CANADA
DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH
BUREAU OF MINES

DRILLING AND SAMPLING
OF
BITUMINOUS SANDS OF NORTHERN ALBERTA

Results of Investigations, 1942-1947

Vol. II: Detailed Drilling and Sampling Records

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WHEELER ISLAND AREA

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WHEELER ISLAND AREA

HOLE No. 1

DATE July 29-Aug. 14 1942 LOCATION Sec.18, Range 10, Tp.97 CO-ORDINATES ELEVATION 821.9' DEPTH 173' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	15.0	Fine, grey sand with boulders (glacial till)														
15.0	21.8	Oil Sand - lean - fishtailed through it	6.8													
21.8	22.3	Oil Sand	0.5	1	5.8	5.3	86.3	8.4		-	3.7	-	10.8	29.8	62.7	37.3
22.3	23.0	" "	0.7	2	5.6	5.1	86.1	8.8		-	3.9	-	18.3	35.1	65.5	34.5
23.0	23.8	" "	0.8	3	5.1	4.6	85.5	9.9		-	1.5	-	10.4	24.2	59.0	41.0
23.8	24.4	" "	0.6	4	12.8	11.5	78.4	10.1		-	0.5	-	3.7	9.9	61.3	38.7
24.4	25.3	" "	0.9	5	14.3	12.9	77.2	9.9		-	0.1	-	0.7	5.1	48.6	51.4
25.3	26.5	" "	1.2	6	11.6	9.3	70.9	19.8		-	0.1		1.1	9.3	57.8	42.2
26.5	27.5	" " - not sampled	1.0													
27.5	28.3	" " - some clay	0.8	7	2.0	1.7	83.9	14.4		-	-	-	-	-	9.8	90.2
28.3	29.0	Mostly Clay	0.7	8	1.0	0.9	87.2	11.9		Clay - not screened						
29.0	29.6	" "	0.6	9	0.9	0.8	90.1	9.1		Clay - not screened						
29.6	31.2	" "	1.6	10	2.7	2.4	85.9	11.7		Clay - not screened						
31.2	40.5	Hit water at 31.2' and fishtailed to 40.0' Drove 4" pipe to 40.5' - No samples	9.3													
40.5	41.0	Clay and Oil Sand	0.5	11	15.6	14.7	80.1	5.2		1.2	2.1	-	54.9	79.4	94.1	5.9
41.0	41.4	Oil Sand	0.4	12	17.7	17.4	81.1	1.5		0.5	0.9	-	49.5	85.4	94.7	5.3
41.4	42.0	" "	0.6	13	17.1	16.6	80.8	2.6		1.5	1.9	-	54.8	80.6	91.8	8.2
42.0	42.5	Clay	0.5	14	17.0	16.7	81.4	1.9		3.0	3.3	-	54.3	78.9	90.2	9.8
42.5	43.0	Oil Sand and Clay	0.5	15	13.1	12.5	82.6	4.9		Clay - not screened						
43.0	43.5	Clay	0.5	16	13.7	13.1	82.2	4.7		1.5	1.8	-	57.0	78.9	88.2	11.8
43.5	44.0	"	0.5	17	8.8	8.0	82.9	9.1		Clay - not screened						
44.0	46.5	"	2.5	18	7.6	7.1	86.8	6.1		Clay - not screened						
46.5	49.2	Oil Sand	2.7	19	12.8	12.3	83.5	4.2		0.7	0.9	-	47.5	69.8	82.4	17.6
49.2	51.8	" "	2.6	20	16.4	15.8	80.6	3.6		2.4	2.5	-	22.8	61.1	83.3	16.7
51.8	53.8	" "	2.0	21	14.9	13.9	79.6	6.5		-	0.1	-	8.5	43.3	76.8	23.2
53.8	54.5	" " - much water - not sampled	0.7													
54.5	58.6	" "	4.1	22	16.3	14.9	76.8	8.3		0.2	0.3	-	11.5	48.2	82.6	17.4
58.6	61.2	" " - wet sample	2.6	23	15.0	13.6	77.0	9.4		0.6	1.1	-	20.7	46.4	74.7	25.3
65.0		Special Oil Sand Sample by S.C. Ells								2.1	5.5	-	22.3	30.4	53.0	47.0

WHEELER ISLAND AREA

HOLE No. 1

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
61.2	70.0	Oil Sand, but used fishtail bit - only sand sample analysis	8.8													
70.0	75.0	Oil Sand - used fishtail bit - sand analysis only	5.0	24						5.7	7.6	-	49.7	75.8	87.2	12.8
75.0	80.0	Oil Sand - used fishtail bit - sand analysis only	5.0	25						1.5	2.2	-	53.5	72.4	85.5	14.5
80.0	85.0	Oil Sand - used fishtail bit - sand analysis only	5.0	26						3.3	4.6	-	54.5	75.0	87.2	12.8
85.0	90.0	Oil Sand - used fishtail bit - sand analysis only	5.0	27						2.2	3.6	-	38.9	69.3	84.0	16.0
90.0	95.0	Oil Sand - used fishtail bit - sand analysis only	5.0	28						0.1	0.2	-	12.2	55.7	83.8	16.2
95.0	100.0	Oil Sand - used fishtail bit - sand analysis only	5.0	29						0.2	0.3	-	10.7	30.6	59.1	40.9
100.0	105.0	Oil Sand - used fishtail bit - sand analysis only	5.0	30						0.8	1.1	-	15.0	38.1	70.3	29.7
105.0	111.5	Oil Sand - used fishtail bit - sand analysis only	6.5	31						0.2	0.4	-	20.9	51.0	77.1	22.9
111.5	120.0	Oil Sand - used fishtail bit - sand analysis only	8.5	32						0.2	0.6	-	14.6	39.7	80.0	20.0
120.0	130.0	Oil Sand - used fishtail bit - sand analysis only	10.0	33						0.2	0.5	-	9.7	34.6	77.0	23.0
130.0	140.0	Oil Sand - used fishtail bit - sand analysis only	10.0	34						0.6	1.4	-	32.7	47.1	73.0	27.0
140.0	150.0	Oil Sand - used fishtail bit - sand analysis only	10.0	35						1.5	2.5	-	20.7	46.3	68.7	31.3
150.0	160.0	Oil Sand - used fishtail bit - sand analysis only	10.0	36						1.4	2.7	-	28.4	55.2	76.5	23.5

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WHEELER ISLAND AREA

HOLE No. 1

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
160.0	170.0	Oil Sand - used fishtail bit - sand analysis only	10.0	37						0.6	1.4	-	17.4	36.8	62.3	37.7
170.0	173.0	Limestone at 173.0 ft.	3.0													
		End of Hole														
		Summary														
21.8	61.2	Oil Sand	39.4		11.7											32.7

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WHEELER ISLAND AREA

HOLE No. 2

DATE Aug.16-Sept. 15 1942 LOCATION Sec.13, Range 11, Tp.97 CO-ORDINATES ELEVATION 789.5' DEPTH 123.8' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	2.0	Sand														
2.0	6.0	Fine, grey sand with boulders - glacial till														
6.0	11.0	Fine-grained, brown oil sand-lean	5.0	1	9.5	8.9	84.5	6.6	8.0	1.5	3.2	13.8	26.6	36.6	45.8	54.2
11.0	14.0	Same as above - No apparent increase in bitumen	3.0	2	7.4	7.0	87.3	5.7	8.0	3.2	5.0	13.5	26.4	40.1	54.1	45.9
14.0	18.0	Wet, brown oil sand-slow seepage of water	4.0	3	9.8	9.0	82.9	8.1	8.0						21.2	78.8
18.0	22.5	Wet, brown oil sand-marcasite nodule at 19' 10"	4.5	4	11.8	11.3	84.5	4.2	7.8	23.3	33.4	51.3	65.8	76.0	84.7	15.3
22.5	33.0	Too wet to sample	10.5													
33.0	37.0	Wet, brown oil sand, but no flow of water	4.0	5	Screen analysis only					21.7	27.3	41.0	67.2	86.1	93.7	6.3
37.0	38.5	Wet, brown oil sand - fine grained	1.5	6	Screen analysis only					0.8	0.9	4.3	39.8	69.2	82.9	17.1
38.5	48.0	Wet oil sand - no samples taken	9.5													
48.0	54.0	Fine-grained oil sand-lean on top but increases in bitumen	6.0	7	12.1	10.5	76.2	13.3	8.0	0.6	1.3	8.2	38.7	64.4	85.1	14.9
54.0	60.0	Dry, fine-grained oil sand- water stopped by 4" casing	6.0	8	16.2	14.8	76.7	8.5	7.6	0.1	0.2	9.1	60.3	79.8	88.2	11.8
60.0	65.0	Predominantly clay - has bitumen smell - much water	5.0	9	15.9	14.8	78.2	7.0	8.0	0.9	2.2	10.2	39.5	64.1	81.4	18.6
65.0	70.6	Oil sand - apparently not rich in bitumen - 4" casing 68.5'	5.6	10	13.0	11.8	78.8	9.4	8.0	0.6	0.7	1.0	11.7	45.6	79.1	20.9
70.6	73.0	No sample - dropped off auger before reaching surface	2.4													
73.0	75.0	Dry oil sand - fine grained - 3" auger now used	2.0	11	16.6	15.4	77.1	7.5	8.0	0.1	0.2	0.5	4.9	42.1	79.7	20.3
75.0	79.3	Oil sand - slow water seepage	4.3	12	15.4	14.1	77.3	8.6	8.0	0.1	0.2	0.6	10.1	46.7	82.1	17.9
79.3	84.5	Oil sand - slow water seepage - sample damp	5.2	13	13.9	12.5	77.5	10.0	8.0	0.6	0.9	2.3	11.9	40.3	76.7	23.3
84.5	90.0	Dry, oil sand - some streaks of pure bitumen	5.5	14	17.5	16.2	76.6	7.2	8.0	0.1	0.3	0.8	11.2	52.8	83.2	16.8

WHEELER ISLAND AREA

HOLE No. 2

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
90.0	95.0	Oil sand - slow water flow	5.0	15	16.9	15.7	77.3	7.0	8.0	0.1	0.1	0.2	7.5	41.0	79.8	20.2
95.0	98.2	" " - medium grained	3.2	16	16.2	14.8	76.4	8.8	8.0	0.3	1.3	7.2	21.6	58.8	85.7	14.3
98.2	103.0	Light, grey clay and soft shale	4.8	17	1.4	1.2	84.6	14.2	Alk.						6.4	93.6
103.0	107.5	Soft, plastic clay	4.5	18	5.2	4.5	81.3	14.2	Alk.	-	-	-	-	-	3.8	96.2
107.5	111.5	Soft shale-lignite band 110'-110.5' lean oil sand below	4.0	19	2.5	2.0	77.1	20.9	Alk.	-	-	-	-	-	31.9	68.1
111.5	115.5	Dry, light-grey clay changing to dark brown, soft shale	4.0	20	0.4	0.3	85.2	14.5	Alk.	-	-	-	-	-	3.2	96.8
115.5	115.7	Marcasite nodule	0.2													
115.7	121.3	Dry, fine-grained, chocolate-colored shale-definite signs of cleavage - at bottom of sample, shale is darker and coarser	5.6	21	0.5	0.4	82.5	17.1	Alk.	-	-	-	-	-	2.8	97.2
121.3	123.8	Same as above with some lignite	2.5	22	3.6	3.2	84.9	11.9	Alk.	-	-	-	-	-	3.0	97.0
		End of Hole Definite smell of gas when 3" casing was being pulled.														
		Summary														
18.0	98.2	Oil Sand	80.2		14.9											17.6

WHEELER ISLAND AREA

HOLE No. 3

DATE Sept.18-Nov.10 1942 LOCATION LS.5,Sec.19-97-10 CO-ORDINATES ELEVATION 830.0' DEPTH 158.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	23.0	Gravel and sand - layer of oil sand overlain by 6" sandstone	23.0													
23.0	24.0	Clay with smell of bitumen	1.0													
24.0	28.3	Clay - with some bitumen	4.3	1	1.9	1.7	88.7	9.6	8.0x						28.1	71.9
28.3	31.7	Clay - some bitumen, brown color	3.4	2	2.1	1.9	89.0	9.1	8.0x						26.0	74.0
31.7	36.3	Clay and oil sand. Definite change to oil sand at 33.7' - wet.	4.6	3	2.6	2.3	84.6	13.1	8.0x						37.7	62.3
36.3	41.7	Oil sand mixed with clay - damp	5.4	4	8.4	7.6	82.4	10.0	8.0x						69.3	31.7
41.7	47.0	Oil sand mixed with clay - wet	5.3	5	6.8	6.2	83.8	10.0	8.0x						28.7	71.3
47.0	48.3	Oil sand - rich, coarse, dry	1.3	6	10.4	9.6	82.3	8.1	8.0x						75.0	25.0
48.3	53.0	Oil sand - dark, coarse and dry	4.7	7	14.1	13.9	84.4	1.7	8.0x	16.9	24.2	29.5	34.0	47.1	80.8	19.2
53.0	58.0	Oil sand - dark, coarse and damp (Water at 58'-4" casing to 61')	5.0	8	12.6	11.6	80.1	8.3	8.0	32.0	41.0	51.0	58.2	70.0	88.4	11.6
58.0	63.0	Oil sand - dark, coarse and dry	5.0	9	13.7	13.0	81.8	5.2	8.0	2.4	31.6	43.0	60.7	75.8	88.7	11.3
63.0	70.0	Oil sand - dark, coarse and damp (Nodule at 65.5', water at 66.0' shut-off with 3" casing)	7.0	10	14.1	13.4	81.4	5.2	8.0	2.3	2.8	4.2	16.3	45.5	76.5	23.5
70.0	74.0	Oil sand mixed with clay (Water at 73' shut off with 3" casing)	4.0	11	12.0	11.1	81.2	7.7	8.0	6.2	7.9	10.6	21.5	50.5	78.4	21.6
74.0	75.0	Nodule - chopped with fishtail bit	1.0													
75.0	80.0	Oil sand - dark, fine and dry	5.0	12	16.1	14.8	77.1	8.1	8.0	5.6	6.6	9.7	28.8	61.6	86.9	13.1
80.0	85.0	Oil sand - part of sample wet Water at 83' shut off with 2¼" casing	5.0	13	15.8	14.3	76.3	9.4	7.6	27.1	31.5	36.4	50.2	67.0	83.9	16.1
85.0	90.0	Oil sand, some clay. (2¼" casing driven down to shut off water)	5.0	14	10.7	10.1	84.2	5.7	8.3						63.8	26.2
90.0	93.0	Oil sand mixed with clay - damp.	3.0	15	12.2	11.4	82.1	6.5	8.6						52.4	47.6
93.0	95.0	Oil sand but too wet to sample	2.0													
95.0	97.0	Oil sand with clay - wet.	2.0	16	9.0	7.6	76.8	15.6	8.6						34.2	65.8

WHEELER ISLAND AREA

HOLE No. 3

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
97.0	98.0	Oil sand - too wet to sample Water at 97' shut off with 2¼" casing	1.0													
98.0	103.0	Oil sand - dry and rich	5.0	17	13.7	12.7	80.0	7.3	8.8	0.8	1.2	2.7	10.6	26.3	52.6	47.4
103.0	107.0	Oil sand - dry and rich Water at 1-7' shut off with 2¼" casing	4.0	18	14.1	13.1	80.0	6.9	8.9	9.7	12.4	22.0	38.7	57.5	74.8	25.2
107.0	107.6	Oil sand, wet, coarse and rich	0.6	19	14.0	12.9	79.2	7.9	8.6	18.4	38.0	52.6	72.4	79.0	85.4	14.6
107.6	108.6	Oil sand, dry, coarse and rich	1.0	20	11.7	11.5	87.2	1.3	9.0	33.6	40.0	50.7	69.3	81.6	88.3	11.7
108.6	110.0	Oil sand - wet. Water at 110 feet	1.4	21	9.7	8.9	82.6	8.5	8.8	30.3	36.2	43.7	53.1	62.1	66.8	33.2
110.0	113.0	Oil sand - dry. Water at 113 feet shut off with 2¼" casing	3.0	22	11.3	10.9	85.9	3.2	9.3	52.7	58.1	64.2	74.3	81.3	86.9	13.1
113.0	118.0	Oil sand - dry	5.0	23	13.2	12.8	84.0	3 2	8 9	21.8	27.2	37.4	61.6	74.2	81.9	18.1
118.0	121.5	Oil sand, some clay, wet. Water at 119' shut off with 2¼" casing	3.5	24	10.5	9.4	80.3	10.3	9.3	26.1	31.0	38.0	53.7	64.2	70.6	29.4
121.5	123.5	Oil sand, some clay - dry	2.0	25	8.2	7.8	87.9	4.3	9.3	28.7	32.1	36.9	47.5	56 2	65.8	34.2
123.5	125.5	Oil sand - wet (separated)	2.0	26	12.8	11.5	78.0	10.5	8.3	22.1	28.7	42 2	65 8	79.0	84.9	15.1
125.5	128.0	Oil sand - dry. Water at 128' shut off with 2¼" casing	2.5	27	14.1	13.7	83.5	2.8	8.6	9.3	14.2	26.0	54.4	74.6	83.7	16.3
128 0	129.0	Oil sand - wet (separated)	1.0	28	15.1	13.1	73.8	13.1	8.2	13.7	17.7	28.1	57.2	67.5	76.9	23.1
129.0	131.5	Oil sand - dry	2.5	29	14.9	14.7	83.9	1.4	8.0	11.6	16.6	34.3	60.9	75.2	83.8	16.2
131.5	133.0	Oil sand wet (separated) Water at 133' shut off with 2¼" casing.	1.5	30	13.1	11.6	76.9	11.5	8.3	24.3	28.0	41.9	61.6	74.5	80.8	19.2
133.0	137.0	Oil sand - dry and coarse	4.0	31	15.9	15.2	80.6	4.2	8.0	8.0	20.4	31.9	57.2	63.8	68.6	31.4
137.0	141.0	Oil sand - dry	4.0	32	16.0	14.7	77.4	7.9	7.7	18.1	40.9	69.3	84.9	88.2	91.0	9.0
141.0	143.0	Oil sand - wet	2.0	33	14.1	12.6	76.7	10.7	8.2	39.3	53.8	72.5	87.0	90.3	92.4	7.5
143.0	145.0	Coarse gravel and clay	2.0													
145.0	148.0	Clay grading into shale	3.0													
148.0	157.0	Shale - dark colored	9.0													
157.0	158.0	Limestone - cored with diamond bit	1.0													

WHEELER ISLAND AREA

HOLE No. 3

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
		Summary														
0.0	24.0	Overburden	24.0													
24.0	36.3	Clay and oil sand	12.3		2.2											68.8
36.3	143.0	Oil sand	106.7		12.6											26.3
143.0	157.0	Shale and clay	14.0													
157.0	158.0	Limestone	1.0													

WHEELER ISLAND AREA

HOLE No. 4

DATE Oct. 20-Nov. 26 1942 LOCATION LS.15, Sec. 19-97-10 CO-ORDINATES ELEVATION 828.2' DEPTH 167.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	10.5	Overburden, sand, gravel, boulders	10.5													
10.5	15.6	Plastic clay with some bitumen	5.1	1	0.4	0.3	85.7	14.0	6.4						18.2	81.8
15.6	18.0	No sample - too much water	2.4													
18.0	23.0	Oil sand - fine grained	5.0	2	12.1	10.9	78.3	10.8	6.7						29.0	71.0
23.0	28.0	Clay - dry, carrying some bitumen (24.0-26.0 no sample, cored)	5.0	3	6.3	5.4	80.1	14.5	7.8						11.6	88.4
28.0	33.0	Clay - dry, carrying some bitumen rock - 29.0'. Water 29.5' shut off with 3" casing.	5.0	4	0.9	0.8	87.2	12.0	8.5						15.2	84.0
33.0	38.0	Clay - dry, carrying bitumen	5.0	5	2.0	1.8	87.3	10.9	8.7						9.8	90.2
38.0	43.0	Clay - wet, a little bitumen (Gas caught fire at casing)	5.0	6	2.9	2.6	85.5	11.9	8.6						6.4	93.6
43.0	43.4	Nodule - used fishtail bit	0.4													
43.4	45.5	Oil sand with clay	2.1	7	3.1	2.8	87.0	10.2	9.0	1.0	1.0	1.0	2.8	4.8	11.4	88.6
45.5	48.0	Nodule - used fishtail bit	2.5													
48.0	53.0	Oil sand, dry, fine grained	5.0	8	14.3	13.4	80.4	6.2	8.8	1.6	2.4	7.4	38.8	62.8	75.6	24.4
53.0	56.0	Oil sand, little clay - dry Water @ 56' shut off with 3" casing	3.0	9	12.0	11.1	81.7	7.2	8.9	1.8	2.2	4.6	25.8	45.6	60.0	40.0
56.0	57.0	Oil sand - wet (separated)	1.0	10	9.4	7.8	74.8	17.4	7.7	2.0	2.4	5.0	51.6	68.2	76.4	23.6
57.0	60.5	Oil sand, some clay - dry	3.5	11	3.0	2.7	86.6	10.7	8.7						13.1	86.9
60.5	61.5	No sample - too much water Water at 61' shut off with 3" casing	1.0													
61.5	62.5	Oil sand - wet (separated)	1.0	12	14.9	13.3	75.7	11.0	7.1	8.2	10.2	14.4	56.2	78.0	86.2	13.8
62.5	67.5	Oil sand some clay - dry	5.0	13	14.8	13.8	79.3	6.9	7.9	1.4	2.0	3.6	25.4	41.2	61.2	38.8
67.5	72.5	Oil sand - damp. (Water at 72.5' shut off with 3" casing)	5.0	14	11.5	10.5	80.7	8.8	8.3	0.4	0.6	1.0	13.8	34.8	50.4	49.6
72.5	77.0	Oil sand - wet. (Water at 77.0' shut off with 3" casing)	4.5	15	10.7	9.8	81.9	8.3	8.4	1.8	2.2	3.0	9.4	27.4	52.4	47.6
77.0	78.0	No sample - water shut off with 3" casing	1.0													
78.0	83.0	Oil sand, some clay. (Water at 79.7' shut off with 3" casing)	5.0	16	11.3	10.8	85.0	4.2	8.9	4.0	4.8	6.6	18.8	37.2	58.4	41.6

WHEELER ISLAND AREA

HOLE No. 4

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
83.0	86.5	Oil sand - dry	3.5	17	11.9	11.1	81.5	7.4	8.3	1.3	1.6	2.1	6.6	18.1	51.1	48.9
86.5	88.0	Rock or nodule - no sample	1.5													
88.0	91.0	Oil sand - dry, coarse	3.0	18	17.7	16.9	78.7	4.4	8.0	4.4	4.6	7.0	28.4	57.0	79.4	20.6
91.0	96.0	Oil sand - damp. Water @ 93.5'	5.0	19	13.5	12.4	79.3	8.3	8.0	3.0	3.6	5.0	13.8	31.8	54.8	45.2
96.0	96.5	Oil sand - dry	0.5	20	16.4	15.2	77.7	7.1	8.0	1.8	2.0	3.0	11.2	39.2	72.4	27.6
96.5	97.0	Rock or nodule	0.5													
97.0	102.0	Oil sand, some clay - damp	5.0	21	3.1	2.7	84.6	12.7	8.0						20.8	79.2
102.0	107.0	Oil sand - dry	5.0	22	2.6	2.3	86.9	10.8	8.5						16.4	83.6
		Rock at 103.8' and 104.7'														
107.0	112.0	Oil sand, some clay	5.0	23	3.6	3.3	87.4	9.3	8.9						17.2	82.8
112.0	113.0	Wet oil sand and clay. No sample	1.0													
113.0	114.4	Rock - sandstone	1.4													
114.4	116.7	Wet oil sand and clay - no sample	2.3													
116.7	121.5	Oil sand, some clay - dry	4.8	24	6.7	6.0	82.7	11.3	8.7						35.8	64.2
		Water @ 120' shut off with 2¼" casing														
121.5	123.0	Oil sand, some clay - dry	1.5	25	12.8	11.5	78.1	10.4	NSS						46.6	55.4
123.0	125.2	No sample - too much water	2.2													
125.2	128.0	Oil sand, some clay - wet	2.8	26	4.3	3.7	81.7	14.6	NSS						20.6	79.4
128.0	129.0	No sample - too much water	1.0													
129.0	132.0	Oil sand, some clay - damp. (Water @ 130' shut off with 2¼" casing)	3.0	27	5.9	5.2	81.5	13.3	8.7						33.8	66.2
132.0	135.6	Water and flowing sand - no sample	3.6													
135.6	137.0	Oil sand, some clay - wet (Separated)	1.4	28	17.3	15.0	71.5	13.5	NSS	1.4	1.4	3.2	28.6	58.4	76.4	23.6
137.0	139.5	Oil sand, some clay - wet	2.5	29	17.2	15.2	83.4	11.4	7.7	0.6	0.6	2.2	15.6	34.0	47.6	52.4
139.5	140.5	Oil sand, some clay - dry	1.0	30	3.6	3.3	88.5	8.2	8.4	1.6	2.0	5.6	20.6	32.0	44.0	56.0
140.5	142.1	Oil sand - dry	1.6	31	15.5	14.7	80.3	5.0	8.4	0.9	1.7	20.2	61.0	69.0	76.6	23.4
142.1	143.0	Set 2¼" casing - no sample	0.9													
143.0	145.5	Oil sand - dry	2.5	32	21.0	19.6	73.9	6.5	7.8	1.9	3.2	27.1	70.4	78.2	83.8	16.2
145.5	153.0	Dark colored shale	7.5	33	3.5	3.2	87.4	9.4	8.3	No screen analysis						

WHEELER ISLAND AREA

HOLE No. 4

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
153.0	165.0	Shale - dark colored	12.0													
165.0	166.0	Sandstone	1.0													
166.0	167.0	Shale, dark colored	1.0													
		Summary														
0.0	18.0	Overburden	18.0													
18.0	48.0	Clay and oil sand	30.0		4.2											83.4
48.0	96.5	Oil sand	48.5		11.7											42.6
96.5	135.6	Oil sand and clay	39.1		5.4											71.3
135.6	145.5	Oil sand - high grade	9.9		16.6											31.9
145.5	167.0	Shale, some sandstone	21.5													

WHEELER ISLAND AREA

HOLE No. 5

DATE Oct. 23-Nov. 18 1942 LOCATION LS 14-19-97-10 CO-ORDINATES ELEVATION 824.4' DEPTH 161.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	20.0	Overburden - gravel, sand, boulders	20.0													
20.0	27.6	Clay - contains streaks of oil sand	7.6													
27.6	30.0	Clay - some bitumen - dry	2.4	1	5.7	5.2	86.1	8.7	8.7						23.2	76.8
30.0	34.3	Clay - some bitumen - dry	4.3	2	5.2	4.8	87.0	8.2	9.1						33.8	66.2
34.3	34.9	Rock - used chopping bit	0.6													
34.9	40.0	Clay - some bitumen - dry	5.1	3	3.1	2.8	88.1	9.1	8.9						19.8	80.2
40.0	45.0	Oil sand - some clay - dry	5.0	4	6.7	6.2	85.6	8.2	8.7						41.0	59.0
45.0	50.0	Oil sand - some clay - dry	5.0	5	9.8	9.1	83.4	7.5	8.7						36.8	63.2
50.0	55.0	Clay - carrying some bitumen - dry	5.0	6	6.7	6.1	85.4	8.5	8.7						31.0	69.0
55.0	60.0	Clay - carrying some bitumen - dry	5.0	7	1.9	1.7	89.5	8.8	8.8						15.4	84.6
60.0	65.0	Clay - layers of coarse oil sand	5.0	8	7.1	6.6	85.8	7.6	8.9						36.0	64.0
65.0	66.0	No sample - too much water	1.0													
66.0	70.0	Oil sand - considerable clay - dry	4.0	9	2.5	2.3	89.1	8.6	8.9						23.4	76.6
70.0	75.0	Oil sand - considerable clay - dry	5.0	10	12.3	11.6	82.9	5.5	8.9	0.6	0.8	1.2	8.0	25.2	49.6	50.4
75.0	80.0	Clay - some layers oil sand - dry	5.0	11	3.7	3.3	86.9	9.8	9.0						21.5	78.5
80.0	85.0	Clay - some oil sand - dry	5.0	12	0.5	0.5	91.2	8.3	8.9						14.2	85.8
85.0	85.7	Clay - some oil sand - dry	0.7	13	2.2	2.0	89.4	8.6	8.9						33.2	66.8
85.7	91.0	Rock - fine grained sandstone	5.3													
91.0	96.0	Oil sand - some considerable clay	5.0	14	5.4	5.0	87.5	7.5	8.9						25.8	74.2
96.0	99.0	Oil sand - considerable clay - dry	3.0	15	6.2	5.8	87.4	6.8	8.8						34.8	65.2
99.0	125.3	Rock - sandstone or clay - no cuttings	26.3													
125.3	128.0	Oil sand - wet, coarse (Water shut off with 2¼" casing)	2.7	16	13.9	12.7	78.8	8.5	8.2	40.4	48.2	64.6	81.2	88.0	91.0	9.0
128.0	128.5	Rock - sandstone or hard clay	0.5													
128.5	128.9	Oil sand (not sampled)	0.4													
128.9	135.0	Sand - coarse sand with layers of tar. No sample	6.1													
135.0	160.0	Shale	25.0													
160.0	161.0	Limestone - cored with diamond bit	1.0													

WHEELER ISLAND AREA

HOLE No. 5

DATE ....194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
		Summary														
0.0	27.6	Overburden	27.6													
27.6	99.0	Clay and oil sand	71.4		5.0											70.8
99.0	125.3	Sandstone	26.3													
125.3	128.0	Oil sand	2.7		13.9											9.0
128.0	160.0	Sandstone, clay, oil sand	32.0													
160.0	161.0	Limestone	1.0													

WHEELER ISLAND AREA

HOLE No. 6

DATE Oct. 30-Nov. 22 1942 LOCATION LS.8, Sec. 30-97-10 CO-ORDINATES ELEVATION 828.9' DEPTH 94.5' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	5.0	Overburden, gravel, sand, boulders	5.0													
5.0	9.0	Oil sand - dry (No sample)	4.0													
9.0	15.0	Oil sand - damp, fine grained	6.0	1	14.6	13.5	79.0	7.5	7.6	1.0	1.1	1.5	19.3	50.5	75.3	24.7
15.0	20.0	Oil sand - damp, fine grained	5.0	2	13.3	12.2	78.9	8.9	7.0	0.2	0.3	0.9	28.1	61.5	80.5	19.5
20.0	25.0	Oil sand, some clay, damp	5.0	3	11.6	10.4	78.6	11.0	7.1	1.6	2.0	3.8	28.0	57.4	75.2	24.8
25.0	30.0	Oil sand - damp	5.0	4	14.4	12.9	76.6	10.5	6.8	0.8	1.2	2.8	23.2	52.8	77.2	22.8
30.0	33.6	Oil sand - dry	3.6	5	10.3	9.4	81.5	9.1	7.2	10.8	17.2	24.6	41.4	57.2	69.6	30.4
33.6	37.0	No sample - too much water	3.4													
37.0	39.5	Oil sand - wet	2.5	6	14.3	12.3	73.6	14.1	7.4	2.0	2.8	7.0	46.2	70.6	82.8	17.2
39.5	43.0	Oil sand - dry	3.5	7	13.8	12.3	76.7	11.0	7.6	1.9	3.0	10.4	40.0	63.0	77.5	22.5
43.0	46.7	Oil sand - damp	3.7	8	13.1	11.8	78.5	9.5	7.5	9.4	11.8	20.8	45.4	65.0	77.4	22.6
46.7	52.0	Oil sand, dry, coarse	5.3	9	14.3	13.4	80.3	6.3	7.4	20.4	31.0	57.0	77.2	84.8	89.0	11.0
52.0	56.5	Oil sand - has a little clay - damp	4.5	10	13.9	12.8	79.3	7.9	7.3	26.8	39.6	55.8	74.8	84.0	88.4	11.6
56.5	63.2	Broken auger - no sample	6.7													
63.2	67.0	Oil sand - dry	3.8	11	16.2	14.8	76.5	8.7	7.4	4.4	6.2	17.4	63.0	83.0	89.8	10.2
67.0	69.3	Oil sand - dry	2.3	12	9.3	8.2	79.8	12.0	8.3	1.2	1.9	5.5	26.9	42.4	60.5	39.5
69.3	72.7	Oil sand - dry	3.4	13	12.5	11.1	77.5	11.4	8.3	2.5	3.8	12.1	56.1	75.0	82.8	17.2
72.7	73.3	No sample - lost in chopping	0.6													
73.3	75.7	Oil sand - wet	2.4	14	16.9	14.9	73.2	11.9	7.7	4.1	10.9	36.2	77.4	86.9	90.7	9.3
75.7	77.5	No sample - lost in chopping	1.8													
77.5	80.0	Oil sand - damp	2.5	15	9.8	8.7	80.0	11.3	8.4	2.5	5.9	18.7	45.8	56.1	63.4	36.6
80.0	84.0	No sample - lost in setting pipe	4.0													
84.0	86.5	Oil sand - dry and coarse	2.5	16	13.4	12.5	80.4	7.1	8.0	33.6	52.2	74.4	83.8	88.6	91.3	8.7
86.5	88.0	Oil sand - dry and coarse	1.5	17	13.3	12.2	79.4	8.4	7.3	49.6	67.7	81.6	89.1	92.9	95.1	4.9
88.0	88.7	Oil sand - no sample	0.7													
88.7	94.0	Nodule, clay, shale	5.3													
94.0	94.5	Limestone	0.5													

WHEELER ISLAND AREA

HOLE No. 6

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
		Summary														
0.0	9.0	Overburden	9.0													
9.0	88.0	Oil Sand	79.0		13.4											19.4
88.0	94.0	Shale, nodules, oil sand	6.0													
94.0	94.5	Limestone	0.5													

WHEELER ISLAND AREA

HOLE No. 7

DATE Nov.12-Dec.27 1942 LOCATION L.S.12, Sec.29-97-10 CO-ORDINATES ELEVATION 819.6' DEPTH 162.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	17.6	Overburden - gravel and sand	17.6													
17.6	20.4	Oil sand - has considerable clay	2.8	1	5.6	5.1	86.3	8.6	7.8						18.0	82.0
20.4	22.0	No sample - rock	1.6													
22.0	27.0	Oil sand - dry	5.0	2	8.4	7.6	83.3	9.1	7.6						39.7	60.3
27.0	32.0	Oil sand - damp	5.0	3	13.4	12.3	80.2	8.5	6.6						59.7	40.3
32.0	37.0	Oil sand - damp	5.0	4	11.8	11.2	84.1	4.7	6.8						53.2	46.8
37.0	42.0	Oil sand, considerable clay bands	5.0	5	5.7	5.2	86.6	8.2	7.8						37.4	62.6
42.0	47.0	Oil sand, clay lenses - dry	5.0	6	7.0	6.5	86.5	7.0	8.0						42.4	57.6
47.0	52.0	Oil sand, some clay - dry	5.0	7	4.7	4.3	87.5	8.2	8.1						32.0	68.0
52.0	57.0	Clay, little oil sand - dry	5.0	8	8.8	8.2	85.4	6.4	7.8						30.2	69.8
		Duplicate		08	9.5	8.9	84.6	6.5	7.6						34.0	66.0
57.0	62.0	Oil sand, clay lenses - dry	5.0	9	12.5	11.7	81.8	6.5	8.0						56.0	44.0
62.0	67.0	Clay, little oil sand - dry	5.0	10	4.2	3.8	87.4	8.8	8.0						17.0	83.0
67.0	72.0	Clay, little oil sand - dry	5.0	11	5.1	.6	85.8	9.6	8.0	(59.4% - 300 mesh)					31.2	68.8
72.0	77.0	Oil sand, little clay - dry	5.0	12	4.1	.8	88.3	7.9	7.9						41.6	58.4
77.0	82.0	Oil sand, clay bands - dry	5.0	13	7.5	.1	87.8	5.1	7.8						56.6	43.4
82.0	87.0	Oil sand - dry	5.0	14	9.7	9.2	86.5	4.2	7.4	0.2	0.2	0.5	8.8	45.5	61.3	38.7
87.0	89.9	Oil sand, little clay - dry	2.9	15	7.3	7.0	89.5	3.5	6.8	0.1	0.1	0.4	10.5	45.7	59.4	40.6
89.9	92.9	No samples - lost in chopping	3.0													
92.9	95.9	Oil sand - wet	3.0	16	12.1	11.0	79.9	9.1	7.2	0.4	0.5	0.9	20.7	61.4	73.5	26.5
		Auger broke at 95.9 feet														
95.9	107.0	Clay, tough and sticky	11.1													
107.0	113.0	Oil sand, coarse, rich - no sample	6.0													
113.0	130.0	Clay, tough and sticky	17.0													
130.0	132.0	Oil sand, coarse, rich - no sample	2.0													
132.0	138.0	Clay, tough and sticky	6.0													
138.0	140.0	Oil sand, coarse, rich - no sample	2.0													
140.0	161.5	Coarse gravel with quartz pebbles and pyrite.	21.5													
161.5	162.0	Limestone	0.5													

WHEELER ISLAND AREA

HOLE No. 7

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
		Summary														
0.0	17.6	Overburden	17.6													
17.6	95.9	Oil sand - low grade	78.3		7.9											55.5
95.9	140.0	Clay with oil sand lenses	44.1													
140.0	161.5	Coarse gravel and sand	21.5													
161.5	162.0	Limestone	0.5													

WHEELER ISLAND AREA

HOLE No. 8

DATE Nov. 22-Dec. 17 1942 LOCATION LS. 2, Sec. 32-97-10 CO-ORDINATES ELEVATION 833.1' DEPTH 155.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	6.0	Overburden - gravel, oxidized sand	6.0													
6.0	8.6	Oil sand - dry	2.6	1	12.7	11.9	81.9	6.2	4.6	0.4	0.6	1.0	3.2	27.4	66.4	33.6
8.6	10.8	Rock or compact clay - no sample	2.2													
10.8	13.2	Oil sand - dry	2.4	2	11.9	11.0	81.5	7.5	5.9	0.4	0.4	0.6	2.6	23.6	57.6	42.4
13.2	15.8	Oil sand - dry	2.6	3	14.3	13.8	82.6	3.6	7.4	-	-	0.4	3.2	23.6	60.2	39.8
15.8	18.2	Oil sand, little clay - dry	2.4	4	13.0	12.3	82.5	5.2	6.7	-	-	0.4	9.4	31.4	52.6	47.4
18.2	19.5	Oil sand, little clay - dry (Water @ 18.5' shut off with 3" casing)	1.3	5	7.4	6.6	82.9	10.5	6.7						32.8	67.2
19.5	20.0	No sample - lost in setting pipe	0.5													
20.0	22.5	Clay, some bitumen - dry	2.5	6	0.5	0.4	87.2	12.4	7.0						10.4	89.6
22.5	25.0	Clay, some bitumen - dry	2.5	7	3.3	3.0	86.8	10.2	5.9						24.6	75.4
25.0	27.5	Clay, some bitumen - dry	2.5	8	5.2	4.7	86.2	9.1	6.4						19.0	81.0
27.5	30.0	Clay, some bitumen - dry	2.5	9	5.5	5.0	85.9	9.1	6.5						20.4	79.6
30.0	32.5	Clay, little oil sand - dry	2.5	10	7.2	6.4	83.0	10.6	6.9						33.6	66.4
32.5	35.0	Clay, little oil sand - dry	2.5	11	8.1	7.5	84.7	7.8	6.7						37.2	62.8
35.0	37.5	Clay, little oil sand - dry	2.5	12	5.3	4.8	85.4	9.8	6.9						23.2	76.8
37.5	39.0	No sample - lost	1.5													
39.0	44.0	Oil sand, some clay layers - dry	5.0	13	7.9	7.5	87.1	5.4	7.3						37.8	62.2
44.0	46.0	Sample lost chopping and setting 3" casing	2.0													
46.0	51.0	Oil sand, little clay - dry	5.0	14	10.2	9.6	84.7	5.7	7.4						57.2	42.8
51.0	53.7	Oil sand, some clay - dry	2.7	15	7.1	6.6	86.4	7.0	7.8						40.0	60.0
53.7	57.6	Rock - sandstone	3.9													
57.6	60.5	Oil sand, little clay - dry	2.9	16	6.6	6.3	88.5	5.2	7.6						53.2	46.8
		Duplicate		016	6.8	6.4	87.6	6.0	7.6						52.4	47.6
60.5	62.3	No sample - too much water	1.8													
62.3	66.0	Oil sand - wet	3.7	17	14.4	13.1	77.7	9.2	7.0	1.3	1.4	2.0	20.9	61.1	79.6	20.4
66.0	67.7	No sample - too much water and flowing sand.	1.7													

WHEELER ISLAND AREA

HOLE No. 8

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
67.7	70.1	Oil sand - dry	2.4	18	10.4	9.9	85.5	4.6	7.0	0.1	0.1	0.6	16.3	44.4	62.5	37.5
70.1	72.0	Oil sand, little clay - dry	1.9	19	11.2	10.8	86.4	2.8	7.5	0.3	0.4	0.9	19.3	51.2	63.5	36.5
72.0	74.0	Oil sand - wet	2.0	20	16.9	15.2	75.0	9.8	7.6	0.1	0.2	1.5	37.3	76.3	85.7	14.3
74.0	76.0	Oil sand - damp	2.0	21	17.4	16.2	76.8	7.0	6.4	-	0.1	0.9	36.7	79.2	90.1	9.9
76.0	76.9	No sample - too much water	0.9													
76.9	79.0	Oil sand, clay bands - wet	2.1	22	11.2	9.8	77.9	12.3	6.8						59.0	41.0
79.0	84.0	Oil sand, little clay - dry	5.0	23	14.8	14.0	80.9	5.1	7.4	-	-	1.0	35.6	69.0	77.6	22.4
84.0	89.0	Oil sand, some clay bands - dry	5.0	24	9.6	9.0	86.2	4.8	8.3						46.8	53.2
89.0	90.0	Oil sand - dry	1.0	25	13.6	13.6	86.2	0.2	NSS	0.1	0.1	1.3	34.8	70.5	80.2	19.8
90.0	91.0	No sample - too much water	1.0													
91.0	93.7	Oil sand - wet	2.7	26	13.5	12.1	77.4	10.5	7.6	0.5	0.5	1.4	35.9	72.8	82.6	17.4
93.7	98.1	Oil sand - damp	4.4	27	16.4	15.9	80.9	3.2	6.8	0.3	0.4	3.3	53.5	78.0	86.1	13.9
		Duplicate		027	15.7	15.2	81.4	3.4	6.7	0.4	0.5	4.3	52.6	78.3	85.9	14.1
98.1	99.5	Oil sand - wet	1.4	28	14.4	12.9	76.8	10.3	7.1	0.3	0.4	3.3	51.6	79.4	86.7	13.3
99.5	101.0	Oil sand - dry	1.5	29	16.2	16.2	83.6	0.2	6.5	0.1	0.1	1.7	49.6	77.7	86.7	13.3
101.0	101.6	No sample - too much water	0.6													
101.6	103.6	Oil sand - wet	2.0	30	12.8	11.1	75.4	13.5	8.1	0.8	0.9	4.5	58.5	81.4	84.3	15.7
103.6	106.9	Oil sand - wet	3.3	31	15.0	13.3	75.3	11.4	7.3	0.6	0.7	7.2	66.0	84.1	89.8	10.2
106.9	110.7	Oil sand - dry	3.8	32	13.2	12.6	83.2	4.2	7.2	-	-	3.7	53.2	70.5	75.4	24.6
		Duplicate		032	12.6	12.1	84.0	3.9	7.6	0.1	0.1	4.0	53.0	68.3	72.8	27.2
110.7	111.7	No sample - sand rose in casing	1.0													
111.7	112.8	Oil sand - wet	1.1	33	16.6	14.5	72.8	12.7	7.7	0.1	0.2	29.2	73.9	83.4	86.5	13.5
112.8	113.8	No sample - too much water	1.0													
113.8	115.1	Clay - wet	1.3	34	3.3	3.0	89.2	7.2	NSS						33.4	66.6
115.1	116.6	Clay, little oil sand - wet	1.5	35	4.2	4.0	90.0	6.0	8.0						33.6	66.4
116.6	117.6	Heavy viscous oil - no sample flowing sand at 116.6 ft.	1.0													
117.6	126.9	Banded clay and oil sand - chopped	9.3													
126.9	138.0	Clay, tough, sticky, grey colored	11.1													
138.0	142.0	Clay, consolidated	4.0													

WHEELER ISLAND AREA

HOLE No. 8

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
142.0	142.5	Sandstone	0.5													
142.5	143.5	Coarse gravel - quartz pebbles	1.0													
143.5	151.0	Clay, light blue color	7.5													
151.0	154.0	Shale - dark colored	3.0													
154.0	155.0	Limestone	1.0													
		Summary														
0.0	6.0	Gravel and oxidised sand	6.0													
6.0	18.2	Oil sand	12.2		12.9											40.1
18.2	60.5	Oil sand with clay	42.3		6.3											63.8
60.5	112.8	Oil sand	52.3		13.6											24.2
112.8	126.9	Clay and oil sand	14.1													
126.9	154.0	Clay, shale, sandstone	27.1													
154.0	155.0	Limestone	1.0													
		OR														
6.0	112.8	Oil sand	106.8		10.6											41.7

8

WHEELER ISLAND AREA

HOLE No. 9

DATE Nov. 14-Nov. 30 1942 LOCATION LS.10, Sec. 32-97-10 CO-ORDINATES ELEVATION 813.0' DEPTH 139.5' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	7.0	Overburden, gravel, sand	7.0													
7.0	12.0	Oil sand with clay bands - dry	5.0	1	11.9	11.3	83.7	5.0	4.6	1.2	1.6	2.0	5.8	25.8	56.0	44.0
12.0	17.0	Oil sand with clay bands - dry	5.0	2	9.9	8.9	81.0	10.1	5.8	0.7	1.1	1.6	6.4	26.5	54.3	45.7
17.0	22.0	Oil sand with clay bands - dry	5.0	3	10.6	9.6	81.1	9.3	6.5	0.5	0.7	0.9	8.6	39.8	59.3	40.7
22.0	27.0	Oil sand with clay bands - damp	5.0	4	6.5	5.9	74.1	10.0	6.7	0.3	0.6	0.9	6.1	50.7	77.7	22.3
27.0	29.6	Oil sand - dry	2.6	5	16.0	14.9	78.3	6.8	6.1	-	-	0.6	21.4	76.4	91.6	8.4
29.6	32.0	Oil sand - dry	2.4	6	17.0	16.1	78.8	5.1	6.2	-	-	0.4	17.2	72.0	90.0	10.0
32.0	34.6	Oil sand - wet	2.6	7	13.9	12.1	74.6	13.3	6.4	-	-	1.0	32.8	83.0	93.6	6.4
34.6	36.0	Oil sand - dry	1.4	8	16.3	15.9	81.4	2.7	NSS	-	-	0.8	31.6	79.6	89.8	10.2
36.0	38.5	Oil sand - damp	2.5	9	14.3	12.6	75.8	11.6	6.7	0.4	0.6	1.6	32.0	78.6	89.0	11.0
38.5	41.0	Oil sand with a little clay - dry	2.5	10	9.8	8.7	79.9	11.4	6.9	1.2	1.4	3.6	39.8	68.6	76.0	24.0
41.0	43.0	Oil sand - wet	2.0	11	13.4	11.3	73.1	15.6	6.9	-	-	2.0	36.4	83.2	93.4	6.6
43.0	45.5	Oil sand - wet	2.5	12	13.8	11.7	73.1	15.2	6.7	-	-	0.8	32.8	81.6	93.4	6.6
45.5	48.0	Oil sand - wet	2.5	13	12.7	10.8	74.0	15.2	6.8	-	-	2.0	34.6	82.4	93.0	7.0
48.0	51.5	Oil sand - wet	3.5	14	12.8	10.6	72.2	17.2	6.8	-	-	2.2	34.0	82.4	92.8	7.2
51.5	54.0	Oil sand - dry and coarse	2.5	15	13.3	12.4	80.8	6.8	7.0	28.6	43.6	66.6	86.6	94.2	96.4	3.6
54.0	56.5	Oil sand - dry	2.5	16	12.1	11.2	81.2	7.6	6.4	37.4	51.0	69.0	84.4	91.2	93.2	6.8
56.5	58.0	Oil sand - dry	1.5	17	11.5	10.4	80.1	9.5	6.4	24.0	37.0	51.0	60.2	69.2	77.4	22.6
58.0	60.5	Oil sand - dry	2.5	18	13.1	12.6	83.5	3.9	6.3	38.4	59.4	78.0	87.0	89.8	91.2	8.8
60.5	63.0	Oil sand - wet (separated)	2.5	19	12.3	10.8	76.9	12.3	6.3	38.0	60.8	80.8	88.8	92.4	93.8	6.2
63.0	65.0	Oil sand - wet	2.0	20	10.9	10.2	83.1	6.7	6.6	37.8	59.2	78.2	86.0	89.6	91.6	8.4
65.0	65.5	Oil sand - wet (no sample)	0.5													
65.5	68.0	Oil sand - coarse, dry (separated)	2.5	21	7.2	6.3	81.5	12.2	6.5	56.4	71.2	80.2	85.2	89.2	91.2	8.8
68.0	68.5	No sample - too much water	0.5													
68.5	71.0	Oil sand - coarse, dry	2.5	22	7.1	6.5	85.1	8.4	6.5	63.6	75.0	83.4	89.2	92.8	94.6	5.4
71.0	121.0	Oil sand (sludge samples only) Oil sand indicated by cuttings	50.0													
121.0	139.5	Clay and shale	18.5													

WHEELER ISLAND AREA

HOLE No. 9

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
		Summary														
0.0	7.0	Overburden	7.0													
7.0	71.0	Oil sand	64.0		11.6											18.1
71.0	121.0	Oil sand - not sampled, sludge only	50.0													
121.0	139.5	Clay and shale	18.5													

WHEELER ISLAND AREA

HOLE No. 10

DATE Nov. 26-Dec. 21 1942 LOCATION L.S.8, Sec. 13-97-11 CO-ORDINATES ELEVATION 806.2' DEPTH 191.5' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	10.0	Overburden - gravel, sand, boulders	10.0													
10.0	12.0	Clay - yellow colored	2.0													
12.0	20.0	Clay - some layers of oil sand	8.0													
20.0	23.0	Oil sand - dry	3.0	1	11.8	11.5	86.0	2.5	7.1	0.4	0.4	1.5	9.6	38.2	71.2	28.8
23.0	25.0	Clay and rock - sandstone	2.0													
25.0	28.5	Clay - carries some bitumen - dry	3.5													
28.5	32.6	Oil sand - dry	4.1	2	1.8	1.6	86.4	12.0	5.9						8.0	92.0
32.6	33.0	No sample - lost in chopping	0.4													
33.0	38.0	Oil sand, fine grained - dry	5.0	3	9.9	9.2	83.4	7.4	7.5						24.7	75.3
38.0	43.0	Oil sand, little clay - dry	5.0	4	8.5	7.8	84.3	7.9	7.1						15.2	84.8
		Rock - sandstone at 42.0'														
43.0	48.0	Clay, carrying some bitumen - dry	5.0	5	Tr	Tr	87.7	12.3	8.0						5.5	94.5
48.0	53.0	Clay, tough and sticky	5.0	6	0.2	0.2	84.9	14.9	8.1						4.4	95.6
53.0	58.0	Clay, tough and sticky	5.0	7	Tr	Tr	89.9	10.1	8.3						6.0	94.0
58.0	160.0	Clay, tough, sticky - light color	102.0													
		Rock or nodule @ 105' and 135'														
160.0	191.4	Clay and shale, clay dark colored grading into shale.	31.4													
191.4	191.5	Limestone	0.1													
		Summary														
0.0	20.0	Overburden and clay	20.0													
20.0	23.0	Oil sand	3.0		11.8											28.8
23.0	33.0	Clay	10.0													
33.0	43.0	Oil sand	10.0		9.2											80.0
43.0	191.4	Clay	148.4													
191.4	191.5	Limestone	0.1													

WHEELER ISLAND AREA

HOLE No. 11

DATE Dec. 13 1942 LOCATION L.S.7, Sec. 30-97-10 CO-ORDINATES ELEVATION 829.0' DEPTH 91.5' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	11.0	Overburden - gravel, sand	11.0													
11.0	15.2	Oil sand, lean - no sample	4.2													
15.2	18.9	Oil sand, dry, fine grained	3.7	1	11.7	11.2	84.5	4.3	6.8						43.9	56.1
18.9	25.0	Clay, little oil sand - dry	6.1	2	8.5	7.9	85.1	7.0	7.2						39.8	60.2
25.0	27.6	No sample - lost in chopping	2.6													
27.6	31.7	Oil sand - damp (separated)	4.1	3	13.6	12.1	76.6	11.3	7.2	0.2	0.2	1.6	35.8	64.4	79.6	20.4
		Duplicate (separated)		03	14.2	12.8	77.4	9.8	6.9	0.2	0.2	1.4	38.2	57.1	74.4	25.6
31.7	33.5	No sample - lost in chopping	1.8													
33.5	36.0	Oil sand - dry	2.5	4	14.9	14.5	83.7	1.8	6.8	0.3	0.4	1.1	16.7	41.7	67.7	32.3
36.0	41.5	Oil sand - wet	5.5	5	13.6	12.3	78.2	9.5	6.9	0.3	0.3	4.1	47.4	63.9	75.5	24.5
41.5	46.5	Oil sand - dry	5.0	6	10.7	9.8	81.6	8.6	7.0	0.1	0.2	6.2	38.6	52.9	65.0	35.0
46.5	58.0	Oil sand - no sample - chopped	11.5													
58.0	61.0	Clay	3.0													
61.0	85.0	Oil sand with clay bands	24.0													
85.0	91.0	Clay - sandstone bed at 90.0'	6.0													
91.0	91.5	Limestone	0.5													
		Summary														
0.0	15.2	Overburden and lean oil sand	15.2													
15.2	46.5	Oil sand	31.3		11.8											38.5
46.5	85.0	Oil sand and clay - not sampled	38.5													
85.0	91.0	Clay	6.0													
91.0	91.5	Limestone	0.5													

WHEELER ISLAND AREA

HOLE No. 20

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION 819.7 DEPTH 13.0' DIP 90° CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	2.0	Red Sand	2.0													
2.0	9.0	Brown sand	7.0													
9.0	10.0	Gray (clay) oil sand	1.0	1	0.1	0.1	80.9	19.0								
10.0	11.0	Gray (clay) oil sand	1.0	2	0.25	0.2	79.5	20.3		Clay - not screened						
11.0	12.0	Gray (clay) oil sand	1.0	3	0.1	0.1	80.4	19.5								
12.0	13.0	Gray (clay) oil sand	1.0	4	0.1	0.1	81.2	18.7								
		Stopped hand augering because of too much water.														
		Summary														
		% Bitumen (9.0-13.0 ft. of hole)	4.0		0.14											

WHEELER ISLAND AREA

HOLE No. 21

DATE 194 LOCATION CO-ORDINATES ELEVATION 819.4' DEPTH 16.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	1.5	Red sand	1.5													
1.5	5.5	Brown sand	4.0													
5.5	9.5	Fine, black oil-sand	4.0	1-4	14.8	14.3	82.0	3.7		1.3	1.3	-	2.3	30.8	72.4	27.6
9.5	14.5	Fine, black oil-sand	5.0	5-9	16.3	15.8	81.1	3.1		0.7	0.8	-	3.0	43.2	79.4	20.6
14.5	16.0	Fine, black oil-sand	1.5	10	13.1	11.7	77.9	10.4		0.5	0.6	-	8.2	43.8	86.4	13.6
		Stopped augering because of too much water.														
		Summary														
		% Bitumen (5.5-16.0 ft. of hole)	10.5		14.7											
		% - 200 (5.5-16.0 ft. of Hole)														20.6

WHELER ISLAND AREA

HOLE No. 22

DATE 194 LOCATION CO-ORDINATES ELEVATION 815.1 DEPTH 10.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FCOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	1.0	Red sand	1.0													
1.0	5.0	Brown sand	4.0													
5.0	10.0	Fine grained, black oil - sand Water at 10.0 feet.	5.0	1	14.8	13.3	76.6	10.1		0.2	0.3	-	50.3	80.6	92.5	7.5

WHEELER ISLAND AREA

HOLE No. 23

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION 818.5 DEPTH 13.5' DIP 90° CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	2.5	Light brown sand	2.5													
2.5	7.0	Dark brown sand	4.5													
7.0	12.0	Fine grained, black oil sand	5.0	1	12.0	11.1	81.0	7.9		Clay not screened						
12.0	13.5	Too much water to obtain sample	1.5													

WHEELER ISLAND AREA

HOLE No. 24

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION 825.2' DEPTH 11.5' DIP 90° CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	2.0	Light brown sand and rock	2.0													
2.0	6.5	Clay with definite smell of bitumen	4.5	1	4.8	4.3	84.8	10.9		Clay not screened						
6.5	11.5	Oil sand - dry and fine grained	5.0	2	0.6	0.5	81.3	18.2		7.4	7.8	-	12.0	21.9	49.0	51.0
		Summary														
		% Bitumen (2.0-11.5 ft. of hole)	9.5		2.7											

WHEELER ISLAND AREA

HOLE No. 25

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION 809.4' ..... DEPTH 9.0' DIP 90° CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	2.0	Light brown sand	2.0													
2.0	6.5	Fine grained, black oil sand	4.5	1	16.3	15.8	81.4	2.8		2.2	3.8	-	45.0	70.1	91.0	9.0
6.5	8.0	Oil sand and clay	1.5	2	12.7	11.3	77.3	11.4		0.3	0.7	-	14.5	29.2	59.9	40.1
8.0	9.0	Clay with some rock - water at 9.0'	1.0													

WHEELER ISLAND AREA

HOLE No. 26

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION 800.1 ..... DEPTH 8.0 ..... DIP 90° ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	3.0	Red Sand	3.0													
3.0	4.5	Red sand and rock	1.5													
4.5	8.0	Dark brown sand	3.5													
		Water at 8.0 ft. - No oil sand														

STEEPBANK RIVER AREA

STEEPBANK AREA

HOLE No. 1

DATE Aug. 21-Sept. 7 1942 LOCATION Sec. 19, Range 9, Tp. 92, L.S.8 CO-ORDINATES ELEVATION 894' DEPTH 121' DIP 90° CORE RECOVERY 67%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0	1	Leached oil sand	1													
1	9	Oxidized oil sand	8													
9	12	Oil sand - no sample, wet	3													
12	15	Oil sand - gray	3	1	12.7	11.6	79.4	9.0	6.9	4.5	4.6	11.8	51.3	70.3	79.4	20.6
15	16.5	Oil sand - light brown	1.5	2	11.6	10.6	81.1	8.3	8.0	1.1	1.2	4.5	44.0	77.5	87.4	12.6
16.5	18	Oil sand - light brown	1.5	3	8.8	8.1	81.9	10.0	8.0	1.0	1.1	5.3	44.0	69.3	81.5	18.5
18	19.5	Oil sand - light brown	1.5	4	8.4	7.5	81.4	11.1	7.8	0.2	0.3	2.4	37.3	65.0	76.3	23.7
19.5	22.5	Oil sand - black	3	5	Screen analysis only					0.2	0.2	1.2	37.9	77.8	91.4	8.6
22.5	41	Oil sand - no sample, wet	18.5													
41	42	Oil sand - black	1	6	20.6	18.4	70.8	10.8	8.0	1.4	1.5	3.6	32.2	71.4	88.8	11.2
42	43	Oil sand - black	1	7	19.4	17.2	71.3	11.5	8.0	0.3	0.3	1.8	31.4	72.0	90.0	10.0
43	44	Oil sand - black	1	8	17.5	15.6	33.4	11.0	8.0	0.5	0.6	1.7	31.2	73.0	90.9	9.1
44	46	Oil sand - brown	2	9	15.0	13.3	75.6	11.1	7.8	0.6	0.6	5.1	41.3	71.5	85.4	14.6
46	47	Oil sand - black	1	10	20.0	17.0	68.0	15.0	8.0	1.6	1.6	5.2	39.6	68.2	80.3	19.7
47	47.5	Oil sand - black	0.5	11	19.8	17.6	71.2	11.2	8.0	0.9	1.1	11.4	49.4	67.0	77.7	22.3
47.5	48.5	Oil sand - dark brown	1	12	6.4	5.7	83.7	10.6	8.0	3.8	3.9	10.1	39.1	58.1	71.8	28.2
48.5	50	Oil sand - dark brown	1.5													
50	51	Oil sand - black	1	13	6.7	5.9	80.8	13.3	8.0	2.7	3.7	7.3	38.3	61.2	74.5	25.5
51	52	Oil sand - brown	1	14	6.8	6.1	83.7	10.2	8.0	0.1	0.1	3.9	39.7	63.3	74.5	25.5
52	54	Oil sand - black	2	15	9.1	8.0	79.5	12.5	8.0	0.1	0.1	4.3	46.2	67.7	78.3	21.7
54	55	Oil sand - brown	1	16	5.0	4.4	82.7	12.9	7.2	4.8	5.0	17.3	55.2	72.6	81.4	18.6
55	57	Oil sand - brown	2													
57	58	Oil sand - brown	1.0	17	5.8	5.2	84.2	10.6	7.2	1.6	1.7	12.2	55.3	69.2	80.5	19.5
58	59	Oil sand - brown	1.0													
59	60	Oil sand - brown	1.0	18	3.7	3.2	84.5	12.3	7.4	1.1	1.2	13.3	54.8	73.5	84.7	15.3
60	62	Oil sand - brown	2.0	19	1.5	1.3	84.1	14.6	7.4	0.2	0.3	6.2	49.0	71.5	82.3	17.7
62	64	Oil sand - brown	2													
64	65	Oil sand - brown	1.0	20	5.6	5.0	83.8	11.2	7.7	5.8	6.0	10.8	53.4	69.8	76.4	23.6

STEEPBANK AREA

HOLE No. 1

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
65	66	Oil sand - black	1.0	21	5.0	4.3	80.7	15.0	7.5	0.2	0.4	4.7	40.6	58.4	69.2	30.8
66	69	Oil sand - no sample, wet	3													
69	70	Oil sand - black	1.0	22	Screen analysis only					0.1	3.6	12.1	74.3	89.4	93.4	6.6
70	73.8	Oil sand - gray, wet	3.8	23	10.1	9.2	81.6	9.2	7.4	0.7	0.8	6.5	48.8	68.6	77.1	22.9
73.8	77	Oil sand - no sample, wet	3.2													
77	78	Oil sand - wet, partly separated	1.0	24	Screen analysis only					11.3	11.9	15.2	35.1	47.3	59.4	40.6
78	79	Oil sand - black	1.0	25	13.1	11.8	78.6	9.6	7.0	1.4	1.5	11.6	63.5	81.6	88.9	11.1
79	81	Oil sand - black	2.0	26	15.3	13.8	76.6	9.6	6.0	0.4	0.7	14.1	68.5	83.8	90.9	9.1
81	83	Oil sand - no sample, wet	2													
83	86	Oil sand - black, wet	3.0	27	14.6	13.3	78.1	8.6	6.6	0.5	0.8	5.4	52.5	81.8	93.5	6.5
86	87	Oil sand - no sample, wet	1													
87	88	Oil sand - black	1.0	28	14.6	13.2	77.3	9.5	6.4	0.1	0.2	5.2	56.4	84.9	95.1	4.9
88	89	Oil sand - black	1.0	29	20.7	18.8	72.0	9.2	7.0	0.1	0.3	6.1	58.2	85.5	94.1	5.9
89	90	Oil sand - gray, wet	1.0	30	12.4	11.4	80.6	8.0	7.4	0.1	0.2	7.0	57.2	85.0	93.3	6.7
90	92	Oil sand - black	2.0	31	12.8	11.2	76.4	12.4	7.2	0.3	0.5	23.1	75.6	88.8	93.0	7.0
92	93	Oil sand - black with clay	1	32	13.1	12.1	80.5	7.4	7.0	0.5	0.8	19.4	70.4	84.3	89.3	10.7
93	94	Oil sand - black with clay	1	33	11.2	10.4	82.0	7.6	7.2						79.9	20.1
94	95	Oil sand - brown	1	34	10.3	9.4	82.1	8.5	7.1						74.9	25.1
95	96	Oil sand - brown with clay	1	35	9.2	8.4	82.7	8.9	7.0						66.4	33.6
96	97	Oil sand - black	1	36	17.8	17.1	78.9	4.0	7.2	0.2	0.8	42.8	84.2	91.3	95.3	4.7
97	98	Oil sand - brown with clay	1	37	12.6	12.0	83.3	4.7	7.4						48.9	51.1
98	100	Oil sand - black	2	38	16.3	15.1	77.3	7.6	6.8	1.6	3.1	18.5	62.8	86.4	93.0	7.0
100	101.5	Oil sand - black	1.5	39	15.7	14.3	76.7	9.0	6.8	7.0	12.8	30.6	69.9	89.6	94.8	5.2
101.5	104	Oil sand - black	2.5	40	16.4	15.0	76.4	8.6	6.8	15.1	24.6	43.5	74.4	87.9	93.1	6.9
104	105	Oil sand - wet, no sample	1													
105	106	Oil sand - brown, quartz grains	1	41	4.8	4.3	84.6	11.1	7.0						43.1	56.9
106	107	Oil sand - brown, quartz grains	1	42	14.1	12.4	75.2	12.4	7.0						68.9	31.1
107	108	Oil sand - brown with clay	1	43	2.6	2.2	81.6	16.2	7.0						45.4	54.6
108	110	Oil sand - with clay, partly separated	2	44	2.4	2.1	84.1	13.8	7.0						36.6	63.4

STEEPBANK AREA

HOLE No. 1

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
110	115	Oil sand - coarse wet	5	45	19.8	18.7	75.1	6.2	6.8	23.1	44.7	67.0	82.7	88.7	94.7	5.3
115	121	Coarse sand and limerock, wet	6	46	Screen analysis only					83.8	89.1	94.9		98.9	99.4	0.6
		Summary														
12.0	115.0	Oil sand	103		10.6											19.9

STEEPBANK AREA

HOLE No. 2

DATE Sept. 9-19 1942 LOCATION L.S.11,S.20, R.9,Tp.92 CO-ORDINATES ELEVATION 1079 DEPTH 105.0' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0	21	Overburden														
21	22	Oil sand - black with clay	1	1	1.8	1.6	88.6	9.8	Alk.						44.7	55.3
22	23	Oil sand - black with clay	1	2	1.4	1.2	86.0	12.8	Alk.						33.0	67.0
23	24	Oil sand - black with clay	1	3	3.0	2.5	80.8	16.7	Alk.	1.8	2.5	4.0	6.5	10.6	20.3	79.7
24	25	Oil sand - black with clay	1	4	1.0	0.8	80.9	18.3	Alk.						9.2	90.8
25	26	Oil sand - black with clay	1	5	1.8	1.6	85.1	13.3	Alk.						25.7	74.3
26	27	Oil sand - greenish	1	6	0.7	0.6	86.5	12.9	Alk.						29.7	70.3
27	28	Oil sand - greenish	1	7	0.5	0.4	87.1	12.5	Alk.						29.5	70.5
28	28.7	Oil sand - greenish	0.7	8	0.5	0.4	88.0	11.6	Alk.						40.1	59.9
28.7	29.5	Oil sand - greenish	0.8	9	1.6	1.4	88.8	9.8	Alk.	1 0	1.4	2.0	2.9	14.5	42.6	57.4
29.5	30	Oil sand - greenish	0.5	10	1.2	1.1	89.2	9.7	Alk.						45.6	54.4
30	31	Oil sand - greenish	1	11	0.7	0.6	88.9	10.5	Alk.						41.8	58.2
31	32	Oil sand - greenish	1	12	0.6	0.5	88.3	11.2	Alk.						39.1	60.9
32	34.5	Oil sand - greenish with clay	2.5	13	0.3	0.3	88.1	11.6	Alk.						38.9	61.1
34.5	39	Oil sand - greenish with clay	4.5	14	1.1	1.0	87.4	11.6	Alk.						38.6	61.4
39	42.5	Oil sand - brown	3.5	15	1.5	1.3	87.9	10.8	Alk.						37.6	62.4
42.5	45	Oil sand - black, fine	2.5	16	1.7	1.5	87.5	11.0	Alk.						41.0	59.0
45	50	Oil sand - black, fine	5	17	2.2	2.0	87.2	10.8	Alk.						45.1	54.9
50	55	Oil sand - black, fine	5	18	3.4	3.0	85.6	11.4	Alk.						42.6	57.4
55	60	Oil sand - black, fine	5	19	1.6	1.4	84.0	14.6	Alk.						40.6	59.4
60	62.5	Oil sand - black, fine	2.5	20	2.2	1.9	85.7	12.4	Alk.						43.4	56.6
62.5	65	Oil sand - black, fine	2.5	21	5.6	5.1	85.6	9.3	Alk.						57.3	42.7
65	67.5	Oil sand - black, fine sand	2.5	22	No sample											
67.5	70	Oil sand - black, fine sand	2.5	23	3.9	3.5	87.0	9.5	Alk.						70.2	29.8
67.5	70	Oil sand - black, fine sand	2.5	24	5.4	5.0	86.7	8.3	Alk.						60.5	39.5
70	72.5	Oil sand - black, fine sand	2.5	25	3.1	2.8	87.9	9.3	Alk.						32.1	67.9
72.5	75	Oil sand - black, fine sand	2.5	26	4.0	3.6	86.3	10.1	Alk.						31.8	68.2
75	77.5	Oil sand - black, fine sand	2.5	27	8.3	7.8	86.7	5.5	7.8						62.5	37.5
77.5	80	Oil sand - black, signs of water	2.5	28	9.3	8.8	85.7	5.5	8.0						69.7	30.3

STEEPBANK AREA

HOLE No. 2

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
80	82.5	Oil sand - black, fine sand	2.5	29	11.3	10.7	84.4	4.9	8.0						67.6	32.4
82.5	85	Oil sand - black, fine sand	2.5	30	8.8	8.0	83.1	8.9	8.0						64.6	35.4
85	90	Oil sand - black, fine sand	5	31	10.3	9.8	85.4	4.8	8.0						68.3	31.7
90	95	Oil sand - black, fine sand	5	32	12.1	11.7	85.1	3.2	8.0						71.2	28.8
95	100	Oil sand - black, fine sand	5	33	13.5	13.0	83.5	3.5	8.0	0.6	0.7	0.8	7.5	39.8	78.5	21.5
100	105	Oil sand - black, fine sand	5	34												
		Summary														
Averages																
62.5	75.0	Oil sand - low grade	12.5		4.7											48.9
75.0	100.0	Oil sand	25.0		10.9											29.9

STEEPBANK AREA

HOLE No. 3

DATE Sept. 20-25 194 2 LOCATION LS. 14, 20-9-92 CO-ORDINATES ELEVATION 1093 DEPTH 218.0' DIP 90° CORE RECOVERY 92%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	20.0	Overburden - Gravel and Sand	20.0													
20.0	25.0	Clay and gumbo	5.0	1	Tr	Tr	84.9	15.1	Alk.	-	-	-	-	-	24.5	75.5
25.0	30.0	Clay and gumbo	5.0	2	0.1	0.1	86.1	13.8	Alk.	-	-	-	-	-	23.7	76.3
30.0	35.0	Clay and gumbo	5.0	3	Tr	Tr	85.7	14.3	Alk.	-	-	-	-	-	50.0	50.0
35.0	40.0	Clay and gumbo	5.0	4	0.9	0.8	87.7	11.5	Alk.	-	-	-	-	-	27.2	72.8
40.0	45.0	Clay and gumbo	5.0	5	0.1	0.1	89.9	10.0	Alk.	-	-	-	-	-	32.6	67.4
45.0	50.0	Clay and gumbo	5.0	6	Tr	Tr	89.7	10.3	Alk.	-	-	-	-	-	34.7	65.3
50.0	55.0	Clay and gumbo	5.0	7	1.8	1.5	82.8	15.7	Alk.	-	-	-	-	-	19.5	80.5
55.0	60.0	Clay and gumbo	5.0		-	-	-	-	-	-	-	-	-	-	-	-
60.0	71.0	Clay and gumbo	11.0		-	-	-	-	-	-	-	-	-	-	-	-
71.0	72.5	Oil sand - dark brown, fine grain	1.5	8	3.4	3.1	89.0	7.9	Alk.	-	-	-	-	-	58.0	42.0
72.5	77.5	Oil sand - dark brown, fine grain	5.0	9	2.8	2.6	89.8	7.6	Alk.	-	-	-	-	-	66.9	33.1
77.5	79.5	Nodule (pulled casing & drilled)	2.0		-	-	-	-	-	-	-	-	-	-	-	-
79.5	84.5	Oil sand - fine grained, dry	5.0	10	2.0	1.8	87.8	10.4	Alk.	-	-	-	-	-	12.2	87.8
84.5	87.0	Oil sand - fine grained, dry	2.5	11	0.5	0.4	86.8	12.8	Alk.	-	-	-	-	-	12.3	87.7
87.0	90.0	Broken auger - no sample	3.0		-	-	-	-	-	-	-	-	-	-	-	-
90.0	95.0	Oil sand - dark brown, fine grain	5.0	12	11.3	10.9	85.7	3.4	Alk.						81.4	18.6
95.0	100.0	Oil sand - dark brown	5.0	13	11.2	10.8	86.0	3.2	Alk.	-	-	-	-	-	76.3	23.7
100.0	105.0	Oil sand - medium grain - richer	5.0	14	12.5	12.1	84.5	3.4	Alk.	0.1	0.2	2.9	45.4	74.6	89.7	10.3
105.0	110.0	Oil sand - grey and brown colored	5.0	15	13.6	13.4	85.4	1.2	Alk.	-	-	1.2	34.8	67.8	85.3	14.7
110.0	115.0	Oil sand - black, dry	5.0	16	12.2	12.0	86.6	1.4	Alk.	-	0.4	3.3	46.0	74.1	87.0	13.0
115.0	120.0	Oil sand - black	5.0	17	13.1	12.7	84.0	3.3	Alk.	-	2.4	3.7	11.8	66.5	85.1	14.9
120.0	125.0	Oil sand - black & mixed with clay	5.0	18	13.3	13.0	84.7	2.3	Alk.	-	-	2.1	39.5	67.1	82.5	17.5
125.0	130.0	Oil sand - some layers of clay	5.0	19	10.7	10.1	84.4	5.5	Alk.	-	-	3.6	37.3	63.1	80.3	19.7
130.0	135.0	Oil sand - some layers of clay	5.0	20	11.3	10.8	85.1	4.1	Alk.	-	0.4	2.0	32.3	67.1	87.9	12.1
135.0	140.0	Oil sand - some layers of clay	5.0	21	12.7	12.0	82.9	5.1	Alk.	-	-	5.1	50.4	71.5	83.5	16.5
140.0	145.0	Clay - some oil sand	5.0	22	11.2	10.6	84.0	5.4	7.8	-	-	-	-	-	63.7	36.3
145.0	150.0	Oil sand - dark brown, dry	5.0	23	8.9	8.3	84.5	7.2	7.8	-	-	-	-	-	64.1	35.9
150.0	152.4	Oil sand - dark brown, dry	2.4	24	14.4	14.0	83.2	2.8	8.0	-	-	-	-	-	55.6	44.6

STEEPBANK AREA

HOLE No. 3

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
152.4	157.1	No sample	4.7		-	-	-	-	-	-	-	-	-	-	-	-
157.1	158.0	Oil sand - black, dry	0.9	25	8.7	8.3	86.4	5.3	8.0x	-	-	-	-	-	70.4	29.6
158.0	160.0	Broken auger - no sample	2.0		-	-	-	-	-	-	-	-	-	-	-	-
160.0	165.0	Oil sand - dark brown some clay	5.0	26	10.4	10.2	86.1	3.7	8.0x	-	-	-	-	-	62.2	37.8
165.0	170.0	Oil sand with some clay	5.0	27	11.7	11.2	84.1	4.7	8.0x	-	-	-	-	-	62.8	37.2
170.0	174.9	Alternating bands oil sand - clay	4.9	28	7.5	6.9	84.7	8.4	8.0x	-	-	-	-	-	44.0	56.0
174.9	180.0	Alternating bands oil sand - clay	5.1	29	6.9	6.3	84.6	8.1	8.0x	-	-	-	-	-	37.6	62.4
180.0	185.0	Alternating bands oil sand - clay	5.0	30	8.2	7.6	85.1	7.3	8.0x	-	-	-	-	-	49.0	51.0
185.0	190.0	Oil sand - black to brown - clay	5.0	31	9.9	9.3	85.0	5.7	8.0x	-	-	-	-	-	52.0	48.0
190.0	195.0	Clay, greyish some oil sand	5.0	32	5.1	4.6	85.5	9.9	8.0x	-	-	-	-	-	28.7	71.3
195.0	196.6	Oil sand - black, slightly damp	1.6	33	11.9	10.5	78.0	11.5	8.0x	-	-	-	-	-	33.3	66.7
196.0	200.0	Broken auger - no sample	3.4		-	-	-	-	-	-	-	-	-	-	-	-
200.0	202.3	Dry brown oil sand and clay	2.3	34	7.3	7.0	88.6	4.4	8.0x	-	-	-	-	-	27.6	72.4
202.3	211.0	Broken auger - no sample	8.7		-	-	-	-	-	-	-	-	-	-	-	-
211.0	218.0	Limestone	7.0													
		Averages														
0.0	20.0	Overburden	20.0		-	-	-	-	-	-	-	-	-	-	-	-
20.0	71.0	Clay	51.0		0.4	-	-	-	-	-	-	-	-	-	-	69.7
71.0	87.0	Oil sand - lean	16.0		2.2	-	-	-	-	-	-	-	-	-	-	62.6
87.0	170.0	Oil sand	83.0		11.5	-	-	-	-	-	-	-	-	-	-	25.0
170.0	211.0	Oil sand - lean	41.0		7.8	-	-	-	-	-	-	-	-	-	-	63.0
211.0	218.0	Limestone	7.0			-	-	-	-	-	-	-	-	-	-	-
		Summary														
87.0	211.0	Oil sand	124.0		10.2	-	-	-	-	-	-	-	-	-	-	37.5

STEEPBANK AREA

HOLE No. 5

DATE Oct. 28-Dec. 15 1942 LOCATION LS.13, Sec. 20-92-9 CO-ORDINATES ELEVATION 1056 DEPTH 222.7' DIP 90° CORE RECOVERY 92%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	35.0	Overburden, gravel, boulders	35.0													
35.0	40.0	Clay and oil sand interbedded	5.0	1	4.4	3.8	82.3	13.9	9.0						64.3	35.7
40.0	45.0	Leached oil sand and clay	5.0	2	4.7	4.3	86.9	8.8	8.8						40.3	59.7
45.0	50.0	Leached oil sand and clay	5.0	3	5.9	5.5	87.7	6.8	8.8						60.5	39.5
50.0	55.0	Oil sand, slightly damp	5.0	4	5.9	5.5	87.2	7.3	9.3						58.8	41.2
55.0	60.0	Oil sand, a little clay	5.0	5	8.5	7.9	85.0	7.1	9.0						65.8	34.2
60.0	65.0	Oil sand, light brown to black	5.0	6	8.0	7.4	85.1	7.5	8.1						59.8	40.2
65.0	70.0	Oil sand, light brown	5.0	7	8.3	7.7	84.9	7.4	8.7						65.6	34.4
70.0	75.0	Oil sand, black - band of clay	5.0	8	11.7	11.2	84.4	4.4	8.6						78.7	21.3
75.0	80.0	Oil sand, black - slightly damp	5.0	9	8.7	7.8	81.4	10.8	8.4						80.8	19.2
80.0	85.0	Oil sand, light brown to black	5.0	10	8.0	7.3	84.6	8.1	8.3						84.0	16.0
85.0	87.6	Oil sand, black and sticky	2.6	11	12.8	11.1	78.4	10.0	8.6	0.1	0.7	8.1	56.1	84.5	93.8	6.2
87.6	91.3	No sample - too much water	3.7													
91.3	95.0	Oil sand, black, wet (separated)	3.7	12	12.5	11.5	79.8	8.7	8.4	-	0.3	9.7	59.1	82.0	90.0	10.0
95.0	100.0	Oil sand, black and sticky	5.0	13	12.8	12.0	81.3	6.7	8.5	-	1.4	12.5	60.7	84.3	91.8	8.2
100.0	105.0	Oil sand, black and sticky (separated)	5.0	14	13.2	11.9	78.2	9.9	7.9	0.8	2.3	14.6	62.5	85.1	92.0	8.0
105.0	110.0	Oil sand, some bluish clay	5.0	15	13.5	12.2	77.7	10.1	8.6						82.5	17.5
110.0	115.0	Oil sand, little clay (separated)	5.0	16	13.5	12.3	78.7	9.0	7.5	0.5	0.8	8.3	55.6	83.8	91.4	8.6
115.0	120.0	Oil sand, slightly damp	5.0	17	16.5	15.0	75.8	9.2	8.2	0.3	0.5	2.8	29.1	74.2	91.3	8.7
120.0	125.0	Oil sand, partly damp	5.0	18	15.0	13.4	76.0	10.6	8.4	0.4	0.9	20.4	71.8	88.9	93.8	6.2
125.0	129.4	Oil sand, black, sticky (separated)	4.4	19	18.3	16.8	74.7	8.5	8.6	0.2	0.4	31.5	80.6	88.4	91.3	8.7
129.4	130.0	No sample - too much water	0.6													
130.0	135.0	Oil sand, black and sticky	5.0	20	15.6	15.1	81.4	3.5	8.6	0.6	1.0	9.8	55.5	80.1	87.0	13.0
135.0	138.3	Oil sand - wet (separated)	3.3	21	16.1	15.0	78.3	6.7	8.6	-	-	5.0	33.6	68.2	81.2	18.8
138.3	140.0	No sample - too much water	1.7													
140.0	145.0	Oil sand - wet	5.0	22	13.7	12.9	81.2	5.9	8.9	5.4	6.4	15.2	59.0	77.8	84.6	15.4
145.0	146.0	Oil sand	1.0	23	14.5	13.1	77.5	9.4	8.7	7.8	9.4	15.2	62.4	83.2	89.0	11.0
146.0	155.0	No sample - too much water	9.0													
155.0	160.0	Oil sand and pure bitumen	5.0	24	30.8	28.0	62.9	9.1	7.7	0.6	0.8	12.2	65.4	83.8	88.4	11.6

STEEPBANK AREA

HOLE No. 5

DATE ..... 194 .. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+46 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
160.0	165.0	Oil sand, black and sticky	5.0	25	20.3	17.9	70.1	12.0	7.5	1.6	2.0	10.0	61.0	83.6	88.8	11.2
165.0	170.0	Oil sand, some clay	5.0	26	11.2	10.3	81.6	8.1	7.4	0.7	0.9	6.9	38.9	56.0	61.5	38.5
		Duplicate		026	11.0	10.1	82.0	7.9	8.4	0.4	0.6	7.2	41.8	55.6	60.2	39.8
170.0	175.0	Oil sand, some clay	5.0	27	9.0	8.2	83.3	8.5	8.6	0.2	0.3	8.3	36.5	47.9	57.9	48.1
175.0	180.0	Oil sand, some clay	5.0	28	8.1	7.2	81.2	11.6	8.6	0.6	0.6	6.6	20.0	40.4	43.4	56.6
180.0	185.0	Clay, some oil sand	5.0	29	9.4	8.5	81.6	9.9	8.5	0.8	2.2	11.8	33.2	49.2	53.8	46.2
185.0	190.0	Oil sand, black and sticky	5.0	30	15.7	14.1	75.9	10.0	8.3	0.4	13.4	52.8	70.2	79.0	82.0	18.0
190.0	195.0	Oil sand, very coarse	5.0	31	12 2	10.7	77.2	12.1	8.3						62.8	37.2
195.0		Duplicate		031	9.7	8.5	79.0	12.5	8.3						57.4	42.6
195.0	200.0	Oil sand, coarse with clay	5.0	32	11.6	10.4	79.4	10.2	8.2						64.6	35.3
200.0	205.0	Oil sand, very coarse	5.0	33	14.6	13.1	76.4	10.5	8.1						86.6	13.4
205.0	210.0	Oil sand, very coarse	5.0	34	16.6	15.4	77.1	7.5	8.0						87.5	12.5
210.0	215.0	Oil sand, very coarse and black	5.0	35	13.0	12.0	80.4	7.6	8.1	46.2	57.9	70.2	79.6	83.9	86.2	13.8
215.0	218.9	Oil sand, coarse	3.9	36	14.0	12.9	79.3	7.8	7.8	32.1	44.5	63.1	78.7	84.2	85.5	14.5
		Duplicate		036	14.5	13.4	78.8	7.8	8.1	31.4	44.5	62.8	78.5	84.6	86.9	13.1
218.9	221.9	No sample - chopped	3.0													
221.9	222.7	Limestone	0.8													
		Summary														
0.0	35.0	Overburden - sand and boulders	35.0													
35.0	55.0	Leached oil sand and clay	20.0		5.2											44.0
55.0	75.0	Oil sand	20.0		9.1											32.5
75.0	165.0	Oil sand	90.0		13.8											11.6
165.0	218.9	Oil sand	53.9		12.3											30.7
218.9	221.9	Oil sand - not sampled - chopped	3.0		-											-
221.9	222.7	Limestone	0.8													
		OR														
35.0	218.9	Oil sand	183.9		11.9											23.0
		Note - For averaging Samples 24 and 25 are changed to 15% Bitumen as bitumen flowed into hole.														

