTION A-A' THRU D.D. HOLE NO. 6