STEEPBANK AREA

HOLE No. 7

DATE Dec. 26/42, Jan 11, 1943 LOCATION L.S.2, Sec. 30-92-9 CO-ORDINATES ELEVATION 1035 DEPTH 163.8 DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	20.0	Overburden	20.0													
20.0	25.0	Oil sand, lean - light brown	5.0	1	4.5	4.0	84.5	11.5	7.6	0.5	0.6	0.8	9.9	39.1	54.9	45.1
25.0	30.0	Oil sand and clay - mixed	5.0	2	4.7	4.2	84.7	11.1	7.8	0.3	0.3	0.5	9.3	40.6	57.1	42.9
30.0	35.0	Oil sand and clay - mixed	5.0	3	6.4	5.6	82.2	12.2	7.8	-	-	0.3	7.4	36.2	53.9	46.1
35.0	40.0	Oil sand, light to dark brown	5.0	4	6.4	5.7	83.0	11.3	7.8	0.1	0.2	0.9	12.4	46.1	64.3	35.7
40.0	45.0	Oil sand, light to dark brown	5.0	5	5.4	4.9	85.2	9.9	7.9	-	-	1.5	24.6	52.0	64.4	35.6
		Duplicate		05	6.0	5.4	84.0	10.6	7.8	0.1	0.1	1.8	26.7	54.6	66.2	33.8
45.0	50.0	Oil sand, light brown	5.0	6	7.3	6.6	83.7	9.7	7.7	0.6	0.7	1.9	33.0	62.2	72.0	28.0
50.0	55.0	Oil sand, light to dark brown	5.0	7	8.2	7.5	84.3	8.2	7.8	0.1	0.1	1.9	39.2	65.6	73.4	26.6
55.0	60.0	Oil sand, dark brown to black	5.0	8	9.2	8.2	80.9	10.9	7.9	0.2	0.2	1.9	34.4	65.9	74.7	25.3
60.0	65.0	Oil sand, black and sticky	5.0	9	13.2	12.4	81.6	6.0	8.0	0.2	0.2	2.7	56.9	79.8	86.7	13.3
		Duplicate		09	12.5	11.8	82.4	5.8	8.1	0.1	0.2	2.9	52.4	78.5	84.9	15.1
65.0	70.0	Oil sand, black and sticky	5.0	10	13.6	12.8	81.4	5.8	8.1	0.1	0.2	10.1	60.4	80.5	86.0	14.0
70.0	75.0	Oil sand, black and sticky	5.0	11	13.6	13.1	83.2	3.7	7.9	0.2	0.3	8.2	47.9	75.6	82.6	17.4
75.0	80.0	Oil sand, black and sticky	5.0	12	14.1	13.0	79.1	7.9	7.9	0.4	1.3	17.2	59.8	80.5	86.2	13.8
80.0	85.0	Oil sand, black and sticky	5.0	13	12.7	11.8	80.9	7.3	7.9	1.2	2.4	24.9	64.4	79.4	83.9	16.1
		Duplicate		013	12.9	11.9	80.5	7.6	8.0	1.0	2.3	24.5	62.6	79.7	84.2	15.8
85.0	90.0	Oil sand, black, slightly wet	5.0	14	11.3	9.7	76.5	13.8	8.0	1.8	2.6	16.8	62.2	78.0	83.5	16.5
90.0	95.0	Oil sand, black, dry	5.0	15	13.1	12.1	78.9	9.0	7.8	0.8	1.6	16.4	61.8	76.8	82.2	17.8
95.0	100.0	Oil sand, dry, black, sticky	5.0	16	13.5	12.4	76.3	11.3	7.9	0.8	1.8	16.3	60.0	77.1	83.1	16.9
100.0	105.0	Oil sand, dry, black, sticky	5.0	17	13.2	12.2	78.5	9.3	7.9	4.9	11.2	34.4	64.5	77.0	82.2	17.8
		Duplicate		017	12.5	11.2	78.5	10.3	8.0	4.9	10.6	33.6	63.0	75.6	80.7	19.3
105.0	109.7	Oil sand, some streaky clay	4.7	18	11.5	10.5	80.9	8.6	8.0	7.0	16.8	43.2	64.9	74.4	79.7	20.3
109.7	110.0	Oil sand - no sample	0.3													
110.0	115.0	Oil sand, dark brown to black	5.0	19	12.3	11.5	81.9	6.6	8.1	10.0	20.8	54.0	71.6	77.7	81.1	18.9
115.0	120.0	Oil sand, black and sticky	5.0	20	12.8	12.0	81.7	6.3	8.1	4.8	12.6	42.1	64.9	76.7	80.0	20.0
120.0	125.0	Oil sand, black and sticky	5.0	21	13.4	12.4	80.0	7.6	8.1	1.5	3.0	21.6	54.6	72.2	79.6	20.4
		Duplicate		021	13.2	12.2	80.0	7.8	8.0	1.6	3.2	22.0	55.0	72.2	80.0	20.0
125.0	130.0	Oil sand, black and sticky	5.0	22	15.7	14.6	78.6	6.8	8.1	0.8	1.2	22.6	65.6	79.6	84.8	15.2

STEEPBANK AREA

HOLE No. 7

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %		SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
130.0	135.0	Oil sand, black and sticky	5.0	23	16.0	15.3	80.3	4.4	8.1	0.8	1.0	30.4	60.0	78.9	86.5	13.5
135.0	140.0	Oil sand, black and sticky	5.0	24	12.7	11.9	81.7	6.4	8.1	0.7	1.2	3.7	18.1	47.2	63.3	36.7
140.0	145.0	Oil sand, black and sticky	5.0	25	13.4	12.3	79.5	8.2	8.1	0.6	0.6	1.1	6.2	35.1	66.0	34.0
		Duplicate		025	12.2	11.1	79.8	9.1	8.1	0.6	0.6	1.0	5.3	31.8	63.0	37.0
145.0	150.0	Oil sand, black, cohesive	5.0	26	14.7	13.7	79.2	7.1	8.1	0.9	1.0	3.5	17.9	55.5	75.3	24.7
150.0	154.0	Oil sand, black, cohesive	4.0	27	10.8	10.0	83.0	7.0	8.1	0.9	5.6	33.8	55.1	67.2	73.9	26.1
154.0	163.8	Limestone - shaly	9.8													
		Summary														
0.0	20.0	Overburden - gravel, boulders	20.0													
20.0	60.0	Oil sand and clay - lean	40.0		6.5											35.6
60.0	154.0	Oil sand	94.0		13.3											19.6
154.0	163.8	Limestone - shaly	9.8													
		QB														
20.0	154.0	Oil sand	134.0		11.2											24.4

STEEPBANK AREA

HOLE No. 8

DATE Sept. 27-Oct. 8 1942 LOCATION Sec. 20, Range 9, Tp. 92 CO-ORDINATES ELEVATION 1032 DEPTH 105' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	5.0	Leached oil sand	5.0													
5.0	10.0	Oil sand	5.0	1	0.7	0.6	86.1	13.3	Alk.	-	-	-	-	-	43.6	56.4
10.0	15.0	Oil sand	5.0	2	0.3	0.3	86.9	12.8	Alk.	-	-	-	-	-	7.6	92.4
15.0	20.0	Oil sand	5.0	3	0.1	0.1	87.5	12.4	Alk.	-	-	-	-	-	11.0	89.0
20.0	25.0	Oil sand	5.0	4	1.7	1.5	86.8	11.7	Alk.	-	-	-	-	-	14.3	85.7
25.0	30.0	Oil sand	5.0	5	0.4	0.3	87.7	12.0	Alk.	-	-	-	-	-	5.0	95.0
30.0	35.0	Oil sand	5.0	6	6.1	5.6	86.8	7.6	Alk.	-	-	-	-	-	29.6	70.4
35.0	40.0	Oil sand	5.0	7	1.0	0.9	87.2	11.9	Alk.	-	-	-	-	-	6.4	93.6
40.0	45.0	Oil sand	5.0	8	1.8	1.6	88.7	9.7	Alk.	-	-	-	-	-	18.4	81.6
45.0	50.0	Oil sand	5.0	9	0.9	0.8	90.3	8.9	Alk.	-	-	-	-	-	20.3	79.7
50.0	53.0	Oil sand	3.0	10	0.4	0.3	90.3	9.4	Alk.	-	-	-	-	-	29.7	70.3
53.0	55.0	Oil sand - light brown color	2.0	11	0.6	0.6	92.0	7.4	Alk.	-	-	-	-	-	61.2	38.8
55.0	56.0	Oil sand - dark brown color and with some clay	1.0	12	Tr.	Tr.	91.2	8.8	Alk.	-	-	-	-	-	27.4	72.6
56.0	57.3	Oil sand - light brown color	1.3	13	2.1	2.0	94.2	3.8	Alk.	-	-	-	-	-	80.4	19.6
57.3	57.5	Oil sand - dark brown color	0.2	14	7.1	6.9	90.5	2.6	Alk.	-	-	-	-	-	81.4	18.6
57.5	60.0	Oil sand - dark brown color	2.5	15	9.3	8.9	86.5	4.6	Alk.	-	-	-	-	-	65.0	35.0
60.0	65.0	Oil sand	5.0	16	9.3	8.8	86.1	5.1	Alk.	-	-	-	-	-	75.6	24.4
65.0	70.0	Oil sand	5.0	17	10.7	10.2	84.9	4.9	Alk.	-	-	-	-	-	76.2	23.8
70.0	75.0	Oil sand	5.0	18	14.6	14.2	83.2	2.6	Alk.	-	-	-	-	-	84.7	15.3
75.0	80.0	Oil sand - red sand from 78.0 - 81.0	5.0	19	7.4	7.0	87.3	5.7	Alk.	-	-	-	-	-	78.5	21.5
80.0	85.0	Oil sand - dark	5.0	20	9.2	8.6	85.4	6.0	Alk.	-	-	-	-	-	75.6	24.4
85.0	90.0	Oil sand - some shale at 88.0 - 88.2	5.0	21	13.2	12.8	84.5	2.7	Alk.	-	-	-	-	-	69.8	30.2
90.0	95.0	Oil sand - dark rock or nodule at 89.3 and 90.8	5.0	22	4.8	4.5	88.9	6.6	Alk.	-	-	-	-	-	61.8	38.2
95.0	100.0	Oil sand - reddish color	5.0	23	6.7	6.3	87.4	6.3	Alk.	-	-	-	-	-	86.0	14.0
100.0	105.0	Oil sand - broke auger at this depth	6.0	24	11.3	10.5	80.4	9.1	Alk.	-	.1	6.5	59.2	86.7	95.0	5.0
		Summary														
5.0	57.3		52.3		1.4											-
57.3	105.0		47.7		9.7											22.5

STEEPBANK AREA

HOLE No. 9

DATE Oct. 2 - 12 1942 LOCATION L.S.9, Sec19, Range 9, Tp. 92 CO-ORDINATES ELEVATION 947 DEPTH 89.0' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0	8	Overburden - leached sand														
8	13	Oil sand - black coarse sand	5	1	16.8	15.8	78.4	5.8	6.5			1.9	58.1	90.2	96.0	4.0
13	17	Oil sand - black, coarse, wet	4	2	14.1	11.9	72.2	15.9	8.0			1.0	56.6	90.5	96.8	3.2
17	22	Oil sand - black, coarse, damp	5	3	15.5	14.7	80.4	4.9	7.0			2.2	52.4	88.1	96.5	3.5
22	27	Oil sand - black, coarse, damp with clay layers	5	4	14.4	12.9	76.6	10.5	7.5			5.6	65.6	88.8	95.5	4.5
27	32	Oil sand - black, coarse, damp	5	5	15.0	12.8	72.4	14.8	8.0			6.4	59.0	86.5	96.0	4.0
32	37	Oil sand - dark grey, coarse, damp	5	6	15.1	13.6	76.3	10.1	7.8			16.3	77.9	90.4	94.9	5.1
37	42	Oil sand - black, coarse, damp	5	7	15.2	13.3	74.0	12.7	7.7			35.0	83.5	92.2	95.6	4.4
42	47	Oil sand - wet	5	8	17.3	15.3	72.9	11.8	8.0			51.2	86.4	92.1	95.5	4.5
47	49	Oil sand - black, damp	2	9	16.7	15.9	79.3	4.8	7.5	0.6	1.4	48.3	80.5	89.8	95.5	4.5
49	54	Oil sand - wet	5	10	15.2	13.2	73.4	13.4	7.5	0.5	2.2	37.9	71.1	87.9	95.0	5.0
54	59	Oil sand - damp	5	11	17.4	15.0	71.3	13.7	8.0	0.5	4.9	42.3	67.3	84.4	93.8	6.2
59	61	Oil sand	2	12	15.8	14.7	78.0	7.3	8.0		4.7	49.1	71.5	83.3	91.4	8.6
61	65	Oil sand - damp at 64'	4	13	15.8	15.4	82.4	2.2	7.2	0.2	2.8	32.6	62.9	77.8	90.1	9.9
65	70	Oil sand - clay from 65.3 - 67	5	14	15.3	15.0	83.0	2.0	7.2	2.5	7.3	37.5	65.8	81.2	90.3	9.7
70	75	Oil sand - clay from 72.5 - 75	5	15	9.7	9.2	85.9	4.9	8.0						48.6	51.4
75	80	Oil sand with sandy clay bands	5	16	8.5	8.2	87.9	3.9	8.0						42.0	58.0
80	85	Mostly clay with oil sands	5	17	4.6	4.2	88.2	7.6	7.8						25.1	74.9
85	89	Oil sands with clay	4	18	11.0	10.6	85.5	3.9	7.6						55.8	44.2
		Summary														
8.0	70.0	Oil sand	62.0		15.5											5.5
8.0	89.0	Oil sand	81.0		13.8											17.0
	89.0	Abandoned Hole														

STEEPBANK AREA

HOLE No. 10

DATE Jan. 16-26 1943 LOCATION L.S.7, Sec. 30-92-9 CO-ORDINATES ELEVATION 1046 DEPTH 150.5 DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	−200 %
0.0	15.0	Overburden	15.0													
15.0	20.0	Clay and oil sand, lean	5.0	1	1.1	1.0	86.7	12.3	8.0	0.2	0.3	1.5	14.8	49.9	67.7	32.3
20.0	25.0	Clay and lean oil sand, mixed	5.0	2	2.3	2.0	86.5	11.5	7.9	0.4	0.6	1.3	8.1	40.0	59.3	40.7
25.0	30.0	Oil sand, light brown, some clay	5.0	3	3.9	3.5	86.3	10.2	7.5	0.7	1.2	3.1	22.8	47.1	62.3	37.7
30.0	35.7	Oil sand light brown	5.7	4	4.1	3.8	88.0	8.2	7.7						44.4	55.6
35.7	40.0	Oil sand and clay mixed	4.3	5	4.8	4.4	87.6	8.0	7.7						29.4	70.6
		Duplicate		05	4.9	4.5	87.2	8.3	7.7						29.8	70.2
40.0	45.0	Oil sand and clay mixed	5.0	6	5.2	4.7	86.4	8.9	7.8						39.4	60.6
45.0	50.0	Oil sand, light brown, some clay	5.0	7	5.7	5.2	86.0	8.8	8.0	0.1	0.1	0.2	3.4	29.5	60.3	39.7
50.0	55.0	Oil sand and clay mixed	5.0	8	7.9	7.9	84.0	8.8	8.1	0.1	0.1	0.2	3.4	29.4	59.9	40.1
55.0	60.0	Oil sand, light to dark brown	5.0	9	9.3	8.3	81.1	10.6	8.4	0.1	0.1	0.5	3.6	40.9	66.0	34.0
60.0	65.0	Clay and oil sand, mixed	5.0	10	5.6	5.1	86.5	8.4	8.5	1.1	1.5	2.8	5.7	31.0	52.2	47.8
		Duplicate		010	5.5	5.0	86.5	8.5	8.4	0.9	1.3	2.6	6.1	30.8	51.9	48.1
65.0	70.0	Oil sand and light brown clay	5.0	11	4.7	4.2	85.3	10.5	8.7						16.6	83.4
70.0	75.0	Clay and some light brown sand	5.0	12	0.4	0.3	85.2	14.5	9.2						5.0	95.0
75.0	80.0	Clay and some light brown sand	5.0	13	Tr.	Tr.	85.4	14.6	9.2						1.2	98.8
80.0	85.1	Oil sand, light brown	5.1	14	1.9	1.8	90.0	8.2	9.4	2.6	11.9	47.6	58.9	64.4	68.9	31.1
85.1	90.0	Oil sand, light brown	4.9	15	3.6	3.3	89.3	7.4	9.4	1.3	4.3	26.8	39.6	47.1	55.7	44.3
		Duplicate		015	3.9	3.6	88.6	7.8	9.4	1.4	4.6	24.0	35.8	43.9	53.1	46.9
90.0	95.0	Clay and light brown oil sand	5.0	16	2.3	2.1	87.4	10.5	9.0						24.0	76.0
95.0	100.0	Oil sand and clay mixed	5.0	17	4.1	3.7	87.5	9.8	9.1						33.0	67.0
100.0	105.0	Oil sand, light brown	5.0	18	4.3	4.1	91.9	4.0	9.3	0.9	2.8	20.3	54.1	70.8	75.6	24.4
105.0	110.0	Oil sand, light brown to black	5.0	19	9.7	9.5	88.1	2.4	9.0	1.4	5.2	34.9	76.4	87.3	90.8	9.2
		Duplicate		019	9.6	9.4	88.0	2.6	9.0	2.0	5.4	34.8	76.1	86.9	90.7	9.3
110.0	115.0	Oil sand, dark brown to black	5.0	20	13.2	12.9	84.8	2.3	9.1	0.4	2.0	32.4	71.3	83.4	88.5	11.5
115.0	120.0	Oil sand, black, sticky	5.0	21	14.3	13.8	82.6	3.6	8.9	1.4	3.1	37.5	73.6	84.6	99.5	0.5
120.0	125.0	Oil sand, black, sticky	5.0	22	13.4	12.6	81.1	6.3	8.9	2.9	6.1	30.1	66.3	81.0	86.4	13.6

STEEPBANK AREA

HOLE No. 10

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
125.0	130.0	Oil sand, black, sticky	5.0	23	14.6	14.1	82.3	3.6	8.9	0.5	2.6	29.1	70.1	84.6	89.2	10.8
		Duplicate		023	15.1	14.6	82.3	3.1	9.0	0.7	3.6	32.5	72.1	85.9	89.3	10.7
130.0	135.0	Oil sand, black, sticky	5.0	24	15.3	14.8	81.9	3.3	9.2	2.4	8.1	40.6	70.4	77.3	86.9	13.1
135.0	140.0	Oil sand, black, sticky	5.0	25	16.2	15.8	82.0	2.2	9.0	1.8	3.9	35.6	72.4	87.9	93.0	7.0
140.0	145.0	Oil sand, dark brown to black	5.0	26	15.6	15.3	83.0	1.7	9.1	1.6	4.0	30.4	66.7	86.7	91.7	8.3
145.0	147.0	Oil sand, some clay and limestone	2.0	27	5.5	4.9	83.8	11.3	9.2						37.2	62.8
		Duplicate		027	5.2	4.6	84.5	10.9	9.2						35.8	64.2
147.0	150.5	Limestone	3.5													
		Summary														
0.0	15.0	Overburden	15.0													
15.0	70.0	Lean oil sand and clay	55.0		5.0											49.3
70.0	105.0	Lean oil sand	35.0		2.9											62.3
105.0	145.0	Oil sand	40.0		14.0											9.2
145.0	147.0	Oil sand and shaly limestone	2.0		5.5											62.8
147.0	150.5	Limestone	3.5													

STEEPBANK AREA

HOLE No. 11

DATE Jan. 4-17 1943 LOCATION L.S.14, Sec. 30-92-9 CO-ORDINATES ELEVATION 1043 DEPTH 166.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	-48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	11.0	Overburden	11.0													
11.0	16.0	Oil sand, lean, light brown	5.0	1	2.8	2.4	82.8	14.8	7.4	0.3	0.3	1.5	10.4	40.2	60.9	39.1
16.0	21.0	Oil sand, lean, light brown	5.0	2	4.6	4.1	84.4	11.5	7.4	0.3	0.3	2.4	26.6	61.5	74.4	25.6
21.0	25.0	Oil sand, lean, light brown	4.0	3	6.2	5.6	85.2	9.2	7.5	1.6	1.7	3.8	14.9	41.8	63.7	36.3
25.0	30.0	Oil sand, lean, light brown	5.0	4	7.4	6.7	84.3	9.0	7.9	-	-	0.6	6.7	32.8	54.3	45.7
30.0	35.1	Oil sand, lean, light brown	5.1	5	8.0	7.4	84.8	7.8	7.9						54.8	45.2
		Duplicate		05	8.5	7.8	84.3	7.9	7.9						53.2	46.8
35.1	37.5	Hard sandstone - no sample	2.4													
37.5	40.0	Oil sand, lean, light brown	2.5	6	9.2	8.4	83.4	8.2	8.0						46.8	53.2
40.0	45.0	Oil sand and clay, mixed	5.0	7	8.2	7.7	86.2	6.1	8.1						18.4	81.6
45.0	50.0	Oil sand and clay, mixed	5.0	8	2.1	1.9	89.4	8.7	8.2						37.2	62.8
50.0	55.0	Oil sand and clay, mixed	5.0	9	6.2	5.7	86.5	7.8	8.3						48.4	51.6
		Duplicate		09	6.2	5.7	86.5	7.8	8.4						49.6	50.4
55.0	60.0	Oil sand, black and clay mixed	5.0	10	9.4	8.9	85.6	5.5	8.4						39.8	60.2
60.0	64.5	Clay	4.5	11	4.0	3.8	90.2	6.0	8.4						46.0	54.0
64.5	70.0	Oil sand, black, some clay	5.5	12	12.5	12.2	85.1	2.7	8.3	-	0.6	9.0	32.4	57.8	71.0	29.0
70.0	72.0	Marcasite nodule - no sample	2.0													
72.0	76.3	Clay, light brown	4.3	13	5.5	5.2	89.8	5.0	8.5						43.8	56.2
		Duplicate		013	5.5	5.2	90.0	4.8	8.9						43.2	56.8
76.3	77.0	Hard sandstone - no sample	0.7													
77.0	82.0	Clay, light brown to black	5.0	14	0.6	0.5	90.7	8.8	8.9						12.2	87.8
82.0	87.0	Clay, light brown to black	5.0	15	0.2	0.2	88.5	11.3	8.9						11.2	88.8
87.0	92.0	Clay and oil sand - mixture	5.0	16	1.4	1.3	89.9	8.8	8.9						13.8	86.2
92.0	97.0	Clay and oil sand - mixture	5.0	17	2.8	2.6	90.5	6.9	9.0						17.4	82.6
		Duplicate		017	2.4	2.2	90.4	7.4	9.0						16.8	83.2
97.0	102.0	Clay and light brown oil sand	5.0	18	3.3	3.0	89.3	7.7	8.9						20.4	79.6
102.0	103.0	Hard sandstone - no sample	1.0													
103.0	108.0	Clay and lean oil sand - mixed	5.0	19	2.5	2.3	89.9	6.8	9.0						27.6	72.4
108.0	113.0	Clay and lean oil sand - mixed	5.0	20	4.5	4.2	90.0	5.8	9.0						31.1	68.9

STEEPBANK AREA

HOLE No. 11

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
113.0	118.0	Oil sand, light brown to black	5.0	21	7.4	7.3	91.0	1.7	8.8	0.2	1.4	21.7	62.4	80.8	87.8	12.2
118.0	123.0	Oil sand, dark brown to black	5.0	22	10.5	10.4	87.8	1.8	8.5	0.2	1.4	17.1	58.3	77.7	84.8	15.2
		Duplicate		022	11.0	10.8	87.3	1.9	9.1	0.4	1.7	21.8	62.4	80.5	86.9	13.1
123.0	124.8	Oil sand, black sticky	1.8	23	14.8	14.6	83.9	1.5	8.9	0.4	1.6	20.9	66.7	85.1	90.8	9.2
124.8	130.0	Marcasite, shale - no sample	5.2													
130.0	135.0	Oil sand, black, sticky	5.0	24	15.9	15.4	81.2	3.4	8.7	1.2	6.1	34.9	72.5	90.9	97.0	3.0
135.0	138.0	Oil sand, black, sticky	3.0	25	15.9	15.7	83.2	1.1	8.4	0.6	2.5	24.5	64.8	85.3	91.3	8.7
138.0	140.4	Broken auger - no sample	2.4													
140.4	145.5	Oil sand, black, sticky	5.1	26	15.4	14.8	81.3	3.9	8.8	0.7	3.4	43.5	71.8	82.9	87.9	12.1
		Duplicate		026	15.6	15.1	81.5	3.4	8.5	0.8	3.6	43.8	72.3	83.4	88.3	11.7
145.5	150.3	Oil sand, black, sticky	4.8	27	16.2	15.9	82.5	1.6	8.7	1.9	5.9	49.8	71.6	81.6	86.7	13.3
150.3	155.0	Oil sand, black, sticky	4.7	28	17.0	16.8	82.0	1.2	8.2	1.1	5.3	66.1	84.1	91.1	94.4	5.6
155.0	160.0	Oil sand, black, sticky	5.0	29	16.3	16.1	82.9	1.0	8.1	0.6	5.1	59.2	78.3	85.4	88.6	11.4
160.0	163.5	Oil sand, black, coarse grained	3.5	30	15.4	15.3	84.3	0.4	8.0	19.4	29.9	54.7	70.1	81.7	87.6	12.4
163.5	166.0	Limestone - clay and shale	2.5													
		Summary														
					% Bit.	% -200										
0.0	11.0	Overburden	11.0													
11.0	76.3	Lean oil sand and clay	65.3		6.2	48.9										
76.3	113.0	Clay and lean oil sand	36.7		2.0	80.9										
113.0	163.5	Oil sand	50.5		13.0	9.9										
163.5	166.0	Limestone	2.5													

STEEPBANK AREA

HOLE No. 12

DATE Jan. 22-Jan. 26 1943 LOCATION L.S.13, Sec. 17-92-9 CO-ORDINATES ELEVATION 910 DEPTH 64.0' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER +35 OZ.	+48 OZ.	+65 %	+100 %	+150 %	+200 %	-200 %
0.0	15.5	Overburden	15.5													
15.5	20.1	Oil sand, black, sticky	4.6	1	16.0	15.2	79.8	5.0	7.5	1.2	2.1	16.5	57.8	81.3	87.0	13.0
20.1	22.0	Oil sand, black, sticky	1.9	2	15.7	15.3	82.4	2.3	7.3	1.4	2.0	21.4	62.2	79.5	83.3	16.7
22.0	27.0	Oil sands and clay, mixed	5.0	3	13.3	12.4	81.0	6.6	8.0	2.0	2.9	19.4	54.9	68.7	71.9	28.1
27.0	32.0	Oil sand, black, sticky	5.0	4	11.8	11.2	83.4	5.4	7.9	5.6	10.4	27.8	47.1	56.0	59.8	40.2
32.0	37.0	Oil sand, black, coarse	5.0	5	11.8	11.3	84.5	4.2	8.0	15.2	21.2	45.1	65.1	74.0	77.3	22.7
37.0	42.0	Oil sand, black, some clay	5.0	6	10.6	9.7	81.5	8.8	8.7	8.0	15.3	44.3	62.3	69.9	73.2	26.8
		Duplicate		06	10.5	9.6	81.7	8.7	8.9	5.0	10.2	35.5	53.6	63.1	67.6	32.4
42.0	47.0	Oil sand, black, sticky	5.0	7	14.8	14.2	81.8	4.0	8.8	2.0	6.0	37.8	66.8	81.8	86.8	13.2
47.0	52.0	Oil sand, dark brown to black	5.0	8	11.3	10.6	83.3	6.1	9.2	4.6	6.6	15.9	27.9	46.2	62.8	37.2
52.0	57.0	Oil sand and clay, mixed	5.0	9	8.1	7.5	84.6	7.9	9.2	16.5	29.9	42.5	47.2	52.0	58.5	41.5
57.0	61.0	Oil sand and clay mixed	4.0	10	7.8	7.4	87.5	5.1	9.1	35.5	45.8	54.3	57.8	59.5	60.6	39.4
		Duplicate		010	8.3	7.9	86.9	5.2	9.1	36.8	46.8	55.0	58.7	60.4	61.5	38.5
61.0	64.0	Limestone														

Summary

				% Bit.	% -200
0.0	15.5	Overburden	15.5		
15.5	61.0	Oil sand	45.5	11.9	28.2
61.0	64.0	Limestone	3.0		

STEEPBANK AREA

HOLE No. 8A

DATE Oct. 6 - 15 1943 LOCATION CO-ORDINATES ELEVATION 1028' DEPTH 235' DIP 90° CORE RECOVERY 90.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Diamond Drill - Gelsaid									
0	51'6"	Clearwater shale	51'6"		-		-	-	-	-	6
51'6"	52'1"	Bit. sand fair grade	7"	1	14.7		0.3	-	99	82	8
52'1"	52'6"	Bit. sand leached	5"	-	(5.0)						
52'6"	54'6"	Lost core, watercourse	2'0"	-	(5.0)		-		-	-	-
54'6"	55'4"	Clay	10"	-	-		-		-	-	-
55'4"	56'0"	Bit. sand fair grade	8"	2	14.7		0.3	-	99	82	8
56'0"	56'6"	Clay	6"	-			-	-	-	-	-
56'6"	59'3"	Bit. sand fair grade	2'9"	3	14.7		0.3	-	99	82	8
59'3"	59'9"	Clay)	6"	-	-						
59'9"	60'9"	Lost core) Probably clay	1'0"	-	-						
60'9"	61'0"	Clay)	3"								
61'0"	63'6"	Bit. sand fair grade	2'6"	4	14.6		0.4	1	99	72	7
63'6"	64'0"	Clay	6"	-	-		-	-	-	-	-
64'0"	64'10"	Bit. sand fair grade	10"	5	14.6		0.4	1	99	72	7
64'10"	65'6"	Bit. sand and clay	8"	-	-		-	-	-	-	-
65'6"	66'0"	Bit. sand fair clay	6"	6	14.6		0.4	1	99	72	7
66'0"	67'0"	Clay and some bit. sand	1'0"	-	-		-	-	-	-	-
67'0"	69'0"	Lost core	2'0"	-	-		-	-	-	-	-
69'0"	71'0"	Bit. sand some clay	2'0"	6A	14.6		0.4	1	99	72	7
71'0"	75'0"	Bit. sand fair grade	4'0"	7	12.4		0.5	5	95	71	17
75'0"	76'0"	Clay nodules, and bit. sand	1'0"	-	-		-	-	-	-	-
76'0"	78'0"	Bit. sand fair grade	2'0"	8	13.5		0.8	1	99	88	20
78'0"	79'4"	Clay	1'4"		-						
79'4"	79'6"	Clay ironstone	2"		-						
	80'6"	Bit. sand leached low grade	1'0"		-						
	81'0"	Clay and bit. sand mix	6"		-						
	82'0"	Clay	1'0"		-						
	83'0"	Lost core	1'0"		-						
	84'0"	Clay	1'0"		-						

STEEPBANK AREA

HOLE No. 8A

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	-40 %	-100 %	-200 %
	88'3"	Bit. sand fair grade	4'3"	10	15.5		0.5	1	99	76	10
	88'9"	Clay	6"		-						
88'9"	97'6"	Lost core	8'9"		-						
97'6"	99'0"	Bit. sand good grade	1'6"	11	14.9		0.2	1	99	64	4
99'0"	100'3"	" " " "	1'3"	11A	14.9		0.2	1	99	64	4
100'3"	101'9"	" " some clay	1'6"	11B	4.9		2.0	1	99	60	23
101'9"	104'0"	" " " "	2'3"	11C	13.9		1.0	-	100	69	7
104'0"	109'0"	" " " "	5'0"	12	15.6		0.5	1	99	65	5
109'0"	115'0"	" " " "	6'0"	13	12.1		0.6	6	94	59	23
115'0"	120'0"	" " good grade	5'0"	14	13.5		0.8	1	99	57	4
120'0"	125'0"	" " " "	5'0"	15	14.8		6.4	1	99	53	7
125'0"	128'0"	" " " "	3'0"	16	10.1		1.1	11	89	52	16
128'0"	131'0"	Clay	3'0"	-	-		-	-	-	-	-
131'0"	134'0"	Bit. sand good grade	3'0"	17	13.1		0.4	4	96	40	9
134'0"	139'0"	" " " "	5'0"	18	16.8		0.3	-	100	30	3
139'0"	140'3"	Soft clay	1'3"	-	-						
140'3"	142'0"	Lost core, probably clay	1'9"	-	-						
142'0"	145'6"	Bit. sand good grade	3'6"	19	16.0		0.6	1	99	32	4
145'6"	146'0"	Lost core	6"	-	-		-	-	-	-	-
146'0"	151'0"	Bit. sand good grade	5'0"	20	16.5		0.7	1	99	19	2
151'0"	156'0"	" " " "	5'0"	21	14.7		0.6	13	87	22	3
156'0"	162'0"	" " " "	6'0"	22	15.3		0.5	12	87	17	4
162'0"	162'7"	Hard band clay	7"	-	-		-	-	-	-	-
162'7"	167'0"	Bit. sand good grade	4'5"	23	14.3		0.3	21	78	15	6
167'0"	171'0"	" " " "	4'0"	24	14.4		0.4	8	92	13	5
171'0"	172'0"	Lost core	1'0"	-	-		-	-	-	-	-
172'0"	177'0"	Bit. sand fair grade	5'0"	25	14.5		0.4	24	75	17	5
177'0"	180'0"	" " " "	3'0"	26	14.7		0.7	53	47	9	4
180'0"	185'0"	" " very coarse low grade	5'0"	27	8.7		0.9	27	72	11	4

STEEPBANK AREA

HOLE No. 8A

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
185'0"	190'0"	Bit. sand very coarse low grade	5'0"	28	5.6		1.1	36	63	12	6
190'0"	193'0"	" " " " " "	3'0"	29	5.4		0.7	50	49	11	5
193'0"	194'0"	Lost core	1'0"	-	-		-	-	-	-	-
194'0"	201'0"	Bit. sand very coarse leached	7'0"	30	6.6		0.7	41	59	16	7
201'0"	206'0"	" " " " lime fragments	5'0"	31	7.7		0.9	32	68	14	6
206'0"	211'0"	Coarse sand leached clay fragments)	5'0")	32	5.1		0.4	37	63	22	10
211'0"	216'0"	" " " " ")	5'0")	32	5.1		0.4	37	63	22	10
216'0"	220'6"	" " " " ")	4'6")	32	5.1		0.4	37	63	22	10
220'6"	221'0"	Lost Core)	6")								
221'0"	222'6"	Coarse sand, leached bands clay)	1'6")	32	5.1		0.4	37	63	22	10
222'6"	223'0"	Lost Core	6"								
223'0"	227'0"	Coarse sand, lime fragments	4'0"								
227'0"	228'0"	Lost Core	1'0"								
228'0"	233'0"	Clay with lime fragments	5'0"								
233'0"	233'6"	Lost Core	6"								
233'6"	235'0"	Limestone	1'6"								
	235'	End Hole									

Summary

97' - 180' = 83' @ 12.8% bitumen & 7.8% Clay Bands

STEEPBANK AREA

HOLE No. 13

DATE July 18 - 30 194 3 LOCATION CO-ORDINATES ELEVATION 978' DEPTH 163'2" DIP 90° CORE RECOVERY 94%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG		FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering										
0	20'0"	Very tough, dark clay										
20'0"	36'7"	Clay		16'7"	1	Not analysed						
36'7"	42'6"	Clay	Clearwater shale	5'11"	2	" "						
42'6"	45'7"	Clay		3'1"	3	" "						
45'7"	54'7"	Clay		9'0"	4	" "						
54'7"	55'5"	Lost core		10"	-							
55'5"	57'11"	Bit. sand and clay, low grade		2'6"	5							
57'11"	61'1"	Bit. sand		3'2"	6							
61'1"	63'0"	Bit. sand		1'11"	7	4.8		1.5	4	95	78	20
63'0"	64'1"	Bit. sand		1'1"	8							
64'1"	65'3"	Bit. sand		1'2"	9							
65'3"	66'11"	Lost core		1'8"	-							
66'11"	71'9"	Clay		4'10"	10							
71'9"	76'0"	Clay		4'3"	11	Not analysed						
76'0"	77'10"	Bit. sand		1'10"	12							
77'10"	79'0"	Bit. sand		1'2"	13							
79'0"	79'9"	Clay		2'6"	14							
79'9"	81'6"	Bit. sand	Low grade			6.0		0.7	4	95	84	32
81'6"	84'3"	Bit. sand, some clay		2'9"	15							
84'3"	84'7"	Lost core		4"								
84'7"	85'5"	Bit. sand some clay		10"	16							
85'5"	88'0"	" " " "		2'7"	17	9.6		0.7	4	95	91	31
88'0"	90'8"	Lost core		2'8"	-	-		-	-	-	-	-
90'8"	92'0"	Bit. sand		1'4"	18	9.6		0.7	4	95	91	31
92'0"	98'1"	Bit. sand; trace clay		6'1"	19							
98'1"	99'0"	Bit. sand		11"	20							
99'0"	102'0"	Bit. sand		3'0"	21	10.8		0.4	1	99	97	
102'0"	102'6"	No recovery		6"	22							

STEEPBANK AREA

HOLE No. 13

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
102'6"	103'4"	Bit. sand, slightly leached	10"	23	12.3		0.2	-	100	95	19
103'4"	104'10"	Bit. sand	1'6")	24							
104'10"	110'0"	" "	5'2")	25	9.6		0.7	1	97	94	37
110'0"	111'5"	Clay	1'5")	26							
111'5"	112'8"	Lost core	1'3")	-	Not analysed						
112'8"	114'0"	Bit. sand	1'4")	27							
114'0"	116'0"	Hard calcareous shale & clay	2'0")	28							
116'0"	117'6"	Bit. sand	1'6")	29							
117'6"	120'0"	Bit. sand; trace clay	2'6")	30	15.0		0.2	1	99	95	29
120'0"	121'0"	Lost core	1'0")	-							
121'0"	122'2"	Bit. sand	1'2")	31							
122'2"	125'1"	Lost core	2'11"	-	-		-	-	-	-	-
125'1"	127'1"	Bit. sand	2'0"	32	8.9		1.0	3	96	87	32
127'1"	128'8"	Bit. sand	1'7")	33	Not analysed; mostly clay						
128'8"	130'8"	Bit. sand some clay	2'0")	34							
130'8"	132'9"	Bit. sand	2'1"	35	14.9		0.2	-	99	98	18
132'9	135'3"	Bit. sand	2'6"	36	14.9		0.2	-	99	89	18
135'3"	138'0"	Lost core	2'9"	-	-		-	-	-	-	-
138'0"	140'5"	Bit. sand	2'5"	37	12.2		0.7	1	99	89	18
140'5"	142'0"	Lost core	2'5"	-	-		-	-	-	-	-
142'0"	146'0"	Bit. sand	4'2"	38	12.2		0.7	1	99	89	18
146'2"	148'0"	Lost core	1'10"	-	-		-	-	-	-	-
148'0"	149'11"	Bit. sand	1'11"	39	12.2		0.7	1	99	89	18
149'11"	153'11"	Bit. Sand	4'0"	40	12.2		0.7	1	99	89	18
153'11"	155'9"	Lost core	1'10"	-	-		-	-	-	-	-
155'9"	158'6"	Bit. sand	2'9"	41	15.1		0.5	-	99	77	17
158'6"	163'2"	Clay (residual) with limestone fragments	4'8"	-	-		-	-	-	-	-

Summary

85' - 158' = 73' @ 10.2% bitumen & 4.6% clay bands.

STEEPBANK AREA

HOLE No. 14

DATE July 31-Aug. 10 1943 LOCATION ..... CO-ORDINATES ..... ELEVATION 1048' DEPTH 156'2" DIP 90° CORE RECOVERY 96%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0	30'4"	Overburden		-							
		Clearwater shale		-							
30'4"	35'6"	Bit. sand and clay	5'2"	1	5.4		0.7	3	95	71	20
35'6"	36'0"	Clay bed	6"	-	-		-	-	-	-	-
36'0"	39'6"	Bit. sand & clay	3'6"	2	5.4		0.7	3	95	71	20
39'6"	43'5"	Bit. sand, fair grade	3'11"	3	8.9		0.1	1	98	94	22
43'5"	46'1"	" " " "	2'8"	4	8.9		0.1	1	98	94	22
46'1"	50'7"	" " & clay, low grade	4'6"	5	4.6		1.1	4	94	83	36
50'7"	51'4"	Lost core	-	-	-		-	-	-	-	-
51'4"	53'0"	Bit. sand & clay, very low grade	1'8"	6	4.6		1.1	4	94	83	36
53'0"	53'4"	Lost core	4"	-	-		-	-	-	-	-
53'4"	57'8"	Bit. sand, low grade	4'4"	7	4.6		1.1	4	94	83	36
57'8"	57'10"	Lost core	2"	-	-		-	-	-	-	-
57'10"	61'1"	Bit. sand & clay, low grade	3'3"	8	4.6		1.1	4	94	83	36
61'1"	62'6"	" " & clay	1'5"	9	4.6		1.1	4	94	83	36
62'6"	65'3"	Clay not sampled	2'9"	-	-		-	-	-	-	-
65'3"	68'8"	Bit. sand, good grade	3'5"	10	12.5		0.4	-	99	79	10
68'8"	72'0"	" " " "	3'4"	11	12.5		0.4	-	99	79	10
72'0"	76'10"	" " " "	4'10"	12	13.7		0.5	1	99	68	10
76'10"	78'10"	" " " "	2'0"	13	13.7		0.5	1	99	68	10
78'10"	79'4"	Clay bed	6"	-	-		-	-	-	-	-
79'4"	83'1"	Bit. sand, good grade	3'9"	14	12.6		0.4	-	99	82	11
83'1"	85'2"	" ", fair "	2'1"	15	5.3		2.2	9	88	66	24
85'2"	87'7"	Lost core. Water course	2'5"	-	-		-	-	-	-	-
87'7"	89'1"	Bit. sand; good grade	1'6"	16	12.6		0.4	-	99	82	11
89'1"	90'2"	" " " "	1'1"	17	15.2		0.3	-	99	91	17
90'2"	90'10"	Lost core (probably good sand)	8"	-	-		-	-	-	-	-
90'10"	94'8"	Bit. sand; good grade	3'10"	18	15.2		0.3	-	99	91	17
94'8"	98'7"	" " & clay	3'11"	19	9.9		2.0	1	99	97	43
98'7"	102'5"	" " " "	3'10"	20	5.9		0.8	8	91	69	31

STEEPBANK AREA

HOLE No. 14

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
102'5"	104'3"	Bit. sand & clay	1'10"	21	9.2		0.7	4	95	73	18
104'3"	107'1"	Clayey bit. sand	2'10"	22	4.5		1.5	12	88	64	36
107'1"	109'10"	Bit. sand; fair grade	2'9"	23	12.7		0.3	-	99	91	24
109'10"	113'1"	" " " "	3'3"	24	12.7		0.3	-	99	91	24
113'1"	117'0"	Bit. sand & clay; low grade	3'11"	25	10.6		0.4	4	95	77	26
117'0"	118'2"	Clay bed	1'2"	-	-		-	-	-	-	-
118'2"	121'2"	Bit. sand; good grade	3'0"	26	13.6		0.9	1	99	90	20
121'2"	125'1"	" " " "	3'11"	27	13.6		0.9	1	99	90	20
125'1"	127'7"	" " very low grade	2'6"	28	5.1		1.5	11	87	61	29
127'7"	131'0"	" " good grade	3'5"	29	13.7		0.0	1	98	86	17
131'0"	133'1"	" " & clay; low grade	2'1"	30	6.6		0.7	9	90	61	30
133'1"	133'7"	Clay bed	6"	-	-		-	-	-	-	-
133'7"	136'0"	Bit. sand; good grade	2'5"	31	12.9		0.2	-	99	80	17
136'0"	138'6"	" " " "	2'6"	32	14.9		0.3	-	99	86	9
138'6"	141'6"	" " fair "	3'0"	33	12.0		0.7	3	96	72	20
141'6"	144'11"	" " with shale fragments	3'5"	34	7.3		0.5	9	90	70	27
144'11"	146'10"	" " good grade	1'11"	35	14.7		0.6	-	99	69	11
146'10"	151'2"	Bituminous residual clay	4'4"	36	Not analysed			-	-	-	-
151'2"	156'2"	Residual clay with limestone fragments	4'0"	-	Not sampled			-	-	-	-
	156'2"	End Hole									

Summary

65' - 147' = 82' @ 10.8% bitumen & 2.0% clay bands.

STEEPBANK AREA

HOLE No. 15

DATE Aug. 13 - 18 194 3 LOCATION CO-ORDINATES ELEVATION 1078' DEPTH 100'6" DIP 90° CORE RECOVERY 97%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0	32'6"	Clay (clearwater shale)	32'6"	-							
32'6"	33'0"	Hard clay; ironstone rib	6"	-							
33'0"	35'6"	Clay	2'6"	-							
35'6"	40'0"	Clay	4'6"	-							
40'0"	43'9"	Clay; little low grade sand	3'9"	1	3.3		1.4	10	89	69	22
43'9"	46'2"	Sand, leached	2'5"	2	3.3		1.4	10	89	69	22
46'2"	52'8"	" "	6'6"	3	3.3		1.4	10	89	69	22
52'8"	54'10"	" "	2'2"	4	3.3		1.4	10	89	69	22
54'10"	55'4"	Clay; ironstone rib	6"	-	-		-	-	-	-	-
55'4"	57'0"	Clay bed	1'8"	-	-		-	-	-	-	-
57'0"	59'6"	Bit. sand, leached	2'6"	5	6.2		0.3	2	97	93	27
59'6"	62'5"	" " "	2'11"	6	9.8		0.1	-	99	89	20
62'5"	64'4"	" " "	1'11"	7	9.8		0.1	-	99	89	20
64'4"	68'0"	" " "	3'8"	8	7.9		0.2	-	98	94	29
68'0"	70'1"	" " fair grade	2'1"	9	12.1		0.1	-	99	95	20
70'1"	71'8"	" " low grade	1'7"	10	9.5		0.2	1	98	93	26
71'8"	73'9"	" " " "	2'1"	11	9.5		0.2	1	98	93	26
73'9"	77'0"	" " better, but low grade	3'3"	12	9.5		0.2	1	98	93	26
77'0"	80'6"	" " low grade	3'6"	13	8.2		0.2	1	98	91	28
80'6"	80'9"	Clay ironstone rib	3"	-	-		-	-	-	-	-
80'9"	81'5"	Bit. sand; low grade	8"	-	-		-	-	-	-	
81'5"	81'7"	Clay; ironstone rib	2"	-	-			-	-	-	
81'7"	83'4"	Bit. sand; leached	1'9"	-	-			-	-	-	
83'4"	83'7"	Clay; ironstone rib	3"	-	-			-	-	-	
83'7"	87'7"	Bit. sand; only 30% recovery; leached (water course)	4'0"	14	8.2		0.2	1	98	91	28
87'7"	90'9"	Bit. sand; very low grade	3'2"	15	5.5		5.0	1	98	82	25

STEEPBANK AREA

HOLE No. 15

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH		CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER			
FROM	TO							+40 %	-40 %	-100 %	-200 %
90'9"	94'11"	Bit. sand; fair grade	4'2"	16	5.5		5.0	1	98	82	25
94'11"	96'8"	Clay bed; not sampled	1'9"	-							
96'8"	100'6"	Bit. sand; low grade	3'10"	17	5.5		5.0	1	98	82	25
	100'6"	End Hole									

STEEPBANK AREA

HOLE No. 15B

DATE Aug. 28-Sept. 3 194 3 LOCATION 60' from No. 15 CO-ORDINATES ELEVATION 1078' DEPTH 241'4" DIP 90° CORE RECOVERY 88.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Diamond Drill - Calmud									
0	67'3"	Overburden, clay and low grade sand (See Hole No. 15)	67'3"	-	-		-				
67'3"	72'3"	Bit. sand: 50% leached	5'0")	1							
72'3"	77'7"	" " 60% leached	5'4")	2	9.3		0.3	2	97	91	27
77'7"	82'11"	" " 70% "	5'4")	3							
82'11"	87'0"	" " 85% "	4'1")	4	6.6		0.3	4	94	88	30
87'0"	92'0"	" " 90% "	5'0")	5							
92'0"	95'0"	" " 90% "	3'0"	6	10.2		0.3	1	99	92	20
95'0"	98'3"	" " 75% "	3'3"	7	7.9						
98'3"	100'3"	Clay bed	2'0"	-	-		-	-	-	-	-
100'3"	102'4"	Bit. sand, leached and clay	2'1"	8	7.9		0.6	2	97	92	32
102'4"	104'10"	Bedded clay	2'6"	-	-		-	-	-	-	-
104'10"	106'6"	Bit. sand; interbedded clay	1'8"	-	-		-	-	-	-	-
106'6"	107'4"	" " leached	10"	-	-		-	-	-	-	-
107'4"	108'0"	" " good grade	8"	9	13.5		0.5	1	99	88	16
108'0"	109'0"	Clay bed	1'0"	-	-		-	-	-	-	-
109'0"	110'9"	Lost core - water course	1'9"	-	-		-	-	-	-	-
110'9"	112'4"	bit. sand; good grade	1'7"	10	15.6		0.3	-	99	91	9
112'4"	114'0"	Bit. sand; partially leached	1'8"	11	Not analysed						
114'0"	116'0"	Lost core - water course	2'0"	-	-		-	-	-	-	-
116'0"	117'4"	Bit. sand; badly leached - water course	1'4"	12	6.9		0.6	-	99	79	11
117'4"	119'0"	Lost core - water course	1'8"	-	-		-	-	-	-	-
119'0"	120'4"	Bit. sand, badly leached. Water course	1'4"	13	6.9		0.6	-	99	79	11
120'4"	123'4"	" " good grade	3'0")	14	15.6		0.3	-	99	91	8
123'4"	125'4"	" " " "	2'0")	15							
125'4"	126'0"	Clay bedded	8"	-	-		-	-	-	-	-
126'0"	128'0"	Bit. sand 50%; clay 50%	2'0"	16	10.0		1.1	7	92	64	23

STEEPBANK AREA

HOLE No. 15B

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
128'0"	128'6"	Clay bedded	6"	-	-		-	-	-	-	-
128'6"	130'0"	Bit. sand; good grade	1'6"	17	13.5		1.1	4	96	74	13
130'0"	130'6"	Clay ironstone 3"; clay 3"	6"	-	-		-	-	-	-	-
130'6"	130'10"	Bit. sand; much clay	4"	-	-		-	-	-	-	-
130'10"	132'0"	Clay bedded	1'2"	-	-		-	-	-	-	-
132'0"	133'0"	Sandy clay	1'0"	-	-		-	-	-	-	-
133'0"	133'6"	Bit. sand, leached	6"	-	-		-	-	-	-	-
133'6"	134'9"	Lost core; water course	1'3"	-	-		-	-	-	-	-
134'9"	135'4"	Bit. sand, leached)	7")	18	14.1		0.4	1	99	90	26
135'4"	138'0"	" " good grade)	2'8")								
138'0"	141'0"	Clay bedded	3'0"	-	-		-	-	-	-	-
141'0"	143'6"	Bit. sand, good grade. Minor water course.	2'6"	19	14.1		0.8	1	99	84	16
143'6"	144'8"	Clay bedded	1'2"	-	-		-	-	-	-	-
144'8"	146'2"	Clay breccia, interstices filled) with bit. sand)	1'6")	20	10.1		1.2	10	89	55	22
146'2"	146'6"	Clay bedded)	4")								
146'6"	146'10"	Bit. sand, good grade)	4")								
146'10"	147'0"	Clay bed)	2")								
147'0"	147'9"	Clay breccia - bit. sand; fair grade)	9")	21	5.1		1.7	19	80	62	34
147'9"	149'0"	" " " " low ")	1'3")								
149'0"	152'0"	" " " "	3'0"	22	4.6		1.8	7	92	59	23
							1.9	18	81	56	34
152'0"	152'6"	Clay bed	6"	-	-		-	-	-	-	-
152'6"	154'0"	Clay breccia - bit. sand	1'6"	23	4.9		2.7	5	94	58	19
							3.0	13	83	60	36
154'0"	157'6"	Bit. sand, leached; water course	3'6"	24	4.5		2.4	3	96	64	14
							3.1	17	81	59	28

STEEPBANK AREA

HOLE No. 15B

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
157'6"	159'0"	Clay bedded	1'6"	-	-		-	-	-	-	-
159'0"	160'3"	Clay breccia - bit. sand	1'3"	25	4.8		2.6	5	94	67	16
							2.9	16	82	58	33
160'3"	160'11"	Lost core; water course	8"	-	-		-	-	-	-	-
160'11"	162'0"	Bit. sand, leached; low grade	1'1")	26	6.4		2.1	-	100	61	2
162'0"	163'6"	" " " Fair)	1'6")								
163'6"	166'6"	" " well leached water course	3'0"	27	6.4		2.1	-	100	61	2
166'6"	167'0"	" good grade)	6")	28	13.0		0.2	-	99	55	2
167'0"	169'0"	" " high ")	2'0")								
169'0"	169'7"	Clay breccia - bit. sand)	7")								
169'7"	170'0"	Clay bedded)	5")	29	5.8		4.5	6	93	55	15
170'0"	170'9"	Clay breccia bit. sand)	9")				4.7	15	83	56	31
170'9"	172'0"	Lost core (lost in washing)	1'3"	-	-		-	-	-	-	-
172'0"	174'0"	Clay breccia - bit. sand	2'0"	30	7.0		2.3	3	96	55	16
							2.6	14	84	62	38
174'0"	174'2"	Clay ironstone rib	2"	-							
174'2"	175'2"	Clay breccia - bit. sand)	1'0")								
175'2"	176'2"	Clay bed - contains 3" bit. sand, rich)	1'0")	31	6.3		1.9	4	94	51	21
176'2"	177'0"	Bit. sand; high grade)	10")				2.1	18	81	62	45
177'0"	180'0"	Bit. sand, few clay fragments; good grade	3'0"	32	15.6		0.6	1	98	46	8
180'0"	182'0"	" " more " " " "	2'0"	33	8.8		1.2	2	97	49	14
							1.7	18	79	56	35
182'0"	184'6"	Clay breccia - bit. sand; low grade	2'6"	34	8.4		1.4	1	97	43	13
							1.7	16	82	57	36
184'6"	187'0"	Same - better grade	2'6"	35	7.6		2.4	3	96	45	17
							3.0	18	81	57	39
187'0"	187'6"	Clay bed	6"	-	-						

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STEEPBANK AREA

HOLE No. 15B

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
187'6"	189'0"	Clay breccia - bit. sand; fair grade	1'6"	36	9.5		1.4	1	98	23	7
							1.7	17	82	53	30
189'0"	190'0"	Lost core	1'0"	-	-						
190'0"	193'9"	Bit. sand; good grade	3'9"	37	17.1		0.2	-	100	21	1
193'9"	195'0"	Lost core; probably good grade	1'3"	-	-						
195'0"	196'0"	Bit. sand; good grade	1'0"	38	17.1		0.2	-	100	21	1
196'0"	197'6"	Clay breccia - bit. sand; fair grade)	1'6")								
197'6"	198'0"	Clay bedded)	6")	39	7.8		1.1	2	97	38	8
198'0"	199'0"	Clay breccia - bit. sand; fair grade)	1'0")				1.7	13	83	53	36
199'0"	200'0"	Lost core	1'0"	-			-	-	-	-	-
200'0"	201'2"	Bit. sand; good grade	1'2"	40	9.9		1.1	1	99	31	8
							1.6	16	86	51	33
201'2"	202'2"	Contorted clay	1'0"	-	-		-	-	-	-	-
202'2"	202'8"	Bit. sand; clay on side	6"	-	-		-	-	-	-	-
202'8"	203'4"	Clay bed like 201'2" - 202'2"	8"	-	-		-	-	-	-	-
203'4"	205'0"	Clay breccia - bit. sand; good grade	1'8"	41	11.2		0.9	4	95	34	14
							1.4	17	81	55	37
205'0"	206'0"	Clay - some bed as 202'8" - 203'0"	1'0"	-	-		-	-	-	-	-
206'0"	210'0"	Bit. sand - clay breccia; good grade	4'0"	42	13.1		0.6	6	94	26	9
							0.9	19	79	54	35
210'0"	211'0"	Bit. sand; good grade	1'0")	43							
211'0"	215'0"	Lost core; fished probably good grade	4'0")	-							
215'0"	219'0"	Bit. sand; good grade	4'0")	44	15.5		0.1	6	93	21	4
219'0"	221'6"	" " " "	2'6")	45							
221'6"	224'0"	Lost core; probably good grade	2'6")	-							
224'0"	226'6"	Bit. sand; good grade	2'6")	46							
226'6"	229'0"	Clay breccia - 65% bit. sand	2'6"	47	11.0		0.5	21	79	22	5
							0.7	41	57	29	18

STEEPBANK AREA

HOLE No. 15B

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
229'0"	232'0"	Bit. sand; good grade	3'0"	48	15.0		0.2	31	67	13	4
232'0"	234'0"	Residual clay containing bitumen, small fragments of limestone.	2'0"	49	8.8		0.7 0.8	51 34	47 63	17 25	8 16
234'0"	235'0"	Residual clay; coarse fragments of limestone. No bit. sand.	1'0"	-	-		-	-	-	-	-
235'0"	241'4"	Limestone - shows residual clay	6'4"	-	-		-	-	-	-	-
	241'4"	End Hole									

Summary

112' @ 9.1% including 46' @ 12.4%, 18% clay bands.

STEEPBANK AREA

HOLE No. 16

DATE June 26 - July 6, 1943 LOCATION CO-ORDINATES ELEVATION 914' DEPTH 87'10" DIP 90° CORE RECOVERY 93%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0	17'0"	River washed sand	17'0"	-							
17'0"	21'0"	Bit. sand	4'0"	1	15.0		0.6		100	90	16
21'0"	21'6"	" "	6")	2							
21'6"	23'3"	" "	1'9")	3							
23'3"	24'1"	" "	10")	4	14.1		0.6		100	89	20
24'1"	24'9"	" "	8")	5							
24'9"	25'9"	" "	1'0")	6							
25'9"	25'11"	" " clay partings	2"	7	8.4		1.1		100	78	39
25'11"	26'4"	" " " "	5")	8							
26'4"	27'1"	" "	9")	9	12.1		0.6		100	84	21
27'1"	27'7"	" "	6")	10							
27'7"	28'6"	" " clay partings	11"	11	6.0		1.1		100	62	26
28'6"	28'8"	" "	2"	12	14.0		0.4		100	80	15
28'8"	29'10"	" " minor clay partings	1'2"	13	7.2		0.8			68	29
29'10"	31'1"	" "	1'3"	14	12.4		0.4			71	20
31'1"	32'6"	" "	1'5")	15	16.2		0.3			74	11
32'6"	33'5"	" "	11")	16							
33'5"	33'10"	" " minor clay partings	5"	17	7.3		0.8		100	70	26
33'10"	35'10"	" "	2'0")	18							
35'10"	37'1"	" "	1'3")	19	13.3		0.6		100	68	11
37'1"	38'2"	" "	1'1")	20							
38'2"	39'3"	" " some clay	1'1"	21	6.8		1.1		100	74	37
39'3"	40'10"	" " " "	1'7"	22	14.5		0.3			77	15
40'10"	41'2"	Lost core	4"	-	-		-			-	-
41'2"	42'10"	Bit. sand	1'8"	23	14.5		0.3			77	15
42'10"	44'1"	Bit. sand	1'3"	24	14.5		0.3			77	15
44'1"	45'1"	" "	1'0"	25	14.5		0.3			77	15

STEEPBANK AREA

HOLE No. 16

DATE ..... 194..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
45'1"	45'10"	Lost core	9"	-	-		-			-	-
45'10"	46'9"	Bit. sand	11"	26	14.5		0.3			77	15
46'9"	47'2"	Lost core	5"	-	-		-			-	-
47'2"	48'7"	Bit. sand	1'5"	27	14.5		0.3			77	15
48'7"	49'11"	" "	1'4"	28	14.5		0.3			77	15
49'11"	51'6"	" "	1'9"	29	14.5		0.3			77	15
51'6"	53'2"	" "	1'8"	30	14.6		0.3			77	15
53'2"	53'8"	" "	6"	31	13.9		0.3		100	59	11
53'8"	55'5"	" " trace clay	1'9"	32	8.1		0.7		100	61	23
55'5"	56'11"	" "	1'6"	33	14.8		0.2		100	74	10
56'11"	57'5"	" "	6"	34	14.8		0.2		100	74	10
57'5"	58'11"	Lost core	6"	-			-		-	-	-
58'11"	59'9"		10"	35	14.8		0.2		100	74	10
59'9"	60'8"		11"	36	14.8		0.2		100	74	10
60'8"	61'6"		10"	37	14.8		0.2		100	74	10
61'6"	62'6"		11"	38	14.8		0.2		100	74	10
62'5	64'1"		1'8"	39	9.0		0.6		100	62	20
64'1"	64'10"	Lost core	9"	-	-		-			-	-
64'10"	65'2"	Bit. sand; some clay	4"	40	13.3		0.2			58	10
65'2"	67'3"	" " " "	2'1")	41							-
67'3"	67'10"	" " " "	7")	42	6.9		0.8			61	29
67'10"	68'3"	" " " "	5")	43							
68'3"	68'9"	" "	6"	44	10.1		0.3			67	29
68'9"	69'10"	" " minor clay	1'1"	45	12.0		0.2			36	17
69'10"	70'8"	" " only fair sample	10"	46	12.0		0.2			36	17
70'8"	71'8"	Lost core	1'0"	-	-		-			-	-
71'8"	73'1"	Bit. sand	5"	47	12.0		0.2			36	17
73'1"	74'5"	" " some separation	1'4"	48	12.0		0.2			36	17

STEEPBANK AREA

HOLE No. 16

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	-40 %	-100 %	-200 %
74'5"	75'10"	Lost core	1'5"	-	-		-				
75'10"	76'8"	Bit. sand, some separation	10"	49	15.2)		0.1			12	5
76'8"	77'6"		10"	50	15.2)						
77'6"	78'4"		10"	51	13.2		0.5			23	10
78'4"	78'10"		6"	52	6.8		1.2			39	25
78'10"	79'3"	Bit. sand	5"	52	10.5		0.5			21	10
79'3"	83'3"	Heavy flow of water Sample water leached	4'0"	54	8.4		0.6			24	14
83'3"	84'7"	Bit. sand; coarse	1'4"	55	10.7		0.4			16	6
84'7"	86'10"	Residual clay limestone fragments	2'3"	56	Not analysed					-	-
86'10"	87'10"	Limestone	1'0"	-							
	87'10"	End Hole									

Summary

17' - 85' = 68' @ 12.4% bitumen, slight clay.

STEEPBANK AREA

HOLE No. 17

DATE July 8 - 21 1943 LOCATION CO-ORDINATES ELEVATION 1028' DEPTH 159' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG		FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER −35 %	−42 %	−100 %	−200 %
		Method: Augering												
0	2'0"	Sandy soil)		2'0"	-									
2'0"	7'5"	Hard sand bed)		5'5"	-									
7'5"	9'5"	Chiefly clay)	Clearwater	2'0"	1	6.0			1.4			100	87	22
9'5"	11'3"	" ")	shale series	1'10"	2	8.4			3.6			100	91	15
11'3"	11'10"	Bit. sand, leached)		7"	3	8.4			3.6			100	91	15
11'10"	13'11"	" " trace clay		2'1"	4	13.2			0.8			100	90	16
13'11"	14'7"	Clay iron stone		8")	5	4.6			2.9			100	82	38
14'7"	16'9"	Bit. sand; wet		2'2")										
16'9"	19'7"	" "		2'10"	6	9.6			4.9			100	88	16
19'7"	21'8"	" "		2'1"	7	6.1			1.6			100	81	21
21'8"	23'8"	" "		2'0"	8	8.9			0.4			100	90	18
23'8"	25'9"	" "		2'1")	9	11.7			1.3			100	88	16
25'9"	27'10"	" "		2'1")	10									
27'10"	28'11"	" "		1'1"	11	9.7			2.7			100	81	24
28'11"	30'8"	" " trace clay		1'9"	12	5.1			3.2			100	89	30
30'8"	31'9"	" " " "		1'1"	13	6.4			0.3		100		89	16
31'9"	32'4"	" " no clay		7")	14	11.1			0.3			100	78	11
32'4"	33'5"	" " some clay		1'1")	15									
33'5"	34'11"	" " " "		1'6")	16	8.3			1.5		100		70	22
34'11"	37'4"	" " " "		2'5")	17									
37'4"	39'3"	" " " "		1'11"	18	8.3			3.3			100	70	16
39'3"	40'0"	" " no clay		9"	19	10.5			3.0			100	73	12
40'0"	42'9"	" " some clay		2'9"	20	7.9			3.1			100	79	24
42'9"	44'0"	" " no clay		1'3"	21	9.6			1.4			100	74	17
44'0"	44'3"	Lost core		3"	-	-			-			-	-	-
44'3"	46'5"	Bit. sand; some clay		2'2"	22	9.6			1.4			100	74	17
46'5"	48'10"	" " no clay		2'5")	23									
48'10"	49'1"	Lost core		3")	-									

STEEPBANK AREA

HOLE No. 17

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER −35 %	−42 %	−100 %	−200 %
49'1"	52'2"	Bit. sand	3'1")	24									
52'2"	54'2"	" "	2'0")	25									
54'2"	56'6"	" "	2'4")	26									
56'6"	57'11"	" "	1'5")	27	12.3			1.0		100		63	13
57'11"	61'0"	" " trace clay	3'1")	28									
61'0"	61'4"	" "	4")	29									
61'4"	64'4"	" "	3'0")	30									
64'4"	66'7"	" "	2'3")	31									
66'7"	66'10"	Lost core	3"	-	-			-		-		-	-
66'10"	67'6"	Bit. sand	8"	32	7.2			0.3			100	75	29
67'6"	68'11"	" "	1'5"	33	14.0			0.1		100		71	15
68'11"	71'3"	Water course Small sample leached	2'4"	34	9.9			0.1		100		58	10
71'3"	72'0"	Lost core	9"	-									
72'0"	75'2"	Bit. sand	3'2"	35	12.2			0.8			100	75	16
75'2"	75'4"	Lost core	-	-	-			-		-		-	-
75'4"	77'4"	Bit. sand	2'0")	36									
77'4"	80'2"	" "	2'10")	37									
80'2"	81'9"	" " leached	1'7")	38									
81'9"	85'3"	" "	3'6")	39									
85'3"	85'7"	" " much leaching	4")	40									
85'7"	89'11"	" " trace clay	4'4")	41	12.2			0.8			100	75	16
89'11"	91'11"	" " some clay	2'0")	42									
91'11"	94'9"	" " " "	2'10")	43									
94'9"	96'7"	" " " "	1'10")	44									
96'7"	98'6"	" "	1'11"	45	14.7			0.7			100	50	11
98'6"	99'6"	" " clay; leached	1'0"	46	1.6			1.7		100		53	31

STEEPBANK AREA

HOLE No.: 17

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER −35 %	−42 %	−100 %	−200 %
99'6"	100'9"	Lost core	1'3"	-	-			-		-		-	-
100'9"	103'5"	Bit. sand	2'8"	47	17.0			0.7			100	73	10
103'5"	104'2"	Clay	9"	48	5.6			1.2		100		74	41
104'2"	104'4"	Lost core	2"	-	-			-		-	-	-	-
104'8"	106'8"	Bit. sand, with clay	2'4"	49	6.2			1.3		100		76	31
106'8"	107'0"	Bit. sand	1'2"	50	14.3			0.4		100		55	14
107'10"	111'[illegible]"	" " & clay	3'4"	51	5.7			4.0			100	48	25
111'2"	112'7"	" " & "	1'5"	52	14.2			0.1		100		58	15
112'7"	113'9"	" " & "	1'2"	53	8.8			1.7			100	49	27
113'9"	114'5"	Lost cor[illegible]	8"	-	-			-			-	-	-
114'5"	115'8"	Bit. sand, clay	1'3"	54	5.4			1.8		100		52	25
115'8"	116'6"	" " no clay	10"	55	10.8			0.2			100	46	13
116'6	117'5"	Lost core (water course)	11"	-	-			-		-		-	-
117'5"	119'2"	Bit. sand	1'9"	56	15.5			0.3		100		54	8
119'2"	120'5"	Clay, with little bit. sand	1'3")	57									
120'5"	120'8"	Bit. sand; some clay	3")	58	8.0			1.0			100	48	24
120'8"	123'5"	Bit. sand; much clay	2'9")	59									
123'5"	124'7"	Lost core (water course)	1'2"	-	-			-			-	-	-
124'7"	125'0"	Bit. sand (good); leached	5"	60	Screen analyses only; sand sample lost								
125'0"	125'7"	Mostly clay (wet)	7"	61	6.8			1.0			100	53	30
125'7"	127'8"	Bit. sand; badly leached	2'1"	62	Not analysed						100	33	13
127'8"	132'1"	Bit. sand, with clay	4'5"	63	10.0			1.1		100		45	26
132'1"	132'5"	Bit. sand; leached	4"	64	Not analysed						100	34	8
132'5"	135'1"	Bit. sand; with 9" clay	2'8"	65	9.0			1.2			100	48	25
135'1"	137'7"	Bit. sand, somewhat leached	2'6"	66	14.8			0.5		100		24	7
137'7"	138'7"	Lost core (water course)	1'0"	-									
138'7"	139'10"	Bit. sand; some leaching	1'3")	67									
139'10"	141'1"	Bit. sand (coarse); somewhat leached	1'3")	68	14.8			0.5		100		24	7
141'1"	143'6"	Bit. sand	2'5")	69									
143'1"	143'10"	Bit. sand; leached	4")	70									

STEEPBANK AREA

HOLE No. 17

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	BITUMEN %	MINERAL MATTER %	WATER %	PH	SCREEN ANALYSIS MINERAL MATTER −35 %	−42 %	−100 %	−200 %
143'10"	147'3"	Not sufficient core recovered but probably good bit. sand	3'5"	-									
147'3"	147'11"	Bit. sand, very rich	8"	71	14.8			0.5		100		24	7
147'11"	148'8"	Bit. sand	9"	72	14.8			0.5		100		24	7
148'8"	150'7"	Bit. sand; much clay	1'11"	73	10.6			0.3			100	59	30
150'7"	153'7"	Bit. sand; some clay	3'0"	74	6.9			0.7		100		47	29
153'7"	155'4"	Bit. sand; little clay	1'9"	75	12.4			0.1			100	13	6
155'4"	155'10"	Bit. sand; much clay	6"	76	7.1			0.6		100		36	28
155'10"	159'0"	Residual clay	3'2"	77	-	Not analysed							
	159'0"	End hole											

Summary

47' - 155' = 108' @ 11.2% bitumen 1.4% clay bands

STEEPBANK AREA

HOLE No. 18

DATE Sept. 7-18 1943 LOCATION CO-ORDINATES ELEVATION 1074' DEPTH 273' DIP 90° CORE RECOVERY 201' @ 96.5% 36' @ 40.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Diamond Drill-Gelmud									
0	5'0"	Glacial drift)	5'0"	-	-						
5'0"	58'0"	Clay) clear	53'0"	-	-						
58'0"	63'0"	Bedded sand trace bit.) water	5'0"	-	-						
63'0"	92'6"	Clay) shale	29'6"	-	-						
92'6"	92'9"	Clay ironstone)	3"	-							
92'9"	93'5"	Bit. sand, leached; water course	8"								
93'5"	94'5"	Bit. sand, fair grade)	1'0")								
94'5"	94'9"	Clay bed)	4")								
94'9"	95'3"	Bit. sand, fair grade)	6")	1	11.9		0.7	4	96	91	31
95'3"	96'0"	Bit. sand, thin clay beds)	9")								
96'0"	96'6"	Clay bed	6"	-							
96'6"	96'9"	Bit. sand thin clay beds	3"	-							
96'9"	97'0"	Clay bed	3"	-							
97'0"	98'0"	Bit. sand leached; water course	1'0"	-							
98'0"	99'3"	Lost core water course	1'3"	-							
99'3"	100'2"	Bit. sand good grade	11"	2	11.6		0.5	1	99	89	
100'2"	101'6"	Clay bed	1'4"	-							
101'6"	102'0"	Clay small amount sand	6"	-							
102'0"	103'6"	Lost core water course	1'6"	-							
103'6"	104'0"	Clay and leached sand	6"	-							
104'0"	107'0"	Clay with interbedded sand	3'0"	3	6.5		0.6	6	94	80	24
107'0"	108'8"	Bit. sand good grade)	1'8")								
108'8"	108'11"	Clay bed)	3")	4	13.6		0.2	1	99	84	9
108'11"	111'3"	Bit. sand good grade)	2'4")								
111'3"	112'0"	Bit. sand & 2 clay beds)	9")	5	13.3		0.4	3	97	78	15
112'0"	112'8"	Bit. sand good grade)	8")								

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STEEPBANK AREA

HOLE No. 18

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
112'8"	112'11"	Clay bed	3"		-						
112'11"	113'6"	Bit. sand, leached; minor water course	7"	-							
113'6"	116'3"	Bit. sand good grade	2'9"	6	17.7		0.5	-	100	87	15
116'3"	117'0"	Clay bed	9"	-	-						
117'0"	119'9"	Lost core - likely clay	2'9"	-	-						
119'9"	121'6"	Clay & thin beds bit. sand	1'9"	-	-						
121'6"	122'8"	Clay bedded	1'2"	-	-						
122'8"	124'0"	Bit. sand good grade	1'4"	7	11.8		0.4	1	99	92	19
124'0"	125'3"	Clay bed	1'3"	-	-						
125'3"	126'3"	Lost core water course	1'0"	-	-						
126'3"	126'6"	Bit. sand leached water course	3"	-	-						
126'6"	127'0"	Bit. sand & clay interbedded)	6"	8	12.9		0.4	2	98	56	21
127'0"	128'2"	Interbedded clay & bit. sand)	1'2"		-						
128'2"	129'10"	Clay bedded	1'8"	-	-						
129'10"	130'2"	Interbedded sand & clay)	4")								
130'2"	130'5"	Clay bed)	3")								
130'5"	130'7"	Bit. sand leached)	2")	9	7.6		0.4	8	92	80	35
130'7"	130'9"	Clay bed)	2"	9							
130'9"	131'0"	Bit. sand, good grade)	3"								
131'0"	131'6"	Clay bed	6"	-	-						
131'6"	132'0"	Lost core, water course	6"	-	-						
132'0"	132'11"	Bit. sand, leached water course	11"	-	-						
132'11"	133'4"	Clay bed	5"	-	-						
133'4"	133'8"	Bit. sand, leached water course	4"	-	-						
133'8"	133'11"	Clay bed	3"	-	-						
133'11"	134'9"	Bit. sand, leached water course	10"	-	-						
134'9"	136'9"	Bit. sand & clay partly leached	2'0"	-	4.1		1.7	12	88	76	34
136'9"	138'0"	Clay	1'3"	-							
138'0"	138'4"	Clay ironstone rib	4"	-							
138'4"	140'4"	Bit. sand, good grade)	2'0")								
140'4"	140'6"	Clay bed)	2")	11	11.1		0.6	5	95	78	19

STEEPBANK AREA

HOLE No. 18

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
140'6"	140'9"	Bit. sand, good grade)	3")								
140'9"	142'0"	Clay bedded	1'3"		-						
142'0"	143'0"	Bit. sand, leached, fair grade	1'0"	12	10.1		0.8	1	99	85	17
143'0"	143'4"	Clay bed	4"		-						
143'4"	144'0"	Bit. sand, leached, water course)	8"		-						
144'0"	146'8"	Clayed bit. sand, leached; low grade)	2'8"	13	2.9		1.4	11	88	68	36
146'8"	146'11"	Bit. sand, good grade)	3"								
146'11"	147'3"	Clay bed	4"		-						
147'3"	147'5"	Clay ironstone rib	2"	-							
147'5"	148'0"	Clay	7"	-							
148'0"	148'6"	Bit. sand, leached, water course)	6")								
148'6"	148'8"	Clay)	2")								
148'8"	149'3"	Bit. sand, good grade)	7")	14	9.7		0.9	4	95	79	21
149'3"	149'5"	Clay)	2")								
149'5"	149'7"	Bit. sand, good grade)	2")								
149'7"	150'0"	Clay bed	5"		-						
150'0"	150'4"	Bit. sand, leached, water course	4"		-						
150'4"	151'6"	Bit. sand, partially leached	1'2"	15	14.1		0.3	1	99	92	18
151'6"	152'0"	Bit. sand, leached	6"		-						
152'0"	153'0"	Clay	1'0"		-						
153'0"	155'2"	Bit. sand, leached (water course)	2'2"	16	4.8		1.4	9	91	74	36
155'2"	156'2"	Clay	1'0"								
156'2"	156'6"	Bit. sand clayed; leached)	4")								
156'6"	157'0"	" " interbedded with clay)	6")	17	9.3		0.5	12	88	68	33
157'0"	159'0"	" " and clay interbedded)	2'0")								
159'0"	164'3"	" " good grade	5'3"	18	16.2		0.6	1	99	68	11
164'3"	164'7"	Clay bedded	4"		-						
164'7"	165'3"	Bit. sand good grade	8"	19	16.2		0.6	1	99	68	11

STEEPBANK AREA

HOLE No. 18

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
165'3"	166'0"	Clay and bit. sand leached)	9")								
	166'4"	Bit. sand with clay)	4")	20	4.1		2.4	14	85	66	40
	167'0"	Clay and bit. sand leached)	8")								
	170'0"	Bit. sand, good grade	3'0"	21	16.0		0.6	1	99	82	14
	171'4"	Clay breccia, leached)	1'4"								
	173'0"	Bit. sand, good grade)	1'8"	22	9.2		3.0	13	87	68	29
	173'1"	Clay ironstone rib	1"	-	-		-	-	-	-	-
	173'7"	Clay bedded	6"	-	-		-	-	-	-	-
	176'10"	Bit. sand, good grade	3'3"	23	16.1		0.4	1	99	82	14
	179'10"	" " " "	3'0"	24	8.6		0.5	2	98	69	14
179'10"	180'3"	Clay bedded	5"		-		-	-	-	-	-
	180'7"	Bit. sand, good grade)	4")								
	180'10"	Clay bed)	3")	25	8.9		1.7	5	94	48	17
	181'2"	Bit. sand, good grade)	4")								
	182'6"	Bit. sand, leached water course	1'4"	26	3.7		1.2	13	86	72	46
	184'6"	Bit. sand, good grade (2" clay bed)	2'0")	27	15.9		0.7	-	99	76	8
	185'2"	Bit. sand, good grade)	8")								
	186'5"	Bit. sand, leached (water course))	1'3")	28	9.0		2.6	7	93	59	19
	187'5"	Bit. sand, good grade)	1'0")								
	187'10"	Clay bedded	5"								
187'10"	189'10"	Clay breccia, fair grade)	2'0")								
189'10"	190'5"	Bit. sand, good grade)	7")	29	9.1		2.6	7	92	51	21
190'5"	191'10"	Clay breccia, fair grade)	1'5")								
191'10"	192'0"	Clay bed)	2")								
	192'4"	Bit. sand, good grade)	4")	30	8.9		1.4	8	92	44	21
	193'0"	Clay, bedded, somswhat sandy)	8")								
	196'0"	Bit. sand, good grade	3'0"	31	14.8		1.3	1	99	51	8
	199'0"	Bit. sand, good grade	3'0"	32	14.8		1.3	1	99	51	8
199'0"	200'0"	Lost core	1'0"		-		-	-	-	-	-

STEEPBANK AREA

HOLE No. 18

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	-40 %	--100 %	-200 %
	201'10"	Bit. sand, good grade	1'10"	33	9.1		2.2	9	91	49	22
	202'0"	Clay bed	2"	-	-		-	-	-	-	-
	202'3"	Bit. sand good grade	3"								
	202'8"	Clay bedded	5"	34	5.0		2.8				
	203'3"	Bit. sand, leached, water course	7"								
	204'0"	Clay breccia, bit. good grade	9"								
	205'0"	Bit. sand, good grade	1'0"	35	8.5		1.0	2	97	41	11
	207'0"	Clay breccia, good grade bit.	2'0"								
	207'6"	Clay breccia, little bit.	6"	36	9.9		0.9	9	91	40	17
	208'10"	Bit. sand, two large clay fragments	1'4"								
208'10"	208'11"	Clay ironstone band	1"								
208'11"	212'0"	Clay breccia coarse clay fragments one of clay ironstone	3'1"	37	10.5		1.1	5	95	41	21
212'0"	213'0"	Bit. sand, good grade	1'0"								
	213'3"	Clay bed	3"	38	8.8		1.1	10	90	37	17
	213'8"	Clay breccia, good bit.	5"								
	215'0"	Bit. sand, good grade	1'4"								
215'0"	215'2"	Clay bed	2"								
	216'6"	Clay breccia, good bit.	1'4"	39	15.4		0.8	4	96	39	8
	216'8"	Clay ironstone fragment	2"								
	217'0"	Bit. sand, good grade	4"								
	217'5"	Bit. sand, slightly coarse, good grade	5"								
	217'9"	Clay fragment on side of core	4"								
	217'11"	" " " " " "	2"								
	218'3"	Clay bedded	4"	40	Retained for geology 12.						
	218'6"	Bit. sand, coarse good grade	3"								
	219'1"	Clay breccia sand coarse	7"								
	219'6"	Clay bedded same as 217'11" - 218'3"	5"								

STEEPBANK AREA

HOLE No. 18

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
	220'0"	Bit. sand, coarse good grade)	6"								
	222'0"	Bit. sand, coarse good bit.	2'0"	41	15.6		1.1	16	83	41	6
	225'6"	Bit. sand, medium good bit.	3'6"	42	15.6		1.1	16	83	41	
	226'6"	Bit. sand, coarse good grade)	1'0")								
	227'6"	Clay breccia, good grade bit.)	6")	43	15.6		1.1	16	83	41	6
	227'6"	" " , coarse sand good grade)	6")								
	230'6"	Bit. sand,good grade	3'0"	44	11.4		0.4	35	64	24	5
230'6"	233'6"	Bit. sand,good grade	3'0"	45	11.4		0.4	35	64	24	5
233'6"	236'0"	Bit. sand,good grade)	2'6"								
236'0"	237'5"	Bit. sand,good grade) First signs lime fragments)	1'5"	46	11.4		0.4	35	64	24	5
237'5"	237'8"	White limey clay	3"								
	241'8"	Bit. sand, coarse grained) water course starts)	4'0"	47	6.3		0.4	28	71	9	3
	245'0"	Lost core	3'4"	-			-	-	-	-	-
	247'5"	Coarse sand, leached; limey) clay fragments)	2'5"	48	6.6		0.3	53	45	11	6
	250'0"	Lost core	2'7"	-	-		-	-	-	-	-
	251'6"	Same as S #48	1'6"	49	6.6		0.3	53	45	11	6
251'6"	255'0"	Lost core	3'6"	-	-		-	-	-	-	-
255'0"	259'0"	Same as S #48	4'0"	50	6.6		0.3	53	45	11	6
	262'0"	Lost core	3'0"	-	-		-	-	-	-	-
	264'0"	Same as S #48	2'0"	51	6.6		0.3	53	45	11	6
	273'0"	Represented by about 18" of coarse quartz sand with limey clay fragments, very badly decomposed. Evidently on limestone basement.	9'0"	52	5.0		0.4	29	69	12	6
	273'0"	END OF HOLE									

STEEPBANK AREA

HOLE No. 18

DATE ..... 194..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Summary 159' - 237' = 78' @ 11.2% bitumen & 8% clay bands.									

STEEPBANK AREA

HOLE No. 20

DATE Aug. 7-26 1943 LOCATION ..... CO ORDINATES ..... ELEVATION 1076' DEPTH 228'10" DIP 90° CORE RECOVERY 88.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0"	30'0"	Clay augered every 5 feet	30'	-	-		-	-	-	-	-
30'0"	37'6"	Clay	7'6"	-	-		-	-	-	-	-
37'6"	39'8"	Hard clay; ironstone rib	2'2"	-	-		-	-	-	-	-
39'8"	43'2"	Bit. sand, leached; low grade	3'6"	-	-		-	-	-	-	-
43'2"	51'0"	Bit. sand, low grade (washed down)	7'10"	-	-		-	-	-	-	-
51'0"	52'8"	Bit. sand, low grade	1'8"	-	-		-	-	-	-	-
52'8"	56'0"	Bit. sand, low grade	3'4"	1			0.5				
56'0"	60'0"	Bit. sand, low grade	4'0"	2			0.5				
60'0"	64'8"	Bit. sand, low grade	4'8"	3	Not analysed						
64'8"	64'10"	Hard clay; ironstone rib	2"	-	-		-				
64'10"	69'4"	Clay mostly, little bit. sand	4'6"	4	5.2		0.4	6	93	83	45
69'4"	70'2"	Bit. sand; fair grade	10"	5	6.5		0.6	5	95	90	30
70'2"	70'11"	Hard clay; ironstone rib	9"	-							
70'11"	73'3"	Bit. sand; very low grade	2'4"	6			0.0				
73'3"	75'6"	Lost core; probably low grade	2'3"	-	-		-	-	-	-	-
75'6"	79'10"	Bit. sand; low grade	4'4"	7	7.6		0.2	-	99	76	17
79'10"	82'3"	" " medium grade	2'5"	8	7.6		0.2	-	99	76	17
82'3"	85'0"	" " " "	2'9"	9	10.9		0.1	-	99	75	12
85'0"	85'9"	No sample (washed down)	9"	-	-		-	-	-	-	-
85'9"	86'10"	Bit. sand; low grade	1'1"	10	9.3		0.9	1	99	82	17
86'10"	87'6"	Hard clay; ironstone rib	8"	-	-		-	-	-	-	-
87'6"	89'6"	Lost core (water course)	2'0"	-	-		-	-	-	-	-
89'6"	91'11"	Bit. sand; fair grade	2'5"	11	11.9		0.2	-	99	55	8
91'11"	93'2"	" " medium grade)	1'3")	12							
93'2"	93'4"	Lost core)	2")		9.0		0.4	-	99	60	16
93'4"	94'7"	Bit. sand; medium grade)	1'3")								
94'7"	95'9"	Lost core due to washing down	1'2"	-	-		-	-	-	-	-
95'9"	98'11"	Bit. sand; some clay	3'2"	13	9.0		0.4	-	99	60	16

STEEPBANK AREA

HOLE No. 20

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
98'11	103'0"	Bit. sand; fair grade	4'1"	14	12.6		0.1	-	99	67	-
103'0"	107'6"	" " " "	4'6"	15	12.6		0.1	-	99	67	-
107'6"	107'9"	Lost core	3"	-			-				
107'9"	110'9"	Bit. sand; good grade	3'0"	16	12.6		0.1	-	99	67	13
110'9"	113'6"	" " with some clay	2'9"	17	7.2		0.7	7	92	67	30
113'6"	114'2"	Clay bed	8"	-	-		-	-	-	-	-
114'2"	115'11"	Lost core; water course	1'9"	-	-		-	-	-	-	-
115'11"	117'9"	Bit. sand; good grade	1'10"	18	11.9		0.4	2	97	70	17
117'9"	119'8"	" " " "	1'11"	19	13.5		0.2	-	99	63	12
119'8"	122'11"	" " " "	3'3"	20	13.5		0.2	-	99	63	12
122'11"	125'0"	" " " "	2'1"	21	13.5		0.2	-	99	63	12
125'0"	127'6"	" " " "	2'6"	22	10.4		0.2	3	96	83	24
127'6"	129'5"	" " " "	1'11"	23	13.6		0.1				
129'5"	130'4"	Lost core	11'	-	-		-	-	-	-	-
130'4"	132'4"	Bit. sand; good grade	2'0"	24	13.6		0.1	-	99	65	12
132'4"	132'11"	Clay bed; not sampled	7"	-			-	-	99	65	12
132'11"	134'7"	Bit. sand; good grade	1'8"	25	14.3		0.2	-	96	72	12
134'7"	135'7"	Clay; not sampled	1'0"	-	-		-	-	-	-	-
135'7"	139'5"	Bit. sand; good grade	3'10"	26	14.3		0.2	1	96	72	12
139'5"	140'6"	Clay bed; not sampled	1'1"	-	-		-	-	-	-	-
140'6"	141'5"	Lost core	11"	-			-	-	-	-	-
141'5"	142'6"	Bit. sand; with clay; fair grade	1'1"	27	10.8		0.7	6	93	51	20
142'6"	143'9"	Clay; not sampled	1'3"	-	-		-	-	-	-	-
143'9"	146'2"	Bit. sand; good grade	2'5"	28	13.7		0.4	1	97	44	12
146'2"	147'11"	Bit. sand some clay; fair grade	1'9"	29	11.3		0.8	2	95	50	18
147'11"	150'0"	Bit. sand good grade	2'1"	30	14.5		0.2	-	99	67	10
150'0"	153'6"	Bit. sand good grade; 3" clay	3'6"	31	13.5		0.8	2	97	51	14
153'6"	158'5"	Bit. sand good grade	4'11"	32	15.1		0.3	-	99	62	11
158'5"	160'1"	Clay bed; not sampled	1'8"	-	-		-	-	-	-	-
160'1"	160'3"	Lost core	2"	-	-		-	-	-	-	-

STEEPBANK AREA

HOLE No. 20

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
160'3"	162'9"	Bit. sand; good grade	2'6"	33	15.1		0.3	-	99	62	11
162'9"	164'0"	Clay bed: not sampled	1'3"	-	-		-	-	-	-	-
164'0"	166'2"	Lost core	2'2"	-	-		-	-	-	-	-
166'2"	170'11"	Clay bed; not sampled	4'9"	-	-		-	-	-	-	-
170'11"	176'0"	Bit. sand; good grade	5'1"	34	15.1		0.3	-	99	62	11
176'0"	177'0"	Clay; not sampled	1'0"	-	-		-				
177'0"	179'4"	Bit. sand; good grade	2'4"	35	15.1		0.3	-	99	62	11
179'4"	179'9"	Lost core	5"	-			-				
179'9"	185'3"	Bit. sand; good grade	5'6"	36	17.2		0.5	-	99	62	11
185'3"	188'6"	Bit. sand with clay; fair grade	3'3"	37	9.4		0.4	7	92	48	21
188'6"	189'4"	Lost core; water course	10"	-	-		-	-	-	-	-
189'4"	193'6"	Bit. sand; good grade	4'2"	38	15.3		1.1	-	99	46	9
193'6"	197'7"	" " " "	4'1"	39	15.3		1.1	-	99	46	9
197'7"	201'7"	" " " "	4'0"	40	15.3		1.1	-	99	46	9
201'7"	205'3"	" " with clay; lower grade	3'8"	41	12.5		1.2	2	97	39	15
205'3"	208'10"	" " good grade	3'7"	42	10.0		0.5	3	95	42	24
208'10"	209'3"	Lost core; water course	5"	-	-		-	-	-	-	-
209'3"	210'5"	Bit. sand	1'2"	43	23'8"		0.2	-	100	26	6
210'5"	211'6"	Lost core; water course	1'1"	-	-		-	-	-	-	-
211'6"	212'7"	Bit. sand) small sample; some)	1'1")								
212'7"	212'9"	Lost core) separation; about)	2")	44	19.9		0.2	-	97	36	18
212'9"	214'1"	Bit. sand) 50% reliable only)	1'4")								
214'1"	215'4"	Lost core; water course	1'3"	-	-		-	-	-	-	-
215'4"	217'8"	Bit. sand; rich; some separation	2'4"	45	15.1		1.3	4	95	40	21
217'8"	220'7"	No sample	2'11"	-	-		-	-	-	-	-
220'7"	222'1"	Bit. sand; much clay	1'6"	46	5.6		3.0	10	89	45	30
222'1"	223'10"	" " good grade	1'9"	47	15.0		0.2	8	91	34	10
223'10"	227'0"	No sample (casing trouble)	3'2"	-	-		-	-	-	-	-
227'0"	228'0"	Residual clay; diam. drilled	1'0"	-	-		-	-	-	-	-
228'0"	228'10"	Clay fragments	1'0"	-	-		-	-	-	-	-
	228'10"	End hole	1'0"	-	-		-	-	-	-	-

STEEPBANK AREA

HOLE No. 20

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Summary									
		99' - 224' = 125' @ 11% bitumen and 11% clay									

STEEPBANK AREA

HOLE No. 21

Recovery to 172'=98.5%
172' - 184'=45%

DATE Sept. 22 - Oct. 1 194 3 LOCATION CO-ORDINATES ELEVATION 1092' DEPTH 184' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	-40 %	-100 %	-200 %
0	3'5"	Surface soil	3'5"	-							
3'5"	47'0"	Glacial	43'7"	-							
47'0"	88'0"	Clearwater shale	41'0"	-							
88'0"	90'6"	Bit. sand, leached	2'6"								
90'6"	91'3"	Clay bed	9"	1	3.8		1.5	7	93	40	36
91'3"	92'7"	Bit. sand, leached watercourse	1'4"								
92'7"	93'0"	Clay bed	5"								
93'0"	94'6"	Bit. sand, leached watercourse	1'6"								
94'6"	96'9"	Clay & sand very little bit.	2'3"	2	3.8		1.5	7	93	40	36
96'9"	97'7"	Bit. sand, leached watercourse	10"								
97'7"	98'0"	Clay bed sandy	5"								
98'0"	98'4"	Bit. sand, partly leached	4"								
98'4"	98'7"	Clay bed	3"								
98'7"	100'0"	Bit. sand, leached, watercourse	1'5"								
100'0"	100'9"	Bit sand, fair grade	9"								
100'9"	101'1"	Clay bed	4"	3	6.9		0.5	4	95	79	26
101'1"	101'7"	Bit. sand, good grade	6"								
101'7"	102'3"	Clay bed	8"								
102'3"	102'9"	Bit. sand, leached	6"								
102'9"	103'0"	Bit. sand, good grade	3"								
103'0"	103'3"	Bit. sand, a little leached	3"								
103'3"	103'4"	Clay bed	1"	4							
103'4"	103'6"	Bit. sand, good grade	2"								
103'6"	103'9"	Clay bed	3"								
103'9"	104'2"	Bit. sand, good grade	5"	4	6.9		0.5	4	95	79	26
104'2"	105'4"	Bit. sand, leached; watercourse	1'2"								
105'4"	106'7"	Bit. sand, good grade	1'3"								
106'7"	106'9"	Clay bed	2"								
106'9"	106'11"	Bit. sand, some leaching	2"								
106'11"	108'0"	Clay, little bit. sand	1'1"								
108'0"	108'6"	Clay bed	6"								

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STEEPBANK AREA

HOLE No 21

DATE 194 LOCATION CO-ORDINA ES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40	-40 %	-100 %	-200 %
108'6"	109'0"	Bit. sand good grade)	6"								
109'0"	109'5"	Bi sand, leached watercourse)	5"	5	6.9		0.5	4	95	79	26
109'5"	109'7"	Clay bed)	2"								
109'7"	109'10"	Bit sand, leached)	3"								
109'10"	110'5"	Bit. sand, good grade)	7"								
110'5"	110'11"	Clay bed)	6"								
110'11"	111'6"	Bit. sand, leached)	9")								
111'6"	112'0"	Clay bed)	6")	6	5.8		1.7	8	91	80	29
112'0"	112'10"	Bit. sand, leached; watercourse)	10")								
112'10"	113'2"	Clay bed)	4")								
113'2"	113'9"	Bit. sand, leached)	7")								
113'9"	114'6"	Bit. sand, good grade)	9")								
114'6"	114'9"	Clay bed)	3")	7	5.8		1.7	8	91	80	29
114'9"	115'0"	Bit sand good grade)	3")								
115'0"	116'0"	Bit. sand, leached)	1'0")								
116'0"	118'	Bit. sand, good grade	2'0"	8	11.9		5.1	1	99	86	27
118'0"	119'5"	Bit. sand thin clay beds low grade	1'5"	9	4.0		1.2	13	86	76	45
119'5"	122'6"	Bit sand, good grade	3'1"	10	12.3		1.0	-	99	87	18
122'6"	125'4"	Bit sand, fair grade	2'10"	11	12.9		0.5	1	98	86	10
125'4"	126'0"	Bit. sand, good grade)	8"								
126'0"	127'6"	Bit. sand leached, watercourse)	1'6"								
127'6"	128'0"	Lost co watercourse)	6"	12	7.2		1.4	7	93	78	29
128'0"	128'6"	Bi sand, leached)	6"								
128'6"	129'6"	Bit. sand good grade)	1'0"								
129'6"	130'0"	Clay bed	6"								
130'0"	131'0"	Bit. sand, leached, watercourse)	1'0")								
131'0"	131'6"	Lost core watercourse)	6")	13	2.9		1.7	12	85	77	34
131'6"	133'0"	Bit. sand leached watercourse)	1'6")								
133'0"	136'0"	Bit. sand & clay low grade	3'0"	14	2.9		1.7	12	85	77	34
136'0"	136'9"	Bit. sand, good grade)	9"	15	7.1		1.0	9	90	70	28
136'9"	138'0"	Bit sand, some leaching)	1'3"								

STEEPBANK AREA

HOLE No. 21

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
138'0"	140'6"	Bit. sand, good grade	2'6"	16	6.9		1.6	4	96	51	15
140'6"	143'0"	Bit. sand, good grade	2'6"	17	12.2		1.1	1	99	38	5
	143'3"	Clay bed	3"	-	-		-	-	-	-	-
	146'0"	Bit. sand, good grade	2'9"	18	12.2		1.1	1	99	38	5
	149'0"	Bit. sand, slightly leached	3'0"	19	13.3		0.3	1	99	38	5
	150'0"	Lost core (grinding)	1'0"	-	10.		-	-	-	-	-
150'0"	153'7"	Bit. sand, good grade	3'7"	20	10.1		0.6	1	99	51	7
	153'9"	Clay bed	2"	-							
	154'9"	Bit. sand, good grade)	1'0")								
	155'0"	Clay bed)	3")	21	11.5		0.3	3	97	57	17
155'0"	157'8"	Bit. sand, good grade)	2'8")								
	157'10"	Clay bed sand leached 2" each side	2"	-							
	159'8"	Bit. sand, good grade)	1'10")								
	160'0"	Clay bed)	4")	22	14.1		0.4	1	99	64	11
160'0"	161'0"	Bit. sand, leached; watercourse)	1'0")								
	162'0"	" " " ")	1'0")	23	10.3		0.6	7	93	69	19
	164'6"	" " good grade)	2'6")								
	165'6"	Clay bed	1'0"	-	-		-	-	-	-	-
	167'0"	Bit. sand, leached, watercourse)	1'6")	24	13.2		0.3	1	99	36	5
167'0"	169'0"	Bit. sand, good grade)	2'0")								
	172'0"	" " " "	3'0"	25	13.2		0.3	1	99	36	5
	175'0"	Lost core	3'0"	-	13.2						
175'0"	176'0"	Bit. sand, separated	1'0"	26	15.6		0.1	-	100	23	4
176'0"	180'0"	Bit. sand, good grade	4'0"	27	15.6		0.1	-	100	23	4
	183'6"	Lost core	3'6"	-	10.0						
	184'0"	Bit. sand, good grade	6"	28	9.2		0.2	2	98	42	10
	184'0"	End Hole									

STEEPBANK AREA

HOLE No. 21

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Summary 88' - 141' = 53' @ 6.4% bitumen 141' - 184' = 43' @ 12% bitumen & 5% clay bands.									

STEEPBANK AREA

HOLE No. 31

DATE July 24 - Aug. 4 1943 LOCATION CO-ORDINATES ELEVATION 1031' DEPTH 151'7" DIP 90° CORE RECOVERY 91%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0	7'5"	Loose sand	7'5"	-							
7'5"	9'3"	Bit. sand	1'10"	1	12.2		0.4		100	85	11
9'3"	11'7"	" " some clay	2'4"	2	9.0		1.4		98	74	25
11'7"	13'6"	" "	1'11"	3	8.2		0.6		99	78	15
13'6"	15'4"	" " a little separation	1'10")	4	10.9		0.4		99	72	10
15'4"	16'9"	" " " " "	1'5")	5							
16'9"	18'6"	" "	1'9")	6							
18'6"	19'8"	" "	1'2")	7							
19'8"	20'10"	" "	1'2")	8	13.3		0.8		99	82	13
20'10"	22'10"	" "	2'0")	9							
22'10"	24'9"	" "	1'11")	10							
24'9"	26'1"	" "	1'4"	11	10.0		1.9	1	99	73	19
26'1"	31'2"	" " trace clay	5'1"	12	9.4		1.1	2	97	74	20
31'2"	31'10"	" "	8"	13	13.0		0.3	-	100	64	12
31'10"	32'9"	" "	11"	14	7.7		0.5	2	97	72	25
32'9"	34'4"	" "	1'7"	15	10.0		0.4	1	99	68	18
34'4"	36'8"	" "	2'4"	16	12.1		0.6	-	99	72	12
36'8"	38'0"	Lost core	1'4"	-	-		-	-	-	-	-
38'0"	38'6"	Bit. sand	6"	17	12.1		0.6	-	99	72	12
38'6"	40'3"	Lost core	1'9"	-	-		-	-	-	-	-
40'3"	43'2"	Bit. sand; trace clay	2'11"	18	12.1		0.6	-	99	72	12
43'2"	44'6"	Bit. sand	1'4"	19	12.1		0.6	-	99	72	12
44'6"	45'1"	Bit. sand; some clay	7"	20	9.0		1.1	8	92	54	20
45'1"	48'1"	Bit. sand	3'0"	21	12.8		0.7	-	99	62	7
48'1"	49'6"	Bit. sand; some clay	1'5"	22	5.4		2.1	10	89	54	26
49'6"	52'2"	Bit. sand; some clay	2'8"	23	14.0		0.2		100	71	10
52'2"	57'9"	Clay bed	5'7"	-	-		-	-	-	-	-
57'9"	59'6"	Bit. sand	1'9")	24							
59'6"	61'9"	" " some clay	2'3")	25	16.5		1.4	6	93	58	17
61'9"	62'10"	" " " "	1'1")	26							

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STEEPBANK AREA

HOLE No. 31

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
62'10"	67'10"	Bit. sand; some clay	5'0"	27	14.1		0.1	-	100	53	8
67'10"	70'0"	Mostly clay (leached)	2'2"	28	9.6		0.3	4	95	60	20
70'0"	72'0"	Lost core (water course)	2'0"	-	-		-	-	-	-	-
72'0"	72'11"	Bit. sand; some clay	11"	29	9.6		0.3	4	95	60	20
72'11"	73'8"	Bit. sand	9"	30	15.0		0.1	2	97	57	11
73'8"	74'4"	" " some clay	8"	31	10.7		0.4	5	93	50	22
74'4"	80'9"	Clay bed	6'5"	-	-		-	-	-	-	-
80'9"	86'3"	Bit. sand	5'6"	32	7.7		0.7	14	85	54	28
86'3"	88'8"	" " some clay	2'5"	33	15.4		0.5		100	57	5
88'8"	89'11"	Mostly clay	1'3"	34	-	Not analysed			-	-	-
89'11"	90'3"	" "	4"	35	17.7		0.2		99	37	6
90'3"	93'6"	Bit. sand and clay	3'3"	36	8.6		1.0	8	91	38	18
93'6"	95'11"	" " good grade	2'5"	37	15.4		0.3	1	98	46	8
95'11"	96'11"	Clay; little bit. sand	1'0"	38	-	Not analysed		-	-	-	-
96'11"	98'7"	Bit. sand; good grade	1'8"	39	15.0		0.2	-	99	46	11
98'7"	99'1"	Clay bed	6"	-	-		-	-	-	-	-
99'1"	99'11"	Bit. sand; good grade	10"	40	15.0		0.2		99	46	11
99'11"	100'4"	Lost core	5"	-	-		-	-	-	-	-
100'4"	100'11"	Bit. sand; good grade	7"	41	15.0		0.2	-	99	46	11
100'11"	103'10"	Lost core	2'11"	-	-		-	-	-	-	-
103'10"	107'2"	Bit. sand; good grade	3'4"	42	15.0		0.2	-	99	46	11
107'2"	109'2"	Only 40% accurate	2'0"	43	10.5		0.4	4	95	45	20
109'2"	110'1"	Bit. sand; good grade	11"	44	12.7		0.3	2	97	50	17
110'1"	115'10"	Clay; little bit. sand	5'9"	45	5.2		1.4	13	87	46	25
115'10"	116'6"	Lost core	8"	-	-		-	-	-	-	-
116'6"	119'3"	Clay and bit. sand; 20% accurate	2'9"	46		Not analysed		-	-	-	-
119'3"	119'5"	Lost core	2"	-	-		-	-	-	-	-
119'5"	120'6"	Bit. sand and clay	1'1"	47	7.9		0.9	8	91	84	25
120'6"	120'9"	Clay bed	3"	-	-		-	-	-	-	-
120'9"	124'7"	Bit. sand and clay	3'10"	48	7.9		0.9	8	91	84	25
124'7"	128'5"	" " " "	3'10"	49	7.9		0.9	8	91	84	25

STEEPBANK AREA

HOLE No. 31

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
128'5"	130'11"	Lost core	2'6"	-	-		-	-	-	-	-
130'11"	133'11"	Bit. sand and clay	3'0"	-	7.9		0.9	8	91	84	25
133'11"	137'3"	" " " "	3'4"	51	7.9		0.9	8	91	84	25
137'3"	138'3"	Lost core	1'0"	-	-		-	-	-	-	-
138'3"	140'7"	Bit. sand; little clay	2'4"	52	14.4		0.2	1	98	30	8
140'7"	141'2"	Clay bed	7"	-	-		-	-	-	-	-
141'2"	141'7"	Lost core	5"	-	-		-	-	-	-	-
141'7"	146'4"	Bit. sand; good grade	4'9"	53	14.4		0.2	1	98	30	8
146'4"	151'0"	" " " "	4'8"	54	10.4		0.3	9	91	41	19
151'0"	151'6"	Limey residual clay	6"		-		-	-	-	-	-
151'6"	151'7"	Limestone	1"		-		-	-	-	-	-
	151'7"	End Hole									

Summary

8' - 151' = 143' @ 9.7% bitumen & 13% clay bands.

STEEPBANK AREA

HOLE No. 32

DATE Sept. 16 - Oct. 1 1943 LOCATION CO-ORDINATES ELEVATION 1046' DEPTH 187'0" DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	-40 %	-100 %	-200 %
		Recovery (Augered 98% (D.D. gel-mud 75%									
0	9'8"	Overburden	9'8"	-							
9'8"	12'7"	Bit. sand, fair grade)	2'11")	1	9.2		2.3	1	99	91	17
12'7"	13'0"	" " better ")	5")								
13'0"	13'3"	Lost core	3"		(7.9)						
13'3"	19'0"	Bit. sand, some clay, fair grade	5'9"	2	7.9		1.7	6	93	83	25
19'0"	24'0"	Bit. sand, fair grade	5'0"	3	9.9		1.5	2	98	89	21
24'0"	28'7"	" " " "	4'7"	4	9.9		1.5	2	98	89	21
28'7"	30'4"	" " some clay fair grade)	1'9")	5	10.1		2.3	1	98	88	25
30'4"	33'6"	" " fair grade)	3'2")								
33'6"	35'7"	" " good grade	2'1"	6	10.1		2.3	1	98	88	25
35'7"	36'9"	" " some clay fair grade)	1'2")	7	6.9		0.3	5	94	87	46
36'9"	40'1"	" " " " low grade)	3'4")								
40'1"	41'3"	Lost core	1'2"	-	(7%)		-	-	-	-	-
41'3"	46'8"	Bit. sand, some clay, fair grade	5'5"	8	7.6		3.9	5	94	80	31
46'8"	51'0"	" " fair grade	4'4"	9	10.3		2.2	1	98	93	32
51'0"	55'8"	" " " "	4'8"	10	10.2		0.8	2	98	87	27
55'8"	58'1"	" " some clay good grade)	2'5"	11	12.5		0.9	1	98	82	22
58'1"	60'9"	)	2'8"	12	12.5		0.9	1	98	82	22
60'9"	61'11"	)	1'2"								
61'11"	63'2"	Clay, very little sand	1'3"	-	-		-	-	-	-	-
63'2"	65'2"	Bit. sand, good grade	2'0"	13	14.4		0.4	-	100	78	8
65'2"	69'0"	" " " "	3'10"	14	14.4		0.4	-	100	78	8
69'0"	74'5"	" " fair grade	5'5"	15	9.4		3.2	4	96	74	27
At	74'5"	Augering technique was changed to Diamond drill - Gelmud									
74'5"	75'8"	Lost core due to change over	1'3"	-	9.4				-	-	-
75'8"	76'6"	Clay bedded	10"	-	-		-	-	-	-	-
76'6"	77'11"	Bit. sand, good grade	1'5")	16	9.4		3.2	4	96	74	27

STEEPBANK AREA

HOLE No. 32

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
77'11"	78'6"	Clay bed)	7"								
78'6"	82'0"	Bit. sand good grade	3'6"	17	14.8		0.2	-	100	72	3
82'0"	82'8"	Sandy clay, water course, low	8"								
82'8"	84'4"	Lost core water course	1'8"								
84'4"	87'0"	Bit. sand, medium grade some leaching	2'8"	18	6.9		1.0	4	96	51	19
87'0"	89'6"	" " good grade	2'6"	19	15.7		0.1		100	11	1
89'6"	89'8"	Clay bed)	2")								
89'8"	90'5"	Bit. sand good grade)	9")	20	12.1		0.6	4	96	35	9
90'5"	91'0"	Sandy clay low grade)	7")								
91'0"	92'0"	Bit. sand, good grade)	1'0")								
92'0"	92'7"	" " some leaching)	7")								
92'7"	92'7½"	Clay seam)	½")								
92'7½"	92'9"	Bit. sand, good grade)	1½")								
92'9"	92'11"	Clay bed)	2")	21	10.8		0.8	2	97	24	10
92'11"	94'3"	Bit. sand, good grade)	1'4")								
94'3"	94'10"	" " leached)	7")								
94'10"	95'3"	Clay bed)	5")								
95'3"	98'0"	Bit. sand good grade	2'9"	22	15.3		0.3	-	100	22	3
98'0"	98'8"	Lost core water course)	8")								
98'8"	99'0"	Bit. sand leached)	4")	23	12.8		0.3	1	99	14	6
99'0"	102'0"	Clay breccia, good bit. sand)	3'0")								
		strong H_2S odor)									
102'0"	102'2"	Clay bed)	2")								
102'2"	102'8"	Clay breccia)	6")	24	16.1		0.2	-	100	15	2
102'8"	107'0"	Bit. sand good grade)	4'4")								
107'0"	108'8"	" " " ")	1'8")								
108'8"	109'2"	" " leached 2 clay seams)	6")								
109'2"	109'6"	" " good grade)	4")								
109'6"	109'8"	Sandy clay)	2")	25	14.6		0.3	-	100	11	3
											8

STEEPBANK AREA

HOLE No. 32

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
109'8"	110'2"	Bit. sand good grade	6"								
110'2"	110'4"	Clay	2"								
110'4"	110'10"	Bit. sand good grade	6"								
110'10"	113'6"	Lost core (fished)	2'8"	-	11.5						
113'6"	113'9"	Clay	3"	-							
113'9"	114'1"	Bit. sand good grade	4"								
114'1"	114'4"	Clay bed	3"	26	11.5		0.4	2	97	15	8
114'4"	116'9"	Bit. sand good grade	2'5"								
116'9"	117'0"	Clay bed	3"								
117'0"	117'6"	Bit. sand good grade	6"								
117'6"	117'11"	Clay bed	5"								
117'11"	118'3"	Bit. sand good grade	4"	27	12.2		0.5	4	96	17	9
118'3"	119'4"	" " interbedded clay	1'1"								
119'4"	121'0"	" " good grade	1'8"	-							
121'0"	122'0"	Lost core	1'0"	-	12.2		-	-	-	-	-
122'0"	125'6"	Bit. sand good grade	3'6"	28	15.2		0.3	5	94	10	2
125'6"	125'8"	Clay bed	2"								
125'8"	125'10"	Bit. sand good grade	2"								
125'10"	126'0"	Clay bed	2"								
126'0"	126'6"	Bit. sand good grade	6"	29	9.3		1.8	15	84	24	14
126'6"	126'7"	Clay	1"								
126'7"	126'9"	Bit. sand slightly leached	2"								
126'9"	126'10"	Clay ironstone	1"								
126'10"	127'0"	Bit. sand good grade	2"								
127'0"	127'10"	Clay	10"	-	-		-	-	-	-	-
127'10"	129'9"	Lost core	1'11"		12						
129'9"	130'6"	Bit. sand good grade	9"								
130'6"	130'9"	Clay bed	3"	30	14.9		0.5	21	78	6	2
130'9"	133'0"	Bit. sand good grade	2'3"								

STEEPBANK AREA

HOLE No. 32

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
133'0"	135'0"	Bit. sand good grade)	2'0"	31	15.4		0.3	34	66	9	2
135'0"	135'6"	Clay bed	6"	-	-		-	-	-	-	-
135'6"	138'0"	Lost core	2'6"	-	15.3		-	-	-	-	-
138'0"	141'0"	Bit. sand, good grade	3'0"	32	15.3		0.4	34	66	7	2
141'0"	142'0"	Lost core	1'0"	-	15.3		-	-	-	-	-
142'0"	143'8"	Bit. sand, good grade	1'8"	33	15.3		0.4	34	66	7	2
143'8"	144'6"	Clay bed	10"	-	-		-	-	-	-	-
144'6"	148'6"	Lost core (faulty spring)	4'0"	-	-		-	-	-	-	-
148'6"	149'9"	Bit. sand, good grade	1'3"	34	15.3		0.4	34	66	7	2
149'9"	151'9"	Clay bedded	2'0"	-			-	-	-	-	-
151'9"	154'6"	Lost core	2'9"	-	10		-	-	-	-	-
154'6"	155'3"	Bit. sand, good grade	9"	35	15.3		0.4	34	66	7	2
155'3"	162'0"	Lost core	6'9"		10.0						
162'0"	163'8"	Bit. sand, very coarse; good grade)	1'8"	36	11.3		0.5	54	43	17	5
163'8"	164'0"	" " finer, leached)	4"								
164'0"	164'2"	Clay bed)	2"								
164'2"	166'4"	Bit. sand, coarse; good grade)	2'2"	37	7.8		0.3	18	81	33	16
		lignitized wood at 165')									
166'4"	166'9"	Clay bed	5"								
166'9"	167'0"	Bit. sand coarse good grade)	3"	38	8.0		0.3	13	87	30	15
167'0"	169'0"	Clay mostly)	2'0"								
169'0"	169'6"	Lost core	6"		8.0						
169'6"	169'10"	Clay bed	4"								
169'10"	171'6"	Bit. sand coarse grained	1'8"	39	9.5		0.2	33	66	19	5
171'6"	172'6"	Lost core	1'0"	-							
172'6"	187'0"	All soft limey clay, typical of the clay which lies upon the limestone from which it has been derived. This is the greatest thickness of residual clay pierced in any of the holes. Small fragments of limestone in evidence towards end.	14'6"								
	187'0"	End Hole									

STEEPBANK AREA

HOLE No. 32

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Summary 47' 164' = 117' @ 11.6% bitumen & 7% clay bands.									

STEEPBANK AREA

HOLE No. 33

DATE Nov. 2 - 5 1943 LOCATION LSD.6,Sec.17,Tp.92,R.9 CO-ORDINATES ELEVATION 1019' DEPTH 172' DIP 90° CORE RECOVERY 96.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method - Gel-mud									
0	15'0"	River Sand	15'0"	-	-		-	-	-	-	-
15'0"	21'0"	Bit. sand, low grade; leached	6'0"	1	13.9		0.5	1	99	73	7
21'0"	26'0"	" " medium grade; some leaching	5'0"	2	13.9		0.5	1	99	73	7
26'0"	27'9"	Clay	1'9"	-	-		-	-	-	-	-
27'9"	29'9"	Bit. sand, medium grade	2'0"	3	13.9		0.5	1	99	73	7
29'9"	30'7"	Clay	10"	-	-		-	-	-	-	-
30'7"	31'0"	Clay and bit. sand	5"	-	-		-	-	-	-	-
31'0"	32'0"	Clay	1'0"	-	-		-	-	-	-	-
32'0"	33'0"	Lost core	1'0"	-	-		-	-	-	-	-
33'0"	38'0"	Bit. sand, fair grade; slightly leached	5'0"	4	11.4		0.8	1	99	74	6
38'0"	42'6"	" " " " " "	4'6"	5	11.4		0.8	1	99	74	6
42'6"	45'0"	Clay	2'6"	-	-		-	-	-	-	-
45'0"	47'0"	Bit. sand, good grade	2'0"	6	11.4		0.8	1	99	74	6
47'0"	48'0"	Lost core	1'0"	-	-		-	-	-	-	-
48'0"	53'0"	Bit. sand, good grade	5'0"	7	14.0		0.4	-	100	67	6
53'0"	58'0"	" " " "	5'0"	8	14.0		0.4	-	100	67	6
58'0"	63'0"	" " " "	5'0"	9	12.5		0.8	1	99	34	8
63'0"	68'0"	" " " "	5'0"	10	12.5		0.8	1	99	34	8
68'0"	70'2"	" " " "	2'2"								
70'2"	70'6"	Clay bed	4"	11	15.1		0.5	1	99	11	4
70'6"	73'0"	Bit. sand; good grade	2'6"								
73'0"	77'10"	Bit. sand; good grade	4'10"	12	15.1		0.5	1	99	11	4
77'10"	78'0"	Clay bed	2"	-	-		-	-	-	-	-
78'0"	83'0"	Bit. sand; good grade	5'0"	13	15.4		0.3	-	100	9	1
83'0"	89'0"	" " " "	6'0"	14	15.1		0.6	-	100	13	4
89'0"	94'0"	" " " "	5'0"	15	14.8		0.3	7	93	8	2
94'0"	99'0"	" " " "	5'0"	16	17.2		0.4	10	90	7	2
99'0"	105'0"	" " " "	6'0"	17	16.1		0.2	18	82	7	2
105'0"	110'0"	" " " "	5'0"	18	16.1		0.2	18	82	7	2
110'0"	115'0"	" " " "	5'0"	19	14.8		0.3	24	75	10	2
115'0"	121'0"	" " " "	6'0"	20	14.8		0.3	24	75	10	2

STEEPBANK AREA

HOLE No. 33

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
121'0"	126'0"	Bit. sand; good grade	5'0"	21	12.6		0.2	29	70	15	2
126'0"	131'0"	" " " "	5'0"	22	12.6		0.2	29	70	15	2
131'0"	132'6"	Clay and bit. sand; fair grade)									
132'6"	136'0"	Bit. sand; good grade; bands of clay)	5'0"	23	15.4		0.5	1	98	27	6
136'0"	141'0"	" " " " " " "	5'0"	24	15.4		0.5	1	98	27	6
141'0"	146'0"	" " " "	5'0"	25	15.4		0.5	1	98	27	6
146'0"	146'9"	Clay	9"	-	-		-	-	-	-	-
146'9"	152'0"	Bit. sand; good grade; some clay	5'3"	26	15.7		0.3	1	99	34	4
152'0"	153'2"	Clay and bit. sand; fair grade)	1'2")	27	15.7		0.3	1	99	34	4
153'2"	155'9"	Bit. sand and clay)	2'7")								
155'9"	160'4"	Clay and some bit. sand	4'7"	-	-		-	-	-	-	-
160'4"	162'0"	Bit. sand and some clay	1'8"	28	10.0		0.5	14	86	39	13
162'0"	164'0"	Clay	2'0"	-	-		-	-	-	-	-
164'0"	167'0"	Lost core	3'0"	-	-		-	-	-	-	-
167'0"	172'0"	Clay; limestone	5'0"	-	-		-	-	-	-	-
	172'0"	End Hole									

Summary

15' - 156' = 141' @ 13.3% bitumen & 5% clay bands.

STEEPBANK AREA

HOLE No. 34

DATE Aug. 29 - Sept. 11 194 3 LOCATION CO-ORDINATES ELEVATION 1058' DEPTH 184'4" DIP 90° CORE RECOVERY 98%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Method: Augering									
0	5'0"	Glacial till	5'0"	-	-						
5'0"	34'5"	Clay	29'5"	-	-						
34'5"	35'5"	Bit. sand; low grade) Clearwater	1'0"	-	-						
35'5"	42'11"	Clay) shale	7'6"	-	-						
42'11"	45'0"	Bit. sand; leached; low grade	2'1"	1	7.3		0.7	4	95	80	22
45'0"	46'0"	Lost core	1'0"	-	-		-	-	-	-	-
46'0"	49'9"	Bit. sand; leached; low grade	3'9"	2	4.3		2.0	5	95	74	31
49'9"	51'2"	Bit. sand (cored)	1'5"	3	12.5		0.4	-	99	76	7
51'2"	55'8"	" " leached (water course)	4'6"	4	12.5		0.4	-	99	76	7
55'8"	59'1"	" " fair grade	3'5")	5	12.5		0.4	-	99	76	7
59'1"	61'7"	" " " "	2'6")								
61'7"	64'8"	Clay	3'1"		-		-	-	-	-	-
64'8"	68'7"	Bit. sand; fair grade	3'11"	6	8.5		1.0	3	97	85	19
68'7"	69'2"	Bit. sand (water course)	7"	7	12.6		1.1	-	100	85	19
69'2"	70'6"	" " fair grade	1'4"								
70'6"	70'10"	Lost core (water course)	4"		-		-	-	-	-	-
70'10"	76'5"	Bit. sand; good grade	5'7"	8	12.6		1.1	-	100	85	19
76'5"	77'1"	Lost core (water course)	8"	-	-		-	-	-	-	-
77'1"	80'3"	Bit. sand; fair grade	3'2"	9	12.6		1.1	-	100	85	19
80'3"	82'4"	Bit. sand, leached (water course)	2'1"	10	7.6		3.1	3	96	83	27
82'4"	87'0"	" " "	4'8"	11	7.6		3.1	3	96	83	27
87'0"	87'9"	Clay	9"	-	-		-	-	-	-	-
87'9"	90'4"	Bit. sand; leached; low grade	2'7"	12	9.2		2.0	3	96	71	21
90'4"	91'5"	" " fair grade	1'1"	13	11.8		3.2	1	99	74	14
91'5"	95'11"	" " leached (water course)	4'6"		11.8		3.2	1	99	74	14
95'11"	99'1"	" " some clay; fair grade	3'2"	14	11.8		3.2	1	99	74	14
99'1"	102'3"	" " better grade	3'2"	15	12.8		0.3	-	99	80	9
102'3"	104'4"	Lost core (water course)	2'1"	-	-		-	-	-	-	-
104'4"	105'10"	Bit. sand; much clay; low grade	1'6"	16	4.8		2.0	14	85	62	28

STEEPBANK AREA

HOLE No. 36

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
105'10"	107'0"	Lost core (water course)	1'2"	-	-		-	-	-	-	-
107'0"	109'0"	Clay ironstone rib	2'0"	-	-		-	-	-	-	-
109'0"	111'10"	Bit. sand with clay; fair grade	2'10"	17	6.1		3.5	9	91	63	27
111'10"	116'0"	Bit. sand some leaching; fair grade	4'2"	18	13.5		0.8	1	99	76	12
116'0"	119'0"	Bit. sand; good grade	3'0"	19	13.5		0.8	1	99	76	12
119'0"	123'0"	Clay bed; some sand	4'0"	20	4.9		3.0	9	90	62	27
123'0"	126'10"	Bit. sand; good grade	3'10"	21	13.0		0.7	1	99	71	16
126'10"	131'8"	" " " "	4'10"	22	13.0		0.7	1	99	71	16
131'8"	134'2"	" " leached (water course)	2'6"	23	13.0		0.7	1	99	71	16
134'2"	136'11"	" " with clay; fair grade	2'9"	24	13.0		0.7	1	99	71	16
136'11"	139'6"	" " good grade	2'7"	25	13.0		0.7	1	99	71	16
139'6"	143'3"	" " with clay; fair grade	3'9"	26	13.0		0.7	1	99	71	16
143'3"	145'7"	" " good grade	2'4"	27	16.1		0.5	-	100	63	9
145'7"	146'11"	" " with clay, good grade	1'4"								
146'11"	152'0"	" " good grade	5'1"	28	16.1		0.5	-	100	63	9
152'0"	152'10"	" " much clay	10"								
152'10"	153'4"	" " good grade	6"	29	Sample lost on arrival						
153'4"	154'9"	" " some clay	1'5"								
154'9"	155'2"	" " good grade	5"								
155'2"	155'8"	" " much clay	6"	30	14.4		0.5	1	99	47	13
155'8"	158'5"	" " good grade	2'9"								
158'5"	159'3"	Clay bed	10"	-	-		-	-	-	-	-
159'3"	160'9"	Bit. sand; good grade	1'6"	31	14.4		0.5	1	99	47	13
160'9"	161'9"	Lost core (water course)	1'0"	-	-		-	-	-	-	-
161'9"	166'4"	Bit. sand; coarse grained)	4'7"	32	5.5		0.5	46	53	24	13
166'4"	170'5"	" " " ")	4'1"	33	5.5		0.5	46	53	24	13
170'5"	174'5"	" " " ")	4'0"	34	5.5		0.5	46	53	24	13
174'5"	177'10"	" " " ") Low grade	3'5"	35	7.9		0.6	37	63	20	11
177'10"	180'5"	" " " ")	2'7"	36	7.9		0.6	37	63	20	11

STEEPBANK AREA

HOLE No. 34

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
180'5"	183'2"	Bit. sand; coarse grained)	2'9"	37	7.9		0.6	37	63	20	11
183'2"	184'4"	" " " ")	1'2"	38	7.9		0.6	37	63	20	11

Summary

50' - 158' = 108' @ 10.7% bitumen & 10% clay bands.

STEEPBANK AREA

HOLE No. 35

DATE Oct. 22-29 1943 LOCATION CO-ORDINATES ELEVATION 1087' DEPTH 225' DIP 90° CORE RECOVERY 95.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
0	35'0"	Overburden, boulders and clay	35'		The upper part of this, Glacial; the lower, Clearwater Series.						
35'0"	39'0"	Clay, clearwater)	4'0"								
39'0"	42'0"	Clay; traces of bit. sand) Clearwater	3'0"								
42'0"	42'6"	Clay, iron stone band) Series	6"								
42'6"	45'0"	Clay; traces of bit. sand)	2'6"								
45'0"	51'0"	Bit. sand, leached; very low grade	6'0"	1	4.2		2.2	-	100	99	57
51'0"	52'6"	" " " " " "	1'6"								
52'6"	53'6"	Lost core	1'0"	2	4.2		2.2	-	100	99	57
53'6"	57'0"	Bit. sand, leached; very low grade & clay	3'6"								
57'0"	62'6"	" " " " " " "	5'6"	3	4.2		2.2	-	100	99	57
62'6"	64'0"	Bit. sand, low grade	1'6"	4	9.9		0.8	2	98	91	31
64'0"	69'0"	" " " "	5'0"								
69'0"	74'0"	" " " "	5'0"	5	5.9		1.5	5	95	88	37
74'0"	75'0"	Lost core	1'0"	-	-		-	-	-	-	-
75'0"	79'0"	Bit. sand; low grade	4'0"	6	5.9		1.5	5	95	88	37
79'0"	80'0"	Lost core	1'0"	-	-		-	-	-	-	-
80'0"	85'6"	Bit. sand; low grade	5'6"	7	7.9		1.3	8	92	84	35
85'6"	86'0"	Clay, ironstone band	6"	-	-		-	-	-	-	-
86'0"	91'0"	Bit. sand, leached; low grade	5'0"	8	7.5		1.2	3	96	87	28
91'0"	93'0"	" " " " "	2'0"								
93'0"	94'6"	Lost core	1'6"	9	7.5		1.2	3	96	87	28
94'6"	97'0"	Bit. sand, leached; low grade	2'6"								
97'0"	102'0"	" " " " "	5'0"	10	7.5		1.2	3	96	87	28
102'0"	107'0"	" " " " "	5'0"	11	7.5		1.2	3	96	87	28
107'0"	112'0"	" " some clay, fair grade	5'0"	12	12.1		0.6	2	98	67	11
112'0"	117'0"	" " " " " "	5'0"	13	12.1		0.6	2	98	67	11
117'0"	123'0"	" " " " " "	6'0"	14	12.1		0.6	2	98	67	11
123'0"	128'0"	" " medium grade	5'0"	15	12.1		0.6	2	98	67	11
128'0"	134'0"	" " " "	6'0"	16	12.1		0.6	2	98	67	11

STEEPBANK AREA

HOLE No. 35

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
134'0"	139'0"	Bit. sand much clay	5'0"	17	12.1		0.6	2	98	67	11
139'0"	141'6"	" " " "	2'6"	18	5.8		0.9	8	92	69	29
141'6"	146'0"	" " good grade	4'6"	19	13.8		0.4	1	99	57	8
146'0"	146'3"	Clay bed	3"	-	-		-	-	-	-	-
146'3"	149'0"	Bit. sand; good grade	2'9"	20	13.0		0.5	1	99	41	8
149'0"	154'0"	" " " "	5'0"	21	11.9		0.5	1	99	54	13
154'0"	159'0"	" " " "	5'0"	22	13.0		0.4	1	99	45	10
159'0"	160'0"	Lost core	1'0"	-	-		-	-	-	-	-
160'0"	165'0"	Bit. sand; good grade	5'0"	23	11.8		0.9	-	99	43	12
165'0"	166'0"	Lost core	1'0"	-							
166'0"	168'0"	Bit. sand; good grade	2'0"								
168'0"	168'5"	" " leached; water course	5"	24	11.3		1.0	1	99	32	13
168'5"	171'0"	" " good grade	2'7"								
171'0"	177'0"	" " " "	6'0"	25	11.9		0.6	1	99	25	8
177'0"	182'0"	" " " "	5'0"	26	12.1		0.9	4	95	25	13
182'0"	183'0"	Lost core	1'0"	-	-		-	-	-	-	-
183'0"	188'0"	Bit. sand; good grade	5'0"	27	13.5		1.1	13	87	20	4
188'0"	190'0"	Lost core	2'0"	-	-		-	-	-	-	-
190'0"	195'0"	Bit. sand, coarser grained; slightly leached	5'0"	28	13.5		1.1	13	87	20	4
195'0"	197'10"	" " " " " "	2'10"	29	13.5		1.1	13	87	20	4
197'10"	198'0"	Clay; ironstone band	2"	-	-		-	-	-	-	-
198'0"	205'0"	Residual clay	7'0"	-	-		-	-	-	-	-
205'0"	222'0"	" "	17'0"	-	-		-	-	-	-	-
222'0"	225'0"	Limestone	3'0"	-	-		-	-	-	-	-
	225'0"	End Hole									

STEEPBANK AREA

HOLE No. 36

DATE Nov. 10-13 1943 LOCATION LSD 3, Sec.17, Tp.92, R.9 CO-ORDINATES ELEVATION 1019' DEPTH 155 DIP 90° CORE RECOVERY 99.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
0	7'0"	River sand	7'0"	-	-		-	-	-	-	-
7'0"	12'0"	Bit. sand, fair grade; slightly leached	5'0"	1	13.4		0.3	-	100	70	4
12'0"	18'0"	" " " " " "	6'0"	2	14.2		0.4	-	100	75	7
		1" clay bands at 12'7" and 14'2"									
18'0"	24'0"	Bit. sand, low grade; leached	6'0"	3	13.8		0.0	-	100	73	3
24'0"	29'0"	" " fair " slightly leached	5'0"	4	13.3		0.4	1	99	69	3
29'0"	34'0"	" " " " " "	5'0"	5	11.7		0.8	-	100	77	8
		4" clay band 30'8" - 31'0"									
34'0"	34'10"	Bit. sand, good grade	10"								
34'10"	35'4"	Clay	6"								
35'4"	37'4"	Bit. sand; good grade	2'0"	6	11.2		2.1	-	100	76	18
37'4"	38'4"	Clay	1'0"								
38'4"	39'0"	Bit. sand; good grade	8"								
39'0"	45'0"	" " " "	6'0"	7	14.5		0.3	1	99	62	2
45'0"	48'0"	" " " "	3'0"								
48'0"	48'5"	Clay	5"	8							
48'5"	50'0"	Bit. sand; good grade	1'7"		13.5		0.9	1	99	64	8
50'0"	52'0"	" " " "	2'0"								
52'0"	52'2"	Clay	2"	9	11.2		1.3	1	99	74	11
52'2"	53'6"	Bit. sand, somewhat leached	1'4"								
53'6"	55'0"	" " good grade	1'6"								
55'0"	60'0"	" " " "	5'0"	10	12.7		0.7	1	99	81	3
60'0"	61'1"	" " " "	1'1"								
61'1"	61'9"	Clay	8"								
61'9"	62'4"	Bit. sand; good grade	7"								
62'4"	62'10"	Clay	6"	11	12.2		0.7	2	98	64	14
62'10"	64'2"	Bit. sand	1'4"								
64'2"	64'4"	Clay	2"								
64'4"	65'0"	Bit. sand; good grade	8"								
65'0"	65'10"	Bit. sand; good grade	10"								
65'10"	66'2"	Clay	4"								

STEEPBANK AREA

HOLE No. 36

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
66'2"	66'6"	Bit. sand; good grade	4"								
66'6"	72'4"	Clay, little bit. sand	5'10"	12	7.7		2.4	1	99	60	23
72'4"	74'10"	Bit. sand; good grade	2'6"								
74'10"	75'4"	Clay	6"								
75'4"	76'0"	Bit. sand; good grade	8"								
76'0"	77'0"	Lost core	1'0"		-		-	-	-	-	-
77'0"	78'6"	Clay and bit. sand	1'6"								
78'6"	80'0"	Bit. sand; some clay	1'6"	13	11.8		1.4	8	92	36	11
80'0"	82'0"	Clay and bit. sand (breccia)	2'0"								
82'0"	87'0"	Clay and bit. sand (breccia)	5'0"	14	11.8		1.4	8	92	36	11
87'0"	92'0"	Bit. sand; good grade	5'0"	15	15.7		0.3	1	99	9	1
92'0"	93'0"	Lost core	1'0"	-	-		-	-	-	-	-
93'0"	98'0"	Bit. sand; good grade	5'0"	16	15.7		0.3	1	99	9	1
98'0"	103'0"	" " " "	5'0"	17	16.5		0.2	16	84	5	1
103'0"	108'0"	" " " "	5'0"	18	16.5		0.2	16	84	5	1
108'0"	114'0"	" " " "	6'0"	19	16.5		0.2	16	84	5	1
114'0"	119'0"	" " " "	5'0"	20	17.8		0.3	7	93	29	3
119'0"	124'0"	" " " "	5'0"	21	17.8		0.3	7	93	29	3
124'0"	129'0"	" " " " some fragments of clay)	5'0"	22	17.0		0.5	1	99	68	4
129'0"	135'6"	" " " " interbedded clay bands) (50% clay))	6'6"	23	13.9		0.2	1	99	62	8
135'6"	139'0"	" " " "	3'6"	24	16.2		0.2	1	99	40	2
139'0"	144'0"	" " " " a few clay bands	5'0"	25	13.5		0.4	1	99	22	4
144'0"	149'0"	" " " " " " " "	5'0"	26	11.9		0.8	1	99	24	9
149'0"	150'2"	Bit. sand and clay	1'2"	27	14.2		0.7	2	98	30	8
150'2"	152'0"	Clay	1'10"	-	-		-	-	-	-	-
152'0"	152'6"	Residual clay	6"	-	-		-	-	-	-	-
152'6"	153'6"	Lost core	1'0"	-	-		-	-	-	-	-
153'6"	155'0"	Clay and fragments of limestone	1'6"	-	-		-	-	-	-	-
	155'0"	End hole									

STEEPBANK AREA

HOLE No. 36

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
		Summary 7' - 150' = 143' @ 13.5% bitumen & 7% clay bands.									

STEEPBANK AREA

HOLE No. 37

DATE Nov. 25 - 29 1943 LOCATION LSD 7, Sec. 17, Tp. 92, R. 9 CO-ORDINATES ELEVATION 1081 DEPTH 218 DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
0	53'0"	Stand pipe - Overburden consisting of sand and clay.	53'0"		The lower part of this is Clearwater series.						
53'0"	55'0"	Bit. sand, low grade and some clay	2'0"	1	13.3		1.8	-	100	77	7
55'0"	57'0"	Clay	2'0"		-		-	-	-	-	-
57'0"	58'0"	Lost core	1'0"		-		-	-	-	-	-
58'0"	59'9"	Bit. sand, low grade and some clay	1'9"	2	13.3		1.8	-	100	77	7
59'9"	62'0"	Clay	2'3"		-		-	-	-	-	-
62'0"	63'0"	Lost core; probably clay	1'0"		-		-	-	-	-	-
63'0"	64'8"	Clay	1'8"		-		-	-	-	-	-
64'8"	69'6"	Bit. sand, low grade and some clay	4'10"	3	13.6		1.9	1	99	69	8
69'6"	71'6"	Clay	2'0"		-		-	-	-	-	-
71'6"	74'0"	Bit. sand, low grade and some clay	2'6"	4	12.0		3.5	3	97	75	13
74'0"	79'0"	" " " " " " "	5'0"	5	10.8		4.2	5	94	63	15
79'0"	84'0"	" " medium " " " "	5'0"	6	12.1		3.6	4	96	56	12
84'0"	86'6"	" " " " " " "	2'6"	7	14.3		1.0	1	98	66	4
86'6"	86'10"	Clay	4"	-	-		-	-	-	-	-
86'10"	89'7"	Bit. sand, medium grade & some clay	2'9"	8	12.0		3.8	3	96	59	11
89'7"	91'2"	Clay	1'7"	-	-		-	-	-	-	-
91'2"	92'6"	Bit. sand, good grade	1'4"								
92'6"	92'8"	Clay	2"	9	12.8		3.2	3	97	62	10
92'8"	95'6"	Bit. sand, good grade	2'10"								
95'6"	96'10"	Clay	1'4"	-	-		-	-	-	-	-
96'10"	101'0"	Bit. sand, good grade	4'2"	10	14.7		3.1	1	99	72	6
101'0"	102'0"	Clay	1'0"		-		-	-	-	-	-
102'0"	104'10"	Bit. sand, good grade; some clay	2'10"	11	12.4		4.9	2	98	58	12
104'10"	105'2"	Clay	4"		-		-	-	-	-	-
105'2"	107'5"	Bit. sand, good grade	2'3"	12	14.0		3.8	1	99	72	6
107'5"	109'9"	Clay	2'4"		-		-	-	-	-	-
109'9"	111'0"	Bit. sand, good grade	1'3"	13	14.0		3.8	1	99	72	6
111'0"	113'0"	Lost core	2'0"								
113'0"	117'0"	Bit. sand, good grade	4'0"								

STEEPBANK AREA

HOLE No. 37

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
117'0"	117'7"	Clay	7"	14	13.9		2.6	2	98	37	5
117'7"	118'2"	Bit. sand, good grade	7"								
118'2"	124'2"	Clay	6'0"	-	-		-	-	-	-	-
124'2"	124'5"	Bit. sand, good grade	3"	-	-		-	-	-	-	-
124'5"	125'4"	Clay	11"	-	-		-	-	-	-	-
125'4"	128'0"	Bit. sand, and clay	2'8"	15	11.3		5.3	6	93	44	13
128'0"	129'8"	Bit. sand, good grade	1'8"	16	11.7		5.2	4	95	48	14
129'8"	130'9"	Clay	1'1"	-	-		-	-	-	-	-
130'9"	133'2"	Bit. sand and clay	2'5"	17	8.3		7.3	11	88	42	20
133'2"	133'6"	Clay	4"	-	-		-	-	-	-	-
133'6"	136'10"	Bit. sand, good grade	3'4"								
136'10"	137'3"	Clay	5"	18	13.9		3.8	3	97	48	9
137'3"	138'0"	Bit. sand, good grade	9"								
138'0"	139'0"	Lost core	1'0"	-	-		-	-	-	-	-
139'0"	143'0"	Bit. sand, good grade	4'0"	19	15.7		2.4	3	97	48	9
143'0"	147'0"	" " " "	4'0"	20	15.7		2.4	3	97	48	9
147'0"	151'0"	" " " "	4'0"	21	13.1		5.5	5	95	27	11
151'0"	155'0"	" " " "	4'0"	22	14.7		3.4	2	98	17	3
155'0"	158'0"	" " " "	3'0"	23	14.7		3.4	2	98	17	3
158'0"	162'0"	" " " "	4'0"	24	14.7		3.4	2	98	17	3
162'0"	166'0"	" " " "	4'0"	25	16.2		1.6	11	89	9	2
166'0"	170'0"	" " " "	4'0"	26	15.5		2.0	2	98	11	2
170'0"	174'0"	" " " "	4'0"	27	15.5		2.0	2	98	11	2
174'0"	178'0"	" " " "	4'0"	28	15.5		2.0	2	98	11	2
178'0"	182'0"	" " " "	4'0"	29	15.8		1.8	3	97	66	9
182'0"	186'0"	" " medium; somewhat leached	4'0"	30	15.8		1.8	3	97	66	9
186'0"	188'10"	" " " " "	2'10"	31	16.0		1.5	1	99	83	10
188'10"	189'0"	Clay - ironstone band	2"	-	-		-	-	-	-	-
189'0"	193'0"	Bit. sand, good grade)	4'0"	32	13.4		3.1	4	96	44	12
193'0"	197'0"	" " " ") scattered	4'0"	33	13.4		3.1	4	96	44	12
197'0"	201'0"	" " " ") clay partings	4'0"	34	13.4		3.1	4	96	44	12

STEEPBANK AREA

HOLE No. 37

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
201'0"	205'0"	Bit. sand, good grade	4'0"	35	13.4		3.1	4	96	44	12
205'0"	209'0"	" " " "	4'0"	36	13.4		3.1	4	96	44	12
209'0"	213'2"	" " " "	4'2"	37	15.1		1.0	11	87	19	6
213'2"	214'5"	Clay	1'3"	-	-		-	-	-	-	-
214'5"	215'2"	Clay & limestone fragments	9"	-			-	-	-	-	-
215'2"	218'0"	Limestone	2'10"				-	-	-	-	-
	218'0"	End Hole									

Summary

72' - 213' = 141' @ 12.3% bitumen & 11.7% clay bands.

STEEPBANK AREA

HOLE No. 38

DATE Nov. 17-21 1943 LOCATION LSD 2, Sec. 17, Tp. 92, R. 9 CO-ORDINATES ELEVATION 1058 DEPTH 226 DIP 90° CORE RECOVERY 96%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
0	35'0"	Overburden, sand and clay	35'0"								
35'0"	39'0"	Clay (clearwater shale)	4'0"								
39'0"	40'0"	Bit. sand, low grade)	1'0")								
40'0"	40'9"	Clay)	9")	1	6.8		0.6	2	98	84	33
40'9"	42'5"	Bit. sand, low grade)	1'8")								
42'5"	44'0"	Clay)	1'7")								
44'0"	45'0"	Lost core	1'0"								
45'0"	46'5"	Bit. sand, low grade)	1'5")								
46'5"	48'6"	Clay and bit. sand)	2'1")	2	9.1		0.6	1	99	61	27
48'6"	50'0"	Bit. sand, low grade & some clay)	1'6")								
50'0"	53'0"	Lost core	3'0"								
53'0"	57'0"	Bit. sand, low grade and some clay	4'0"	3	11.1		0.3	1	99	79	15
57'0"	58'0"	Clay	1'0"								
58'0"	59'0"	Bit. sand, low grade)	1'0")								
59'0"	61'6"	Bit. sand, fair grade)	1'8")	4	10.2		0.8	1	99	76	18
61'6"	61'10"	Clay)	4")								
61'10"	64'0"	Bit. sand, fair grade)	2'2")								
64'0"	65'0"	Lost core	1'0"								
65'0"	66'8"	Bit. sand, medium grade)	1'8")								
66'8"	66'10"	Clay)	2")								
66'10"	68'4"	Bit. sand, medium grade)	1'6")	5	12.7		0.6	-	100	77	12
68'4"	68'8"	Clay)	4")								
68'8"	70'0"	Bit. sand, medium grade)	1'4")								
70'0"	71'4"	Bit. sand, medium grade	1'4"								
71'4"	74'6"	Clay	3'2"								
74'6"	78'3"	Bit. sand, medium grade	3'9"	6	9.9		1.1	2	98	54	16
78'3"	78'9"	Clay	6"								
78'9"	79'10"	Bit. sand, medium grade	1'1"								
79'10"	80'0"	Clay	2"								
80'0"	86'0"	Bit. sand, good grade	6'0"	7	11.4		0.5	1	99	80	10

STEEPBANK AREA

HOLE No. 38

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
86'0"	86'10"	Bit. sand, good grade)	10")								
86'10"	87'0"	Clay)	2")	8	11.8		0.7	1	99	69	9
87'0"	90'6"	Bit. sand, good grade)	3'6")								
90'6"	91'0"	Clay	6"								
91'0"	93'10"	Bit. sand, fair grade, leached)	2'10")								
93'10"	94'6"	Clay)	8")	9	12.1		0.5	1	99	58	13
94'6"	96'0"	Bit. sand, good grade)	1'6")								
96'0"	97'0"	Lost core	1'0"								
97'0"	98'0"	Bit. sand, good grade)	1'0")								
98'0"	99'0"	" " leached)	1'0")								
99'0"	99'2"	Clay band)	2")	10	12.9		0.6	1	99	65	11
99'2"	100'8"	Bit. sand, good grade)	1'6")								
100'8"	100'9"	Clay band)	1")								
100'9"	101'7"	Bit. sand, good grade)	10")								
101'7"	102'0"	Clay	5"								
102'0"	102'6"	Bit. sand, good grade)	6")								
102'6"	102'8"	Clay)	2")								
102'8"	104'0"	Bit. sand, fair grade)	1'4")								
104'0"	104'6"	Clay)	6")	11	12.5		0.8	1	99	58	13
104'6"	105'10"	Bit. sand, good grade)	1'4")								
105'10"	106'0"	Clay)	2")								
106'0"	107'0"	Bit. sand, fair grade)	1'0")								
107'0"	112'0"	Bit. sand, good grade; slightly leached	5'0"	12	14.0		0.7	-	100	66	3
112'0"	113'8"	" " " " " ")	1'8")								
113'8"	113'10"	Clay)	2")	13	13.8		0.1	1	99	48	5
113'10"	117'0"	Bit. sand, good grade)	3'2")								
117'0"	118'0"	Bit. sand, good grade)	(1'0"								
118'0"	118'4"	Clay)	(4"	14	12.8		0.7	1	99	49	7
118'4"	122'0"	Bit. sand, fair grade; some clay)	(3'8"								

STEEPBANK AREA

HOLE No. 38

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
122'0"	127'0"	Bit. sand, good grade	5'0"	15	15.0		0.5	-	100	62	3
127'0"	131'4"	" " " "	4'4"								
131'4"	131'8"	Clay	4"	16	14.0		0.5	1	99	65	7
131'8"	132'0"	Bit. sand, leached	4"								
132'0"	135'0"	Bit. sand, good grade	3'0"								
135'0"	135'2"	Clay	2"	17	14.4		0.8	2	98	45	8
135'2"	136'4"	Bit. sand, good grade	1'2"								
136'4"	137'0"	Clay	8"								
137'0"	137'9"	Bit. sand and clay	9"								
137'9"	139'8"	Bit. sand, good grade	1'11"	18	16.0		0.4	1	99	50	5
139'8"	140'0"	Clay	4"								
140'0"	142'0"	Bit. sand, good grade	2'0"								
142'0"	144'6"	" " " "	2'6"								
144'6"	145'3"	Clay and bit. sand	9"	19	14.9		0.5	1	99	47	7
145'3"	147'0"	Bit. sand, good grade	1'9"								
147'0"	152'0"	Bit. sand, good grade	5'0"	20	15.9		0.2	1	99	57	3
152'0"	157'0"	" " " "	5'0"	21	15.9		0.2	1	99	57	3
157'0"	162'0"	" " " "	5'0	22	14.2		0.6	1	99	48	6
162'0"	165'0"	Clay, some bit. sand	3'0"	-	-						
165'0"	170'0"	Bit. sand, good grade	5'0"	23	13.6		0.7	1	99	53	7
170'0"	175'0"	" " " "	5'0"	24	16.0		-	1	99	38	2
175'0"	176'0"	Bit. sand, good grade	1'0"								
176'0"	177'0"	" " some clay	1'0"	25	13.7		0.7	2	98	48	10
177'0"	180'0"	" " good grade	3'0"								
180'0"	185'0"	" " " "	5'0"	26	13.8		0.4	1	99	36	10
185'0"	185'10"	" " " "	10"								
185'10"	186'0"	Clay	2"	27	14.8		0.4	1	99	40	10
186'0"	190'0"	Bit. sand, good grade	4'0"								
190'0"	195'0"	Bit. sand, good grade	5'0"	28	16.4		0.2	6	94	75	4
195'0"	199'6"	" " " " - coarser	4'6"	29	14.2		0.3	29	71	11	2

STEEPBANK AREA

HOLE No. 38

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +40 %	−40 %	−100 %	−200 %
199'6"	200'6"	Clay	1'0"								
200'6"	207'0"	Bit. sand, good grade	6'6"	30	15.7		0.3	11	89	58	9
207'0"	208'0"	Clay	1'0"								
208'0"	211'0"	Bit. sand, clay particles)	3'0")	31	16.0		0.3	-	100	90	10
211'0"	214'3"		3'3")								
214'3"	214'10"	Clay	7"								
214'10"	221'0"	Bit. sand, good grade	6'2"	32	15.2		-	30	70	11	4
221'0"	223'0"	Limestone	2'0"								
223'0"	226'0"	Lost core (limestone)	3'0"								
	226'0"	End Hole									

Summary

80' - 221' = 141' @ 13.5% bitumen & 7.4% clay bands.
59' - 221' = 162' @ 13.1% bitumen
39' - 221' = 182' @ 12.6% bitumen

STEEPBANK AREA

HOLE No. A

DATE Sept. 26-27 1944 LOCATION LS.11,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1062' DEPTH 209' DIP 90° CORE RECOVERY 94.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	29'0"	Overburden - clay	29'0"	-											
29'	33'	Bit. sand, very low grade	4')	1											
33'	37'	" " " " "	4')	2	6.7		Tr	6	-	6	1	6	28	29	24
37'	41'	" " " " "	4')	3											
41'	45'	" " " " "	4')	4											
45'	49'	" " low grade	4')	5											
49'	53'	" " " "	4')	6	8.9		Tr	3	-	2	2	23	48	15	7
53'	57'	" " medium grade	4')	7											
57'	61'	" " " "	4')	8	10.4		Tr	2	-	2	1	25	55	10	5
61'	65'	" " " "	4')	9											
65'	69'	" " " "	4')	10	10.2		Tr	2	1	-	1	33	50	9	5
69'	73'	" " " "	4')	11											
73'	77'	" " good grade	4')	12											
77'	81'	" " " "	4')	13	11.9		Tr	3	-	2	27	24	31	8	5
81'	83'	Lost core	2'	-											
83'	87'	Bit. sand, good grade	4')	14											
87'	91'	" " " "	4')	15	10.7		Tr	5	3	1	-	34	44	7	7
91'	95'	" " medium grade, slight clay	4')	16											
95'	99'	" " " "	4')	17	9.1		Tr	3	2	-	1	39	43	6	5
99'	103'	" " good grade	4')	18											
103'	107'	" " " "	4')	19	11.5		Tr	2	-	3	15	37	31	6	6
107'	111'	" " medium grade, partly leached	4')	20											
111'	115'	" " " " " "	4')	21	10.8		Tr	1	-	1	23	36	28	5	4
115'	119'	" " good grade	4')	22											
119'	123'	" " " "	4')	23	12.8		Tr	2	-	2	4	49	33	5	4
123'	127'	" " medium grade, slightly leached	4')	24											
127'	131'	" " good grade, slight clay	4')	25	11.3		Tr	3	-	2	61	20	9	2	2
131'	133'	Lost core	2'	-											

STEEPBANK AREA

HOLE No. A

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
133'	137'	Bit. sand, good grade	4')	26											
137'	141'	" " " "	4')	27	12.4		Tr	1	-	20	24	42	7	2	3
141'	145'	" " " "	4')	28											
145'	149'	" " " " slight clay	4')	29											
149'	153'	" " " "	4')	30	14.6		Tr	2	-	27	56	7	4	2	3
153'	157'	" " " "	4')	31											
157'	161'	" " " "	4')	32	13.1		Tr	-	13	60	11	10	3	1	2
161'	162'	Lost core	1'	-											
162'	166'	Bit. sand, good grade	4')	33											
166'	170'	" " " "	4')	34	14.7		Tr	4	21	-	44	15	11	3	3
170'	174'	" " " "	4')	35											
174'	175'	Lost core	1'	-											
175'	179'	Bit. sand, good grade, some clay	4')	36											
179'	183'	" " " " considerable clay	4')	37	13.1		Tr	7	8	-	1	19	40	18	8
183'	187'	" " medium grade, some clay	4')	38											
187'	191'	" " " " " "	4')	39	12.4		0.0	4	2	-	2	20	41	21	10
191'	195'	" " low grade, leached	4')	40											
195'	199'	" " " " "	4')	41	10.6		Tr	4	-	4	26	26	22	8	7
199'	200'	" " and clay	1'	-											
200'	204'	Lost core	4'	-											
204'	209'	Altered limestone	5'	-											
	209'	End of Hole													

Summary

0'0" - 29'0" - 29'0" Overburden
29'0" - 53'0" - 24'0" - 7.4% Bitumen
53'0" - 199'0" - 146'0" - 11.9% Bitumen

STEEPBANK AREA

HOLE No. B

DATE Sept. 28-30 1944 LOCATION LS.10, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1087' DEPTH 212' DIP 90° CORE RECOVERY 99.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	66'0"	Overburden, clay and sand	66'0"	-											
66'0"	70'0"	Bit. sand, low grade, some clay	4'0"	1)											
70'0"	74'0"	" " " " " "	4'0"	2)	5.6		0.1	11	12	-	8	9	18	17	25
74'0"	90'0"	Clay and leached bit. sand	16'0"	-											
90'0"	94'0"	Bit. sand, low grade, some clay	4'0"	3)											
94'0"	98'0"	" " " " considerable clay	4'0"	4)	6.5		Tr	5	3	-	1	47	29	8	7
98'0"	102'0"	" " " " " "	4'0"	5)											
102'0"	106'0"	" " " " " "	4'0"	6)	9.3		0.0	2	2	-	26	29	31	7	4
106'0"	110'0"	" " " " " "	4'0"	7	10.2		Tr	1	1	-	25	34	29	6	3
110'0"	114'0"	" " " " some clay	4'0"	8)											
114'0"	118'0"	" " medium grade, some clay	4'0"	9)	13.2		Tr	1	1	-	2	48	41	5	3
118'0"	122'0"	" " " " " "	4'0"	10)											
122'0"	126'0"	" " " "	4'0"	11)	13.6		0.0	1	2	-	3	60	27	4	3
126'0"	128'0"	Lost core	2'0"	-											
128'0"	132'0"	Bit. sand, medium grade, 4" clay	4'0"	12)											
132'0"	136'0"	" " " " 9" clay band	4'0"	13)	14.1		Tr	1	2	-	4	60	27	4	3
136'0"	140'0"	" " good grade	4'0"	14)											
140'0"	144'0"	" " " "	4'0"	15)	15.4		Tr	-	1	-	42	20	18	4	3
144'0"	148'0"	" " " " 50% clay	4'0"	16)											
148'0"	152'0"	" " " " " "	4'0"	17)	13.0		Tr	3	14	-	41	30	8	2	2
152'0"	156'0"	" " " " ½" clay band	4'0"	18)											
156'0"	160'0"	" " " "	4'0"	19)											
160'0"	164'0"	" " " "	4'0"	20)	14.6		Tr	1	-	23	14	49	10	2	2
164'0"	168'0"	" " " "	4'0"	21)											
168'0"	172'0"	" " " "	4'0"	22)											
172'0"	176'0"	" " " "	4'0"	23)	13.4		0.0	4	-	22	50	16	6	1	1
176'0"	180'0"	" " " "	4'0"	24)											
180'0"	184'0"	" " " "	4'0"	25)											
184'0"	188'0"	" " " "	4'0"	26)	14.6		0.0	4	-	42	18	28	6	1	1
188'0"	192'0"	" " " "	4'0"	27)											

STEEPBANK AREA

HOLE No. B

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
192'0"	196'0"	Bit. sand, medium grade, 50% clay	4'0"	28)											
196'0"	200'0"	" " low " 60% "	4'0"	29)	13.4		Tr	-	2	19	21	43	9	4	3
200'0"	204'0"	" " " " 40% "	4'0"	30)											
204'0"	207'0"	" " " " 40% "	3'0"	31)	11.3		Tr	9	-	30	33	15	7	3	4
207'0"	212'0"	Limestone	5'0"	-											
	212'0"	End of Hole													

Summary

0'0" - 90'0" = 90'0" Overburden
90'0" - 106'0" = 16'0" 7.9% Bitumen
106'0" - 207'0" = 101'0" 13.6% Bitumen

STEEPBANK AREA

HOLE No. C

DATE Sept. 23-25 1944 LOCATION LSD.7,Sec.17,Tp.92,R.9 CO-ORDINATES ELEVATION 1085' DEPTH 222' DIP 90° CORE RECOVERY 93.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	35'0"	Overburden, gravel and clay	35'0"	-											
35'0"	37'0"	Bit. sand, low grade, leached	2'0"	1											
37'0"	40'0"	Lost core	3'0"	-	8.6		0.0	10	8	-	1	18	40	11	13
40'0"	44'0"	Bit. sand, low grade, leached	4'0"	2											
44'0"	45'0"	Lost core	1'0"	-											
45'0"	48'0"	Bit. sand, low grade, leached	3'0"	3											
48'0"	50'0"	Lost core	2'0"	-	6.9		Tr	4	2	-	13	32	36	10	6
50'0"	54'0"	Bit. sand, low grade	4'0"	4											
54'0"	58'0"	" " " "	4'0"	5											
58'0"	62'0"	" " " "	4'0"	6	9.5		Tr	2	1	-	1	40	43	7	4
62'0"	66'0"	" " " "	4'0"	7											
66'0"	70'0"	" " medium grade	4'0"	8	11.1		0.0	1	1	-	26	35	26	7	3
70'0"	74'0"	" " " " slight clay	4'0"	9											
74'0"	76'0"	Lost core	2'0"	-	12.8		0.0	1	1	-	1	46	38	8	5
76'0"	80'0"	Bit. sand, medium grade, slight clay	4'0"	10											
80'0"	82'0"	Lost core	2'0"	-											
82'0"	86'0"	Bit. sand, medium grade, slight clay	4'0"	11	13.4		Tr	1	-	1	10	41	34	9	4
86'0"	90'0"	" " " "	4'0"	12											
90'0"	94'0"	" " " " 10% clay	4'0"	13											
94'0"	98'0"	" " " " 3% "	4'0"	14	13.2		Tr	1	1	-	1	45	41	7	4
98'0"	102'0"	" " " " some clay	4'0"	15											
102'0"	106'0"	" " low " considerable clay	4'0"	16	11.4		Tr	2	-	1	2	54	33	4	3
106'0"	110'0"	" " " " " "	4'0"	17											
110'0"	114'0"	" " medium " slight clay	4'0"	18	11.7		0.0	1	1	-	34	28	29	3	3
114'0"	118'0"	" " " " two 2" bands clay	4'0"	19											
118'0"	122'0"	" " " " 10" clay	4'0"	20	14.5		0.0	-	-	1	22	41	26	5	3
122'0"	126'0"	" " " " slight clay	4'0"	21											
126'0"	130'0"	" " low grade, considerable clay	4'0"	22											

STEEPBANK AREA

HOLE No. C

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
130'0"	132'0"	Lost core	2'0"	-	9.5		0.0	2	2	-	4	56	27	5	3
132'0"	136'0"	Bit. sand, low grade, considerable clay	4'0"	23											
136'0"	140'0"	" " " " " "	4'0"	24											
140'0"	144'0"	" " medium grade, " "	4'0"	25	10.7		0.0	1	-	2	47	32	13	3	3
144'0"	148'0"	" " " " , some clay	4'0"	26											
148'0"	152'0"	" " " " , considerable clay	4'0"	27	11.5		0.0	1	-	7	13	60	14	2	2
152'0"	156'0"	" " good "	4'0"	28											
156'0"	160'0"	" " " "	4'0"	29	14.0		0.0	-	-	3	64	17	10	2	2
160'0"	164'0"	" " " "	4'0"	30											
164'0"	168'0"	" " " "	4'0"	31	14.5		0.0	-	-	5	61	20	9	2	2
168'0"	172'0"	" " " "	4'0"	32											
172'0"	176'0"	" " " "	4'0"	33											
176'0"	180'0"	" " " "	4'0"	34	14.1		0.0	2	-	25	17	40	12	2	2
180'0"	184'0"	" " " "	4'0"	35											
184'0"	185'0"	Lost core	1'0"	-											
185'0"	189'0"	Bit. sand, good grade	4'0"	36	16.0		0.0	2	-	9	5	36	39	7	3
189'0"	193'0"	" " medium grade, 10" clay band	4'0"	37											
193'0"	197'0"	" " low grade, considerable clay	4'0"	38	11.7		0.0	2	-	2	12	38	24	12	11
197'0"	201'0"	" " " " " "	4'0"	39											
201'0"	205'0"	" " " " " "	4'0"	40	13.0		0.0	1	1	-	1	60	26	6	5
205'0"	209'0"	" " " " " "	4'0"	41											
209'0"	213'0"	" " " " " "	4'0"	42	12.6		0.0	4	-	10	50	21	8	3	4
213'0"	217'0"	Grey clay and altered limestone	4'0"	-											
217'0"	222'0"	Limestone	5'0"	-											
	222'	End of Hole													

Summary

0'0" - 35'0" = 35' = Overburden
35'0" - 62'0" = 27' = 8.25% Bitumen
62'0" - 213'0" = 151' = 12.6% Bitumen
35'0" - 213'0" = 178' = 11.95% Bitumen

STEEPBANK AREA

HOLE No. D

DATE Sept. 21-22 1944 LOCATION LSD.3, W 16, S 17, Tp. 92, R.9 CO-ORDINATES ELEVATION 1024' DEPTH 152' DIP 90° CORE RECOVERY 96.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	3'0"	Overburden and leached sand	3'0"	-											
3'0"	4'0"	Bit. sand, medium grade	1'10"	1	15.1		0.0	-	-	-	5	23	47	18	6
4'10"	7'0"	Clay and barren leached sand	2'2"	-											
7'0"	8'0"	Lost core	1'0"	-											
8'0"	13'0"	Clay and barren leached sand	5'0"	-											
13'0"	17'0"	Bit. sand, medium grade 2-4" clay bands	4'0"	2)											
17'0"	18'0"	Lost core	1'0"	-)	11.2		0.0	1	1	-	1	31	50	11	4
18'0"	21'0"	Bit. sand, low grade, 40% clay	3'0"	3)											
21'0"	23'0"	Lost core	2'0"	-											
23'0"	27'0"	Bit. sand, medium grade, 3-2" clay bands	4'0"	4											
27'0"	28'0"	Lost core	1'0"	-	11.6		Tr	1	1	-	1	62	29	4	2
28'0"	32'0"	Bit. sand, medium grade 1-3" clay band	4'0"	5											
32'0"	36'0"	" " " " 1-2" " "	4'0"	6											
36'0"	40'0"	" " good " 15% " "	4'0"	7	13.7		0.0	-	1	-	52	28	14	3	2
40'0"	44'0"	" " " "	4'0"	8											
44'0"	45'0"	Lost core	1'0"	-	13.6		0.0	-	-	1	3	61	29	4	3
45'0"	49'0"	Bit. sand, good grade	4'0"	9											
49'0"	53'0"	" " " "	4'0"	10											
53'0"	57'0"	" " " "	4'0"	11											
57'0"	61'0"	" " " "	4'0"	12	14.0		Tr	-	1	-	4	68	21	3	2
61'0"	65'0"	" " " "	4'0"	13											
65'0"	69'0"	" " " "	4'0"	14											
69'0"	73'0"	" " " "	4'0"	15	14.9		Tr	-	-	-	37	36	20	4	2
73'0"	77'0"	" " " "	4'0"	16											
77'0"	81'0"	" " " "	4'0"	17											
81'0"	82'0"	Lost core	1'0"												
82'0"	86'0"	Bit. sand, good grade	4'0"	18	14.5		Tr	-	-	3	7	62	23	3	2
86'0"	90'0"	" " " "	4'0"	19											
90'0"	94'0"	" " " "	4'0"	20											

STEEPBANK AREA

HOLE No. D

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY, BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
94'0"	98'0"	Bit. sand, good grade	4'0"	21	15.0		0.0	-	-	3	72	15	7	2	2
98'0"	102'0"	" " " "	4'0"	22											
102'0"	106'0"	" " " "	4'0"	23											
106'0"	110'0"	" " " "	4'0"	24	15.9		0.0	2	-	53	14	20	7	2	2
110'0"	114'0"	" " " "	4'0"	25											
114'0"	118'0"	" " " "	4'0"	26											
118'0"	122'0"	" " " "	4'0"	27	14.8		0.0	5	53	0	9	13	12	4	4
122'0"	126'0"	" " " "	4'0"	28											
126'0"	130'0"	" " medium grade, 50% clay	4'0"	29	14.2		0.0	3	-	10	26	30	20	6	6
130'0"	134'0"	" " " " , slightly clay	4'0"	30											
134'0"	139'0"	" " " " " "	5'0"	31	15.4		Tr	1	4	-	16	22	31	17	8
139'0"	143'0"	" " " " , considerable clay	4'0"	32											
143'0"	147'0"	" " low grade, 40% clay	4'0"	33	12.1		Tr	1	12	-	4	18	30	21	14
147'0"	150'0"	Clay and small amount bit. sand	3'0"	-											
150'0"	152'0"	Limestone	2'0"	-											
	152'0"	End of Hole													

Summary

0'0" - 13'0" = 13'0" - Overburden
13'0" - 147'0" = 134'0" 14.1% Bitumen

STEEPBANK AREA

HOLE No. E

DATE Sept. 16-20 1944 LOCATION LS.2, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1092' DEPTH 242' DIP 90° CORE RECOVERY 90.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	54'	Overburden & clay	54	-											
54'	57'	Lost core	3	-											
57'	62'	Clay & very low grade sand	5	-											
62'	67'	" " " " "	5	-											
67'	72'	" " " " "	5	-											
72'	76'	" " " " "	5	-											
76'	77'	Lost core	1	-											
77'	82'	Low grade bit. sand and clay	5	-											
82'	85'	Lost core	3	-											
85'	86'	Low grade bit. sand	1	-	Slight traces of bitumen										
86'	90'	Lost core	4	-											
90'	95'	Bit. sand, low grade, considerable clay	5	-											
95'	100'	" " " " " "	5	-											
100'	104'	" " " " " "	4	-											
104'	105'	Lost core	1	-											
105'	110'	Bit. sand, low grade, and clay	5	-											
110'	114'	" " " " " "	4	-											
114'	115'	" " " " " "	1)												
115'	116'	Lost core	1)												
116'	121'	Bit. sand, low grade, considerable clay	5)	2	10.5	38	Tr	0	1	0	4	9	3	67	16
121'	126'	" " medium grade, some clay	5)												
126'	131'	" " " " " "	5)												
131'	132'	Lost core	1)	3	11.1	26½	Tr	2	2	1	8	12	15	53	6
132'	136'	Bit. sand, medium grade, some clay	4)												
136'	140'	" " " " " "	4)												
140'	143'	" " " " " "	3)	4	13.6	12½	Tr	2	2	0	7	13	19	52	5
143'	147'	" " low grade, considerable clay	4)												
147'	151'	" " medium grade, " "	4)												
151'	152'	Lost core	1)	5	9.2	53½	Tr	3	2	1	12	17	30	26	9
152'	156'	Bit. sand, low grade, considerable clay	4)												

STEEPBANK AREA

HOLE No. E

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
156'	160'	Bit. sand, low grade, considerable clay	4)												
160'	162'	Lost core	2)												
162'	166'	Bit. sand, low grade, considerable clay	4)	6	9.1	52¼	Tr	1	2	1	16	16	11	49	4
166'	169'	" " " " some clay	3)												
169'	171'	Lost core	2												
171'	175'	Bit. sand, low grade, considerable clay	4)												
175'	179'	" " medium grade, some clay	4)	7	11.2	38½	Tr	1	1	1	15	26	23	28	5
179'	183'	" " " " " "	4)												
183'	187'	" " " " " "	4)												
187'	191'	" " low grade, considerable clay	4)	8	12.6	16¾	Tr	3	2	0	16	17	28	28	6
191'	195'	" " " " " "	4)												
195'	199'	" " " " " "	4)	9	8.8	66¾	Tr	2	1	1	19	30	30	14	3
199'	203'	" " " " " "	4)												
203'	207'	" " medium grade, some clay	4)												
207'	211'	" " good "	4)	10	16.0	4¼	Tr	0	1	0	11	12	12	58	5
211'	215'	" " good " slight clay	4)												
215'	219'	" " medium " , " "	4)	11	14.2	-	Tr	3	6	6	6	6	0	55	18
219'	223'	" " " " some clay	4)												
223'	227'	" " low grade, considerable clay	4)	12	12.4	20¼	Tr	3	11	7	28	7	1	36	7
227'	228'	Lost core	1												
228'	232'	Bit. sand, low grade, considerable clay	4)												
232'	236'	" " " " " "	4)	13	15.2	21¼	Tr	1	2	4	18	18	1	46	7
236'	242'	Limestone	6	-											
	242'	End of Hole													

Summary

0' - 114' = 114' Overburden & very low grade bituminous sand.

114' - 236' = 122' @ 11.5% bitumen & 23.9% clay bands.

STEEPBANK AREA

HOLE No. F

DATE Oct. 3 - 4 1944 LOCATION LSD 3/14, S.8, Tp. 92, R.9 CO-ORDINATES ELEVATION 1021' DEPTH 161' DIP 90° CORE RECOVERY 92.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	7'0"	Bit. sand, low grade	7'0"	-											
7'0"	11'0"	" " " "	4'0")	1											
11'0"	15'0"	" " " "	4'0")	2	11.3		Tr	-	1	1	-	36	42	13	6
15'0"	19'0"	" " medium grade	4'0")	3											
19'0"	23'0"	" " " "	4'0")	4	11.7		Tr	-	3	-	26	30	25	8	7
23'0"	24'0"	Lost core	1'0"	-											
24'0"	28'0"	Bit. sand, low grade, slight clay	4'0")	5											
28'0"	32'0"	" " " " " "	4'0")	6	11.3		Tr	1	1	-	24	34	30	7	4
32'0"	36'0"	" " medium grade	4'0")	7											
36'0"	40'0"	" " " "	4'0")	8	10.9		Tr	1	1	-	16	39	33	7	4
40'0"	44'0"	" " " "	4'0")	9											
44'0"	48'0"	" " " " slight clay	4'0")	10											
48'0"	52'0"	" " " " " "	4'0")	11	14.5		Tr	1	1	1	-	59	27	6	3
52'0"	56'0"	" " " " " "	4'0")	12											
56'0"	60'0"	" " good grade, two 1" clay bands	4'0")	13											
60'0"	64'0"	" " " " , two 3" clay bands	4'0")	14	14.2		Tr	-	1	4	-	65	21	4	3
64'0"	68'0"	" " medium grade, 5" clay	4'0")	15											
68'0"	72'0"	" " " " , 8" clay	4'0")	16											
72'0"	76'0"	" " good grade, 3" clay	4'0")	17	13.1		Tr	-	1	-	38	34	20	4	3
76'0"	80'0"	" " " "	4'0")	18											
80'0"	84'0"	" " " "	4'0")	19	14.3		0.0	-	1	-	52	31	11	2	3
84'0"	88'0"	" " " "	4'0")	20											
88'0"	92'0"	" " " "	4'0")	21											
92'0"	96'0"	" " " "	4'0")	22	15.4		0.0	-	1	3	-	74	17	3	3
96'0	100'0"	" " " " , 5" clay	4'0")	23											
100'0"	104'0"	" " " "	4'0")	24	14.8		Tr	-	1	-	55	29	10	2	2
104'0"	108'0"	" " " "	4'0")	25											
108'0"	112'0"	" " " "	4'0")	26	16.1		Tr	-	-	-	70	14	11	3	1
112'0"	116'0"	" " " "	4'0")	27											

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STEEPBANK AREA

HOLE No. F

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
116'0"	120'0"	Bit. sand, good grade	4'0")	28											
120'0"	124'0"	" " " "	4'0")	29	16.4		Tr	1	1	-	4	75	14	3	2
124'0"	125'0"	Lost core	1'0"	-											
125'0"	129'0"	Bit. sand, good grade	4'0")	30											
129'0"	133'0"	" " " "	4'0")	31	16.2		Tr	-	1	-	4	79	12	2	2
133'0"	137'0"	" " " "	4'0")	32											
137'0"	146'0"	Lost core, good grade, bit. sand, too soft to recover.	9'0"	-											
146'0"	150'0"	Bit. sand, good grade, 3" clay	4'0")	33											
150'0"	154'0"	" " medium grade, thin clay partings	4'0")	34	16.1		Tr	-	1	9	61	12	9	4	3
154'0"	158'4"	" " " " " " "	4")	35											
158'4"	161'0"	Soft limestone													
	161'0"	End of Hole													

Summary

0'0" - 7'0" = 7'0" Overburden and low grade bit. sand.

7'0" - 158'4" = 151'4" 14.25% bitumen.

STEEPBANK AREA

HOLE No. H

DATE Oct. 28-30 1944 LOCATION LS.12,Sec.17,Twp.92-9-4 CO-ORDINATES ELEVATION 948' DEPTH 164' DIP 90° CORE RECOVERY 93.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	80'	Overburden - clay and some low grade bit. sand	80'												
80'	84'	Bit. sand, low grade and clay	4'	1											
84'	88'	" " " " " "	4'	2											
88'	92'	" " " " " "	4'	3											
92'	93'	Lost core	1'	-	3.6	201'	Tr	7	10	-	48	12	9	11	4
93'	97'	Bit. sand, low grade and clay	4'	4											
97'	101'	" " " " " "	4'	5											
101'	105'	" " " " " "	4'	6											
105'	109'	" " " " " "	4'	7											
109'	113'	" " " " " "	4'	8											
113'	114'	Lost core	1'	-	4.6	54"	0.0	4	3	4	-	56	14	15	4
114'	118'	Bit. sand, low grade, some clay	4'	9											
118'	122'	" " " " " "	4'	10	7.1	5½"	Tr	2	2	-	49	27	4	12	3
122'	126'	" " " " " "	4'	11											
126'	130'	" " " " considerable clay	4'	12	3.6	16"	Tr	3	2	6	-	60	4	22	4
130'	133'	Lost core	3'	-											
133'	137'	Bit. sand, low grade	4'	13											
137'	141'	" " " "	4'	14	7.9	22"	0.0	1	4	-	30	34	14	13	4
141'	145'	Lost core	4'	-											
145'	149'	Bit. sand, low grade, considerable clay	4'	15	6.3	9"	Tr	5	23	9	-	34	11	14	5
149'	150'	Lost core	1'	-											
150'	157'	Clay	7'	-											
157'	159'	Coarse sand impregnated with bitumen	2'	-											
159'	164'	Altered limestone and limestone													
	164'	End of Hole													

Summary

0' - 80' = Overburden

80' - 149' = 69' 4.86% bitumen

STEEPBANK AREA

HOLE No. J

DATE Oct. 25-27 1944 LOCATION LS.13,Sec.17,Twp.92-9-4 CO-ORDINATES ELEVATION 967' DEPTH 189' DIP 90° CORE RECOVERY 96.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	4'	Leached sand	4'	-											
4'	8'	Bit. sand, leached, very low grade	4'	1)											
8'	12'	" " " " " "	4'	2)	0.9		1.0	19	11	-	9	8	22	16	15
12'	27'	Clay	15'	-											
27'	31'	Clay and leached bit. sand	4'	3)											
31'	35'	Bit. sand, low grade, slight clay	4'	4)	8.1	12½"	Tr	5	4	1	-	4	13	53	21
35'	39'	" " " " " "	4'	5)											
39'	43'	" " " " " "	4'	6)	10.2	17"	Tr	2	2	-	2	10	43	27	12
43'	47'	" " " " 6" clay band	4'	7)											
47'	51'	" " " " 40% clay	4'	8)	9.2	25"	Tr	1	1	-	2	8	43	32	13
51'	55'	" " " "	4'	9)											
55'	59'	Lost core	4'	-)											
59'	63'	Clay and low grade bit. sand	4'	10)	7.4	42"	Tr	4	2	-	2	8	25	39	19
63'	67'	Bit. sand, low grade, some clay	4'	11)											
67'	71'	" " " " " "	4'	12)											
71'	75'	Clay and low grade bit. sand	4'	13)											
75'	79'	" " " " " "	4'	14)	4.8	140	1.0	3	2	-	1	12	25	42	16
79'	83'	" " " " " "	4'	15)											
83'	87'	" " " " " "	4'	16)											
87'	91'	" " " " " "	4'	17)											
91'	95'	" " " " " "	4'	18)	6.4	119	1.0	2	3	1	-	12	21	51	10
95'	99'	" " " " " "	4'	19)											
99'	103'	" " " " " "	4'	20)											
103'	107'	" " " " " "	4'	21)											
107'	111'	" " " " " "	4'	22)	5.3	119	Tr	3	3	1	-	16	22	46	10
111'	115'	" " " " " "	4'	23)											
115'	119'	" " " " " "	4'	24)											
119'	123'	" " " " " "	4'	25)	7.9	73	Tr	1	3	-	45	26	16	5	3

STEEPBANK AREA

HOLE No. J

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
123'	127'	Clay and low grade bit. sand	4'	26											
127'	131'	" " " " " "	4'	27											
131'	135'	Bit. sand, medium grade, 50% clay	4'	28	8.2	70	0.0	1	1	-	49	25	7	15	3
135'	139'	" " " " , 30% "	4'	29											
139'	143'	Bit. sand, good grade	4'	30											
143'	147'	" " " "	4'	31	15.6		Tr	-	4	13	-	63	-	17	2
147'	151'	" " " "	4'	32											
151'	155'	" " " "	4'	33	16.0		Tr	1	7	17	-	61	-	13	2
155'	159'	" " " " slight clay	4'	34											
159'	163'	" " " "	4'	35	15.6	1	0.0	1	9	16	-	50	2	18	3
163'	167'	Clay and 30% bit. sand, good grade	4'	36											
167'	171'	" " 20% " " low grade	4'	37											
171'	172'	Lost core	1'	-	5.5	117	0.0	6	10	9	-	46	18	7	4
172'	176'	Clay and 20% bit. sand, low grade	4'	38											
176'	180'	" " 10% " " " "	4'	39											
180'	182'	Lost core	2'												
182'	188'-8"	Clay	6'-8"	-											
188'-8"	189'	Limestone	0'-4"	-											
	189'	End of Hole													

Summary

0' - 27' = 27' Overburden
27' - 139' = 112' @ 7% Bitumen
139' - 163' = 24' @ 15.7% Bitumen
or
27' - 163' = 136' @ 8.57% Bitumen

STEEPBANK AREA

HOLE No. K

DATE Oct. 23-25 1944 LOCATION LS.13,Sec.17,Twp.92-9-4 CO-ORDINATES ELEVATION 1031' DEPTH 169'0" DIP 90° CORE RECOVERY 88.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	12'	Overburden, gravel and clay	12'												
12'	16'	Bit. sand, medium grade	4'	1)											
16'	17'	Lost core	1'	-)	9.8		Tr	3	2	-	2	14	18	50	10
17'	21'	Bit. sand, medium grade	4'	2)											
21'	22'	Lost core	1'	-											
22'	26'	Bit. sand, medium grade	4'	3)											
26'	30'	" " " "	4'	4)	10.3		Tr	3	2	-	-	7	1	69	18
30'	34'	" " " "	4'	5)											
34'	36'	Lost core	2'	-)	9.5										
36'	40'	Bit. sand, medium grade	4'	6)			Tr	1	1	-	2	10	34	41	10
40'	43'	Lost core	3'	-											
43'	47'	Bit. sand, medium grade	4'	7	11.4		Tr	2	1	-	-	5	40	37	14
47'	48'	Lost core	1'	-											
48'	52'	Clay, small amount of bit. sand	4'	8	3.0		-	-	-	-	-	-	-	-	-
52'	53'	Lost core	1'	-											
53'	57'	Bit. sand, medium grade, slight clay	4'	9)											
57'	61'	" " " " " "	4'	10)	10.5		Tr	1	1	1	-	5	45	32	14
61'	65'	Clay, small amount bit. sand	4'	11)											
65'	68'	Lost core	3'	-)	3.0		-	-	-	-	-	-	-	-	-
68'	72'	Clay, small amount bit. sand	4'	12)											
72'	76'	Bit. sand, medium grade	4'	13)											
76'	80'	" " low grade, 25% clay	4'	14)	9.9		Tr	10	46	-	34	7	2	1	-
80'	84'	" " " " 40% clay	4'	15)											
84'	88'	" " " " mostly clay	4'	16)	7.0		Tr	4	5	1	-	12	-	66	12
88'	92'	" " " " considerable clay	4'	17)											
92'	96'	Clay and low grade bit. sand	4'	18)											
96'	100'	" " " " " "	4'	19)	3.0		-	-	-	-	-	-	-	-	-
100'	103'	Lost core	3'	-)											
103'	107'	Clay	4'	20)											

STEEPBANK AREA

HOLE No. K

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
107'	111'	Clay and 30% bit. sand	4'	21)											
111'	115'	" " " " "	4'	22)	9.8		0.0	1	1	1	-	34	37	21	5
115'	116'	Lost core	1'	-											
116'	120'	Clay and 15% bit. sand	4'	23)											
120'	121'	Lost core	1'	-)											
121'	125'	Bit. sand, medium grade, 40% clay	4'	24)	8.0		0.0	2	2	1	-	57	29	7	2
125'	129'	" " " " 50% "	4'	25)											
129'	133'	" " good " 10% "	4'	26)											
133'	137'	" " " " 15% "	4'	27)	13.3		0.0	1	16	-	62	10	-	8	3
137'	141'	" " " " slight clay	4'	28)											
141'	142'	Lost core	1'	-)	11.4		0.0	3	33	-	46	8	-	6	3
142'	146'	Bit. sand, getting coarser, 50% clay	4'	29)											
146'	150'	" " good grade, 25% clay	4'	30)											
150'	154'	" " " " 25% "	4'	31)	10.9		Tr	18	54	6	-	11	3	4	3
154'	158'	" " " " 25% "	4'	32)											
158'	162'	" " medium grade, 25% clay	4'	33)	11.4		0.0	8	23	4	-	33	16	14	4
162'	166'	" " " " 15% "	4'	34)											
166'	168'6"	" " " "	2'6"	35)	12.6		0.0	9	30	8	-	32	8	11	4
168'6"	169'	Basal clay	0-6	-											
	169	End of Hole													

Summary

0'-0" - 12'-0" = 12'0" Overburden
12'-0" - 129'-0" = 117'-0" 6.3% Bitumen ±
129'-0" - 168'-6" = 39'-6" 11.75% Bitumen
12'-0" - 168'-6" = 156'-6" 7.7% Bitumen

± The bitumen content of 32' feet of 3% material is not included.

STEEPBANK AREA

HOLE No. 1

DATE Oct. 20-22 1944 LOCATION 18.14,Sec.17,Twp.92-9-4 CO-ORDINATES ELEVATION 1082' DEPTH 223' DIP 90° CORE RECOVERY 84.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'-0"	33'-0"	Overburden, sand, clay and boulders	33'-0"	-											
33'	37'	Clay and low grade bit. sand	4'	1	3.0										
37'	41'	Low grade bit. sand and clay	4'	2											
41'	43'	Lost core	2'	-	4.5		0.2	4	5	-	2	8	4	23	54
43'	47'	Low grade, bit. sand and clay	4'	3											
47'	51'	" " " " " "	4'	4											
51'	55'	" " " " " "	4'	5	3.0		Tr	15	10	2	-	7	32	17	18
55'	57'	Lost core	2'	-											
57'	61'	Low grade bit. sand and clay	4'	6											
61'	65'	Lost core	4'	-	7.9		Tr	3	4	-	2	12	44	18	17
65'	69'	Bit. sand - low grade	4'	7											
69'	73'	" " " "	4'	8											
73'	74'	Lost core	1'	-	12.4		Tr	2	2	-	-	19	60	10	6
74'	78'	Bit. sand - low grade	4'	9											
78'	82'	" " " "	4'	10											
82'	84'	Lost core	2'	-	10.9		Tr	4	3	-	-	11	57	14	9
84'	88'	Bit. sand - low grade - some clay	4'	11											
88'	92'	" " " " " "	4'	12											
92'	96'	" " " " considerable clay	4'	13	10.0		Tr	3	3	-	-	12	55	17	9
96'	97'	Lost core	1'	-											
97'	101'	Bit. sand, medium grade with clay 50%	4'	14											
101'	102'	Lost core	1'	-	11.2		0.0	1	1	-	3	29	36	26	4
102'	106'	Bit. sand, low grade, 25% clay	4'	15											
106'	108'	Lost core	2'	-											
108'	112'	Bit. sand, medium grade, slight clay	4'	16											
112'	116'	" " " " " "	4'	17	14.2		Tr	1	1	-	-	22	55	14	6
116'	120'	" " " " " "	4'	18	13.3		Tr	3	2	-	81	3	5	3	2
120'	124'	" " " " " "	4'	19	16.4		0.0	-	-	-	-	30	57	8	3

STEEPBANK AREA

HOLE No. L

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
124'	128'	Bit. sand, low grade, leached 60% clay	4')	20											
128'	129'	Lost core	1')	-	6.3		0.2	3	3	-	1	26	47	10	9
129'	133'	Clay with some low grade sand	4')	21											
133'	138'	Clay	5'	-											
138'	140'	Lost core	2'	-											
140'	144'	Bit. sand, low grade 50% clay	4')	22											
144'	148'	" " good grade, 1" clay bands	4')	23	12.6		Tr	1	1	1	-	60	29	5	4
148'	152'	" " " "	4')	24											
152'	156'	" " " "	4')	25	15.9		Tr	-	1	1	-	78	16	2	2
156'	160'	" " " " , two 4" clay bands	4')	26											
160'	164'	" " " " 20% clay	4')	27	14.2		Tr	1	1	-	56	25	5	10	2
164'	168'	" " " " 25% clay	4')	28											
168'	172'	" " medium grade, considerable clay	4')	29	12.1		Tr	3	1	-	38	35	10	9	3
172'	173'	Lost core	1'	-											
173'	177'	Bit. sand, medium grade, 50% clay	4')	30											
177'	181'	" " " " 20% clay	4')	31	10.5		Tr	1	7	-	14	58	16	2	2
181'	185'	" " " " slight clay	4')	32											
185'	186'	Lost core	1')	-	13.4		Tr	1	7	-	67	16	2	4	2
186'	190'	Bit. sand, medium grade, 25% clay	4')	33											
190'	194'	" " " " 25% "	4')	34											
194'	198'	" " good grade, slight clay	4')	35	13.7		0.2	4	24	-	39	24	1	6	2
198'	199'	Lost core	1'	-											
199'	203'	Bit. sand, good grade	4')	36											
203'	207'	" " medium grade, 25% clay	4')	37	14.4		Tr	3	15	-	26	40	10	3	3
207'	211'	" " " " 50% "	4')	38											
211'	215'	Lost core	4')	-	8.9		0.0		3	20	40	16	5	11	3
215'	222'8"	Clay and low grade sand, mostly clay	7'8")	39											
222'8"	223'	Limestone	0'4"	-											
	223'	End of Hole													

STEEPBANK AREA

HOLE No. 1

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0'0" - 33'0" = 33'0" Overburden 33'0" - 69'0" = 36'0" 5.3% Bitumen 69'0" - 207'0" = 138'0" 11.66% Bitumen 124'0" - 140'0" = 16'0" clay and low grade sand.													

STEEPBANK AREA

HOLE No. 7A

DATE July 11-12 1945 LOCATION L.S.2, Sec. 30, Tp. 92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1039' DEPTH 157' DIP 90° CORE RECOVERY 94.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	39'	Overburden & very low grade bit. sand	39	1-4											
39	43	Bit. sand, low grade	4	5)											
43	47	" " medium grade	4	6)	8.1	6½	0.1	16	4	3	13	19	15	20	10
47	48	Lost core	1	-											
48	52	Bit. sand, medium grade, 5% clay	4	7)											
52	56	" " " " slight clay	4	8)	11.0	5	Tr	7	3	1	14	15	17	36	8
56	58	Lost core	2	-											
58	62	Bit. sand, good grade	4	9)											
62	66	" " " " slight clay	4	10)	12.9	3½	Tr	1	2	2	36	17	24	13	5
66	70	" " " "	4	11)											
70	74	" " " " " "	4	12)	14.1	2¾	Tr	2	2	7	28	24	10	21	5
74	78	" " " " " "	4	13)											
78	82	" " " " " "	4	14)	14.1	1½	Tr	2	3	3	48	14	1	26	3
82	83	Lost core	1	-											
83	87	Bit. sand, good grade, slight clay	4	15)											
87	91	" " " " " "	4	16)	14.1	3¾	Tr	2	1	4	49	19	15	7	3
91	92	Lost core	1	-											
92	96	Bit. sand, good grade, slight clay	4	17)											
96	100	" " " " 25% clay	4	18)	12.6	13½	Tr	3	8	8	39	12	1	26	4
100	104	" " " " 10% clay	4	19)											
104	108	" " " " 10% clay	4	20)	13.7	8½	Tr	3	9	35	31	6	3	10	3
108	112	" " " " 5% clay	4	21)											
112	116	" " " " 15% clay	4	22)	13.0	9½	Tr	3	21	17	35	6	10	4	4
116	120	" " " " 20% clay	4	23)											
120	124	" " " "	4	24)	14.0	8	Nil	1	6	17	44	14	4	11	3
124	125	Lost core	1	-											
125	129	Bit. sand, good grade	4	25)											
129	133	" " " " slight clay	4	26)	15.8		Nil	1	1	4	52	15	3	21	3
															131

STEEPBANK AREA

HOLE No. 7A

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
133	137	Bit. sand, good grade 20% clay	4	27)											
137	141	" " " " 5% clay	4	28)	14.7	1½	Tr	2	1	4	18	14	11	40	10
141	145	" " " " 5% clay	4	29)											
145	146	Lost core	1	-)			Tr	7	11	2	15	11	16	32	6
146	150	Bit. sand, good grade, 10% clay	4	30)	14.5										
150	151'8"	" " " " 15% clay & limestone	1'8"	31	2.5		Tr	7	11	2	15	11	16	32	6
151'8"	153'3"	Decomposed limestone	1'7"	-											
153	157	Clay	3'9"	-											
	157	End of Hole													

Summary

0' - 39' = 39' Overburden and low grade sand.

39' - 150' = 111' @ 13.2% bitumen and 5% clay bands.

STEEPBANK AREA

HOLE No. 17A

DATE March 22-23 1945 LOCATION L.S.4, Sec.20, Tp.92-9-4 CO-ORDINATES ELEVATION 1030' DEPTH 159' DIP 90° CORE RECOVERY 97.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	6'	Overburden, sand	6'												
6'	10'	Bit. sand, low grade 20% clay	4'	1)											
10'	14'	" " " " 30% "	4'	2)	6.3	39¾	Tr	7	3	2	-	10	7	55	16
14'	18'	" " " " 20% " leached	4'	3)											
18'	22'	" " " " leached	4'	4)											
22'	26'	Sand, leached, with traces o bit	4	5)											
26'	27'	Lost core	1'	-)	5.4	34¾	Tr	3	4	2	2	7	5	58	20
27'	31'	Sand, leached with traces of bitumen & clay	4'	6)											
31'	35'	Bit. sand, low grade leached, 10% clay	4'	7)											
35'	39'	" " " " slight clay	4'	8)	6.8	13½	Tr	9	8	1	5	9	20	37	12
39'	43'	" " " "	4'	9)											
43'	47'	" " " "	4'	10)	12.7		Tr	2	2	-	9	17	-	63	8
47'	51'	" " medium grade	4'	11)											
51'	55'	" " " " 10% clay	4'	12)	11.5	3¾	Tr	4	3	1	7	25	-	48	11
55'	59'	" " good grade, 5% "	4'	13)	10.5	21	Tr	3	2	1	5	28	-	51	10
59'	63'	" " medium grade 20% "	4'	14)											
63'	67'	" " " "	4'	15)	12.6	14	Tr	4	4	5	65	7	12	3	1
67'	71'	" " " " 5% "	4'	16)											
71'	75'	" " " " 5% "	4	17	10.1	13¾	Tr	3	3	1	4	24	-	53	11
75'	79'	" " good "	4	18)											
79'	83'	" " medium grade, slight clay	4'	19)	12.2	15½	Tr	1	1	-	11	21	39	19	7
83'	87'	" " " " 20% clay	4'	20)											
87'	91'	" " " " 20% "	4'	21)											
91'	92'	Lost core	1'	-)											
92'	96'	Bit. sand, medium grade, 60% clay	4'	22)	8.1	82¼	Tr	3	2	1	4	23	-	52	15
96'	100'	" " " " 60% "	4'	23)											
100'	104'	" " good grade 50% "	4'	24)											
104'	105'	Lost core	1'	-											
105'	109'	Bit. sand, good grade, 5% clay	4'	25)											

STEEPBANK AREA

HOLE No. 17A

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
109'	113'	Bit. sand, good grade, 30% clay	4'	26)	11.9	31	Tr	2	1	2	22	30	-	39	5
113'	117'	" " " " 5% "	4'	27)											
117'	118'	Lost core	1'	-											
118'	122'	Bit. sand, good grade, 50% clay	4'	28)											
122'	126'	" " " " 50% "	4'	29)	6.6	72	Tr	18	7	3	24	17	21	4	8
126'	130'	" " " " 50% "	4'	30)											
130'	134'	" " " " 40% "	4'	31)											
134'	138'	" " " " 10% "	4'	32)	12.9	12¼	Tr	4	9	11	38	22	-	14	2
138'	142'	" " " " 5% "	4'	33)											
142'	146'	" " " " 5% "	4'	34)											
146'	150'	Clay with 10% good grade, bit. sand	4'	35)	7.8	57¾	Tr	10	19	6	29	14	18	3	3
150'	152'	Bit. sand, good grade, 50% clay	2'	36)											
152'	158'	Clay	6'												
158'	159'	Limestone	1'												
	159'	End of Hole													

Summary

0' - 6' = 6' Overburden
6' - 39' = 33' @ 6.06% bit. & 22.2% clay bands
39' - 87' = 48' @ 11.7% bit. & 11.8% clay bands
87' - 152' = 65' @ 8.9% Bit. & 32.7% clay bands.

STEEPBANK AREA

HOLE No. 39

DATE Oct. 7-12 1944 LOCATION LSD.15,S.8,Tp.92,R.9 CO-ORDINATES ELEVATION 1081' DEPTH 209' DIP 90° CORE RECOVERY 97%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	72'0"	Overburden, clay and boulders	72'0"												
72'0"	76'0"	Bit. sand, low grade, 50% clay	4'0"	1)											
76'0"	80'0"	" " " " mostly clay	4'0"	2)	6.4		0.2	3	2	-	-	3	36	34	22
80'0"	84'0"	" " " " " "	4'0"	3)											
84'0"	88'0"	" " " " " "	4'0"	4)	6.8		0.0	2	1	-	1	9	28	43	16
88'0"	92'0"	" " " " " "	4'0"	5)											
92'0"	96'0"	" " " " " "	4'0"	6)	7.9		Tr	2	1	-	1	9	37	37	14
96'0"	100'0"	" " " " " "	4'0"	7)											
100'0"	104'0"	" " " " " "	4'0"	8)	5.3		0.2	14	2	-	76	1	3	1	-
104'0"	108'0"	" " " " " "	4'0"	9)											
108'0"	112'0"	" " " " " "	4'0"	10)	5.0		Tr	3	1	-	1	9	18	48	20
112'0"	114'0"	Lost core	2'0"	-											
114'0"	118'0"	Bit. sand, low grade, three - 2" clay bands	4'0"	11)											
118'0"	122'0"	" " " " two - 6" " "	4'0"	12)	13.4		Tr	1	1	-	-	4	52	29	14
122'0"	123'0"	Lost core	1'0"	-											
123'0"	127'0"	Bit. sand, low grade, mostly clay	4'0"	13)											
127'0"	131'0"	" " " " " "	4'0"	14)	11.0		Tr	1	1	-	-	2	42	32	21
131'0"	132'0"	Lost core	1'0"	-											
132'0"	136'0"	Bit. sand, medium grade, 25% clay	4'0"	15)											
136'0"	140'0"	" " low grade, 50% "	4'0"	16)	13.6		Tr	1	1	-	-	6	39	37	15
140'0"	144'0"	" " medium grade, 25% "	4'0"	17)											
144'0"	148'0"	" " " " 10% "	4'0"	18)	14.7		Tr	-	-	-	3	13	27	50	7
148'0"	152'0"	" " low grade, mostly clay	4'0"	19)											
152'0"	156'0"	" " " " " "	4'0"	20)	11.7		Tr	1	1	-	1	35	40	14	7
156'0"	160'0"	Clay and low grade bit. sand	4'0"	21)											
160'0"	164'0"	Bit. sand, low grade, 50% clay	4'0"	22)	8.2		Tr	1	1	-	1	6	59	26	7
164'0"	168'0"	" " " " 30% "	4'0"	23)											
168'0"	172'0"	" " " " 50% "	4'0"	24)	12.9		Tr	1	-	1	22	30	25	14	7

STEEPBANK AREA

HOLE No. 39

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
172'0"	173'0"	Lost core	1'0"												
173'0"	177'0"	Bit. sand, low grade, mostly clay	4'0"	25)											
177'0"	181'0"	Clay and low grade bit. sand	3'0"	26)	9.8		Tr	2	2	-	-	18	53	15	9
181'0"	185'0"	Bit. sand, low grade, 25% clay	4'0"	27)											
185'0"	189'0"	" " " " 50% "	4'0"	28)	11.4		Tr	2	2	-	-	11	58	18	11
189'0"	193'0"	" " " " 40% "	4'0"	29)											
193'0"	194'0"	Lost core	1'0"	-)											
194'0"	198'0"	Bit. sand low grade, 20% clay	4'0"	30)	14.7		Tr	-	-	-	1	11	40	38	9
198'0"	203'0"	" " good grade	5'0"	31)											
203'0"	209'0"	Mixture soft sandstone and altered limestone	6'0"	-											
	209'0"	End of Hole													

Summary

0'0" - 72'0" = 72'0" Overburden
72'0" - 114'0" = 42'0" 6.2% Bitumen
114'0" - 203'0" = 89'0" 11.17% Bitumen

STEEPBANK AREA

HOLE No. 40

DATE Oct. 5 - 6 1944 LOCATION LSD.14, S.8, Tp.92, R.9 CO-ORDINATES ELEVATION 1028' DEPTH 196' DIP 90 CORE RECOVERY 96.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	4'0"	Overburden - gravel	4'0"	-											
4'0"	8'0"	Bit. sand; low grade, leached	4'0"	1											
8'0"	12'0"	" " " " some clay	4'0"	2	3										
12'0"	16'0"	" " " " mostly clay	4'0"	3											
16'0"	20'0"	" " " " ironstone	4'0"	4	5.1		1.0	7	9	-	1	8	32	17	25
20'0"	22'0"	Lost core	2'0"	-											
22'0"	26'0"	Bit. sand, low grade, some clay	4'0"	5											
26'0"	30'0"	" " " " ironstone	4'0"	6	8.2		Tr	4	2	-	1	17	47	20	10
30'0"	34'0"	" " " " some clay	4'0"	7	8.5		0.0	1	1	-	1	14	49	23	11
34'0"	35'0"	Lost core	1'0"	-											
35'0"	39'0"	Bit. sand, medium grade	4'0"	8											
39'0"	43'0"	" " " " some clay	4'0"	9	12.4		Tr	2	1	-	-	4	51	28	13
43'0"	47'0"	" " " "	4'0"	10											
47'0"	51'0"	" " " " partly leached	4'0"	11	12.2		Tr	5	2	1	-	5	31	35	21
51'0"	55'0"	" " " " considerable clay	4'0"	12											
55'0"	59'0"	" " very low grade, mostly clay	4'0"	13	9.2		Tr	3	-	1	11	22	36	12	14
59'0"	63'0"	" " " " " some clay	4'0"	14											
63'0"	67'0"	" " medium grade	4'0"	15	10.9		Tr	3	1	-	4	26	42	13	10
67'0"	71'0"	" " low grade, leached, some clay	4'0"	16											
71'0"	75'0"	" " medium grade, 3-2" clay bands	4'0"	17	12.9		Tr	1	1	-	-	22	52	16	7
75'0"	79'0"	" " " " 4-2" " "	4'0"	18											
79'0"	83'0"	" " " " 1-4" " "	4'0"	19	11.8		Tr	2	1	-	6	34	32	18	7
83'0"	87'0"	" " low grade, leached, one 2" clay band	4'0"	20											
87'0"	91'0"	" " " " "	4'0"	21	13.0		Tr	1	1	-	-	32	49	11	6
91'0"	95'0"	" " good grade	4'0"	22											
95'0"	99'0"	" " " "	4'0"	23	15.5		0.0	-	1	-	-	31	51	12	4

STEEPBANK AREA

HOLE No. 40

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
99	103	Bit. sand, good grade	4.0	24											
103	107	" " " "	4.0	25	16.6		Tr	-	-	1	3	23	36	29	7
107	111	" " " " 8" clay band	4.0	26											
111	115	" " medium grade, fine clay partings	4.0	27	15.5		0.0	1	1	2	-	23	13	50	9
115	119	" " " " " " "	4.0	28											
119	123	" " " " 8" clay band	4.0	29	10.7		Tr	3	3	7	-	13	39	23	12
123	124	Lost core	1.0	-											
124	128	Bit. sand low grade, considerable clay	4.0	30											
128	132	" " " " two - 1" clay bands	4.0	31	13.8		Tr	2	-	2	3	41	29	15	8
132	136	" " medium grade	4.0	32											
136	140	" " " " 6" clay band	4.0	33	15.0		Tr	1	1	-	-	26	52	12	6
140	144	" " " "	4.0	34											
144	145	Lost core	1.0	-											
145	149	Bit. sand, medium grade	4.0	35	14.9		Tr	1	2	-	1	20	53	15	7
149	153	" " good grade	4.0	36											
153	157	" " " "	4.0	37	15.8		Tr	1	1	1	-	34	49	10	5
157	161	" " " "	4.0	38											
161	165	" " medium grade, considerable clay	4.0	39											
165	169	" " " " some clay	4.0	40	14.3		Tr	2	1	-	4	23	20	40	9
169	171	Lost core	2.0	-											
171	175	Bit. sand, medium grade, some clay	4.0	41	13.5		Tr	2	3	-	37	31	15	7	4
175	179	" " " " 17" clay	4.0	42											
179	183	" " good grade, ironstone bands	4.0	43	14.5		Tr	4	42	-	14	22	9	5	5
183	188-6"	" " " " "	5.6	44											
188-6"	196-0"	Limestone	7.6	-											
	196-0"	End of Hole													

Summary

0'0" - 4'0" = 4'0" Overburden
4'0" - 35'0" = 31'0" 5.3% Bitumen
35'0" - 188'6" = 153'6" 13.57% Bitumen

STEEPBANK AREA

HOLE No. 41

DATE Oct. 16 - 18 1944 LOCATION LSD.10, S.8, Tp.92,R.9 CO-ORDINATES ELEVATION 1055' DEPTH 184' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	26'0"	Low grade sand, drove pipe	26'0"	-											
26'0"	40'0"	Clay and low grade bit. sand	14'0"	-											
40'0"	50'0"	Clay with traces of bit. sand	10'0"	-											
50'0"	100'0"	Clay	50'0"	-											
100'0"	159'0"	Clay	9'0"	-											
159'0"	164'0"	Clay and low grade bit. sand	5'0"	1											
164'0"	169'0"	Bit. sand, low grade with clay	5'0"	2	8.8		Tr	2	2	-	33	25	11	22	5
169'0"	174'0"	" " " " " "	5'0"	3											
174'0"	179'0"	" " " " " "	5'0"	4	11.4		Tr	14	24	11	-	28	15	4	4
179'0"	184'0"	Altered limestone	5'0"	-											
	184'0"	End of Hole													

Summary

0'0" - 159'0" = 159' - Overburden
159'0" - 179'0" = 20'0" - 10.1% Bitumen

STEEPBANK AREA

HOLE No. 42

DATE Oct. 12-14 1944 LOCATION LSD.11, Sec.8, Tp.92, R.9 CO-ORDINATES ELEVATION 1013' DEPTH 150' DIP 90° CORE RECOVERY 98%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	4'0"	Low grade, bit. sand	4'0"	-											
4'0"	8'0"	Bit. sand, leached, very low grade	4'0"	1											
8'0"	11'0"	" " " " " "	3'0"	2	5.5		0.2	2	2	-	1	3	1	32	60
11'0"	14'0"	Lost core	3'0"	-											
14'0"	20'0"	Clay traces of leached sand	6'0"	-											
20'0"	30'0"	" " " " "	10'0"	-											
30'0"	40'0"	" " " " "	10'0"	-											
40'0"	60'0"	" " " " "	20'0"	-											
60'0"	80'0"	Hard gray clay	20'0"	-											
80'0"	100'0"	" " "	20'0"	-											
100'0"	123'0"	Clay with traces of bit. sand	23'0"	-											
123'0"	127'0"	Bit. sand, medium grade	4'0"	3											
127'0"	131'0"	" " " "	4'0"	4	14.6		Tr	-	8	36	-	44	5	3	4
131'0"	135'0"	Coarse bit. sand, medium 14" clay	4'0"	5											
135'0"	139'0"	" " " " grade	4'0"	6	11.5		0.0	11	35	-	8	15	2	21	8
139'0"	143'0"	" " " " " some clay	4'0"	7											
143'0"	146'0"	" " " " " " "	3'0"	8	13.5		Tr	5	31	-	19	14	10	13	8
146'0"	149'0"	Hard clay ironstone	3'0"	-											
149'0"	150'0"	Limestone													
	150'0"	End of Hole													

Summary

0'0" - 123'0" = 123'0" - Overburden
123'0" - 146'0" = 23'0" - 13.2% Bitumen

STEEPBANK AREA

HOLE No. 44

DATE Aug. 31 - Sept. 2 1944 LOCATION LSD.7, Sec.8, Tp.92, R.9 CO-ORDINATES ELEVATION 1013' DEPTH 175' DIP CORE RECOVERY 96%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	13'0"	Overburden gravel, sand & clay	13'0"												
13'0"	19'0"	Bit. sand - low grade, leached	6'0"												
19'0"	22'0"	" " " "	3'0"												
22'0"	35'0"	" " medium to good grade clay partings	13'0"												
35'0"	39'0"	" " good grade	4'0"		Core from this hole was not assayed.										
39'0"	42'0"	" " medium grade	3'0"												
42'0"	53'0"	" " good grade, 25% clay partings	11'0"												
53'0"	66'0"	Clay	13'0"		(4' only shipped)										
66'0"	70'0"	Clay - unimpregnated	4'0"												
70'0"	70'4"	Clay ironstone	0'4"												
70'4"	107'0"	Clay	36'8"												
107'0"	117'0"	Bit. sand, good grade with clay partings	10'0"												
117'0"	120'6"	" " " " " 15% clay "	3'6"												
120'6"	133'6"	" " " " " 5% " "	13'0"												
133'6"	138'0"	" " medium grade, increased clay partings.	1'6"												
138'0"	139'3"	Chiefly clay	1'3"												
139'3"	142'3"	Sand - leached with clay	3'0"												
142'3"	148'9"	Bit. sand - medium to low grade	5'6"												
148'9"	171'3"	" " coarse, particularly barren	21'6"												
171'3"	175'0"	Residual clay and limestone	3'9"												
	175'0"	End of Hole													

STEEPBANK AREA

HOLE No. 45

DATE Sept. 3-7 1944 LOCATION LSD.7,Sec.8,Tp.92,R.9 CO-ORDINATES ELEVATION 1065' DEPTH 242' DIP 90° CORE RECOVERY 95.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	23'0"	Overburden with low grade bit. sand	23'0"												
23'0"	42'0"	Bit. sand, highly banded with clay	19'0"												
42'0"	45'0"	" " medium to low grade	3'0"												
45'0"	50'6"	" " highly banded with clay partings	5'6"												
50 6	54'6"	" " medium to low grade	4'0"												
54'6"	58'0"	" " low grade - banded	3'6"												
58'0"	62'0"	" " " " to good grade	4'0"		Core from this hole was not assayed										
62'0"	63'6"	" " medium grade to good grade	1'6"												
63'6"	68'0"	" " low grade with clay bands	4'6"												
68'0"	69'0"	Lost core	1'0"												
69'0"	77'0"	Bit. sand, low grade, banded with clay	8'0"												
77'0"	81'0"	" " medium grade with some clay	4'0"												
81'0"	85'0"	" " low grade considerable clay	4'0"												
85'0"	89'0"	" " " " mostly clay	4'0"												
89'0"	93'0"	" " " " some clay	4'0"												
93'0"	104'0"	Clay	11'0"												
104'0"	139'0"	Clay with traces of leached bit. sand	35'0"												
139'0"	141'0"	Lost core	2'0"												
141'0"	173'0"	Bit. sand - low grade some clay	32'0"												
173'0"	174'0"	Lost core	1'0"												
174'0"	178'0"	Bit. sand - good grade	4'0"												
178'0"	181'0"	Bit. sand - medium grade	3'0"												
181'0"	186'0"	Clay with patches of low grade bit. sand	5'0"												
186'0"	201'0"	" " " " " " " "	15'0"		(Core not shipped)										
201'0"	225'0"	Mostly clay and leached bit. sand	24'0"												
225'0"	228'6"	Clay and low grade bit. sand	3'6"												
228'6"	232'6"	Coarse sand	4'0"												
232'6"	239'0"	Lost core	6'6"												
239'0"	242'0"	Sandstone	3'0"												
	242'0"	End of Hole													

STEEPBANK AREA

HOLE No. 48

DATE Aug. 24-26 1944 LOCATION LSD.1 or S.S.S.Tp.92, R.9 CO-ORDINATES ELEVATION 1049' DEPTH 150' DIP 90° CORE RECOVERY 96%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	16'4"	Overburden - sands clay	16'4"												
16'4"	18'10"	Bit. sand - low grade with clay	2'6"												
18'10"	31'0"	" " leached, low grade with clay	12'2"												
31'0"	40'0"	" " low to medium grade	9'0"												
40'0"	41'0"	" " low grade with clay	1'0"												
41'0"	51'0"	" " medium grade	10'0"												
51'0"	58'0"	" " " to good grade	7'0"												
58'0"	64'0"	" " " " " " with clay partings	8'0"		Core from this hole was not assayed.										
64'0"	66'6"	" " good grade with some clay	2'0"												
66'6"	71'6"	" " " "	4'0"												
71'6"	79'0"	" " low grade with some clay	7'6"												
79'0"	88'0"	" " " " " considerable clay	9'0"												
88'0"	94'0"	Chiefly clay	6'0"												
94'0"	103'0"	Clay	9'0"												
103'0"	110'0"	Clay with partings of sand	7'0"												
110'0"	115'0"	Bit. sand, good grade 50% clay partings	5'0"												
115'0"	120'4"	" " " " 50% " "	5'4"												
120'4"	139'0"	" " " " with narrow clay partings	18'8"												
139'0"	148'0"	" " " "	9'0"												
148'0"	149'0"	Limey residual clay	1'0"												
149'0"	150'0"	Limestone	1'0"												
	150'0"	End of Hole													

STEEPBANK AREA

HOLE No. 49

DATE Aug. 22-23 1944 LOCATION LSD. 2, S. 8, Tp. 92, R. 9 CO-ORDINATES ELEVATION 1035' DEPTH 151' DIP 90° CORE RECOVERY 94.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	13'0"	Overburden, clay and gravel	13'0"												
13'0"	15'0"	Chiefly clay	2'0"												
15'0"	19'0"	Bit. sand, very low grade	4'0"												
19'0"	23'0"	" " low grade with partings	4'0"		Core from this hole was not assayed.										
23'0"	29'0"	" " " "	4'0"												
29'0"	33'0"	" " " " obviously leached	4'0"												
33'0"	37'0"	" " medium with narrow clay partings	4'0"												
37'0"	41'0"	" " good grade	4'0"												
41'0"	44'0"	" " " " clay partings	3'0"												
44'0"	47'0"	" " highly banded with clay	3'0"												
47'0"	48'0"	" " medium grade	1'0"												
48'0"	50'0"	" " with clay partings	2'0"												
50'0"	57'0"	" " good grade	7'0"												
57'0"	59'0"	" " banded with clay	2'0"												
59'0"	64'0"	" " with clay partings - leached	5'0"												
64'0"	107'0"	Clay, black with evidence of movement	43'0"												
107'0"	109'0"	Bit. sand, good grade 1-6" clay band	2'0"												
109'0"	131'0"	" " medium grade 5 - 15% clay	22'0"												
131'0"	137'0"	" " coarse	6'0"												
137'0"	140'0"	" " with limestone fragments	4'0"												
140'0"	151'0"	Limestone fragments and clay	11'0"												
	151'0"	End of Hole													

STEEPBANK AREA

HOLE No. 61

DATE Nov. 16-17 1944 LOCATION LS.10,Sec.5,Twp.92-9-4 CO-ORDINATES ELEVATION 1023' DEPTH 162' DIP 90° CORE RECOVERY 96.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	4'	Drove pipe - low grade sand	4'	-											
4'	8'	Bit sand, low grade	4'	1)											
8'	12'	" " " "	4'	2)	10.5	15	Tr	1	6	-	4	6	1	41	41
12'	16'	" " " "	4'	3)											
16'	20'	" " " "	4'	4)											
20'	24'	" " " "	4'	5)	7.0	28	Tr	4	3	1	-	7	24	38	24
24'	49'	Clay with traces of leached bit. sand	25'	-											
49'	53'	Bit. sand, low grade, some clay	4'	6)											
53'	57'	" " " " " "	4'	7)	3.4	90.5	Tr	3	3	-	3	5	20	35	31
57'	61'	" " " " considerable clay	4'	8)											
61'	65'	" " " " " "	4'	9)											
65'	69'	" " " " " "	4'	10)	9.2	41	Tr	1	2	-	-	6	12	62	18
69'	73'	" " " " " "	4'	11)											
73'	74'	Lost core	1'												
74'	78'	Bit. sand, low grade, slight clay	4'	12)											
78'	82'	" " " " " "	4'	13)	12.5	8½	0.0	1	1	-	-	12	24	47	15
82'	86'	" " " " considerable clay	4'	14)											
86'	88'	Lost core	2'	-)											
88'	92'	Bit. sand, low grade, band of clay & clay ironstone	4'	15)	9.9	29	0.0	1	2	-	-	7	14	59	17
92'	96'	" " medium grade, some clay	4'	16)											
96'	100'	" " " " 40% clay	4'	17)	12.2	21	0.0	1	1	-	1	18	34	33	13
100'	104'	" " " " 30% "	4'	18)											
104'	108'	" " " " 50% "	4'	19)	11.9	23	Tr	1	1	-	1	18	34	33	13
108'	109'	Lost core	1'												
109'	113'	Bit. sand, good grade	4'	20)											
113'	117'	" " medium grade, some clay	4'	21)	15.8	2½	Tr	-	1	-	5	22	15	45	12

STEEPBANK AREA

HOLE No. 61

DATE ....194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
117'	121'	Bit. sand, good grade, slight clay	4'	22)											
121'	125'	" " " " " "	4'	23)	16.2		0.0	2	1	-	-	22	2	67	6
125'	129'	" " " " " "	4'	24)											
129'	133'	" " " "	4'	25)	16.5	1	0.0	1	1	-	4	28	29	31	6
133'	137'	" " " "	4'	26)											
137'	141'	" " " "	4'	27)	17.1		Tr	-	1	-	-	18	35	37	8
141'	145'	" " " "	4'	28)											
145'	147'	Lost core	2'	-)	15.8		Tr	1	2	-	1	14	32	30	19
147'	151'	Bit. sand, good grade, slight clay	4'	29)											
151	156'6"	" " medium grade	5'6"	30	15.4		Tr	1	3	3	-	42	1	43	8
156'6"	162'0"	Altered limestone and limestone	5'6"	-											
	162'0"	End of Hole													

Summary

0' - 4' = 4' low grade bit. sand
4' - 74' = 70' @ 4.7% Bitumen (39'6" clay)
74' - 156'6" = 82'6" @ 14.2% Bitumen (7' clay)
4' - 156'6" = 152'6" @ 9.85% Bitumen (46'6" Clay)
61' - 156'6" = 95'6" @ 13.54% Bitumen (10'5" clay)

STEEPBANK AREA

HOLE No. 62

DATE Nov. 19-20 1944 LOCATION LS.7, Sec.5, Twp.92-9-4 CO-ORDINATES ELEVATION 1025' DEPTH 149' DIP 90° CORE RECOVERY 93.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	6'	Drove pipe, gravel and sand	6'	-											
6'	10'	Bit. sand, low grade	4'	1)											
10'	14'	" " " "	4'	2)											
14'	18'	" " " " and clay	4'	3)	3	177									
18'	22'	" " " " " "	4'	4)											
22'	26'	" " " " " "	4'	5	7.0	23½	Tr	2	2	2	-	41	13	27	13
26'	48'	Clay with traces of bit. sand	22'	-											
48'	52'	Clay and low grade bit. sand	4'	6)											
52'	56'	" " " " " "	4'	7)	3										
56'	60'	" " " " " "	4'	8)											
60'	64'	" " " " " "	4'	9)											
64'	68'	" " " " " "	4'	10)	1.7	97	Tr	12	9	-	5	4	14	28	27
68'	72'	" " " " " "	4'	11)											
72'	76'	Bit. sand, low grade, and clay	4'	12)											
76'	80'	" " " " " "	4'	13)	1.0	77	Tr	11	8	-	5	4	14	28	27
80'	84'	" " " " " "	4'	14)											
84'	88'	" " " " " "	4'	15)	1.0	121½	Tr	12	10	1	-	67	3	43	23
88'	92'	" " " " " "	4'	16)											
92'	96'	" " " "	4'	17	14.4		Tr	1	1	-	-	28	-	62	7
96'	100'	" " " " some clay	4'	18)											
100'	101'	Lost core	1'	-)	9.2	35"	Tr	1	1	-	-	15	28	44	10
101'	105'	Clay and low grade bit. sand	4'	19)											
105'	109'	Bit. sand, medium grade	4'	20)											
109'	113'	" " " "	4'	21)	15.2		Tr								
113'	117'	" " " "	4'	22)											
117'	121'	" " " "	4'	23)	15.3		Tr								
121'	125'	" " good grade	4'	24)											
125'	127'	" " " "	2'	25)											
127'	131'	Lost core	4'	-)	15.1	1½	Tr								
131'	133'	Bit. sand, good grade	2'	25)											

STEEPBANK AREA

HOLE No. 62

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
133'	137'	Bit. sand, good grade	4'	26)											
137'	140'	" " " "	3'	27)	14.6	1½	Tr								
140'	144'	Lost core	4'	-											
144'	149'	Basal clay and clay ironstone	5'	-											
	149'	End of Hole													

Summary

0' - 6' = 6' Overburden, gravel and sand.

6' - 92' = 86' @ -3% Bitumen (over 65' clay)

92' - 140' = 48' @ 13.9% Bitumen (6.6% or 38" clay)

STEEPBANK AREA

HOLE No. 64

DATE Nov. 2-3 1944 LOCATION LS.5, Sec.17, Twp.92-9-4 CO-ORDINATES ELEVATION 989' DEPTH 139' DIP 90° CORE RECOVERY 87.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	8'	Overburden, clay and sand	8'	-											
8'	12'	Bit. sand, medium grade, 25% clay	4'	1											
12'	16'	" " " " 50% "	4'	2	10.2	35	Tr	6	5	1	-	14	33	34	6
16'	20'	" " " " 50% "	4'	3											
20'	24'	Clay with some medium grade bit. sand	4'	4											
24'	28'	Bit. sand, medium grade, 25% clay	4'	5	9.0	38½	0.0	3	2	1	-	27	7	55	5
28'	32'	" " " " 20% "	4'	6											
32'	36'	" " " " 40% "	4'	7	10.6	24½	0.0	1	1	-	22	30	15	27	3
36'	40'	Clay and low grade bit. sand	4'	8											
40'	43'	" " " " " "	3'	9	4.7	19	1.0	15	9	5	-	40	16	6	8
43'	44'	Lost core	1'	-											
44'	48'	Bit. sand, good grade	4'	10											
48'	51'	" " " "	3'	11	15.0		0.0	1	23	-	64	6	1	4	2
51'	54'	Lost core	3'	-											
54'	58'	Bit. sand, good grade	4'	12											
58'	62'	" " " "	4'	13	14.7		0.0	4	40	-	46	5	-	3	2
62'	66'	" " " "	4'	14											
66'	70'	" " " "	4'	15	13.8		0.0	6	64	14	-	12	-	3	1
70'	74'	" " " "	4'	16											
74'	75'	Lost core	1'	-	13.4	4½	0.0	6	33	-	32	13	3	8	3
75'	79'	Bit. sand, good grade	4'	17											
79'	83'	" " " "	4'	18											
83'	87'	" " " "	4'	19	12.6		0.0	26	33	-	17	11	1	8	5
87'	91'	" " " " slight clay	4'	20											
91'	95'	" " " " " "	4'	21	11.1	4½	0.0	19	15	2	-	32	15	9	8
95'	99'	" " " " " "	4'	22											
99'	103'	" " " " " "	4'	23	14.5		0.0	5	3	-	35	23	8	18	8
103'	104'	Lost core	1'	-											

STEEPBANK AREA

HOLE No. 64

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
104'	108'	Bit. sand, good grade, slight clay	4'	24)											
108'	112'	" " " " 20% "	4'	25)	13.1		Tr	5	5	-	60	18	-	8	3
112'	120'	Clay with traces of low grade sand	8'	-											
120'	125'	Bit. sand, medium grade, slight clay	4'	26)											
125'	129'	Lost core	4'	-)	11.6		0.0	5	22	10	-	40	12	7	4
129'	131'	Bit. sand and clay	3'	27)											
131'	134'	Lost core	3'	-											
134'	136'5"	Coarse sand and clay	2'5"	-											
136'5"	138'5"	Lost core	2'	-											
138'5"	139'	Limestone fragments	0'7"	-											
	139'	End of Hole													

Summary

0' - 8' = 8' Overburden
8' - 44' = 36' @ 9.8% Bitumen
44' - 112' = 68' @ 13.5% Bitumen
112' - 131' = 19' @ 6.7% Bitumen
or
8' - 112' = 104' @ 12.25% Bitumen

STEEPBANK AREA

HOLE No. 65

DATE Nov. 5 1944 LOCATION LS.4, Sec.17, Twp.92-9-4 CO-ORDINATES ELEVATION 940' DEPTH 81' DIP 90° CORE RECOVERY 84.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	4'	Bit. sand, leached	4'	-											
4'	7'	Bit. sand, good grade	3'	1											
7'	9'	Lost core	2'	-	18.2		0.0	-	12	-	65	15	-	6	2
9'	13'	Bit. sand, good grade	4'	2											
13'	17'	" " " "	4'	3											
17'	18'	Lost core	1'	-	15.9		0.0	-	22	14	-	45	1	14	2
18'	22'	Bit. sand, good grade	4'	4											
22'	26'	" " " "	4'	5											
26'	28'	Lost core	2'	-	14.6		0.0	7	17	-	42	17	1	11	4
28'	32'	Bit. sand, good grade	4'	6											
32'	33'	Lost core	1'	-											
33'	37'	Bit. sand, good grade	4'	7											
37'	38'	Lost core	1'	-	14.4		0.0	7	8	2	-	24	32	23	4
38'	42'	Bit. sand, good grade	4'	8											
42'	46'	" " " "	4'	9											
46'	50'	" " " "	4'	10	18.2	2	0.0	1	1	-	28	32	21	14	4
50'	51'	Lost core	1'	-											
51'	55'	Bit. sand, good grade	4'	11											
55'	59'	" " " "	4'	12	16.9	1¼	0.0	-	-	1	-	1	66	28	3
59'	61'	Lost core	2'	-											
61'	65'	Bit. sand, good grade, some clay	4'	13											
65'	67'	Lost core	2'	-	15.4	13¾	0.0	-	-	-	36	26	20	14	2
67'	71'	Bit. sand, medium grade, considerable clay	4'	14											
71'	75'	" " low grade, " "	4'	15	8.0	25	Tr	-	38	11	-	24	8	11	7
75'	79'	Basal clay	4'	-											
79'	81'	Limestone	2'	-											
	81'	End of Hole													

Summary

0' - 4' = 4' leached bit. sand
4' - 71' = 67' @ 16.1% Bitumen

STEEPBANK AREA

HOLE No. 66

DATE Nov. 6-7 1944 LOCATION LS.14,Sec.8,Twp.92-9-4 CO-ORDINATES ELEVATION 939' DEPTH 81' DIP 90° CORE RECOVERY 93.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	8'	Drove pipe, leached bit. sand	8'	-											
8'	12'	Bit. sand, good grade	4'	1											
12'	13'	Lost core	1'	-	16.		0.0	-	1	7		75	7	9	2
13'	17'	Bit. sand, good grade	4'	2											
17'	21'	" " " "	4'	3											
21'	25'	" " " "	4'	4	15.7	2	Tr	-	2	12	-	76	2	6	2
25'	29'	" " " "	4'	5											
29'	30'	Lost core	1'	-	16.2		Tr	-	2	11	-	76	1	8	1
30'	34'	Bit. sand, good grade	4'	6											
34'	38'	" " " "	4'	7											
38'	42'	" " " "	4'	8	16.2	3½	Tr	-	1	-	71	20	3	4	2
42'	46'	" " " " 30% clay	4'	9											
46'	47'	Lost core	1'	-	13.0	18½	Tr	-	1	-	69	19	1	7	2
47'	51'	Bit. sand, good grade, slight clay	4'	10											
51'	55'	" " medium grade, 20% clay	4'	11											
55'	59'	" " " " 10% "	4'	12	12.9	21¾	0.0	1	1	2	-	86	2	6	2
59'	63'	" " " " 40% "	4'	13											
63'	65'	Lost core	2'	-	12.5	17¾	0.0	7	23	-	49	11	1	5	2
65'	69'	Bit. sand, medium grade, 30% clay	4'	14											
69'	73'	Clay and bit. sand	4'	15											
73'	77'	Bit. sand, medium grade, 10% clay	4'	16	10.1	30	Tr	7	22	-	41	14	1	12	3
77'	81'	Coarse gravel, altered limestone & limestone	4	-											
	81'	End of Hole													

Summary

0' - 8' = 8' leached bit. sand
8' - 77' = 69' 14.07% bitumen (11.2% or 7'9" clay)

STEEPBANK AREA

HOLE No. 67

DATE Nov. 8-9 1944 LOCATION 18.14,Sec.8,Twp.92-9-4 CO-ORDINATES ELEVATION 983' DEPTH 135' DIP 90° CORE RECOVERY 96.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 #	+40 %	-60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	5'	Drove pipe, leached sand	5'	-											
5'	9'	Bit. sand, low grade	4'	1											
9'	13'	" " " "	4'	2	9.4	16	0.0	1	4	-	10	18	23	33	10
13'	17'	" " " "	4'	3											
17'	21'	" " " " some clay	4'	4											
21'	25'	" " " " " "	4'	5	10.1	32	0.0	1	1	1	-	18	27	42	10
25'	29'	" " " " " "	4'	6											
29'	33'	" " " " considerable clay	4'	7											
33'	34'	Lost core	1'	-											
34'	38'	Clay and bit. sand	4'	8	5.5	84	Tr	2	2	-	9	19	29	29	10
38'	42'	Bit. sand, low grade, some clay	4'	9											
42'	46'	" " medium grade	4'	10											
46'	47'	Lost core	1'	-	11.9	4	Tr	1	1	1	-	29	20	42	7
47'	51'	Bit. sand, low grade	4'	11											
51'	52'	Lost core	1'	-											
52'	56'	Bit. sand, medium grade, slight clay	4'	12											
56'	60'	" " " "	4'	13	14.5	2	Tr	-	1	-	7	29	20	37	7
60'	64'	" " " "	4'	14											
64'	68'	" " " "	4'	15	14.4	3	0.0	-	1	-	-	29	36	29	7
68'	72'	" " good grade	4'	16											
72'	76'	" " " "	4'	17	15.5	2	0.0	-	-	-	8	33	16	36	6
76'	80'	" " " " some clay	4'	18											
80'	81'	Lost core	1'	-	13.7	12	0.0	1	1	-	-	28	15	49	7
81'	85'	Bit. sand, good grade, some clay	4'	19											
85'	89'	" " " "	4'	20											
89'	93'	" " " "	4'	21	16.0		Tr	-	-	-	2	31	34	24	8
93'	97'	" " " " " "	4'	22											
97'	101'	" " " " " "	4'	23	12.6	17	Tr	-	1	-	-	29	29	30	11
101'	105'	" " " " " "	4'	24											
105'	109'	" " " " " "	4'	25	14.8	6	Tr	-	1	-	-	22	37	31	8

STEEPBANK AREA

HOLE No. 67

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
109'	113'	Bit. sand, good grade, 25% clay	4'	26											
113'	117'	" " medium grade, 40% clay	4'	27	12.3	25	0.0	1	2	-	-	72	17	5	2
117'	121'	" " " "	4'	28											
121'	125'	" " low grade, mostly clay	4'	29	12.9	22	Tr	2	23	-	27	22	6	15	5
125'	129'	Coarse bit. sand, good grade	4'	30											
129'	130'	Lost core	1'	-											
130'	135'	Limestone	5'	-											
	135'	End of Hole													

Summary

0' - 5' = Bit. sand, leached
5' - 42' = 37' @ 8.25% Bitumen (30% or 11' clay)
42' - 129' = 87' @ 13.7% Bitumen (8.6% or 7'6" clay)
5' - 129' = 124' @ 12.1% Bitumen (15% or 18'6" clay)

STEEPBANK AREA

HOLE No. 101

DATE Feb. 26-27 1945 LOCATION LS.9, Sec.19, Tp.92-9-4 CO-ORDINATES ELEVATION 962' DEPTH 136' DIP 90° CORE RECOVERY 88.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	8'	Overburden, sand and gravel	8'	-											
8'	11'	Bit. sand, medium grade, 30% clay	3'	1											
11'	12'	Lost core	1'	-											
12'	15'	Bit. sand, medium grade, 50% clay	3'	2	6.0	62	Tr	1	1	-	-	9	20	60	9
15'	16'	Lost core	1'	-											
16'	20'	Clay and some bit. sand	4'	3											
20'	24'	" " " "	4'	4											
24'	28'	" " " " "	4'	5	5.0	91	0.0	3	3	-	4	22	25	33	11
28'	32'	" " " " "	4'	6											
32'	34'	" " 50% " "	2'	7											
34'	36'	Lost core	2'	-											
36'	39'	Bit. sand, good grade, 10% clay	3'	8	10.9	23½	0.0	1	2	-	-	9	21	57	10
39'	40'	Lost core	1'	-											
40'	43'	Bit. sand, good grade, 25%	3'	9											
43'	45'	Lost core	2'	-											
45'	49'	Bit. sand, good grade, 35% clay	4'	10											
49'	53'	" " " " slight clay	4'	11	11.8	21½	Tr	1	1	-	28	28	9	27	6
53'	57'	" " " " " "	4'	12											
57'	58'	Lost core	1'	-	13.4	9	Tr	-	9	18	-	49	4	18	3
58'	62'	Bit. sand, good grade, 10% clay	4'	13											
62'	64'	Lost core	2'	-											
64'	68'	Bit. sand, good grade, 25% clay	4'	14											
68'	69'	Lost core	1'	-											
69'	73'	Bit. sand, good grade, 45% clay	4'	15	9.1	25½	Tr	1	12	16	-	51	4	12	4
73'	74'	Lost core	1'	-											
74'	78'	Clay and bit. sand	4'	16		36									
78'	80'	Lost core	2'	-											
80'	90'	Clay	10'	-		120									

STEEPBANK AREA

HOLE No. 101

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
90'	94'	Bit. sand, low grade, clay and coarse sandstone	4'	17											
94'	97'	Coarse leached sand	3'	18											
97'	98'	Lost core	1'	-	3.7	14½	Tr	31	26	-	18	6	-	7	11
98'	102'	Coarse leached sand	4'	19											
102'	106'	Coarse leached sand and sandstone	4'	20											
106'	110'	" " " " "	4'	21	3.9		Tr	27	37	-	24	5	-	4	3
110'	114'	Leached sand	4'	22											
114'	120'	" "	6'	23											
120'	124'	Coarse compacted sand with slight bitumen	4'	24	3.5		Tr	26	46	7	-	12	-	5	4
124'	128'	" " " " " "	4'	25											
128'	134'	" " " " " "	6'	26	3.4		Tr	49	24	-	19	4	-	3	2
134'	136'	Coarse sand containing fragments of limestone.	2'	-											
	136'	End of Hole													

Summary

0' - 8' = 8' Overburden

8'-36 = 28' @ 5.6% bitumen & 45% clay bands

36' - 73' = 37' @ 11.0% bitumen & 18% clay bands

73' - 136' = 63' @ 3% bitumen

STEEPBANK AREA

HOLE No. 103

DATE Jan.29-Feb.1 1945 LOCATION LS.16,Sec.19,Twp.92-9-4 CO-ORDINATES ELEVATION 1044' DEPTH 272' DIP 90° CORE RECOVERY 77.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	16'	Overburden, clay and rock	16'	-											
16'	20'	Bit. sand, low grade and clay	4'	1											
20'	24'	" " " " " "	4'	2	3.4		1.0	17	10	-	6	7	14	20	25
24'	28'	" " " " " "	4'	3											
28'	32'	" " " " " "	4'	4											
32'	34'	Lost core	2'	-	6.0	10½	Tr	18	10	-	3	10	8	33	18
34'	38'	Bit. sand, medium grade and clay	4'	5											
38'	45'	Lost core	7'	-	6.0										
45'	49'	Bit. sand, medium grade, some clay	4'	6											
49'	51'	Lost core	2'	-	9.4		Tr	3	2	-	-	37	26	26	6
51'	54'	Bit. sand, medium grade	3'	7											
54'	61'	Lost core	7'	-	9.4										
61'	65'	Bit. sand, medium grade	4'	8											
65'	66'	Lost core	1'	-	11.9		Tr	1	1	-	11	31	26	25	4
66'	70'	Bit. sand, good grade	4'	9											
70'	74'	Bit. sand, good grade	4'	10											
74'	76'	Lost core	2'	-	12.1		Tr	4	2	-	28	27	19	16	5
76'	80'	Bit. sand, good grade	4'	11											
80'	85'	Lost core	5'	-											
85'	89'	Bit. sand, good grade, 10% clay	4'	12											
89'	93'	" " " " slight clay	4'	13	12.5	9½	Tr	2	1	-	-	41	17	34	4
93'	97'	" " " " " "	4'	14											
97'	102'	" " " " " "	5'	15	13.3		0.0	4	2	-	21	40	7	22	4
102'	109'	Lost core	7'	-											
109'	113'	Bit. sand, good grade	4'	16											
113'	115'	Lost core	2'	-	14.0		Tr	-	-	1	-	51	34	12	2
115'	119'	Bit. sand, good grade	4'	17											
119'	123'	" " " " 10% clay	4'	18											
123'	127'	" " " " 40% clay	4'	19	12.6	13	Tr	3	1	-	-	56	23	14	2

STEEPBANK AREA

HOLE No. 103

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
127'	128'	Lost core	1'	-											
128'	132'	Clay and bit. sand	4'	20)											
132'	136'	" " " "	4'	21)	7.8	50½	Tr	16	5	19	-	28	14	11	7
136'	140'	" " " "	4'	22)											
140'	144'	Bit. sand, good grade, 25% clay	4'	23)											
144'	148'	" " " " 40% "	4'	24)	9.4		Tr	8	3	2	-	49	4	30	4
148'	149'	Lost core	1'	-											
149'	153'	Bit. sand, good grade	4'	25)											
153'	157'	" " " "	4'	26)	15.1		0.0	1	1	-	80	9	1	6	2
157'	161'	" " " "	4'	27)											
161'	162'	Lost core	1'	-)	15.8		Tr	1	15	35	-	36	2	9	2
162'	166'	Bit. sand, good grade	4'	28)											
166'	170'	" " " " slight clay	4'	29)											
170'	174'	" " " " 30% clay	4'	30)	12.1	7	Tr	11	21	-	27	11	11	12	7
174'	178'	" " " "	4'	31)											
178'	182'	" " " " slight clay	4'	32)	16.3		0.0	2	8	7	-	28	11	37	8
182'	186'	" " " " " "	4'	33)											
186'	190'	" " " " 20% clay	4'	34)	14.2	6	Tr	4	19	-	26	11	9	16	15
190'	194'	" " " " 50% "	4'	35)											
194'	198'	" " " " 10% "	4'	36)	14.1		Tr	3	46	15	-	24	3	5	4
198'	201'	Lost core	3'	-											
201'	205'	Bit. sand, good grade, 15% clay	4'	37)											
205'	209'	" " " " 10% "	4'	38)	12.2	15	0.0	4	52	18	-	15	2	4	5
209'	210'	Lost core	1'	-											
210'	214'	Bit. sand, good grade	4'	39)											
214'	218'	" " " "	4'	40)	10.3		0.0	36	23	-	23	6	-	6	5
218'	222'	Lost core	4'	-											
222'	226'	Bit. sand, good grade, partly leached	4'	41)											
226'	230'	" " medium " considerably leached.	4'	42)	9.7		Tr	3	18	10	-	30	7	25	6

STEEPBANK AREA

HOLE No. 103

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
230'	235'	Bit. sand, low grade, leached and clay	5'	43	3.0	51	-	-	-	-	-	-	-	-	-
235'	239'	" " good grade	4'	44											
239'	243'	Lost core	4'	-	13.8		Tr	4	20	-	50	11	5	8	2
243'	245'	Bit. sand, good grade	2'	45											
245'	252'	Lost core	7'	-											
252'	260'	Fine leached barren sand	8'	-											
260'	272'	Coarse leached, barren sand containing particles of limestone	12'0												
	272'	End of Hole													

Summary

0' - 28' = Overburden and low grade bit. sand

28' - 61' = 33' @ 7.6% Bitumen (2.6% or 10.5" clay)

61' - 230' = 169' @ 12.35% bitumen (5% or 8'5" clay)

230' - 245' = 15' @ 9.8% bitumen (28.6% or 4'3" clay)

61' - 245' = 184' @ 12.1% bitumen (7% or 12'8" clay)

STEEPBANK AREA

HOLE No. 104

DATE June 21-22 1945 LOCATION LS.15,Sec.19,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1004' DEPTH 156' DIP 90° CORE RECOVERY 97.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	2	Overburden	2	-											
2	4	Bit. sand, low grade	2	-											
4	8	" " " "	4	1)											
8	9	Lost core	1	-)	8.3	17¾	Tr	3	2	1	7	16	42	21	8
9	13	Bit. sand, low grade	4	2)											
13	17	" " medium grade	4	3)											
17	21	" " " " slight clay	4	4)	13.2		Tr	2	1	0	6	12	13	57	8
21	25	" " " " 5% clay	4	5)											
25	29	" " " " 5% "	4	6)	11.3	5½	Tr	8	2	1	4	17	35	23	10
29	33	" " " "	4	7)											
33	37	" " " "	4	8)	12.7	¾	Tr	1	1	0	10	14	26	40	8
37	38	Lost core	1	-											
38	42	Bit. sand, medium grade	4	9)											
42	46	" " " " slight clay	4	10)	13.4	1¾	Tr	2	1	1	11	25	33	20	7
46	50	" " " " 10% clay	4	11)											
50	54	" " " " some clay	4	12)	13.5	8	Tr	1	1	1	15	17	23	36	6
54	58	" " " "	4	13)											
58	62	" " " "	4	14)	14.3	-	Tr	1	0	2	22	34	25	12	4
62	66	" " " "	4	15)											
66	70	" " " "	4	16)	13.8		Tr	1	1	1	25	21	32	14	5
70	74	" " " "	4	17)											
74	78	" " " "	4	18)	14.0		Tr	0	0	3	39	34	14	7	3
78	82	Bit. sand, good grade	4	19)											
82	84	Lost core	2	-	15.5		Tr	0	0	3	48	28	7	10	4
84	88	Bit. sand, good grade	4	20)											
88	92	" " " "	4	21)											
92	96	" " " "	4	22)	16.6		Tr	0	1	6	58	16	2	14	3
96	100	" " " "	4	23)											
100	104	" " " "	4	24)	15.8		Tr	0	0	22	60	10	3	3	2

STEEPBANK AREA

HOLE No. 104

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
104	108	Bit. sand, good grade	4	25)											
108	112	" " " "	4	26)	15.5		Tr	2	21	29	35	5	2	4	2
112	116	" " " "	4	27)											
116	120	" " medium grade, 20% clay	4	28)	13.2	15	Tr	9	13	22	9	7	6	24	10
120	124	" " good grade, 10% clay	4	29	14.0	6									
124	128	" " " " 25% clay	4	30	7.3	27	Tr	5	2	1	2	6	29	42	13
128	132	Clay with small amount of bit. sand	4	31	-1										
132	156	Leached sand and limestone fragments	24	-											
	156	End of Hole													

Summary

0' - 2' = 2' Overburden

2' - 13' = 11' @ 8.3% bitumen & 13% clay bands

13' - 124' = 111' @ 14.1% bitumen & 1.2% clay bands

2' - 124' = 122' @ 13.6% bitumen & 2.3% clay bands

STEEPBANK AREA

HOLE No. 105

DATE June 19-21 1945 LOCATION LS.15,Sec.19,Tp.92-9-4 CO-ORDINATES ELEVATION 1046' DEPTH 207' DIP 90° CORE RECOVERY 94.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	34'	Overburden, sand, clay, boulders	34	-											
34	38	Bit. sand, low grade	4	1)											
38	42	" " " " slight clay	4	2)	4.6	21½	0.1	29	7	2	4	7	22	15	15
42	44	Lost core	2												
44	48	Bit. sand, low grade	4	3)											
48	52	" " " "	4	4)	11.9		Tr	6	3		7	13	29	35	8
52	56	" " " " some clay	4	5)											
56	60	" " " " 10% clay	4	6)	10.6	12	Tr	5	2	1	4	14	42	25	7
60	64	" " " " 5% clay	4	7)											
64	68	" " " " 5% clay	4	8)	12.3	3	Tr	5	2	-	5	11	23	46	8
68	69	Lost core	1	-											
69	73	Bit. sand, low grade, slight clay	4	9)											
73	74	Lost core	1	-)	12.8	1	Tr	2	1	1	10	16	37	30	5
74	78	Bit. sand, low grade	4	10)											
78	82	" " medium grade	4	11)											
82	86	" " " " 10% clay	4	12)	13.3	6½	Tr	3	1	1	11	26	32	19	6
86	90	" " " " some clay	4	13)											
90	94	" " " " 10% clay	4	14)	14.0	3	Tr	1	1	1	11	15	17	49	6
94	98	" " " "	4	15)											
98	102	" " " "	4	16)	13.9		Tr	1	-	1	18	13	29	21	17
102	106	" " " "	4	17)											
106	110	" " " "	4	18)	14.1		Tr	1	1	1	-	24	29	18	3
110	114	" " " "	4	19)											
114	117	Lost core	3	-)	14.3		Tr	-	1	3	49	23	9	12	3
117	121	Bit. sand, good grade	4	20)											
121	125	" " " "	4	21)	14.5	1½	Tr	-	1	12	59	16	4	5	3
125	129	" " " "	4	22)											
129	133	" " " "	4	23)											
133	137	" " " "	4	24)	14.6	1½	Tr	-	4	19	56	9	1	7	3

STEEPBANK AREA

HOLE No. 105

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
137	141	Bit. sand, good grade	4	25)											
141	145	" " " "	4	26)	15.3		Tr	-	-	32	50	9	2	4	3
145	149	" " " "	4	27)	14.9		Tr	2	12	37	27	10	3	5	3
149	153	" " " "	4	28)											
153	157	" " " "	4	29)											
157	161	" " " "	4	30)	14.1		Tr	3	30	27	14	3	1	17	5
161	165	" " " " slight clay	4	31)											
165	169	" " " " 25% clay	4	32)	13.6	18¾	Tr	3	4	2	3	3	23	53	9
169	173	" " " " 30% "	4	33)											
173	177	" " " " 15% "	4	34)	12.6	13½	Tr	8	4	2	3	13	32	27	10
177	181	" " " " slight clay	4	35)											
181	185	" " " "	4	36)	14.9		Tr	4	36	6	9	5	1	34	4
185	190	" " " "	5	37	16.0	6)									
190	193	Barren sand	3	-		)	Tr	1	47	8	6	2	3	26	8
193	194	Lost core	1	-		64)									
194	200	Bit. sand impregnated in medium grained sand	6	38											
200	201	Lost core	1	-											
201	206	Leached sand	5	-											
206	207	Limestone	1	-											
	207	End of Hole	1	-											

Summary

0' - 34' = 34' Overburden
34' - 44' = 10' @ 4.6% bitumen
44' - 190' = 146' @ 13.6% bitumen & 3.8% clay bands

STEEPBANK AREA

HOLE No. 106

DATE June 17-19 1945 LOCATION LS.1,Sec.30,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1053' DEPTH 193' DIP 90° CORE RECOVERY 96.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	36'	Overburden - clay and boulders	36												
36	40	Bit. sand, low grade, 15% clay	4	1)											
40	44	" " " "	4	2)	4.2	89	Tr	10	4	1	5	10	29	30	11
44	48	" " " "	4	3)											
48	49	Lost core	1	-											
49	53	Bit. sand, medium grade, 10% clay	4	4)											
53	57	" " " " 10% "	4	5)	9.6	11½	Tr	8	3	1	4	18	33	24	9
57	61	" " " " slight clay	4	6)											
61	65	" " " " " "	4	7)	11.7	8¾	Tr	4	2	1	3	16	36	28	9
65	69	" " " " " "	4	8)											
69	71	Lost core	2	-)	8.8	10¾	Tr	6	3	1	6	19	33	22	10
71	75	Bit. sand, low grade, leached	4	9)											
75	79	" " medium grade	4	10)											
79	83	" " " " 5% clay	4	11)	12.6	5¼	Tr	3	1	1	10	14	42	25	4
83	87	" " " "	4	12)											
87	91	" " " " 5% "	4	13)	13.7	5¼	Tr	5	1	1	7	21	30	26	8
91	95	" " " "	4	14)											
95	99	" " " " 30% "	4	15)	11.7	16½	Tr	3	1	2	15	25	29	18	7
99	103	" " " "	4	16)											
103	107	" " " "	4	17)	13.2		Tr	1	2	1	23	22	5	43	3
107	111	" " " " slight clay	4	18)											
111	115	" " " "	4	19)	13.9	1¼	Tr	3	1	2	32	22	19	18	3
115	117	Lost core	2	-											
117	121	Bit. sand, medium grade	4	20)											
121	125	" " " "	4	21)	15.0		Tr	1	0	2	26	30	25	12	4
125	129	" " " "	4	22)											
129	133	" " " "	4	23)	14.3		Tr	0	0	4	35	30	15	13	3
133	137	" " " "	4	24)											
137	141	" " good " some clay	4	25)	14.2	3½	Tr	1	2	7	50	19	2	16	3

STEEPBANK AREA

HOLE No. 106

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100. %	+150 %	+200 %	-200 %
141	145	Bit. sand, good grade, some clay	4	26)											
145	149	" " " "	4	27)	15.0	2	Tr	2	1	19	47	17	5	7	2
149	153	" " " " " "	4	28)											
153	157	" " " "	4	29)	15.2	2	Tr	1	18	27	37	6	1	7	2
157	161	" " " "	4	30)											
161	165	" " " "	4	31)	15.7		Tr	3	5	27	33	11	11	6	3
165	169	" " " "	4	32)											
169	173	" " " " 5% clay	4	33)	14.9	7½	Tr	3	10	9	19	7	14	28	10
173	177	" " " " 25% "	4	34)											
177	181	" " " " slight clay	4	35)	11.0	25¾	Tr	6	4	3	6	11	26	33	11
181	185	" " " " 25% clay	4	36)											
185	188	" " " " 30% "	3	37)	4.3		Tr								
188	192'9"	Clay	4'9"	-											
192'9"	193	Limestone	0'3"	-											
	193	End of Hole													

Summary

0' - 36' = 36' Overburden
36' - 49' = 13' @ 4.2% bitumen & 57% clay bands
49' - 181' = 132' @ 13.1% bitumen & 6.3% clay bands

STEEPBANK AREA

HOLE No. 107

DATE Feb. 3-6 1945 LOCATION LS.4,Sec.29,Twp.92-9-4 CO-ORDINATES ELEVATION 1077' DEPTH 242' DIP 90° CORE RECOVERY 91.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	39'	Overburden, clay, gravel, boulders	39												
39'	43'	Clay and low grade bit. sand	4	1)											
43'	47'	" " " " " "	4	2)											
47'	51'	" " " " " "	4	3)	3.0	139	0.0	5	12	4	-	13	14	21	30
51'	55'	" " " " " "	4	4)											
55'	59'	" " " " " "	4	5)											
59'	63'	" " " " " "	4	6)											
63'	67'	" " " " " "	4	7)	5.0	90	0.0	6	4	-	3	13	19	35	21
67'	68'	Lost core	1	-)											
68'	72'	Clay and low grade bit. sand	4	8)											
72'	73'	Lost core	1	-											
73'	77'	Bit. sand, medium grade, some clay	4	9)											
77'	81'	" " " " " "	4	10)	12.5	5½	Tr	1	1	1	-	32	33	25	7
81'	85'	" " " " " "	4	11)											
85'	87'	Lost core	2	-)	11.6	4½	0.0	1	1	-	18	29	30	15	5
87'	91'	Bit. sand, medium grade	4	12)											
91'	95'	" " " "	4	13)											
95'	99'	" " " "	4		1		0.0	1	1	1	-	43	32	16	7
99'	103'	" " " "	4	1											
103'	107'	" " " "	4	16)	7.3		0.0	-	1	1	-	55	5	34	5
107'	111'	" " " "	4	17)											
111'	115'	" " " "	4	18)	10.8		Tr	1	1	-	36	23	15	20	5
115'	119'	" " " "	4	19)											
119'	123'	" " good "	4	20)	14.8	1½	0.0	1	1	2	-	88	4	14	2
123'	127'	" " " "	4	21)											
127'	131'	" " " "	4	22)	15.3	1¼	Tr	-	-	-	53	23	6	15	2
131'	135'	" " " " slight clay	4	23)											
135'	139'	" " " " 10% clay	4	24)	15.1	6	Tr	1	2	2	-	64	7	21	4

STEEPBANK AREA

HOLE No. 107

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
139'	143'	Bit. sand, good grade, slight clay	4	25)											
143'	147'	" " " "	4	26)	15.8	1¼	0.0	1	-	-	63	16	-	16	3
147'	151'	" " " "	4	27)											
151'	155'	" " " "	4	28)	15.5		0.0	-	1	5	-	78	3	11	2
155'	159'	" " " "	4	29)											
159'	163'	" " " "	4	30)	15.0		Tr	-	-	-	71	16	9	3	1
163'	167'	" " " "	4	31)											
167'	171'	" " " "	4	32)	14.9		Tr	-	-	4	-	77	8	9	2
171'	175'	" " " "	4	33)											
175'	179'	" " " "	4	34)	16.1		Tr	-	3	14	-	67	7	6	3
179'	183'	" " " "	4	35)											
183'	187'	" " " "	4	36)	16.0		Tr	-	-	-	71	18	3	6	2
187'	191'	" " " " some clay	4	37)											
191'	195'	" " " " slight clay	4	38)	15.2	3½	Tr	-	5	11	68	-	1	13	2
195'	199'	" " " " " "	4	39)											
199'	203'	" " " " " "	4	40)	15.8	3	0.0	-	26	-	48	11	1	11	2
203'	207'	" " " " 10% "	4	41)											
207'	211'	" " " "	4	42)	17.0	3	0.0	1	56	8	-	25	3	4	2
211'	214'	" " " "	3	43)											
214'	218'	" " medium grade	4	44)	13.0	2½	Tr	7	34	-	40	7	3	6	3
218'	224'	" " " "	6	45	6.1	10¾	Tr	4	52	9	-	20	3	6	6
224'	233'	Lost core, probably bit. sand	9	-											
233'	237'	Lost core, sand, leached white	4	-											
237'	242'	Clay and limestone	5	-											
	242'	End of Hole													

Summary

0' - 39' = 39' Overburden
39' - 73' = 34' @ 4.06% bitumen
73' - 218' = 145' @ 14.1% bitumen & -1% clay bands.

STEEPBANK AREA

HOLE No. 108

DATE June 8-13 1945 LOCATION LS.4,Sec.29,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1076' DEPTH 245' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	58'	Overburden, clay and sand	58												
58	62	Bit. sand, low grade	4	1)											
62	66	" " " " 5% clay	4	2)	6.3	51¼	Tr	5	2	0	6	11	16	50	10
66	70	" " " " slight clay	4	3)											
70	74	" " medium grade, slight clay	4	4)											
74	78	" " " " 15% clay	4	5)	10.1	16¼	Tr	4	1	1	1	11	31	39	12
78	79	Lost core	1	-											
79	83	Bit. sand, low grade, 5% clay	4	6)											
83	87	" " " " 5% "	4	7)	9.8	9	Tr	7	3	0	5	8	37	31	9
87	91	" " medium grade, 5% clay	4	8)											
91	95	" " " " 5% "	4	9)	11.8	12	Tr	3	1	2	4	8	28	48	6
95	99	" " " " slight clay	4	10)											
99	103	" " " " 20% clay	4	11)	9.6	25¼	Tr	2	2	1	4	15	42	27	7
103	107	" " " " 10% "	4	12)											
107	111	" " " " 10% "	4	13)	10.5	19¾	Tr	6	2	1	3	16	30	31	11
111	115	" " good grade, slight clay	4	14)											
115	119	" " " "	4	15)	10.6	15	Tr	2	2	1	6	11	45	26	7
119	123	" " " "	4	16)											
123	127	" " " " 10% clay	4	17)	12.7	11¼	Tr	1	1	1	6	10	24	51	6
127	131	" " " " slight clay	4	18)											
131	132	Lost core	1	-)	13.6	7¾	Tr	1	1	1	4	18	41	24	10
132	136	Bit. sand, good grade	4	19)											
136	140	" " " " 5% clay	4	20)											
140	144	" " " " 15% "	4	21)	11.7	14¾	Tr	1	1	1	9	10	2	65	11
144	145	Lost core	1	-											
145	149	Bit. sand, low grade	4	22)											
149	153	" " good grade	4	23)	12.3	1¾	Tr	0	1	1	9	20	42	20	7

STEEPBANK AREA

HOLE No. 108

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
153'	157'	Bit. sand, good grade	4	24)											
157	161	" " " "	4	25)	14.8		Tr	0	0	1	12	20	48	14	4
161	165	" " " "	4	26)											
165	169	" " " "	4	27)	13.6	13½	Tr	2	2	2	16	16	9	48	5
169	173	" " " "	4	28)											
173	177	" " " "	4	29)	15.2		Tr	1	9	26	37	12	8	4	3
177	181	" " " " 40% clay	4	30)											
181	185	" " " " 15% "	4	31)	9.5	35	Tr	2	16	15	26	9	4	21	5
185	189	" " " " 15% "	4	32)											
189	193	" " " " 15% "	4	33)	12.9	20¾	Tr	1	1	3	9	19	30	30	7
193	197	" " " " 20% "	4	34)											
197	201	" " medium grade, 10% clay	4	35)	12.6	14¾	Tr	2	2	1	9	17	1	61	7
201	205	" " good grade, slight clay	4	36)											
205	209	" " " " 30% clay	4	37)	12.5	26¼	Tr	3	1	2	15	21	32	19	6
209	213	" " " "	4	38)											
213	217	" " " " 5% "	4	39)											
217	221	" " " "	4	40)	15.4	7½	Tr	0	1	1	21	23	2	47	4
221	225	" " " " slight clay	4	41)											
225	229	" " " "	4	42)	16.0	3½	Tr	1	1	0	13	18	26	36	4
229	233	" " " "	4	43)											
233	237	" " " " 15% clay	4	44)	11.8	24¼	Tr	1	13	2	18	20	8	31	6
237	239	Barren sand	2	-											
239	244	Lost core	5	-											
244	245	Barren sand with particles of limestone	1	-											
	245	End of Hole													

Summary

0' - 58' = 58' Overburden

58' - 70' = 12' @ 6.3% bitumen & 35.5% clay bands

70' - 237' = 167' @ 12.4% bitumen & 13.8% clay bands

STEEPBANK AREA

HOLE No. 109

DATE June 23-24 1945 LOCATION LS.15,Sec.19,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 983' DEPTH 127' DIP 90° CORE RECOVERY 92.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	3'	Sand (standpipe)	3	-											
3'	4'	Bit. sand, low grade (standpipe)	1	-											
4'	8'	" " medium grade, 5% clay	4	1)											
8'	12'	" " low grade	4	2)	9.1	5½	Tr	1	1	1	11	32	26	20	8
12'	16'	" " " "	4	3)											
16'	20'	" " " "	4	4)	11.9	¾	Tr	3	1	3	20	34	24	9	6
20'	24'	" " " "	4	5)											
24'	28'	" " " " some clay	4	6)	12.8	6¼	Tr	1	2	5	32	24	21	10	4
28'	32'	" " medium grade	4	7)											
32'	36'	" " " "	4	8)	12.8	1½	0.1	2	3	3	31	19	7	30	5
36'	40'	" " " " slight clay	4	9)											
40'	44'	" " " " " "	4	10)	11.8	7½	0.1	2	2	3	31	20	6	30	6
44'	48'	" " good " 15% clay	4	11)											
48'	52'	" " " "	4	12)	12.4	8¾	Tr	3	4	22	32	14	7	12	6
52'	56'	" " " " some clay	4	13)											
56'	60'	" " " " slight clay	4	14)	13.9	3½	Tr	2	15	22	38	6	7	6	4
60'	64'	" " " " 15% clay	4	15)											
64'	68'	" " " " 25% "	4	16)	10.2	31¼	Tr	2	9	27	43	9	4	4	2
68'	72'	" " " " 15% "	4	17)											
72'	76'	" " medium " slight clay	4	18)	9.2	36½	Tr	3	4	3	7	4	5	54	19
76'	80'	" " " " some "	4	19)											
80'	84'	" " good " " "	4	20)	14.2	10¼	Tr	1	1	0	1	1	9	71	15
84'	88'	" " medium " slight "	4	21)											
88'	92'	" " " " " "	4	22)	15.1		Tr	1	1	1	1	3	29	48	16
92'	96'	" " " " " "	4	23)											
96'	100'	" " good "	4	24)	15.2		Tr	1	1	0	2	2	2	82	10
100'	104'	" " " "	4	25)											
104'	108'	" " " " 20% clay	4	26)	13.0	14¾	Tr	2	1	2	7	8	5	64	11

STEEPBANK AREA

HOLE No. 109

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY ASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
108'	109'	Lost core	1												
109'	117'	Leached sand	8												
117'	121'	Lost core	4												
121'	122'	Leached sand	1												
122'	126'	Lost core	4												
126'	127'	Leached sand	1												
	127'	End of hol													

Summary

0' - 3' = Overburden

3' - 108' = 105' @ 12.4% bitumen and 10% clay bands

STEEPBANK AREA

HOLE No. 110

DATE July 7-9 1945 LOCATION LS.1,Sec.30,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1048' DEPTH 178' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	45'	Overburden, clay and barren sand	45	1,2,3	Trace of bitumen only										
45'	49'	Bit. sand, low grade, some clay	4	4)											
49'	53'	" " " " slight clay	4	5)	6.6	7	0.1	12	5	2	6	17	34	12	12
53'	57'	" " " "	4	6)											
57'	59'	Lost core	2	-)	10.6	Tr	Tr	8	2	2	13	30	26	11	7
59'	63'	Bit. sand, medium grade	4	7)											
63'	67'	" " " "	4	8)											
67'	68'	Lost core	1	-)	11.6		Tr	6	2	1	16	18	35	16	6
68'	72'	Bit. sand, medium grade, slight clay	4	9)											
72'	76'	" " " "	4	10)											
76'	77'	Lost core	1	-)	12.9	2¼	Tr	3	2	1	12	36	19	20	7
77'	81'	Bit. sand, medium grade, 5% clay	4	11)											
81'	85'	" " good " 5% "	4	12)											
85'	89'	" " " " 5% "	4	13)	13.8	3¼	Tr	4	2	2	24	16	6	39	6
89'	93'	" " " " slight clay	4	14)											
93'	97'	" " " " " "	4	15)	14.2	2	Tr	3	2	3	24	27	14	21	6
97'	101'	" " " " some clay	4	16)											
101'	105'	" " " " 5% "	4	17)	13.9	4¾	Tr	2	3	2	36	14	21	15	7
105'	109'	" " " " some clay	4	18)											
109'	113'	" " " "	4	19)	13.6	5¼	0.1	3	6	11	30	18	11	15	6
113'	117'	" " " " " "	4	20)											
117'	121'	" " " " 30% "	4	21)	11.9	19½	Tr	3	5	5	46	12	17	8	4
121'	125'	" " " " 25% "	4	22)											
125'	129'	" " " "	4	23)	14.2	11¼	Tr	2	1	6	42	26	12	7	4
129'	133'	" " " "	4	24)											
133'	137'	" " " "	4	25)	16.0		Tr	1	3	13	46	17	11	6	3
137'	141'	" " " "	4	26)											
141'	145'	" " " "	4	27)	16.0		Tr	1	9	11	41	13	0	21	3

STEEPBANK AREA

HOLE No. 110

DATE ... 194 LOCATION ... CO-ORDINATES ... ELEVATION ... DEPTH ... DIP ... CORE RECOVERY ...

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
145	149	Bit. sand, good grade, slight clay	4	28	16.0										
149	150	Lost core	1	-											
150	154	Bit. sand, good grade, 20% clay	4	29	12.3	4¾	Tr	1	3	7	27	10	35	13	4
154	158	" " " " 30% "	4	30	8.8										
158	160	" " " " 60% "	2	31	3.4										
160	173	Clay with stringers of bit. sand	13	-											
173	177	Leached sand	4	-											
177	178	Clay	1	-											
	178	End of Hole													

Summary

0' - 45' = 45' Overburden
45' - 53' = 8' @ 6.6% bitumen & 7.3% clay bands
53' - 158' = 105' @ 13.3% bitumen & 7.4% clay bands

STEEPBANK AREA

HOLE No. 111

DATE July 3-6 1945 LOCATION LS.2,Sec.30,Tp.92-9-4 Hammerstein Grant R.25 CO-ORDINATES ELEVATION 1042' DEPTH 155' DIP 90° CORE RECOVERY 97.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	53	Overburden, clay & very low grade bit. sand	53	1-4											
53	57	Bit. sand, low grade	4	5)											
57	61	Bit. sand, low grade, slight clay	4	6)	11.4	1¼	Tr	6	2	1	1	2	4	38	45
61	65	" " " " 10% clay	4	7)											
65	69	" " " " some clay	4	8)											
69	73	" " " " slight clay	4	9)		No assay									
73	102	Leached sand	29	-											
102	106	Bit. sand, low grade, 10% clay	4	10		No assay									
106	110	" " medium grade, 5% clay	4	11)											
110	114	" " good grade	4	12)	10.3	22¾	Tr	2	3	6	53	11	0	18	6
114	118	" " " "	4	13)											
118	119	Lost core	1	-)	15.3	1¼	Tr	1	1	12	41	13	9	17	6
119	123	Bit. sand, good grade, slight clay	4	14)											
123	127	" " " " 5% clay	4	15	12.5)										
127	144	Clay	17	-	)										
144	148	Bit. sand, good grade, 30% clay	4	16	12.5)	23	Tr	1	9	7	36	16	0	27	4
148	149	Clay band	1	-	)										
149	150'6"	Bit. sand, good grade, some clay	1'6"	17	12.5)										
150'6"	151	Clay	0'6"	-											
151	152	Lost core	1	-											
152	155	Limestone	3	-											

Summary

0' - 53' = 53' Overburden

53' - 150' = 97' @ 4.7% bitumen & 85% barren material.

STEEPBANK AREA

HOLE No. 112

DATE June 24-26 1945 LOCATION LS.2, Sec. 30, Tp. 92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 994' DEPTH 127' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	7	Overburden, sand	7	-											
7	11	Bit. sand, low grade, 30% clay	4	1		Not assayed, very low grade									
11	15	" " " " 10% "	4	2		Not assayed, very low grade									
15	19	Clay and leached sand	4												
19	23	Bit. sand, low grade, 40% clay	4	3		Not assayed, very low grade									
23	34	Clay with stringers of leached sand	11	-											
34	38	Bit. sand, low grade, 15% clay	4	4		Not assayed, very low grade									
38	42	Bit. sand, low grade, 10% clay	4	5		Not assayed, very low grade									
42	46	" " " "	4	6)											
46	50	" " medium grade, some clay	4	7)	8.7	22½	Tr	6	2	1	1	5	12	59	14
50	54	" " " "	4	8)											
54	58	" " " "	4	9)	11.5		Tr	3	5	5	10	9	3	56	8
58	62	" " " "	4	10)											
62	66	" " good "	4	11)	13.4	1	Tr	1	2	18	34	16	3	21	5
66	76	Clay	10	-		120									
76	80	Bit. sand, medium grade, 10% clay	4	12)											
80	84	" " low grade, 10% clay	4	13)	7.3	7½	Tr	4	2	1	2	1	4	65	21
84	88	" " " " 10% "	4	14)											
88	92	" " " " some clay	4	15)											
92	96	" " medium grade	4	16)	13.4	8	Tr	2	1	0	1	2	15	47	32
96	100	" " " " some clay	4	17	13.1	5½)									
100	104	" " " " 15% clay	4	18	8.5	20½)	Tr	1	1	1	7	6	16	41	26
104	108	Solidified hydrocarbon	4	19	nil	Carbonaceous Material 50-60% ash									
108	110	" "	2	20	nil	Carbonaceous Material 50-60% ash									
110	112	Bit. sand, low grade	2	20	5.4		Tr	1	1	1	7	6	16	41	26

Summary

0' - 42' = 42' Overburden & very low grade sand

42' - 100' = 58' @ 8.9% bitumen and 34% clay bands

STEEPBANK AREA

HOLE No. 113

DATE June 26-29 1945 LOCATION LS.6,Sec.30,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 992' DEPTH 97' DIP 90° CORE RECOVERY 96.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	19	Overburden, clay with leached sand stringers	19												
19	23	Bit. sand, low grade, 40% clay	4	1		Not assayed - very low grade									
23	26	Clay band	3	-											
26	30	Bit. sand, low grade	4	2											
30	34	" " medium grade, some clay	4	3											
34	37	Lost core	3	-	6.2	42½	Tr	5	2	6	43	17	3	18	6
37	41	Bit. sand, low grade	4	4											
41	45	" " " "	4	5											
45	49	" " good " slight clay	4	6	12.4	1¼	Tr	1	1	1	45	19	20	9	3
49	53	" " " " 25% clay	4	7											
53	57	" " " " 10% "	4	8	13.1	15½	Tr	1	1	5	58	14	10	8	3
57	61	" " " " 40% "	4	9	9.3	18									
61	65	Clay band	4	-											
65	69	Bit. sand, medium grade, 50% clay	4	10	6.3	6½									
69	73	" " " " 30% "	4	11	7.0	26	Tr	5	2	5	37	16	3	25	7
73	91'2"	Clay with some low grade sand bands	18'2"	-											
91'2"	91'11"	Bit. sand, low grade	0'9"	12	15.0										
91'11"	96	Clay with limestone particles	4'1"	-											
96	97	Limestone	1	-											
	97	End of Hole													

Summary

0' - 26' = 26' Overburden
26' - 41' = 15' @ 6.2% bitumen
41' - 61' = 20' @ 12.06% bitumen & 14.3% clay bands

STEEPBANK AREA

HOLE No. 114

DATE June 30-July 1, 1945 LOCATION LS.11, Sec. 30, Tp. 92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 990' DEPTH 83' DIP 90° CORE RECOVERY 98.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	6	Overburden, clay and boulders	6	-											
6	10	Bit. sand, medium grade, 25% clay	4	1	7.4	16	Tr	4	2	3	14	13	22	23	18
10	16	Clay band	6	-											
16	20	Bit. sand, low grade, 20% clay	4	2)											
20	24	" " good " slight clay	4	3)	7.4	36½	Tr	4	2	3	14	13	22	23	18
24	28	" " " " 15% clay	4	4)											
28	32	" " low " 50% "	4	5)	8.0	47½	Tr	4	1	1	5	20	14	40	15
32	36	Clay band	4	-											
36	37	Lost core	1	-											
37	40	Clay with sand stringers	3	-											
40	44	Bit. sand, medium grade, 10% clay	4	6	8.0	6	Tr	4	1	1	5	20	14	40	15
44	48	" " low " 30% "	4	7)											
48	52	" " medium " 10% "	4	8)											
52	56	" " low " 25% "	4	9)	6.9	110½	Tr	4	2	1	6	6	17	53	11
56	60	" " good " 25% "	4	10)											
60	61'6"	" " medium " slight clay	1'6"	11)											
61'6"	83	Clay	21'6"												
	83	End of Hole													

Summary

0' - 16' = 16' Overburden
16' - 61'6" = 45'6" @ 6.1% bitumen & 37% clay bands

STEEPBANK AREA

HOLE No. 116

DATE March 15-16 194 5 LOCATION LS.8,Sec.19,Tp.92-9-4 CO-ORDINATES ELEVATION 978' DEPTH 104' DIP 90° CORE RECOVERY 89%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	4'	Overburden - gravel and sand	4	-											
4'	8'	Bit. sand, low grade	4	1)											
8'	9'	Lost core	1	-)	10.9	13¾	0.1	8	2	-	6	23	22	31	8
9'	13'	Bit. sand, medium grade, 20% clay	4	2)											
13'	14'	Lost core	1	-											
14'	18'	Bit. sand, medium grade, 10% clay	4	3)											
18'	22'	" " good " 10% "	4	4)	12.9	10	0.0	3	1	-	6	19	26	36	9
22'	26'	" " " " 30% "	4	5)											
26'	30'	" " " " 40% "	4	6)	10.8	26¾	0.0	2	1	-	-	13	46	28	9
30'	34'	" " " "	4	7)											
34'	38'	" " " "	4	8)	15.6		0.0	-	-	-	6	24	32	32	6
38'	42'	" " " "	4	9)											
42'	46'	" " " " 60% "	4	10)	11.1	37½	0.0	1	1	-	-	25	2	67	4
46'	50'	" " " " 15% "	4	11)											
50'	51'	Lost core	1	-											
51'	55'	Bit. sand, good grade	4	12)											
55'	58'	Lost core	3	-)	15.1		Tr	4	2	-	16	33	15	26	5
58'	62'	Bit. sand, good grade, slight clay	4	13)											
62'	63'	Lost core	1	-											
63'	67'	Bit. sand, good grade, slight clay	4	14)											
67'	71'	" " " " 10% clay	4	15)	12.4	18½	Tr	4	1	-	-	35	5	50	5
71'	75'	" " " " 15% "	4	16)											
75'	79'	" " " " 10% "	4	17)	11.8	30	Tr	4	3	10	23	14	9	32	4
79'	83'	" " " " 10% "	4	18)											
83'	84'	Lost core	1	-											
84'	88'	Bit. sand, good grade, 10% clay	4	19)											
88'	91'	Lost core	3	-)	10.7	25¾	Tr	5	20	-	42	13	-	16	4
91'	95'	Bit. sand, medium grade, rock & 20% clay	4	20)											

STEEPBANK AREA

HOLE No. 116

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
95'	99'	Course hard sand, impregnated with bit.	4	21)											
99'	103'	" " " " " "	4	22)	8.1	9½	Tr	27	32	-	29	5	1	5	4
103'	104'	Clay and limestone	1	-											
	104'	End of Hole													

Summary

0' - 4' = 4' Overburden
4' - 95' = 91' @ 12.1% bitumen & 14.8% clay
95' - 103' = 8' @ 8.1% bitumen & 8% stone

STEEPBANK AREA

HOLE No. 117

DATE March 13-15 1945 LOCATION LS.5,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1043' DEPTH 160' DIP 90° CORE RECOVERY 93.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	11	Overburden, clay-gravel and sand	11	-											
11	15	Clay with traces of bit. sand	4	1											
15	19	Bit. sand, low grade	4	2)											
19	23	" " " "	4	3)	9.3	13½	0.0	2	2	-	-	4	23	53	16
23	27	" " medium grade	4	4)											
27	28	Lost core	1	-)	10.6	13½	Tr	2	2	-	3	12	19	51	11
28	32	Bit. sand, medium grade	4	5)											
32	34	Lost core	2	-											
34	38	Bit. sand, medium grade	4	6)											
38	40	Lost core	2	-)	10.2	24½	Tr	1	1	-	-	12	-	77	8
40	44	Bit. sand, medium grade	4	7)											
44	48	" " good " slight clay	4	8)											
48	52	" " " " " "	4	9)	13.0	5	Tr	-	1	-	1	8	25	51	14
52	56	" " " " 20% "	4	10)											
56	60	" " " " 10% "	4	11)	11.1	13½	Tr	1	2	-	-	7	1	78	11
60	64	" " " " 25% "	4	12)											
64	68	Lost core	4	-)	9.6	29	Tr	1	1	-	-	15	24	50	10
68	72	Bit. sand, good grade, slight clay	4	13)											
72	76	" " " " " "	4	14)											
76	80	" " " " 10% clay	4	15)	13.1	10½	Tr	1	2	-	-	12	4	70	11
80	84	" " " " 10% "	4	16)											
84	88	" " " " 25% "	4	17)	11.0	22½	Tr	1	1	-	-	14	2	74	8
88	92	" " " "	4	18)											
92	96	" " " " 50% "	4	19)	8.9	28½	0.0	-	2	-	-	11	3	68	14
96	100	" " " " 10% "	4	20)											
100	104	" " " " slight clay	4	21)	12.3	14	Tr	2	2	-	-	19	3	68	7
104	108	" " " "	4	22)											
108	112	" " " " 25% clay	4	23)	11.7	19	Tr	3	2	-	6	40	25	14	9

STEEPBANK AREA

HOLE No. 117

DATE ... 194 .. LOCATION ... CO-ORDINATES ... ELEVATION ... DEPTH ... DIP ... CORE RECOVERY ...

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
112	116	Bit. sand, good grade, 25% clay	4	24)											
116	120	" " medium grade, 20% clay leached	4	25)	5.0	8½	Tr	7	4	-	9	24	17	29	11
120	124	" " " " 40% "	4	26)											
124	128	" " good " 10% "	4	27)											
128	132	" " " "	4	28)	11.9	14½	Tr	1	1	-	33	37	1	21	5
132	136	" " " "	4	29)											
136	140	" " " "	4	30)	14.5	4½	0.0	2	2	7	-	70	1	14	3
140	144	" " " "	4	31)											
144	148	" " " "	4	32)											
148	149	Lost core	1	-)	13.8	12	0.0	3	5	-	55	17	-	17	4
149	154	Bit. sand, good grade, 20% clay	5	33)											
154	160	Blue clay and limestone	6	-											
	160	End of Hole													

Summary

0' - 15' = 15' Overburden with traces of bit. sand

(15' - 112' = 97' @ 10.6% bitumen & 15.6% clay)

(112' - 124' = 12' @ 5.0% bitumen & 58.3% clay)

(124' - 154' = 30' @ 13.48% bitumen & 8.5% clay)

15' - 154' = 139' @ 10.74% bitumen & 18.4% clay

(15' - 112' = 97')
(124' - 154' = 30') = 127' @ 11.3% bitumen & 14.7% clay

STEEPBANK AREA

HOLE No. 118

DATE March 20 1945 LOCATION LS.1,Sec.19,Tp.92-9-4 CO-ORDINATES ELEVATION 920' DEPTH 57' DIP 90° CORE RECOVERY 95.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	12	Overburden, gravel and sand	12												
12	16	Bit sand, low grade	4	1)											
16	20	" " medium grade	4	2)	11.9		Tr	4	3	1	11	24	3	41	12
20	21	Lost core	1	-											
21	25	Bit. sand, good grade, 10% clay	4	3)											
25	29	" " " " 15% "	4	4)	12.0	13½	Tr	8	2	10	28	22	-	23	7
29	33	" " " "	4	5)											
33	37	" " " " 15% "	4	6)	12.3	21	Tr	3	2	11	27	-	28	25	3
37	38	Lost core	1	-											
38	42	Bit. sand, good grade, 5% clay	4	7)											
42	46	" " " " 5% "	4	8)	11.4	30¾	Tr	6	15	8	26	17	-	25	3
46	50	" " " " 20% "	4	9)											
50	54	" " low " 50% "	4	10)											
54	57	Clay with low grade bit. sand last foot pure clay	3	11)	clay with traces of bituminous sand										
	57	End of Hole													

Summary

0' - 12' = 12' Overburden
12' - 50' = 38' @ 11.8% bitumen & 14% clay bands.

STEEPBANK AREA

HOLE No. 119

DATE March 24-25 1945 LOCATION LS.4,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1049' DEPTH 198' DIP 90° CORE RECOVERY 94%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	14	Overburden - clay and boulders	14	-											
14	18	Bit. sand, low grade, leached	4	1											
18	22	" " " " " 20% clay	4	2	3.5	9¼	Tr	12	11	2	5	4	30	20	18
22	26	" " " " " 15% "	4	3											
26	30	" " " " " 30% "	4	4											
30	34	" " " " " 10% "	4	5											
34	35	Lost core	1	-											
35	39	Bit. sand, low grade, 20% clay	4	6	6.8	38½	Tr	6	5	1	2	4	45	23	14
39	40	Lost core	1	-											
40	44	Bit. sand, low grade	4	7											
44	48	" " " " leached	4	8											
48	52	" " " " "	4	9	8.2	26¾	Tr	3	2	1	-	15	-	65	14
52	56	" " " "	4	10											
56	60	" " " "	4	11	9.3	16	Tr	3	4	-	3	8	53	18	12
60	64	" " " "	4	12											
64	65	Lost core	1	-	8.2	30½	0.0	3	3	-	3	8	53	18	12
65	69	Bit. sand, low grade, 50% clay	4	13											
69	73	" " medium grade, 5% clay	4	14											
73	77	" " " " 5% "	4	15	10.9	23½	Tr	1	1	1	-	17	2	66	12
77	81	" " " "	4	16											
81	85	" " " " 5% "	4	17	13.7	6½	Tr	1	1	-	3	8	59	20	9
85	89	" " " "	4	18											
89	93	" " " "	4	19	12.1	16½	Tr	1	1	-	1	25	47	18	7
93	97	" " " "	4	20											
97	101	" " good " slight clay	4	21	14.1	6½	Tr	1	1	-	8	15	58	14	4
101	105	" " medium " 10% clay	4	22											
105	109	" " good " 30% "	4	23	10.0	27⅜	Tr	1	1	1	-	27	51	15	6
109	110	Lost core	1	-											

STEEPBANK AREA

HOLE No. 119

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
110	114	Bit. sand, good grade, 40% clay	4	24)											
114	118	" " " " 60% "	4	25)	10.6	49½	Tr	2	1	1	-	26	43	17	9
118	122	" " " "	4	26)											
122	123	Lost core	1	-											
123	127	Bit. sand, good grade, 30% clay	4	27)											
127	131	" " " "	4	28)	13.6	9½	Tr	1	2	1	17	22	45	8	5
131	135	" " " " 20% "	4	29)											
135	139	" " " " slight clay	4	30)	14.0	11	Tr	1	1	-	13	42	-	38	4
139	143	" " " " 50% clay	4	31)											
143	147	" " " " 40% "	4	32)	8.7	50½	Tr	7	3	4	19	35	21	5	7
147	151	" " " " 50% "	4	33)											
151	153	Lost core	2	-											
153	157	Bit. sand, good grade, 40% "	4	34)											
157	161	" " " " 5% "	4	35)											
161	164	Lost core	3	-)	10.1	39½	Tr	5	4	4	36	21	23	3	5
164	168	Bit. sand, good grade, 30% "	4	36)											
168	172	" " " " 20% "	4	37)											
172	173	Lost core	1	-)											
173	177	Bit. sand, good grade, 30% "	4	38)	8.8	56½	Tr	4	4	7	40	20	17	3	6
177	181	" " " " 10% "	4	39)											
181	185	" " " " 70% "	4	40)											
185	189	" " medium grade 50% "	4	41)	10.1	68	Tr	3	10	17	21	7	18	16	9
189	193	" " " " 30% "	4	42)											
193	197	" " good " 5% "	4	43											
197	198	Decomposed limestone	1	-											
	198	End of Hole													

STEEPBANK AREA

HOLE No. 119

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary													
		0' - 14' = 14' Overburden													
		14' - 30' = 16' @ 3.5% bitumen & 4% clay bands													
		30' - 69' = 39' @ 8.1% bitumen & 2% clay bands													
		69' - 197' = 128' @ 10.9% bitumen & 2% clay bands													
		30' - 197' = 167' @ 10.3% bitumen & 2% clay bands													

STEEPBANK AREA

HOLE No. 120

DATE April 4-6 1945 LOCATION IS.14/3,Sec.17/20, Tp.92-9-4 CO-ORDINATES ELEVATION 1068' DEPTH 220' DIP 90° CORE RECOVERY 94.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	39	Overburden, clay and gravel	39	-											
39	43	Bit. sand, low grade	4	1)											
43	47	" " " " 10% clay	4	2)											
47	51	" " " " 10% clay	4	3)	3.6	89	0.1	15	11	2	4	4	28	18	18
51	53	Lost core	2	-)											
53	57	Bit. sand, low grade	4	4)											
57	61	" " " "	4	5)											
61	65	" " " "	4	6)	9.1	3	0.1	5	4	2	5	22	32	20	10
65	67	Lost core	2	-											
67	71	Bit. sand, medium grade	4	7)											
71	73	Lost core	2	-)	9.6	15	Tr	4	3	1	9	16	49	11	7
73	77	Bit. sand, medium grade	4	8)											
77	78	Lost core	1	-											
78	82	Bit. sand, medium grade, slight clay	4	9)											
82	83	Lost core	1	-)	11.0	18	Tr	1	1	1	7	36	35	13	6
83	87	Bit. sand, medium grade, 10% clay	4	10)											
87	88	Lost core	1	-											
88	92	Bit. sand, good grade, 5% clay	4	11)											
92	96	" " " "	4	12)	13.6	4	Tr	1	1	1	4	19	40	25	10
96	100	" " medium grade, 30% clay	4	13)											
100	101	Lost core	1	-)											
101	105	Bit. sand, medium grade, 40% clay	4	14)	8.6	52	Tr	2	2	1	5	9	55	18	9
105	106	Lost core	1	-)											
106	110	Bit. sand, medium grade, 5% clay	4	15)											
110	114	" " " " 20% "	4	16)											
114	118	" " good " 15% "	4	17)	9.3	36	Tr	1	1	1	13	38	30	13	4
118	122	" " " " 5% "	4	18)											
122	126	" " " " 10% "	4	19)	10.9	25½	Tr	2	1	1	17	23	47	7	3

STEEPBANK AREA

HOLE No. 120

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
126	130	Bit. sand, good grade, 30% clay	4	20)											
130	134	" " " " 10% "	4	21)	11.1	22	Tr	3	1	1	16	33	28	12	4
134	138	" " " "	4	22)											
138	142	" " " " 20% "	4	23)	12.0	20	Tr	-	1	-	15	22	50	9	3
142	146	" " " "	4	24)											
146	150	" " " " slight clay	4	25)	14.9	7	0.0	1	1	-	14	18	53	9	4
150	154	" " " " 25% clay	4	26)											
154	158	" " " "	4	27)	13.7	17½	Tr	1	1	1	13	36	29	16	4
158	162	" " " " 5% clay	4	28)											
162	166	" " " " 10% "	4	29)	12.9	16	Tr	1	2	2	26	21	39	6	3
166	170	" " " " 10% "	4	30)											
170	174	" " " " 5% "	4	31)	13.3	15	Tr	1	1	2	38	26	27	3	2
174	178	" " " " 30% "	4	32)											
178	182	" " " " 30% "	4	33)	7.5	62½	Tr	9	6	6	32	26	5	12	5
182	186	" " " " 40% "	4	34)											
186	190	" " " " 10% "	4	35)	12.9	17	Tr	1	39	20	28	5	5	1	2
190	194	" " " " 5% "	4	36)											
194	198	" " " " 5% "	4	37)											
198	202	" " " " Course sand	4	38)	12.8	11½	0.1	16	55	12	5	4	4	2	2
202	206	" " " " " "	4	39)											
206	210	" " " " 20% clay	4	40)	11.1	30	Tr	4	25	10	17	8	22	10	5
210	214	" " medium grade, 30% clay	4	41)											
214	218	" " " " 20% "	4	42)	10.4	38½	Tr	3	5	4	6	12	37	25	8
218	219-10"	Clay	1'10"	-											
219'10"	220	Limestone	2"	-											
	220	End of Hole													

STEEPBANK AREA

HOLE No. 120

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 39' = 39' Overburden 39' - 57' = 18' @ 3.6% bitumen & 41% clay bands 57' - 218' = 161' @ 11% bitumen & 21% clay bands													

STEEPBANK AREA

HOLE No. 121

DATE April 17-19 1945 LOCATION LS.14, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1062' DEPTH 199' DIP 90° CORE RECOVERY 97.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	29	Overburden, clay	29	-											
29	33	Bit. sand, low grade, leached	4	1)											
33	37	" " " " "	4	2)	5.5	40¾	Tr	14	7	1	3	3	37	21	14
37	38	Lost core	1	-)											
38	42	Bit. sand, low grade, leached	4	3)											
42	46	" " " " "	4	4)											
46	50	" " " " "	4	5)	9.0	4¼	Tr	5	3	1	1	4	53	23	11
50	54	" " " " "	4	6)											
54	58	" " medium grade	4	7)	8.1	14¼	Tr	6	4	1	2	5	53	20	11
58	62	" " " "	4	8)											
62	66	" " " "	4	9)	10.5	17¾	Tr	2	1	1	1	19	44	25	8
66	70	" " " " 5% clay	4	10)											
70	74	" " " " 5% "	4	11)	11.7	17	Tr	-	1	-	-	13	45	32	9
74	78	" " " " 30% "	4	12)											
78	82	" " " " 30% "	4	13)	10.4	42½	Tr	4	2	1	1	7	46	30	10
82	86	" " good "	4	14)											
86	90	" " " " 50% "	4	15)											
90	94	" " medium " 15% "	4	16)											
94	98	" " " " 70% "	4	17)	7.4	95½	Tr	2	1	-	6	17	58	10	5
98	102	" " " " 30% "	4	18)											
102	106	" " " " 20% "	4	19)											
106	110	" " " " 50% "	4	20)	8.1	44	Tr	4	2	1	5	25	29	22	13
110	114	" " good " 5% "	4	21)											
114	118	" " " " 5% "	4	22)	14.1	6¾	Tr	-	1	-	15	40	16	22	6
118	122	" " " "	4	23)											
122	126	" " " "	4	24)	15.3	6½	Tr	1	1	1	11	35	36	11	5
126	130	" " " " 10% "	4	25)											
130	134	" " " " 10% "	4	26)	11.3	30¼	Tr	3	1	1	12	35	34	9	5

STEEPBANK AREA

HOLE No. 121

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
134	138	Bit. sand, good grade	4	27)											
138	142	" " " " 60% clay	4	28)	11.2	27	Tr	-	1	-	7	17	57	126	
142	146	" " " " 30% "	4	29)											
146	150	" " " "	4	30)	12.6	17½	Tr	2	2	1	13	20	51	8	5
150	154	" " " " 10% "	4	31)											
154	158	" " " " 5% "	4	32)	9.6	35	Tr	1	5	22	47	13	2	7	3
158	160	Lost core	2	-											
160	164	Bit. sand, good grade, 5% "	4	33)											
164	168	" " " " 10% "	4	34)	10.1	25½	Tr	4	30	23	28	5	6	2	3
168	172	" " " " 10% "	4	35)											
172	173	Lost core	1	-)											
173	177	Bit. sand, good grade	4	36)	12.2	14½	Tr	6	26	35	23	5	2	2	2
177	181	" " " " 5% "	4	37)											
181	185	" " " " 40% "	4	38)	9.1	34½	Tr	8	52	22	6	4	4	2	3
185	189	" " " " 5% "	4	39)											
189	193	" " " "	4	40)	10.9	18½	Tr	4	7	6	10	23	28	16	7
193	197	" " " " coarse clay	4	41)											
197	198.6	" " " " " "	1.6	42)	11.6	3½	Tr	26	19	5	12	8	19	6	6
198.6	199	Clay	.6	-											
	199	End of Hole													

Summary

0' - 29' = 29' Overburden
29' - 58' = 29' @ 7.2% bitumen & 17% clay bands
58' - 198'6" = 140'5" @ 10.75% bitumen & 25.8% clay bands
29' - 198'6" = 169'6" @ 10.15% bitumen & 24.3% clay bands

STEEPBANK AREA

HOLE No. 122

DATE April 21-22 1945 LOCATION LS.13,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 925' DEPTH 93' DIP 90° CORE RECOVERY 98.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	13	Overburden, clay and sand	13	-											
13	17	Bit. sand, low grade, 30% clay	4	1	10.2	16	Tr	1	2	1	20	24	44	5	3
17	23	Clay	6	-											
23	27	Bit. sand, good grade, 15% clay	4	2)											
27	31	" " " " 25% "	4	3)	10.2	36	Tr	1	2	1	20	24	44	5	3
31	32	Lost core	1	-											
32	36	Bit. sand, good grade	4	4)											
36	40	" " " "	4	5)	16.2		Tr	1	-	1	17	39	27	11	5
40	44	" " " "	4	6)											
44	48	" " " "	4	7)	15.2	5¾	Tr	1	-	4	29	33	16	14	3
48	52	" " " "	4	8)											
52	56	" " " "	4	9)	16.7		Tr	1	4	4	23	35	11	19	4
56	60	" " " " 10% clay	4	10)											
60	64	" " " " 50% "	4	11)	7.1	77¼	Tr	4	10	6	24	17	30	6	4
64	68	" " " " 50% "	4	12)											
68	72	Clay	4	-		48									
72	76	Bit. sand, medium grade, 15% clay	4	13)											
76	80	" " good " 5% "	4	14)	11.1	25¾	Tr	3	7	4	10	26	32	13	5
80	84	" " " "	4	15)											
84	88	" " " " coarse	4	16)	12.5	7	Tr	14	25	5	16	12	20	5	4
88	92	" " " " 10% clay	4	17)											
92	93	Clay	1												
	93	End of Hole													

Summary

0' - 13' = 13' Overburden
13' - 23' = 10'; 4' of 10% sand & 6' of clay; av. 4% bitumen & 73% clay
23' - 92' = 69' @ 11.6% bitumen & 18% clay clay bands, including 4' of clay at 68'.

STEEPBANK AREA

HOLE No. 123

DATE April 7-9 1945 LOCATION LS.14,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1073' DEPTH 219' DIP 90° CORE RECOVERY 95.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	44'	Overburden, clay and gravel	44	-											
44'	48'	Bit. sand, low grade	4	1)											
48'	52'	" " " "	4	2)	10.6	10½	Tr	10	5	1	4	4	47	20	10
52'	53'	Lost core	1	-											
53'	57'	Bit. sand, medium grade	4	3)											
57'	61'	" " " " 10% clay	4	4)	10.2	22¾	Tr	5	3	1	1	12	45	23	10
61'	65'	" " low grade 15% "	4	5)											
65'	69'	" " " " 10% "	4	6)											
69'	70'	Lost core	1	-)											
70'	74'	Bit. sand, low grade, 10% clay	4	7)	8.9	37½	Tr	5	4	1	3	7	47	19	15
74'	78'	" " medium grade, 15% clay	4	8)											
78'	79'	Lost core	1	-											
79'	83'	Bit. sand, good grade, 10% clay	4	9)											
83'	87'	" " " " 5% "	4	10)	13.3	8¼	Tr	1	1	1	2	14	55	19	7
87'	91'	" " " " 20% "	4	11)											
91'	95'	" " " " 20% "	4	12)	8.6	53¾	Tr	3	1	1	1	14	43	26	11
95'	99'	" " " " 60% "	4	13)											
99'	100'	Lost core	1	-											
100'	104'	Bit. sand, medium grade, 10% clay	4	14)											
104'	108'	" " good " 20% "	4	15)	9.7	39½	Tr	4	4	1	2	7	56	19	8
108'	112'	" " " " 30% "	4	16)											
112'	116'	" " " "	4	17)											
116'	120'	" " " " 5% "	4	18)	12.9	8¾	Tr	3	3	4	15	25	29	14	7
120'	124'	" " " " 5% "	4	19)											
124'	128'	" " " "	4	20)	11.8	18½	Tr	1	1	1	22	27	40	6	4
128'	132'	" " " " 10% "	4	21)											
132'	136'	" " " " 10% "	4	22)	12.0	16½	Tr	3	4	2	25	26	33	4	5

STEEPBANK AREA

HOLE No. 123

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY SANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
136'	140'	Bit. sand, good grade	4	23)											
140'	144'	" " " "	4	24)	13.0	14	Tr	2	2	5	46	26	7	8	4
144'	148'	" " " "	4	25)											
148'	152'	" " " "	4	26)	14.8	6	Tr	2	3	6	47	21	16	3	3
152'	156'	" " " " 10% clay	4	27)											
156'	160'	" " " "	4	28)	12.1	22⅜	Tr	2	2	9	60	14	9	2	2
160'	164'	" " " " 5% "	4	29)											
164'	165'	Lost core	1	-)	13.3	17½	Tr	1	4	13	54	16	9	2	2
165'	169'	Bit. sand, good grade, slight clay	4	30)											
169'	173'	" " " "	4	31)											
173'	174'	Lost core	1	-)	15.3	12	Tr	1	10	26	40	13	1	6	3
174'	178'	Bit. sand, good grade	4	32)											
178'	182'	" " " " 15% clay	4	33)											
182'	186'	" " " " slight clay	4	34)	12.5	16½	Tr	2	44	18	21	5	4	4	3
186'	190'	" " " "	4	35)											
190'	194'	" " " " slight clay	4	36)	13.6	13	Tr	5	22	24	15	10	4	16	4
194'	195'	Lost core	1	-											
195'	199'	Bit. sand, good grade, 50% clay	4	37)											
199'	200'	Lost core	1	-	6.9	73½	Tr	2	4	5	28	28	12	12	8
200'	204'	Bit. sand, good grade, 50% clay	4	38)											
204'	208'	" " medium grade, 20% clay	4	39)											
208'	212'	" " " " 30% "	4	40)											
212'	216'	" " good " 10% "	4	41)	7.6	33	Tr	16	29	10	11	4	9	12	9
216'	219'	Coarse sand and clay	3	-											
	219'	End of Hole													

Summary

0' - 44' = 44' Overburden

44' - 194' = 150' @ 11.85% bitumen & 17.6% clay bands

194' - 216' = 22' @ 7.1% bitumen & 40% clay bands

44' - 216' = 172' @ 11.25% bitumen & 20.5% clay bands

STEEPBANK AREA

HOLE No. 124

DATE April 19-21 1945 LOCATION LS.12, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1008' DEPTH 179' DIP 90° CORE RECOVERY 94.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	5'	Overburden - gravel	5												
5'	9'	Bit. sand, low grade	4	1)											
9'	13'	" " " "	4	2)	8.2	31	Tr	6	2	1	1	2	27	40	21
13'	17'	" " " " 10% clay	4	3)											
17'	21'	" " " " 10% "	4	4)											
21'	25'	" " " "	4	5)	9.5	9½	Tr	8	3	1	1	2	40	29	16
25'	29'	" " " "	4	6)											
29'	33'	" " medium " 30% "	4	7)	11.3	16¾	Tr	2	1	1	0	12	41	34	9
33'	37'	" " " "	4	8)											
37'	41'	" " " " 20% "	4	9)	8.6	47	Tr	2	2	0	2	4	47	31	12
41'	45'	" " " " 30% "	4	10)											
45'	49'	" " " " 40% "	4	11)											
49'	53'	Clay with 20% medium grade, bit. sand	4	12)											
53'	57'	" " 20% " " " "	4	13)	5.3	10¾	Tr	3	2	2	15	23	29	19	7
57'	58'	Lost core	1	-)											
58'	62'	Bit. sand, medium grade, 10% clay	4	14)											
62'	66'	" " good " slight clay	4	15)											
66'	70'	" " " "	4	16)	11.9	13	Tr	1	1	3	38	35	9	9	4
70'	74'	" " " "	4	17)											
74'	78'	" " " "	4	18)	12.8	11¾	Tr	3	1	4	55	18	13	3	2
78'	79'	Lost core	1	-											
79'	83'	Bit. sand, good grade, 10% clay	4	19)											
83'	87'	" " " " 15% "	4	20)	12.0	20½	Tr	2	2	10	57	18	3	5	3
87'	91'	" " " " 5% "	4	21)											
91'	95'	" " " " 5% "	4	22)	14.7	6	Tr	2	1	9	60	19	5	2	2
95'	99'	" " " "	4	23)											
99'	100'	Lost core	1	-)	14.0	9¾	Tr	2	2	20	54	10	5	4	3
100'	104'	Bit. sand, good grade, 5% clay	4	24)											

STEEPBANK AREA

HOLE No. 124

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
104'	108'	Bit. sand, good grade, slight clay	4	25											
108'	112'	" " " " 30% "	4	26	11.5	27½	Tr	2	14	27	39	8	5	3	2
112'	116'	" " " " 15% "	4	27											
116'	120'	" " " " slight "	4	28	10.6	25	Tr	4	46	20	20	3	2	3	2
120'	124'	" " " "	4	29											
124'	128'	" " " "	4	30	14.4	1	Tr	5	52	16	15	4	1	5	2
128'	132'	" " " "	4	31											
132'	136'	" " " "	4	32	14.7		Tr	6	30	15	23	10	9	4	3
136'	140'	" " " "	4	33											
140'	144'	" " medium grade, 15% clay	4	34	12.0	21	Tr	0	5	10	26	25	16	14	4
144'	148'	" " " " 20% "	4	35											
148'	152'	" " " " 60% "	4	36											
152'	154'	Lost core	2	-	5.4	13⅜	Tr	3	21	13	24	8	14	12	6
154'	158'	Bit. sand, medium grade	4	37											
158'	162'	" " " " leached	4	38											
162'	166'	" " " " "	4	39	6.5	13⅜	Tr	11	19	15	14	9	14	10	8
166'	168'	Lost core	2	-											
168'	171'	Leached sand	3	-											
171'	174'	Lost core	3	-											
174'	179'	Limestone	5	-											
	179'	End of Hole													

Summary

0' - 5' = 5' Overburden

5' - 62' = 57' @ 8.03% bitumen & 31% clay bands

62' - 144' = 82' @ 12.86% bitumen & 13.7% clay bands

144' - 166' = 22' @ 5.8% bitumen & 10.3% clay bands

5' - 144' = 139' @ 10.9% bitumen & 20.8% clay bands.

STEEPBANK AREA

HOLE No. 125

DATE April 25-26 1945 LOCATION LS.12,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 992' DEPTH 142' DIP 90° CORE RECOVERY 93.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	5	Overburden - sand	5	-											
5	9	Bit. sand, low grade, 5% clay	4	1)											
9	10	Lost core	1	-)	9.7	12	Tr	6	2	1	5	21	33	25	7
10	14	Bit. sand, low grade, 25% clay	4	2)											
14	18	" " medium grade, 40% clay	4	3)											
18	22	" " " " 30% "	4	4)	9.6	50¾	Tr	1	1	1	7	15	54	15	6
22	26	" " good " 20% "	4	5)											
26	30	" " " " 20% "	4	6)											
30	32	" " " "	2	7)	12.8	11	Tr	1	2	1	6	21	41	18	9
32	40	Clay	8	-		9½									
40	41	Lost core	1	-											
41	45	Bit. sand, good grade, 30% clay	4	8)											
45	49	" " " "	4	9)	8.2	35½	Tr	3	3	2	32	24	24	6	6
49	53	" " " "	4	10)											
53	57	" " " "	4	11)	13.7	8	Tr	1	1	14	45	23	6	6	3
57	61	" " " " 5% clay	4	12)											
61	65	" " " "	4	13)	14.3	8½	Tr	1	8	35	42	5	5	2	2
65	69	" " " "	4	14)											
69	73	" " " "	4	15)	14.6	7	nil	1	19	51	18	4	1	3	3
73	77	" " " "	4	16)											
77	79	Lost core	2	-)	14.7	1	nil	4	64	14	9	2	2	3	2
79	83	Bit. sand, good grade	4	17)											
83	86	Lost core	3	-											
86	90	Bit. sand, good grade	4	18)											
90	94	" " " "	4	19)	13.4		nil	18	51	13	5	3	2	3	4
94	98	" " " " 15% clay	4	20)											
98	102	" " " "	4	21)	11.4	15	nil	14	19	2	14	10	21	13	7

STEEPBANK AREA

HOLE No. 125

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
102	106	Bit. sand, good grade, 5% clay	4	22)											
106	110	" " " " 15% "	4	23)	12.6	17	Nil	4	3	2	40	22	15	8	6
110	114	" " " " 10% "	4	24)											
114	118	" " " " 20% "	4	25)	11.3	26	Tr	3	4	11	54	11	8	4	5
118	119	Lost core	1	-											
119	123	Bit. sand, good grade, 15% clay	4	26)											
123	127	" " " " 10% "	4	27)	9.7	22¾	Tr	7	28	21	11	6	6	12	9
127	131	" " " " 5% "	4	28)											
131	132	Lost core	1	-)	7.0	31¾	Tr	31	29	3	7	3	8	11	8
132	136	Bit. sand, medium grade, 50% clay	4	29)											
136	139	Clay	3	-											
139	142	Limestone	3	-											
	142	End of Hole													

Summary

0' - 5' = 5' Overburden
5' - 32' = 27' @ 10.3% bitumen & 22.7% clay bands
32' - 41' = 9' clay
41' - 127' = 86' @ 12.5% bitumen & 13.6% clay bands
5' - 32') + 41' - 127') = 113' @ 11.5% bitumen & 15.8% clay bands

STEEPBANK AREA

HOLE No. 126

DATE April 23-24 1945 LOCATION LS.11, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1034' DEPTH 183' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	15'	Overburden, sand	15	1	Traces of bitumen only in lower four feet.										
15'	16'	Lost core	1	-											
16'	20'	Bit. sand, low grade, leached	4	2)											
20'	24'	" " " " "	4	3)	9.1	10¼	Tr	8	4	2	7	19	34	20	6
24'	28'	" " " "	4	4)											
28'	32'	" " " "	4	5)	9.9	11¾	Tr	2	2	1	13	18	47	11	6
32'	36'	" " " "	4	6)											
36'	40'	" " " "	4	7)	8.5	15½	Tr	6	4	2	14	28	31	9	6
40'	41'	Lost core	1	-											
41'	45'	Bit. sand, low grade	4	8)											
45'	46'	Lost core	1	-	10.1	11	Tr	2	2	1	15	19	44	11	6
46'	50'	Bit. sand, medium grade	4	9)											
50'	54'	" " " " 5% clay	4	10)											
54'	58'	" " " "	4	11)	10.7	11¾	Tr	3	2	1	11	24	33	19	7
58'	62'	" " " "	4	12)											
62'	66'	" " " "	4	13)	10.0	8¼	Tr	0	3	1	18	22	41	9	5
66'	67'	Lost core	1	-											
67'	71'	Bit. sand, medium grade	4	14)											
71'	75'	" " good "	4	15)	11.9	8¼	Tr	1	2	2	31	24	22	14	3
75'	76'	Lost core	1												
76'	80'	Bit. sand, good grade, slight clay	4	16)											
80'	84'	" " " " 5% "	4	17)	13.1	6½	Tr	1	2	4	43	22	17	8	3
84'	88'	" " " "	4	18)											
88'	92'	" " " "	4	19)	13.7	2¼	Tr	2	7	48	20	14	5	3	1
92'	96'	" " " "	4	20)											
96'	100'	" " " " 10% clay	4	21)	14.0	9¼	Tr	1	32	50	7	2	4	2	2
100'	104'	" " " "	4	22)											
104'	108'	" " " "	4	23)	15.6	-	Tr	0	3	47	35	7	1	4	3

STEEPBANK AREA

HOLE No. 126

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
108'	112'	Bit. sand, good grade	4	24)											
112'	116'	" " " "	4	25)	14.7	5	Tr	1	36	29	26	4	1	1	2
116'	120'	" " " "	4	26)											
120'	124'	" " " "	4	27)	13.9	-	Tr	9	36	25	13	7	2	5	3
124'	128'	" " " "	4	28)											
128'	132'	" " " " 5% clay	4	29)	15.3	4½	Tr	2	3	3	24	15	28	18	6
132'	136'	" " " " 10% "	4	30)											
136'	140'	" " " " 5% "	4	31)	14.8	5	Tr	2	2	1	6	13	46	22	8
140'	144'	" " " " 15% "	4	32)											
144'	148'	" " " " 20% "	4	33)	10.7	23½	Tr	5	11	2	12	25	25	13	7
148'	152'	" " " " 15% "	4	34)											
152'	156'	" " " " 5% "	4	35)	12.4	12½	Tr	3	2	5	38	14	26	6	5
156'	160'	" " " " 5% "	4	36)											
160'	164'	" " " " 5% "	4	37)	14.1	6½	Tr	3	2	1	0	26	36	23	8
164'	168'	" " " " 25% "	4	38)											
168'	172'	" " " " 30% "	4	39)	7.7	52½	Tr	5	11	14	14	18	32	12	6
172'	176'	Coarse sand with good grade bit. sand	4	40)											
176'	179'	Lost core	3	-											
179'	183'	Limestone	4	-											
	183'	End of Hole													

Summary

0' - 16' = 16' Overburden
16' - 164' = 148' @ 12.3% bitumen and 8.6% clay bands.

STEEPBANK AREA

HOLE No. 127

DATE April 13-16 1945 LOCATION LS.11,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1080' DEPTH 210' DIP 90° CORE RECOVERY 96.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	72'	Overburden, clay with trace of bit. sand	72	1,2		Samples 1 and 2 not assayed.									
72'	76'	Bit. sand, medium grade	4	3)											
76'	80'	" " " "	4	4)	9.6	22½	Tr	2	2	1	12	31	30	17	5
80'	84'	" " good "	4	5)											
84'	88'	" " " "	4	6)	11.9	10	Tr	3	1	2	14	32	27	16	4
88'	92'	" " " " 5% clay	4	7)											
92'	96'	" " " "	4	8)	11.3	10½	Tr	3	3	2	19	19	39	12	4
96'	100'	" " " " 10% "	4	9)											
100'	104'	" " " "	4	10)	12.6	10½	Tr	0	1	2	21	21	42	10	3
104'	108'	" " " "	4	11)											
108'	112'	" " " "	4	12)	10.8	10	Tr	2	2	3	28	23	28	10	4
112'	113'	Lost core	1	-											
113'	117'	Bit. sand, good grade	4	13)											
117'	121'	" " " " 5% clay	4	14)	12.2	6½	Tr	0	1	3	41	32	4	16	3
121'	125'	" " " "	4	15)											
125'	129'	" " " " 5% "	4	16)	14.0	3½	Tr	1	1	8	50	21	10	4	4
129'	133'	" " " "	4	17)											
133'	135'	Lost core	2	-)	14.7	7½	Tr	0	5	13	51	14	10	3	3
135'	139'	Bit. sand, good grade, 5% clay	4	18)											
139'	143'	" " " "	4	19)											
143'	147'	" " " "	4	20)	15.6		Tr	0	9	23	47	8	3	6	4
147'	151'	" " " "	4	21)											
151'	155'	" " " "	4	22)	15.2		Tr	1	14	19	44	10	6	4	2
155'	159'	" " " "	4	23)											
159'	163'	" " " "	4	24)	15.0		Tr	0	15	25	35	11	5	4	4
163'	164'	Lost core	1	-											
164'	168'	Bit. sand, good grade	4	25)											
168'	169'	Lost core	1	-)	14.6		Tr	2	24	27	25	12	3	5	2
169'	173'	Bit. sand, good grade	4	26)											

STEEPBANK AREA

HOLE No. 127

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
173'	174'	Lost core	1	-											
174'	178'	Bit. sand, good grade	4	27)											
178'	182'	" " " "	4	28)	15.1		Tr	2	23	32	23	9	5	4	2
182'	185'	" " " "	3	29)											
185'	202'	Clay	17	-		204									
202'	207'	Bit. sand, low grade	5	30				Not analysed, mostly clay							
207'	210'	Limestone	3	-											
	210'	End of Hole													

Summary

0' - 72' = 72' Overburden
72' - 185' = 113' @ 13.35% bitumen & 6" clay bands.

STEEPBANK AREA

HOLE No. 128

DATE April 27-30 1945 LOCATION LS.6,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1057' DEPTH 191' DIP 90° CORE RECOVERY 98.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	18'	Overburden, clay	18												
18'	22'	Bit. sand, low grade, leached	4	1)											
22'	26'	" " " "	4	2)	5.3	21½	Tr	11	5	4	10	22	28	10	9
26'	30'	" " " "	4	3)											
30'	34'	" " medium grade	4	4)	10.8	9	Tr	2	1	1	13	29	37	12	5
34'	38'	" " good grade, 5% clay	4	5)											
38'	42'	" " " " 10% "	4	6)	10.7	18½	Tr	3	1	2	19	32	27	11	5
42'	46'	" " " " 5% "	4	7)											
46'	50'	" " medium "	4	8)	9.7	11	Tr	7	4	1	15	17	32	17	7
50'	54'	" " good "	4	9)											
54'	58'	" " " " 5% "	4	10)	10.8	8½	Tr	3	2	1	18	21	42	7	6
58'	62'	" " " " leached	4	11)											
62'	66'	" " " " 5% clay	4	12)	13.4	2½	Tr	2	1	3	25	33	20	11	5
66'	70'	" " " " 10% "	4	13)											
70'	74'	" " " " 5% "	4	14)	10.6	17⅝	Tr	1	1	3	29	34	22	5	5
74'	78'	" " " " 5% "	4	15)											
78'	82'	" " " " slight clay	4	16)	12.7	10½	Tr	0	1	3	29	25	19	17	6
82'	86'	" " " " " "	4	17)											
86'	90'	" " " " 10% "	4	18)	13.3	10¼	Tr	0	1	5	29	31	24	6	4
90'	94'	" " " " 5% "	4	19)											
94'	98'	" " " "	4	20)	13.6	6¼	Tr	0	2	3	38	23	19	10	5
98'	102'	" " " "	4	21)											
102'	106'	" " " " 20% "	4	22)	13.7	9⅜	Tr	2	3	6	44	26	10	6	3
106'	110'	" " " " 15% "	4	23)											
110'	114'	" " " " slight clay	4	24)	14.3	10¾	Tr	1	2	11	58	15	4	6	2
114'	118'	" " " "	4	25)											
118'	122'	" " " "	4	26)	14.9	1¼	Tr	1	1	22	58	11	2	3	2

STEEP BANK AREA

HOLE No. 128

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
122'	126'	Bit. sand, good grade	4	27)											
126'	130'	" " " "	4	28)	14.8		Tr	0	10	15	44	14	6	7	3
130'	134'	" " " "	4	29)											
134'	138'	" " " "	4	30)	14.0		Nil	0	18	31	29	12	7	1	2
138'	142'	" " " "	4	31)											
142'	146'	" " " "	4	32)	13.7		Tr	1	28	13	28	12	8	7	2
146'	150'	" " " "	4	33)											
150'	154'	" " " "	4	34)	13.1		Nil	4	40	34	12	6	2	1	1
154'	158'	" " " "	4	35)											
158'	162'	" " " "	4	36)	15.8		Nil	2	37	23	27	5	3	2	1
162'	163'	Lost core	1	-											
163'	167'	Bit. sand, good grade	4	37)											
167'	171'	" " " " 15% clay	4	38)	13.7	12	Nil	4	39	25	17	7	4	1	2
171'	175'	Clay with small quantity of bit. sand	4	39)											
175'	179'	Bit. sand, medium grade, 30% clay	4	40)											
179'	183'	" " " " 15% "	4	41)											
183'	184'	Lost core	1	-	6.5	9¼	Tr	7	10	2	6	6	28	24	17
184'	188'	Bit. sand, medium grade, 30% clay	4	42)											
188'	190'	" " " " 15% "	2	43)											
190'	191'	Clay	1	-											
	191'	End of Hole													

Summary

0' - 18' = 18' Overburden

18' - 26' = 8' @ 5.3% bitumen & 22% clay bands

26' - 171' = 145' @ 12.87% bitumen & 7.3% clay bands

171' - 190' = 19' @ 6.5% bitumen & 40% clay bands.

STEEPBANK AREA

HOLE No. 129

DATE May 9-15 1945 LOCATION LS.3,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1057' DEPTH 184' DIP 90° CORE RECOVERY 91.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +0 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	15'	Overburden - gravel and clay	15	-											
15'	19'	Bit. sand, low grade, 15% clay	4	1)											
19'	20'	Lost core	1	-)											
20'	24'	Bit. sand, low grade, 15% clay	4	2)	9.1	39½	Nil	2	1	1	5	22	34	27	8
24'	28'	" " " " slight clay	4	3)											
28'	32'	" " medium grade, 5% clay	4	4)											
32'	36'	" " low " 15% "	4	5)	9.1	25⅝	Tr	1	1	1	8	12	45	23	9
36'	40'	" " " " 40% "	4	6)											
40'	44'	" " " " 20% "	4	7)	6.9	35½	Tr	3	2	1	5	30	31	20	8
44'	45'	Lost core	1	-											
45'	49'	Bit. sand, medium grade, 15% clay	4	8)											
49'	50'	Lost core	1	-)	9.4	30½	Tr	2	2	0	11	15	45	18	7
50'	54'	Bit. sand, medium grade, 30% "	4	9)											
54'	56'	Lost core	2	-											
56'	60'	Bit. sand, medium grade, 15% "	4	10)											
60'	64'	" " " " slight clay	4	11)	11.4	15⅝	Tr	3	2	2	7	26	31	21	8
64'	66'	Lost core	2	-											
66'	70'	Bit. sand, medium grade	4	12)											
70'	74'	" " " " 40% clay	4	13)	11.5	18½	Tr	3	3	1	9	12	45	20	7
74'	78'	" " " " 10% "	4	14)											
78'	82'	" " " " 25% "	4	15)	10.9	26¼	Tr	2	2	1	5	22	36	24	8
82'	86'	" " " " 30% "	4	16)											
86'	90'	" " low " 20% "	4	17)	8.2	39½	Tr	5	2	2	23	21	28	13	6
90'	92'	Lost core	2	-											
92'	96'	Bit. sand, low grade, 40% clay	4	18)											
96'	97'	Lost core	1	-)	11.8	21	Tr	3	2	2	16	30	27	15	5
97'	101'	Bit. sand, good grade	4	19)											

STEEPBANK AREA

HOLE No. 129

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY SANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
101'	102'	Lost core	1	-											
102'	106'	Bit. sand, good grade, 40% clay	4	20)											
106'	110'	" " " " 30% "	4	21)	6.3	39½	0.1	13	3	3	26	22	10	9	14
110'	114'	" " " "	4	22)											
114'	118'	" " " " 5% "	4	23)	13.9	3	Tr	1	4	12	39	19	14	9	2
118'	122'	" " " " 10% "	4	24)											
122'	126'	" " " "	4	25)	12.9	11½	Tr	2	7	15	40	14	10	10	2
126'	127'	Lost core	1	-											
127'	131'	Bit. sand, good grade	4	26)											
131'	135'	" " " "	4	27)	15.0		Tr	0	3	23	39	21	9	3	1
135'	139'	" " " "	4	28)											
139'	140'	Lost core	1	-)	15.9		Tr	0	26	24	29	9	3	7	1
140'	144'	Bit. sand, good grade	4	29)											
144'	148'	" " " " slight clay	4	30)											
148'	152'	" " " "	4	31)	14.9	6⅜	Nil	1	3	22	23	19	10	13	7
152'	156'	" " " "	4	32)											
156'	160'	" " " " slight clay	4	33)	15.7	1	Nil	2	1	0	6	15	49	22	5
160'	164'	" " " " " "	4	34)											
164'	168'	" " " " " "	4	35)	15.7	4½	Tr	1	1	1	11	47	19	16	4
168'	172'	" " " " 5% clay	4	36)											
172'	173'	Lost core	1	-)											
173'	177'	Bit. sand, good grade, 10% clay	4	37)	11.7	34	Tr	3	3	4	44	21	14	5	5
177'	181'	" " " " 20% "	4	38)											
181'	184'	Clay and limestone fragments	3	-											
	184'	End of Hole													

STEEPBANK AREA

HOLE No. 129

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 15' = 15' Overburden 15' - 56' = 41' @ 8.7% bitumen & 27.2% clay bands 56' - 181' = 125' @ 12.4% bitumen & 7.1% clay bands 15' - 181' = 166' @ 11.5% bitumen & 11.1% clay bands													

STEEPBANK AREA

HOLE No. 130

DATE May 28-31 1945 LOCATION LS.7,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1090' DEPTH 230' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+50 %	+80 %	+100 %	+150 %	+200 %	−200 %
1'	84'	Overburden, clay with traces of bit. sand	84	1-5											
84'	85'	Lost core	1	-											
85'	89'	Bit. sand, low grade, 20% clay	4	6)											
89'	93'	" " medium grade, 25% clay	4	7)	7.2	38¾	Tr	3	2	1	5	15	33	28	12
93'	98'	Clay	5	-		60									
98'	102'	Bit. sand, medium grade, slight clay	4	8)											
102'	106'	" " " " 40% clay	4	9)	7.3	38	Tr	4	4	2	8	21	29	22	10
106'	110'	Clay and rock	4	-		48									
110'	114'	Bit. sand, medium grade, 20% clay	4	10)											
114'	115'	Lost core	1	-)											
115'	119'	Bit. sand, medium grade, 20% clay	4	11)	9.2	51¼	Tr	2	2	1	12	13	36	25	9
119'	123'	" " " " 30% "	4	12)											
123'	127'	" " good "	4	13)											
127'	131'	" " " " 20% "	4	14)	11.9	22¼	Tr	2	2	2	17	17	30	25	5
131'	132'	Lost core	1	-											
132'	136'	Bit. sand, good grade, slight clay	4	15)											
136'	137'	Lost core	1	-)	13.6	9	Tr	3	1	2	25	32	23	9	4
137'	141'	Bit. sand, good grade, slight clay	4	16)											
141'	145'	" " " " 10% clay	4	17)											
145'	146'	Lost core	1	-)	13.2	8⅜	Tr	2	3	4	33	19	23	12	4
146'	150'	Bit. sand, good grade, 5% clay	4	18)											
150'	154'	" " " " 5% "	4	19											
154'	158'	" " " "	4	20	13.7	3½	Nil	0	1	11	37	27	14	6	3
158'	162'	" " " " 5% "	4	21)											
162'	166'	" " " "	4	22)	14.5	21⅝	Tr	1	1	12	45	24	9	5	3
166'	170'	" " " "	4	23)											
170'	174'	" " " "	4	24)	15.9		Tr	1	4	10	48	17	4	12	3

STEEPBANK AREA

HOLE No. 130

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
174'	178'	Bit. sand, good grade	4	25)											
178'	182'	" " " " slight clay	4	26)	16.0	1¾	Tr	1	4	11	44	17	14	6	3
182'	183'	Lost core	1	-											
183'	187'	Bit. sand, good grade, " "	4	27)											
187'	191'	" " " "	4	28)	15.6	3½	Tr	3	2	22	46	15	6	3	3
191'	195'	" " " "	4	29)											
195'	199'	" " " "	4	30)	16.7		Nil	0	9	24	40	12	5	7	3
199'	203'	" " " "	4	31)											
203'	207'	" " " " 10% clay	4	32)	14.9	8	Tr	1	4	22	37	20	10	4	2
207'	211'	" " " "	4	33)											
211'	215'	" " " "	4	34)	17.2		Tr	1	4	42	38	7	3	2	3
215'	219'	" " " "	4	35)											
219'	223'	" " " " 30% clay	4	36)	11.9	48½	Tr	1	29	20	18	11	1	14	5
223'	228'	" " " " 45% "	5	37)											
228'	228'4"	Clay	0-4"	-											
228'4"	230'	Limestone	1-8"	-											
	230'	End of Hole													

Summary

0' - 85' = 85' Overburden

85' - 123' = 38' @ 8.4% bit. & 51.8% clay bands

123' - 223' = 100' @ 14.5% bit. & 7% clay bands

85' - 223' = 138' @ 12.2% bit. & 19.2% clay bands

STEEPBANK AREA

HOLE No. 131

DATE May 19-21 1945 LOCATION LS.2,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1080' DEPTH 238' DIP 90° CORE RECOVERY 96.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	48	Overburden, gravel sand clay	48	-											
48	52	Bit. sand, low grade, 10% clay	4	1)											
52	56	" " " " 20% "	4	2)											
56	60	" " " " 30% "	4	3)											
60	61	Lost core	1	-)	3.3	138¾	0.1	14	4	3	5	5	14	22	33
61	65	Bit. sand, low grade, 30% clay	4	4)											
65	69	" " " " 30% "	4	5)											
69	73	" " " " 40% "	4	6)											
73	77	" " " " 5% "	4	7)	9.8	41½	Tr	2	1	1	1	23	38	21	13
77	81	" " " " 10% "	4	8)											
81	85	" " medium grade, 20% clay	4	9)											
85	89	" " " " slight clay	4	10)	11.6	16¾	Tr	1	1	1	2	18	46	23	8
89	90	Lost core	1	-											
90	94	Bit. sand, good grade, 5% clay	4	11)											
94	95	Lost core	1	-)	15.1	3¾	Tr	0	1	0	3	7	34	47	8
95	99	Bit. sand, good grade	4	12)											
99	103	" " " " 5% clay	4	13)											
103	107	" " " " 25% "	4	14)	13.9	13½	Tr	0	1	1	4	16	37	31	10
107	108	Lost core	1	-											
108	112	Bit. sand, good grade	4	15)											
112	116	" " " "	4	16)	14.5	-	Tr	0	1	0	8	10	33	40	7
116	120	" " " "	4	17)											
120	124	" " " " 15% clay	4	18)	12.7	9½	Tr	1	2	0	5	8	39	35	8
124	128	" " " " 10% "	4	19)											
128	132	" " " " 50% "	4	20)	10.4	29¼	Nil	1	0	1	9	28	33	23	4
132	136	" " " " 5% "	4	21)											
136	140	" " " " 5% "	4	22)	15.0	8½	Tr	1	2	2	6	18	36	28	7

STEEPBANK AREA

HOLE No. 131

DATE 194 . LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
140	141	Lost core	1	-											
141	145	Bit. sand, good grade	4	23)											
145	149	" " " " 15% clay	4	24)	11.6	22¾	Tr	3	3	1	7	11	31	39	4
149	153	" " " " 5% "	4	25)											
153	157	" " medium " 15% "	4	26)	12.3	25¼	Tr	1	2	1	4	14	35	30	13
157	161	" " " " 10% "	4	27)											
161	162	Lost core	1	-											
162	166	Bit. sand, good grade	4	28)											
166	170	" " " " 30% clay	4	29)	10.6	21½	Tr	5	3	0	11	16	7	50	8
170	174	" " medium " 5% "	4	30)											
174	178	" " " " 15% "	4	31)	9.3	30	Tr	12	5	1	3	18	28	21	12
178	182	" " low " 20% "	4	32)											
182	186	" " medium " 20% "	4	33)											
186	190	" " " " 5% "	4	34)	12.1	21¼	Tr	2	2	0	7	14	15	50	10
190	191	Lost core	1	-											
191	195	Bit. sand, good grade, 5% clay	4	35)											
195	199	" " " "	4	36)	15.3	6¾	Tr	2	1	0	9	15	25	44	4
199	203	" " " "	4	37)											
203	207	" " " " slight clay	4	38)	15.8	1	Tr	11	38	9	14	7	3	13	5
207	211	" " " " 15% clay	4	39)											
211	215	" " " "	4	40)	14.1	7¼	Tr	3	3	3	30	26	8	19	7
215	219	" " " " slight clay	4	41)											
219	223	" " " " 5% clay	4	42)	16.1	5¾	Tr	2	3	5	28	21	9	29	3
223	227	" " " " coarse sand	4	43)											
227	232	" " " "	5	44)	13.1	8	Tr	2	1	1	7	31	31	18	9
232	234	Clay	2	-											
234	238	Limestone	4	-											
	238	End of Hole													

STEEPBANK AREA

HOLE No. 131

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 48' = 48' clay gravel sand and boulders) over- 48' - 69' = 21' @ 3.3% bitumen and 55% clay) burden 69' - 232' = 163' @ 12.76% bitumen & 13.9% clay bands, with 8.1% clay bands under 6" in thickness.													

STEEPBANK AREA

HOLE No. 132

DATE May 17-19 1945 LOCATION LS.3,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1039' DEPTH 176' DIP 90° CORE RECOVERY 97.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	2	Sand	2	-											
2	6	Bit. sand, good grade	4	-	Washed out.										
6	10	" " " " 10% clay	4	1)											
10	11	Lost core	1	-)	13.2	9½	Tr	2	2	1	2	8	35	31	19
11	15	Bit. sand, medium grade, 10% clay	4	2)											
15	19	" " " " 15% "	4	3)											
19	23	" " " " 15% "	4	4)	7.3	22¼	Tr	6	4	1	4	7	18	39	21
23	27	" " " " 15% "	4	5)											
27	31	" " " " 30% "	4	6)	7.8	42½	Tr	3	2	1	4	22	38	21	9
31	35	" " " " 30% "	4	7)											
35	39	" " " "	4	8)											
39	43	" " good "	4	9)	12.5		Tr	0	0	1	12	17	40	25	5
43	44	Lost core	1	-											
44	48	Bit. sand, good grade, 25% clay	4	10)											
48	52	" " " " 5% "	4	11)	10.7	35¼	Tr	1	1	1	16	37	29	11	4
52	56	" " " " 20% "	4	12)											
56	57	Lost core	1	-											
57	61	Bit. sand, good grade, slight clay	4	13)											
61	65	" " " "	4	14)	15.1	2¼	Tr	2	0	4	35	35	17	4	3
65	69	" " " "	4	15)											
69	73	" " " " slight clay	4	16)	14.4	4½	Tr	0	1	2	35	25	22	11	3
73	77	" " " "	4	17)											
77	81	" " " "	4	18)	14.3	1½	Tr	0	1	4	46	23	19	4	2
81	85	" " " "	4	19)											
85	89	" " " "	4	20)	14.9	2¼	Tr	0	0	12	51	22	7	6	2
89	90	Lost core	1	-											
90	94	Bit. sand, good grade, 15% clay	4	21)											
94	95	Lost core	1	-)	14.4	8½	Tr	0	3	12	53	16	4	9	3
95	99	Bit. sand, good grade	4	22)											

STEEPBANK AREA

HOLE No. 132

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
99	103	Bit. sand, good grade	4	23)											
103	107	" " " "	4	24)	16.0	1¼	Tr	0	2	12	57	14	7	6	2
107	111	" " " "	4	25)											
111	115	" " " " slight clay	4	26)	15.0	2	Tr	0	1	9	55	22	7	2	4
115	119	" " " "	4	27)											
119	123	" " " "	4	28)	16.0		Tr	0	4	13	49	14	10	7	3
123	127	" " " "	4	29)											
127	131	" " " "	4	30)	15.1	5¾	Tr	0	1	21	51	16	6	2	3
131	135	" " " "	4	31)											
135	139	" " " "	4	32)	15.9		Tr	0	3	16	57	8	2	12	2
139	143	" " " "	4	33)											
143	147	" " " "	4	34)	15.9	1¾	Tr	2	7	15	21	11	22	14	8
147	151	" " " " slight clay	4	35)											
151	155	" " " " 5% clay	4	36)	15.8	4	Tr	7	2	4	65	12	1	12	3
155	159	" " " " 5% "	4	37)											
159	163	" " " " 10% "	4	38)	13.6	9½	Tr	6	5	9	31	6	7	27	9
163	167	" " " "	4	39)											
167	171	" " " "	4	40)	14.3	5	Tr	12	6	4	20	16	18	18	6
171	173'5"	" " " " coarse sand	2'5"	41)											
173'5"	176	Limestone	2'7"	-											
	176	End of Hole													

Summary

0' - 2' = 2' Overburden, sand
2' - 173' = 171' @ 13.55% bitumen & 8.2% clay bands.

STEEPBANK AREA

HOLE No. 133

DATE March 26-28 1945 LOCATION LS.4,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1050' DEPTH 182' DIP 90° CORE RECOVERY 95.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	31	Overburden, gravel & clay	31	-											
31	35	Bit. sand, low grade, 20% clay	4	1)											
35	39	" " " " leached	4	2)	9.0	10½	Tr	5	4	-	5	11	53	13	10
39	43	" " " "	4	3)											
43	47	" " " " "	4	4)	11.7		Tr	3	3	4	5	12	50	14	10
47	51	" " " "	4	5)											
51	55	" " medium " slight clay	4	6)	9.3	35½	Tr	4	3	1	2	29	39	13	9
55	59	" " " " 30% clay	4	7)											
59	63	" " " " 10% "	4	8)											
63	67	" " " " 10% "	4	9)	10.9	17½	Tr	4	3	-	8	15	51	13	6
67	71	" " good " 5% "	4	10)											
71	75	" " " " 10% "	4	11)	10.9	18	Tr	2	1	1	1	31	42	14	9
75	79	" " " " 20% "	4	12)											
79	83	" " " " 30% "	4	13)	6.8	73¼	Tr	2	2	-	7	15	54	12	9
83	87	" " " " 60% "	4	14)											
87	91	" " " " 20% "	4	15)											
91	92	Lost core	1	-)											
92	96	Clay with good grade bit. sand	4	16)	9.9	50¼	Tr	1	1	2	-	19	47	19	12
96	100	Bit. sand, good grade, 5% clay	4	17)											
100	101	Lost core	1	-											
101	105	Bit. sand, good grade, 5% clay	4	18)											
105	109	" " " " 60% "	4	19)	9.1	55½	Tr	6	2	1	5	23	36	15	11
109	113	" " " " 40% "	4	20)											
113	117	" " " " 30% "	4	21)											
117	121	Lost core	4	-)											
121	125	Bit. sand, good grade, 30% clay	4	22)	8.4	57½	Tr	8	5	-	15	18	40	8	8
125	129	" " " " 10% "	4	23)											
129	130	Lost core	1	-											

STEEPBANK AREA

HOLE No. 133

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
130	134	Bit. sand, good grade, 10% clay	4	24)											
134	135	Lost core	1	-)											
135	139	Bit. sand, good grade, 50% clay	4	25)	8.0	6½	Tr	9	4	2	31	23	24	3	5
139	143	" " " " 10% "	4	26)											
143	147	" " " " 30% "	4	27)											
147	151	" " " "	4	28)	12.5	26	Tr	3	2	4	15	41	27	4	4
151	155	" " " "	4	29)											
155	159	" " " " 10% "	4	30)											
159	163	" " " " 5% "	4	31)	9.8	22¼	Tr	10	5	10	31	22	6	10	7
163	167	" " " " 10% "	4	32)											
167	171	" " " " slight clay	4	33)	11.6	30	Tr	5	5	12	29	26	15	3	5
171	175	" " " "	4	34)											
175	182	Clay	7	-											
	182	End of Hole													

Summary

0' - 31' = 31' Overburden
31' - 175' = 144' @ 9.6% bitumen & 26.5% clay bands.

STEEPBANK AREA

HOLE No. 134

DATE March 21 1945 LOCATION LS.4,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 934' DEPTH 80' DIP 90° CORE RECOVERY 95.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	13'	Overburden, sand and gravel	13												
13'	17'	Bit. sand, low grade	4	1)											
17'	21'	" " " "	4	2)	12.1		Tr	3	5	2	7	10	8	51	15
21'	22'	Lost core	1	-											
22'	26'	Bit. sand, medium grade, 3% clay	4	3)											
26'	30'	" " " " 20% "	4	4)	9.1	14¾	0.1	21	4	2	12	27	1	26	10
30'	34'	" " " " 30% "	4	5)											
34'	38'	" " good " 50% "	4	6)	6.9	24½	Tr	25	7	1	14	14	3	26	11
38'	42'	" " " " 50% "	4	7)											
42'	46'	" " " " 30% "	4	8)	9.6	12½	Tr	23	4	6	18	24	-	16	8
46'	50'	" " " " 20% "	4	9)											
50'	54'	" " " " 10% "	4	10)	11.2	27¾	Tr	6	5	8	36	22	6	15	3
54'	58'	" " " " slight clay	4	11)											
58'	62'	" " " " " "	4	12)	14.8	6	Tr	3	9	9	39	20	11	8	2
62'	64'	Lost core	2	-											
64'	68'	Bit. sand, good grade	4	13)											
68'	72'	" " " " slight clay	4	14)	13.2	5	Tr	6	27	15	27	9	-	11	4
72'	76'	" " " " " "	4	15)											
76'	80'	Clay	4	-											
	80'	End of Hole													

Summary

0' - 13' = 13' Overburden
13' - 76' = 63' @ 11.16% bitumen & 19% clay

STEEPBANK AREA

HOLE No. 135

DATE April 10-12 1945 LOCATION LS.11,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1081' DEPTH 209' DIP 90° CORE RECOVERY 93.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	43	Overburden, clay and gravel	43	-											
43	47	Clay	4	1											
47	51	Bit. sand, low grade, 15% clay	4	2)											
51	55	" " " " 10% "	4	3)											
55	59	" " " " 15% "	4	4)	4.6	112	Tr	5	3	2	0	14	29	33	14
59	63	" " " " 20% "	4	5)											
63	64	Lost core	1	-											
64	68	Bit. sand, medium grade, 10% clay	4	6)											
68	72	" " " " 20% "	4	7)	8.5	46½	Tr	3	2	1	7	14	52	15	6
72	76	" " " "	4	8)											
76	80	" " " "	4	9)											
80	81	Lost core	1	-)	10.3	23½	Tr	3	2	1	8	29	35	17	5
81	85	Bit. sand, medium grade, 10% clay	4	10)											
85	89	" " good " 10% "	4	11)											
89	93	" " " " 10% "	4	12)	9.9	29	Tr	1	2	1	14	19	48	11	4
93	97	" " " " 10% "	4	13)											
97	101	" " " "	4	14)	12.0	11	Tr	3	1	2	19	37	17	17	4
101	105	" " " " 10% "	4	15)											
105	109	" " " " 10% "	4	16)	11.2	17	Tr	4	2	2	19	34	26	9	4
109	110	Lost core	1	-											
110	114	Bit. sand, good grade, 5% clay	4	17)											
114	115	Lost core	1	-)	13.2	3½	Tr	2	2	1	19	24	41	7	4
115	119	Bit. sand, good grade	4	18)											
119	123	" " " "	4	19)											
123	127	" " " " 10% clay	4	20)	9.5	33½	Tr	4	3	0	17	20	43	9	4
127	131	" " " " 15% "	4	21)											
131	132	Lost core	1	-)	12.0	18½	Tr	2	3	1	23	25	35	7	4
132	136	Bit. sand, good grade	4	22)											
136	140	" " " " 5% clay	4	23)	13.6	9½	Tr	2	3	2	25	27	31	6	4
140	144	" " " " 5% "	4	24)											

STEEPBANK AREA

HOLE No. 135

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
144	148	Bit. sand, good grade, 5% clay	4	25)											
148	152	" " " "	4	26)	14.2	10	Tr	1	2	5	39	34	12	4	3
152	156	" " " " slight clay	4	27)											
156	159	Lost core	3	-)	14.1	8	Tr	2	11	35	31	12	5	2	2
159	163	Bit. sand, good grade, 10% clay	4	28)											
163	167	" " " " 10% "	4	29)											
167	171	" " " "	4	30)	13.0	8	Tr	4	46	20	19	4	3	2	2
171	175	" " " "	4	31)											
175	178	Lost core	3	-)	13.6		Tr	8	56	14	13	3	0	4	2
178	182	Bit. sand, good grade	4	32)											
182	186	" " " " 70% clay	4	33)	8.4	36	Tr	2	9	6	25	21	25	8	4
186	187	Lost core	1	-											
187	194	Clay	7	-		84									
194	198	Bit. sand, low grade, 15% clay	4	34)											
198	202	" " " " 30% "	4	35)	8.4	43½	Tr	2	9	6	25	21	25	8	4
202	206	" " medium " 20% "	4	36)											
206	209	Clay	3	-											
	209	End of Hole													

Summary

0' - 47' = 47' Overburden
47' - 76' = 29' @ 5.7% bitumen & 45.5% clay bands
76' -182' = 106' @ 12.3% bitumen & 13.4% clay bands
182' -206' = 24' @ 7.0% bitumen & 56.6% clay bands.

STEEPBANK AREA

HOLE No. 136

DATE March 28-30 1945 LOCATION LS.3,Sec.20,Tp.92-9-4 CO-ORDINATES _____ ELEVATION 1078' DEPTH 232' DIP 90° CORE RECOVERY 96.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	62	Overburden with traces of bit. sand	62	1-4											
62	74	Bit. sand, very low grade	12	5,6,7	3.2	45½	0.3	16	11	4	4	8	21	18	8
74	78	" " low grade, 10% clay	4	8											
78	82	" " " " 5% "	4	9											
82	83	Lost core	1	-	7.8	21	Tr	4	4	-	2	3	45	28	16
83	87	Bit. sand, low grade, leached	4	10											
87	91	" " " " 10% clay	4	11											
91	92	Lost core	1	-	4.5	5½	Tr	5	2	1	3	20	43	12	13
92	96	Bit. sand, low grade	4	12											
96	100	" " " " leached	4	13											
100	104	" " medium grade, 10% clay	4	14	6.2	19½	Tr	8	5	1	11	14	39	11	11
104	108	" " " " 10% "	4	15											
108	112	" " " "	4	16	9.8	16	Tr	5	3	2	8	28	25	22	7
112	116	" " " "	4	17											
116	120	" " good "	4	18	9.9	23½	Tr	1	2	1	20	21	42	9	4
120	124	" " " "	4	19											
124	128	" " " "	4	20	12.5	4	Tr	1	2	1	25	21	39	9	4
128	129	Lost core	1	-											
129	133	Bit. sand, good grade, 25% clay	4	21											
133	137	" " " " 25% "	4	22	9.6	30½	Tr	2	3	-	10	32	28	19	7
137	141	" " " " 5% "	4	23											
141	145	" " " "	4	24	13.1	7½	Tr	3	2	-	12	17	51	10	5
145	149	" " " " 30% "	4	25											
149	151	Lost core	2	-											
151	155	Bit. sand, good grade, 60% "	4	26	8.3	67½	Tr	-	1	1	5	31	35	18	9
155	159	" " " " 30% "	4	27											
159	163	" " " " 15% "	4	28											
163	167	" " " " 70% "	4	29	10.7	47½	Tr	-	-	1	14	21	50	10	4
167	171	" " " "	4	30											

STEEPBANK AREA

HOLE No. 136

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
171	175	Bit. sand, good grade	4	31)											
175	179	" " " " 60% clay	4	32)	10.8	30	Tr	-	2	-	24	26	40	6	3
179	183	" " " "	4	33)											
183	187	" " " "	4	34)	16.9		Tr	-	-	1	18	34	31	11	4
187	191	" " " " 10% clay	4	35)											
191	195	" " " " 5% "	4	36)	8.3	50½	Tr	10	4	6	29	25	13	7	6
195	199	" " " " 10% "	4	37)											
199	200	Lost core	1	-											
200	204	Bit. sand, good grade, 50% clay	4	38)											
204	208	" " " " 30% "	4	39)	8.8	54	Tr	7	7	19	37	11	11	3	4
208	212	" " " " slight clay	4	40)											
212	216	" " " "	4	41)											
216	220	" " " "	4	42)	15.8	2½	Tr	1	18	41	28	5	5	1	2
220	224	" " " "	4	43)											
224	227	" " " " 10% clay	3	44)	14.4	11½	Tr	-	3	64	20	6	3	2	2
227	231'6"	Clay	4'6"	-											
231'6"	232	Limestone	6"	-											
	232	End of Hole													

Summary

0' - 74' = 74' Overburden & very low grade bit. sand

74' -104' = 30' @ 6.38% bitumen & 26% clay bands

104' -227' = 123' @ 11.% bitumen & 23% clay bands

74' - 227' = 153' @ 10.1% bitumen & 24% clay bands.

STEEPBANK AREA

HOLE No. 137

DATE March 5-7 1945 LOCATION LS.5,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1051' DEPTH 233' DIP 90° CORE RECOVERY 97.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	12'	Overburden, sand and clay	12												
12'	24'	Clay with traces of bit. sand	12	1,2,3		Not assayed									
24'	40'	Bit. sand, low grade & clay	16	4,5,6,7	5.3	97¾	Tr	5	1	1	-	5	30	42	16
40'	44'	" " " " " "	4	8)											
44'	48'	" " " " slight clay	4	9)	10.2	32½	Tr	1	1	-	3	13	11	60	11
48'	52'	" " medium grade, & clay	4	10)											
52'	56'	" " " " " "	4	11)											
56'	60'	" " " " " "	4	12)	10.7	21½	Tr	2	1	-	-	12	40	36	8
60'	61'	Lost core	1	-											
61'	65'	Bit. sand, medium grade, some clay	4	13)											
65'	69'	" " " " 25% clay	4	14)	10.0	25½	Tr	1	1	-	2	23	20	43	8
69'	73'	" " low " leached, some clay	4	15)											
73'	74'	Lost core	1	-)	9.3	20	Tr	6	3	-	-	8	6	62	15
74'	78'	Bit. sand, medium grade, 15% clay	4	16)											
78'	82'	" " low " 50% "	4	17)											
82'	86'	" " good " slight clay	4	18)	10.2	20¾	Tr	7	2	-	-	11	14	57	10
86'	90'	" " " " 50% clay	4	19)											
90'	94'	" " " " 20% "	4	20)	8.9	31½	Tr	4	2	-	-	16	40	28	9
94'	98'	" " medium " 25% "	4	21)											
98'	102'	" " good " slight clay	4	22)	11.8	15¾	Tr	3	1	-	4	25	16	43	8
102'	104'	Lost core	2	-											
104'	108'	Bit. sand, good grade, 25% clay	4	23)											
108'	112'	" " " " 15% "	4	24)	12.3	22	Tr	-	1	-	2	23	28	38	7
112'	116'	" " " " 30% "	4	25)											
116'	119'	" " medium " 25% "	3	26)	12.0	26¾	Tr	4	2	-	-	14	6	65	9
119'	120'	Lost core	1	-											
120'	124'	Bit. sand, medium grade, 40% clay	4	27)											
124'	128'	" " good " 20% "	4	28)	9.8	28¾	Tr	3	2	-	-	20	37	31	7

STEEPBANK AREA

HOLE No. 137

DATE ..... 194 ... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
128'	132'	Bit. sand, good grade	4	29)											
132'	136'	" " " "	4	30)	15.8	-	Tr	1	1	-	14	31	20	27	5
136'	140'	" " " "	4	31)											
140'	144'	" " " " slight clay	4	32)	14.5	5¾	Tr	2	1	-	11	34	21	26	5
144'	148'	" " and clay	4	33)											
148'	152'	" " " "	4	34)	7.2	25	Tr	24	7	-	-	26	19	16	9
152'	156'	" " good grade, 25% clay	4	35)											
156'	160'	Clay and bit sand	4	36)	9.5	19¾	Tr	13	3	-	19	30	3	24	7
160'	166'	Bit. sand, good grade, 40% clay	6	37	9.3	8¾	Tr	12	7	5	-	44	4	19	8
166'	193'	Hard sandstone slightly impregnated with bitumen	27	-											
193'	233'	Coarse compacted sand, almost completely leached but carrying traces of bitumen	40	-											
	233'	End of Hole													

Summary

0' - 24' = 24 ft. overburden with traces of bit. sand
24' - 40' = 16 ft. @ 5.3% bitumen & 51% clay bands
40' - 144' = 104 ft. @ 11.1% bitumen & 20% clay bands
144' - 166' = 22 ft. @ 8.6% bitumen & 20.3% clay bands
40' - 166' = 126 ft. @ 10.7% bitumen & 20.1% clay bands

STEEPBANK AREA

HOLE No. 138

DATE March 9-12 1945 LOCATION LS,6,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1078' DEPTH 254' DIP 90° CORE RECOVERY 97.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	39'	Overburden, gravel, sand and clay	39												
39'	43'	Clay, may contain bitumen	4	1)											
43'	47'	Clay, with trace of bit. sand	4	2)	Trace of bitumen only										
47'	51'	Black clay with traces of bit. sand	4	3)											
51'	55'	Bit. sand, low grade with clay	4	4)											
55'	59'	" " " " slight clay	4	5)											
59'	63'	" " " " 40% clay	4	6)	2.4	116	0.0	14	6	-	4	10	11	37	17
63'	67'	" " " " 30% "	4	7)											
67'	71'	" " " "	4	8)											
71'	75'	" " " " 15% clay	4	9)											
75'	79'	" " " " 10% "	4	10)											
79'	80'	Lost core	1	-)	5.1	66⅔	Tr	4	3	1	-	8	23	47	15
80'	84'	Clay and bit. sand	4	11)											
84'	88'	Bit. sand, medium grade, 30% clay	4	12)											
88'	89'	Lost core	1	-)	9.2	41	Tr	2	1	-	4	18	42	24	9
89'	93'	Bit. sand, medium grade, 40% clay	4	13)											
93'	97'	" " good grade, 25% clay	4	14											
97'	101'	" " " " 25% "	4	15)											
101'	105'	" " " " 20% "	4	16)	9.1	20¼	Tr	4	2	-	4	19	21	40	9
105'	109'	" " " " 20% "	4	17)											
109'	113'	" " " " 10% "	4	18)	11.1	18	Tr	1	1	-	-	25	26	41	6
113'	117'	" " " " slight clay	4	19)											
117'	121'	" " " " 5% clay	4	20)	12.4	15½	0.0	1	1	1	-	29	30	34	5
121'	122'	Lost core	1	-											
122'	126'	Bit. sand, good grade	4	21)											
126'	130'	" " " "	4	22)	12.8	8	0.0	2	1	-	7	21	13	45	10
130'	134'	" " " " 20% clay	4	23)											
134'	138'	" " " "	4	24)	13.6	11¾	0.0	-	1	-	-	17	6	67	8

STEEPBANK AREA

HOLE No. 138

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
138'	142'	Bit. sand, good grade, 10% clay	4	25)											
142'	146'	" " " " 10% "	4	26)	13.3	10	0.0	1	-	-	8	18	31	30	11
146'	150'	" " " " 10% "	4	27)											
150'	154'	" " " " 30% "	4	28)	12.6	16½	0.0	1	1	-	7	22	21	38	10
154'	158'	" " " " 30% "	4	29)											
158'	162'	" " medium grade, 40% clay	4	30)	11.0	29	Tr	1	-	-	4	19	7	57	11
162'	166'	" " good grade, 10% clay	4	31)											
166'	170'	" " " " 40% "	4	32)	13.8	12¼	Tr	1	1	-	-	23	35	34	6
170'	174'	Clay and bit. sand	4	33)											
174'	178'	Bit. sand, good grade, 40% clay	4	34)	8.6	65¼	Tr	2	1	1	-	26	8	56	6
178'	182'	Clay and bit. sand	4	35)											
182'	186'	Bit. sand, good grade, 50% clay	4	36)											
186'	190'	Clay and 25% bit. sand	4	37)	8.4	68	Tr	2	1	1	-	28	13	47	7
190'	194'	" " 40% " "	4	38)											
194'	198'	Bit. sand, good grade, 20% clay	4	39)											
198'	202'	" " " " 40% "	4	40)	12.2	22¼	Tr	1	1	-	33	35	6	19	4
202'	206'	" " " " slight clay	4	41)											
206'	210'	" " " " 15% clay	4	42)	14.3	9½	Tr	2	3	3	-	51	2	39	3
210'	214'	" " " " slight clay	4	43)											
214'	218'	" " " "	4	44)	13.9	7	Tr	1	16	-	56	11	2	12	3
218'	222'	" " " "	4	45)											
222'	226'	" " " "	4	46)	14.0	7¼	Tr	2	32	20	-	27	-	17	3
226'	230'	" " hard, coarse, medium grade	4	47)											
230'	234'	" " " " " "	4	48)	6.5	22¼ stone	0.0	15	45	-	24	5	1	6	4
234'	238'	" " " " " "	4	49)											
238'	242'	" " " " " "	4	50)	8.1	2 stone	Tr	15	46	-	23	5	-	7	5

STEEPBANK AREA

HOLE No. 138

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
242'	246'	Bit. sand, medium grade	4	51											
246'	251'	" " " "	4	52	7.2	12¼ stone	Tr	7	49	-	27	6	3	4	5
251'	253'	Lost core	2	-											
253'	254'	Clay ironstone and limestone	1	-											
	254'	End of Hole													

Summary

0' - 71' = 71' Overburden and clay with traces of bit. sand

71' - 84' = 13' @ 5.1% bitumen and 43% clay

(84' - 170' = 86' @ 11.7% bitumen and 17.6% clay)

(170' - 194' = 24' @ 8.5% bitumen and 46.2% clay)

(194' - 226' = 32' @ 13.6% bitumen and 12% clay)

226' - 251' = 25' @ 7.3% bitumen and 12% stone

84' - 226' = 142' @ 11.6% bitumen and 21.2% clay.

STEEPBANK AREA

HOLE No. 139

DATE Mar.31-Apr.4 1945 LOCATION LS.3,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1083' DEPTH 237' DIP 90° CORE RECOVERY 93.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	55	Overburden, clay and boulders	55	-											
55	59	Bit. sand, low grade	4	1)											
59	63	" " " " 30% clay	4	2)	6.0	44	Tr	8	6	4	1	8	7	21	45
63	67	" " " " 30% "	4	3)											
67	69	Lost core	2	-											
69	73	Bit. sand, low grade	4	4)											
73	77	" " " " 40% clay	4	5)	9.6	7	Tr	4	4	1	4	9	50	16	11
77	79	Lost core	2	-											
79	83	Bit. sand, low grade, 20% clay	4	6)											
83	84	Lost core	1	-)	9.1	11⅜	Tr	4	3	2	8	26	31	18	8
84	88	Bit. sand, low grade	4	7)											
88	92	" " medium grade	4	8)											
92	96	" " " "	4	9)	11.2	10⅜	Tr	1	2	1	10	18	52	11	6
96	100	" " " "	4	10)											
100	104	" " " " 5% clay	4	11)	12.4	6⅜	Tr	2	1	1	9	34	33	16	5
104	108	" " good grade, slight clay	4	12)											
108	112	" " " " 10% clay	4	13)	11.3	5½	Tr	1	1	-	8	16	59	12	4
112	113	Lost core	1	-											
113	117	Bit. sand, good grade	4	14)											
117	121	" " " " 10% clay	4	15)	13.9	2½	Tr	1	1	1	5	25	39	20	8
121	125	" " " " 15% "	4	16)											
125	129	" " " " 10% "	4	17)	12.7	12½	Tr	-	1	1	9	17	56	11	5
129	133	" " " "	4	18)											
133	137	" " " " 15% "	4	19)	12.4	12¼	Tr	2	1	1	12	36	31	14	3
137	141	" " " " 50% "	4	20)											
141	142	Lost core	1	-)											
142	146	Bit. sand, good grade, 30% clay	4	21)	9.5	5⅜	Tr	-	1	1	13	20	54	8	4
146	150	" " " " partly leached	4	22)											

STEEPBANK AREA

HOLE No. 139

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
150	154	Bit. sand, good grade, 30% clay	4	23											
154	155	Lost core	1	-	11.3	28½	Tr	-	-	1	18	37	24	17	4
155	159	Bit. sand, good grade, 20% clay	4	24											
159	160	Lost core	1	-											
160	164	Bit. sand, good grade, slight clay	4	25											
164	168	" " " " 5% clay	4	26	15.1	3½	Tr	1	2	1	13	18	50	10	6
168	172	" " " " 20% clay	4	27											
172	176	" " " " 20% "	4	28	11.0	29½	Tr	1	1	3	20	29	29	12	6
176	180	Clay, with 20% medium grade bit. sand	4	29											
180	181	Lost core	1	-											
181	185	Bit. sand, good grade, 40% clay	4	30	8.4	66¼	Tr	2	2	1	19	21	44	7	5
185	189	" " " " 10% "	4	31											
189	193	" " " " 30% "	4	32											
193	197	" " " " 5% "	4	33	8.3	43	Tr	4	2	15	39	21	9	7	5
197	198	Lost core	1	-											
198	202	Bit. sand, good grade, 10% clay	4	34											
202	206	" " " " 5% "	4	35	11.7	35½	Tr	1	4	60	20	8	3	2	3
206	210	" " " " 15% "	4	36											
210	214	" " " "	4	37											
214	218	" " " "	4	38	16.3		Tr	-	33	33	24	4	4	2	2
218	222	" " " " slight clay	4	39											
222	226	" " " "	4	40	15.0	5½	Tr	3	25	26	14	13	8	8	5
226	230	" " " " 10% clay	4	41											
230	231	Lost core	1	-	10.8	21	Tr	9	17	3	14	14	29	9	4
231	234'6"	Bit. sand, good grade, coarse	3'6"	42											
234'6"	236'10"	Decomposed limestone	2'4"	-											
236'10"	237	Limestone	2"	-											
	237	End of Hole													

STEEPBANK AREA

HOLE No. 239

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 55' = 55' Overburden 55' - 14' = 69' @ 6.0% bitumen & 26% clay bands 69' - 88' = 19' @ 9.4% bitumen & 7% clay bands 88' - 234'6" = 146'6" @ 11.8% bitumen & 19.8% clay bands 69' - 234'6" = 165'6" @ 11.3% bitumen & 17.8% clay bands.													

STEEPBANK AREA

HOLE No. 140

DATE Feb. 7-10 1945 LOCATION LS.13,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1075' DEPTH 273' DIP 90° CORE RECOVERY 91.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	52'	Overburden, gravel rock and clay	52	-											
52'	56'	Bit. sand, low grade, considerable clay	4	1)											
56'	57'	Lost core	1	-)	11.0	14	Tr	2	1	-	-	44	9	37	8
57'	61'	Bit. sand, low grade, slight clay	4	2)											
61'	65'	" " " " " "	4	3)											
65'	69'	" " medium grade, slight leaching	4	4)	10.0	3½	Tr	4	2	-	12	21	28	21	12
69'	73'	" " " " " clay	4	5)											
73'	77'	" " " " " "	4	6)	13.0		Tr	1	1	-	14	17	29	29	8
77'	80'	Lost core	3	-											
80'	84'	Bit. sand, medium grade	4	7)											
84'	88'	" " " "	4	8)	12.3	5	0.0	1	1	-	-	43	18	31	6
88'	89'	Lost core	1	-											
89'	93'	Bit. sand, medium grade	4	9)											
93'	97'	" " " " some clay	4	10)	13.7	2	Tr	1	1	-	3	22	27	39	8
97'	101'	" " good grade, slightly leached	4	11)											
101'	105'	" " " " 25% clay	4	12)	13.6	4½	Tr	2	1	-	5	23	15	40	6
105'	109'	" " " "	4	13)											
109'	113'	" " " " some clay	4	14)	12.7	10½	Tr	1	2	-	-	29	-	58	9
113'	115'	Lost core	2	-											
115'	119'	Bit. sand, good grade, 30% clay	4	15)											
119'	123'	" " " " " "	4	16)	12.3	15	Tr	1	2	-	3	11	27	39	19
123'	127'	Lost core (clay)	4	-		48									
127'	131'	Clay and low grade bit. sand	4	17)											
131'	135'	Bit. sand, good grade, partly leached	4	18)	8.7	19	Tr	-	1	-	-	16	31	42	9
135'	139'	" " " " " "	4	19)											
139'	143'	Clay and low grade bit. sand	4	20)	6.6	72	Tr	3	3	-	7	30	31	20	5
143'	147'	" " " " " "	4	21)											

STEEPBANK AREA

HOLE No. 140

DATE ... 194... LOCATION ... CO-ORDINATES ... ELEVATION ... DEPTH ... DIP ... CORE RECOVERY ...

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY Bo-Ls, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
147'	151'	Bit. sand, good grade, 40% clay	4	22)											
151'	155'	Clay and bit. sand	4	23)											
155'	159'	" " " "	4	24)	7.8	79½	0.0	2	1	-	18	32	14	26	5
159'	163'	Clay banded with good grade bit. sand	4	25)											
163'	167'	" " " " " " "	4	26)											
167'	171'	" and good grade bit. sand mostly clay	4	27)	6.4	80½	Tr	4	1	1	-	60	8	24	4
171'	175'	" " " " " " " "	4	28)											
175'	179'	" " " " " " " "	4	29)											
179'	183'	" " " " " " " "	4	30)	8.4	64	0.0	4	2	1	-	44	13	34	4
183'	187'	" " " " " " " "	4	31)											
187'	191'	Bit. sand, good grade, 30% clay	4	32)											
191'	195'	" " " " 20% "	4	33)	13.0	22	Tr	4	15	-	35	31	5	9	3
195'	199'	" " " " 30% "	4	34)											
199'	203'	" " " "	4	35)											
203'	207'	" " " "	4	36)	15.6	1¼	0.0	-	8	10	-	67	5	8	2
207'	211'	" " " "	4	37)											
211'	215'	" " " " slight clay	4	38)	15.6	1	Tr	3	13	-	51	13	3	13	4
215'	219'	" " " "	4	39)											
219'	223'	" " " "	4	40)	12.1	3	Tr	3	28	10	-	41	-	14	4
223'	227'	" " " "	4	41)											
227'	229'	Lost core	2	-)	13.4	½	Tr	1	16	-	47	13	3	16	4
229'	233'	Bit. sand, good grade	4	42)											
233'	234'	Lost core	1	-											
234'	238'	Bit. sand, good grade	4	43)											
238'	242'	" " " "	4	44)	13.0		Tr	1	40	17	-	33	-	7	2
242'	246'	" " " "	4	45)											
246'	250'	Carbonaceous material and bit. sand	4	46)	8.7	35	0.0	1	17	-	44	13	5	13	6
250'	254'	Bit. sand, good grade, 50% leached	4	47)											
254'	255'	Lost core	1	-)	10.1	20	0.0	5	32	10	-	29	8	10	5
255'	259'	Bit. sand, medium grade	4	48)											

STEEPBANK AREA

HOLE No. 140

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
259'	263'	Bit. sand, medium grade, partly leached	4	49)											
263'	265'	Lost core	2	-)	12.7	1	Tr	6	18	-	50	9	5	9	5
265'	267'6"	Bit. sand, good grade	2'6"	50)											
267'6"	273'	Leached sand and rock (4' lost core)	5'6"	-											
	273'	End of Hole													

Summary

0' - 52' = 52' Overburden
52' - 123' = 71' @ 12.3% bitumen, 6.4% clay bands
123' - 187' = 64' @ 7.05% bitumen, 47% clay bands
187' - 267'6" = 80'6" @ 12.68% bitumen, 5% clay, 4.3% C.M.
52' - 267'6" = 215'6" @ 10.88 bitumen, 18% clay, 1.6% C.M.
52' - 123') 187' - 267'6") = 151'6" @ 12.5% bitumen, 5.7% clay, 2.3% C.M.
0' - 52' = 52' Overburden)
123' - 187' = 64' low grade bituminous sand) and clay - 116 ft.)

Analyses of Carbonaceous Material

	Moisture	Ash	V.M.	F.C.
Samples 45 & 46	5.6%	47.0%	18.5%	28.9%
Samples 47 & 48	3.0%	63.4%	16.4%	17.2%

STEEPBANK AREA

HOLE No. 141

DATE Feb. 18-21 1945 LOCATION LS.13,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1060' DEPTH 270' DIP 90° CORE RECOVERY 93.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	37'	Overburden, gravel, sand and clay	37	-											
37'	41'	Bit. sand, low grade	4	1)											
41'	45'	" " " "	4	2)	45	65	Tr	1	2	-	-	32	28	27	10
45'	49'	" " medium grade	4	3)											
49'	50'	Lost core	1	-											
50'	54'	Bit. sand, medium grade	4	4)											
54'	58'	" " " "	4	5)	9.9	11½	Tr	1	1	-	13	18	41	19	8
58'	62'	" " " "	4	6)											
62'	66'	" " " "	4	7)	10.3	13¼	Tr	1	1	-	16	14	35	26	7
66'	70'	" " " "	4	8)											
70'	74'	" " " "	4	9)	12.7	2½	Tr	-	1	-	-	26	24	39	9
74'	78'	" " " "	4	10)											
78'	82'	" " " "	4	11)	10.9	20	0.0	2	1	-	4	19	24	42	7
82'	86'	" " " "	4	12)											
86'	90'	" " good grade, slight clay	4	13)											
90'	94'	" " " " 20% clay	4	14)	12.2	14	0.0	-	1	-	-	23	8	59	10
94'	98'	" " " " slight clay	4	15)											
98'	102'	" " " " " "	4	16)	14.6	½	Tr	1	1	-	-	49	6	37	7
102'	106'	" " medium grade, 20% clay	4	17)											
106'	110'	" " good grade, 50% clay	4	18)	12.8	18½	0.0	1	1	-	-	46	3	41	7
110'	114'	" " " " 15% "	4	19)											
114'	118'	Clay and good grade bit. sand	4	20)											
118'	122'	" " bit. sand, both in thin bands	4	21)											
122'	126'	" slight amount bit. sand	4	22)	8.6	76	Tr	4	2	-	12	15	28	29	11
126'	130'	Bit. sand, good grade, 25% clay	4	23)											
130'	131'	Lost core	1	-											
131'	135'	Clay and bit. sand	4	24)											
135'	139'	" " " "	4	25)											
139'	143'	" " " "	4	26)	7.2	102	Tr	2	1	-	-	44	7	40	6
143'	147'	" " " "	4	27)											

STEEPBANK AREA

HOLE No. 141

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY SANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
147'	151'	Clay and bit. sand	4	28)											
151'	155'	" " " "	4	29)											
155'	159'	" " " "	4	30)	7.8	88	0.0	2	1	-	-	71	6	17	3
159'	163'	Bit. sand, medium grade, 25% clay	4	31)											
163'	167'	Clay and bit. sand	4	32)											
167'	171'	Bit. sand, good grade, 20% clay	4	33)											
171'	173'	Lost core	2	-)	8.7	57	Tr	3	1	-	56	13	12	11	4
173'	177'	Clay and good grade bit. sand	4	34)											
177'	181'	Bit. sand, good grade	4	35)											
181'	182'	Lost core	1	-)	13.2		0.0	-	12	18	-	57	5	8	2
182'	186'	Bit. sand, good grade	4	36)											
186'	187'	Lost core	1	-											
187'	191'	Bit. sand, good grade	4	37)											
191'	193'	Lost core	2	-)	13.5		Tr	3	11	-	72	5	4	3	3
193'	197'	Bit. sand, good grade	4	38)											
197'	198'	Lost core	1	-											
198'	202'	Bit. sand, good grade	4	39)											
202'	203'	Lost core	1	-)	13.4		0.0	4	15	-	59	6	1	12	4
203'	207'	Bit. sand, good grade	4	40)											
207'	210'	Lost core	3	-											
210'	214'	Bit. sand, good grade, slight clay	4	41)											
214'	216'	Lost core	2	-)	11.9	5	Tr	2	30	10	-	36	-	17	4
216'	220'	Bit. sand, low grade, slight clay	4	42)											
220'	224'	" " medium grade, slight clay	4	43)											
224'	228'	" " " "	4	44)	9.8	2½	Tr	1	50	-	32	4	1	7	4
228'	232'	" " " "	4	45)											
232'	236'	" " " "	4	46)	8.7		Tr	9	66	8	1	10	1	4	3
236'	240'	" " " "	4	47)											
240'	244'	" " " " 20% clay	4	48)	8.5	4½	Tr	16	41	-	31	5	-	4	3

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STEEPBANK AREA

HOLE No. 141

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
244'	248'	Bit. sand, low grade, some clay	4	49)											
248'	252'	" " " "	4	50)	7.6		Tr	48	34	3	-	6	1	3	4
252'	256'	Sandstone slightly impregnated with bitumen	4	51)	9.1		Tr	33	25	-	32	4	-	3	3
256'	260'	Bit. sand, medium grade, finer sand, hard and dry	4	52	7.8		Tr	58	25	-	4	7	-	3	3
260'	264'	Coarse hard sandstone, slight bituminous	4	53											
264'	268'	Coarse hard sandstone	4	-											
268'	269'10"	Coarser, softer sandstone	1'10"	-											
269'10"	270'	Limestone	0'2"	-											
	270'	End of Hole													

Summary

0' - 37' = 37' Overburden
37' - 50' = 13' @ 4.5% bitumen 5'5" clay
50' - 114' = 64' @ 11.9% bitumen 6'8" clay
114' - 177' = 63' @ 7.9% bitumen 27'0" clay
177' - 228' = 51' @ 12.3% bitumen 7" clay
228' - 252' = 24' @ 8.2%
50' - 252' = 202' @ 10.3% bitumen, 19.7% clay bands.

STEEPBANK AREA

HOLE No. 142

DATE Feb. 22-24 1945 LOCATION LS.9,Sec.19,Tp.92-9-4 CO-ORDINATES ELEVATION 1016' DEPTH 217' DIP 90° CORE RECOVERY 94.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	6'	Overburden, gravel and sand	6	-											
6	10	Bit. sand, low grade	4	1)											
10	14	" " medium grade	4	2)	7.9		Tr	6	4	-	-	15	6	53	17
14	16	Lost core	2	-											
16	20	Bit. sand, good grade	4	3)											
20	24	" " " "	4	4)	10.3		Tr	5	3	-	8	13	36	23	12
24	28	" " medium grade, some clay	4	5)											
28	32	" " " " 30% clay	4	6)	7.7	9	Tr	9	4	-	4	11	18	27	27
32	36	" " " " 10% "	4	7)											
36	40	" " low " 25% "	4	8)	8.4	44	Tr	2	2	-	-	6	19	58	13
40	44	" " medium "	4	9)											
44	48	" " good " 25% "	4	10)											
48	49	Lost core	1	-)	10.3	19½	Tr	1	1	-	3	19	28	40	8
49	53	Bit. sand, good grade, slight clay	4	11)											
53	57	" " " " 25% clay	4	12)											
57	61	" " " " slight clay	4	13)	11.3	18	Tr	-	1	-	-	15	34	43	7
61	65	" " " " 50% clay	4	14)											
65	69	" " " " 35% "	4	15)	8.9	54	Tr	1	1	-	12	18	27	35	7
69	73	" " " " 25% "	4	16)											
73	77	" " " " 50% "	4	17)											
77	81	" " " " 10% "	4	18)	11.3	22½	Tr	-	1	-	3	15	36	34	11
81	85	" " " " 30% "	4	19)											
85	89	" " " " 40% "	4	20)	10.8	22½	Tr	-	1	-	3	18	28	40	11
89	93	" " " " 25% "	4	21)											
93	97	Clay and bit. sand	4	22)											
97	101	" " " "	4	23)	5.4	12½	Tr	-	1	-	17	21	21	35	4
101	105	" " " "	4	24)											
105	108	Bit. sand, medium grade, 20% clay	3	25)											
108	113	Lost core, over run	5	-)	9.3	34	Tr	1	1	-	61	13	5	15	3
113	118	Bit. sand, good grade, 25% clay	5	26)											

STEEPBANK AREA

HOLE No. 142

DATE ... 194... LOCATION ... CO-ORDINATES ... ELEVATION ... DEPTH ... DIP ... CORE RECOVERY ...

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
118'	122'	Bit. sand, good grade, 25% clay	4	27)											
122	126	" " " " slight clay	4	28)	9.6	35	0.0	2	1	-	-	24	1	66	5
126	130	" " " " " "	4	29)											
130	134	" " " " " "	4	30)	16.0		Tr	1	15	32	-	43	-	8	2
134	137	" " " " 30% clay	3	31)											
137	138	Lost core	1	-)											
138	142	Bit. sand, good grade, 50% clay	4	32)	13.3	23	Tr	1	12	15	-	38	2	28	3
142	146	" " " " slight clay	4	33)											
146	150	" " " " 25% clay	4	34)											
150	154	" " " " 25% "	4	35)	12.0	19	0.0	3	7	-	35	17	14	18	7
154	158	" " " "	4	36)											
158	162	Clay and bit. sand	4	37)	7.1	64	0.0	2	10	4	-	26	10	37	11
162	166	Bit. sand, medium grade, 25% clay	4	38)											
166	170	" " good grade	4	39)											
170	174	" " " "	4	40)	13.3		0.0	1	3	-	22	11	7	38	17
174	178	" " " " slight clay	4	41)											
178	182	" " " "	4	42)	11.4	12¼	Tr	1	19	16	-	49	-	10	4
182	186	" " " "	4	43)											
186	190	" " " " sand coarse	4	44)	13.5	2	Tr	8	44	-	29	8	-	5	5
190	192	Lost core	2	-											
192	196	Bit. sand, good grade, sand coarse	4	45)											
196	200	" " medium grade	4	46)	11.1		0.0	27	38	7	-	15	-	8	5
200	204	" " " "	4	47)											
204	208	" " " "	4	48)	11.4		0.0	4	44	-	39	6	-	3	3
208	214	" " " "	6	49	9.3		0.0	2	57	13	-	15	-	10	3
214	217	Leached sand	3	-											
	217	End of Hole													

SUNBURST AREA

HOLE No. 142

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +30 %	+45 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary													
		0' – 6' = 6' Overburden													
		6' – 44' = 38' @ 8.5% bitumen & 11.6% clay bands													
		44' – 89' = 45' @ 10.4% bitumen & 24.4% clay bands													
		89' – 105' = 16' @ 5.4% bitumen & 64.7% clay bands													
		105' – 214' = 109' @ 11.1% bitumen & 14% clay bands													
		44' – 89') = 154' @ 10.9% bitumen & 17%													
		105' – 214') = clay bands													
		44' – 214' = 170' @ 10.4% bitumen & 21.8% clay bands													

STEEPBANK AREA

HOLE No. 143

DATE June 1-4 1945 LOCATION LS.7,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1091' DEPTH 219' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	53	Overburden, clay, boulders and sand	53	-											
53	57	Bit. sand, low grade	4	1)											
57	61	" " " " 50% clay	4	2)	4.5	75	Tr	5	3	3	3	6	11	23	46
61	65	" " " " 75% "	4	3)											
65	69	Clay	4	-		48									
69	70	Lost core	1	-											
70	74	Bit sand, low grade, 30% clay	4	4	2.6		Tr	10	8	2	7	8	20	28	17
74	79	Clay with small stringers of sand	5	-		60									
79	80	Lost core	1	-											
80	84	Bit. sand, low grade, 15% clay	4	5)											
84	88	" " " " 50% "	4	6)	2.6	24½	Tr	10	8	2	7	8	20	28	17
88	92	" " medium grade, 15% clay	4	7)											
92	96	" " " " 25% "	4	8)	6.3	33¼	Tr	6	5	1	8	10	9	47	14
96	98	Clay	2	-		24									
98	99	Lost core	1	-											
99	103	Bit. sand, medium grade, 60% clay	4	9	6.3	28	Tr	6	5	1	8	10	9	47	14
103	107	" " good " 20% "	4	10)											
107	111	" " " " 50% "	4	11)	8.8	58½	Tr	5	2	2	10	25	34	16	6
111	115	" " " " 25% "	4	12)											
115	119	" " " " 30% "	4	13)											
119	120	Lost core	1	-)	8.7	58¼	Tr	4	5	2	20	18	26	19	6
120	124	Bit. sand, good grade, 30% clay	4	14)											
124	128	" " " " 30% "	4	15)											
128	132	" " " " 30% "	4	16)											
132	133	Lost core	1	-)											
133	137	Bit. sand, good grade, 25% clay	4	17)	7.9	64¾	Tr	8	2	4	27	27	18	8	6
137	138	Lost core	1	-)											
138	142	Bit. sand, good grade, 25% clay	4	18)											
142	146	" " " " slight clay	4	19)											
146	150	" " " " 30% clay	4	20)	11.7	25½	Tr	4	2	7	29	27	18	9	4

STEEPBANK AREA

HOLE No. 143

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
150	154	Bit. sand, good grade, 15% clay	4	21)											
154	158	" " " "	4	22)	15.3	8	Tr	-	-	5	34	32	12	14	3
158	162	" " " " 10% "	4	23)											
162	166	" " " " 60% "	4	24)	8.0	72½	Tr	4	3	7	35	20	8	20	3
166	170	" " " " 35% "	4	25)											
170	174	" " " " 40% "	4	26)											
174	178	" " " " 25% "	4	27)	11.3	38	Tr	2	3	23	42	17	7	3	2
178	182	" " " "	4	28)											
182	186	" " " "	4	29)	15.4	4	Tr	2	14	21	39	11	1	11	2
186	190	" " " "	4	30)											
190	194	" " " "	4	31)	16.2		Tr	-	9	33	35	12	5	4	2
194	198	" " " " 5% clay	4	32)											
198	202	" " " "	4	33)	15.0	3½	Tr	-	31	21	31	8	3	4	2
202	203	Lost core	1	-											
203	207	Bit. sand, good grade, 50% clay	4	34)		19									
207	211	Clay	4	-)		48									
211	215	Bit. sand, good grade, 15% clay	4	35)	12.9	6¾	Tr	2	5	11	34	23	9	12	3
215	218	" " " "	3	36)											
218	219	Limestone	1	-											
	219	End of Hole													

Summary

0' - 88' = 88' Overburden & very low grade sand

88' - 142' = 54' @ 7.6% bitumen & 41.2% clay bands; 11% clay bands under 6"

142' - 218' = 76' @ 12.2% bitumen & 25.9% clay bands; 12% clay bands under 6"

88' - 218' = 130' @ 10.3% bitumen and 32.2% clay bands; 12% clay bands under 6"

STEEPBANK AREA

HOLE No. 144

DATE Feb. 12-17 1945 LOCATION LS.12,Sec.20,Tp.92-9-4 CO-ORDINATES ELEVATION 1068' DEPTH 263' DIP 90° CORE RECOVERY 90.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	47'	Overburden, gravel clay and boulders	47	-											
47	51	Bit. sand, low grade, some clay	4	1)											
51	55	" " " " " "	4	2)											
55	56	Lost core	1	-)	4.5		Tr	2	7	3	-	16	10	48	12
56	60	Bit. sand, low grade	4	3)											
60	61	Lost core	1	-)											
61	65	Bit. sand, low grade	4	4)											
65	66	Lost core	1	-											
66	70	Bit. sand, medium grade	4	5)											
70	72	Lost core	2	-)	12.1	½	Tr	-	1	-	5	15	44	27	7
72	76	Bit. sand, medium grade	4	6)											
76	80	" " " " slight clay	4	7)											
80	84	" " " " " leaching	4	8)	12.6	2¼	0.0	-	1	-	-	34	16	42	6
84	88	" " " " " "	4	9)											
88	90	Lost core	2	-)	13.2	2	0.0	-	1	-	5	23	23	42	7
90	94	Bit. sand, medium grade, slight leaching	4	10)											
94	98	" " " " 25% clay bands	4	11)											
98	101	Lost core	3	-)											
101	103	Bit. sand, medium grade, slight clay	2	12)	10.6	32	0.0	-	-	1	-	24	6	56	12
103	106	Lost core	3	-)											
106	110	Bit. sand, medium grade, 25% clay	4	13)											
110	114	" " " " 25% "	4	14)											
114	118	" " " " 20% "	4	15)	12.3	8½	Tr	1	1	-	4	10	25	46	12
118	122	" " " "	4	16)											
122	126	" " " " 50% "	4	17)	11.9	14¾	Tr	-	1	-	-	12	-	72	15
126	130	" " low grade, 50% clay, ironstone	4	18)											
130	134	Clay and low grade bit. sand	4	19)											
134	135	Lost core	1	-)											
135	139	Bit. sand, medium grade, 30% clay	4	20)											

STEEPBANK AREA

HOLE No. 144

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
139	140	Lost core	1	-)	7.8	113									
140	144	Clay and medium grade bit. sand	4	21)		20	Tr	2	2	-	-	21	10	55	9
144	148	" " " " " "	4	22)											
148	149	Lost core	1	-)											
149	155	Clay and low grade bit. sand	6	23)											
155	175	Clay with traces of leached bit. sand	20	-		240									
175	179	Bit. sand, medium grade, 25% clay	4	24)											
179	183	" " " " 10% "	4	25)	13.0	13	Tr	2	1	-	14	25	11	38	9
183	187	" " " " 10% "	4	26)											
187	189	Lost core	2	-)	14.1	11½	0.0	1	1	1	-	34	7	48	8
189	193	Bit. sand, medium grade, 25% clay	4	27)											
193	197	" " " " 50% "	4	28)											
197	201	" " good "	4	29)	14.4	8¾	Tr	1	1	-	52	19	9	12	5
201	203	Lost core	2	-											
203	207	Bit. sand, good grade, 15% clay	4	30)											
207	211	" " medium grade, 40% clay	4	31)	10.8	32	0.0	4	6	5	-	63	2	17	3
211	213	Clay and bit. sand	2	32)											
213	216	Lost core	3	-											
216	220	Clay with traces of bit. sand	4	33)											
220	224	" " " " " "	4	34)	5.5	45	Tr	5	4	-	17	12	9	36	15
224	228	Bit. sand, medium grade, 25% clay	4	35)											
228	231-6"	" " good " 15% "	3-6	36)	12.3	3½	0.0	1	4	7	-	44	16	23	5
231-6"	237	Altered limestone	5-6	-											
237	247	Hard dark brown shale	10-0	-											
247	248	Limestone	1	-											
248	252	Shale and clay	4	-											
252	253	Limestone	1	-											
253	258	Altered limestone	5	-											
258	263	Limestone	5	-											
	263	End of Hole													

STEEPBANK AREA

HOLE No. 144

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 47' = 47' Overburden 47' - 66' = 19' @ 4.5% bitumen 66' - 126' = 60' @ 11.9% bitumen, 5' or 8.3% clay 126' - 155' = 29' @ 7.8% bitumen, 9.5' or 33% clay 155' - 175' = 20' clay with traces of bit. sand 175' - 213' = 38' @ 12.9% bitumen, 5.5' or 14% clay 66' - 126' = 60') 175' - 213' = 38') 98' @ 12.3% bitumen, 10.5' or 10.7% clay												

STEEPBANK AREA

HOLE No. 146

DATE May 7 - 9 1945 LOCATION LS.6, Sec.17, Tp.92-9-4 CO-ORDINATES ELEVATION 1044' DEPTH 160' DIP 90° CORE RECOVERY 94.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	6	Overburden, sand and clay	6	-											
6	10	Bit. sand, low grade	4	1)	11.9	1	Tr	4	2	1	15	18	38	15	7
10	14	" " " "	4	2)											
14	18	" " " " slight clay	4	3)											
18	22	" " medium grade, 5% clay	4	4)	11.5	8¼	Tr	4	1	2	17	31	29	11	5
22	26	" " " " 10% "	4	5)											
26	30	" " " " 5% "	4	6)	10.6	10	Tr	4	2	1	21	21	36	10	5
30	34	" " " " slight clay	4	7)											
34	35	Lost core	1	-)	13.4		Tr	1	1	3	27	35	16	13	4
35	39	Bit. sand, medium grade	4	8)											
39	40	Lost core	1	-											
40	44	Bit. sand, medium grade, 10% clay	4	9)											
44	48	" " " " 10% "	4	10)	11.3	19⅜	Tr	2	1	3	33	23	28	6	4
48	52	" " " " 10% "	4	11)											
52	56	" " good "	4	12)	13.3	6¾	Tr	1	0	4	35	35	17	6	2
56	57	Lost core	1	-											
57	61	Bit. sand, good grade, 15% clay	4	13)											
61	63	Lost core	2	-)	12.4	13	Nil	1	1	4	39	36	14	3	2
63	67	Bit. sand, good grade, 10% clay	4	14)											
67	71	" " " " 5% "	4	15)											
71	72	Lost core	1	-)	14.5	8¾	Tr	0	2	3	39	21	23	9	2
72	76	Bit. sand, good grade, 10% clay	4	16)											
76	80	" " " " 15% "	4	17)											
80	84	" " " "	4	18)	14.1	8¾	Tr	1	2	6	48	22	15	3	2
84	88	" " " " 15% "	4	19)											
88	92	" " " "	4	20)	13.9	11¼	Tr	0	1	6	43	22	17	7	2
92	96	" " " "	4	21)											
96	100	" " " "	4	22)	14.1		Tr	0	2	8	52	18	11	7	2
100	104	" " " "	4	23)											
104	108	" " " "	4	24)	13.7		Nil	0	5	11	45	18	13	5	2

STEEPBANK AREA

HOLE No. 146

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
108	112	Bit. sand, good grade	4	25)											
112	116	" " " "	4	26)	14.4		Nil	0	16	16	36	14	11	5	2
116	120	" " " "	4	27)											
120	121	Lost core	1	-)	15.4		Nil	2	32	25	18	11	6	2	3
121	125	Bit. sand, good grade	4	28)											
125	129	" " " "	4	29)											
129	133	" " medium grade, 10% clay	4	30)	14.5	2	Tr	1	13	8	23	14	25	10	6
133	137	" " " " 15% "	4	31)											
137	138	Lost core	1	-)	14.7	3½	Tr	2	1	1	6	24	37	21	6
138	142	Bit. sand, good grade	4	32)											
142	146	" " " " 10% clay	4	33)											
146	150	" " medium grade, 20% clay	4	34)											
150	154	" " low grade, 5% clay	4	35)	6.4	106	Tr	4	2	3	20	23	21	15	11
154	158	" " " " 10% "	4	36)											
158	159'9"	Clay	1'9"	-											
159'9"	160	Limestone	3"	-											
	160	End of Hole													

Summary

0' - 6' = 6' Overburden
6' - 142' = 136' @ 13.35% bitumen and 5.6% clay bands

STEEPBANK AREA

HOLE No. 147

DATE May 15 - 17 1945 LOCATION LS.3,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1047' DEPTH 183' DIP 90° CORE RECOVERY 92.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	6'	Overburden	6	-											
6'	10'	Bit. sand, low grade, 50% clay	4	1)											
10'	11'	Lost core	1	-)											
11'	15'	Bit. san , low grade, 25% clay	4	2)	8.9	23¼	Tr	5	4	1	2	5	22	39	22
15'	19'	" " " " 10% "	4	3)											
19'	23'	" " " " 20% "	4	4)											
23'	27'	" " " " 30% "	4	5)	6.3	57¾	Tr	5	4	1	2	3	19	44	21
27'	31'	" " " " 30% "	4	6)											
31'	35'	" " medium grade, 20% clay	4	7)											
35'	39'	" " " " 10% "	4	8)	10.8	14⅜	Tr	6	2	1	6	21	34	22	8
39'	43'	" " " " 5% "	4	9)											
43'	47'	" " " 10% "	4	10)	11.9	9	Tr	3	2	1	10	24	31	21	8
47'	48'	Lost core	1	-											
48'	52'	Bit. sand, medium grade, 5% clay	4	11)											
52'	56'	" " " "	4	12)	12.3	3¼	Tr	2	2	0	7	11	42	28	8
56'	60'	" " good "	4	13)											
60'	64'	" " " " 10% clay	4	14)	13.4	3	Tr	0	1	1	18	19	44	11	4
64'	68'	" " " " 5% "	4	15)											
68'	72'	" " " "	4	16)	13.5	4	Tr	1	1	3	22	35	22	12	4
72'	76'	" " " " 40% "	4	17)											
76'	80'	" " " " 5% "	4	18)	7.3	64½	Tr	5	1	3	19	34	23	11	4
80'	84'	" " " " 30% "	4	19)											
84'	88'	" " " " 30% "	4	20)											
88'	89'	Lost core	1	-)											
89'	93'	Bit. sand, good grade, slight clay	4	21)	12.2	29½	Tr	2	3	6	38	19	15	13	3
93'	95'	Lost core	2	-)											
95'	99'	Bit. sand, good grade, 5% clay	4	22)											

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STEEPBANK AREA

HOLE No. 147

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
99'	103'	Bit. sand, good grade	4	23)											
103'	107'	" " " " 5% clay	4	24)	14.6	2	Tr	0	4	12	41	19	15	7	1
107'	109'	Lost core	2	-											
109'	113'	Bit. sand, good grade	4	25)											
113'	114'	Lost core	1	-)	14.9		Tr	0	2	31	38	14	8	3	4
114'	118'	Bit. sand, good grade	4	26)											
118'	121'	Lost core	3	-											
121'	125'	Bit. sand, good grade	4	27)											
125'	129'	" " " "	4	28)	16.1		Tr	0	3	29	41	15	6	3	3
129'	133'	" " " "	4	29)											
133'	137'	" " " "	4	30)	15.6		Tr	0	3	22	44	13	4	10	4
137'	141'	" " " "	4	31)											
141'	145'	" " " "	4	32)	15.9		Tr	1	30	21	20	8	2	15	3
145'	146'	Lost core	1	-											
146'	150'	Bit. sand, good grade	4	33)											
150'	154'	" " " " 5% clay	4	34)	13.8	4	Tr	8	9	11	22	19	14	10	6
154'	158'	" " " " 10% "	4	35)											
158'	162'	" " " "	4	36)	15.8	4¾	Tr	2	1	2	50	30	6	5	4
162'	163'	Lost core	1	-											
163'	167'	Bit. sand, good grade, 15% clay	4	37)											
167'	171'	" " " " 10% "	4	38)	13.1	18¼	Tr	1	2	13	68	7	2	5	2
171'	175'	" " " " 30% "	4	39)											
175'	179'6"	" " " " 10% "	4'6"	40)	9.9	26½	Tr	13	32	17	16	4	5	9	4
179'6"	183'	Limestone	3'6"	-											
	183	End of Hole													

Summary

0' - 6' = 6' Overburden
6' - 31' = 25' @ 7.65% bitumen and 26.7% clay bands
31' - 179'6" = 148'6" @ 12.25% bitumen and 10.2% clay bands

STEEPBANK AREA

HOLE No. 148

DATE May 4 - 6 1945 LOCATION LS.2,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1085' DEPTH 219' DIP 90° CORE RECOVERY 91.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	35	Overburden, clay, gravel, boulders	35	-											
35	40	Clay	5	-											
40	67	Leached sand and clay	27	-											
67	70	Lost core	3	-											
70	74	Bit. sand, low grade, 20% clay	4	1)											
74	78	" " " " 15% "	4	2)	8.5	38¾	Tr	6	4	1	5	8	29	32	15
78	82	" " " "	4	3)											
82	86	" " " " 15% "	4	4)											
86	90	" " " " 30% "	4	5)	7.7	59½	Tr	1	3	2	7	15	32	25	13
90	94	" " " " 50% "	4	6)											
94	98	" " " " 30% "	4	7)											
98	102	" " " " 30% "	4	8)	8.2	35	Tr	3	3	1	4	6	15	40	28
102	103	Lost core	1	-											
103	107	Bit. sand, medium grade	4	9)											
107	111	" " " " 10% clay	4	10)	12.2	5¼	Tr	5	2	2	12	22	31	18	8
111	115	" " " " 20% "	4	11)											
115	119	" " " "	4	12)	12.5	13¼	Tr	4	2	5	20	28	26	9	5
119	123	" " " " 50% "	4	13)											
123	127	" " " " 25% "	4	14)	11.8	15½	Tr	2	2	5	18	27	29	11	5
127	131	" " " " 10% "	4	15)											
131	135	" " good " 10% "	4	16)	10.9	23¼	Tr	5	4	6	33	17	15	15	5
135	139	" " " " 30% "	4	17)											
139	143	" " " " 20% "	4	18)	8.9	47¼	Tr	8	4	5	36	19	16	8	4
143	147	" " " " 15% "	4	19)											
147	151	" " " " slight clay	4	20)	11.5	29½	Nil	3	2	3	19	33	20	16	4
151	155	" " " "	4	21)											
155	159	" " " "	4	22)											
159	163	" " " "	4	23)	15.3	2	Tr	1	1	7	33	30	23	4	1
163	167	" " " "	4	24)											

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STEEPBANK AREA

HOLE No. 148

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
167	171	Bit. sand, good grade, 10% clay	4	25)											
171	175	" " " " 20% "	4	26)	9.7	32¼	Tr	9	3	4	28	29	17	6	4
175	179	" " " " 35% "	4	27)											
179	183	" " " " 5% "	4	28)	10.7	30¾	Tr	6	25	7	18	10	16	14	3
183	184	Lost core	1	-											
184	188	Bit. sand, good grade	4	29)											
188	192	" " " "	4	30)	16.4		Tr	2	4	18	57	8	2	5	4
192	196	" " " " 15% clay	4	31)											
196	200	" " " "	4	32)	15.4	8	Nil	3	3	1	12	16	34	22	8
200	204	" " " "	4	33)											
204	208	" " " "	4	34)	17.6		Nil	0	1	1	15	20	34	24	
208	212	" " " " 25% clay	4	35	11.2	12½									
212	216'8"	" " " " 50% "	4'8"	36	9.7	25	Nil	7	14	11	16	17	15	11	
216'8"	219	Clay	2'4"												
	219	End of Hole													

Summary

0' - 70' = 70' Overburden leached sand & clay

70' - 103' = 33' @ 8.1% bitumen and 33.0% clay bands

103' - 212' = 109' @ 12.1% bitumen and 17.0% clay bands

70' - 212' = 142' @ 11.2% of bitumen and 20.4% clay bands

STEEPBANK AREA

HOLE No. 149

DATE May 22-24 1945 LOCATION LS.15, Sec.8, Tp.92-9-4 CO-ORDINATES ELEVATION 1059' DEPTH 214' DIP 90° CORE RECOVERY 94.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY SANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	22	Overburden, clay and boulders	22	-											
22	26	Bit. sand, low grade, 5% clay	4	1)											
26	27	Lost core	1	-)	3.4	8½	Tr	11	6	1	3	2	7	43	27
27	31	Bit. sand, low grade, 30% clay	4	2)											
31	43	Clay	12	-		144									
43	47	Bit. sand, low grade, 20% clay	4	3)											
47	51	" " " " 20% "	4	4)	3.4	74	Tr	11	6	1	3	2	7	43	27
51	55	" " " " 5% "	4	5)											
55	59	" " " " 10% "	4	6)											
59	60	Lost core	1	-)											
60	64	Bit. sand, low grade, 20% clay	4	7)	6.9	111¾	Tr	19	5	2	1	3	6	25	39
64	65	Lost core	1	-)											
65	69	Bit. sand, low grade, 10% clay	4	8)											
69	70	Lost core	1	-											
70	74	Bit. sand, low grade, 5% clay	4	9	6.9	8¾	Tr	3	1	0	3	7	13	58	14
74	79	Clay	5	-		60									
79	83	Bit. sand, low grade, 10% clay	4	10)											
83	84	Lost core	1	-)											
84	88	Bit. sand, low grade, 20% clay	4	11)	6.9	73	Tr	3	1	0	3	7	13	58	14
88	92	" " " " 15% "	4	12)											
92	96	" " " " 5% "	4	13)											
96	97	Lost core	1	-)	9.8	20	Tr	5	2	1	4	13	30	29	15
97	101	Bit. sand, low grade, 10% clay	4	14)											
101	105	" " medium grade, 5% clay	4	15)											
105	109	" " " " 10% "	4	16)	10.4	31¼	Tr	1	1	1	4	19	35	28	11
109	113	" " " " 15% "	4	17)											
113	115	Lost core	2	-											
115	119	Bit. sand, good grade	4	18)											
119	123	" " " "	4	19)	14.5		Tr	1	1	0	7	13	38	34	6
123	127	" " " "	4	20)											
127	131	" " " "	4	21)	14.8		Tr	2	2	1	3	15	36	30	11

STEEPBANK AREA

HOLE No. 149

DATE ..... 194 .. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
131	135	Bit. sand, good grade	4	22)											
135	139	" " " "	4	23)	16.3		Tr	0	1	0	9	16	32	35	6
139	143	" " " "	4	24)											
143	147	" " " "	4	25)	14.2	5½	Tr	2	2	1	4	19	36	26	9
147	151	" " " "	4	26)											
151	155	" " " "	4	27)	14.7		Tr	1	1	0	5	11	23	50	8
155	159	" " " "	4	[illegible]											
159	160	Lost core	1	)	15.5		Tr	0	1	1	5	23	34	28	8
160	164	Bit. sand, good grade	4	29)											
164	168	" " " "	4	30)											
168	172	" " " "	4	31)	15.9		Tr	2	1	0	6	11	33	40	6
172	173	Lost core	1	-											
173	177	Bit. sand, good grade	4	32)											
177	181	" " " " 5% clay	4	33)	15.1	2½	Tr	2	1	1	6	23	32	23	11
181	185	" " " " 15% "	4	34)											
185	189	" " " " 5% "	4	35)	12.6	18	Tr	1	1	1	14	15	31	28	9
189	193	" " " " slight clay	4	36)											
193	194	Lost core	1	-)	16.7		Tr	1	1	5	32	30	17	10	4
194	198	Bit. sand, good grade	4	37)											
198	202	" " " "	4	38)											
202	206	" " " "	4	39)	13.5	5½	Tr	7	28	18	21	8	3	10	5
206	210	" " " "	4	40)											
210	212	Clay	2	-											
212	214	Limestone	2	-											
	214	End of Hole													

STEEPBANK AREA

HOLE No. 149

DATE 194.. LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0 - 51' = 51' Overburden, very low grade sand and clay 51 - 92' = 41' @ 6.0% bitumen & 51.5% clay bands; 8.4% clay bands under 6" 92 - 210' = 118' @ 13.6% bitumen & 5.7% clay bands; 2.9% clay bands under 6"													

STEEPBANK AREA

HOLE No. 150

DATE Apr. 30-May 3 1945 LOCATION LS.7,Sec.17,Tp.92-9-4 CO-ORDINATES ELEVATION 1089' DEPTH 225' DIP 90° CORE RECOVERY 97.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	48	Overburden, clay and sand	48	-											
48	56	Clay with traces of bitumen	8	1,2											
56	84	Bit. sand, low grade, much clay	28	3 to 9	2.3	21 3/4	Tr	70	4	1	3	8	21	21	32
84	109	" " " " " "	25	10 " 15	4.0	18 5/8	Tr	6	2	1	7	10	38	21	14
109	121	" " medium grade, 15-40% clay	12	16,17, 18	8.3	5 1/4	Tr	4	3	1	12	15	45	13	7
121	134	Bit. sand, medium grade, 15-40% clay	13	19,20, 21	7.4	62	Tr	8	3	3	13	22	27	16	7
134	138	" " good " 10% clay	4	22)											
138	139	Lost core	1	-)	9.9	21 1/4	0.1	13	4	5	24	16	24	6	7
139	143	Bit. sand, good grade, 25% clay	4	23)											
143	147	" " " " 5% "	4	24)											
147	151	" " " "	4	25)	11.9	19 1/4	Tr	2	2	8	35	27	16	5	4
151	155	" " " " slight clay	4	26)											
155	156	Lost core	1	-)	14.7		Tr	4	4	10	41	16	11	10	4
156	160	Bit. sand, good grade	4	27)											
160	164	" " " "	4	28)											
164	168	" " " "	4	29)	14.4	2	Tr	0	6	23	38	14	10	6	2
168	172	" " " "	4	30)											
172	176	" " " "	4	31)	14.4		Tr	0	13	18	36	12	11	8	2
176	180	" " " "	4	32)											
180	184	" " " "	4	33)	15.0		Tr	0	4	27	41	17	7	2	1
184	188	" " " "	4	34)											
188	192	" " " "	4	35)	16.8		Tr	0	5	23	40	19	7	4	2
192	196	" " " "	4	36)											
196	200	" " " "	4	37)	16.4		Tr	1	19	20	37	11	6	4	2
200	204	" " " " 5% clay	4	38)											
204	208	" " " "	4	39)	15.8	3 1/2	Tr	3	2	18	47	15	7	5	3

STEEPBANK AREA

HOLE No. 150

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
208	212	Bit. sand, good grade	4	40)											
212	216	" " " "	4	41)	15.3		Tr	4	25	15	12	4	12	14	14
216	220	" " " " 5% clay	4	42)											
220	223'3"	" " " " 5% "	3.3	43)	14.0		Tr	6	4	2	10	5	16	23	23
223'3"	225	Clay	1-9	-											
	225	End of Hole													

Summary

(0' - 56' = 56' Clay, sand, gravel & boulders)
(56' - 109' = 53' @ 3.1% bitumen & 62.7% clay bands) overburden
109' - 134' = 25' @ 7.8% bitumen & 37.9% clay bands
134' - 223'3" = 89-3 @ 14.37% bitumen & 4.6% clay bands
109' - 223'3" = 114'3" @ 12.95% bitumen & 11.8% clay bands

STEEPBANK AREA

HOLE No. 151

DATE Feb.28-Mar.3 1945 LOCATION LS.4/13,Sec.29/20, Tp.92-9-4 CO-ORDINATES ELEVATION 1072' DEPTH 222' DIP 90° CORE RECOVERY 98.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	38	Overburden, gravel and clay	38	-											
38	42	Clay and trace of bit. sand	4	1											
42	46	Bit. sand, low grade, 50% clay	4	2)											
46	50	" " leached, 50% clay	4	3)											
50	54	" " low grade, some clay	4	4)											
54	58	" " " " slight clay	4	5)	3.7	186¼	Tr	12	6	-	-	7	14	42	18
58	62	" " " " " "	4	6)											
62	66	" " " " 20% clay	4	7)											
66	70	" " " " 30% "	4	8)											
70	74	" " " " 30% "	4	9)											
74	78	" " " " 20% "	4	10)	8.5	32¼	Tr	3	2	-	5	24	16	40	11
78	82	" " " " slight clay	4	11)											
82	86	" " medium grade, " "	4	12)											
86	90	" " " " partly leached	4	13)	11.5	¾	Tr	2	3	-	-	23	-	64	8
90	94	" " " " " "	4	14)											
94	98	" " " " " "	4	15)	10.1	6¼	Tr	2	1	-	8	31	29	21	8
98	102	" " " " " "	4	16)											
102	106	" " " " " "	4	17)	10.7	2¼	Tr	2	1	-	22	35	24	13	5
106	110	" " good "	4	18)											
110	114	" " " "	4	19)	14.3	1½	Tr	-	1	1	-	49	3	41	4
114	118	" " " " 15% clay	4	20)											
118	122	" " " " partly leached	4	21)	13.0	8¼	0.0	1	1	1	-	38	2	54	5
122	126	" " " "	4	22)											
126	130	" " " "	4	23)	14.7		Tr	-	1	-	3	27	28	33	8
130	132	Lost core	2	-											
132	136	Bit. sand, good grade	4	24)											
136	140	" " " "	4	25)	15.0		Tr	-	-	1	-	43	8	45	3
140	144	" " " "	4	26)											
144	148	" " " " 15% clay	4	27)	13.3	11¼	Tr	-	-	-	48	27	11	10	2
148	152	" " " "	4	28)											
152	156	" " " "	4	29)	15.3		Tr	-	-	-	46	30	3	18	3

STEEPBANK AREA

HOLE No. 151

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
156	160	Bit. sand, good grade	4	30)											
160	164	" " " "	4	31)	16.4		Tr	-	-	3	-	74	8	13	2
164	168	" " " "	4	32)											
168	172	" " " "	4	33)	16.3		Tr	-	-	3	-	73	16	6	2
172	176	" " " "	4	34)											
176	180	" " " " 30% clay	4	35)	16.6	2	Tr	-	-	-	56	28	3	11	2
180	184	" " " " 50% "	4	36)											
184	188	Clay and 40% bit. sand	4	37)											
188	192	" " 40% " "	4	38)	4.8	126	Tr	6	18	-	37	18	-	17	4
192	196	Bit. sand, good grade, slight clay	4	39)											
196	200	" " medium grade	4	40)											
200	201	Lost core	1	-)	7.8		0.0	27	52	-	16	1	2	2	2
201	205	Bit. sand, coarse, low grade	4	41)											
205	209	" " " " "	4	42)											
209	215	" " " " "	6	43)	8.0		0.0	16	56	7	-	11	3	3	5
215	220	Hard clay	5	-											
220	222	Limestone	2	-											
	222	End of Hole													

Summary

0' - 70' = 70' Overburden and low grade sand

70' - 82' = 12' @ 8.5% bitumen & 2% clay bands

82' - 180' = 98' @ 13.95% bitumen & 2.5% clay bands

180' - 215' = 35' @ 6.5% bitumen & 30% clay bands

70' - 180' = 110' @ 13.3% bitumen & 4.7% clay bands

STEEPBANK AREA

HOLE No. 152

DATE March 18-19 1945 LOCATION LS.8, Sec.19, Tp.92-9-4 CO-ORDINATES ELEVATION 973' DEPTH 197' DIP 90° CORE RECOVERY 98.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	55	Overburden, clay	55	1-7											
55	59	Clay with small amount of bit. sand	4	8)											
59	63	Bit. sand, low grade	4	9)	7.3	43	Tr	4	3	1	2	4	5	64	17
63	67	" " " " slight clay	4	10)											
67	71	" " " "	4	11)											
71	75	" " " "	4	12)	10.6	11¼	Tr	1	1	-	-	15	22	51	9
75	79	" " " "	4	13)											
79	80	Lost core	1	-)	12.1	5¾	Tr	1	1	-	13	27	15	33	9
80	84	Bit. sand, low grade, leached	4	14)											
84	88	" " " " "	4	15)											
88	92	" " " "	4	16)	12.4		Tr	1	1	-	11	20	-	61	6
92	96	" " " "	4	17)											
96	100	" " " " slight clay	4	18)	13.0	2½	Tr	3	2	-	-	37	8	44	5
100	104	" " " " " "	4	19)											
104	108	" " " "	4	20)	13.5	3¾	Tr	2	1	-	15	35	3	41	3
108	109	Lost core	1	-											
109	113	Bit. sand, medium grade	4	21)											
113	117	" " " " slight clay	4	22)	13.9	2½	Tr	-	1	-	-	38	23	34	4
117	121	" " good "	4	23)											
121	125	" " " " " "	4	24)	14.2	3	Tr	2	-	-	10	34	19	29	6
125	129	" " " "	4	25)											
129	133	" " " "	4	26)	15.1		Tr	1	1	-	15	29	1	50	3
133	137	" " " "	4	27)											
137	141	" " " "	4	28)	15.9		Tr	1	-	1	9	41	-	41	6
141	145	" " " "	4	29)											
145	149	" " " " 10% clay	4	30)	12.8	13½	Tr	2	1	1	13	34	20	23	6
149	153	" " " " 20% "	4	31)											
153	157	" " " "	4	32)	12.2	15	Tr	1	1	1	14	38	-	37	5

STEEPBANK AREA

HOLE No. 152

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
157	161	Bit. sand, good grade	4	33)											
161	165	" " " "	4	34)	12.9	8	Tr	3	1	1	17	23	5	45	4
165	169	" " " "	4	35)											
169	173	" " " "	4	36)	15.3		Tr	-	1	4	35	22	1	33	3
173	177	" " " "	4	37)											
177	179'6"	" " " " coarse sand	2-6	38)	14.4	3½	Tr	5	11	11	40	15	-	15	4
179'6"	197	Clay	17-6	-											
	197	End of Hole													

Summary

0' - 55' = 55' Overburden
55' - 67' = 12' @ 7.3% bitumen & 30% clay bands
67' - 179.5 = 112.5' @ 13.4% bitumen & 5.1% clay bands
55' - 179.5 = 124.5 @ 12.8% bitumen & 8.3% clay bands

STEEPBANK AREA

HOLE No. 153

DATE May 24-26 1945 LOCATION LS.10,Sec.8,Tp.92-9-4 CO-ORDINATES ELEVATION 999' DEPTH 151' DIP 90° CORE RECOVERY 98.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	16	Overburden, clay and boulders	16	-											
16	45	Bit. sand, low grade, 30-50% clay	29	1-7)											
45	50	Clay	5	-)		60									
50	54	Bit. sand, low grade, 25% clay	4	8)	3.7	255	0.1	11	4	2	1	7	21	29	25
54	78	" " " " 20-70% clay	24	9-14)											
78	95	Clay	17	-)		204									
95	96	Lost core	1	-)	4.3	209	0.1	11	5	1	2	2	17	37	25
96	107	Clay and rock	11	-)		132									
107	111	Bit. sand, low grade, 40% clay	4	15)											
111	141	Clay	30	-		360									
141	145	Bit. sand, good grade, slight clay	4	16)	6.2	44	Tr	36	27	5	7	2	2	9	11
145	149	" " " " coarse sand	4	17)											
149	151	Limestone	2	-											
	151	End of Hole													

Summary

0' - 16' = 16' Overburden
16' - 149' = 133' @ 2.23% bitumen & 7% clay bands

STEEPBANK AREA

HOLE No. 154

DATE June 13-16 1945 LOCATION LS.1,Sec.30,Tp.92-9-4 Hammerstein Grant CO-ORDINATES ELEVATION 1067' DEPTH 230' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	37	Overburden, clay, gravel, boulders	37	-											
37	41	Bit. sand, low grade	4	1)											
41	45	" " " " 50% clay	4	2)											
45	49	" " " " 5% "	4	3)	2.6	13 2/3	0.1	12	6	1	3	7	23	33	14
49	53	" " " slight clay	4	4)											
53	57	" " medium grade	4	5)											
57	61	" " " " 5% clay	4	6)	12.3	4 3/4	Tr	8	30	-	48	1	10	1	1
61	65	" " " " slight clay	4	7)											
65	69	" " " " 10% clay	4	8)	12.4	9	Tr	3	1	1	3	17	44	25	6
69	73	" " " " slight clay	4	9)											
73	77	" " " " 5% clay	4	10)	13.1	6	Tr	5	1	1	5	8	18	53	9
77	81	Lost core	4	-											
81	85	Bit. sand, medium grade, 10% clay	4	11)											
85	89	" " low " 5% "	4	12)	12.3	7 1/8	Tr	7	2	1	3	16	24	36	11
89	93	" " medium " 20% "	4	13)											
93	97	" " " "	4	14)	12.7	9 1/2	Tr	3	1	1	7	23	37	21	7
97	101	" " " "	4	15)											
101	102	Lost core	1	-)											
102	106	Bit. sand, medium grade	4	16)	12.0	25 3/4	Tr	2	1	-	9	12	27	42	8
106	110	" " " " 15% clay	4	17)											
110	114	" " " " 5% "	4	18)											
114	118	" " " " some clay	4	19)	13.1	5 1/4	Tr	2	1	1	10	25	35	20	6
118	119	Lost core	1	-											
119	123	Bit. sand, medium grade	4	20)											
123	124	Lost core	1	-)											
124	128	Bit. sand, medium grade, 30% clay	4	21)	11.5	13 1/2	Tr	1	1	1	11	16	22	39	8
128	132	" " " "	4	22)											
132	136	" " good "	4	23)											
136	140	" " " "	4	24)	15.3		Tr	1	-	2	21	32	26	13	4
140	144	" " " " 10% "	4	25)											
144	148	" " " "	4	26)	15.1	3 1/2	Tr	-	1	6	46	19	9	16	3

STEEPBANK AREA

HOLE No. 154

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
148	152	Bit. sand, good grade	4	27)											
152	156	" " " "	4	28)	15.2		Tr	-	1	18	55	14	5	4	2
156	160	" " " "	4	29)											
160	164	" " " "	4	30)	16.1		Tr	1	18	22	42	8	5	2	2
164	168	" " " "	4	31)											
168	172	" " " "	4	32)	15.3		Tr	3	14	43	24	5	5	3	3
172	176	" " " "	4	33)											
176	180	" " " "	4	34)	16.1		Tr	1	40	30	18	3	2	4	2
180	184	" " " "	4	35)											
184	188	" " " "	4	36)	15.6		Tr	3	35	28	21	4	1	6	2
188	192	" " " "	4	37)											
192	196	" " " "	4	38)	16.7		Tr	4	4	12	6	17	26	24	7
196	200	" " " "	4	39)											
200	204	" " " "	4	40)	12.7	10½	Tr	10	8	13	12	10	12	19	15
204	208	" " medium grade, slight clay	4	41)		stone									
208	209	Lost core	1	-											
209	213	Fine compacted sand with traces of bitumen	4	42)											
213	215	" " " " " " "	2	43)	trace										
215	223	" leached barren sand	8	-											
223	224	Lost core	1	-											
224	230	Leached barren sand with particles of limestone	6	-											
	230	End of Hole													

Summary

0' - 53' = 53' Overburden & very low grade sand

53' - 208' = 155' @ 13.7% bitumen & 5.1% clay bands; 2.5% clay bands under 6" thickness

HORSE RIVER AREA

HORSE RIVER RESERVE AREA

HOLE No. 1

DATE Jan. 13-17 1944 LOCATION CO-ORDINATES ELEVATION 832' DEPTH 68' DIP 90° CORE RECOVERY 79.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	13'3"	Overburden - boulders	13'3"	-											
13'3"	18'0"	Bit. sand, good grade	4'9"	1	15.5		0.5	-	-	-	4	15	1	73	5
18'0"	22'0"	" " " "	4'0"	2	15.7		1.2	-	-	-	3	13	1	76	6
22'0"	24'0"	Lost core (probably good grade)	2'0"	-											
24'0"	27'0"	Bit. sand, good grade	3'0"	3	17.3		0.4	1	-	-	5	16	4	67	7
27'0"	29'0"	Lost core (probably good grade)	2'0"	-											
29'0"	33'0"	Bit. sand, good grade	4'0"	4	17.1		0.3	-	-	-	8	21	1	62	6
33'0"	36'0"	Lost core (probably good grade)	3'0"	-											
36'0"	39'6"	Bit. sand, good grade	3'6"	5	18.8 *		0.2	-	-	-	19	28	5	43	5
39'6"	41'6"	Clay	2'0"	-											
41'6"	42'6"	Thick tar; pebbles and lignite inclusions	1'0"	6	52.9		5.5	19	-	-	7	11	1	33	24
42'6"	43'0"	Lost core	6"	-											
43'0"	49'0"	Clay	6'0"	-											
49'0"	53'0"	Lost core	4'0"	-											
53'0"	58'0"	Clay	5'0"	7	Tr		6.8		8	16	15	5	-	18	37
58'0"	62'0"	Clay	4'0"	8	Tr		7.1		8	18	13	5	1	18	36
62'0"	66'6"	Clay with altered limestone	4'6"	-											
66'6"	68'0"	Limestone	1'6"												
	68'0"	End Hole													

* Believe this is contamination.

Summary

26.25' at 16.0% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 2

DATE Jan. 18-19 194 4 LOCATION ..... CO-ORDINATES ..... ELEVATION 825' DEPTH 65' DIP 90° CORE RECOVERY 90.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	3'6"	Casing (bit. sand - no core)	3'6"												
3'6"	8'0"	Bit. sand; good grade	4'6"	1	15.7		0.3	-	-	-	4	14	3	73	4
8'0"	11'0"	" " " "	3'0"	2	16.3		0.2	-	-	-	5	15	9	66	4
11'0"	14'6"	" " " "	3'6"	3	16.2		0.3	-	-	-	5	17	-	72	4
14'6"	16'0"	Lost core (probably good)	1'6"	-	16.2										
16'0"	20'0"	Bit. sand, good grade	4'0"	4	16.2		0.3	-	-	-	4	15	4	71	4
20'0"	24'0"	" " " "	4'0"	5	16.1		0.3	-	-	-	5	16	3	70	4
24'0"	28'0"	" " " "	4'0"	6	16.3		0.2	-	-	-	13	25	2	54	4
28'0"	32'0"	" " " "	4'0"	7	16.9		0.7	1	-	-	25	26	7	37	3
32'0"	36'9"	" " " "	4'9"	8	17.2		0.3	-	-	-	24	29	5	37	5
36'9"	40'0"	Lost core (probably bit. sand)	3'3"	-											
40'0"	51'0"	Clay, light colored	11'0"	-											
51'0"	55'0"	Clay, darker colored	4'0"												
55'0"	56'0"	Lost core	1'0"	-											
56'0"	61'0"	Clay, black	5'0"	9	Tr		8.4	-	7	17	13	6	-	18	37
61'0"	63'6"	Clay, bluish green residual	2'6"												
63'6"	65'0"	Limestone	1'6"												
	65'0"	End Hole													

Summary

33.25' at 16.3% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 3

DATE Jan. 21 - 22 1944 LOCATION CO-ORDINATES ELEVATION 825' DEPTH 58' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	4'0"	Overburden	4'0"												
4'0"	8'0"	Bit. sand, good grade	4'0"	1	16.3		1.7	-	-	-	7	16	3	70	3
8'0"	12'0"	" " " "	4'0"	2	16.7		1.6	-	-	-	7	14	12	63	4
12'0"	16'0"	" " " "	4'0"	3	16.0		1.7	-	-	-	7	15	3	71	3
16'0"	20'0"	" " " "	4'0"	4	16.1		1.8	-	-	-	6	15	2	72	3
20'0"	24'0"	" " " "	4'0"	5	15.9		1.7	-	-	-	5	12	3	74	3
24'0"	28'0"	" " " "	4'0"	6	15.7		1.5	1	-	-	6	15	12	62	4
28'0"	32'0"	" " " "	4'0"	7	17.5		1.2	-	-	-	27	22	4	44	2
32'0"	36'0"	" " " "	4'0"	8	18.1		1.5	-	-	-	29	24	2	41	3
36'0"	40'2"	" " " "	4'2"	9	18.3		1.3	-	-	-	23	25	2	46	4
40'2"	48'0"	Clay, light coloured	7'10"												
48'0"	53'0"	Clay, darker coloured	5'0"												
53'0"	53'5"	Clay, ironstone band	5"												
53'5"	56'4"	Clay, black	2'11"												
56'4"	56'6"	Clay, ironstone band	2"												
56'6"	57'3"	Clay, black	9"												
57'3"	58'0"	Limestone	9"												
	58'0"	End Hole													

Summary

36.16' at 16.7% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 4

DATE Jan. 24-26 1944 LOCATION CO-ORDINATES ELEVATION 836 DEPTH 75 DIP 90° CORE RECOVERY 90.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	6'6"	Overburden - boulders	6'6"	-											
6'6"	8'0"	Lost core - bit. sand	1'6"												
8'0"	12'0"	Bit. sand, good grade	4'0"	1	17.5		1.2	-	-	-	6	16	3	70	3
12'0"	16'0"	" " " "	4'0"	2	16.6		1.4	-	-	-	4	11	16	64	5
16'0"	20'0"	" " " "	4'0"	3	15.8		0.6	-	-	-	3	11	16	63	5
20'0"	24'0"	" " " "	4'0"	4	16.1		1.4	-	-	-	4	11	10	69	5
24'0"	28'0"	" " " "	4'0"	5	16.1		1.4	-	-	-	5	15	2	71	5
28'0"	32'0"	" " " "	4'0"	6	16.7		1.2	-	-	-	7	18	12	58	4
32'0"	36'0"	" " " "	4'0"	7	16.8		1.6	-	-	-	9	23	8	56	3
36'0"	40'0"	" " " "	4'0"	8	17.2		1.5	-	-	-	17	3	4	48	4
40'0"	45'0"	" " " "	5'0"	9	17.3		0.9	-	-	-	37	26	6	27	3
45'0"	56'0"	Clay, dark grayish	11'0"												
56'0"	56'5"	Clay, ironstone band	5"												
56'5"	58'0"	Clay, dark grayish	1'7"												
58'0"	61'0"	Lost core	3'0"	-											
61'0"	63'0"	Clay, black	2'0"												
63'0"	65'0"	Lost core	2'0"	-											
65'0"	67'0"	Clay, black	2'0"	-											
67'0"	70'0"	Clay, light grayish	3'0"	-											
70'0"	75'0"	Limestone, altered and crumbly	5'0"												
	75'0"	End Hole													

Summary

37.0' at 16.7% - Bitumen.

HORSE RIVER RESERVE AREA

HOLE No. 5

DATE Jan. 28-29 1944 LOCATION CO-ORDINATES ELEVATION 838 DEPTH 54 DIP 90° CORE RECOVERY 98%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	3'0"	Overburden, boulders	3'0"												
3'0"	8'0"	Bit. sand, good grade	5'0"	1	16.3		0.3	-	-	-	8	29	17	42	2
8'0"	12'0"	" " " "	4'0"	2	17.2		0.2	-	-	-	7	14	6	68	3
12'0"	16'0"	" " " "	4'0"	3	16.2		0.3	-	-	-	3	10	13	66	6
16'0"	20'0"	" " " "	4'0"	4	16.7		0.2	-	-	-	6	12	2	74	5
20'0"	24'0"	" " " "	4'0"	5	16.4		0.1	-	-	-	10	19	30	37	4
24'0"	25'0"	Lost core (probably good)	1'0"	-											
25'0"	29'0"	Bit. sand - good grade	4'0"	6	16.4		0.1	-	-	-	11	20	6	57	4
29'0"	33'0"	" " " "	4'0"	7	16.7		0.1	-	-	-	10	26	18	41	5
33'0"	37'0"	" " " "	4'0"	8	17.4		0.2	-	-	-	14	25	2	54	4
37'0"	41'0"	" " " "	4'0"	9	17.4		0.1	-	-	-	17	22	4	51	4
41'0"	45'0"	" " " "	4'0"	10	18.0		0.5	-	-	-	38	23	1	32	5
45'0"	48'9"	" " " "	3'9"	11	17.5		0.8	-	-	-	57	17	1	21	3
48'9"	53'0"	Clay	4'3"												
53'0"	54'0"	Black sandstone	1'0"												
	54'0"	End Hole													

Summary

45.75' at 16.8% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 6

DATE Feb. 1-2 1944 LOCATION CO-ORDINATES ELEVATION 843 DEPTH 81 DIP 90° CORE RECOVERY 95%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	10'0"	Overburden	10'0"	-											
10'0"	14'0"	Bit. sand, good grade	4'0"	1	15.6		0.4	-	-	-	5	16	4	66	7
14'0"	18'0"	" " " "	4'0"	2	15.8		0.2	-	-	-	2	19	41	30	7
18'0"	22'0"	" " " "	4'0"	3	16.7		0.4	-	-	-	14	27	6	37	14
22'0"	26'0"	" " " "	4'0"	4	16.1		0.2	-	-	-	6	21	4	63	6
26'0"	30'0"	" " " "	4'0"	5	16.6		0.2	-	-	-	15	34	3	41	5
30'0"	34'0"	" " " "	4'0"	6	16.8		0.3	-	-	-	20	36	8	31	4
34'0"	38'0"	" " " "	4'0"	7	16.8		0.3	-	-	-	16	35	3	41	4
38'0"	42'0"	" " " "	4'0"	8	13.7		0.3	-	-	-	17	30	5	40	6
42'0"	46'0"	" " " "	4'0"	9	15.8		0.9	-	-	-	52	22	1	20	5
46'0"	50'0"	" " " "	4'0"	10	17.0		0.3	-	-	-	69	14	1	11	3
50'0"	54'0"	" " " "	4'0"	11	17.8		0.3	-	-	3	63	16	-	13	4
54'0"	54'10"	Bit. sand - banded with clay)	10")	12	13.4		0.5	2	38	7	28	7		7	11
54'10"	57'0"	" " - good grade)	2'2")												
57'0"	60'6"	Lost core	3'6"	-											
60'6"	67'6"	Clay, black	7'0"												
67'6"	75'0"	Clay, light grey	7'6"												
75'0"	76'0"	Altered limestone	1'0"												
76'0"	81'0"	Limestone	5'0"												
	81'0"	End Hole													

Summary

47.0' at 16.0% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 7

DATE Feb. 4-5 1944 LOCATION CO-ORDINATES ELEVATION 836 DEPTH 50 DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	13'0"	Overburden	13'0"	-											
13'0"	17'0"	Bit. sand - good grade	4'0"	1	15.7		0.3	-	-	-	3	11	66	13	4
17'0"	21'0"	" " " "	4'0"	2	16.2		0.3	-	-	-	3	18	1	69	8
21'0"	25'0"	" " " "	4'0"	3	15.8		0.2	-	-	-	1	11	68	13	3
25'0"	29'0"	" " " "	4'0"	4	16.0		0.3	-	-	-	5	26	1	54	14
29'0"	33'0"	" " " "	4'0"	5	16.1		0.4	-	-	1	14	19	54	8	3
33'0"	37'0"	" " " "	4'0"	6	16.0		0.3	-	-	-	8	27	11	45	8
37'0"	41'0"	" " " "	4'0"	7	16.6		0.3	-	-	-	19	15	54	7	3
41'0"	43'5"	" " " "	2'5"	8	17.7		0.3	-	-	-	24	34	1	36	4
43'5"	50'0"	Clay	6'7"												
	50'0"	End Hole													

Summary

30.42' at 16.1% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 8

DATE Feb. 8 - 10 1944 LOCATION CO-ORDINATES ELEVATION 827 DEPTH 63 DIP 90° CORE RECOVERY 83.4%

DEPTH FROM	DEPTH TO	* CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	18'0"	Overburden casing	18'0"												
18'0"	19'6"	Bit. sand - somewhat leached	1'6"	1	16.8		0.3	-	-	3	42	18	27	5	5
19'6"	24'0"	Lost core, probably bit. sand	4'6"	-											
24'0"	28'9"	Bit. sand - good grade	4'9"	2	18.1		0.5	-	-	-	48	22	1	23	6
28'9"	31'2"	Clay, black	2'5"												
31'2"	31'4"	Clay, ironstone	2"												
31'4"	31'7"	Clay, black	3"												
31'7"	32'4"	Sandstone, hard, impregnated with bitumen	9"												
32'4"	34'0"	Clay, black	1'8"												
34'0"	36'9"	Lost core, clay	2'9"												
36'9"	38'0"	Sandstone, hard, impregnated with bitumen	1'3"												
38'0"	42'9"	Clay, black	4'9"												
42'9"	43'0"	Clay, ironstone	3"												
43'0"	48'0"	Clay, black	5'0"												
48'0"	49'0"	Clay, ironstone	1'0"												
49'0"	58'0"	Clay, light grey	9'0"												
58'0"	63'0"	Limestone	5'0"												
	63'0"	End Hole													

Summary

10.75' at 17.3% bitumen, assuming 19'6" - 24'0" as good bituminous sand (16.8%)

HORSE RIVER RESERVE AREA

HOLE No. 9

DATE Feb. 15-25 1944 LOCATION CO-ORDINATES ELEVATION 974 DEPTH 127 DIP 90° CORE RECOVERY 89.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	20'6"	Piped through clay)	20'6")												
20'6"	23'0"	Clay (fishtail bit.)) Clearwater	2'6")	Clearwater											
23'0"	48'0"	Clay (diamond drilled)) Series	25'0")	Shale											
48'0"	52'0"	Clay & leached bit. sand)	4'0")												
52'0"	56'0"	Bit. sand, leached, low grade	4'0"	1	3.7		0.3	-	1	1	6	3	1	50	38
56'0"	60'0"	" " " " "	4'0"	2	4.7		0.3	-	1	-	2	2	4	65	26
60'0"	65'0"	" " " " "	5'0"	3	9.4		0.2	-	-	1	1	3	4	72	17
65'0"	70'0"	" " " " "	5'0"	4	8.2		0.1	2	1	-	1	5	36	41	14
70'0"	75'0"	" " medium grade	5'0"	5	13.9		0.1	1	-	-	-	3	27	49	18
75'0"	82'3"	Lost core	7'3"	-											
82'3"	86'0"	Bit. sand, good grade	3'9"	6	13.6		0.3	2	1	-	19	17	33	20	8
86'0"	90'0"	" " " "	4'0"	7	13.9		0.1	2	-	-	21	22	33	14	6
90'0"	94'0"	" " " "	4'0"	8	15.3		0.1	2	-	-	54	16	17	8	4
94'0"	98'0"	" " " "	4'0"	9	13.9		0.1	2	2	-	54	12	15	8	5
98'0"	102'0"	" " " "	4'0"	10	12.5		0.3	1	-	-	5	12	52	23	7
102'0"	106'0"	" " " "	4'0"	11	15.6		0.1	1	-	-	2	12	53	25	7
106'0"	110'0"	" " " "	4'0"	12	15.6		0.2	-	-	-	3	20	49	20	7
110'0"	114'0"	" " " "	4'0"	13	16.0		0.3	1	-	-	2	9	41	30	11
114'0"	118'0"	Clay, light coloured	4'0"												
118'0"	122'0"	Lost core (clay)	4'0"	-											
122'0"	127'0"	Clay, light coloured	5'0"												
	127'0"	End Hole													

Summary

23' at 8.3% - Bitumen
7'3" - Lost core
31'9" at 14.5% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 10

DATE Feb.28-Mar.4 1944 LOCATION CO-ORDINATES ELEVATION 983 DEPTH 213 DIP 90° CORE RECOVERY 90.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	10'0"	Overburden - cased	10'0"	-											
10'0"	14'0"	Clay, black	4'0"												
14'0"	31'0"	Lost core (clay)	17'0"	-											
31'0"	35'0"	Bit. sand and clay	4'0"	1	8.5		0.7	8	9	-	5	3	15	30	30
35'0"	40'0"	" " " "	5'0"	2											
40'0"	45'0"	Clay and bit. sand	5'0"	3											
45'0"	50'0"	" " " " - clay ironstone	5'0"	4	4.8		0.4	11	5	-	1	2	6	26	49
50'0"	55'0"	" " " "	5'0"	5											
55'0"	65'0"	Clay	10'0"	-											
65'0"	70'0"	Clay and bit. sand	5'0"	6	2.9		0.7	-	12	1	5	3	9	23	47
70'0"	75'0"	Bit. sand, low grade	5'0"	7	10.1		0.3	6	4	-	2	2	16	39	30
75'0"	80'0"	" " fair " some clay	5'0"	8	11.2		0.4	4	3	-	1	1	16	44	30
80'0"	85'0"	" " good " " "	5'0"	9	14.3		0.2	4	1	-	1	2	26	44	22
85'0"	90'0"	" " " " 1.5 clay ironstone	5'0"	10	12.1		0.2	9	4	-	2	2	18	35	30
90'0"	92'0"	" " and clay	2'0"	11	9.8		0.1	9	5	-	2	2	17	33	31
92'0"	101'0"	Clay	9'0"												
101'0"	106'0"	Bit. sand and clay	5'0"	12	7.9		0.1	13	8	-	3	3	15	25	32
106'0"	111'0"	" " " "	5'0"	13	6.3		0.1	-	14	-	7	6	24	20	29
111'0"	113'0"	Lost core	2'0"												
113'0"	118'0"	Clay and bit. sand	5'0"	14	4.0		0.1	-	21	-	9	3	12	25	36
118'0"	123'0"	Clay and bit. sand	5'0"	15	3.9		0.4	-	16	-	8	2	12	25	36
123'0"	128'0"	" " " "	5'0"	16	not run, called 4%										
128'0"	133'0"	" " " "	5'0"	17	6.8		0.2	14	10	-	7	10	19	13	26
133'0"	138'3"	Bit. sand, good grade	5'3"	18	16.5		0.1	2	1	-	12	20	45	14	4
138'3"	139'0"	Clay, ironstone	9"	-											
139'0"	144'0"	Clay and bit. sand	5'0"	19	6.6		0.3	-	13	3	3	4	8	22	46
144'0"	149'0"	" " " "	5'0"	20	6.5		0.1	-	9	-	4	4	17	27	38
149'0"	154'0"	Bit. sand, fair grade, clay partings	5'0"	21	6.9		0.1	-	10	3	4	3	17	29	33

HORSE RIVER RESERVE AREA

HOLE No. 10

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
154'0"	159'0"	Bit. sand, fair grade, clay partings	5'0"	22	9.7		0.2	7	5	-	3	5	20	31	29
159'0"	164'0"	" " " " " "	5'0"	23	12.5		0.1	3	3	-	2	5	24	37	26
164'0"	169'0"	" " " " " "	5'0"	24	11.8		0.1	4	3	-	4	14	31	21	23
169'0"	174'0"	" " " " " "	5'0"	25	10.8		Tr	6	6	-	9	15	25	19	19
174'0"	177'0"	Bit. sand and clay	3'0"	26	10.9		0.1	5	8	2	24	22	19	10	10
177'0"	181'0"	Black clay with traces of bit. sand	4'0"												
181'0"	208'0"	Black clay	27'0"												
208'0"	211'0"	Altered limestone	3'0"												
211'0"	213'0"	Limestone	2'0"												
	213'0"	End Hole													

Summary

From 70'0" - 92'0" - 22' at 11.7% =Bitumen
92'0" - 101'0" - 9' clay
101'0" - 154'0" - 53' at 6.8% =Bitumen
154'0" - 177'0" - 23' at 11.2% = Bitumen.

HORSE RIVER RESERVE AREA

HOLE No. 11

DATE Mar. 7-11 1944 LOCATION CO-ORDINATES ELEVATION 1001 DEPTH 225 DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	20'0"	Casing (clay))	20'0"												
20'0"	34'0"	Fish tailed (clay)) Clearwater series	14'0"												
34'0"	39'0"	Clay)	5'0"												
39'0"	43'0"	Bit. sand, low grade - some clay	4'0")	1											
43'0"	47'0"	" " " " " "	4'0")	2											
47'0"	51'0"	" " " " " "	4'0")	3											
51'0"	55'0"	" " " " " "	4'0")	4											
55'0"	59'0"	" " " " " "	4'0")	5											
		6" clay ironstone)			Low grade, leached - not assayed.										
59'0"	63'0"	Bit. sand, low grade - some clay	4'0")	6											
63'0"	67'0"	" " " " " "	4'0")	7											
67'0"	71'0"	" " " " " "	4'0")	8											
71'0"	75'0"	" " " " " "	4'0")	9											
75'0"	79'0"	" " " " " "	4'0")	10											
		Note: The clay in the above 40 feet of bit. sand is in particles disseminated through the sand rather than in bands of clay.													
79'0"	83'0"	Bit. sand, low grade	4'0"	11	Low grade, leached - not assayed.										
83'0"	87'0"	" " " "	4'0"	12	6.7		0.0	3	1	-	1	2	34	14	18
87'0"	91'0"	" " medium grade	4'0"	13	9.3		0.1	3	1	-	-	1	28	46	21
91'0"	94'0"	" " " "	3'0"	14	10.7		0.1	5	-	-	-	1	28	46	17
94'0"	98'0"	" " " "	4'0"	15	10.9		0.1	3	-	-	-	2	42	38	13
98'0"	102'0"	" " " "	4'0"	16	11.3		0.1	3	-	-	-	3	39	42	12
102'0"	106'0"	" " good "	4'0"	17	13.1		0.1	2	-	-	-	3	38	45	12
106'0"	110'0"	" " " "	4'0"	18	13.8		0.1	1	-	-	-	2	34	46	16

HORSE RIVER RESERVE AREA

HOLE No. 11

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
110'0"	114'0"	Bit. sand, good grade	4'0"	19	14.1		0.1	2	-	-	-	3	40	41	12
114'0"	118'0"	" " " "	4'0"	20	15.6		0.1	1	-	-	4	12	45	29	8
118'0"	122'0"	" " " "	4'0"	21	14.8		0.2	5	-	-	21	16	24	20	12
122'0"	126'0"	" " " "	4'0"	22	15.3		0.1	2	1	2	63	15	9	4	4
126'0"	130'0"	" " " " clay bands	4'0"	23	11.6		0.3	2	8	-	28	9	15	18	19
130'0"	134'0"	" " " " " "	4'0"	24	6.9		0.2	3	14	-	7	5	19	23	29
134'0"	138'0"	" " " " " "	4'0"	25	12.0		0.2	4	6	-	4	8	29	29	20
138'0"	142'0"	" " fair " " "	4'0"	26	7.9		0.6	4	12	-	7	9	27	19	20
142'0"	146'0"	" " " " " "	4'0")	27		Low grade, leached - not assayed									
146'0"	149'0"	" " " " " "	3'0")	28			Clay								
149'0"	153'0"	" " good " some clay	4'0"	29	11.7		0.3	2	8	-	7	11	37	18	16
153'0"	155'0"	" " " " " "	2'0"	30	14.2		0.1	5	15	-	34	11	17	8	7
155'0"	155'9"	Sandstone	9"	-											
155'9"	157'0"	Clay and clay ironstone	1'3")	-											
157'0"	161'0"	Bit. sand, fair grade	4'0")	31											
161'0"	165'0"	" " " "	4'0")	32		Low grade, much clay - not assayed									
165'0"	169'0"	" " " " some clay	4'0")	33											
169'0"	173'0"	" " " " " "	4'0")	34											
173'0"	177'0"	Clay and bit. sand	4'0")	35											
177'0"	181'0"	" " " "	4'0")	36		Low grade, much clay - not assayed									
181'0"	185'0"	" " " "	4'0")	37											
185'0"	189'0"	" " " "	4'0")	38											
189'0"	193'0"	" " " "	4'0")	39											
193'0"	205'0"	Clay	12'0"	-											
205'0"	210'0"	Clay, trace bit. sand	5'0"	-											
210'0"	225'0"	Clay	15'0"	-											
	225'0"	End Hole													

Summary

91'0" - 142'0" - 51'0" at 12% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 12

DATE Mar. 15 - 23 1944 LOCATION CO-ORDINATES ELEVATION 974 DEPTH 220 DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
C	21'0"	Casing - no core	21'0"	-											
21'0"	29'0"	Used fishtail bit.-no core	8'0"	-											
29'0"	47'0"	Clay (clearwater shale)	18'0"	-											
47'0"	51'0"	Bit. sand, low grade	4'0")	1											
51'0"	55'0"	" " " "	4'0")	2											
55'0"	59'0"	" " " "	4'0")	3		Low grade, leached - not assayed									
59'0"	60'0"	Lost core	1'0")	-											
60'0"	64'0"	Bit. sand, low grade; some clay	4'0")	4											
64'0"	68'0"	" " " " " "	4'0")	5											
68'0"	72'0"	" " " "	4'0"	6	7.5		0.0	1	-	-	-	5	48	36	9
72'0"	76'0"	" " " "	4'0"	7	8.7		Tr	2	-	-	2	16	50	22	7
76'0"	80'0"	" " " "	4'0"	8	9.8		Tr	3	1	-	4	16	47	21	7
80'0"	84'0"	" " medium grade	4'0"	9	14.3		Tr	1	-	-	6	28	44	14	7
84'0"	88'0"	" " good "	4'0"	10	15.6		0.0	1	-	-	6	27	42	15	7
88'0"	92'0"	" " " "	4'0"	11	15.7		0.0	1	-	-	11	35	36	11	4
92'0"	96'0"	" " " "	4'0"	12	16.8		Tr	1	-	-	21	37	26	9	6
96'0"	101'6"	" " " "	5'6"	13	16.7		Tr	1	-	2	46	23	15	7	5
101'6"	106'6"	Clay	5'0"	-											
106'6"	111'0"	Bit. sand, good grade	4'6"	14	16.2		Tr	2	3	-	10	12	35	25	12
111'0"	115'0"	" " " "	4'0"	15	16.8		Tr	1	1	-	2	8	50	27	10
115'0"	119'0"	" " " "	4'0"	16	14.6		Tr	3	1	-	-	9	43	30	12
119'0"	123'0"	" " " "	4'0"	17	15.0		Tr	1	-	-	-	9	42	32	14
123'0"	127'0"	" " medium grade	4'0"	18	10.6		Tr	4	1	-	1	10	39	28	16
127'0"	131'0"	" " " "	4'0"	19	13.0		Tr	2	-	-	-	8	46	28	14
131'0"	135'0"	" " low grade, some clay	4'0")	20											
135'0"	139'0"	" " " " " "	4'0")	21											
139'0"	143'0"	" " " " " "	4'0")	22		Low grade - not assayed									
143'0"	147'0"	" " " " " "	4'0")	23											
147'0"	151'0"	Clay and bit. sand	4'0")	24											
151'0"	151'6"	Clay, ironstone	6")	-											

HORSE RIVER RESERVE AREA

HOLE No. 12

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151'6"	155'0"	Clay and bit. sand	3'6")	25											
155'0"	159'0"	" " " "	4'0")	26											
159'0"	163'0"	" " " "	4'0")	27											
163'0"	167'0"	" " " "	4'0")	28											
167'0"	185'0"	Black clay	18'0"	-											
185'0"	188'0"	Sandstone	3'0"	-											
188'0"	199'0"	Black clay	11'0"	-											
199'0"	201'0"	Carbonaceous material and clay	3'0"	-											
201'0"	207'0"	Gray clay	6'0"	-											
207'0"	210'0"	Bluish green clay	3'0"	-											
210'0"	219'0"	Altered limestone	9'0"	-											
219'0"	220'0"	Limestone	1'0"	-											
	220'0"	End Hole													

Summary

68'0" - 80'0" - 12'0" at 8.6% - Bitumen
80'0" - 101'6" - 21'6" at 15.8% - Bitumen
101'6" - 106'6" - 5'0" - Clay
106'6" - 131'0" - 24'6" at 14.4% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 13

DATE Mar. 25-28 1944 LOCATION CO-ORDINATES ELEVATION 829 DEPTH 49 DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	20'0"	Overburden (casing)	20'0"												
20'0"	24'0"	Bit. sand, good grade	4'0"	1	17.0		Tr	-	-	-	6	27	48	13	6
24'0"	28'0"	" " " "	4'0"	2	16.4		Tr	-	-	-	14	34	37	10	3
28'0"	31'10"	" " " "	3'10"	3	16.9		Tr	-	-	-	31	29	24	11	3
31'10"	40'6"	Black clay	8'8"	-											
40'6"	43'8"	Greenish clay	3'2"	-											
43'8"	44'0"	Limestone	4"	-											
44'0"	49'0"	Limestone and altered limestone	5'0"	-											
	49'0"	End Hole													

Summary

11'10" at 16.7% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 14

DATE Mar. 30 - 31 1944 LOCATION CO-ORDINATES ELEVATION 899' DEPTH 133' DIP 90° CORE RECOVERY 90.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	29'0"	Overburden - cased	29'0"	-											
29'0"	33'0"	Bit. sand, low grade - some clay	4'0"	1	9.6		0.4	3	5	-	31	21	15	11	13
33'0"	37'0"	" " medium grade	4'0"	2	10.5		Tr	1	2	-	32	21	20	12	12
37'0"	41'0"	" " good grade	4'0"	3	13.8		Tr	1	-	-	38	25	20	10	6
41'0"	45'0"	" " " "	4'0"	4	12.0		Tr	-	1	-	25	36	22	9	5
45'0"	47'0"	" " " "	2'0")												
47'0"	51'0"	Lost core	4'0")	5	12.1		0.1	1	1	-	27	23	23	12	11
51'0"	53'0"	Bit. sand, good grade	2'0")												
53'0"	57'0"	" " " "	4'0"	6	15.4		Tr	-	-	-	8	34	44	9	4
57'0"	61'0"	" " " "	4'0"	7	16.8		Tr	-	-	-	8	26	35	19	12
61'0"	63'0"	" " " "	2'0")												
63'0"	64'0"	Lost core	1'0")	8	17.3		0.0	-	-	-	10	36	41	7	4
64'0"	66'0"	Bit. sand, good grade	2'0")												
66'0"	70'0"	" " " "	4'0"	9	17.3		Tr	1	1	-	11	21	43	12	4
70'0"	72'0"	" " " "	2'0")												
72'0"	74'0"	Lost core	2'0")	10	17.1		0.0	-	-	-	4	41	43	8	3
74'0"	76'0"	Bit. sand, good grade	2'0")												
76'0"	80'0"	" " " "	4'0"	11	16.2		0.0	-	-	-	14	42	34	6	3
80'0"	84'0"	" " " "	4'0"	12	16.2		Tr	-	-	-	7	31	46	12	4
84'0"	88'0"	" " " "	4'0"	13	16.6		0.0	-	-	-	10	36	38	12	4
88'0"	92'0"	" " " "	4'0"	14	17.1		0.0	-	-	-	7	30	42	14	6
92'0"	96'0"	" " " "	4'0"	15	17.4		0.0	-	-	-	1	36	36	20	6
96'0"	100'0"	" " " "	4'0"	16	17.4		0.0	-	-	-	8	34	40	11	4
100'0"	103'0"	" " " "	3'0")												
103'0"	104'0"	Lost core	1'0")	17	16.5		Tr	-	-	-	12	40	28	14	6
104'0"	105'0"	Bit. sand, good grade	1'0")												
105'0"	109'0"	" " " "	4'0"	18	15.3		Tr	-	-	-	16	23	33	18	8
109'0"	112'6"	" " " "	3'6"	19	16.5		Tr	-	-	-	62	17	11	4	3
112'6"	116'6"	Clay, black	4'0"	-											
116'6"	118'0"	Lost core	1'6"	-											

HORSE RIVER RESERVE AREA

HOLE No. 14

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
118'0"	121'0"	Clay, black	3'0"												
121'0"	125'0"	Clay, grayish	4'0"												
125'0"	130'0"	Clay, greenish	5'0"												
130'0"	133'0"	Altered limestone and limestone	3'0"												
	133'0"	End Hole													

Summary

29'0" - 53'0" - 24' at 11.7% = Bitumen
53'0" - 112'6" - 59'6" at 16.5% = Bitumen
or
29'0" - 112'6" - 83'6" at 15.1% = Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 15

DATE April 3-5 1944 LOCATION CO-ORDINATES ELEVATION 869' DEPTH 83' DIP 90° CORE RECOVERY 96½%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	38'0"	Overburden (cased)	38'0"	-											
38'0"	41'0"	No core (Bit. sand assumed)	3'0"	-											
41'0"	44'0"	Bit. sand	3'0"	1	16.2		Tr	-	-	-	5	26	50	14	5
44'0"	48'0"	" "	4'0"	2	16.4		Tr	-	-	-	7	31	36	12	4
48'0"	52'0"	" "	4'0"	3	16.3		0.0	-	-	-	5	27	49	13	5
52'0"	56'0"	" "	4'0"	4	16.1		0.0	-	-	-	6	31	44	15	4
56'0"	60'0"	" "	4'0"	5	16.2		0.0	-	-	-	4	29	45	15	4
60'0"	64'0"	" "	4'0"	6	16.3		Tr	-	-	-	7	33	36	18	5
64'0"	68'3"	" "	4'3"	7	16.7		Tr	-	-	-	25	33	25	12	4
68'3"	74'6"	Black clay	6'3"												
74'6"	75'3"	Limestone	0'9"												
75'3"	83'0"	Clay - grayish to greenish	8'0"												
	83'0"	End of Hole													

Summary

27.3' at 16.3% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 16

DATE April 7 - 8 1944 LOCATION CO-ORDINATES ELEVATION 846' DEPTH 54' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FCOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	14'0"	Overburden (cased)		-											
14'0"	14'6"	Boulders		-											
14'6"	18'0"	Bit. Sand	3'6"	1	16.2		Tr	-	-	-	15	32	38	11	3
18'0"	22'0"	" "	4'0"	2	15.7		Tr	-	-	-	12	29	39	14	5
22'0"	26'0"	" "	4'0"	3	16.6		0.0	-	-	-	14	35	36	11	3
26'0"	30'0"	" "	4'0"	4	16.5		Tr	-	-	-	12	24	42	16	4
30'0"	34'0"	" "	4'0"	5	16.9		Tr	1	-	-	21	32	34	8	4
34'0"	38'0"	" "	4'0"	6	15.7		Tr	1	1	-	15	31	34	11	7
38'0"	42'0"	" "	4'0"	7	16.9		Tr	-	-	-	19	34	31	7	6
42'0"	44'0"	" "	2'0"	8	17.4		Tr	-	-	-	33	38	20	4	3
44'0"	54'0"	Black clay													
	54'0"	End of Hole													

Summary

29.6' at 16.4% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 17

DATE April 12-21 1944 LOCATION CO-ORDINATES ELEVATION 1112' DEPTH 328' DIP 90° CORE RECOVERY 93.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	113'0"	Overburden													
113'0"	125'0"	Bit. sand - low grade													
125'0"	133'6"	Black clay													
133'6"	146'6"	Lost core													
146'6"	147'4"	Clay													
147'4"	152'0"	Bit. sand	4'8"	4	1.3		0.1	-	-	-	11	28	40	10	8
152'0"	156'0"	" "	4'0"	5	5.0		0.1	2	-	-	7	28	39	19	4
156'0"	160'0"	" "	4'0"	6	9.1		Tr	3	1	-	6	28	38	19	5
160'0"	164'0"	" "	4'0"	7	8.6		0.1	1	1	-	5	32	43	14	5
164'0"	168'0"	" "	4'0"	8	13.3		Tr	1	-	-	7	34	42	12	3
168'0"	172'0"	" " bands of clay	4'0"	9	12.4		0.1	3	2	-	13	33	2	36	10
172'0"	176'0"	" " some clay	4'0"	10	7.5		0.1	3	-	-	11	27	17	26	14
176'0"	180'0"	" " " "	4'0"	11	7.5		0.2	4	5	-	3	10	26	28	23
180'0"	184'0"	" "	4'0"	12	4.4		0.1	8	6	-	3	7	22	28	25
184'0"	188'0"	" " " "	4'0"	13	4.1		0.4	-	10	-	3	7	13	32	32
188'0"	192'0"	" "	4'0"	14	4.2		0.1	-	1	-	4	7	23	28	34
192'0"	196'0"	" "	4'0"	15	4.4		0.3	-	11	-	6	7	15	31	30
196'0"	200'0"	" "	4'0"	16	4.5		0.2	-	9	-	7	7	15	31	30
200'0"	204'0"	" "	4'0"	17	5.6		0.1	-	10	-	6	5	7	43	28
204'0"	208'0"	" "	4'0"	18	4.4		0.4	-	14	-	7	6	11	31	30
208'0"	212'0"	" "	4'0"	19	9.0		0.1	9	4	-	2	5	14	53	21
212'0"	216'0"	" "	4'0"	20	8.7		0.2	14	3	-	2	5	3	60	17
216'0"	220'0"	" "	4'0"	21	9.6		0.3	8	4	-	1	3	10	46	27
220'0"	224'0"	" "	4'0"	22	11.8		0.1	8	3	-	1	5	1	62	18
224'0"	228'0"	" "	4'0"	23	10.2		0.1	6	3	-	1	5	4	58	21
228'0"	232'0"	" "	4'0"	24	10.3		0.1	6	2	-	1	4	3	61	21
232'0"	236'0"	" "	4'0"	25	8.5		0.1	5	3	-	2	8	1	58	21
236'0"	240'0"	" "	4'0"	26	8.9		0.1	3	1	-	1	14	44	24	12
240'0"	244'0"	" "	4'0"	27	12.0		0.1	5	2	-	3	12	4	61	13

HORSE RIVER RESERVE AREA

HOLE No. 17

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
244'0"	248'0"	Bit. sand	4'0"	28	14.6		0.1	4	1	-	6	18	40	23	8
248'0"	252'0"	" "	4'0"	29	12.7		0.1	7	2	-	11	23	1	42	12
252'0"	256'0"	" "	4'0"	30	15.5		0.1	2	-	-	8	17	45	18	8
256'0"	258'0"	Lost core	2'0"	-											
258'0"	262'0"	Bit. sand	4'0"	31	13.4		0.1	3	1	-	23	23	31	11	7
262'0"	266'0"	" "	4'0"	32	12.6		Tr	2	2	2	35	20	9	17	11
266'0"	270'0"	" " plus clay	4'0"	33	2.2		0.4	-	17	2	25	12	3	17	23
270'0"	274'0"	" "	4'0"	34	14.2		Tr	2	2	-	25	21	9	32	8
274'0"	278'0"	" " " "	4'0"	35	10.6		0.2	7	4	-	14	16	25	18	17
278'0"	282'0"	Clay with some bit. sand	4'0"	36	2.2		0.4	-	14	-	11	10	3	26	35
282'0"	286'0"	Bit. sand, some clay	4'0"	37	3.8		0.2	-	11	1	8	6	2	30	40
286'0"	290'8"	" " " "	4'8"	38	2.8		0.2	-	10	-	6	8	9	27	39
290'8"	317'0"	Clay, ironstone, etc.		-											
317'0"	322'0"	Coarse sand impregnated with bitumen	5'0"	39	13.1		Tr	2	46	12	23	3	-	8	5
322'0"	323'0"	Lost core	1'0"												
323'0"	327'8"	Blue clay	4'8"												
327'8"	328'0"	Limestone	0'4"												
	328'0"	End of Hole													

Summary

16' at 10.8% = Bitumen
36' at 5.2% = "
68' at 10.6% = "
or
120' at 9.0% = Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 18

DATE April 24 - May 10, 1944 LOCATION CO-ORDINATES ELEVATION 1116' DEPTH 313' DIP 90° CORE RECOVERY 94.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	163'0"	Overburden, clay and gravel		1 & 2											
163'0"	167'0"	Bit. sand - leached	4'0"	3	2.3		0.1	-	2	3	38	25	3	22	6
167'0"	169'0"	" " ")	2'0")												
169'0"	171'0"	Lost core)	2'0")	4	2.7		0.3	-	7	-	32	11	7	12	30
171'0"	173'0"	Bit. sand - leached)	2'0")												
173'0"	177'0"	Bit. sand, low grade with clay	4'0")	5											
177'0"	181'0"	" " " " " "	4'0")	6											
181'0"	183'0"	" " " " " "	2'0")												
183'0"	186'0"	Lost core	3'0")	7	2.4		0.4	-	11	-	8	5	6	30	39
186'0"	188'0"	Bit. sand, low grade with clay	2'0")												
188'0"	189'0"	" " " " " "	1'0")												
189'0"	193'0"	Lost core	4'0")	8											
193'0"	196'0"	Bit. sand, low grade with clay	3'0")												
196'0"	200'0"	" " " "	4'0")	9											
200'0"	204'0"	" " " "	4'0")	10	2.8		0.3	-	10	-	7	4	2	40	34
204'0"	208'0"	" " medium grade	4'0")	11											
208'0"	212'0"	" " " "	4'0")	12											
212'0"	214'0"	" " low "	2'0")												
214'0"	215'0"	Lost core	1'0")	13	2.4		0.4	-	11	-	7	8	15	27	31
215'0"	217'0"	Bit. sand, low grade	2'0")												
217'0"	219'0"	" " " "	2'0")												
219'0"	220'0"	Lost core	1'0")	14											
220'0"	222'0"	Bit. sand, low grade	2'0")												
222'0"	226'0"	" " medium grade	4'0")	15											
226'0"	230'0"	" " " "	4'0")	16	3.1		0.1	-	9	-	8	7	30	20	24
230'0"	234'0"	" " " "	4'0")	17											
234'0"	238'0"	" " " "	4'0"	18	6.3		Tr	-	5	-	4	9	18	41	21
238'0"	242'0"	" " " "	4'0"	19	5.5		Tr	-	-	-	7	12	29	30	19
242'0"	246'0"	" " " "	4'0"	20	8.1		Tr	4	3	3	-	14	39	18	16

HORSE RIVER RESERVE AREA

HOLE No. 18

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
246'0"	250'0"	Bit. sand, good grade	4'0"	21	9.2		0.1	7	4	-	2	20	10	38	17
250'0"	254'0"	" " medium grade	4'0"	22	5.0		0.3	-	9	-	8	17	-	43	20
254'0"	258'0"	" " " " leached	4'0"	23	8.9		Tr	2	3	-	-	16	3	64	10
258'0"	262'0"	" " " " "	4'0"	24	9.3		0.1	1	1	-	3	16	28	41	7
262'0"	266'0"	" " " "	4'0"	25	12.8		0.1	3	1	-	2	20	18	47	7
266'0"	270'0"	" " good "	4'0"	26	12.5		0.1	4	3	-	29	21	15	19	8
270'0"	274'0"	" " " "	4'0")	27											
274'0"	278'0"	" " " "	4'0")	28	14.4		Tr	2	6	-	-	51	29	6	4
278'0"	282'0"	" " " "	4'0")	29											
282'0"	286'0"	" " " "	4'0"	30	13.3		Tr	3	3	-	23	29	10	25	6
286'0"	290'0"	" " " "	4'0"	31	15.0		Tr	1	-	-	45	22	-	26	5
290'0"	294'0"	" " " "	4'0"	32	15.0		Tr	1	19	-	-	39	25	11	4
294'0"	298'0"	" " " "	4'0"	33	16.0		Tr	5	17	-	-	19	7	43	7
298'0"	302'0"	" " " "	4'0"	34	15.0		Tr	1	1	-	-	26	49	15	7
302'0"	306'0"	" " " "	4'0"	35	16.9		Tr	-	2	-	-	18	41	27	10
306'0"	309'0"	" " " "	3'0"	36	16.7		Tr	-	9	-	21	24	-	39	6
309'0"	313'0"	Clay	4'0"	-	-		-	-	-	-	-	-	-	-	-
	313'0"	End of Hole													

Summary

0' - 163' = 163' Overburden
163' - 234' = 71' 2.6% Bitumen
234'0" - 262' = 28' - 7.47% Bitumen) 75', 11.8% Bitumen
262' - 309' = 47' 14.4% Bitumen)
163' - 309' = 146' - 7.4% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 19

DATE Apr.24-May 1 1944 LOCATION CO-ORDINATES ELEVATION 1024' DEPTH 262' DIP 90° CORE RECOVERY 97.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	92'0"	Overburden (sand, gravel and clay with traces of low grade bit. sand)													
92'0"	96'0"	Clay with traces of bit. sand	4'0"	8	2.1		.9	-	17	2	7	4	14	21	34
96'0"	100'0"	Bit. sand, low grade	4'0"	9	4.5		.1	-	10	1	4	7	28	27	23
100'0"	104'0"	" " " "	4'0"	10	6.1		.1	-	8	-	3	5	10	45	28
104'0"	108'0"	" " " "	4'0"	11	6.1		.1	-	9	-	4	5	22	30	29
108'0"	112'0"	" " " "	4'0"	12	6.4		.2	-	9	-	4	4	10	39	32
112'0"	116'0"	" " " "	4'0"	13	5.0		.2	-	14	1	6	5	5	38	29
116'0"	120'0"	" " medium "	4'0"	14	6.7		.1	4	4	-	-	6	13	50	22
120'0"	124'0"	" " " "	4'0"	15	8.3		.1	6	4	-	-	11	15	48	15
124'0"	128'0"	Bit. sand, good grade, some clay	4'0"	16	14.0		.1	5	-	-	-	18	47	20	9
128'0"	132'0"	" " " " " "	4'0"	17	8.9		.2	8	3	-	2	8	4	49	24
132'0"	136'0"	" " medium " leached	4'0"	18	8.8		.1	4	4	-	1	8	3	56	22
136'0"	140'0"	" " good " some clay	4'0"	19	11.4		.2	5	3	-	3	14	2	58	14
140'0"	144'0"	" " " " " "	4'0"	20	5.2		.1	-	10	-	10	15	20	22	22
144'0"	148'0"	" " medium " " "	4'0"	21	6.4		.1	5	4	-	4	11	7	42	24
148'0"	152'0"	" " " " " "	4'0"	22	9.2		.1	8	-	4	-	2	13	40	30
152'0"	156'0"	" " low " " "	4'0"	23	7.3		.1	-	5	-	1	5	-	56	31
156'0"	160'0"	" " " " " "	4'0"	24	7.5		.1	2	4	-	1	5	20	39	26
160'0"	164'0"	" " " " plus clay	4'0"	25	9.9		.1	2	3	-	-	8	14	51	20
164'0"	168'0"	" " medium " " "	4'0"	26	8.7		.2	7	3	-	1	6	13	46	23
168'0"	172'0"	" " " " " "	4'0"	27	8.6		Tr	5	3	-	-	5	6	56	22
172'0"	176'0"	" " " " " "	4'0"	28	10.2		Tr	7	2	-	1	3	29	35	22
176'0"	180'0"	" " " " " "	4'0"	29	10.0		Tr	4	3	-	-	4	12	52	24
180'0"	184'0"	" " good " " "	4'0"	30	13.2		Tr	5	1	-	1	5	15	56	16
184'0"	188'0"	" " " " " "	4'0"	31	13.9		Tr	4	1	-	1	4	1	70	19
188'0"	190'0"	" " medium " " "	2'0"	32A	14.4		Tr	1	1	-	-	2	3	75	15

HORSE RIVER RESERVE AREA

HOLE No. 19

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
190'0"	192'0"	Bit. sand, low grade, plus clay	2'0"	32B	5.9		.3	-	12	-	6	5	1	36	38
192'0"	212'0"	" " " " " "	20'0"	33 -37	3.4		.6	-	17	-	7	4	-	34	36
212'0"	220'0"	" " " " " "	8'0"	38 -39	6.4		.2	6	11	-	2	5	2	31	43
220'0"	224'0"	" " " " " "	4'0"	40	8.9		.2	6	6	-	1	3	3	36	44
224'0"	232'0"	" " " " " "	8'0"	41 -42	7.1		.1	6	8	-	3	4	-	46	31
232'0"	236'0"	Clay plus low grade bit. sand	4'0"	43	12.4		.1	3	2	-	-	7	-	67	20
236'0"	239'6"	" " " " " "	3'6"	44	8.7		.1	2	1	-	-	6	-	64	25
239'6"	255'0"	Black clay													
255'0"	257'0"	Blue clay													
257'0"	262'4"	Limestone													
	262'4"	End of Hole													

Summary

0 - 92' - (92') - Overburden
92' - 120' (28') - 5.3% - Bitumen)
120' - 140' (20') - 9.7% - ") 98' -
140' - 172' (32') - 7.2% - ") 8.1%
172' - 190' (18') - 12.1% - ") Bitumen
190' - 239'6" (49'6") 4.9% - ")

* (Above percentages have been adjusted to include any clay partings which have been eliminated in the laboratory.)

HORSE RIVER RESERVE AREA

HOLE No. 20

DATE May 5 - 20 1944 LOCATION ..... CO-ORDINATES ..... ELEVATION 1148 DEPTH 395 DIP 90° CORE RECOVERY 92.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	183'0"	Overburden (sand, clay, silt, pebbles and boulders)													
183'0"	187'0"														
187'0"	191'0"	Black clay with lenses of bit. sand	12'0"	1-3	2.2		0.2	-	9	-	-	6	14	26	43
191'0"	195'0"														
195'0"	199'0"	Bit. sand, low grade	4'0"	4	4.6		0.1	-	10	-	6	5	-	42	36
199'0"	203'0"	" " " "	4'0"	5	7.6		0.2	9	5	-	-	4	26	27	29
203'0"	207'0"	" " medium grade	4'0"	6	8.0		0.1	8	4	-	3	9	14	36	23
207'0"	211'0"	" " " "	4'0"	7	7.5		Tr	4	6	-	-	11	22	36	21
211'0"	215'0"	" " " "	4'0"	8	8.8		Tr	4	3	-	-	16	36	17	18
215'0"	219'0"	" " " "	4'0"	9	11.6		0.1	3	2	-	-	21	50	14	10
219'0"	223'0"	" " good "	4'0"	10	11.1		0.1	4	2	-	2	17	16	45	14
223'0"	227'0"	" " " "	4'0"	11	11.4		0.1	5	2	-	-	20	42	17	13
227'0"	231'0"	" " " "	4'0"	12	10.9		0.1	4	2	-	-	26	39	15	13
231'0"	235'0"	" " " "	4'0"	13	13.4		0.1	4	2	-	1	20	16	38	18
235'0"	239'0"	" " " "	4'0"	14	13.8		0.1	5	2	-	-	14	45	21	13
239'0"	239'5"	" " " "	0'5"	15	13.8		0.1	-	11	-	4	7	2	26	49
239'5"	240'0"	Clay)	0'7"		-		-	-	-	-	-	-	-	-	-
240'0"	249'0"	Bit. sand, low grade)	9'0"	15-17	3.7		0.1	-	11	-	4	7	2	26	49
249'0"	251'0"	Clay)	2'0"												
251'0"	255'0"	Bit. sand, low grade	4'0"	18	1.9		0.4	-	9	-	7	6	5	23	50
255'0"	259'0"	" " " "	4'0"	19	1.9		0.4	-	9	-	7	6	5	23	50
259'0"	263'0"	" " " "	4'0"	20	5.0		0.2	-	11	-	-	7	16	24	50
263'0"	267'0"	" " medium "	4'0"	21	11.0		0.1	5	3	-	-	3	1	58	41
267'0"	271'0"	" " " "	4'0"	22	8.8		0.1	3	3	-	1	4	-	58	29
271'0"	275'0"	" " " " considerable clay	4'0"	23	12.3		0.1	4	2	-	-	3	14	52	31
275'0"	278'2"	" " " "	3'2"	24	11.9		0.1	5	2	-	1	3	9	47	23
278'2"	278'6"	Clay	0'4"	24	-		-	-	-	-	-	-	-	-	-

HORSE RIVER RESERVE AREA

HOLE No. 20

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
278'6"	280'0"	Lost core	1'6"	-	-		-	-	-	-	-	-	-	-	-
280'0"	284'0"	Bit. sand, medium grade - some clay	4'0"	25	12.9		0.1	2	1	-	-	2	1	59	32
284'0"	288'0"	" " " " " "	4'0"	26	9.8		0.2	6	4	-	-	3	21	34	30
288'0"	292'0"	" " " " " "	4'0"	27	13.0		0.1	6	3	-	-	3	1	49	36
292'0"	302'0"	" " " " " "	10'0"	28	13.1		0.1	5	3	-	-	3	20	34	34
302'0"	306'0"	" " " " " "	4'0"	29	9.1		0.1	7	5	-	-	4	3	42	36
306'0"	310'0"	" " " " " "	4'0"	30	9.0		Tr	8	4	-	-	4	38	22	23
310'0"	314'0"	" " " " " "	4'0"	31	5.4		0.1	-	7	-	3	8	21	29	29
314'0"	318'0"	" " " " " "	4'0"	32	5.5		0.1	1	8	-	-	10	34	22	25
318'0"	321'8"	" " " "	3'8")	33	6.6		0.1	5	6	-	-	31	-	40	17
321'8"	322'0"	Clay	0'4")	-	-		-	-	-	-	-	-	-	-	-
322'0"	326'0"		4'0"	34	9.9		0.1	8	10	-	-	32	28	13	10
326'0"	336'0"	Lost core	10'0"	-	-		-	-	-	-	-	-	-	-	-
336'0"	340'0"	Bit. sand, good grade	4'0"	35	12.9		0.1	2	2	-	7	18	21	39	11
340'0"	344'0"	" " " "	4'0"	36	14.7		Tr	1	1	8	-	-	51	25	13
344'0"	348'0"	" " " "	4'0"	37	14.4		0.1	2	1	-	7	15	8	52	13
348'0"	352'0"	" " " "	4'0"	38	14.4		0.1	1	1	-	-	53	26	10	8
352'0"	355'7"	" " " "	3'7"	39	14.3		Tr	1	1	-	9	21	5	53	9
355'7"	370'0"	Clay, with lenses, leached sand	14'5"	-	-		-	-	-	-	-	-	-	-	-
370'0"	395'0"	Black clay	25'0"	-	-		-	-	-	-	-	-	-	-	-
	395'0"	End of Hole													

HORSE RIVER RESERVE AREA

HOLE No. 20

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0 - 195' = 195'0" - Overburden 195' - 215' = 20'0" - 7.3% - Bitumen 215' - 239'5" = 24'5" - 12.1% - Bitumen) 9.3 239'5" - 263' = 23'7" - 2.9% - Bitumen) 263' - 310' = 47'0" - 11.1% - Bitumen) 310' - 322' = 12'0" - 5.8% Bitumen 322' - 355'7" = 33'7" - 12.6% Bitumen 160'7" - 9.63% - Bitumen												

HORSE RIVER RESERVE AREA

HOLE No. 21

DATE May 12 - 22 1944 LOCATION CO-ORDINATES ELEVATION 1120' DEPTH 315' DIP 90° CORE RECOVERY 97.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	167'0"	Overburden - clay													
167'0"	171'0"	Bit. sand, leached, some clay	4'0"	1	0.9		1.0	-	7	-	6	6	8	40	33
171'0"	175'0"	" " low grade, some clay	4'0"	2	1.2		0.6	-	13	-	-	6	11	27	42
175'0"	179'0"	" " " " " "	4'0"	3	4.8		0.6	-	8	3	-	5	-	43	40
179'0"	183'0"	" " " " " "	4'0"	4	5.0		Tr	-	7	-	-	6	20	34	32
183'0"	187'0"	" " " " " "	4'0"	5	2.9		0.8	-	12	-	-	8	19	28	33
187'0"	191'0"	" " " " " "	4'0"	6	6.5		0.1	6	4	-	1	4	-	55	30
191'0"	195'0"	" " " " " "	4'0"	7	3.8		0.1	-	8	-	5	4	8	44	31
195'0"	199'0"	" " " " " "	4'0"	8	6.0		0.1	-	8	-	-	4	23	35	29
199'0"	203'0"	" " " " " "	4'0"	9	4.8		0.2	-	7	-	3	5	-	47	38
203'0"	207'0"	" " " " " "	4'0"	10	3.8		0.4	-	9	-	1	7	24	25	35
207'0"	211'0"	" " " " " "	4'0"	11	3.2		0.4	-	5	-	3	6	8	45	33
211'0"	215'0"	" " medium grade	4'0"	12	6.6		0.1	-	5	-	-	4	24	28	38
215'0"	219'0"	" " " "	4'0"	13	6.5		0.1	4	7	-	-	4	5	42	38
219'0"	223'0"	" " " "	4'0"	14	7.7		0.2	-	8	-	-	6	21	26	38
223'0"	227'0"	" " " "	4'0"	15	3.8		0.5	-	12	-	8	5	9	29	36
227'0"	231'0"	" " " "	4'0"	16	5.3		0.3	-	-	-	10	11	32	26	20
231'0"	234'0"	Lost core	3'0"	-	-		-	-	-	-	-	-	-	-	-
234'0"	238'0"	Bit. sand, medium grade	4'0"	17	8.8		0.1	8	4	-	2	14	9	50	13
238'0"	242'0"	" " " "	4'0"	18	9.1		0.1	2	-	-	-	6	38	38	15
242'0"	246'0"	" " " "	4'0"	19	11.9		Tr	3	1	-	6	36	4	44	6
246'0"	250'0"	" " " "	4'0"	20	7.1		0.1	3	3	-	-	20	47	14	13
250'0"	254'0"	" " " "	4'0"	21	6.6		0.1	2	4	-	-	27	8	49	8
254'0"	258'0"	" " " "	4'0"	22	6.3		Tr	1	1	-	-	24	56	9	9
258'0"	262'0"	" " " "	4'0"	23	8.5		Tr	1	-	-	-	35	53	7	4
262'0"	266'0"	" " good "	4'0"	24	11.3		Tr	5	-	-	11	34	14	28	7
266'0"	270'0"	" " " "	4'0"	25	14.3		0.0	-	1	-	17	44	4	28	4

HORSE RIVER RESERVE AREA

HOLE No. 21

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
270'0"	273'0"	Lost core	3'0"	-	-		-	-	-	-	-	-	-	-	-
273'0"	277'0"	Bit. sand, good grade	4'0"	26	14.7		Tr	-	-	-	2	38	45	9	6
277'0"	281'0"	" " " "	4'0"	27	16.5		Tr	-	1	-	10	35	1	46	8
281'0"	285'0"	" " " "	4'0"	28	16.4		Tr	-	-	-	2	50	33	9	6
285'0"	289'0"	" " " "	4'0"	29	15.8		Tr	-	-	-	10	53	26	6	5
289'0"	293'0"	" " " "	4'0"	30	14.8		Tr	-	6	-	14	39	-	34	6
293'0"	296'6"	" " " " some clay	3'6"	31	13.4		Tr	9	3	-	4	41	29	8	8
296'6"	304'0"	Clay	7'6"	-	-		-	-	-	-	-	-	-	-	-
304'0"	308'0"	Clay plus low grade bit. sand	4'0"	32	2		1.0	-	-	-	-	-	-	-	-
308'0"	311'10"	" " " " " "	3'10"	33	4.5		0.4	-	10	-	7	9	1	28	44
311'10"	315'0"	Clay	3'2"	-	-		-	-	-	-	-	-	-	-	-
	315'0"	End of Hole													

Summary

0' - 175' = 175' - Overburden
175' - 211' = 36' - 4.5% Bitumen) 121'6"
211' - 262' = 51' - 7.2% ") 8.5%
262' - 296'6" = 34'6" - 14.6% ") Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 22

DATE May 30 - 31 1944 LOCATION CO-ORDINATES ELEVATION 890' DEPTH 110' DIP 90° CORE RECOVERY 97.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	28'0"	Overburden, sand, gravel, clay	28'0"												
28'0"	32'0"	Bit. sand - good grade	4'0"	1	15.6		Tr	1	2	-	20	38	1	34	5
32'0"	36'0"	" " " "	4'0"	2	11.8		Tr	-	-	1	20	31	2	40	5
36'0"	37'0"	Lost core	1'0"	-	-		-	-	-	-	-	-	-	-	-
37'0"	41'0"	Bit. sand - good grade	4'0"	3	13.8		0.0	-	3	-	-	31	45	14	7
41'0"	45'0"	" " " "	4'0"	4	16.3		0.0	-	-	-	4	23	1	61	10
45'0"	49'0"	" " " "	4'0"	5	16.6		0.0	-	-	-	5	16	49	22	8
49'0"	53'0"	" " " "	4'0"	6	16.2		0.0	-	-	-	1	23	56	15	6
53'0"	57'0"	" " " "	4'0"	7	15.3		0.0	-	-	-	4	35	11	46	6
57'0"	61'0"	" " " "	4'0"	8	15.9		0.0	-	-	-	-	33	48	12	6
61'0"	65'0"	" " " "	4'0"	9	16.8		0.0	-	-	-	-	31	55	9	4
65'0"	69'0"	" " " "	4'0"	10	16.5		0.0	-	-	1	4	25	1	62	7
69'0"	73'0"	" " " "	4'0"	11	16.4		0.0	-	-	-	-	19	54	18	8
73'0"	74'0"	Lost core	1'0"	-	-		-	-	-	-	-	-	-	-	-
74'0"	78'0"	Bit. sand - good grade	4'0"	12	16.9		0.0	-	-	-	4	38	2	52	5
78'0"	82'0"	" " " "	4'0"	13	17.2		0.0	-	-	-	-	19	57	15	8
82'0"	86'0"	" " " "	4'0"	14	17.5		0.0	-	-	-	7	36	4	44	6
86'0"	90'0"	" " " "	4'0"	15	15.9		0.1	1	-	-	10	32	37	9	11
90'0"	93'10"	" " " "	3'10"	16	17.3		0.0	-	-	-	-	56	35	3	3
93'10"	102'0"	Black clay	8'2"	-											
102'0"	108'0"	Grey clay	6'0"	-											
108'0"	110'0"	Blue clay	2'0"	-											
		End of Hole													

Summary

0'0" - 28'0" = 28'0" - Overburden
28'0" - 93'10" = 65'10" - 15.9% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 23

DATE May 26-29 1944 LOCATION CO-ORDINATES ELEVATION 935' DEPTH 160' DIP 90° CORE RECOVERY 91.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	37'0"	Overburden, clay and some gravel	37'0"												
37'0"	41'0"	Bit. sand - good grade	4'0"	1	14.2		Tr	1	4	-	-	51	32	6	5
41'0"	45'0"	" " " " 50% clay	4'0"	2	8.0		0.3	11	-	7	5	20	2	29	25
45'0"	49'0"	" " " " 25% "	4'0"	3	13.3		0.2	2	5	-	8	28	10	30	17
49'0"	53'0"	" " " " leached	4'0"	4	9.6		0.1	-	3	-	-	38	40	11	8
53'0"	59'0"	Lost core	6'0"	-	-		-	-	-	-	-	-	-	-	-
59'0"	63'0"	Bit. sand - good grade	4'0"	5	13.0		0.1	-	-	-	-	29	52	12	7
63'0"	67'0"	" " " "	4'0"	6	14.4		0.0	-	11	-	-	40	2	43	3
67'0"	71'0"	" " " "	4'0"	7	15.6		Tr	-	-	-	1	52	39	5	3
71'0"	75'0"	" " " "	4'0"	8	15.7		Tr	-	4	-	-	46	42	6	2
75'0"	79'0"	" " " "	4'0"	9	15.5		0.1	4	6	-	-	43	31	8	7
79'0"	83'0"	" " " "	4'0"	10	16.8		0.1	-	1	-	8	45	4	34	7
83'0"	87'0"	" " " "	4'0"	11	17.1		0.1	2	-	-	-	39	44	9	6
87'0"	91'0"	" " " "	4'0"	12	17.6		Tr	-	-	-	10	39	2	42	5
91'0"	95'0"	" " " "	4'0"	13	17.0		Tr	-	-	-	-	43	42	9	6
95'0"	99'0"	" " " "	4'0"	14	16.6		Tr	-	-	-	8	39	12	33	8
99'0"	100'0"	Lost core	1'0"	-	-		-	-	-	-	-	-	-	-	-
100'0"	104'0"	Bit. sand - good grade	4'0"	15	17.1		0.1	-	-	-	1	49	38	6	6
104'0"	108'0"	" " " "	4'0"	16	17.1		Tr	-	-	-	-	61	29	5	4
108'0"	112'0"	" " " "	4'0"	17	17.1		Tr	-	-	-	37	32	5	21	5
112'0"	116'0"	" " " "	4'0"	18	16.4		0.0	-	-	-	15	38	2	38	7
116'0"	120'0"	" " " "	4'0"	19	16.6		0.0	-	-	-	-	69	20	5	5
120'0"	124'0"	" " " "	4'0"	20	16.6		Tr	-	-	-	4	53	2	38	3
124'0"	127'0"	Lost core	3'0"	-	-		-	-	-	-	-	-	-	-	-
127'0"	131'0"	Bit. sand - good grade	4'0"	21	16.9		0.0	-	-	-	-	45	41	7	7
131'0"	135'0"	" " " "	4'0"	22	16.7		Tr	-	-	-	-	42	39	10	8
135'0"	139'0"	" " " "	4'0"	23	17.6		0.0	-	-	-	28	42	2	22	6
139'0"	140'0"	Lost core	1'0"	-	-		-	-	-	-	-	-	-	-	-
140'0"	142'0"	Bit. sand - good grade	2'0"	24	15.2		Tr	1	13	-	-	51	21	8	7

HORSE RIVER RESERVE AREA

HOLE No. 23

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
142'0"	145'0"	Clay	3'0"	-	-		-	-	-	-	-	-	-	-	-
145'0"	160'0"	Limestone	15'0"	-	-		-	-	-	-	-	-	-	-	-
	160'0"	End of Hole													

Summary

0' - 37' = 37' - Overburden
37' - 59' = 22' - 11.1% Bitumen
59' - 142' = 83' - 16.3% Bitumen
37' - 142' = 105' - 15.3% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 24

DATE May 29 - 31 1944 LOCATION CO-ORDINATES ELEVATION 887 DEPTH 111 DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	66'0"	Overburden, clay, sand and gravel	66'0"												
66'0"	70'0"	Bit. sand, good grade	4'0"	1	16.0		Tr	2	1	-	-	52	32	6	7
70'0"	74'0"	" " " "	4'0"	2	16.9		0.0	1	-	-	22	43	6	21	7
74'0"	78'0"	" " " "	4'0"	3	17.0		0.0	1	-	-	-	56	30	7	7
78'0"	82'0"	" " " "	4'0"	4	17.2		0.0	-	-	-	22	39	2	33	4
82'0"	86'0"	" " " "	4'0"	5	15.6		0.0	1	3	-	-	81	7	3	3
86'0"	90'0"	" " " "	4'0"	6	15.7		Tr	8	26	-	42	14	-	8	3
90'0"	96'0"	Black clay	6'0"												
96'0"	105'6"	Blue gray clay	9'6"												
105'6"	111'0"	Limestone	5'6"												
	111'0"	End of Hole													

Summary

0'0" - 66'0" = 66' - Overburden
66'0" - 90'0" = 24' - 16.6% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 25

DATE June 6-8 1944 LOCATION CO-ORDINATES ELEVATION 946 DEPTH 134 DIP 90° CORE RECOVERY 98.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	77'0"	Overburden - clay	77'0"												
77'0"	81'0"	Bit. sand - good grade	4'0"	1	15.6		Tr	-	2	-	-	54	29	8	6
81'0"	85'0"	" " medium grade, leached	4'0"	2	10.4		0.2	-	2	-	-	44	24	13	17
85'0"	89'0"	" " good grade	4'0"	3	13.6		Tr	-	1	-	29	36	19	9	6
89'0"	93'0"	" " " "	4'0"	4	13.7		Tr	2	11	-	-	75	6	2	2
93'0"	97'0"	" " " "	4'0"	5	15.6		0.0	-	1	-	26	38	22	7	5
97'0"	101'0"	" " " "	4'0"	6	17.0		0.0	-	1	-	4	54	27	7	7
101'0"	105'0"	" " " "	4'0"	7	16.8		0.0	-	1	-	-	58	33	5	3
105'0"	109'0"	" " " "	4'0"	8	16.5		0.0	-	-	-	5	54	29	7	4
109'0"	113'0"	" " " "	4'0"	9	16.6		0.0	-	-	-	-	41	48	7	4
113'0"	117'0"	" " " "	4'0"	10	17.4		0.0	-	-	-	8	50	32	6	4
117'0"	121'0"	" " " "	4'0"	11	17.7		0.0	-	-	-	-	41	47	8	4
121'0"	125'0"	" " " "	4'0"	12	17.9		0.0	-	-	-	28	41	18	6	7
125'0"	129'0"	" " " "	4'0"	13	17.2		0.0	-	-	-	-	57	30	6	7
129'0"	132'2"	" " " "	3'2"	14	18.1		0.0	-	-	-	16	56	19	5	4
132'2"	133'2"	Lost core - probably clay	1'0"												
133'2"	134'0"	Blue clay													
	134'0"	End of Hole													

Summary

0'0" - 77'0" = 77'0" - Overburden
77'0" - 132'2" = 55'2" - 15.98% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 26

DATE June 8 - 10 1944 LOCATION ..... CO-ORDINATES ..... ELEVATION 901 DEPTH 100 DIP 90° CORE RECOVERY 71%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	80'0"	Overburden - clay and gravel	80'0"												
80'0"	84'0"	Bit. sand, good grade	4'0"	1	16.4		0.0	-	-	-	-	61	29	6	4
84'0"	85'0"	Lost core	1'0"												
85'0"	87'0"	Bit. sand, good grade	2'6"	2	17.7		0.0	1	1	-	40	37	13	4	4
87'6"	88'6"	Clay	1'0"												
88'6"	90'0"	Limestone	1'6"												
90'0"	100'0"	Clay with limestone fragments	10'0"												
	100'0"	End of Hole													

Summary

0'0" - 80'0" = 80' - Overburden
80'0" - 87'6" = 7'6" - 16.9% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 27

DATE June 3 - 5 1944 LOCATION CO-ORDINATES ELEVATION 947' DEPTH 137' DIP 90° CORE RECOVERY 91.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	27'0"	Overburden - clay and boulders	27'0"												
27'0"	31'0"	Bit. sand, medium grade	4'0"	1	7.9		0.1	3	2	-	-	29	42	12	12
31'0"	32'0"	Lost core	1'0"		-		-	-	-	-	-	-	-	-	-
32'0"	36'0"	Bit. sand, medium grade	4'0"	2	7.9		0.1	-	2	-	-	41	44	8	5
36'0"	40'0"	" " " "	4'0"	3	9.1		0.1	1	1	-	12	47	27	7	5
40'0"	43'0"	" " " "	3'0"	4	6.4		0.2	10	5	-	21	23	20	7	14
43'0"	50'0"	Lost core	7'0"		-		-	-	-	-	-	-	-	-	-
50'0"	54'0"	Bit. sand, medium grade	4'0"	5	12.7		Tr	2	3	-	-	47	36	6	6
54'0"	58'0"	" " good "	4'0"	6	15.3		Tr	1	2	-	21	40	28	5	3
58'0"	62'0"	" " " " some clay	4'0"	7	13.7		Tr	7	4	-	-	41	37	6	5
62'0"	66'0"	" " " " " "	4'0"	8	15.6		Tr	3	2	-	14	32	1	43	5
66'0"	70'0"	" " " " " "	4'0"	9	14.5		Tr	3	3	-	-	37	36	13	8
70'0"	72'0"	Lost core	2'0"	-	-		-	-	-	-	-	-	-	-	-
72'0"	76'0"	Bit. sand, good grade	4'0"	10	14.7		Tr	2	2	-	-	45	35	9	6
76'0"	80'0"	" " " "	4'0"	11	14.2		Tr	2	1	-	28	34	22	7	6
80'0"	84'0"	" " medium " leached	4'0"	12	6.8		Tr	1	1	-	-	46	40	7	5
84'0"	88'0"	" " good " some clay	4'0"	13	11.0		Tr	2	6	-	-	48	30	6	7
88'0"	92'0"	" " " "	4'0"	14	14.6		0.0	1	1	-	8	46	32	7	5
92'0"	96'0"	" " " "	4'0"	15	14.8		0.0	-	1	-	-	35	51	9	4
96'0"	100'0"	" " " "	4'0"	16	15.7		0.0	-	-	-	-	37	50	9	4
100'0"	104'0"	" " " "	4'0"	17	16.1		0.0	-	-	-	-	39	50	8	3
104'0"	108'0"	" " " "	4'0"	18	15.6		0.0	-	-	-	9	41	40	7	3
108'0"	112'0"	" " " "	4'0"	19	16.7		0.0	-	-	-	9	40	39	7	5
112'0"	116'0"	" " " "	4'0"	20	16.7		0.0	-	2	-	-	43	45	6	4
116'0"	120'0"	" " " "	4'0"	21	17.7		Tr	-	-	-	-	34	52	9	5
120'0"	124'0"	" " " "	4'0"	22	16.9		0.0	-	-	-	-	49	43	5	3
124'0"	128'0"	" " " "	4'0"	23	16.8		0.0	1	-	-	19	38	32	5	4
128'0"	132'0"	" " " "	4'0"	24	16.1		Tr	-	-	-	18	43	26	8	5

HORSE RIVER RESERVE AREA

HOLE No. 27

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
132'0"	133'6"	Bit. sand, good grade	1'6"	25	16.6		Tr	1	1	-	-	52	33	7	6
133'6"	137'0"	Clay													
137'0"		End of Hole													

Summary

0'0" - 27'0" = 27' - Overburden
27'0" - 50'0" = 23' - 7.9% - Bitumen
50'0" - 133'6" = 83'6" - 14.4% - Bitumen
27'0" - 133'6" = 106'6" - 13.0% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 28

DATE June 6 - 7 1944 LOCATION CO-ORDINATES ELEVATION 862 DEPTH 50 DIP 90° CORE RECOVERY 81%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	29'0"	Overburden, clay and gravel	29'0"												
29'0"	31'0"	Bit. sand, good grade	2'0"												
31'0"	33'0"	Lost core	2'0"	1	15.2		Tr	3	7	-	30	31	17	7	3
33'0"	35'0"	Bit. sand, good grade	2'0"												
35'0"	36'0"	" " and clay	1'0"												
36'0"	38'0"	Lost core	2'0"	2	14.8		Tr	1	3	-	-	30	47	10	9
38'0"	41'0"	Bit. sand, good grade	3'0"												
41'0"	45'0"	" " " "	4'0"	3	17.0		0.0	1	1	-	-	39	46	9	4
45'0"	48'7"	" " " "	3'7"	4	16.4		0.0	-	3	-	34	37	24	2	2
48'7"	50'0"	Clay	1'5"												
	50'0"	End of Hole													

Summary

0'0" - 29'0" = 29'0" - Overburden
29'0" - 48'7" = 19'7" - 15.6% - Bitumen

300

HORSE RIVER RESERVE AREA

HOLE No. 29

DATE June 3-5 1944 LOCATION CO-ORDINATES ELEVATION 901' DEPTH 95' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	31'0"	Overburden - clay	31'0"												
31'0"	35'0"	Bit. sand - low grade - clay	4'0"	1	5.0		1.2	-	11	-	-	35	30	11	12
35'0"	36'0"	Lost core	1'0"		-		-	-	-	-	-	-	-	-	-
36'0"	40'0"	Bit. sand - low grade	4'0"	2	4.8		0.8	-	7	-	-	32	36	12	13
40'0"	44'0"	" " " "	4'0"	3	6.1		0.2	-	2	-	19	33	30	10	6
44'0"	48'0"	" " " "	4'0"	4	11.8		0.0	-	-	-	-	18	55	18	9
48'0"	52'0"	" " medium grade	4'0"	5	13.3		Tr	-	-	-	2	24	49	17	8
52'0"	56'0"	" " good "	4'0"	6	17.5		0.1	-	1	-	-	7	49	31	12
56'0"	60'0"	" " " "	4'0"	7	17.7		0.1	-	-	-	1	21	51	19	8
60'0"	64'0"	" " " "	4'0"	8	17.9		Tr	-	1	-	1	22	53	16	7
64'0"	68'0"	" " " "	4'0"	9	16.4		Tr	-	-	-	-	39	47	8	5
68'0"	72'0"	" " " "	4'0"	10	16.7		Tr	-	-	-	6	50	33	7	4
72'0"	73'0"	Lost core	1'0"	-	-		-	-	-	-	-	-	-	-	-
73'0"	77'0"	Bit. sand - good grade	4'0"	11	17.0		0.0	-	-	-	-	42	45	9	4
77'0"	81'0"	" " " "	4'0"	12	17.1		0.0	-	1	-	-	52	38	5	4
81'0"	85'0"	" " " "	4'0"	13	17.8		Tr	1	2	-	17	49	21	5	5
85'0"	88'0"	" " " "	3'0"	14	15.8		Tr	9	35	-	-	34	13	4	5
88'0"	89'0"	Clay	1'0"												
89'0"	90'0"	Lost core	1'0"												
90'0"	92'0"	Clay	2'0"												
92'0"	95'0"	Limestone	3'0"												
	95'0"	End of Hole													

Summary

0'0" - 31'0" = 31'0" - Overburden
31'0" - 44'0" = 13'0" - 5.3% - Bitumen)
44'0" - 88'0" = 44'0" - 16.3% - ")13.8% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 30

DATE June 9 1944 LOCATION CO-ORDINATES ELEVATION 852' DEPTH 30' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	14'0"	Overburden - sand and gravel	14'0"												
14'0"	18'0"	Bit. sand, good grade	4'0"	1	16.8										
18'0"	22'0"	" " " "	4'0"	2	17.1										
22'0"	24'6"	" " " "	2'6"	3	17.0										
24'6"	30'0"	Limestone	5'4"												
	30'0"	End of Hole													

Summary

0' - 14'0" = 14' - Overburden
14' - 24'62 = 10'6" - 17% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 31

DATE June 10 1944 LOCATION CO-ORDINATES ELEVATION 852' DEPTH 33' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'0"	12'0"	Overburden - sand and gravel	12'0"												
12'0"	16'0"	Bit. sand, good grade	4'0"	1	16.4		0.0	2	1	-	-	33	48	10	6
16'0"	17'0"	Lost core	1'0"	-			-	-	-	-	-	-	-	-	-
17'0"	21'0"	Bit. sand, good grade	4'0"	2	16.0		0.0	2	1	-	25	36	24	7	5
21'0"	23'6"	" " " "	2'6"	3	16.7		0.0	-	5	-	-	63	21	6	5
23'6"	28'0"	" " supersaturated	4'6"	4	29.3		1.0	2	8	-	32	35	12	4	5
28'0"	31'6"	" " good grade	3'6"	5	12.9		0.1	1	5	-	-	29	43	10	12
31'6"	32'6"	Clay	1'0"												
32'6"	33'0"	Limestone	0'6"												
	33'0"	End of Hole													

Summary

0'0" - 12'0" = 12' - Overburden
12'0" - 31'6" = 19'6" - 18.7% - Bitumen (15.8%) *

* Assuming that the exceptionally high assay of 29.3% bitumen in sample 4 should be reduced to 17%, the average bitumen content from 12' to 31'6" would be 15.8%.

HORSE RIVER RESERVE AREA

HOLE No. 32

DATE June 12 1944 LOCATION CO-ORDINATES ELEVATION 844' DEPTH 34' DIP 90° CORE RECOVERY 88.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	12'0"	Overburden; sand, gravel, boulders	12'0"												
12'0"	16'0"	Bit. sand, good grade	4'0"	1	10.6		0.4	3	4	-	-	20	35	12	26
16'0"	20'0"	" " " "	4'0"	2	13.6		0.2	1	3	-	5	35	32	9	13
20'0"	23'0"	" " " "	3'0"	3	15.4		0.1	-	1	-	-	35	48	9	7
23'0"	25'6"	Lost core	2'6"	-											
25'6"	28'3"	Bit. sand, good grade	2'9"	4	16.9		0.1	1	-	-	4	47	35	8	5
28'3"	32'0"	Clay	3'9"												
32'0"	34'0"	Clay, with fragments of limestone	2'0"												
		End of Hole													

Summary

0'0" - 12'0" = 12'0" - Overburden
12'0" - 28'3" = 16'3" - 14.1% - Bitumen

304

HORSE RIVER RESERVE AREA

HOLE No. 33

DATE June 14-16 1944 LOCATION CO-ORDINATES ELEVATION 965' DEPTH 168' DIP 90° CORE RECOVERY 95.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	38'0"	Overburden - clay	38'0"												
38'0"	42'0"	Bit. sand, low grade	4'0"	1	6.4		0.6	-	10	-	-	33	15	10	31
42'0"	46'0"	" " " "	4'0"	2	5.6		0.2	-	3	-	15	32	27	8	14
46'0"	50'0"	" " " "	4'0"	3	7.6		0.0	-	1	-	-	57	33	4	3
50'0"	54'0"	" " medium grade	4'0"	4	7.8		Tr	-	-	-	26	44	22	5	3
54'0"	58'0"	" " good "	4'0"	5	9.9		Tr	-	-	-	-	61	32	4	2
58'0"	63'0"	Lost core	5'0"	-	-										
63'0"	67'0"	Bit. sand, medium grade	4'0"	6	6.9		Tr	1	1	-	13	50	24	5	5
67'0"	71'0"	" " good "	4'0"	7	14.6		0.0	-	-	-	-	53	37	6	3
71'0"	75'0"	" " " " some clay	4'0"	8	15.6		0.0	1	1	-	12	35	34	11	5
75'0"	79'0"	" " " " " "	4'0"	9	15.8		0.0	1	1	-	16	39	25	10	6
79'0"	83'0"	" " " "	4'0"	10	16.1		0.0	1	1	1	-	54	32	7	4
83'0"	87'0"	" " " "	4'0"	11	15.5		0.0	1	2	-	31	40	18	5	3
87'0"	91'0"	" " " "	4'0"	12	16.0		0.0	1	1	3	-	63	22	6	4
91'0"	95'0"	" " " "	4'0"	13											
95'0"	99'0"	" " " "	4'0"	14	16.8		0.0	-	1	1	-	59	26	8	5
99'0"	103'0"	" " " "	4'0"	15											
103'0"	104'0"	Lost core	1'0"	-	-										
104'0"	108'0"	Bit. sand, good grade, 17" clay	4'0"	16	12.1		0.2	-	5	-	14	23	26	11	21
108'0"	112'0"	Leached - bit. sand and clay	4'0"	17	2.4		0.4	-	7	-	4	17	35	17	20
112'0"	116'0"	" " " " " low grade	4'0"	18	9.2		Tr	-	1	-	-	27	41	21	10
116'0"	120'0"	Bit. sand, medium grade	4'0"	19	11.6		0.0	-	1	-	-	16	58	16	9
120'0"	124'0"	" " good "	4'0"	20											
124'0"	128'0"	" " " "	4'0"	21											
128'0"	132'0"	" " " "	4'0"	22	14.2		Tr	-	-	-	4	27	43	17	9
132'0"	136'0"	" " " "	4'0"	23											
136'0"	140'0"	" " " "	4'0"	24	15.5		0.0	-	-	-	-	27	44	18	10
140'0"	144'0"	" " medium " some clay	4'0"	25	14.2		Tr	3	3	2	-	42	33	8	9

HORSE RIVER RESERVE AREA

HOLE No. 33

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
144'0"	148'0"	Bit. sand, medium grade	4'0"	26	14.6		Tr	4	9	-	19	27	26	8	7
148'0"	152'0"	" " " "	4'0"	27	13.4		Tr	6	8	-	10	27	27	12	10
152'0"	156'0"	" " " "	4'0"	28	15.4		Tr	1	2	2	-	24	44	19	8
156'0"	159'0"	" " " "	3'0"	29	15.0		0.0	3	9	-	16	29	27	10	6
159'0"	162'0"	" " low "	3'0"	30	6.1		0.1	2	22	5	-	17	21	10	23
162'0"	168'0"	Clay	6'0"	-											
	168'0"	End of Hole													

Summary

0'0" - 38'0" = 38' - Overburden
38'0" - 67'0" = 29' - 7.5% Bitumen
67'0" - 159'0" = 92' - 14.1% - "
159'0" - 162'0" = 3' - 6.1% - "
67'0" - 162'0" = 95' - 13.88% "
38'0" - 159' = 121' - 12.5% Bitumen
38'0" - 162' = 95' - 12.3% "

HORSE RIVER RESERVE AREA

HOLE No. 34

DATE June 17 - 20 1944 LOCATION ..... CO-ORDINATES ..... ELEVATION 927' DEPTH 134' DIP 90° CORE RECOVERY 93.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	55'0"	Overburden - clay and gravel	55'0"												
55'0"	58'0"	Bit. sand, low grade ∮ clay	3'0"	1	10.1		Tr	1	3	4	-	33	32	10	17
58'0"	60'0"	Lost core	2'0"	-											
60'0"	63'0"	Bit. sand, good grade	3'0"	2	12.9		0.0	-	2	3	-	55	34	4	2
63'0"	65'0"	Lost core	2'0"	-											
65'0"	69'0"	Bit. sand, good grade	4'0"	3											
69'0"	73'0"	" " " "	4'0"	4	16.4		0.0	1	2	-	21	41	22	8	5
73'0"	77'0"	" " " "	4'0"	5	13.3		Tr	3	4	-	16	34	21	11	11
77'0"	78'0"	Lost core	1'0"	-											
78'0"	82'0"	Bit. sand, good grade	4'0"	6	16.1		Tr	3	1	-	13	34	28	12	9
82'0"	86'0"	" " medium grade	4'0"	7	14.6		Tr	2	1	1	-	7	23	41	25
86'0"	90'0"	" " " "	4'0"	8											
90'0"	94'0"	" " " "	4'0"	9	14.6		0.0	4	3	-	2	21	25	27	18
94'0"	98'0"	" " " " 1' clay	4'0"	10	9.8		0.0	8	10	-	17	34	19	6	6
98'0"	102'0"	" " good " some clay	4'0"	11	13.2		0.0	6	18	6	-	34	26	5	5
102'0"	106'0"	" " " "	4'0"	12											
106'0"	110'0"	" " " " " "	4'0"	13	15.0		0.0	6	2	3	-	39	37	8	5
110'0"	114'0"	" " medium " " "	4'0"	14	13.8		Tr	10	4	3	-	40	26	7	10
114'0"	118'0"	Clay ∮ low grade bit. sand	4'0"	15	7.2		0.2	23	6	-	3	18	19	11	20
118'0"	122'0"	" ∮ " " " "	4'0"	16	9.9		Tr	2	12	3	-	23	30	12	18
122'0"	124'0"	" ∮ " " " "	2'0"	17	2.6		0.4	-	22	-	12	11	11	15	29
124'0"	130'0"	Black clay	6'0"	-											
130'0"	134'0"	Blue clay, altered limestone	4'0"	-											
	134'0"	End of Hole													

Summary

0'0" - 55'0" = 55'0" - Overburden
55'0" - 114'0" = 59'0" - 14.0% Bitumen
114'0" - 122'0" = 8'0" - 8.0% Bitumen
55'0" - 122'0" = 67'0" - 13.3% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 35

DATE June 14 - 15 1944 LOCATION CO-ORDINATES ELEVATION 884' DEPTH 94' DIP 90° CORE RECOVERY 82.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	13'0"	Overburden - clay, sand and boulders	13'0"	-											
13'0"	16'0"	Bit. sand, good grade	3'0"	1	14.3		0.1	1	2	-	10	43	29	8	7
16'0"	18'0"	Lost core	2'0"	-	-										
18'0"	20'0"	Bit. sand, good grade; some clay	2'0"	2	12.7		0.1	-	2	-	-	59	32	4	3
20'0"	23'0"	Lost core	3'0"	-	-										
23'0"	25'6"	Bit. sand, good grade; some clay	2'6"	3	10.1		0.2	-	7	-	27	40	16	4	6
25'6"	32'0"	Lost core	6'6"	-	-										
32'0"	36'0"	Bit. sand, good grade	4'0"	4	12.9		0.0	1	10	-	-	61	24	2	2
36'0"	37'0"	Lost core	1'0"	-	-										
37'0"	41'0"	Bit. sand, good grade	4'0"	5	14.4		0.0	1	6	-	-	60	27	4	2
41'0"	45'0"	" " " "	4'0"	6	13.6		0.0	1	7	-	29	43	15	3	2
45'0"	49'0"	" " " "	4'0"	7	13.2		0.0	2	12	-	-	57	24	3	2
49'0"	53'0"	" " " "	4'0"	8	13.5		0.0	2	6	-	24	42	18	4	4
53'0"	57'0"	" " " "	4'0"	9	15.5		0.0	-	14	-	-	55	26	3	2
57'0"	61'0"	Clay and bit. sand	4'0"	10	7.2		0.3	-	21	-	13	22	13	6	25
61'0"	65'0"	" " " "	4'0"	11	6.0		0.4	-	18	-	15	21	13	7	26
65'0"	69'0"	" " " "	4'0"	12	4.0		0.4	-	17	-	-	24	18	8	33
69'0"	73'0"	" " " "	4'0"	13	3.3		0.5	-	17	-	12	17	13	2	38
73'0"	76'8"	Bit. sand, good grade	3'8"	14	14.2		0.0	17	13	-	-	47	18	3	2
76'8"	78'0"	Lost core, probably bit. sand	1'4"	-											
78'0"	94'0"	Black clay	16'0"	-											
	94'0"	End of Hole													

Summary

0'0" - 13'0" = 13' - Overburden
13'0" - 57'0" = 44' 13.1% Bitumen
57'0" - 73'0" = 16' 5.1% "
73'0" - 78'0" = 5' 14.2% "
13'0" - 78'0" = 65' 11.2% "

HORSE RIVER RESERVE AREA

HOLE No. 36

DATE June 16 - 17 1944 LOCATION ..... CO-ORDINATES ..... ELEVATION 889' DEPTH 92' DIP 90° CORE RECOVERY 90.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	16'0"	Overburden - sand and gravel	16'0"	-											
16'0"	20'0"	Lost core - bit. sand	4'0"	-											
20'0"	24'0"	Bit. sand - good grade	4'0")	1											
24'0"	28'0"	" " " "	4'0")	2	14.5		Tr	2	2	1	-	41	39	9	6
28'0"	32'0"	" " " "	4'0")	3											
32'0"	36'0"	" " " "	(4'0"	4											
36'0"	39'0"	" " " "	(3'0"	5	15.3		0.0	-	3	2	-	43	42	7	3
39'0"	40'0"	Lost core	1'0"	-											
40'0"	44'0"	Bit. sand, good grade; some clay	4'0"	6	14.2		0.0	7	9	-	21	30	23	6	4
44'0"	48'0"	" " " "	4'0")	7											
48'0"	52'0"	" " " "	4'0")	8	14.2		0.0	1	3	3	-	58	27	5	3
52'0"	55'0"	" " " "	3'0")	9											
55'0"	56'0"	Lost core	1'0"	-											
56'0"	60'0"	Bit. sand, good grade	4'0"	10	12.7		Tr	5	7	3	-	59	17	5	4
60'0"	61'0"	Lost core	1'0"	-											
61'0"	65'0"	Bit. sand, good grade; some clay	4'0"	11	11.9		Tr	6	8	-	24	35	18	5	4
65'0"	69'0"	" " " " " "	4'0"	12	13.6		Tr	6	5	-	28	38	15	4	4
69'0"	73'0"	" " " " " "	4'0")	13											
73'0"	77'0"	" " " " " "	4'0")	14	16.7		0.0	-	4	4	-	65	22	3	2
77'0"	81'0"	" " medium " considerable clay	4'0"	15	14.0		Tr	13	7	4	-	40	25	5	6
81'0"	85'0"	" " " " " "	4'0"	16	11.2		Tr	13	5	2	-	27	32	11	10
85'0"	87'9"	" " " " " "	2'9"	17	15.0		Tr	10	4	-	15	32	25	8	6
87'9"	92'0"	Clay	4'3"	-											
	92'0"	End of Hole													

Summary

0'0" - 16'0" = 16'0" - Overburden
16'0" - 87'9" = 71'9" - 14.2% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 37

DATE June 21-22 1944 LOCATION CO-ORDINATES ELEVATION 876' DEPTH 107' DIP 90° CORE RECOVERY 91.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	14'0"	Overburden - sand, gravel, boulders	14'0"												
14'0"	16'0"	Bit. sand, low grade, no core	2'0"												
16'0"	20'0"	" " " "	4'0"	1	9.4		0.0	-	1	-	17	48	26	5	3
20'0"	24'0"	" " " "	4'0"	2	8.9		Tr	4	1	-	16	42	26	6	5
24'0"	30'0"	Lost core	6'0"	-											
30'0"	34'0"	Bit. Sand, medium grade	4'0"	3	15.1		0.0	1	1	-	20	42	27	6	3
34'0"	38'0"	" " good "	4'0")	4											
38'0"	42'0"	" " " "	4'0")	5	15.3		0.0	-	1	2	-	53	36	5	3
42'0"	44'0"	Lost core	2'0"	-											
44'0"	48'0"	Bit. sand, good grade	4'0"	6	15.2		0.0	2	3	4	-	57	27	4	3
48'0"	52'0"	" " medium grade, considerable clay	4'0"	7	13.7		Tr	10	6	-	23	36	17	3	5
52'0"	56'0"	" " " " " "	4'0"	8	14.1		Tr	2	7	4	-	43	30	5	9
56'0"	60'0"	" " low " " "	4'0"	9	8.2		Tr	2	12	3	-	37	20	8	18
60'0"	64'0"	Clay and bit. sand, low grade	4'0"	10	10.9		Tr	3	6	-	9	29	23	12	18
64'0"	68'0"	Bit. sand, low grade; some clay	4'0"	11	15.0		Tr	2	1	-	-	8	44	31	14
68'0"	72'0"	" " medium grade	4'0")	12											
72'0"	76'0"	" " " "	4'0")	13	14.7		Tr	1	1	1	-	11	32	33	21
76'0"	80'0"	" " " " considerable clay	4'0"	14	14.6		0.0	2	1	-	4	32	35	16	10
80'0"	84'0"	" " " " " "	4'0"	15	14.7		0.0	3	1	-	7	39	29	12	9
84'0"	88'0"	" " " " " "	4'0"	16	16.0		0.0	-	1	1	-	45	39	8	6
88'0"	92'0"	Clay with some bit. sand	4'0"	17	8.6		Tr	2	9	6	-	35	27	11	10
92'0"	95'0"	Bit. sand, low grade; some clay	3'0"	18	9.3		Tr	2	8	3	-	23	23	22	19
95'0"	100'0"	Clay with traces of bit. sand	5'0"	-											
100'0"	107'0"	Black clay	7'0"	-											
	107'0"	End of Hole													

Summary

0'0" - 16'0" = 16'0" - Overburden
16'0" - 24'0" = 8'0" - 9.1% Bitumen
24'0" - 88'0" = 64'0" - 14.05% Bitumen
88'0" - 95'0" = 7'0" - 8.9% Bitumen
16'0" - 88'0" = 72'0" - 13.5% Bitumen

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HORSE RIVER RESERVE AREA

HOLE No. 38

DATE June 20 - 24 1944 LOCATION CO-ORDINATES ELEVATION 947' DEPTH 202' DIP 90° CORE RECOVERY 93.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	38'0"	Overburden, clay and sand													
38'0"	42'0"	Bit. sand, low grade, some clay	4'0"	1	4.1		0.4	2	7	-	36	21	11	7	16
42'0"	47'0"	" " good grade	5'0"	2	8.0		0.0	-	6	16	-	62	12	2	2
47'0"	56'0"	Lost core	9'0"	-											
56'0"	61'0"	Bit. sand, good grade, some clay	5'0"	3	13.1		0.0	3	7	-	45	27	11	3	5
61'0"	63'0"	Lost core	2'0"	-											
63'0"	67'0"	Bit. sand, good grade, some clay	4'0"	4	15.3		0.0	2	2	-	22	35	29	7	3
67'0"	71'0"	" " " " " "	4'0"	5	12.5		Tr	4	5	2	-	28	39	10	11
71'0"	75'0"	" " " "	4'0")	6											
75'0"	79'0"	" " " "	4'0")	7	15.0		0.0	1	1	-	24	39	25	6	4
79'0"	83'0"	" " " "	4'0")	8											
83'0"	87'0"	" " " "	4'0"	9	15.5		0.0	-	1	2	-	50	37	6	4
87'0"	91'0"	" " " "	4'0")	10											
91'0"	95'0"	" " " "	4'0")	11	14.0		0.0	1	1	-	21	42	24	6	5
95'0"	99'0"	" " " " some clay	4'0"	12	15.8		0.0	1	2	2	-	49	38	5	4
99'0"	103'0"	" " " " " "	4'0")	13											
103'0"	107'0"	" " " "	4'0")	14	15.5		Tr	2	2	-	24	38	22	6	6
107'0"	111'0"	" " " " " "	4'0"	15	13.3		Tr	5	2	1	-	39	37	8	7
111'0"	115'0"	" " " "	4'0"	16	14.6		0.0	1	1	-	16	50	22	5	4
115'0"	119'0"	" " " "	4'0")	17											
119'0"	123'0"	" " " "	4'0")	18	17.3		0.0	-	1	1	-	58	32	5	3
123'0"	127'0"	" " " "	4'0")	19											
127'0"	130'0"	" " " " half clay	3'0"	20	12.5		0.0	2	1	-	17	40	23	9	8
130'0"	133'6"	" " " "	3'6"	21	13.5		Tr	4	3	1	-	16	51	17	9
133'6"	139'0"	Clay	5'6"	-	-										
139'0"	143'0"	Bit. sand, good grade, some clay	4'0"	22	15.3		Tr	-	1	-	-	17	57	16	8
143'0"	147'0"	Clay and bit. sand	4'0"	23	3.3		Tr	4	4	3	-	31	42	10	7
147'0"	151'0"	Bit. sand, low grade, some lignite	4'0"	24	10.2		0.3	2	6	-	3	21	36	18	13

HORSE RIVER RESERVE AREA

HOLE No. 38

DATE ..... 194..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151'0"	155'0"	Bit. sand, low grade, some clay	4'0"	25	9.4		Tr	1	5	-	2	16	29	20	27
155'0"	159'0"	" " " " " "	4'0"	26	11.0		Tr	1	4	-	8	23	33	16	6
159'0"	163'0"	" " " " " "	4'0"	27	11.4		Tr	2	4	1	-	21	46	13	14
163'0"	167'0"	" " " " " "	4'0"	28	8.7		Tr	1	9	5	-	37	29	7	11
167'0"	170'0"	" " " " " "	3'0"	29	7.1		Tr	1	9	-	18	29	23	8	12
170'0"	172'3"	" " " " " "	2'3"	30	6.7		0.0	3	4	-	6	38	27	7	5
172'3"	180'0"	Black clay	7'9"	-											
180'0"	187'0"	Light grey clay	7'0"	-											
187'0"	200'0"	Black clay	13'0"	-											
200'0"	202'0"	Altered limestone and fragments	2'0"	-											
	202'0"	End of Hole													

Summary

0'0" - 47'0" = Overburden and low grade bituminous sand
47'0" - 163'0" = 116' 12.8% - Bitumen
163'0" - 172'0" = 9'3" 7.2% - Bitumen
47'0" - 133'6" = 86'6" 14.4% - Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 39

DATE June 27-29 1944 LOCATION CO-ORDINATES ELEVATION 888' DEPTH 100' DIP 90° CORE RECOVERY 97.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	31'0"	Overburden, clay sand, bit. sand	31'0"												
31'0"	35'0"	Bit. sand, good grade	4'0"	1	15.4		0.0	1	4	-	42	30	13	4	5
35'0"	39'0"	" " " "	4'0")	2											
39'0"	43'0"	" " " "	4'0")	3	15.3		0.0	1	1	-	12	31	37	13	5
43'0"	47'0"	" " " "	4'0")	4											
47'0"	51'0"	" " " "	4'0")	5											
51'0"	55'0"	" " " "	4'0")	6	16.5		0.0	-	-	-	-	14	61	20	6
55'0"	59'0"	" " " "	4'0")	7											
59'0"	63'0"	" " " "	4'0")	8	15.8		0.0	-	-	-	-	22	58	15	5
63'0"	67'0"	" " " "	4'0")	9											
67'0"	71'0"	" " " "	4'0"	10	16.3		0.0	-	-	-	4	39	41	11	4
71'0"	75'0"	" " " "	4'0"	11	17.0		0.0	-	-	-	-	37	50	8	4
75'0"	76'0"	" " " "	1'0")												
76'0"	78'0"	Lost core	2'0")	-	16.9		0.0	-	-	-	6	37	34	15	8
78'0"	81'0"	Bit. sand, good grade	3'0")	12											
81'0"	85'0"	" " " "	4'0")	13											
85'0"	89'0"	" " " "	4'0")	14	17.4		0.0	-	1	-	25	39	21	7	6
89'0"	93'4"	" " " "	4'4")	15											
93'4"	97'0"	Black clay	3'8"												
97'0"	100'0"	Grey clay	3'0"												
	100'0"	End of Hole													

Summary

0'0" - 31'0" = 31'0" - Overburden
31'0" - 93'4" = 62'4" - 16.6% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 40

DATE June 30 - July 3, 1944 LOCATION CO-ORDINATES ELEVATION 845' DEPTH 63' DIP 90° CORE RECOVERY 91.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	29'0"	Overburden - clay, sand and gravel	29'0"	-											
29'0"	32'0"	Lost core. Presumably bit. sand	3'0"	-											
32'0"	36'0"	Bit. sand, good grade	4'0")	1											
36'0"	40'0"	" " " "	4'0")	2	16.4		0.0	1	1	-	-	34	52	9	4
40'0"	44'0"	" " " "	4'0")	3											
44'0"	48'0"	" " " "	4'0"	4	16.5		0.0	1	2	2	-	32	44	12	7
48'0"	52'0"	" " medium grade, half clay	4'0"	5	8.0		0.0	1	6	-	49	21	13	5	5
52'0"	54'6"	" " low " some clay	2'6"	6	8.6		Tr	3	40	17	-	20	8	5	8
54'6"	58'0"	Black clay	3'6"	-											
58'0"	63'0"	Grey clay	5'0"	-											
	63'0"	End of Hole													

Summary

0'0" - 32'0" = 32'0" - Overburden
32'0" - 54'6" = 22'6" - 14.1% Bitumen
32'0" - 48'0" = 16'0" - 16.4% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 41

DATE July 3 - 6 1944 LOCATION CO-ORDINATES ELEVATION 961' DEPTH 158' DIP 90° CORE RECOVERY 93.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	77'0"	Overburden - clay, gravel, boulders	77'0"	-											
77'0"	81'0"	Bit. sand, low grade, some clay	4'0"	1	11.0		Tr	1	7	2	-	33	33	8	16
81'0"	85'0"	Lost core	4'0"	-											
85'0"	89'0"	Bit. sand, good grade	4'0")	2											
89'0"	93'0"	" " " "	4'0")	3	16.6		0.0	-	-	-	8	40	37	10	4
93'0"	97'0"	" " " "	4'0")	4											
97'0"	101'0"	" " " "	4'0")	5											
101'0"	104'0"	" " " "	(3'0"												
104'0"	105'0"	Lost core	(1'0"	6	16.7		0.0	-	1	-	27	39	21	7	5
105'0"	106'0"	Bit. sand, good grade	(1'0"												
106'0"	110'0"	" " " "	4'0")	7											
110'0"	114'0"	" " " "	4'0")	8	16.6		0.0	-	-	-	-	49	39	6	6
114'0"	118'0"	" " " "	4'0")	9											
118'0"	122'0"	" " " "	(4'0"	10											
122'0"	126'0"	" " " "	(4'0"	11	16.4		0.0	-	-	13	-	43	30	7	6
126'0"	130'0"	" " " "	(4'0"	12											
130'0"	134'0"	" " " "	4'0")	13											
134'0"	138'0"	" " " "	4'0")	14	16.3		0.0	-	-	-	20	41	25	8	6
138'0"	142'0"	" " " "	4'0")	15											
142'0"	146'0"	" " " "	(4'0")	16											
146'0"	150'0"	" " " "	(4'0"	17	17.1		0.0	-	1	-	-	42	44	8	4
150'0"	153'0"	" " " "	(3'0"	18											
153'0"	156'0"	" " " "	3'0"	19	15.3		Tr	-	2	-	31	36	15	6	7
156'0"	158'0"	Clay and fragments of limestone	2'0"	-											
	158'0"	End of Hole													

Summary

0'0" - 77'0" - 77'0" - Overburden
77'0" - 156'0" - 79'0" - 16.1% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 42

DATE June 29-30 1944 LOCATION CO-ORDINATES ELEVATION 891' DEPTH 92' DIP 90° CORE RECOVERY 95.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	68'0"	Overburden, clay, sand, gravel	68'0"	-											
68'0"	71'0"	Bit. sand, good grade	3'0")	1											
71'0"	72'0"	Lost core	1'0")	-				-	-	-	37	33	20	5	4
72'0"	76'0"	Bit. sand, good grade	4'0")	2	17.4										
76'0"	80'0"	" " " "	4'0")	3											
80'0"	84'0"	" " " "	4'0"	4	16.9		Tr	2	22	10	-	43	15	4	4
84'0"	87'0"	" " " "	3'0"	5	16.8		Tr	1	3	-	32	33	19	6	6
87'0"	92'0"	Clay	5'0"	-											
	92'0"	End of Hole													

Summary

0'0" - 68'0" = 68'0" - Overburden
68'0" - 87'0" = 19'0" - 17.2% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 43

DATE June 26-28 1944 LOCATION CO-ORDINATES ELEVATION 905' DEPTH 95' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	87'0"	Overburden - clay and gravel	87'0"	-											
87'0"	91'0"	Bit. sand and bitumen	2'3")	1	34.0		0.3	42	3	-	4	20	15	5	11
			1'9")		18.4		0.0	2	1	1	-	35	45	10	7
91'0"	94'0"	Bit. sand and bitumen	(0'6"	2	60.7		0.3	10	4	-	13	29	18	7	18
			(2'0"		18.0		0.0	-	1	2	-	42	42	9	5
94'0"	95'0"	Clay	1'0"	-											
	95'0"	End of Hole													

Summary

0'0" - 87'0" - 87'0" - Overburden
87'0" - 94'0" - 7'0" - 26.3% - Bitumen

N.B. Upper parts of Sample No. 1 (2'3") and Sample No. 2 (6") contained free bitumen.

HORSE RIVER RESERVE AREA

HOLE No. 44

DATE July 5 - 7 1944 LOCATION CO-ORDINATES ELEVATION 921' DEPTH 156' DIP 90° CORE RECOVERY 94.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	36'0"	Overburden - clay	36'0"	-											
36'0"	39'0"	Bit. sand - medium grade	3'0"	1	8.1		Tr	1	2	2	-	65	14	7	8
39'0"	40'0"	Lost core	1'0"	-											
40'0"	44'0"	Bit. sand, good grade	4'0"	2	13.4		0.0	1	2	4	-	66	16	6	4
44'0"	48'0"	Lost core	4'0"	-											
48'0"	52'0"	Bit. sand, good grade	4'0"	3	14.4		0.3	7	3	-	7	25	29	16	12
52'0"	53'0"	Lost core	1'0"	-											
53'0"	57'0"	Bit. sand, good grade	4'0"	4											
57'0"	61'0"	" " " "	4'0"	5	16.3		0.0	-	-	-	3	22	47	19	7
61'0"	65'0"	" " " "	4'0"	6											
65'0"	69'0"	" " " "	4'0"	7											
69'0"	73'0"	" " " "	4'0"	8	16.2		0.0	-	-	-	-	15	58	17	8
73'0"	77'0"	" " " "	4'0"	9											
77'0"	81'0"	" " " "	4'0"	10											
81'0"	85'0"	" " " "	4'0"	11	16.1		0.0	-	-	-	-	17	54	21	6
85'0"	89'0"	" " medium grade	4'0"	12	16.0		Tr	1	3	-	-	7	55	24	10
89'0"	93'0"	" " " "	4'0"	13	10.3		Tr	11	6	-	3	7	24	25	24
93'0"	97'0"	" " " "	4'0"	14	14.1		0.0	-	1	-	-	2	22	48	26
97'0"	101'0"	" " good "	4'0"	15											
101'0"	105'0"	" " " "	4'0"	16	16.3		0.0	-	-	-	-	2	32	49	16
105'0"	106'0"	Lost core	1'0"	-	16.8										
106'0"	110'0"	Bit. sand, good grade	4'0"	17	17.3		Tr	-	-	-	-	2	45	41	12
110'0"	114'0"	" " " "	4'0"	18	16.3		Tr	1	1	-	-	9	41	37	12
114'0"	118'0"	" " medium grade, some clay	4'0"	19	14.0		Tr	1	2	-	4	27	36	17	13
118'0"	122'0"	" " low " leached, clay	4'0"	20											
122'0"	126'0"	" " " " " "	4'0"	21	6.8		0.1	-	6	1	-	6	32	25	28
126'0"	130'0"	" " " "	4'0"	22											
130'0"	134'0"	" " " "	4'0"	23	5.2		0.2	-	7	1	-	11	31	24	26
134'0"	138'0"	" " " "	4'0"	24											
															318

HORSE RIVER RESERVE AREA

HOLE No. 44

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
138'0"	140'0"	Clay & some bit. sand, low grade	2'0"	-											
140'0"	146'0"	Grey clay	6'0"	-											
146'0"	151'0"	Black clay	5'0"	-											
151'0"	154'0"	Greenish clay to altered limestone	3'0"	-											
154'0"	156'0"	Limestone	2'0"	-											
	156'0"	End of Hole													

Summary

0'0" - 36'0" = 36'0" - Overburden
36'0" - 118'0" = 82'0" 15.1% Bitumen
39'0" - 118'0" = 79'0" 15.3% Bitumen

HORSE RIVER RESERVE AREA

HOLE No. 45

DATE July 8 - 12 1944 LOCATION CO-ORDINATES ELEVATION 904' DEPTH 127' DIP 90° CORE RECOVERY 97.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	40'0"	Overburden - clay, gravel and boulders	40'0"	-											
40'0"	44'0"	Bit. sand, low grade	4'0"	1	8.3		0.2	-	5	-	2	41	33	11	8
44'0"	48'0"	" " medium grade	4'0"	2	14.5		Tr	-	1	-	12	29	41	9	8
48'0"	52'0"	" " good grade	4'0"	3	17.9		0.0	-	-	-	-	36	52	6	5
52'0"	53'0"	Lost core	1'0"	-											
53'0"	56'0"	Bit. sand, good grade	3'0"	4											
56'0"	60'0"	" " " "	4'0"	5	15.7		Tr	-	-	3	38	27	19	5	5
60'0"	64'0"	" " " "	4'0"	6											
64'0"	68'0"	" " " "	4'0"	7											
68'0"	72'0"	" " " "	4'0"	8	15.9		Tr	1	3	-	3	57	25	6	6
72'0"	76'0"	" " " "	4'0"	9											
76'0"	80'0"	" " " "	4'0"	10											
80'0"	84'0"	" " " "	4'0"	11											
84'0"	88'0"	" " " "	4'0"	12	17.5		0.0	-	-	-	-	29	38	23	8
88'0"	92'0"	" " " "	4'0"	13											
92'0"	96'0"	" " " "	4'0"	14											
96'0"	100'0"	" " " "	4'0"	15	17.3		0.0	-	-	-	9	20	33	27	10
100'0"	104'0"	" " " "	4'0"	16	15.6		Tr	1	7	5	-	48	25	9	5
104'0"	108'0"	" " " "	4'0"	17											
108'0"	112'0"	" " " "	4'0"	18	15.2		Tr	-	3	16	51	13	7	4	4
112'0"	113'0"	Lost core	1'0"	-											
113'0"	118'0"	Bit. sand, good grade	5'0"	19	15.6		0.0	-	4	38	43	6	3	2	3
118'0"	122'0"	Clay with trace of bit. sand	4'0"	-											
122'0"	127'0"	Black clay	5'0"	-											
	127'0"	End of Hole													

Summary

0'0" - 40'0" = 40'0" - Overburden
40'0" - 118'0" = 78'0" - 15.9% - Bitumen

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HORSE RIVER RESERVE AREA

HOLE No. 46

DATE July 11 - 19 194 4 LOCATION ..... CO-ORDINATES ..... ELEVATION 1064' DEPTH 286' DIP 90° CORE RECOVERY 92.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	85'0"	Overburden - clay													
85'0"	88'0"	Clay and bit. sand	3'0"	1	4.0										
88'0"	91'0"	Lost core	3'0"												
91'0"	95'0"	Bit. sand, low grade	4'0"	2	4.3		0.0	1	3	-	4	57	27	4	3
95'0"	96'0"	Lost core	1'0"	-											
96'0"	100'0"	Bit. sand, low grade	4'0")	3											
100'0"	104'0"	" " " "	4'0")	4	9.5		0.2	7	5	-	4	11	18	27	26
104'0"	108'0"	" " " "	4'0"	5	9.0		Tr	1	1	1	-	35	44	10	8
108'0"	112'0"	" " " " some clay	4'0")	6											
112'0"	113'0"	Lost core	1'0")	-											
113'0"	117'0"	Bit. sand, low grade, some clay	4'0")	7	10.3		0.2	6	5	1	-	23	36	10	16
117'0"	118'0"	Lost core	1'0"	-											
118'0"	122'0"	Bit. sand, low grade, some clay	4'0")	8	5.8		0.4	16	-	8	2	9	22	19	24
122'0"	126'0"	" " " " " "	4'0")	9											
126'0"	127'0"	Lost core	1'0")	-											
127'0"	131'0"	Bit. sand, low grade, some clay	4'0")	10											
131'0"	132'0"	Lost core	1'0"	-											
132'0"	136'0"	Bit. sand, low grade, some clay	4'0"	11	4.8		0.2	20	12	2	-	11	21	12	22
136'0"	140'0"	" " " " " "	4'0")	12											
140'0"	144'0"	" " " " " "	4'0")	13	8.2		Tr	7	-	4	1	24	40	11	10
144'02	148'0"	" " " " " "	4'0"	14	4.5		0.2	15	10	1	-	13	34	9	17
148'0"	152'0"	" " " " leached	4'0")	15											
152'0"	156'0"	" " " " "	4'0")	16	4.8		Tr	2	1	-	9	43	34	6	4
156'0"	160'0"	" " " " "	(4'0"	17											
160'0"	164'0"	" " " " "	(4'0"	18	8.9		Tr	1	1	-	11	48	27	6	6
164'0"	168'0"	" " medium grade	4'0")	19											
168'0"	172'0"	" " good "	4'0")	20	15.6		Tr	-	1	-	20	40	25	8	6

HORSE RIVER RESERVE AREA

HOLE No. 46

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
172'0"	176'0"	Bit. sand, leached, low grade	4'0")	21											
176'0"	180'0"	" " " " "	4'0")	22	6.9		Tr	1	1	-	1	47	35	9	6
180'0"	184'0"	" " " " "	4'0"	23	9.7		0.0	1	1	-	1	50	34	8	5
184'0"	188'0"	" " good grade	4'0")	24											
188'0"	192'0"	" " " "	4'0")	25	15.6		Tr	-	1	-	24	35	25	9	5
192'0"	196'0"	" " " "	4'0")	26											
196'0"	200'0"	" " " "	4'0")	27											
200'0"	204'0"	" " " "	4'0")	28	15.6		Tr	1	2	-	3	63	19	6	6
204'0"	208'0"	" " " "	4'0")	29											
208'0"	212'0"	" " " "	4'0")	30											
212'0"	216'0"	" " " "	4'0")	31	17.2		0.0	-	-	-	26	42	19	5	6
216'0"	220'0"	" " " "	4'0")	32											
220'0"	224'0"	" " " "	4'0")	33											
224'0"	228'0"	" " " "	4'0")	34	15.2		0.0	-	2	-	-	54	27	9	7
228'0"	232'0"	" " " "	4'0")	35											
232'0"	236'0"	" " " "	4'0")	36											
236'0"	237'0"	Lost core	1'0")	-	16.2		0.0	-	-	-	50	23	15	5	6
237'0"	241'0"	Bit. sand, good grade	4'0")	37											
241'0"	245'0"	Bit. sand, good grade	4'0")	38											
245'0"	249'0"	" " " "	4'0")	39											
249'0"	253'0"	" " " "	4'0")	40	17.4		0.0	-	-	-	31	33	21	8	6
253'0"	257'0"	" " " "	4'0")	41											
257'0"	260'0"	" " " "	3'0")	42											
260'0"	261'0"	Lost core	1'0")	-	17.0		0.0	-	-	-	1	70	21	2	4
261'0"	265'0"	Bit. sand, good grade	4'0")	43											
265'0"	269'0"	" " " "	4'0")	44											
269'0"	272'0"	" " " "	3'0")	45	16.6		0.0	-	-	2	4	75	10	3	5
272'0"	274'0"	" " " "	2'0")	46											
274'0"	276'0"	Clay ironstone	2'0"	-											
276'0"	286'0"	Clay	10'0"	-											
	286'0"	End of Hole													

HORSE RIVER RESERVE AREA

HOLE No. 46

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0'0" - 85'0" = 85'0" - Overburden (85'0" - 164'0" = 79'0" - 6.96%) Bitumen (164'0" - 274'0" = 110'0" 14.9%) " or (85'0" - 184'0" = 99'0" - 7.5%) " (184'0" - 274'0" = 90'0" -16.2%) " 85'0" - 274'0" = 189'0" - 11.6%) " 96'0" - 274'0" = 178'0" - 12.1% "												

HORSE RIVER RESERVE AREA

HOLE No. 47

DATE July 14-21 1944 LOCATION CO-ORDINATES ELEVATION 1064' DEPTH DIP 90° CORE RECOVERY 90%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	98'0"	Overburden - clay and soft sandstone	98'0"	-											
98'0"	101'0"	Bit. sand, low grade	3'0"	1	6.5		0.0	2	-	1	44	15	23	7	7
101'0"	111'0"	Lost core	10'0"	-											
111'0"	116'0"	Bit. sand, low grade	5'0"	2	8.9		0.0	3	3	1	-	38	33	11	12
116'0"	117'0"	Lost core	1'0"	-											
117'0"	121'0"	Bit. sand, low grade	4'0"	3	8.1		0.0	1	2	-	2	62	22	6	6
121'0"	125'0"	" " medium grade	4'0")	4											
125'0"	129'0"	" " good grade	4'0")	5	13.7		0.0	1	-	2	29	33	22	7	5
129'0"	133'0"	" " " "	4'0"	6	15.2		Tr	1	-	1	30	31	27	6	4
133'0"	137'0"	" " " " & 40% clay	4'0")	7											
137'0"	141'0"	" " low " considerable clay	4'0")	8	12.6		0.1	4	-	4	1	26	34	14	18
141'0"	145'0"	" " " " " "	4'0")	9											
145'0"	149'0"	" " " " " "	4'0")	10	10.5		Tr	1	3	-	3	53	28	6	7
149'0"	153'0"	" " " " " "	4'0")	11											
153'0"	157'0"	" " " " " "	4'0")	12	9.9		0.1	2	-	7	38	21	13	5	13
157'0"	161'0"	" " " " " "	4'0")	13											
161'0"	165'0"	" " " " " "	4'0")	14											
165'0"	169'0"	Lost core	4'0")	-	6.3		0.1	1	2	-	2	35	44	9	8
169'0"	173'0"	Bit. sand, low grade, leached	4'0")	15											
173'0"	174'0"	Lost core	1'0"	-											
174'0"	178'0"	Bit. sand, low grade	4'0"	16	7.4		Tr	2	12	-	65	20	1	-	-
178'0"	182'0"	" " medium grade	4'0")	17											
182'0"	186'0"	" " good "	4'0")	18	13.5		Tr	4	1	-	29	27	23	8	7
186'0"	190'0"	" " " "	4'0")	19											
190'0"	194'0"	" " " " some clay	4'0")	20	14.3		Tr	1	3	-	2	48	34	7	5
194'0"	198'0"	" " " "	4'0")	21											
198'0"	202'0"	" " " "	4'0")	22	14.3		Tr	-	3	-	2	63	20	6	5
202'0"	206'0"	" " " "	4'0")	23											
206'0"	210'0"	" " " "	4'0")	24	15.9		Tr	-	-	1	37	30	15	7	6
210'0"	214'0"	" " " "	4'0")	25											

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HORSE RIVER RESERVE AREA

HOLE No. 47

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
214'0"	218'0"	Bit. sand, good grade	4'0")	26											
218'0"	222'0"	" " " "	4'0")	27	15.8.		0.0	-	-	1	14	56	16	6	6
222'0"	225'0"	" " medium grade, clay ironstone	3'0")	28											
225'0"	228'0"	" " " " " "	3'0")	29	16.4		0.0	1	5	-	8	44	26	7	6
228'0"	237'0"	Clay	9'0"	-											
237'0"	241'0"	Clay & low grade bit. sand	4'0")	30											
241'0"	245'0"	" & " " " "	4'0")	31	5.9		Tr	5	15	-	2	26	16	16	21
245'0"	247'0"	Lost core	2'0"	-											
247'0"	250'0"	Bit. sand, coarse, good grade	3'0"	32	15.2		0.0	5	-	65	9	9	5	2	5
250'0"	254'0"	Black clay	4'0"	-											
254'0"	269'0"	Grey clay	15'0"	-											
269'0"	274'0"	Blue clay; altered limestone	5'0"	-											
274'0"	277'0"	Limestone	3'0"	-											
	277'0"	End of Hole													

Summary

0'0" - 98'0" = 98'0" - Overburden
98'0" - 121'0" = 23'0" - 7.9% Bitumen
121'0" - 149'0" = 28'0" - 12.7% "
149'0" - 178'0" = 29'0" - 7.96% "
178'0" - 228'0" = 50'0" - 15.05% "
228'0" - 250'0" = 22'0" - 5.17% "
121'0" - 228'0" = 107'0" - 12.1% "
98'0" - 228'0" = 130'0" - 11.38% "

HORSE RIVER RESERVE AREA

HOLE No. 48

DATE July 22-28 1944 LOCATION CO-ORDINATES ELEVATION 1037' DEPTH 225' DIP 90° CORE RECOVERY 84.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'0"	63'0"	Overburden - clay, sand and gravel	63'0"												
63'0"	67'0"	Bit. sand, low grade, leached	4'0")	1											
67'	71'0"	" " " " "	4'0")	2	4.3		0.0	-	-	1	6	60	22	7	6
71'0	75'0"	" " " " " some clay	4'0"	3	10.7		0.1	1	-	3	1	37	36	12	10
75'0"	80'0"	Lost core	5'0"	-											
80'0"	84'0"	Bit. sand, medium grade	4'0")	4											
84'0"	88'0"	" " low " leached	4'0")	5	11.6		0.0	2	2	1	-	12	18	27	29
88'0"	89'0"	Lost core	1'0"	-											
89'0"	93'0"	Bit. sand, low grade, some clay	4'0")	6											
93'0"	97'0"	" " " " " "	4'0")	7	9.7		Tr	1	7	-	3	31	34	11	13
97'0"	101'0"	" " " " " "	4'0")	8											
101'0"	109'0"	Lost core	8'0"	-											
109'0"	113'0"	Bit. sand, medium grade	4'0")	9											
113'0"	117'0"	" " " "	4'0")	10	6.2		Tr	2	14	-	56	8	8	5	6
117'0"	118'0"	Lost core	1'0"	-											
118'0"	122'0"	Bit. sand, medium grade	4'0"	11	7.7		Tr	4	16	-	41	22	9	4	4
122'0"	123'0"	Lost core	1'0"	-											
123'0"	127'0"	Bit. sand, good grade	4'0")	12											
127'0"	131'0"	" " " "	4'0")	13	13.0		0.0	-	5	-	8	65	17	2	2
131'0"	135'0"	" " " "	4'0")	14											
135'0"	139'0"	" " " " with clay	4'0")	15											
139'0"	143'0"	" " low " considerable clay	4'0")	16	9.2		0.1	4	10	-	6	53	20	4	3
143'0"	147'0"	" " medium " some clay	4'0"	17	14.6		Tr	3	2	-	19	33	25	8	9
147'0"	151'0"	" " good "	4'0")	18											
151'0"	155'0"	" " " "	4'0")	19	15.9		Tr	-	1	-	1	55	34	5	2
155'0"	159'0"	" " " " considerable clay	4'0")	20											
159'0"	163'0"	" " medium grade, some clay	4'0")	21	10.8		Tr	1	-	1	26	30	27	6	7
163'0"	164'0"	Lost core	1'0"	-											
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HORSE RIVER RESERVE AREA

HOLE No. 48

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
164'0"	168'0"	Bit. sand, low grade, some clay	4'0")	22											
168'0"	172'0"	" " " " " "	4'0")	23	5.7		0.1	1	4	-	13	22	23	16	21
172'0"	176'0"	" " " " mostly clay	4'0")	24											
176'0"	180'0"	" " good "	4'0")	25											
180'0"	184'0"	" " " "	4'0")	26	17.0		Tr	-	-	-	1	24	46	20	8
184'0"	188'0"	" " " "	4'0")	27											
188'0"	192'0"	" " " "	4'0")	28	16.3		0.0	-	-	-	5	44	37	10	5
192'0"	196'0"	" " " "	4'0")	29											
196'0"	200'0"	" " " "	4'0")	30	16.9		Tr	-	-	-	14	21	51	8	4
200'0"	204'0"	" " " "	4'0")	31											
204'0"	208'0"	" " " " some clay	4'0")	32	15.5		0.1	-	1	-	5	4	44	35	10
208'0"	212'0"	" " " "	4'0"	33	14.6		0.1	-	9	-	6	39	26	9	9
212'0"	215'0"	" " and clay	3'0"	34	7.7		0.2	-	6	-	2	17	37	21	16
215'0"	225'0"	Clay	10'0"	-											
	225'0"	End of Hole													

Summary

0'0" - 63'0" = 63'0" - Overburden)
63'0" - 71'0" = 8'0" - 4.3% Bitumen)
71'0" - 101'0" =30'0" -10.6% "
101'0" - 123'0" =22'0" - 7.3% "
123'0" - 212'0" =89'0" -13.1% "
71'0" - 212'0" =141'0"-10.93% "

EAST OF STEEPBANK RIVER AREA

EAST OF STEEPBANK RIVER AREA

HOLE No. 115

DATE Aug. 14 - 21 1945 LOCATION Sec.29,Tp.92-9-4 CO-ORDINATES ELEVATION 1095' DEPTH 227' DIP 90° CORE RECOVERY 94.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	39'	Overburden, sand and clay	39	-											
39'	43'	Bit. sand, low grade, 30% clay	4	1	Not assayed, very low grade										
43'	44'	Lost core	1												
44'	48'	Bit. sand, low grade	4	2	Not assayed, very low grade										
48'	50'	Lost core	2	-											
50'	54'	Bit. sand, low grade, slight clay	4	3	Not assayed, very low grade										
54'	55'	Lost core	1	-											
55'	59'	Bit. sand, low grade, 5% clay	4	4)											
59'	63'	" " medium grade, some clay	4	5)	11.3	8½	Tr	2	1	1	10	27	11	41	7
63'	67'	" " " " 15% clay	4	6)											
67'	71'	" " low " 5% "	4	7)	11.6	10½	Tr	2	2	0	6	11	11	60	6
71'	75'	" " good " 5% "	4	8)											
75'	76'	Lost core	1	-)	12.7	6	Tr	1	1	1	5	26	8	52	6
76'	80'	Bit. sand, good grade	4	9)											
80'	84'	" " " " 10% clay	4	10)											
84'	88'	" " " " 5% "	4	11)	12.3	6⅜	Tr	1	1	0	6	12	6	68	6
88'	92'	" " " " slight clay	4	12)											
92'	96'	" " " " 10% clay	4	13)	12.9	7¼	Tr	1	1	0	4	8	24	54	8
96'	100'	" " medium " 5% "	4	14)											
100'	104'	" " good " some clay	4	15)	12.9	3⅜	Tr	1	1	0	10	15	1	67	5
104'	108'	" " " " 10% "	4	16)											
108'	112'	" " " " 15% "	4	17)	12.6	11½	Tr	1	1	1	5	20	40	26	6
112'	116'	" " " " 10% "	4	18)											
116'	120'	" " " " 30% "	4	19)	12.0	19	Tr	0	1	1	8	10	0	73	7
120'	124'	" " medium " 30% "	4	20)											
124'	128'	" " good " 40% "	4	21)	10.8	32¼	Tr	1	1	1	4	13	32	39	9
128'	132'	" " " "	4	22)											
132'	136'	" " " "	4	23)											
136'	140'	" " " " 15% "	4	24)	12.9	12	Tr	1	1	0	12	15	22	43	6

EAST OF STEEPBANK RIVER AREA

HOLE No. 115

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
140'	141'	Clay	1	-											
141'	145'	Bit. sand, good grade, 5% clay	4	25)											
145'	149'	" " " "	4	26)	12.8	9½	Tr	1	1	1	18	10	10	52	5
149'	153'	" " " " 30% "	4	27)											
153'	157'	" " " " 20% "	4	28)	10.0	50	Tr	2	1	2	30	17	1	45	3
157'	161'	" " " " 15% "	4	29)											
161'	165'	" " " " 20% "	4	30)											
165'	169'	" " " " 20% "	4	31)	8.8	60½	Tr	2	1	2	24	30	1	36	4
169'	173'	" " " " 30% "	4	32)											
173'	177'	" " " " 25% "	4	33)											
177'	181'	" " " "	4	34)	15.8	10¼	Tr	1	4	21	47	8	7	10	2
181'	185'	" " " "	4	35)											
185'	189'	" " " "	4	36)	16.1	1½	Tr	1	1	35	45	3	3	9	3
189'	193'	" " " "	4	37)											
193'	197'	" " " "	4	38)	15.3	1½	Tr	0	33	28	25	3	0	7	3
197'	198'	Lost core	1	-											
198'	202'	Bit. sand, low grade, 15% clay	4	39	Not assayed, very low grade										
202'	204'	Clay	2	-											
204'	206'	Bit. sand, medium grade, 30% clay	2	40	Not assayed, very low grade										
206'	211'	Clay with stringers of low grade sand	5	-											
211'	213'	Bit. sand, medium grade	2	41	Not assayed, very low grade										
213'	217'	Leached sand	4	-											
217'	218'	Lost core	1	-											
218'	219'	Leached coarse sand	1	-											
219'	223'	Lost core	4	-											
223'	226'10"	Leached coarse sand	3'10"	-											
226'10"	227'	Limestone	0'2"	-											

EAST OF STEEPBANK RIVER AREA

HOLE No. 115

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 55' = 55' Overburden 55' - 197' = 142' @ 12.2% bitumen and 15.4% clay bands; 7.6% clay bands under 6" in thickness.													

EAST OF STEEPBANK RIVER AREA

HOLE No. 155

DATE Sept. 3 - 10 1945 LOCATION L.S.7, Sec.29, Tp.92-9-4 CO-ORDINATES ELEVATION 1091' DEPTH 222' DIP 90° CORE RECOVERY 96.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	48	Overburden - clay		-											
48	51	Bit. sand, low grade, some clay	3	1											
51	52	Lost core	1	-											
52	53	Clay	1	-											
53	57	Bit. sand, low grade, some clay	4	2											
57	58	Lost core	1												
58	63	Clay with few stringers of low grade sand	5		Samples 1 - 14 not assayed - clay and very low grade										
63	67	Bit. sand, low grade, some clay	4	3	bituminous sand										
67	69	" " " " " "	2	4											
69	83	Clay with few stringers of low grade sand	14												
83	87	Bit. sand, low grade, 20% clay	4	5											
87	91	" " " " 20% "	4	6											
91	92	Clay	1	-											
92	96	Bit. sand, low grade, 15% clay	4	7											
96	98	" " " " 20% "	2	8											
98	102	Clay with few stringers of low grade sand	4	-											
102	106	Bit. sand, low grade, 20% clay	4	9											
106	108	" " " " 10% "	2	10											
108	114	Clay with few stringers of low grade sand	6	-											
114	118	Bit. sand, low grade, 15% clay	4	11											
118	128	Clay with small stringers of low grade sand	10	-											
128	134	Sand with traces of bitumen	6	-											
134	138	Bit. sand, low grade, 10% clay	4	12											
138	144	Sand with slight traces of bitumen	6	-											
144	148	Bit. sand, low grade, 20% clay	4	13											
148	150	" " " " 10% "	2	14											
150	154	Clay	4	-											
154	158	Bit. sand, medium grade, 20% clay	4	15)											
158	162	" " " " 20% "	4	16)	9.7	35½	Tr	7	3	1	2	6	12	57	11
162	164	" " good " slight clay	2	17)											

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EAST OF STEEPBANK RIVER AREA

HOLE No. 155

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
164	168	Clay with few stringers of low grade sand	4	-											
168	172	Bit. sand, good grade, 5% clay	4	18)											
172	176	" " " " 10% "	4	19)	12.9	30½	Tr	4	1	1	13	32	31	13	5
176	180	" " " " 10% "	4	20)											
180	184	" " " " 25% "	4	21)											
184	188	" " " "	4	22)	14.2	16½	Tr	0	1	5	46	15	18	12	3
188	192	" " " "	4	23)											
192	196	" " " "	4	24)	15.3	1½	Tr	1	2	30	39	5	1	16	6
196	200	" " " "	4	25)											
200	201	Lost core	1	-)	16.4	1	Tr	2	3	4	53	15	15	4	4
201	205	Bit. sand, good grade, slight clay	4	26)											
205	209	" " " " 5% clay	4	27)											
209	210	" " medium " 20% "	1	28A)	15.5	6¾	Tr	1	2	15	54	5	9	7	7
210	213	Bit. sand, medium grade, much clay	3	28B	Not assayed - clay and trace of bituminous sand										
213	214	Lost core	1	-											
214	216	Bit. sand, low grade	2	29	"	"	"	"	"		"	"			
216	218	Coarse sand with trace of bitumen	2	-											
218	220	Lost core	2	-											
220	222	Clay with limestone fragments	2	-											
	222	End of Hole													

Summary

0' - 154' = 154' Overburden, clay and very low grade bit. sand

154' - 168' = 14' @ 7% bitumen & 50% clay bands

168' - 210' = 42' @ 14.66% bitumen & 11.1% clay bands

154' - 210' = 56' @ 12.7% bitumen & 20.8% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 156

DATE Nov.28-Dec.1 1945 LOCATION Sec.29, Tp.92-9-4 CO-ORDINATES ELEVATION 1098' DEPTH 213' DIP 90° CORE RECOVERY 97.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	40	Clay	40	-											
40	57	Clay with stringers of sands	17	-											
57	61	Bit. sand, low grade, 30% clay	4	1)											
61	65	" " " " 15% "	4	2)											
65	67	Lost core	2	-)	4.8	37½	0.1	20	9	4	5	8	8	33	13
67	71	Bit. sand, low grade, 15% clay	4	3)											
71	72	Lost core	1	-											
72	76	Bit. sand, low grade, some clay	4	4)											
76	80	" " medium grade, some clay	4	5)	9.6	4	Tr	7	3	1	1	2	46	27	12
80	84	" " " " 20% clay	4	6)											
84	88	" " " " some clay	4	7)	11.0	13½	Tr	5	3	2	2	2	14	52	20
88	90'6"	" " " " " "	2'6"	8)											
90'6"	93	Clay	2'6"	-)	7.6	32¾	Tr	13	7	1	3	3	28	24	21
93	97	Bit. sand, medium & good grade, 25% clay	4	9)											
97	101	" " " grade, 10% clay	4	10)											
101	105	" " " " 20% "	4	11)											
105	109	" " good grade, 27% "	4	12)	8.3	20½	Tr	17	6	3	3	5	16	30	19
109	110	Lost core	1	-											
110	114	Bit. sand, good grade, 15% clay	4	13)											
114	118	" " " " 12% "	4	14)	11.4	12¾	Tr	3	2	1	3	8	49	22	12
118	122	" " " " 20% "	4	15)											
122	126	" " " " 17% "	4	16)	11.9	16½	Tr	5	2	1	6	18	12	46	10
126	130	" " " " 25% "	4	17)											
130	134	" " " " some clay	4	18)	13.3	11	Tr	1	1	0	3	7	55	25	8
134	138	" " " " 12% clay	4	19)											
138	142	" " " "	4	20)	14.7	4½	Tr	1	0	1	7	5	0	75	11
142	146	" " " " some clay	4	21	14.2		Tr	2	4	1	17	16	41	13	6

EAST OF STEEPBANK RIVER AREA

HOLE No. 156

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
146	150	Bit. sand, low grade, 50% clay	4	22)											
150	154	" " medium grade, 35% clay	4	23)											
154	158	" " " " 50% "	4	24)	5.7	9 6½	Tr	12	3	2	17	23	7	31	5
158	162	" " " " 20% "	4	25)											
162	166	" " good " some clay	4	26)											
166	170	" " " " 20% clay	4	27)	10.5	29	Tr	4	1	1	20	37	32	3	2
170	174	" " " " 10% "	4	28)											
174	178	" " " " 12% "	4	29)	12.8	18¾	Tr	2	2	3	41	17	29	4	2
178	182	" " " " 15% "	4	30)											
182	186	" " " " 10% "	4	31)	11.5	45	Tr	1	1	7	49	17	18	5	2
186	190	" " " "	4	32)											
190	194	" " " "	4	33)											
194	198	" " " "	4	34)	16.4		Tr	1	6	14	52	11	13	2	1
198	202	" " " " 10% clay	4	35)											
202	206	" " " "	4	36)	14.6	3	Tr	6	21	28	24	9	0	9	3
206	208'10"	" " " "	2'10"	37)											
208'10"	210	Clay	1'2"	-											
210	213	Limestone	3	-											
	213'	End of Hole													

EAST OF STEEPBANK RIVER AREA

HOLE No. 156

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 57' = 57' Overburden 57' - 72' = 15' @ 4.8% Bitumen 72' - 110' = 38' @ 8.4% Bitumen & 16% clay bands 110' - 146' = 36' @ 13% Bitumen & 10% clay bands 146' - 162' = 16' @ 5.7% Bituman & 50% clay bands 162' - 208'10" = 46'10" @ 13.1% Bitumen & 16% clay bands 72' - 208'10" = 136'10" @ 11.2% Bitumen & 20% clay bands.												

EAST OF STEEPBANK RIVER AREA

HOLE No. 157

DATE Sept. 17-21 1945 LOCATION LS.1,Sec.29,Tp.92-9-4 CO-ORDINATES ELEVATION 1097' DEPTH 239' DIP 90° CORE RECOVERY 93.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	22	Overburden, gravel and clay	22	-											
22	40	Clay with band of low grade sand	18	-											
40	44	Bit. sand, low grade, 5% clay	4	1	Not assayed										
44	48	" " " "	4	2	Not assayed										
48	50	Lost core	2	-											
50	54	Bit. sand, low grade, some clay	4	3	Not assayed										
54	58	" " " " 15% "	4	4	Not assayed										
58	62	Lost core	4	-											
62	66	Bit. sand, medium grade, 10% clay	4	5)											
66	70	" " " " 5% "	4	6)	9.3	32½	Tr	5	3	4	10	20	29	17	12
70	72	Lost core	2	-											
72	76	Bit. sand, medium grade, some clay	4	7	9.3	2½	Tr	5	3	4	10	20	29	17	12
76	80	" " " " 5% clay	4	8)											
80	84	" " low " 15% "	4	9)	9.9	17	Tr	2	2	1	22	18	34	16	5
84	88	" " medium " 10% "	4	10)											
88	92	" " good " 5% "	4	11)	12.7	8¾	Tr	2	1	1	21	29	1	38	7
92	96	" " medium " 5% "	4	12	12.3	6	Tr	2	2	1	15	18	47	11	4
96	97	Lost core	1	-											
97	101	Bit. sand, medium grade	4	13	12.3		Tr	2	2	1	15	18	47	11	4
101	105	" " " " 5% clay	4	14)											
105	109	" " " " slight clay	4	15)	12.8	3¼	Tr	1	1	1	20	26	5	41	5
109	113	" " " " 10% clay	4	16)											
113	117	" " " " some clay	4	17)	13.8	7¾	Tr	1	1	1	4	12	1	69	10
117	121	" " good " slight clay	4	18)											
121	125	" " " " 5% clay	4	19)	14.3		0.0	1	1	1	11	13	16	50	7
125	128	Lost core	3	-											
128	132	Bit. sand, good grade, 15% clay	4	20)											
132	136	" " " " 20% "	4	21)	11.5	23¼	0.0	1	1	1	16	25	31	18	7

EAST OF STEEPBANK RIVER AREA

HOLE No. 157

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
136	140	Bit. sand, good grade, 5% clay	4	22)											
140	144	" " " " some clay	4	23)	15.1	5½	Tr	1	1	0	16	20	1	53	8
144	145	Lost core	1	-											
145	149	Bit. sand, good grade	4	24)											
149	153	" " " "	4	25)	14.1		Tr	2	1	1	14	16	26	26	14
153	157	" " " "	4	26)											
157	161	" " " " 40% clay	4	27)	9.5	40	Tr	5	1	1	19	18	5	41	10
161	165	" " medium " 30% "	4	28)											
165	169	" " " " some clay	4	29)											
169	173	" " good " 35% clay	4	30)	11.6	45	Tr	1	1	1	29	34	19	10	5
173	174	Lost core	1	-											
174	179	Bit. sand, good grade	5	31	11.6		Tr	1	1	1	29	34	19	10	5
179	182	Clay	3	-											
182	186	Bit. sand, low grade, 15% clay	4	32)											
186	190	" " good " 5% "	4	33)	10.8	8	Tr	4	3	1	14	15	41	16	6
190	194	" " " " 30% "	4	34)											
194	198	" " " " slight clay	4	35)	11.0	18	Tr	2	1	4	23	28	0	38	4
198	202	" " " " 25% clay	4	36)											
202	206	" " " "	4	37)											
206	210	" " " "	4	38)	10.4	63	Tr	4	8	5	26	12	1	38	5
210	215	" " low " 10% clay	5	39)											
215	226	Sand with slight trace of bitumen	11	-											
226	235	Clay	9	-											
235	239	Limestone	4	-											
	239	End of Hole													

EAST OF STEEPBANK RIVER AREA

HOLE No. 157

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 62' = 62' Overburden and very low grade sand 62' - 215' = 153' @ 11.01% bitumen and 15.3" clay bands													

EAST OF STEEPBANK RIVER AREA

HOLE No. 158

DATE Sept. 21-25 1945 LOCATION LS.8,Sec.29,Tp.92-9-4 CO-ORDINATES ELEVATION 1114' DEPTH 242' DIP 90° CORE RECOVERY 96.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	22	Sand and clay	22	-											
22	34	Clay	12	-											
34	35	Lost core	1	-											
35	68	Clay	33	-											
68	74	Sand	14	-											
74	78	Bit. sand, low grade, some clay	4	1)											
78	82	" " " " " "	4	2)											
82	86	" " " " " "	4	3)		Not assayed, very low grade									
86	90	" " " " " "	4	4)											
90	94	" " medium grade, 30% clay	4	5)											
94	95	Lost core	1	-											
95	99	Bit. sand, medium grade, 25% clay	4	6	10.5	15½	Tr	1	2	1	3	7	2	76	8
99	101	Lost core	2	-											
101	105	Bit. sand, medium grade, 5% clay	4	7)											
105	109	" " " " 15% "	4	8)	10.5	17½	Tr	1	2	1	3	7	2	76	8
109	110'8"	" " " " some clay	1'8"	9	11.8	1½	Tr	1	1	1	2	8	24	47	1
110'8"	122'6"	Clay	11'10"	-		142									
122'6"	125	Bit. sand, good grade, 25% clay	2'6"	10)											
125	129	" " " " 50% "	4	11)	8.0	31	Tr	1	1	1	2	8	24	47	1
129	133	" " " " 5% "	4	12)											
133	135	" " " " 50% "	2	13)	11.4	11½	Tr	4	6	1	3	4	1	66	14
135	141	Clay	6	-											
141	145	Bit. sand, good grade, 20% clay	4	14	10.6	10½	Tr	4	6	1	3	4	1	66	14
145	149	" " " " 10% "	4	15)											
149	153	" " " " slight clay	4	16)	12.9	10½	Tr	2	2	1	4	22	25	39	5
153	157	" " " " 10% clay	4	17)											
157	161	" " " " 15% "	4	18)	12.4	12½	Tr	3	3	0	12	16	0	59	7

EAST OF STEEPBANK RIVER AREA

HOLE No. 158

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
161	165	Bit. sand, good grade, 5% clay	4	19)											
165	169	" " " " 40% "	4	20)	12.0	32½	Tr	2	2	1	6	20	29	30	10
169	173	" " " " 15% "	4	21)											
173	174	Lost core	1	-											
174	178	Bit. sand, good grade, 20% clay	4	22)											
178	182	" " " " 25% "	4	23)	12.2	20¾	Tr	1	1	0	13	13	1	63	8
182	183	Lost core	1	-											
183	187	Bit. sand, good grade, some clay	4	24)											
187	191	" " " " slight clay	4	25)	15.2	2¼	Tr	0	0	1	24	34	29	8	4
191	195	" " " " 15% clay	4	26)											
195	199	" " " " 20% "	4	27)	Not assayed, very low grade										
199	203	" " " " 15% "	4	28)											
203	207	" " " " 5% "	4	29)	11.9	37¾	Tr	5	3	2	29	18	26	14	3
207	211	" " " " 5% "	4	30)											
211	215	" " " "	4	31)											
215	219	" " " "	4	32)	14.6	4½	Tr	8	7	4	28	28	17	5	3
219	223	" " " "	4	33)											
223	227	" " " " 10% clay	4	34)	12.2	15½	Tr	10	28	8	25	10	0	17	2
227	231	" " " " 5% "	4	35)											
231	232	Lost core	1	-)											
232	235	Bit. sand, good grade, 10% clay	3	36)	11.3	21½	Tr	21	32	22	12	5	4	2	2
235	237'6"	Clay	2'6"	-											
237'6"	242	Limestone	4'6"												
	242	End of Hole													

340

EAST OF STEEPBANK RIVER AREA

HOLE No. 158

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 95' = 95' Overburden 95' - 141' = 46' @ 6.0% bitumen & 52.5% clay bands 141' - 235' = 94' @ 11.47% bitumen; 24.5% clay bands, including samples 26 & 27.													

EAST OF STEEPBANK RIVER AREA

HOLE No. 159

DATE Sept. 26 - Oct. 2, 1945 LOCATION Sec. 21, Tp. 92-9-4 CO-ORDINATES ELEVATION 1121' DEPTH 300' DIP 90° CORE RECOVERY 94.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	28	Sand and clay - standpipe	28	-											
28	43	Clay	15	-											
43	45	Lost core	2	-											
45	55	Clay	10	-											
55	56	Lost core	1	-											
56	153	Clay	97	-											
153	157	Bit. sand, low grade, some clay	4	1)											
157	161	" " " " " "	4	2)		Not assayed clay with traces of bituminous sand									
161	165	" " " " 10% clay	4	3)											
165	169	" " medium grade, 5% clay	4	4)	8.8	42½	Tr	4	3	1	4	8	0	73	7
169	173	" " " " slight clay	4	5)											
173	177	" " good " some clay	4	6)											
177	181	" " " " 15% clay	4	7)	10.5	21½	Tr	2	1	1	4	22	16	48	6
181	182	Lost core	1	-											
182	186	Bit. sand, good grade	4	8)											
186	190	" " " " 10% clay	4	9)	10.7	7½	Tr	3	2	1	5	10	1	72	6
190	194	" " " " slight clay	4	10)											
194	198	" " " " 10% clay	4	11)	12.2	10½	Nil	2	2	1	9	21	43	17	5
198	202	" " " " slight clay	4	12)											
202	206	" " " " " "	4	13)	13.1	6	Nil	1	1	1	21	17	0	52	7
206	207	Lost core	1	-											
207	211	Bit. sand, good grade, 40% clay	4	14)											
211	215	" " " " 10% "	4	15)	9.0	57	Nil	3	2	1	10	28	39	13	4
215	218	Lost core	3	-											
218	222	Bit. sand, good grade, 5% clay	4	16)											
222	226	" " " " 35% "	4	17)	6.0	87½	Tr	2	1	10	11	15	2	64	5
226	230	Clay with 20% good grade bit. sand	4	18)											
230	234	Clay and rock	4	-											

EAST OF STEEPBANK RIVER AREA

HOLE No. 159

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
234'	238'	Bit. sand, good grade, 10% clay	4	19)											
238	242	" " " " 60% "	4	20)	8.1	58	Tr	8	4	2	14	20	30	14	8
242	246	" " " " 30% "	4	21)											
246	250	" " " " 30% "	4	22)											
250	251	Lost core	1	-)											
251	255	Bit. sand, good grade, 5% clay	4	23)	10.7	44¾	Tr	21	1	2	42	14	14	21	4
255	257	Lost core	2	-)											
257	261	Bit. sand, good grade, 5% clay	4	24)											
261	265	" " " " 20% "	4	25)											
265	269	" " " " 30% "	4	26)											
269	273	" " " " 25% "	4	27)	5.3	120	Tr	7	3	8	41	20	12	4	5
273	275	Lost core	2	-)											
275	279	Bit. sand, good grade, 40% clay	4	28)											
279	283	" " " "	4	29)											
283	287	" " " " 5% "	4	30)	15.1	3	Tr	4	26	16	28	7	4	12	5
287	289	Lost core	2	-											
289	293	Bit. sand, good grade, slight clay	4	31)											
293	297'6"	" " " "	4'6"	32)	13.8	3	Tr	16	25	19	21	8	5	3	3
297'6"	300	Clay	2'6"												
	300	End of Hole													

.....AREA

HOLE No.....

DATE.....194.... LOCATION..... CO-ORDINATES..... ELEVATION..... DEPTH..... DIP..... CORE RECOVERY.....

DEPTH		CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER							
FROM	TO							+20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 161' = 161' Overburden 161' - 173' = 12' @ 8.8% bitumen & 30% clay bands 173' - 215' = 42' @ 11.03% bitumen & 20.2% clay bands 215' - 246' = 31' @ 6.04% bitumen & 52.0% clay bands 246' - 297'6" = 51.5 @ 9.8% bitumen & 28.0% clay bands 161' - 297'6" = 136.5 @ 9.25% bitumen & 31% clay bands.													

EAST OF STEEPBANK RIVER AREA

HOLE No. 160

DATE Oct. 4-10 1945 LOCATION Sec. 21, Tp. 92-9-4 CO-ORDINATES ELEVATION 1108' DEPTH 308' DIP 90° CORE RECOVERY 95.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	44'	Sand	44	-											
44'	57'	Clay	13	-											
57'	59'	Lost core	2	-											
59'	90'	Clay	31	-											
90'	94'	Bit. sand, low grade, some clay	4	1)											
94'	98'	" " " " 5% clay	4	2)											
98'	102'	" " " " 10% "	4	3)											
102'	106'	" " " " some clay	4	4)	Not assayed, very low grade sand and clay										
106'	110'	" " " " 10% "	4	5)											
110'	114'	" " " " 10% "	4	6)											
114'	117'	Lost core	3	-)											
117'	121'	Bit. sand, low grade, 15% clay	4	7)											
121'	122'	Lost core	1	-											
122'	126'	Bit. sand, medium grade, slight clay	4	8)											
126'	130'	" " " " " "	4	9)	13.0	3	Tr	4	2	1	13	14	8	53	5
130'	134'	" " " " 10% clay	4	10)											
134'	138'	" " good " 5% "	4	11)	11.1	18¾	Nil	1	1	1	5	21	0	64	7
138'	142'	" " " " 5% "	4	12)											
142'	146'	" " " " some clay	4	13)	12.3	13½	Nil	2	1	0	10	18	1	63	5
146'	150'	" " " " 20% clay	4	14)	7.6	19	Tr)								
150'	154'	" " " " slight clay	4	15)	12.2	1½	Tr)	10	4	1	8	20	0	47	10
154'	156'	Lost core	2	-											
156'	160'	Bit. sand, good grade, 10% clay	4	16)											
160'	162'	Lost core	2	-)	10.6	19¾	0.1	5	7	1	8	9	9	57	7
162'	166'	Bit. sand, medium and good grade, 10% clay	4	17)											
166'	170'	" " good grade	4	18)											
170'	174'	" " " " 15% clay	4	19)	10.9	11¼	0.04	10	6	2	3	14	34	22	9

EAST OF STEEPBANK RIVER AREA

HOLE No. 160

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
174'	178'	Bit. sand, low grade, 10% clay	4	20)											
178'	182'	" " good grade. 20% clay	4	21)	10.7	13½	Tr	10	3	1	21	18	39	6	3
182'	186'	" " " " 10% "	4	22)											
186'	190'	" " " " slight clay	4	23)	12.0	15¼	Tr	3	1	2	37	27	21	6	3
190'	194'	" " " "	4	24)											
194'	198'	" " " " some clay	4	25)	13.5	8	Tr	2	1	3	56	16	7	13	2
198'	202'	" " " " 50% clay	4	26	4.9	30	Tr)								
202'	206'	" " " "	4	27	13.2		Tr)	7	3	1	12	26	36	9	6
206'	210'	" " " "	4	28)											
210'	214'	" " " " few leached bands	4	29)	14.5		Tr	1	1	0	15	21	0	59	3
214'	218'	" " " "	4	30)											
218'	222'	" " " " 15% clay	4	31)	13.8	5	Tr	0	1	1	20	40	16	19	3
222'	226'	" " " "	4	32)											
226'	230'	" " " "	4	33)	15.2		Tr	1	1	1	22	20	14	38	3
230'	234'	" " " "	4	34	2.6	40	Hil)								
234'	238'	" " " " 60% clay	4	35	15.3		Hil)	3	1	1	26	33	16	17	3
238'	242'	" " " " 5% "	4	36)											
242'	246'	" " " " 15% "	4	37)	12.4	17	Tr	1	1	2	27	20	2	44	3
246'	250'	" " " "	4	38)											
250'	252'	Lost core	2	-)	15.7	3¾	Tr	2	0	1	41	29	0	23	2
252'	256'	Bit. sand, good grade	4	39)											
256'	257'	Lost core	1	-											
257'	261'	Bit. sand, good grade, 15% clay	4	40)											
261'	265'	" " " " 20% "	4	41)	11.3	28¾	Tr	2	3	2	32	18	6	33	3
265'	269'	" " " " 15% "	4	42)											
269'	273'	" " " "	4	43)	14.3	5	Tr	2	12	14	23	23	18	4	4
273'	277'	" " " "	4	44)											
277'	281'	" " " " slight clay	4	45)	15.9	¾	Tr	2	38	12	23	6	5	9	5

EAST OF STEEPBANK RIVER AREA

HOLE No. 160

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
281'	285'	Bit. sand, good grade, slight clay	4	46)											
285'	289'	" " " " " "	4	47)	13.2	1	Tr	24	31	12	12	7	2	7	5
289'	293'	" " " "	4	48)											
293'	297'4"	" " " "	4'4"	49)	15.6	1¼	Tr	14	45	8	13	5	6	6	3
297'4"	303'	Clay	5'8"	-											
303'	308'	Clay with limestone fragments	5	-											
	308'	End of Hole													

Summary

0' - 122' = 122' Overburden
122' - 297'4" = 175' @ 12.55% bitumen & 12.7% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 161

DATE Oct. 11 - 20 1945 LOCATION Sec. 21, Tp. 92-9-4 CO-ORDINATES ELEVATION 1120' DEPTH 273' DIP 90° CORE RECOVERY 94.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	76	Clay	76	-											
76	85	Clay and leached sand	11	-											
85	89	Bit. sand, low grade, 5% clay	4	1)											
89	93	" " " " 5% "	4	2)	Not assayed, very low grade										
93	97	" " " "	4	3)											
97	101	" " " " 5% "	4	4)											
101	105	" " medium " slight clay	4	5)	9.1	29¾	Tr	2	1	1	8	14	0	66	8
105	109	" " " " some clay	4	6)											
109	113	" " " " 5% clay	4	7)	11.1	14¾	Nil	2	1	1	17	28	30	14	7
113	117	" " " " slight clay	4	8)											
117	118	Lost core	1	-)	11.9	12½	Tr	2	2	1	18	8	19	34	5
118	122	Bit. sand, medium grade, slight clay	4	9)											
122	124	Lost core	2	-											
124	128	Bit. sand, medium grade, slight clay	4	10)											
128	129	Lost core	1	-)	14.1	1¼	Nil	0	0	1	10	25	48	13	4
129	133	Bit. sand, medium grade	4	11)											
133	137	" " good " 5% clay	4	12)											
137	141	" " " " some clay	4	13)	14.3	4½	Nil	0	1	0	6	12	3	73	5
141	143	Lost core	2	-											
143	147	Bit. sand, good grade, slight clay	4	14)											
147	151	" " " " some clay	4	15)	13.3	5¼	Tr	5	2	3	40	22	16	9	3
151	155	" " " " " "	4	16)											
155	159	" " " "	4	17)	15.1	1¾	Tr	2	2	5	57	12	2	19	1
159	160	Lost core	1	-											
160	164	Bit. sand, good grade, 5% clay	4	18)											
164	168	" " " " 5% "	4	19)	14.6	3½	Tr	1	1	3	46	24	16	6	3
168	169	Lost core	1	-											

EAST OF STEEPBANK RIVER AREA

HOLE No. 161

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
169	173	Bit. sand, good grade, some clay	4	20)											
173	177	" " " "	4	21)	14.8	2¾	Tr	0	1	3	46	19	22	7	2
177	181	" " " " 10% clay	4	22)											
181	185	" " " "	4	23)	14.4	2¼	Nil	1	2	3	58	13	5	16	2
185	189	" " " "	4	24)											
189	193	" " " " 5% "	4	25)	15.7	3¾	Nil	1	1	3	34	30	20	8	3
193	197	" " " "	4	26)											
197	198	Lost core	1	-)	14.9	8½	Nil	1	1	2	47	16	0	30	2
198	202	Bit. sand, good grade, 15% clay	4	27)											
202	206	" " " " 5% "	4	28)											
206	207	Lost core	1	-)	16.9	4¾	Nil	0	1	4	25	22	15	10	3
207	211	Bit. sand, good grade	4	29)											
211	215	" " " "	4	30)											
215	216	Lost core	1	-)	17.1		Nil	1	2	3	50	14	1	27	2
216	220	Bit. sand, good grade	4	31)											
220	224	" " " " 5% clay	4	32)											
224	228	" " " "	4	33)	15.5	2	Tr	1	1	6	53	14	15	7	3
228	232	" " " "	4	34)											
232	236	" " " "	4	35)	15.6		Tr	1	2	4	50	16	1	24	2
236	240	" " " "	4	36)											
240	244	" " " "	4	37)	16.7		Nil	0	8	26	31	10	0	21	3
244	248	" " " "	4	38)											
248	252	" " " "	4	39)	16.8	1¼	Tr	1	22	48	16	4	0	7	2
252	256	" " " "	4	40)											
256	260	" " " "	4	41)	15.8	4	Tr	3	50	16	18	3	5	2	3
260	263'5"	" " " " 5% clay	3'5"	42)											
263'5"	273	White clay with coarse grains of quartz	9'7"	-											
	273'	End of Hole													

EAST OF STEEPBANK RIVER AREA

HOLE No. 161

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 97' = 97' Overburden and very low grade sand 97' - 263'5" = 166'5" @ 14.6% bitumen and 5% clay bands													

EAST OF STEEPBANK RIVER AREA

HOLE No. 162

DATE Oct. 21-25 1945 LOCATION Sec. 21, Tp. 92-9-4 CO-ORDINATES ELEVATION 1130' DEPTH 256' DIP 90° CORE RECOVERY 94.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %,	-200 %
0	77	Clay	77	-											
77	89	Clay and leached sand	12	-											
89	93	Bit. sand, low grade	4	1)											
93	97	" " " "	4	2)											
97	101	" " " "	4	3)	Very low grade sand and clay										
101	105	" " " "	4	4)											
105	109	" " " "	4	5)											
109	113	" " " "	4	6)											
113	117	" " medium grade, 40% clay	4	7)											
117	118	Lost core	1	-)	10.4	23½	Tr	2	2	1	6	13	3	61	12
118	122	Bit. sand, medium grade, 15% clay	4	8)											
122	126	" " " " 25% "	4	9)											
126	130	" " good " 10% "	4	10)	11.4		Tr	0	2	0	9	11	49	21	8
130	134	" " " " some clay	4	11)											
134	136	Lost core	2	-)	11.8	17½	Tr	1	2	1	15	23	35	16	7
136	140	Bit. sand, good grade, 10% clay	4	12)											
140	144	" " " "	4	13)											
144	148	" " " " 5% "	4	14)	14.0	3	Tr	0	1	3	12	22	35	19	8
148	152	" " " " 25% "	4	15)											
152	156	" " " " 20% "	4	16)	11.1	24	Tr	1	2	1	9	10	51	17	8
156	160	" " " " 25% "	4	17)											
160	164	" " " " 40% "	4	18)	9.5	33½	Tr	2	2	1	7	10	36	28	14
164	168	" " " "	4	19)											
168	172	" " medium " 30% "	4	20)	9.5	51½	Tr	0	1	0	7	12	52	19	9
172	176	" " good " 10% "	4	21)											
176	180	" " " " 10% "	4	22)											
180	184	" " " "	4	23)	12.1	18	Tr	1	1	3	41	26	17	6	4

EAST OF STEEPBANK RIVER AREA

HOLE No. 162

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
184	188	Bit. sand, good grade, 5% clay	4	24)											
188	189	Lost core	1	-)	14.4	7½	Tr	0	1	2	43	18	29	4	2
189	193	Bit. sand, good grade, 5% clay	4	25)											
193	197	" " " " some clay	4	26)											
197	201	" " " " 5% clay	4	27)	14.8	4½	Tr	1	2	9	49	17	12	7	3
201	205	" " " " some clay	4	28)											
205	209	" " " "	4	29)	15.3	1¾	Tr	0	1	4	54	17	18	3	2
209	211	Lost core	2	-											
211	215	Bit. sand, good grade	4	30)											
215	219	" " " "	4	31)	16.1	-	Tr	0	2	11	47	13	20	4	2
219	220	Lost core	1	-											
220	224	Bit. sand, good grade, slight clay	4	32)											
224	228	" " " "	4	33)	16.3		Tr	2	6	26	6	10	44	4	2
228	229	Lost core	1	-											
229	233	Bit. sand, good grade	4	34)											
233	237	" " " "	4	35)	16.3		Tr	1	23	28	29	4	9	3	3
237	241	" " " "	4	36)											
241	245	" " " "	4	37)	12.5		Tr	23	32	6	12	5	13	5	4
245	249	" " " "	4	38)											
249	252	Clay	3	-											
252	256	Limestone	4	-											
	256	End of Hole													

Summary

0' - 113' = 113' Overburden (clay)
113' - 249' = 136' @ 12.9% bitumen & 11% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 163

DATE Oct. 26-31 1945 LOCATION Sec.22, Tp.92-9-4 CO-ORDINATES ELEVATION 1135' DEPTH 279' DIP 90° CORE RECOVERY 96.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	119	Clay	119	-											
119	146	Clay with occasional band of low grade sand	27	-											
146	150	Bit. sand, medium grade, 15% clay	4	1)											
150	154	" " " " some clay	4	2)	12.00	12	Tr	4	4	2	6	15	28	29	12
154	158	" " " " 30% clay	4	3	8.00	22	Tr	1	2	3	6	13	11	52	12
158	162	Clay	4	-											
162	166	Bit. sand, low and medium grade, 50% clay	4	4	8.00	35	Tr	1	2	3	6	13	11	52	12
166	175	Clay with occasional stringers of medium grade sand	9	-											
175	179	Bit. sand, good grade, 15% clay	4	5	8.00	7⅜	Tr	1	2	3	6	13	11	52	12
179	183	" " " " 15% "	4	6)											
183	187	" " " " 30% "	4	7)	10.2	30½	Tr	5	2	1	11	14	47	14	6
187	191	" " " " 25% "	4	8)											
191	195	" " " " 30% "	4	9)	8.5	34½	Tr	2	2	2	13	26	30	20	5
195	199	Clay	4	-											
199	203	Bit. sand, low grade, 20% clay	4	10)	8.5	30	Tr	2	2	2	13	26	30	20	5
203	207	" " good " 5% "	4	11)											
207	211	" " " " 35% "	4	12)	9.4	39	Tr	2	1	1	13	13	47	16	7
211	215	" " low " 50% "	4	13)											
215	217	Lost core	2	-)											
217	221	Bit. sand, good grade, some clay	4	14)	9.1	60	Tr	1	2	2	17	29	30	14	5
221	225	" " " " 5% clay	4	15)											
225	229	" " " " 25% "	4	16)											
229	233	" " " " 10% "	4	17)	9.5	35	Tr	1	2	2	36	20	31	5	3
233	234	Lost core	1	-											
234	238	Bit. sand, good grade, some clay	4	18)											
238	242	" " " " slight clay	4	19)	14.9	1⅜	Tr	6	44	33	11	3	2	1	0
242	246	" " " "	4	20)											
246	250	" " " " some clay	4	21)	15.3	⅜	Tr	1	1	9	46	20	15	6	2

EAST OF STEEPBANK RIVER AREA

HOLE No. 163

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
250	254	Bit. sand, good grade, 10% clay	4	22)											
254	258	" " " " slight clay	4	23)	15.3	3¾	Tr	2	2	6	49	15	21	3	2
258	262	" " " "	4	24)											
262	266	" " " "	4	25)	14.5		Tr	5	30	15	22	8	1	15	4
266	270'10"	" " " " some clay	4'10"	26	14.3		Tr	5	25	12	31	8	12	4	3
270'10"	274	Clay	3'2"	-											
274	279	White clay	5	-											

Summary

0' - 146' = 146' Clay
146' - 203' = 57' @ 6.6% bitumen and 25% clay bands
203' - 270'10" = 67'10" @ 12.3% bitumen and 17% clay bands
146' - 270'10" = 124'10" @ 9.7% bitumen and 21% clay bands

EAST OF STEEPBANK RIVER AREA

HOLE No. 166

DATE Nov. 1 - 4 1945 LOCATION Sec. 28, Tp. 92-9-4 CO-ORDINATES ELEVATION 1119' DEPTH 305' DIP 90° CORE RECOVERY 93.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	36	Clay and gravel	36	-											
36	112	Clay	76	-											
112	116	Clay and leached sand	4	-											
116	120	Bit. sand, low grade, 5% clay	4	1)											
120	124	" " " "	4	2)	Very low grade, not assayed										
124	128	" " " "	4	3)											
128	132	" " " " 15% clay	4	4)											
132	136	" " " " 15% "	4	5)	5.5	76	Tr	2	2	1	2	2	41	36	14
136	140	" " " " 5% "	4	6)											
140	142	Lost core	2	-											
142	146	Bit. sand, low grade, 20% clay	4	7)	9.3	25¼	Tr	3	3	1	2	4	43	29	15
146	150	" " good grade, 20% clay	4	8)											
150	154	" " " " 20% "	4	9)											
154	158	" " " " 15% "	4	10)	11.5	16¼	Tr	3	2	0	2	3	47	28	15
158	162	" " " " 5% "	4	11)											
162	166	" " " "	4	12)	11.3	3¾	Tr	2	1	1	2	18	45	23	8
166	170	" " " "	4	13)											
170	174	" " " " 15% clay	4	14)	14.0	6½	Tr	0	0	1	7	26	21	40	5
174	178	" " " "	4	15)											
178	182	" " " " 10% "	4	16)	12.6	11½	Tr	1	1	1	4	13	24	43	13
182	186	" " " " 10% "	4	17)											
186	187	Lost core	1	-)	10.1	9¼	Tr	9	8	1	3	3	28	24	24
187	191	Bit. sand, medium grade	4	18)											
191	192	Lost core	1	-											
192	196	Bit. sand, good grade, some clay	4	19)											
196	203	Lost core	7	-)	8.4	36½	Tr	1	2	1	6	9	43	20	18
203	207	Bit. sand, good grade, 20% clay	4	20)											

EAST OF STEEPBANK RIVER AREA

HOLE No. 166

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
207	211	Bit. sand, good grade, 10% clay	4	21)											
211	215	" " " " 35% "	4	22)	10.3	28	Tr	1	1	1	7	27	32	24	7
215	219	" " medium grade, 50% clay	4	23)											
219	223	" " good " 15% "	4	24)	7.1	72	Tr	3	2	1	8	13	26	38	9
223	227	" " " " 60% "	4	25)											
227	231	" " low " 15% "	4	26)											
231	235	" " good " 10% "	4	27)											
235	239	" " medium " 75% "	4	28)	5.7	126½	Tr	2	1	1	31	21	36	5	3
239	240	Lost core	1	-)											
240	244	Bit. sand, good grade, 25% clay	4	29)											
244	248	" " " " some clay	4	30)											
248	252	" " " " 15% clay	4	31)	14.1	11	Tr	2	1	2	48	17	25	5	2
252	256	" " " " 30% "	4	32)											
256	260	" " " " 50% "	4	33)											
260	264	" " " " 10% "	4	34)	6.2	114	Tr	4	3	3	35	17	10	25	3
264	265	Lost core	1	-)											
265	269	Bit. sand, good grade, 25% clay	4	35)											
269	273	" " " " slight clay	4	36)											
273	277	" " " " 5% clay	4	37)	15.6	3	Tr	5	43	24	9	7	1	9	2
277	278	Lost core	1	-											
278	282	Bit. sand, good grade, 5% clay	4	38)											
282	286	" " " "	4	39)	15.5	3	Tr	3	40	13	25	7	8	2	2
286	288	Lost core	2	-											
288	292	Bit. sand, good grade, 5% clay	4	40)											
292	296	" " " " 5% "	4	41)	11.7	18½	Tr	6	23	32	22	7	1	6	3
296	297'6"	" " low " coarse	1'6"	42)											
297'6"	300	Clay	2'6"	-											
300	305	White clay	5	-											
	305	End of Hole													

EAST OF STEEPBANK RIVER AREA

HOLE No. 166

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 128' = 128' Overburden 128' - 142' = 14' @ 5.5% bitumen & 4% clay bands 142' - 191' = 49' @ 11.4% bitumen & 12.5% clay bands 191' - 215' = 24' @ 9.03% bitumen & 2% clay bands 215' - 269' = 54' @ 8.15% bitumen & 4% clay bands 269' - 297'6" = 28'6" @ 14.0% bitumen & 7% clay bands 142' - 297'6" = 155.6" @ 10.4% bitumen & 25.7% clay bands.												

EAST OF STEEPBANK RIVER AREA

HOLE No. 167

DATE Dec. 5 - 8 1945 LOCATION Sec.28, Tp. 92-9-4 CO-ORDINATES ELEVATION 1106' DEPTH 231' DIP 90° CORE RECOVERY 94.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	69	Clay	69	-											
69	73	Bit. sand, low grade	4	1)	Not assayed, predominately clay										
73	77	" " " "	4	2)											
77	81	" " " "	4	3)											
81	82	Lost core	1	-)	5.4	9½	Tr	20	9	4	7	7	1	37	15
82	86	Bit. sand, low grade	4	4)											
86	91	Lost core	5	-											
91	95	Bit. sand, low grade, 10% clay	4	5)											
95	99	" " " and medium grade, 30% clay	4	6)	7.1	20	Tr	14	6	1	5	8	29	19	18
99	103	" " medium grade, 5% clay	4	7)											
103	107	" " " " 12% "	4	8)	10.6	12¾	Tr	5	2	1	13	22	1	49	7
107	111	" " " " 6% "	4	9)											
111	115	" " " " slight clay	4	10)	12.4	6½	Tr	1	1	1	13	16	52	12	4
115	119	" " good "	4	11)											
119	120	Lost core	1	-)	14.4	1	Tr	1	1	1	11	26	3	52	5
120	124	Bit. sand, good grade, slight clay	4	12)											
124	128	" " " "	4	13)											
128	132	" " low " 40% clay	4	14)	11.3	24	Tr	1	1	0	5	11	53	21	8
132	133	Lost core	1	-											
133	137	Bit. sand, low and good grades, 25% clay	4	15)											
137	141	" " good grade, 15% clay	4	16)	9.1	30	Tr	3	3	1	12	13	45	16	7
141	145	" " " " 15% "	4	17)											
145	149	" " " " 20% "	4	18)	12.4	14½	Tr	1	1	1	19	16	41	15	6
149	153	" " " " 40% "	4	19)											
153	154	Lost core	1	-)	10.5	25½	Tr	4	3	1	5	11	16	49	11
154	158	Bit. sand, good grade, 8% clay	4	20)											
158	162	" " " " 8% "	4	21)											
162	166	" " " " 10% "	4	22)	13.1	12	Tr	3	3	1	4	9	50	19	11

EAST OF STEEPBANK RIVER AREA

HOLE No. 167

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
166	170	Bit. sand, good grade, 15% clay	4	23)											
170	174	" " " " some clay	4	24)	14.3	6¾	Tr	2	1	1	6	19	42	21	8
174	178	" " low and medium grades, 60% clay	4	25	8.7	26	Tr	5	4	1	8	11	45	17	9
178	182	Clay and rock	4	-											
182	186	Bit. sand, medium and good grades, 25% clay	4	26	8.7	12	Tr	5	4	1	8	11	45	17	9
186	190	" " good grade, slight clay	4	27)											
190	194	" " " " 5% clay	4	28)	15.3	3¾	Tr	4	2	1	13	24	10	42	4
194	195	Lost core	1	-											
195	199	Bit. sand, good grade, 30% clay	4	29)											
199	203	" " " " 45% "	4	30)	8.4	44½	Tr	2	2	1	13	16	52	11	3
203	207	" " " "	4	31)											
207	211	" " " "	4	32)	15.7	3½	Tr	2	1	1	18	31	25	17	4
211	215	" " " " 30% "	4	33)											
215	219	" " " " 60% "	4	34)											
219	223	" " medium " 15% "	4	35)	6.8	108½	Tr	8	13	7	28	11	20	6	6
223	227	" " low " 15% "	4	36)											
227	228'5"	" " " " 20% "	1'5"	37)											
228'5"	231	Leached sand and clay	2'7"	-											
	231	End of Hole													

Summary

0'-77' = 77' Overburden

77' - 99' = 22' @ 6. % bitumen & 13% clay bands

99' - 211' = 112' @ 11.5% bitumen & 17% clay bands

112' - 228'5" = 16'5" @ 6.8% bitumen & 52% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 168

DATE Dec. 2 - 4 1945 LOCATION Sec. 29, Tp. 92-9-4 CO-ORDINATES ELEVATION 1097' DEPTH 226' DIP 90° CORE RECOVERY 93.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	28	Sand and clay	28	-											
28	31	Clay	3	-											
31	39	Clay with bands of sand	8	-											
39	43	Bit. sand, low grade, some clay	4	1)	Not assayed, predominately clay										
43	47	" " " " " "	4	2)											
47	51	" " " " 15% clay	4	3)											
51	55	" " " " 12% "	4	4)	6.3	72	Tr	4	1	1	5	16	2	61	10
55	59	" " " " slight clay	4	5)											
59	63	" " medium " " "	4	6)											
63	67	" " " "	4	7)	13.0	5½	Tr	2	1	0	8	13	52	19	5
67	71	" " " " " "	4	8)											
71	75	" " good " 5% clay	4	9)	11.5	16½	Tr	3	1	1	21	26	0	43	5
75	79	" " " " some clay	4	10)											
79	83	" " " " 15% "	4	11)	12.2	13¼	Nil	1	1	1	33	21	35	6	2
83	87	" " " " some clay	4	12)											
87	91	" " " " 17% "	4	13)	10.8	23⅜	Nil	1	1	1	23	30	2	39	3
91	92	Lost core	1	-											
92	96	Bit. sand, good grade	4	14)											
96	97	Lost core	1	-)	14.1	1½	Tr	1	1	1	24	22	40	8	3
97	101	Bit. sand, good grade	4	15)											
101	105	" " " " some clay	4	16)											
105	109	" " " " 17% "	4	17)	14.4	6⅜	Tr	2	1	2	28	24	3	36	4
109	113	" " " " 12% "	4	18)											
113	117	" " " "	4	19)	14.6	5½	Tr	2	1	1	21	19	41	10	5
117	121	" " " " 8% clay	4	20)											
121	125	" " " " 19% "	4	21)	14.1	15	Tr	1	1	1	8	24	38	16	11

EAST OF STEEPBANK RIVER AREA

HOLE No. 168

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
125	129	Bit. sand, good grade, 25% clay	4	22)											
129	133	" " low and medium grades	4	23)	12.8	23½	Tr	1	1	1	22	16	41	13	5
133	137	" " good grade	4	24)											
137	141	" " " "	4	25)											
141	145	" " " " 20% clay	4	26)	13.3	16	Tr	2	1	5	42	28	11	9	2
145	149	" " " " some clay	4	27)											
149	153	" " " "	4	28)	15.2	2½	Tr	1	2	1	17	18	48	9	4
153	157	" " " "	4	29)											
157	161	" " " "	4	30)	15.6		Tr	0	0	6	44	28	3	17	2
161	165	" " " "	4	31)											
165	169	" " " "	4	32)	15.5		Tr	0	1	9	56	14	17	2	1
169	171	Lost core	2	-											
171	175	Bit. sand, good grade	4	33)											
175	179	" " " " 15% clay	4	34)	9.8	56¼	Tr	2	1	11	55	18	6	6	1
179	181	Lost core	2	-)											
181	185	Bit. sand, good grade, 30% clay	4	35)											
185	189	" " " " 30% "	4	36)											
189	191	Lost core	2	-)											
191	195	Bit. sand, good grade, 10% clay	4	37)	16.0	15¾	Tr	2	4	10	51	13	17	2	1
195	199	" " " " 6% "	4	38)											
199	203	" " " " 40% "	4	39)											
203	207	" " " "	4	40)	13.2	22¾	Tr	2	4	11	43	21	3	14	2
207	211	" " " " 30% "	4	41	12.9	12¼	Tr	2	9	13	25	19	17	10	5
211	212	Lost core	1	-											
212	213'3"	Liquid bitumen	1'3"		57.3	6	20.5								
213'3"	216'2"	Bit. sand, good grade	2'11"	42	12.9		Tr	2	9	13	25	19	17	10	5
216'2"	217	Clay		-											

EAST OF STEEPBANK RIVER AREA

HOLE No. 168

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
217	220	Leached sand	3	-											
220	223	Lost core	3	-											
223	224	Leached sand	1	-											
224	225	Lost core	1	-											
225	226	Leached sand	1	-											
	226'	End of Hole													

Summary

0' - 47' = 47' Overburden
47' - 59' = 12' @ 6.3% bitumen and 50% clay bands
59' - 216' = 157' @ 13.4% bitumen and 14% clay bands.

N.B. - 1'3" (liquid bitumen sample) taken as assaying 18%.

EAST OF STEEPBANK RIVER AREA

HOLE No. 169

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	39	Sand and clay	39	-											
39	52	Clay and barren sand	13	-											
52	56	Bit. sand, low grade	4	1)											
56	60	" " " "	4	2)	Not assayed, very low grade										
60	64	" " " "	4	3)											
64	66	Lost core	2	-)	10.6	7½	Tr	4	3	2	3	10	25	39	14
66	70	Bit. sand, medium grade, some clay	4	4)											
70	74	" " good "	4	5)											
74	78	" " " " " "	4	6)	12.5	5½	Tr	2	1	0	12	16	53	11	5
78	82	" " " " slight clay	4	7)											
82	86	" " " " 5% clay	4	8)	13.2	6½	Tr	1	1	1	10	38	33	13	3
86	90	" " " " 10% "	4	9)											
90	94	" " " " 5% "	4	10)	10.9	17	Tr	3	2	0	8	10	45	24	8
94	98	" " " " 6% "	4	11)											
98	102	" " " " 8% "	4	12)	13.2	6¼	Tr	1	1	0	8	8	28	47	7
102	106	" " " " 10% "	4	13)											
106	108	Lost core	2	-)	13.3	9½	Tr	1	1	0	10	17	51	14	6
108	112	Bit. sand, good grade, 8% clay	4	14)											
112	116	" " " " 12% "	4	15)											
116	120	" " " " 20% "	4	16)	11.6	15¾	Tr	3	3	1	16	0	51	17	9
120	124	" " low " 15% "	4	17)											
124	128	" " " " 17% "	4	18)	9.9	13¾	Tr	8	7	2	5	13	1	49	15
128	132	" " good " 10% "	4	19)											
132	134	Lost core	2	-)	12.7	15½	Tr	0	1	0	23	0	54	16	6
134	138	Bit. sand, good grade, 25% clay	4	20)											
138	142	" " " "	4	21)											
142	146	" " " "	4	22)	16.1	-	Tr	1	1	1	14	30	0	51	2

EAST OF STEEPBANK RIVER AREA

HOLE No. 169

DATE ..... 194 ... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
146	150	Bit. sand, good grade	4	23)											
150	154	" " " " 30% clay	4	24)	12.1	36	Tr	1	0	1	12	34	2	48	2
154	158	" " " " 40% "	4	25)											
158	162	" " " " 30% "	4	26)											
162	166	" " " " 35% "	4	27)	8.1	71	Tr	4	3	3	45	0	37	6	2
166	170	" " " " 70% "	4	28)											
170	174	" " " " 8% "	4	29)											
174	178	" " medium " 25% "	4	30)	9.7	56	Tr	4	1	2	52	0	34	5	2
178	182	" " " " 25% "	4	31)											
182	186	" " good "	4	32)											
186	190	" " " "	4	33)	16.1		Tr	1	0	6	47	22	20	3	1
190	194	" " " "	4	34)											
194	198	" " " " some clay	4	35)	15.9	1	Tr	2	6	10	60	0	18	2	2
198	202	" " " "	4	36	17.0		Tr	1	4	43	37	6	1	6	2
202	206	" " " "	4	37)											
206	207	Lost core	1	-)	16.0	¾	Tr	1	25	22	37	0	9	3	3
207	211	Bit. sand, good grade	4	38)											
211	214	Lost core, presumably liquid bitumen	3	-											
214	216	Liquid bitumen with sand	2	39	40.7										
216	219	Coarse quartz grains with clay	3	-											
219	221	White clay	2	-											
	221	End of Hole													

Summary

0' - 60' = 60' Overburden
60' - 216' = 156' @ 13% bitumen & 14% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 170

DATE Nov. 19 - 22 1945 LOCATION Sec. 29, Tp. 92-9-4 CO-ORDINATES ELEVATION 1103' DEPTH 229' DIP 90° CORE RECOVERY 92.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	39	Clay and rock	39	-											
39	52	Clay with stringers of sand	13	-											
52	56	Bit. sand, medium grade, 6% clay	4	1)											
56	58	Lost core	2	-)	11.1	15¾	Tr	2	1	1	1	3	46	32	14
58	62	Bit. sand, medium grade, some clay	4	2)											
62	64	Lost core	2	-											
64	68	Bit. sand, medium grade	4	3)	13.1	2¾	Tr	1	1	1	10	17	2	60	8
68	72	" " good grade	4	4)											
72	76	" " " " 30% clay	4	5)											
76	80	" " low and good grade, 35% clay	4	6)											
80	81	Lost core	1	-)	10.3	37½	Tr	1	2	0	6	10	50	20	11
81	85	Bit. sand, good grade, 10% clay	4	7)											
85	89	" " " " 25% "	4	8)											
89	93	" " " " 33% "	4	9)	10.4	24¼	Tr	1	1	1	5	18	41	22	10
93	97	" " " "	4	10)											
97	101	" " " " 30% "	4	11)	11.5	15	Tr	1	1	1	6	14	22	35	18
101	105	" " " " 10% "	4	12)											
105	106	Lost core	1	-)											
106	110	Bit. sand, good grade, 10% clay	4	13)	9.0	55¼	Tr	5	5	4	6	5	28	27	20
110	112	Lost core	2	-)											
112	116	Bit. sand, low grade, 15% clay	4	14)											
116	120	" " good grade	4	15)											
120	124	" " " "	4	16)	13.4		Tr	5	5	4	6	5	28	27	20
124	128	" " " "	4	17)											
128	132	" " " " 8% clay	4	18)	14.4	4½	Tr	1	1	1	9	19	1	56	12
132	136	" " " " 12% "	4	19)											
136	140	" " " " 15% "	4	20)	12.7	22	Tr	1	1	1	23	29	2	37	2
140	144	" " " " 12% "	4	21)											

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EAST OF STEEPBANK RIVER AREA

HOLE No. 170

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
144	148	Bit. sand, good grade	4	22)											
148	152	" " " "	4	23)	16.1		Tr	5	2	2	28	17	35	9	4
152	156	" " " "	4	24)											
156	160	" " " " 8% clay	4	25)	14.7	4½	Tr	1	1	2	47	13	28	4	4
160	164	" " " "	4	26)											
164	168	" " " " 8% "	4	27)	14.0	5½	Tr	3	1	5	42	13	1	30	4
168	172	" " " " 8% "	4	28)											
172	176	" " " "	4	29)	16.2		Tr	0	1	5	50	15	24	3	2
176	180	" " " "	4	30)											
180	181	Lost core	1	-)	14.8		Tr	0	0	15	47	18	11	5	3
181	185	Bit. sand, good grade	4	31)											
185	189	" " " "	4	32)											
189	193	" " " "	4	33)	16.3		Tr	0	2	8	53	11	19	4	3
193	195	Lost core	2	-											
195	199	Bit. sand, good grade	4	34)											
199	203	" " " "	4	35)	17.2		Tr	0	2	8	53	11	19	4	3
203	207	" " " " 6% clay	4	36)											
207	211	" " " " 6% "	4	37)											
211	213	Lost core	2	-)	15.5	12	Tr	2	23	24	23	6	10	6	6
213	217	Bit. sand, good grade, 6% clay	4	38)											
217	220	Barren coarse sand	3	-											
220	222	Lost core	2	-											
222	229	Clay	7	-											
	229	End of Hole													

Summary

0' - 52' = 52' Overburden
52' - 217' = 165' @ 13.3% bitumen and 9.5% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 172

DATE Nov. 9 - 14 1945 LOCATION Sec. 28, Tp. 92-9-4 CO-ORDINATES ELEVATION 1117' DEPTH 234' DIP 90° CORE RECOVERY 96.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+8 %	+100 %	+150 %	+200 %	-200 %
0	50	Gravel and boulders	50	-											
50	61	Clay	11	-											
61	68	Sand and clay stringers	7	-											
68	70	Lost core	2	-											
70	72	Sand with trace of bitumen	2	-											
72	76	Bit. sand, low grade, some clay	4	1)											
76	80	" " " " 60% clay	4	2)	Not assayed, very low grade										
80	85	Clay	5	-											
85	89	Bit. sand, low grade, 25% clay	4	3)											
89	93	" " good " 15% "	4	4)	9.2	50	Tr	1	2	1	15	15	45	14	7
93	97	" " " " 15% "	4	5)											
97	101	" " " " slight clay	4	6)											
101	105	" " " "	4	7)	13.1	4¼	Nil	2	1	1	18	20	29	22	7
105	109	" " " " 12% clay	4	8)											
109	110	Lost core	1	-)	13.0	6	Nil	1	1	1	15	16	48	12	6
110	114	Bit. sand, good grade, some clay	4	9)											
114	118	" " " "	4	10)											
118	122	" " " "	4	11)	14.9		Tr	0	1	1	20	28	1	44	5
122	126	" " " " 5% clay	4	12)											
126	127	Lost core	1	-)	14.9	2	Tr	1	1	1	13	15	52	13	5
127	131	Bit. sand, good grade	4	13)											
131	132	Lost core	1	-											
132	136	Bit. sand, good grade, 40% clay	4	14)											
136	140	" " " " 17% "	4	15)	10.3	29	Tr	0	1	1	13	22	37	18	8
140	144	" " " " some clay	4	16)											
144	148	" " " " 17% clay	4	17)	8.7	22	Tr	2	4	1	11	13	47	14	8
148	152	" " " " 5% "	4	18)		42 (stone)									

EAST OF STEEPBANK RIVER AREA

HOLE No. 172

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
152	156	Bit. sand, low and good grade	4	19)											
156	160	" " good grade, 8% clay	4	20)	9.9	14¼	Tr	3	2	1	0	20	24	40	9
160	164	" " " " 25% "	4	21)											
164	168	" " " " 8% "	4	22)											
168	169	Lost core	1	-)	13.6	7½	Tr	1	1	1	11	13	48	17	7
169	173	Bit. sand, good grade	4	23)											
173	177	" " " "	4	24)											
177	181	" " " "	4	25)	15.8	-	Tr	2	1	1	19	33	22	19	3
181	185	" " " " 20% clay	4	26)											
185	189	" " " " 10% "	4	27)	11.9	31¼	Tr	3	3	1	13	13	43	14	10
189	193	" " " " 10% "	4	28)											
193	194	Lost core	1	-											
194	198	Bit. sand, good grade, 60% clay	4	29)	9.8	39	Tr	1	1	6	18	21	0	48	5
198	202	" " " " some clay	4	30)											
202	206	" " " " 6% clay	4	31)											
206	210	" " " " 50% "	4	32)											
210	214	" " " " 20% "	4	33)	9.7	82¾	Tr	3	10	11	30	11	27	6	2
214	218	" " " " 25% "	4	34)											
218	222	" " " " 12% "	4	35)											
222	226	" " " "	4	36)											
226	229'5"	" " " " 5% "	3'5"	37)	11.7	1¾	Nil	14	23	16	16	6	16	6	3
229'5"	231	Clay	1'7"	-											
231	234	Limestone	3												
	234	End of Hole													

Summary

0' - 85' = 85' Overburden
85' - 229'5" = 144'5" @ 11.5% bitumen & 1% clay bands.

EAST OF STEEPBANK RIVER AREA

HOLE No. 171

DATE Nov. 15 - 18 1945 LOCATION Sec. 28, Tp. 92-9-4 CO-ORDINATES ELEVATION 1107' DEPTH 236' DIP 90° CORE RECOVERY 95.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +28 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	59	Clay	59	-											
59	61	Clay with sand stringers	2	-											
61	65	Bit. sand, low grade	4	1)											
65	69	" " " "	4	2)	5.7	42½	Tr	21	8	3	6	6	38	13	5
69	70	Lost core	1	-											
70	74	Bit. sand, medium grade, 6% clay	4	3)											
74	78	" " good " some clay	4	4)	12.7	7	Tr	0	1	1	6	12	33	38	9
78	82	" " " " " "	4	5)											
82	86	" " " "	4	6)	13.6	1½	Tr	1	1	0	20	17	42	13	6
86	90	" " " " 10% clay	4	7)											
90	92	Lost core	2	-	12.5	10	Tr	1	1	1	16	31	4	41	5
92	96	Bit. sand, good grade, slight clay	4	8)											
96	100	" " " " 8% clay	4	9)											
100	101	Lost core	1	-	12.8	8½	Tr	2	2	1	25	19	38	9	4
101	105	Bit. sand, good grade, 10% clay	4	10)											
105	109	" " " " 8% "	4	11)											
109	110	Lost core	1	-	14.0	4½	Tr	1	1	1	24	13	22	33	5
110	114	Bit. sand, good grade	4	12)											
114	118	" " " " 5% clay	4	13)											
118	122	" " " "	4	14)	13.4	3	Nil	0	1	1	35	21	38	1	3
122	126	" " " " 5% "	4	15)											
126	130	" " " " 10% "	4	16)	14.8	3	Nil	3	1	3	22	28	23	15	5
130	134	" " " "	4	17)											
134	138	" " " " 6% "	4	18)	15.7	1½	Tr	1	1	25	17	42	1	9	4
138	142	" " " "	4	19)											
142	146	" " " " 5% "	4	20)	14.9	3½	Tr	3	2	2	19	21	28	19	6

EAST OF STEEPBANK RIVER AREA

HOLE No. 171

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
146	150	Bit. sand, good grade, 25% clay	4	21)											
150	154	" " " "	4	22)	13.7	12¾	Tr	1	1	2	32	16	38	7	3
154	158	" " " " 6% "	4	23)											
158	162	" " " " 33% "	4	24)	13.9	17½	Tr	1	1	2	34	31	18	10	3
162	166	" " " " 8% "	4	25)											
166	170	" " " "	4	26)	14.0	7½	Tr	1	2	1	16	11	35	22	12
170	171	Lost core	1	-											
171	175	Bit. sand, good grade, 8% clay	4	27)											
175	179	" " " " 15% "	4	28)											
179	181	Lost core	1	-)	13.3	14¾	Tr	2	1	4	32	25	8	24	4
181	185	Bit. sand, good grade, 5% clay	4	29)											
185	186	Lost core	1	-											
186	190	Bit. sand, good grade, 30% clay	4	30)											
190	194	" " " " 20% "	4	31)	10.1	34¾	Tr	5	2	2	33	14	32	8	4
194	198	" " " " 35% "	4	32)											
198	202	" " " " 15% "	4	33)	11.0	48½	Tr	2	1	4	34	24	20	12	3
202	206	" " " " 25% "	4	34)											
206	207	Lost core	1	-											
207	211	Bit. sand, medium grade, 20% clay	4	35)											
211	215	" " " " 20% "	4	36)	9.5	37¼	Tr	2	3	9	47	12	22	3	2
215	219	" " " " 5% "	4	37)											
219	222	" " " "	3	38)	9.9	7	Tr	23	16	16	20	6	8	9	2
222	233	Clay	11	-											
233	236	Limestone	3	-											
	236 ✓	End of Hole													

Summary

0' - 70' = 70' Overburden - clay
70' - 222' = 152' @ 12.9% bitumen & 12.7% clay bands.

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EAST OF STEEPBANK RIVER AREA

HOLE No. 173

DATE Nov. 5 - 8 1945 LOCATION Sec. 28, Tp. 92-9-4 CO-ORDINATES ELEVATION 1122' DEPTH 263' DIP 90° CORE RECOVERY 97.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	74	Clay	74	-											
74	75	Lost core	1	-											
75	89	Leached sand and clay	14	-											
89	93	Bit. sand, low grade	4	1	Not assayed, very low grade										
93	97	" " medium grade, 40% clay	4	2											
97	101	" " " " 10% "	4	3											
101	102	Lost core	1	-	8.0	39	Tr	7	4	2	4	14	16	40	13
102	106	Bit. sand, good grade, 35% clay	4	4											
106	110	" " medium & good grade, 10% clay	4	5											
110	114	" " low grade, 15% clay	4	6	8.6	13¼	Tr	3	3	1	4	8	48	22	11
114	118	" " medium grade	4	7											
118	122	" " good grade, 5% clay	4	8	13.4	2½	Tr	1	1	1	4	16	1	65	11
122	126	" " " " 30% "	4	9											
126	130	" " " " 5% "	4	10	11.4	18¼	Tr	1	2	1	15	15	51	11	4
130	131	Lost core	1	-											
131	135	Bit. sand, good grade, 5% clay	4	11											
135	137	Lost core	2	-	13.6	6¼	Tr	0	1	1	19	25	3	47	4
137	141	Bit. sand, good grade, some clay	4	12											
141	145	" " " " 5% clay	4	13											
145	149	" " " " 15% "	4	14	13.0	10	Tr	0	1	1	22	17	45	10	4
149	153	" " " " 5% "	4	15											
153	157	" " " " 5% "	4	16	13.9	5¼	Tr	1	1	1	21	27	6	37	6
157	161	" " " " 5% "	4	17											
161	165	" " " " 5% "	4	18	14.4	7	Tr	0	1	0	20	19	43	12	5
165	169	" " " " 30% "	4	19	12.8	16	Tr	1	1	1	8	22	2	55	9
169	178	Clay	9	-											
178	182	Bit. sand, good grade, some clay	4	20	12.8	1	Tr	1	1	1	8	22	2	55	9

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EAST OF STEEPBANK RIVER AREA

HOLE No. 173

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
182	186	Bit. sand, good grade, some clay	4	21)											
186	187	Lost core	1	-)	12.0	19	Tr	1	1	1	18	16	47	11	5
187	191	Bit. sand, good grade, 20% clay	4	22)											
191	195	" " low " 25% "	4	23)											
195	199	" " medium " 20% "	4	24)	10.3	37¾	Tr	5	4	2	8	13	20	34	14
199	203	" " good "	4	25)											
203	207	" " " " 5% "	4	26)											
207	211	" " " " 10% "	4	27)	10.8	37¼	Tr	5	4	1	15	13	42	14	6
211	215	" " " " 30% "	4	28)											
215	219	" " " " 10% "	4	29)											
219	223	" " " " 30% "	4	30)	10.9	37¼	Tr	5	2	3	26	30	24	6	4
223	227	" " " " 25% "	4	31)											
227	232	" " " " 25% "	5	32	10.1	23	Tr	3	9	6	28	14	28	7	5
232	248	Clay	16	-											
248	252	Bit. sand, good grade, 25% clay	4	33)											
252	256'6"	" " " " 10% "	4'6"	34)	10.1	22¾	Tr	3	9	6	28	14	28	7	5
256'6"	263	White clay	6'6"												
	263'	End of Hole													

Summary

0' - 93' = 93' Overburden
93' - 232' = 139' @ 10.7% bitumen & 23% clay bands.

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NORTH OF STEEPBANK RIVER AREA

NORTH OF STEEPBANK RIVER AREA

HOLE No. R 1

DATE July 18 - 21 1945 LOCATION Sec. 93, Tp. 93-10-4 CO-ORDINATES ELEVATION 1021' DEPTH 182' DIP 90° CORE RECOVERY 94.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	4	Overburden - sand	4	-											
4	8	Bit. sand, low grade (standpipe)	4	-											
8	12	" " " " 5% clay	4	1)											
12	16	" " " " 15% "	4	2)	8.9	25¾	Tr	8	2	9	2	2	13	34	30
16	20	" " " " 15% "	4	3)											
20	24	" " medium grade, some clay	4	4)	6.8	36	Tr	8	2	1	4	12	13	49	11
24	25	Lost core	1	-											
25	40	Clay	15	-		180									
40	41	Lost core	1	-		12									
41	58	Clay with stringers of leached sand	17	-		204									
58	62	" " " " low grade sand	4	5)											
62	66	Bit. sand, low grade, 30% clay	4	6)	3.7	7¾	0.1	19	6	1	2	2	2	49	19
66	70	" " " " 30% "	4	7)											
70	74	" " medium grade, 35% clay	4	8		48	Not assayed, mostly clay								
74	75	Lost core	1	-		12									
75	77	Bit. sand, medium grade, 10% clay	2	9		24	Not assayed, mostly clay								
77	85	Clay	8	-		96									
85	89	Bit. sand, medium grade	4	10)											
89	93	" " low " 5% clay	4	11)	8.1	37¾	0.1	7	2	0	6	12	0	65	7
93	97	" " medium " 35% "	4	12)											
97	101	" " " " 40% "	4	13)	5.0	91¼	0.1	10	44	8	9	4	0	23	2
101	105	" " good " 5% "	4	14)											
105	109	" " " " some clay	4	15)											
109	113	" " " " 5% clay	4	16)	7.6	58¾	Tr	12	38	20	9	5	7	4	3
113	117	" " " " 10% "	4	17)											
117	120	Lost core	3	-											

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NORTH OF STEEPBANK RIVER AREA

HOLE No. R 1

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS. INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
120	124	Bit. sand, good grade, 10% clay	4	18)											
124	128	" " " " slight clay	4	19)	11.8	12¾	0.1	6	26	27	29	4	3	3	2
128	130	Clay	2	-											
130	134	Solidified hydrocarbon	4	20)											
134	135	Lost core	1	-)											
135	139	Solidified hydrocarbon and low grade sand	4	21)											
139	143	Low grade sand & solidified hydrocarbon	4	22)	Not assayed, carbonaceous material										
143	147	Solidified hydrocarbons	4	23)											
147	148	Lost core	1	-)											
148	152	Solidified hydrocarbons & low grade sand	4	24)											
152	156	Bit. sand, good grade, 5% clay	4	25)											
156	160	" " medium grade, 15% clay	4	26)	7.3	30⅛	Tr	1	13	22	24	10	13	9	7
160	164	" " good " 25% "	4	27)											
164	168	" " " "	4	28)	10.3	12¼	0.1	11	18	19	19	12	0	16	5
168	169	Lost core	1	-											
169	173	Bit. sand, good grade, some clay	4	29)											
173	174	Lost core	1	-)	8.9	12½	0.1	7	22	23	18	8	0	16	6
174	177	Bit. sand, low grade	3	30)											
177	178	Lost core	1	-											
178	182	Clay with fragments of limestone	4	-											
	182	End of Hole													

Summary

0' - 4' = 4' Overburden
4' - 85' = 81' @ 2.5% bitumen & 76% clay
85' - 128' = 43' @ 7.7% " & 39% "
128' - 177' = 49' @ 4.7% " ; 13% clay & 45% carbonaceous material.

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NORTH OF STEEPBANK RIVER AREA

HOLE No. R 2

DATE July 12-13 1945 LOCATION Sec. 12, Tp. 93-10-4 CO-ORDINATES ELEVATION 1026' DEPTH 121' DIP 90° CORE RECOVERY 97.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	11	Overburden, sand and clay	11	-											
11	15	Bit. sand, low grade, 20% clay	4	1	Trace of bitumen only										
15	16	Lost core	1	-											
16	20	Bit. sand, low grade	4	2)											
20	24	" " medium grade, 25% clay	4	3)	9.6	20½	Tr	5	2	1	4	6	23	46	12
24	78	Clay	54	-											
78	82	Bit. sand, good grade, 20% clay	4	4)											
82	86	" " " " 5% "	4	5)	11.9	15¼	Tr	8	2	1	2	8	11	62	6
86	90	" " " " 10% "	4	6)											
90	94	" " " " 10% "	4	7)	11.9	18¾	Tr	8	2	1	3	20	30	29	7
94	98	" " " " 15% "	4	8)											
98	99	Lost core	1	-)	11.9	25¼	0.1	5	2	1	11	24	26	26	5
99	103	Bit. sand, good grade, 5% "	4	9)											
103	107	" " " " some clay	4	10)											
107	111	" " " " 10% "	4	11)	9.8	23½	0.1	11	30	8	19	7	4	16	5
111	112	Lost core	1	-											
112	116	Clay	4	-											
116	118	Clay with limestone fragments	2	-											
118	121	Limestone	3	-											

Summary

0' - 78' = 78' Overburden, mostly clay
78' - 111' = 33' @ 11.4% bitumen & 21% clay bands.

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NORTH OF STEEPBANK RIVER AREA

HOLE No. R 3

DATE July 15-17 19 5 LOCATION Sec. 1, Tp. 93-12-4 CO-ORDINATES ELEVATION 1027' DEPTH 116' DIP 90° CORE RECOVERY 91.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	12	Overburden, sand and clay	12	-											
12	16	Bit. sand, low grade, 5% clay	4	1)											
16	17	Lost core	1	-)	Trace of bitumen only										
17	21	Bit. sand, low grade, 5% clay	4	2)											
21	22	Lost core	1	-											
22	26	Bit. sand, low grade, some clay	4	3)											
26	27	Lost core	1	-)											
27	79	Clay and rock	52	-)	3.3	45	Tr	7	5	2	19	11	41	9	6
79	83	Bit. sand, good grade, 25% clay	4	4)											
83	88	Clay	5	-											
88	89	Lost core	1	-											
89	94	Clay	5	-											
94	98	Lost core	4	-											
98	100	Clay	2	-											
100	104	Bit. sand, good grade, 60% clay	4	5)											
104	108	" " low " 5% "	4	6)	3.3	100¾	Tr	7	5	2	19	11	41	9	6
108	110	Clay	2	-											
110	111	Lost core	1	-											
111	115	Leached sand	4	-											
115	116	Clay and limestone fragments	1	-											

Summary

0' - 22' = 22' Overburden
22' - 108' = 86' @ less than 2% bitumen

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NORTH OF STEEPBANK RIVER AREA

HOLE No. R 4

DATE July 23-25 1945 LOCATION Sec. 11, Tp. 93-10-4 CO-ORDINATES ELEVATION 1037' DEPTH 128' DIP 90° CORE RECOVERY 92.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	9	Overburden, gravel	9												
9	13	Bit. sand, low grade, 10% clay	4	1)											
13	14	Lost core	1	-)											
14	18	Bit. sand, low grade, 10% clay	4	2)											
18	22	" " " " 30% "	4	3)											
22	23	Lost core	1	-)											
23	27	Clay with stringers of sand	4	-)	Mostly clay, some bituminous sand										
27	29	Lost core	2	-)											
29	49	Clay with stringers of sand	20	-)											
49	53	Bit. sand, low grade, 30% clay	4	4)											
53	54	Lost core	1	-)											
54	58	Bit. sand, low grade, 20% clay	4	5)											
58	62	" " medium grade, 15% clay	4	6)											
62	66	" " good " 10% "	4	7)	8.4	62¾	Tr	9	3	1	2	6	18	51	10
66	70	" " " " 15% "	4	8)											
70	74	" " " " 25% "	4	9)											
74	78	" " " " 20% "	4	10)	9.1	69½	Tr	7	2	1	14	29	2	36	9
78	82	" " " " 15% "	4	11)											
82	86	" " " " 5% "	4	12)											
86	90	" " " " 30% "	4	13)											
90	94	" " " " 10% "	4	14)	8.8	58¼	Tr	5	3	1	30	18	1	37	5
94	98	" " " " 10% "	4	15)											
98	99	Lost core	1	-											
99	103	Bit. sand, good grade, 10% clay	4	16)											
103	104	Lost core	1	-)	9.8	37¾	Tr	3	5	11	46	17	4	11	3
104	108	Bit. sand, good grade, 20% clay and solidified hydrocarbons	4	17)											
108	109	Lost core	1	-											

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NORTH OF STEEPBANK RIVER AREA

HOLE No. R 4

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
109	113	Solidified hydrocarbons & low grade sand	4	18)											
113	117	Bit. sand, low grade	4	19)	Not assayed. Traces of bitumen only.										
117	118	Lost core	1	-											
118	119	Barren sand	1	-											
119	127'6"	Clay	8'6"	-											
127'6"	128	Limestone	0'6"	-											

Summary

0'-58' = 58' Overburden & very low grade sand

58' - 108' = 50' @ 9% bitumen & 38% clay bands.

MUSKEG RIVER AREA

MUSKEG RIVER AREA

HOLE No. M 1

DATE Aug. 12-14 1945 LOCATION L.S.15, Sec. 31, Tp. 94-10-4 CO-ORDINATES ELEVATION 909' DEPTH 80' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	9'	Casing	9	-											
9'	13'	Bit. sand, medium grade, 20% clay	4	1)											
13'	16'	Lost core	3	-)	12.0	22¼	0.1	6	5	6	12	16	18	29	7
16'	20'	Bit. sand, medium grade, 5% "	4	2)											
20'	24'	Clay, light colour	4	-											
24'	28'	Clay, dark colour	4	-											
28'	29'	Clay with some bitumen	1	-											
29'	32'	Clay, dark colour	3	-											
32'	33'6"	Bit. sand, medium grade	1'6"	3	9.1	6	Tr	18	38	8	13	4	7	8	4
33'6"	40'	Clay light colour	6'6"	-											
40'	46'	Clay, dark colour	6	-											
46'	52'	Clay, dark waxy fracture	6	-											
52'	56'	Bit. sand, coarse, 15% clay	4	4)											
56'	58'6"	Bit. sand, very coarse, 15% clay	2'6"	5)	9.1	12¼	Tr	18	38	8	13	4	7	8	4
58'6"	63'	Clay, dark	4'6"	-											
63'	63'6"	Bit. sand, good grade, coarse	0'6"	-											
63'6"	70'	Clay and very coarse sand	6'6"	-											
70'	70'6"	Bit. sand, good grade, coarse	0'6"	-											
70'6"	73'	Clay and coarse sand	2'6"	-											
73'	73'3"	Bit. sand, good grade, coarse	0'3"	-											
73'3"	78'	Clay and coarse sand	4'9"	-											
78'	80'	Decomposed limestone	2	-											
	80'	End of Hole													

Summary

0-9' = 9' - Casing
9-20' = 11' @ 12.0% bitumen
20'-52' = 30'6" clay and 1'6" bit. sand @ 9.1%
52' - 58'6" = 6'6" bit. sand @ 9.1%

MUSKEG RIVER AREA

HOLE No. M 2

DATE Aug. 10-11 1945 LOCATION L.S.7,Sec.31,Tp.94-10-4. CO-ORDINATES ELEVATION 922' DEPTH 76' DIP 90° CORE RECOVERY 93.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	18'	Casing, sand and gravel	18	-											
18'	22'	Bit. sand, medium grade, 5% clay	4	1)											
22'	26'	Lost core	4	-)	13.6	5¾	Tr	2	2	1	3	12	5	62	12
26'	30'	Bit. sand, medium grade, 5% clay	4	2)											
30'	34'	Bit. sand, good grade	4	3)											
34'	35'	Lost core	1	-)	15.9		Tr	1	2	0	4	8	9	68	8
35'	39'	Bit. sand, good grade, slight clay	4	4)											
39'	43'	" " " " " "	4	5)											
43'	44'6"	" " medium grade, 20% clay	1'6"	6)	14.7	6	Tr	2	2	2	8	22	1	53	10
44'6"	47'	Clay, light colour	0'6"	-											
47'	48'	Clay, dark colour	1	-											
48'	53'	Clay, light colour	5	-											
53'	60'	Clay, dark colour	7	-											
60'	75'6"	Decomposed limestone	15'6"	-											
75'6"	76'	Limestone	0'6"												
	76'	End of Hole													

Summary

0' - 18' = Casing, sand and gravel
18' - 44'6" = 26'6" @ 14.6% bitumen & 3.1% clay bands.

MUSKEG RIVER AREA

HOLE No. M 3

DATE Aug. 15 1945 LOCATION L.S.2,Sec.31,Tp.94-10-4. CO-ORDINATES ELEVATION 902' DEPTH 31' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	19'	Overburden - casing	19												
19'	21'9"	Bit. sand, low grade, leached	2'9"	1	Not assayed.										
21'9"	25'	Coarse grit	3'3"												
25'	30'6"	Decomposed limestone and green clay	4'6"												
30'6"	31'	Limestone	0'6"												
	31'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 4

DATE Aug. 20 1945 LOCATION L.S.12, Sec. 30, Tp. 94-10-4. CO-ORDINATES ELEVATION 902' DEPTH 25' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	18'	Casing - sand, gravel and boulders	18												
18'	25'	Limestone, rubbly	7												
25'		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 5

DATE Aug. 21 1945 LOCATION LS.11,Sec.30,Tp.94-10-4 CO-ORDINATES ELEVATION DEPTH 22' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	8'	Casing - leached sand	8'0"												
8'	9'6"	Bit. sand, low grade, 5% clay	1'6"												
9'6"	12'	Clay	2'6"												
12'	18'6"	Decomposed limestone	6'6"												
18'6"	22'	Limestone, rubbly	3'6"												
	22'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 6.

DATE Aug. 22-23 1945 LOCATION LS.6,Sec.30,Tp.94-10-4 CO-ORDINATES ELEVATION 896' DEPTH 49' DIP 90° CORE RECOVERY 95.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	26'	Sand, gravel, boulders, and clay	26												
26'	29'	Bit. sand, very low grade	3												
29'	31'	Clay	2												
31'	32'	Lost core	1												
32'	36'	Grit, considerable clay	4												
36'	37'	Lost core	1												
37'	46'	Clay, brown colour, few red streaks	9												
46'	48'	Clay, grey brown	2												
48'	49'	Decomposed limestone	1												
	49'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 7

DATE Aug. 23-24 1945 LOCATION LS.2,Sec.30,Tp.94-10-4 CO-ORDINATES ELEVATION 905' DEPTH 85' DIP 90° CORE RECOVERY 92.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	20'	Sand, clay, gravel and boulder	20												
20'	20'6"	Bit. sand, good grade	0'6"												
20'6"	21'6"	Clay and gravel	1'0"												
21'6"	35'	Clay	13'6"												
35'	39'	Solid hydrocarbon, few sandy bands	4	1											
39'	40'	Lost core	1	-											
40'	44'	Bit. sand, low grade	4	2											
44'	50'	Grit, poorly consolidated, considerable clay	6	-											
50'	54'	Bit. sand, very low grade	4	3											
54'	56'	Lost core	2	-	No samples assayed.										
56'	60'	Bit. sand, very low grade	4	4											
60'	64'	" " " " " some clay	4	5											
64'	65'	Lost core	1	-											
65'	69'	Grit, low grade, coarse	4	6											
69'	73'	" " " "	4	7											
73'	76'4"	" " " "	3'4"	8											
76'4"	79'	Lost core	2'8"	-											
79'	83'	Clay	4	-											
83'	84'	Quartzite	1	-											
84'	85'	Limestone fragments and greenish clay	1	-											
	85'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 8

DATE Aug. 27-31 1945 LOCATION LS.5,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 937' DEPTH 168' DIP 90° CORE RECOVERY 86.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	15	Sand casing	15	-											
15	19	Clay, about 20% l.g. bit. sand with infrequent 1/8" stringers of bitumen	4	1	Not analysed.										
19	20	Clay, as above	1	-											
20	22	Quartzite	2	-											
22	47	Clay, as from 15' - 19'	25	-											
47	48	Lost core	1	-											
48	51	Bit. sand, good grade, 35% clay	3	2	Not analysed.										
51	61	Clay, about 15% l.g.s.	10	-											
61	65	Solid hydrocarbon, considerable shale	4	3)	Lignite Moisture 11.5%, Ash 35.5%, Volatile matter 20.8%										
65	69	" " " "	4	4)	Fixed carbon 32.2% Analysis of ash: SiO_2-77.90; Fe_2O_3-1.64										
69	71	" " " "	2	5)											
71	73	Mostly grit	2	5	Al_2O_3-10.88; CaO-3.37; MgO-1.62; TiO_2-1.14; P_2O_5-.57; MnO-.015;										
73	78	Fine sand and clay	5	-	Na_2O-1.99; K_2O-.59.										
78	82	Bit. sand, medium to good grade	4	6)	10.1	21	Tr	10	30	23	20	6	6	2	2
82	86	" " good grade, coarse grains	4	7)											
86	90	" " " " " "	4	8)	13.4	3	Tr	11	32	14	26	5	0	10	2
90	94	" " " " " "	4	9)											
94	98	" " " " " "	4	10)	9.1	6½	Tr	24	35	17	9	4	5	5	1
98	102	" " " " very " "	4	11)											
102	107	Lost core, apparently very high grade	5	-											
107	111	Bit. sand, good grade, coarse, few grains up to 3/8"	4	12	9.1	27	Tr	24	35	17	9	4	5	5	1
111	125	Lost core, tar sample	14	13	52.3		25.5	26	47	6	7	2	1	7	4
125	127	Bit. sand, good grade, coarse	2	14)											
127	129	Lost core	2	-)	12.2	9½	Tr	44	41	4	5	1	2	1	1
129	133	Bit. sand, good grade, coarse	4	15)											
133	141	Clay, and leached sand	8	-											

MUSKEG RIVER AREA

HOLE No. M 8

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
141	145	Bit. sand, good grade, 20% clay	4	16	9.7)	27½									
145	146	Clay band	1	-	)		Tr	12	40	25	12	4	1	4	2
146	150	Bit. sand, medium to good grade	4	17	9.7)	6									
150	153'6"	Bit. sand, good grade	3'6"	18											
153'6"	158	" " 85% liquid bitumen	4'6"	19	57.1		16.0	29	45	9	5	2	1	4	5
158	168	Clay, light colour	10	-											
	168	End of Hole													

Summary

0' - 61' = 61' Overburden & small quantity of bituminous sand
61' - 71' = 10' Lignite
71' - 78' = 7' Fine sand and clay
* 78' - 133' = 55' @ 22.1% (13.39%) bitumen & 6.9% clay bands
133' - 141' = 8' clay & leached sand
* 141' - 158' = 17' @ 21.68% (11.3%) bitumen & 22% clay bands
* 78' - 158' = 80' @ 19.8% (11.6%) bitumen & 19.5% clay bands.

* The percentage in brackets is the average bitumen content when the assays of samples 13 and 19 are taken as 18%.

MUSKEG RIVER AREA

HOLE No. M 9

DATE Sept. 4-7 1945 LOCATION Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 941' DEPTH 194' DIP 90° CORE RECOVERY 91.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	8	Overburden, sand, standpipe	8	-											
8	43	Clay with few stringers of l.g.s.	35	-											
43	44	Lost core	1	-											
44	55	Clay with few stringers of l.g.s.	11	-											
55	58	Bit. sand, good grade, 40% clay	3	1	Not assayed.										
58	60	Clay with stringers of m.g.s.	2	-											
60	64	Bit. sand, low grade, 30% clay	4	2	Not assayed.										
64	66	" " medium grade, 30% clay	2	3	Not assayed.										
66	68	Clay with few m.g.s. stringers	2	-											
68	70	Bit. sand, good grade, 10% clay	2	4	10.9	3½	Tr	6	34	15	29	6	5	3	2
70	75	Clay	5	-											
75	79	Bit. sand, good grade	4	5)											
79	83	" " " " 20% clay	4	6)	10.9	23	Tr	6	34	15	29	6	5	3	2
83	87	" " " " 15% "	4	7)											
87	88	Lost core	1	-)											
88	92	Bit. sand, good grade, 20% clay	4	8)	8.5	49½	Tr	24	19	22	18	7	4	4	2
92	96	" " " " 15% "	4	9)											
96	100	" " " " 5% "	4	10)											
100	101	Lost core	1	-)	10.6	9½	.1	13	43	10	15	4	0	11	4
101	105	Bit. sand, good grade, slight clay	4	11)											
105	110	Clay	5	-											
110	114	Bit. sand, good grade, slight clay	4	12)											
114	119	Clay and barren sand	5	-)	11.3	7½	Tr	5	20	18	20	13	5	13	5
119	123	Bit. sand, good grade, slight clay	4	13)											
123	127	" " " " " "	4	14)											
127	128	Lost core	1	-)	13.7	1½	Tr	1	10	6	22	11	5	38	7
128	132	Bit. sand, good grade	4	15)											
132	134	Lost core	2	-											

MUSKEG RIVER AREA

HOLE No. M 9

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
134	138	Bit. sand, good grade, 5% clay	4	16)											
138	142	" " " " 10% "	4	17)	8.8	39¼	Tr	3	4	8	19	17	22	15	12
142	143'6"	" " low grade, some clay	1'6"	18)											
143'6"	152	Clay	8'6"	-											
152	156	Bit. sand, medium grade, some clay	4	19)											
156	160	" " good " 15% clay	4	20)	9.9	24	Tr	7	24	10	22	7	17	7	6
160	168	Lost core, apparently good grade sand	8	-											
168	172	Bit. sand, good grade	4	21	13.4	2	Tr	6	16	21	23	10	1	18	5
172	174	Clay	2	-											
174	175	Bit. sand, medium grade	1	22	7.0	6	Tr	6	16	21	23	10	1	18	5
175	180	Clay	5												
180	184	Bit. sand, low grade, 10% clay	4	23	4.6	32½	Tr	6	16	21	23	10	1	18	5
184	191	Clay with few l.g.s. stringers	7	-											
191	193	Lost core	2	-											
193	194	Limestone	1	-											
	194	End of Hole													

Summary

0' - 75' = 75' Overburden & very low grade sand

75' - 132' = 57' @ 8.9% bitumen & 31% clay bands

132' - 172' = 40' @ 7.8% bitumen & 34.6% clay bands

75' - 172' = 97' @ 8.5% bitumen & 32% clay bands

MUSKEG RIVER AREA

HOLE No. M 10

DATE Sept. 8-10 1945 LOCATION Sec.8, Tp.95-10-4 CO-ORDINATES ELEVATION 952' DEPTH 177' DIP 90° CORE RECOVERY 93.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	65	Clay with few bands of l.g.s.	65	-											
65	66	Lost core	1	-											
66	70	Bit. sand, good grade, 15% clay	4	1)	11.4	2 9/16	Tr	1	1	0	1	2	32	48	14
70	74	" " " " some clay	4	2)											
74	78	" " " " 10% "	4	3)	11.4	9	Tr	4	15	14	42	10	2	10	3
78	82	" " " " 10% "	4	4)											
82	83	Lost core	1	-											
83	84	Bit. sand, good grade, 15% clay	1	5	11.4	3	Tr	4	15	14	42	10	2	10	3
84	87	Clay	3	-											
87	91	Bit. sand, low grade, grit and solidified hydrocarbons	4	6	Not assayed.		Tr								
91	94	Clay	3	-											
94	99	Lost core, apparently good grade sand	5												
99	103	Bit. sand, good grade, slight clay	4	7)	13.9	11 1/4	Tr	3	1	1	5	8	13	59	10
103	107	" " " " 15% clay	4	8)											
107	111	" " " " 20% "	4	9)	10.5	14 3/4	Tr	5	11	19	22	13	14	9	6
111	115	" " " "	4	10)											
115	116	Lost core	1	-											
116	120	Bit. sand, good grade	4	11	13.0		Tr	16	49	9	9	5	6	3	3
120	122	Lost core	2	-											
122	124	Bit. sand, good grade	2	12	13.0		Tr	16	49	9	9	5	6	3	3
124	134	Clay	10	-											
134	137	Bit. sand, low grade, slight clay	3	13	9.5	10 1/4	Tr	12	25	16	20	8	10	5	4
137	139	Clay	2	-											
139	143	Bit. sand, medium grade, 30% clay	4	14	4.6	32	Tr	12	25	16	20	8	10	5	4
143	147	" " good " 25% "	4	15	8.7	17 1/2	Tr	12	25	16	20	8	10	5	4
147	151	Clay	4	-											

MUSKEG RIVER AREA

HOLE No. M 10

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151	156	Bit. sand, good grade, 15% clay	5	16	11.4	10	Tr	12	25	16	20	8	10	5	4
156	166	Clay	10	-											
166	167	Lost core	1	-											
167	172	Clay	5	-											
172	177	Limestone	5	-											
	177	End of Hole													

Summary

0' - 66' = 66' Overburden

(66' - 84' = 18' @ 11.4% bitumen & 19% clay bands

(84' - 94' = 10'; clay 6' and carbonaceous material 4'

(94' - 124' = 30' @ 12.6% bitumen & 7.4% clay bands

66' - 124' = 58' @ 10.1% bitumen & 27% clay bands

124' - 156' = 32' @ 4.4% bitumen & 68% clay bands.

MUSKEG RIVER AREA

HOLE No. M 11

DATE Sept. 11-13 1945 LOCATION Sec.8, Tp.95-10-4 CO-ORDINATES ELEVATION 948' DEPTH 111' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	7'	Sand standpipe	7	-											
7'	11'	Bit. sand, low grade, 10% clay	4	1)	Not assayed, very low grade.										
11'	14'	Bit. sand, low grade	3	2)											
14'	72'	Clay	58	-											
72'	74'	Lost core	2	-											
74'	84'	Clay	10	-											
84'	88'	Bit. sand, good grade, slight clay	4	3)	8.8	31½	Tr	6	23	8	19	8	15	13	7
88'	92'	" " " "	4	4)											
92'	96'	" " " " 5% clay	4	5)	13.5	3½	Tr	6	5	2	18	17	1	45	6
96'	99'6"	" " " "	3'6"	6)											
99'6"	104'	Clay	3'6"	-											
104'	106'	Lost core	2	-											
106'	110'3"	Clay	4'3"												
110'3"	111'	Limestone	0'9"												
	111'	End of Hole													

Summary

0' - 84' = 84' Overburden
84' - 99'6" = 15'6" @ 11.1% bitumen and 19.3% clay bands.

MUSKEG RIVER AREA

HOLE No. M 12

DATE Sept. 15-18 1945 LOCATION LS.3,Sec.8,Tp 95-10-4 CO-ORDINATES ELEVATION 930' DEPTH 200' DIP 90° CORE RECOVERY 83.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	7'	Sand - casing	7	-											
7'	11'	Bit. sand, good grade, 10% clay	4	1)	14.9	3¼	Tr	5	15	19	24	13	0	20	4
11'	15'	" " " " 20% "	4	2)											
15'	17'	Lost core	2	-											
17'	21'	Bit. sand, good grade, 30% clay	4	3)	11.9	13¼	Tr	4	2	1	5	17	51	12	7
21'	23'8"	" " " " 5% "	2'8"	4)											
23'8"	24'6"	Sandstone, slight bitumen	0'10"	-											
24'6"	29'	Bit. sand, good grade, 5% clay	4'6"	5)	10.3	40¼	Tr	4	3	1	19	21	2	39	10
29'	33'	" " " " 70% "	4	6)											
33'	37'	" " " " 70% "	4	7	Not assayed.										
37'	38'	Lost core	1	-											
38'	42'	Bit. sand, good grade, 50% clay	4	8)	10.9	39½	Tr	7	13	15	19	16	9	17	4
42'	46'	" " " " slight clay	4	9)											
46'	50'	" " " " 25% clay	4	10)											
50'	59'	Clay	9	-											
59	59'6"	Bit. sand, low grade, compacted 25% solid hydrocarbons	0'6"	-											
59'6"	88'	Clay	28'6"	-											
88'	92'	Bit. sand, medium grade, 20% clay	4	11)	11.4	21	Tr	4	8	7	37	15	21	4	4
92'	96'	" " good " 5% "	4	12)											
96'	100'	" " " " slight clay	4	13)	14.1		Tr	12	33	30	17	4	2	1	1
100'	104'	" " " " considerable free bitumen	4	14)											
104'	108'	" " medium " 10% clay	4	15)	10.8	17½	Tr	18	19	6	23	10	1	18	4
108	112'6"	" " " " 15% "	4'6"	16)											
112'6"	120	Lost core, apparently very high grade	7'6"	17	33.7		8.0								
120'	142'	Clay	22	-											

MUSKEG RIVER AREA

HOLE No. M 12

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
142'	143'4"	Bit. sand, good grade, slight clay	1'4"	18	8.4	2	Tr	6	20	19	20	12	1	18	4
143'4"	147'	Clay	3'8"	-											
147'	148'	Bit. sand, low grade, and clay	1	-											
148'	152'	" " medium grade	4	19)	8.4	37	Tr	6	20	19	20	12	1	18	4
152'	156'	" " low grade	4	20)											
156'	160'	" " medium grade	4	21)	10.3	14½	Tr	9	40	12	14	5	11	14	4
160'	161'	Lost core	1	-)											
161'	166'3"	Bit. sand, good grade	5'3"	22)											
166'3"	168'	Lost core	1'9"	-											
168'	171'	Clay with few stringers of leached sand	3	-											
171'	175'	Lost core	4	-											
175'	178'	Clay with 50% leached sand stringers	3	-											
178'	180'	Lost core	2	-											
180'	182'6"	Leached sand, about 25% clay	2'6"	-											
182'6"	185'	Lost core	2'6"	-											
185'	189'	Clay, about 20% leached sand	4	-											
189'	198'	Lost core	9	-											
198'	200'	Clay about 5% leached sand	2												
	200'	End of Hole													

Summary

0' - 7' = 7' Overburden
7' - 50' = 43' @ 10.5% bitumen & 19% clay bands
50' - 88' = 38' clay
88' - 120' = 32' @ 13.2% bitumen & 10% clay bands
120' - 166' = 46' @ 4% bitumen & 68% clay bands

* Estimated assay of Sample #17 taken as 17%.

MUSKEG RIVER AREA

HOLE No. M 13

DATE Sept. 13-15 1945 LOCATION LS.14, Sec.5, Tp.95-10-4 CO-ORDINATES ELEVATION 942' DEPTH 130' DIP 90° CORE RECOVERY 93.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	7'	Sand - casing	7	-											
7'	11'	Bit. sand, medium grade	4	1)											
11'	15'	" " " " 20% clay	4	2)	15.2	9½	Tr	1	1	1	1	15	1	75	5
15'	19'	" " " " 20% "	4	3)											
19'	23'	" " " " 50% "	4	4)											
23'	24'	Lost core	1	-)	12.8	27½	Tr	3	3	1	8	9	40	30	6
24'	26'3"	Bit. sand, medium grade, 15% clay	2'3"	5)											
26'3"	72'	Clay with some narrow bands of low grade sand	45'9"	-											
72'	76'	Bit. sand, good grade, 5% clay	4	6)											
76'	78'	" " " " 50% "	2	7)	11.1	15	Tr	9	36	26	12	5	1	8	3
78'	80'	Clay	2	-											
80'	84'	Bit. sand, good grade	4	8	11.1	6¾	Tr	9	36	26	12	5	1	8	3
84'	99'	Clay with 15% low grade sand	15	-											
99'	101'	Bit. sand, good grade, 10% clay	2	9	13.5	9	Tr	2	5	1	7	10	50	21	4
101'	109'	Lost core apparently good grade sand	8	-											
109'	113'	Bit. sand, good grade, little clay	4	10	13.5		Tr	2	5	1	7	10	50	21	4
113'	117'	" " " " 10% clay	4	11)											
117'	120'3"	" " " " 5% "	3'3"	12)	12.2	11½	Tr	4	6	3	11	23	0	48	5
120'3"	129'6"	Clay	9'3"	-											
129'6"	130'	Limestone	0'6"	-											
	130'	End of Hole													

Summary

0' - 7' = 7' Overburden
7' - 26' = 19' @ 13.8% Bitumen & 16% clay bands
26' - 72' = 46' clay
72' - 120' = 48' @ 7.5% bitumen & 49% clay bands.

MUSKEG RIVER AREA

HOLE No. M 14

DATE Sept. 20-21 1945 LOCATION LS.4, Sec.8, Tp.95-10-4 CO-ORDINATES ELEVATION 895' DEPTH 148' DIP 90° CORE RECOVERY 92.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	54'	Leached sand, casing	54												
54'	58'	Bit. sand, low grade, 15% clay	4	1)											
58'	62'	" " good " 50% "	4	2)	8.4	44½	Tr	8	33	10	20	6	14	5	4
62'	68'	Clay with 15% leached sand	6	-											
68'	72'	Bit. sand, good grade	4	3	8.4		Tr	8	33	10	20	6	14	5	4
72'	76'	" " " "	4	4)											
76'	78'	Lost core	2	-)	13.3		Tr	3	16	22	23	7	19	6	4
78'	82'	Bit. sand, good grade	4	5)											
82'	83'	Lost core	1	-											
83'	87'	Bit. sand, medium grade, 5% clay	4	6)											
87'	91'	" " low " 60% "	4	7)	8.0	55	Tr	4	7	5	12	7	1	45	19
91'	94'	" " medium " 15% "	3	8)											
94'	99'	Clay	5	-											
99'	103'	Bit. sand, good grade	4	9	11.2	4	Tr	3	14	19	21	11	4	21	7
103'	104'	Lost core	1	-											
104'	108'	Bit. sand, good grade	4	10)											
108'	112'	" " " " 10% clay	4	11)	11.2	26¼	Tr	3	14	19	21	11	4	21	7
112'	113'	Lost core	1	-											
113'	118'	Bit. sand, good grade	5	12	12.9	5	Tr	10	39	9	16	6	11	5	4
118'	120'	Lost core	2	-											
120'	123'	Clay	3	-											
123'	127'	Lost core	4	-											
127'	130'	Clay	3	-											
130'	132'2"	Bit. sand, medium grade, leached	2'2"	13	12.9		Tr	10	39	9	16	6	11	5	4
132'2"	143'	Clay	10'10"	-											
143'	148'	Limestone	5	-											

MUSKEG RIVER AREA

HOLE No. M 14

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 54' = 54' Overburden 54' - 68' = 14' @ 4.8% bitumen & 6% clay bands 68' - 118' = 50' @ 9.68% bitumen & 15% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 15

DATE Sept. 23-25 1945 LOCATION LS.5,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 899' DEPTH 180' DIP 90° CORE RECOVERY 86.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	50'	Sand - casing	50	-											
50'	54'	Bit. sand, good grade	4	1)											
54'	58'2"	" " " " coarse	4'2"	2)	13.9		Tr	18	44	19	10	2	3	2	2
58'2"	61'	Clay	2'10"	-											
61'	64'	Lost core	3	-											
64'	82'	Clay	18	-											
82'	83'	Solid hydrocarbon	1	-											
83'	99'	Clay	16	-											
99'	102'4"	Bit. sand, good grade	3'4"	3	13.1	2¼	Tr	15	48	7	12	4	8	4	2
102'4"	108'	Clay, about 50% l.g.s.	5'10"	-											
108'	112'	Bit. sand, good grade	4	4	13.1	1½	Tr	15	48	7	12	4	8	4	2
112'	116'	" " " " 120% clay	4	5	10.5	3	Tr	7	27	22	19	6	12	3	3
116'	117'	Lost core	1	-											
117'	122'	Clay	5	-											
122'	126'	Bit. sand, good grade	4	6	10.5	17¼	Tr	7	27	22	19	6	12	3	3
126'	130'	" " " "	4	7)											
130'	134'	" " " "	4	8)	12.3		Tr	5	28	10	22	8	16	7	4
134'	138'	" " low grade, 80% clay	4	9)											
138'	141'4"	" " " "	4	10)	Not assayed, mostly clay										
141'4"	145'	Sand, leached	3'8"	-											
145'	147'	Clay	2	-											
147'	149'	Sand, leached	2	-											
149'	153'	Clay	4												
153'	155'	Sand, leached	2	-											
155'	176'	Lost core, probably leached sand	21	-											
176'	180'	Clay	4	-											

MUSKEG RIVER AREA

HOLE No. M 15

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 50' = 50' Overburden 50' - 99' = 49'; clay 41', and good grade bit. sand 8' 99' - 134' = 35' @ 7.9% bitumen & 40% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 16

DATE Sept.28-Oct.2 1945 LOCATION LS.14,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 945' DEPTH 138' DIP 90° CORE RECOVERY 97.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
1'	10'	Sand - casing	10												
10'	12'	Leached sand	2	-											
12'	16'	Bit. sand, medium grade, 20% leached	4	1)											
16'	21'	" " " " 20% clay	5	2)	11.1	21¾	Tr	3	3	1	10	11	22	38	12
21'	34'	Clay	13	-											
34'	34'6"	Quartzite	0'6"	-											
34'6"	35'	Clay	0'6"	-											
35'	39'	Bit. sand, medium grade, 45% clay	4	3)											
39'	42'2"	" " " " 35% "	3'2"	4)	8.5	43¼	Tr	5	4	3	3	4	0	59	21
42'2"	46'	Clay with few stringers medium grade sand	3'10"	-											
46'	57'	" " " " low grade sand	11	-											
57'	76'	" " " " " " "	19	-											
76'	77'	Bit. sand, medium grade, 5% clay	1	5	8.5	2	Tr	5	4	3	3	4	0	59	21
77'	78'	Lost core	1	-											
78'	85'	Clay	7	-											
85'	85'6"	Quartzite	0'6"	-											
85'6"	89'	Clay	3'6"												
89'	92'	Clay, 20% low grade sand	3	-											
92'	96'	Bit. sand, medium grade, 35% clay	4	6)			Nil								
96'	98'	" " " " 50% "	2	7)	10.7	25	Nil	2	2	1	1	1	11	60	22
98'	99'	Lost core	1	-											
99'	102'	Clay	3	-											
102'	103'	Bit. sand, good grade	1	8	10.7		Nil)								
103'	104'	Clay	1	-			)	2	2	1	1	1	11	60	22
104'	107'	Bit. sand, good grade, 35% clay	3	9	10.7	15½	Nil)								
107'	108'	Lost core	1	-											

MUSKEG RIVER AREA

HOLE No. M 16

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
108'	109'	Clay	1	-											
109'	113'	Bit. sand, good grade, 10% clay	4	10	13.1	6	Nil)								
113'	115'	Clay	2	-			)	3	4	2	2	5	32	37	15
115'	119'3"	Bit. sand, good grade, 25% clay	4'3"	11	13.1	12¼	Nil)								
119'3"	138'	Clay	18'9"	-											
	138'	End of Hole													

Summary

0' - 12' = 12' Overburden
12' - 21' = 9' @ 11.1% bitumen & 20% clay bands
21' - 92' = 71'; 63' clay and 8' bituminous sand @ 8.5%
92' - 119' = 27' @ 7.8% bitumen & 50% clay bands.

MUSKEG RIVER AREA

HOLE No. M 17

DATE Oct. 3-8 1945 LOCATION LS.2,Sec.17,Tp.95-10-4 CO-ORDINATES ELEVATION 961' DEPTH 165' DIP 90° CORE RECOVERY 97.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	18'	Clay with leached sand	18	-											
18'	22'	Bit. sand, medium grade, 50% clay	4	1)	8.7	48¾	Tr	2	1	0	1	2	1	81	12
22'	26'	" " " " 50% "	4	2)											
26'	27'	Quartzite	1	-											
27'	28'	Clay with 40% low grade sand	1	-											
28'	33'	Clay with 5% " " "	5	-											
33'	33'4"	Quartzite	1'4"	-											
33'4"	52'	Clay	18'8"	-											
52'	97'	Clay with 5% medium grade sand	45	-											
97'	101'	Bit. sand, low grade, 50% clay	4	3)	8.7	45	Tr	2	1	0	1	2	1	81	12
101'	103'6"	" " " " 60% "	2'6"	4)											
103'6"	109'	Clay, some leached sand	5'6"	-											
109'	113'	Bit. sand, good grade, 5% clay	4	5)											
113'	114'	Lost core	1	-)	8.0	45¼	Tr	6	2	1	1	2	16	43	29
114'	118'	Bit. sand, low to good grade, 20% clay	4	6)											
118'	122'	" " medium grade, 5% clay	4	7)											
122'	126'	" " good grade, slight clay	4	8)	14.8	6¼	Tr	1	2	1	8	7	31	39	11
126'	130'	" " " " " "	4	9)											
130'	134'	" " " " 10% clay	4	10)	14.5	4¾	Tr	2	15	10	29	8	20	10	5
134'	138'	" " " " slight clay	4	11)											
138'	142'	" " " " 10% clay	4	12)	13.7	6	Nil	4	24	8	26	1	8	23	6
142'	146'	" " " " 5% "	4	13)											
146'	150'	" " " " slight clay	4	14	14.6	1	Tr	13	38	28	8	5	0	5	3
150'	153'10"	Lost core, some bitumen	3'10"	-											
153'10"	158'	Bit. sand, good grade, coarse	4'2"	15	14.8		Tr	13	38	28	8	5	0	5	3
158'	165'	Clay, light colour	7	-											
	165'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 17

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 109' = 109'; 14'6" bituminous sand @ 8.7% and 94'6" clay 109' - 158' = 49' @ 11.9% bitumen & 11% clay bands													

MUSKEG RIVER AREA

HOLE No. M 18

DATE Oct. 17-19 1945 LOCATION LS.4,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 930' DEPTH 150' DIP 90° CORE RECOVERY 87.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER -20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	10'	Sand	10	-											
10'	29'	Clay with 20% low grade sand	19	-											
29'	29'3"	Claystone	0'3"	-											
29'3"	31'	Clay with 20% low grade sand	1'9"	-											
31'	31'3"	Claystone	2'3"	-											
31'3"	34'	Clay with 20% low grade sand	2'9"	-											
34'	38'	Bit. sand, medium & good grade, 25% clay	4	1)											
38'	42'	" " good grade, 25% clay	4	2)	12.6	17½	Tr	2	2	3	13	25	15	32	8
42'	46'	" " " " slight clay	4	3)											
46'	50'	" " " " " "	4	4)											
50'	51'	Lost core	1	-	13.1	10½	Nil	4	14	9	37	13	17	4	2
51'	55'	Bit. sand, good grade, 15% clay	4	5)											
55'	58'	Clay	3	-											
58'	62'	Shale & solid hydrocarbon	4	6)	Fixed carbon 33.0%, vol. matter 21.7%										
62'	66'	" " " "	4	7)	Lignite Ash 39.2% Moisture 6.1%.										
66'	70'	" " " " some clay	4	8)											
70'	73'	" " " " " "	3	9)											
73'	100'	Clay	27	-											
100'	104'	Bit. sand, low grade, 60% clay	4	10)											
104'	108'	" " medium grade, 25% clay	4	11)	8.0	36½	Nil	7	3	3	20	24	2	35	6
108'	112'	" " " " 10% "	4	12)											
112'	116'	" " good " slight clay	4	13)	13.2	3½	Nil	9	30	10	23	8	15	3	2
116'	120'	" "	4	14	72.8	9.5	17.7								
120'	135'	Lost core probably very high grade	15	-											
135'	139'3"	Bit. sand, good grade, coarse	4'3"	15	15.3	-	Nil	4	76	6	7	2	3	1	1
139'3"	145'	Clay	5'9"												
145'	148'	Lost core	3	-											
148'	150'	Clay	2	-											
	150'	End of Hole													

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MUSKEG RIVER AREA

HOLE No. M 18

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 34' = 34' Sand and clay 34' - 55' = 21' @ 12.9% bitumen & 10% clay bands 55' - 73' = 3' clay and 15' lignite 73' - 100' = 27' clay * 100' - 139'3" = 39'3" @ 14.67% bitumen & 8.3% clay bands 34' - 139'3" = 105'3" @ 8.03% bitumen, 34% clay bands & 14% lignite * The assay of sample 14 and the following 15' of lost core is taken as 18%. If it could be assumed that the assay of 70% for sample 14 is representative of the sand from 116' - 135' then the average assay from 100' - 139'3" would be 40% and the average assay of the body from 34' - 139'3" would be 17.5%.													

MUSKEG RIVER AREA

HOLE No. M 19

DATE Oct. 11-16 1945 LOCATION LS.5,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 923' DEPTH 155' DIP 90° CORE RECOVERY 86.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	80'	Sand within gravel beds	80	-											
80'	84'	Bit. sand, good grade, coarse	4	1)											
84'	88'	" " low to good grade, 50% clay	4	2)	7.5	66	Tr	24	49	5	13	4	4	1	1
88'	92'	" " " grade, 60% clay	4	3)											
92'	93'	Lost core	1	-											
93'	97'	Bit. sand, good grade, slight clay	4	4)											
97'	101'	" " " " 20% clay	4	5)	14.7	11	Tr	4	11	28	38	12	1	6	0
101'	105'	" " " " 5% "	4	6)											
105'	109'	" " " " 10% "	4	7)	11.4	12⅜	Tr	12	34	8	20	7	13	4	2
109'	110'	Lost core, some free bitumen	1	-											
110'	114'	Bit. sand, good grade, 40% clay	4	8)											
114'	116'	Lost core, probably good grade sand	2	-)	11.5	17½	Tr	6	21	21	20	12	10	7	3
116'	120'	Bit. sand, good grade, slight clay	4	9)											
120'	124'	Lost core, probably good grade sand	4	-											
124'	128'	Bit. sand, good grade, 10% clay	4	10)											
128'	130'8"	" " medium grade, 75% grit	2'8"	11)	11.0	25⅝	Tr	5	35	12	23	6	13	4	2
130'8"	138'	Lost core	7'4"	-											
138'	141'	Clay	3	-											
141'	143'8"	Bit. sand, medium grade, slight clay	2'8"	12	11.0		Tr	5	35	12	23	6	13	4	2
143'8"	149'	Lost core	5'4"	-											
149'	155'	Clay	6	-											
	155'	End of Hole													

Summary

0' - 80' = 80' Overburden
80' - 130'8" = 50'8" @ 11.6 bitumen & 22% clay bands.

MUSKEG RIVER AREA

HOLE No. M 20

DATE Oct. 22-24 1945 LOCATION LS.6,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 932' DEPTH 165' DIP 90° CORE RECOVERY 91.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	8'	Sand	8	-											
8'	12'	Leached sand, 20% clay	4	-											
12'	26'	Clay, 30% leached sand	14	-											
26'	28'	Bit. sand, medium grade, 30% clay	2	1	8.7	8¾	Tr	13	23	18	16	7	3	16	4
28'	32'	Clay, 40% leached sand	4	-											
32'	33'6"	Bit. sand, medium grade, 25% clay	1'6"	2	8.7	4¼	Tr	13	23	18	16	7	3	16	4
33'6"	34'	Quartzite	1'6"	-											
34'	47'	Clay, 30% leached sand	13	-											
47'	49'	Lost core	2	-											
49'	53'	Bit. sand, good grade, 25% clay	4	3	8.7	14	Tr	13	23	18	16	7	3	16	4
53'	57'	Bit. sand, good grade	4	4)											
57'	59'	" " " "	2	5)	12.7		Tr	18	29	11	25	5	8	2	2
59'	62'	Clay	3	-					(Moisture 13.7%, ash 25.3%						
62'	66'3"	Clay with some hydrocarbons	4'3"	6		23	28	lignite							
66'3"	70'	Lost core	3'9"	-					(Vol. Matter 25.6%, Fixed carbon 35.4%						
70'	75'	Clay and sand mixture	5	-											
75'	77'	Clay	2	-											
77'	79'	Clay and sand mixture	2	-											
79'	83'	Bit. sand, good grade	4	7)											
83'	87'	" " " " 5% clay	4	8)	13.2	9½	Tr	2	44	19	25	4	4	1	1
87'	89'	Lost core	2	-											
89'	93'	Bit. sand, good grade, slight clay	4	9)	11.8	4¼	Tr	11	55	12	14	2	4	1	1
93'	97'	" " " "	4	10)											
97'	101'	Lost core, probably good grade sand	4	-											
101'	105'	Bit. sand, good grade, slight clay	4	11)											
105'	109'	" " " " 25% clay	4	12)	11.4	12¾	Tr	13	51	21	6	2	3	2	2
109'	111'	Lost core, probably good grade sand	2	-											

MUSKEG RIVER AREA

HOLE No. M 20

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
111'	115'	Bit. sand, good grade, 35% clay	4	13)											
115'	116'6"	" " " " 60% "	1'6"	14)	9.3	29	Tr	6	53	9	14	5	8	3	2
116'6"	133'	Clay with 10% leached sand	16'6"	-											
133'	137'	Bit. sand, medium grade, 15% clay	4	15	9.3	13½	Tr	6	53	9	14	5	8	3	2
137'	138'	Clay and leached sand	1	-											
138'	142'	Bit. sand, good grade	4	16)											
142'	146'	" " " " slight clay	4	17)	10.9	28	Tr	5	9	14	19	14	1	29	9
146'	150'	" " medium grade, 10% clay	4	18)											
150'	155'	Clay and sand mixture	5	-											
155'	163'9"	Clay, dark colour	8'9"	-											
163'9"	164'	Claystone	0'3"	-											
164'	165'	Clay, light green colour	1	-											
	165'	End of Hole													

Summary

0' - 79' = 79' clay with 13'6" of low grade sand in 4 layers

79' - 116'6" = 37'6" @ 11.03% bitumen & 12.3% clay bands

116'6" - 150' = 33'6" @ 5.0% bitumen & 62% clay bands.

MUSKEG RIVER AREA

HOLE No. M 21

DATE Oct. 9-10 1945 LOCATION LS.3,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 940' DEPTH 104' DIP 90° CORE RECOVERY 94.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	6'	Sand	6	-											
6'	10'	Bit. sand, good grade, slight clay	4	1)											
10'	14'	" " " " 15% clay	4	2)	15.6	4½	Tr	3	2	1	9	7	45	25	8
14'	18'	" " " " 20% "	4	3)											
18'	22'	" " " " 5% "	4	4)											
22'	26'	" " " " 30% "	4	5)	12.2	41¾	Tr	2	1	0	2	2	44	35	13
26'	28'	" " low " 30% "	2	6)											
28'	32'6"	Clay with 20% of low grade sand	4'6"	-											
32'6"	33'	Quartzite	0'6"	-											
33'	46'	Clay with 15% of low grade sand	13	-											
46'	47'4"	Bit. sand, good grade, 10% clay	1'4"	7	11.5	1½	Tr	4	13	28	30	8	5	9	3
47'4"	75'	Clay, dark colour	27'9"	-											
75'	79'	Bit. sand, good grade, 25% clay	4	8)											
79'	80'10"	" " " " slight clay	1'10"	9)	11.5	19½	Tr	4	13	28	30	8	5	9	3
80'10"	83'	Lost core, apparently high grade with some liquid bitumen	2'2"	-											
83'	85'4"	Bit. sand, good grade	2'4"	10	14.1		Tr	12	27	13	28	7	8	3	2
85'4"	87'	Clay	1'8"	-											
87'	91'	Lost core	4	-											
91'	94'2"	Bit. sand, good grade, coarse	3'2"	11	14.1		Tr	12	27	13	28	7	8	3	2
94'2"	103'	Clay	0'8"	-											
103'	104'	Clay with limestone fragments													
	104'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 21

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 6' Overburden (sand) 6' - 28' = 22' @ 13.4% bitumen & 17.5% clay bands 28' - 75' = 47' clay with one 16" band of bituminous sand 75' - 85'4" = 10'4" @ 13% bitumen & 15% clay bands.												

MUSKEG RIVER AREA

HOLE No. M 22

DATE Nov. 1-9 1945 LOCATION LS.4,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 913' DEPTH 77' DIP 90° CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	55	Sand, casing	55	-											
55	77	Coarse gravel, casing	22	-											
77	86	Gravel	9	-											
		Hole abandoned													

MUSKEG RIVER AREA

HOLE No. M 23

DATE Oct. 25-31 1945 LOCATION LS.5,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 908' DEPTH 156' DIP 90° CORE RECOVERY 86.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	50'	Sand	50	-											
50'	55'	Bit. sand, good grade, 25% clay	5	1	10.7	4½ sand	Tr	28	45	6	10	2	4	2	3
55'	71'	Lost core, apparently high grade, liquid sample	16	2	56.2		19.5								
71'	75'	Bit. sand, good grade, 25% clay	4	3	9.1	12	Tr	25	50	8	4	3	2	3	5
75'	85'	Clay, dark	10	-											
85'	87'	Clay and leached sand	2	-											
87'	89'	Lost core	2	-											
89'	90'	Clay and leached sand	1	-											
90'	94'	Bit. sand, medium grade, slight clay	4	4	12.1		Tr	11	33	9	18	7	15	5	2
94'	99'	Clay	5	-											
99'	103'2"	Bit. sand, good grade, 10% clay	4'2"	5	12.1	6	Tr	11	33	9	18	7	15	5	2
103'2"	107'	Lost core	3'10"	-											
107'	109'	Sand and clay mixture	2	-											
109'	113'	Bit. sand, medium grade, slight clay	4	6	13.9	1	Tr	3	14	19	21	14	3	20	6
113'	117'	" " " "	4	7)											
117'	122'3"	" " " " " "	5'3"	8)	12.3	7¼	Tr	3	23	11	23	7	17	9	7
122'3"	129'	Clay with 20% low grade sand	6'9"	-											
129'	135'	Clay with 35% low grade sand	6	-											
135'	139'	Bit. sand, good grade	4	9)											
139'	141'5"	" " " " slight clay	2'5"	10)	12.1	9¾	Tr	7	23	22	16	5	8	9	5
141'5"	152'	Clay	0'7"	-											
152'	156'	Limestone	4	-											
	156'	End of Hole													

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MUSKEG RIVER AREA

HOLE No. M 23

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 50' = 50' Sand * 50' - 75' = 25' @ 15.1% bitumen & 4% clay bands 75' - 90' = 15' clay 90' - 103' = 13' @ 7.4% bitumen & 35% clay bands 103' - 109' = 6' clay 109' - 122' = 13' @ 12.8% bitumen & 5% clay bands 50' - 122' = 72' @ 8.9% bitumen & 33% clay bands * 16' of lost core estimated at 18%.												

MUSKEG RIVER AREA

HOLE No. M 24

DATE Jan. 31- Feb. 1, 1946 LOCATION Sec. 8, Tp. 95-10-4 CO-ORDINATES ELEVATION 940' DEPTH 100' DIP 90° CORE RECOVERY 95.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	14	Sand	14												
14	18	Bit. sand, medium grade, slight clay	4	1)											
18	19	Lost core	1	-)	13.7		Tr	4	6	2	30	0	38	14	6
19	23	Bit. sand, good grade	4	2)											
23	27	" " " " some clay	4	3)											
27	31	" " " " " "	4	4)	13.7	4¾	Tr	3	5	9	17	17	14	26	9
31	32'6"	" " " " " "	1'6"	5)											
32'6"	39	Clay	6'6"	-											
39	41	Lost core	2	-											
41	63	Clay	22	-											
63	64	Lost core	1	-											
64	72	Clay	8	-											
72	74	Bit. sand, good grade	2	6)											
74	82	Clay	8	-)											
82	84	Bit. sand, medium grade, 10% clay	2	7)	11.8	13¾	Tr	2	22	12	35	0	18	6	5
84	86	Clay	2	-)											
86	90	Bit. sand, good grade	4	8)											
90	91'3"	" " " "	1'3"	9)											
91'3"	98	Clay	6'9"	-											
98	100	Clay with limestone fragments	2	-											
	100	End of Hole													

Summary

0' - 14' = Overburden
14' - 32'6" = 18'6" @ 13.7% bitumen & 2% clay bands.

MUSKEG RIVER AREA

HOLE No. M 25

DATE Oct. 20-21 1945 LOCATION LS.3,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 939' DEPTH 115' DIP 90° CORE RECOVERY 92.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	5'	Sand - casing	5	-											
5'	9'	Bit. sand, medium grade, with some pebbles	4	1	13.8		Tr	8	7	3	1	5	5	59	12
9'	13'	" " good "	4	2)											
13'	14'	Lost core	1	-)	14.8		Nil	0	1	0	2	3	58	28	8
14'	18'	Bit. sand, good grade, slight clay	4	3)											
18'	22'	" " " " 5% clay	4	4)											
22'	26'	" " medium " 50% "	4	5)	8.2	60½	Nil	1	1	1	7	27	2	55	6
26'	28'6"	" " good " 40% "	2'6"	6)											
28'6"	32'	Clay with 10% medium grade sand	3'6"	-											
32'	60'	Clay with 5% low grade sand	28	-											
60'	64'	Bit. sand, good grade, slight clay	4	7	12.6	½	Tr	13	36	10	19	5	11	4	2
64'	66'	Lost core	2	-											
66'	70'6"	Bit. sand, good grade, coarse, 30% clay	4'6"	8	10.1		Tr	15	32	13	27	6	5	1	1
70'6"	76'	Clay, very dark colour	5'6"	-											
76'	80'	Lost core	4	-											
80'	82'	Bit. sand, medium grade	2	9	10.1		Tr	15	32	13	27	6	5	1	1
82'	85'	Mixture low grade sand and clay	3	-			Tr	15	32	13	27	6	5	1	1
85'	87'6"	Bit. sand, medium to good grade	2'6"	10	10.1										
87'6"	89'	Lost core	1'6"	-											
89'	113'	Clay, greenish	24	-											
113'	115'	Limestone, rubbly	2	-											
	115'	End of Hole													

Summary

0' - 5' = 5' Overburden - sand
5'28" - 6" = 23'6" @ 11.7% bitumen & 21% clay bands
28'6" - 87'6" = 59' @ 3% bitumen

MUSKEG RIVER AREA

HOLE No. M 26

DATE Nov. 10-24 1945 LOCATION LS.1,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 954' DEPTH 131' DIP 90° CORE RECOVERY 96.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	5	Clay and low grade sand	5	-											
5	42	Bit. sand, low grade, 60% clay	37	-											
42	43	Lost core	1	-											
43	47	Bit. sand, low to medium grade, 50% clay	4	1											
47	48	Lost core	1	-											
48	52	Bit. sand, low to medium grade, 50% clay	4	2	8.4	62¾	Nil	4	1	1	2	6	27	46	13
52	56	" " " " " 50% "	4	3											
56	57	Lost core	1	-											
57	61	Bit. sand, medium grade, 15% clay	4	4											
61	62	Lost core	1	-	15.3	2	Nil	3	1	0	3	6	56	25	6
62	66	Bit. sand, medium grade, slight clay	4	5											
66	70	" " " " " "	4	6											
70	74	" " " " 10% clay	4	7	14.7	7¼	Nil	2	1	1	1	5	47	35	8
74	78	" " " " 5% "	4	8											
78	82	" " " " 10% "	4	9	13.8	12	Nil	3	2	0	3	6	58	23	5
82	86	" " " " slight clay	4	10											
86	90	" " " " " "	4	11	16.4	⅜	Nil	3	1	1	3	14	26	44	8
90	94	" " " " 5% clay	4	12											
94	98	" " " " slight clay	4	13	16.2	5⅜	Nil	2	1	1	5	9	62	16	4
98	102	" " " " " "	4	14											
102	106	" " " " 5% clay	4	15	15.8	5½	Nil	3	2	0	8	23	43	16	5
106	110	" " " " slight clay	4	16											
110	114	" " " " 5% clay	4	17	16.8	1½	Nil	1	1	1	22	17	48	7	3
114	118	" " " " slight clay	4	18											
118	122	" " " " 5% clay	4	19	16.6	4	Nil	2	1	2	19	34	29	9	4
122	123	Lost core	1	-											

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MUSKEG RIVER AREA

HOLE No. M 26

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
123	127	Bit. sand, medium grade	4	20)											
127	130'9"	" " " " slight clay	3'9"	21)	16.9	3¼	Nil	1	1	0	15	19	51	9	4
130'9"	131'	Limestone	0'3"	-											
	131'	End of Hole													

Summary

0' - 43' = 43' Overburden
43' - 57' = 14' @ 8.4% bitumen & 38% clay bands
57' - 130'9" = 73'9" @ 15.8% bitumen & 4.7% clay bands
43' - 130'9" = 87'9" @ 14.6% bitumen & 10% clay bands.

MUSKEG RIVER AREA

HOLE No. M 27

DATE Nov. 25-28 1946 LOCATION LS.4,Sec.9,Tp.95-10-4 CO-ORDINATES ELEVATION 952' DEPTH 140' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	48	Clay	48	-											
48	58	Clay, 20% low grade sand	10	-											
58	62	Bit. sand, low grade, 50% clay	4	1	Not assayed.										
62	83	Clay, 20% low grade sand	21	-											
83	104	Clay, 40% low grade sand	21	-											
104	108	Bit. sand, medium grade, 10% clay	4	2)	14.7	7½	Nil								
108	112	" " " " slight clay	4	3)											
112	116	" " " " " "	4	4)	16.9		Nil								
116	120	" " " " " "	4	5)											
120	124	" " " " 10% clay	4	6)											
124	128	" " " " 50% "	4	7)	11.8	32½	Nil								
128	132	" " " " 20% "	4	8)											
132	137'6"	" " " " 35% "	5'6"	9)											
137'6"	139'6"	Clay, light colour	3	-											
139'6"	140	Limestone	0'6"	-											
	140	End of Hole													

Summary

0' - 104' = 104' Clay
104' - 137'6" = 33'6" @ 13.7% bitumen & 10% clay bands.

MUSKEG RIVER AREA

HOLE No. M 28

DATE Jan.27-29 1946 LOCATION LS.8,Sec.8,Tp.95-10-4 CO-ORDINATES ELEVATION 958' DEPTH 167' DIP 90° CORE RECOVERY 98.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	8	Clay and low grade bit. sand	8	-											
8	12	Clay and " " " "	4	1	9.6		Tr	14	4	2	2	2	11	27	38
12	13	Lost core	1	-											
13	16'6"	Bit. sand, low grade, 10% clay	3'6"	2	9.6		Tr	14	4	2	2	2	11	27	38
16'6"	70	Clay	53'6"	-											
70	72	Bit. sand, medium grade, 20% clay	2	3	9.6		Tr	14	4	2	2	2	11	27	38
72	91	Clay	19	-											
91	95	Bit. sand, low grade, 10% clay	4	4	9.6		Tr	14	4	2	2	2	11	27	38
95	99	" " " " 15% "	4	5)											
99	100	Lost core	1	-)											
100	104	Bit. sand, low grade, 20% clay	4	6)	8.2	5 9¼	Tr	10	4	1	2	0	21	29	33
104	108	" " " " 30% "	4	7)											
108	109	Lost core	1	-											
109	113	Bit. sand, medium grade, 5% clay	4	8)											
113	117	" " " " slight clay	4	9)	14.7	12½	Tr	5	2	1	2	3	22	43	22
117	121	" " " " " "	4	10)											
121	125	" " " " " "	4	11)	14.7	12½	Tr	2	1	0	4	0	51	33	9
125	129	" " " "	4	12)											
129	133	" " " " 25% clay	4	13)	13.5	19½	Tr	7	5	2	3	11	12	50	10
133	137	" " " "	4	14)											
137	141	Shale with some bit. sand	4	15)											
141	145	Bit. sand, medium grade, 5% clay	4	16)	8.4	18¾	Tr	20	20	7	22	0	15	8	8
145	149	" " " " 15% "	4	17)											
149	150	Lost core	1	-											
150	155	Clay	5	-											
155	159	Bit. sand, medium grade	4	18)											
159	164'3"	" " " " 10% clay	5'3"	19)	11.0	10¼	Tr	7	12	9	10	8	21	15	18

MUSKEG RIVER AREA

HOLE No. M 28

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
164'3"	167'	Limestone and clay	2'9"	-											
	167'	End of Hole													
		Summary													
		0' - 91' = 91' Overburden & 9.5 feet of bit. sand													
		91' - 149' = 58' @ 11.2% bitumen & 18% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 29

DATE Feb. 21-26 1946 LOCATION LS.2,Sec.20,Tp.95-10-4 CO-ORDINATES ELEVATION 949' DEPTH 237' DIP 90° CORE RECOVERY 87.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	17	Casing - sand and boulders													
17	21	Bit. sand, low to medium grade, 50% clay	4	1											
21	68	Clay, 5-10% medium grade bit. sand in thin partings, few narrow leached bands													
68	88'6"	Clay													
88'6"	89	Grit													
89	93	Bit. sand, medium grade, 15% clay stringers	4	2											
93	110	Clay, few narrow bands of medium grade bit. sand			Sample not assayed.										
110	114	Bit. sand, medium grade, 15% clay in stringers	4	3											
114	118	Bit. sand, medium grade, 10% clay	4	4											
118	120	Lost core													
120	124	Bit. sand, medium grade, 5% clay	4	5											
124	128	" " " " 15% "	4	6											
128	132	" " " " 5% "	4	7											
132	136	" " " " 20% "	4	8											
136	140	" " " " 30% "	4	9											
140	141	Lost core													
141	145	Bit. sand, medium grade, 5% clay	4	10											
145	149	" " " "	4	11											
149	153	" " good "	4	12											
153	157	" " " " coarse grains	4	13											
157	158	" " " " 25% clay	1	14											
158	173	Clay													
173	178	Leached sand													
178	180	Lost core													
180	188	Leached sand													

MUSKEG RIVER AREA

HOLE No. M 29

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
188	192	Bit. sand, good grade	4	15											
192	196	" " " "	4	16											
196	200	" " " "	4	17											
200	204	" " " "	4	18											
204	205	Lost core													
205	209	Bit. sand, good grade	4	19											
209	214	" " " "	5	20											
214	236'8"	Lost core, likely leached sand as hole started making water at this point.													
236'8"	237	Limestone													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 30

DATE March 7-11 1946 LOCATION LS.11,Sec.20,Tp.95-10-4. CO-ORDINATES ELEVATION 947' DEPTH 234' DIP 90° CORE RECOVERY 90.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	13	Casing - boulders and gravel													
13	13'6"	Bit. sand, medium grade													
13'6"	20	Clay													
20	21	Lost core													
21	37	Bit. sand, low grade, leached, 60% clay													
37	44	Clay, 10% low grade, bit. sand in stringers													
44	48	Bit. sand, medium grade, 50% clay	4	1											
48	52	" " " " 70% "	4	2											
52	56	" " low to medium grade, 70% clay in stringers	4	3											
56	57	Clay													
57	61'3"	Bit. sand, low to medium grade, 70% clay in stringers	4	4	Samples not assayed.										
61'3"	67	Clay, 10% low grade sand in stringers													
67	71	Bit. sand, medium grade, 50% clay in stringers	4	5											
71	75	Bit. sand, medium grade, 50% clay in stringers	4	6											
75	79	Bit. sand, medium grade, 40% clay in stringers	4	7											
79	80	Lost core													
80	84	Bit. sand, medium to good grade, 20% clay	4	8											
84	88	Bit. sand, medium to good grade, 15% clay	4	9											
88	92	" " " " " " coarse, 10% clay	4	10											
92	94	Clay													
94	98	Bit. sand, medium to good grade, 30% clay	4	11											
98	99	Lost core													
99	103	Bit. sand, medium to good grade, 15% clay	4	12											

MUSKEG RIVER AREA

HOLE No. M 30

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
103	107	Bit. sand, good grade, 10% clay	4	13											
107	109	Lost core													
109	113	Bit. sand, good grade, 5% clay	4	14											
113	117	" " " " slight clay	4	15											
117	121	" " " " " "	4	16											
121	123	Lost core													
123	124'6"	Bit. sand, good grade, considerable free bitumen	1'6"	17											
124'6"	129	Clay, odd grain of solid hydrocarbon													
129	133	Bit. sand, medium to good grade, slight clay	4	18											
133	137	" " " " " " 15% clay in stringers	4	19											
137	139'4"	Bit. sand, good grade, 25% clay	2'4"	20	Samples not assayed.										
139'4"	146	Clay													
146	150	Bit. sand, medium grade, 15% clay	4	21											
150	160	Clay													
160	163	Clay, like marl, whitish color													
163	176	Clay													
176	180	Bit. sand, low to medium grade, 30% clay	4	22											
180	184	" " " " " 30% "	4	23											
184	188	" " " good grade	4	24											
188	192	" " good grade	4	25											
192	196	" " " "	4	26											
196	197	Lost core													
197	201	Bit. sand, medium to good grade	4	27											
201	204	Lost core													
204	208	Bit. sand, medium to good grade, slight clay	4	28											
208	212	" " " " " " "	4	29											

MUSKEG RIVER AREA

HOLE No. M 30

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
212	215'6"	Bit. sand, medium grade, leached	3'6"	30											
215'6"	217	Lost core													
217	222	Leached sand													
222	232	Lost core, probably leached sand													
232	234	Clay, greenish													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 31

DATE Mar. 26-28 1946 LOCATION LS.9,Sec.19,Tp.95-10-4 CO-ORDINATES ELEVATION 938' DEPTH 230' DIP 90° CORE RECOVERY 93.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	12	Casing - sand													
12	16	Bit. sand, low grade, leached													
16	21	" " " " partly leached	5	1											
21	24	" " " " leached													
24	32	Clay													
32	40	Clay, 5% thin partings low grade sand													
40	51	Clay, 30% stringers, low grade sand, leached			Samples not assayed.										
51	59'6"	" 5% " " " " "													
59'6"	61'6"	Bit. sand, low grade, 40% clay	2	2											
61'6"	73	Clay, 5% low grade sand in thin partings													
73	77	Bit. sand, medium grade, slight clay	4	3											
77	81	" " " " " "	4	4											
81	85	" " " to good grade, slight clay	4	5											
85	89	" " good grade	4	6											
89	93	" " " "	4	7											
93	97	" " " " partly leached	4	8											
97	115'6"	Clay													
115'6"	119'6"	Bit. sand, good grade	4	9											
119'6"	121'9"	" " " " 25% clay	2'3"	10											
121'9"	126	Clay, few grains of solid hydrocarbon													
126	147	Clay													
147	151	Bit. sand, very good grade	4	11											
151	155	" " " " " 5% clay	4	12											
155	190	Clay													
190	191	Lost core													
191	195	Bit. sand, medium grade, leached	4	13											
195	199	" " " to good grade, partly leached	4	14											
199	205	Lost core, likely leached sand													

MUSKEG RIVER AREA

HOLE No. M 31

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
205	209	Bit. sand, good grade	4	15											
209	213'3"	" " " "	4	16											
213'3"	218	" " low to medium grade, leached	4'9"	17											
218	223	Lost core, likely leached sand				Samples not assayed.									
223	226	Leached sand													
226	228	Lost core													
228	229'9"	Clay and claystone													
229'9"	230	Quartzite (?) mineralized with pyrite and arsenopyrite.													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 32

DATE March 22-25 1946 LOCATION LS.15,Sec.19,Tp.95-10-4 CO-ORDINATES ELEVATION 930' DEPTH 216' DIP 90° CORE RECOVERY 94.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	14	Sand	14	-											
14	23	Bit. sand, low grade, 50% clay	9	-											
23	27	" " " "	4	1)											
27	31	" " " "	4	2)	14.5	01	Tr	2	2	0	1	0	28	50	17
31	35	" " " "	4	3)											
35	39	" " " "	4	4)	15.1		Tr	1	1	0	1	1	24	52	20
39	43	" " low to medium grade	4	5)											
43	47	" " " " " "	4	6)	15.1		Tr	1	1	0	1	1	36	43	17
47	51	" " " " " "	4	7)											
51	55	" " " " " "	4	8)	15.2	0½	Tr	1	1	0	1	1	0	74	22
55	59	" " " " " "	4	9)											
59	63	" " medium grade	4	10)	15.0		Tr	0	0	0	1	1	47	37	14
63	67	" " medium to good grade, 5% clay	4	11)											
67	71	" " good grade	4	12)	15.8		Tr	1	1	0	2	18	33	32	12
71	75	" " " "	4	13)											
75	79	" " " " slight clay	4	14)	16.0	01	Tr	2	1	0	2	9	56	21	9
79	83	" " " " 15% clay	4	15)											
83	87	" " " " 50% "	4	16)											
87	88	Lost core	1	-)	9.0	57¾	Tr	4	16	25	31	7	8	4	5
88	92	Bit. sand, medium grade, 50% clay	4	17)											
92	94	Lost core	2	-											
94	98	Bit. sand, good grade	4	18	14.2	0¾	Tr	8	59	10	11	3	3	2	4
98	102	Bit. sand, 70% liquid bitumen	4	19	43.7		17.8	liquid sample							
102	106	Clay	4	-											
106	107	Lost core	1	-											
107	109	Bit. sand, 70% liquid bitumen	2	20	38.8		9.2	liquid sample							
109	114	" " good grade	5	21	13.7		Tr	28	38	16	7	3	1	4	3
114	118	" " 70% liquid bitumen	4	22	52.7		10.5	liquid sample							
118	119	Clay	1	-											

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MUSKEG RIVER AREA

HOLE No. M 32

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
119	120	Lost core	1	-											
120	143	Clay	23	-											
143	149	Leached sand	6	-											
149	151	Lost core	2	-											
151	153	Leached sand, low grade	2	-											
153	157	Bit. sand, low grade	4	23)											
157	161	" " good grade	4	24)	13.0	2¼	Tr	3	12	6	24	13	26	9	7
161	165	" " " "	4	25)											
165	169	" " " "	4	26)	14.8		Tr	1	3	28	41	6	10	5	6
169	173	" " " " slight clay	4	27)											
173	177	" " " "	4	28)	14.0	1¾	Tr	1	12	27	26	10	3	15	6
177	181	" " " "	4	29)											
181	185	" " " "	4	30)	15.5		Tr	1	21	22	32	6	11	4	3
185	189	" " " "	4	31)											
189	193	" " " "	4	32)	15.9		Tr	1	8	39	32	7	4	6	3
193	195	Lost core	2	-											
195	199	Bit. sand, medium to good grade	4	33)											
199	203	" " good grade	4	34)	13.9	03	Tr	7	38	11	23	5	8	3	5
203	206	" " " "	3	35)											
206	208	Lost core, likely good grade sand	2	-											
208	216	Clay with few limestone bands	8	-											
	216	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 32

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 23' = 23' Overburden & low grade sand 23' - 118' = 95' @ 13.6% bitumen & 5.3% clay bands (16.6%) * 118' - 153' = 35' clay & leached sand 153' - 206' = 53' @ 14.5% bitumen & 1.1% clay bands 23' - 206' = 183' @ 11.25% bitumen & 38.6% clay bands (12.8%) * N.B. In above computation assay of liquid samples 19,20 and 22 were taken as 18%. * Average assay of column when actual assay of liquid samples 19, 20 and 22 were taken.													

MUSKEG RIVER AREA

HOLE No. M 33

DATE March 17-21 1946 LOCATION LS.4,Sec.29,Tp.95-11-4 CO-ORDINATES ELEVATION 948' DEPTH 227' DIP 90° CORE RECOVERY 90.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	12	Casing - gravel & boulders, leached sand													
12	16	Bit. sand, low grade, 50% clay	4	1											
16	20	" " " " 70% "	4	2											
20	20'3"	Claystone													
20'3"	66	Clay, few thin partings of low grade sand													
66	85	" 25% low grade sand, infrequent narrow stringers, good grade sand													
85	85'6"	Claystone													
85'6"	96	Clay, 5% low grade sand in stringers													
96	96'2"	Claystone													
96'2"	99	Clay, 15% low to medium grade stringers													
99	99'3"	Claystone													
99'3"	107	Clay, odd narrow low to medium grade stringers													
107	107'3"	Claystone													
107'3"	112	Clay						Samples not assayed							
112	116	Bit. sand, low to good grade, 50% clay	4	3											
116	129'10"	Clay, 10% low grade sand in stringers odd narrowgood grade sand stringers													
129'10"	130	Grit													
130	134	Bit. sand, good grade, partly leached, coarse	4	4											
134	135	Lost core													
135	139	Bit. sand, good grade, slightly leached	4	5											
139	141	Lost core													
141	144'3"	Bit. sand, good grade	3'3"	6											
144'3"	145'9"	Lost core													
145'9"	158	Clay, very dark grey													

MUSKEG RIVER AREA

HOLE No. M 33

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
158	158'6"	Claystone													
158'6"	162	Clay, 5% good grade sand in stringers													
162	165'6"	Bit. sand, medium grade, 20% clay	3'6"	7											
165'6"	169	Clay													
169	173	Leached low grade bit. sand													
173	177	Bit. sand, low to good grade	4	8											
177	181	" " good grade	4	9											
181	185	" " " "	4	10											
185	186	Lost core													
186	190	Bit. sand, good grade	4	11					Samples not assayed.						
190	194	" " " " slight clay	4	12											
194	195	Lost core													
195	196'6"	Bit. sand, low grade, leached	1'6"	13											
196'6"	202	Lost core													
202	205'9"	Bit. sand, medium to good grade	3'9"	14											
205'9"	209	Lost core													
209	213	Bit. sand, good grade	4	15											
213	214	Lost core													
214	215	Bit. sand, good grade	1	16											
215	216	Grit													
216	218'6"	Bit. sand, good grade, partly leached	2'6"	17											
218'6"	224	Lost core													
224	227	Clay, greenish color													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 34

DATE Feb.27-Mar.6 1946 LOCATION LS.2,Sec.29,Tp.95-10-4 CO-ORDINATES ELEVATION 970' DEPTH 77' DIP 90° CORE RECOVERY 97.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	29	Casing - boulders, clay and sand													
29	38	Clay													
38	45	Clay, 5-10% medium grade bit. sand in narrow stringers													
45	47'10"	Bit. sand, medium to good grade	2'10"	1											
47'10"	49'6"	" " " " " 35% clay	1'8"	2	Samples not assayed.										
49'6"	59	Clay, 5% medium grade sand in narrow stringers													
59	71	Clay													
71	73	Lost core													
73	77	Clay, few small rocks up to 3"													

MUSKEG RIVER AREA

HOLE No. M 35

DATE March 29 - April 2, 1946 LOCATION LS.10,Sec.19,Tp.95-11-4 CO-ORDINATES ELEVATION 934' DEPTH 196' DIP 90° CORE RECOVERY 95.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	10	Casing - leached sand													
10	16	Leached l.g.s.													
16	22	Clay													
22	34	Leached l.g.s.													
34	59	Clay													
59	77	Clay, 10% l.g.s. in stringers				Samples not assayed.									
77	78	Bit. sand, medium grade													
78	83	Clay, 10% l.g.s. in stringers													
83	87	Bit. sand, low grade, 50% clay	4	1											
87	89	" " " " 80% "	2	2											
89	113	Clay, 15% l.g.s. in stringers, few narrow medium grade sand stringers													
113	123	Clay, 35% leached l.g.s.													
123	123'3"	Claystone													
123'3"	125	Clay													
125	125'3"	Bit. sand, good grade													
125'3"	127	Lost core													
127	131	Clay													
131	139	Clay, 15% l.g.s. in stringers													
139	152	Clay													
152	152'3"	Bit. sand, medium grade													
152'3"	160	Clay													
160	178	Clay, very dark color													
178	185	Clay													
185	188	Lost core													
188	188'10"	Bit. sand, low to medium grade, 50% clay	10	3											
188'10"	193	Lost core													
193	196	Clay, 10% l.g.s. in stringers													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 36

DATE April 6-8 1946 LOCATION LS.7,Sec.30,Tp.95-10-4 CO-ORDINATES ELEVATION 945' DEPTH 210' DIP 90° CORE RECOVERY 84.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	10	Casing - sand and clay													
10	15	Clay, 15% low grade sand													
15	15'8"	Quartzite													
15'8"	17	Clay, 15% low grade sand													
17	21	Bit. sand, low to medium grade	4	1											
21	22	Leached sand			Samples not assayed.										
22	28	Clay													
28	28'3"	Claystone													
28'3"	38	Clay													
38	38'3"	Quartzite													
38'3"	46	Clay													
46	59	Clay, 15% low grade sand													
59	60	Lost core													
60	64	Bit. sand, low grade, 60% clay	4	2											
64	68	" " " to medium grade, 25% clay	4	3											
68	72	" " " " " 20% "	4	4											
72	76	" " medium grade, 20% clay	4	5											
76	80	" " " " slight clay	4	6											
80	84	" " " " " "	4	7											
84	88	" " " to good grade	4	8											
88	92	" " " " " slight clay	4	9											
92	93	Lost core													
93	97	Bit. sand, medium to good grade, slight clay	4	10											
97	101	" " " " " " "	4	11											
101	103	Lost core													
103	107	Bit. sand, medium to good grade, 10% clay	4	12											
107	111	" " " " "	4	13											
111	115	" " good grade, slight clay	4	14											

MUSKEG RIVER AREA

HOLE No. M 36

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
115	119	Bit. sand, good grade, slight clay	4	15											
119	123'10"	Bit. sand, good grade, (at 121'7", 4" solid hydrocarbons)													
123'10"	125	Lost core (some liquid bit.)													
125	128	Clay													
128	129	Clay, 25% leached sand													
129	133	Bit. sand, low to medium grade, 10% clay, slightly leached in few narrow bands	4	17											
133	137	Bit. sand, good grade, slight clay	4	18											
137	138	Lost core													
138	140'10"	Bit. sand, good grade, slight clay	2'10"	19											
140'10"	143	Lost core													
143	157	Clay													
157	170	Clay, very dark color													
170	170'3"	Claystone													
170'3"	171'3"	Lost core													
171'3"	175	Clay, light color													
175	178	Bit. sand, low grade, 50% clay	3	20											
178	179	Clay													
179	183	Bit. sand, good grade	4	21											
183	187	Lost core													
187	191'6"	Bit. sand, medium grade, partly leached, 15% clay	4'6"	22											
191'6"	210	Lost core (leached sand)													
		End of Hole													

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MUSKEG RIVER AREA

HOLE No. M 37

DATE April 3-5 1946 LOCATION LS.13,Sec.19,Tp.95-10-4 CO-ORDINATES ELEVATION 899' DEPTH 201' DIP 90° CORE RECOVERY 94.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	10	Casing - sand and clay													
10	28	Clay													
28	41	Clay, 35% leached low grade sand													
41	42	Lost core													
42	51	Clay, 20% leached low grade sand													
51	52	Lost core													
52	55	Clay, 10% leached low grade sand													
55	56	Claystone		Samples not assayed.											
56	58	Clay, 15% leached low grade sand													
58	62	Bit. sand, low grade, 65% clay	4	1											
62	65	" " medium grade, 10% clay	3	2											
65	75	Clay, 15% low grade sand													
75	79	Bit. sand, medium grade, 20% clay	4	3											
79	80	Lost core													
80	83'8"	Bit. sand, medium to good grade, 20% clay	3'8"	4											
83'8"	87	Clay, 15% low grade sand													
87	88	Lost core													
88	92	Bit. sand, medium to good grade, 50% clay	4	5											
92	97'6"	" " " grade, 25% clay	5'6"	6											
97'6"	128	Clay, 10% low grade sand													
128	130'8"	Bit. sand, medium grade, 25% clay	2'8"	7											
130'8"	146	Clay													
146	150	Clay, 50% leached sand													
150	154	Bit. sand, medium grade, slightly leached, 50% clay	4	8											
154	155	Lost core													

MUSKEG RIVER AREA

HOLE No. M 37

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
155	159	Bit. sand, medium grade, slightly leached	4	9											
159	163	" " " "	4	10											
163	167	" " " "	4	11											
167	168	Lost core													
168	172	Bit. sand, medium to good grade	4	12											
172	173	Lost core													
173	177	Bit. sand, good grade	4	13	Samples not assayed.										
177	181	" " " "	4	14											
181	183	" " " " 50% liquid bitumen (can sample)													
183	187	Bit. sand, good grade	4	16											
187	189	" " " "	2	17											
189	193	Lost core													
193	194	Bit. sand, good grade, 50% liquid bitumen (can sample)	1	18											
194	196	Bit. sand, good grade	2	19											
196	201	Limestone													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 38

DATE April 9-11 1946 LOCATION LS.15,Sec.30,Tp.95-10-4 CO-ORDINATES ELEVATION 948' DEPTH 232' DIP 90° CORE RECOVERY 87.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	11	Casing - clay													
11	12	Clay and small rocks													
12	16'6"	Bit. sand, medium grade, slightly leached	4'6"	1											
16'6"	51	Clay, 25% low grade sand													
51	55	Bit. sand, low grade, 50% clay	4	2											
55	68	Clay, 10% low grade sand, 5% medium grade sand in stringers													
68	84	Clay, 10% low grade sand						Sample not assayed.							
84	87	Clay, 30% low grade sand													
87	91	Bit. sand, low grade, 60% clay	4	3											
91	95	Clay, 20% low grade sand													
95	99	Bit. sand, low to medium grade, 60% clay	4	4											
99	103	" " " " " " 50% "	4	5											
103	105	Lost core													
105	109	Bit. sand, medium grade, 40% clay	4	6											
109	111'9"	" " " " 90% "	2'9"	7											
111'9"	113	Lost core													
113	117	Bit. sand, medium to good grade, slight clay	4	8											
117	121	" " " grade, partly leached, slight clay	4	9											
121	125	" " " to good grade	4	10											
125	126	Lost core													
126	130	Bit. sand, medium to good grade	4	11											
130	134	" " " " " "	4	12											
134	137	Lost core													
137	141 4"	Bit. sand, good grade, 10% clay	4'4"	13											
141'4"	143	Clay, like marl													
143	147'2"	Bit. sand, medium grade, 60% clay	4'2"	14											
147'2"	151	Clay													

MUSKEG RIVER AREA

HOLE No. M 38

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
151	155'4"	Bit. sand, good grade	4'4"	15											
155'4"	158	Lost core													
158	164	Clay													
164	166	Lost core													
166	170	Clay, like marl													
170	171	Clay, 10% medium grade sand			Sample not assayed.										
171	175	Bit. sand, medium to good grade, 40% clay	4	16											
175	178	Lost core													
178	182	Bit. sand, medium to good grade, slight clay	4	17											
182	186	Bit. sand, medium to good grade, slight clay	4	18											
186	190	Bit. sand, good grade	4	19											
190	194	" " " "	4	20											
194	197	Lost core													
197	201	Bit. sand, good grade, 5% clay	4	21											
201	205	" " " " slight clay	4	22											
205	209	" " " "	4	23											
209	213	" " " " slight clay	4	24											
213	214	Lost core													
214	218	Bit. sand, good grade, slightly leached	4	25											
218	219	Lost core													
219	222	Bit. sand, good grade, slight clay	3	26											
222	232	Lost core (leached sand)													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 39

DATE April 12-18 1946 LOCATION LS.1,Sec.31,Tp.95-10-4 CO-ORDINATES ELEVATION 974' DEPTH 198' DIP 90° CORE RECOVERY 85%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	35	Casing - clay, boulders, gravel and sand													
35	37	Clay, 5% l.g.s.													
37	37'8"	Quartzite													
37'8"	39	Clay, 5% l.g.s.													
39	39'2"	Quartzite													
39'2"	44	Clay, 5% l.g.s.			Sample not assayed.										
44	44'2"	Quartzite													
44'2"	47	Clay, 5% l.g.s.													
47	47'6"	Claystone													
47'6"	53	Clay, 5% l.g.s.													
53	53'2"	Quartzite													
53'2"	57	Clay, 5% l.g.s.													
57	57'1"	Claystone													
57'1"	70	Clay, 5% l.g.s.													
70	70'4"	Quartzite													
70'4"	77	Clay, 15% l.g.s.													
77	77'3"	Quartzite													
77'3"	78'8"	Clay, 10% l.g.s.													
78'8"	79	Quartzite													
79	86	Clay, 20% l.g.s.													
86	86'2"	Quartzite													
86'2"	89	Clay, 15% l.g.s.													
89	89'2"	Quartzite													
89'2"	93	Clay, 20% l.g.s.													
93	93'1"	Claystone													
93'1"	97	Clay, 15% l.g.s., few narrow stringers medium grade sand													

MUSKEG RIVER AREA

HOLE No. M 39

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
97	97'3"	Quartzite													
97'3"	101	Clay, 15% l.g.s.													
101	101'6"	Quartzite													
101'6"	106'8"	Clay, 15% low to medium grade stringers													
106'8"	107	Quartzite													
107	115	Clay, 15% low to medium grade stringers													
115	115'3"	Bit. sand, medium grade													
115'3"	125	Clay, 10% low to medium grade stringers													
125	125'3"	Quartzite													
125'3"	133	Clay, 20% l.g.s.													
133	134	Lost core													
134	135'6"	Clay													
135'6"	136	Quartzite		Samples not assayed.											
136	140	Bit. sand, low to medium grade, 50% clay stringers	4	1											
140	144	Bit. sand, low to medium grade, partly leached	4	2											
144	149'3"	Bit. sand, medium grade, partly leached	5'3"	3											
149'3"	150	Lost core													
150	154	Clay													
154	157	Lost core													
157	158	Clay, 30% l.g.s.													
158	162	Bit. sand, medium grade, 10% clay	4	4											
162	166	" " " to good grade, slight clay	4	5											
166	167	Lost core													
167	171	Bit. sand, medium to good grade, 50% clay, slightly leached	4	6											

MUSKEG RIVER AREA

HOLE No. M 39

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
171	173	Lost core													
173	176	Bit. sand, medium grade, partly leached	3	7											
176	198	Lost core - likely leached sand													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 40

DATE April 19-21 1946 LOCATION LS.7,Sec.31,Tp.95-10-4 CO-ORDINATES ELEVATION 960' DEPTH 183' DIP 90° CORE RECOVERY 99.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	11	Casing - clay and boulders													
11	17'4"	Clay, 50% leached sand													
17'4"	22	Bit. sand, low to medium grade, 50% clay	4	1											
22	24	Clay, 15% l.g.s.													
24	24'8"	Quartzite													
24'8"	29	Bit. sand, medium grade	4'4"	2											
29	31	" " low to medium grade, 30% clay	2	3											
31	31'8"	Quartzite													
31'8"	37'1"	Bit. sand, low grade, 30% clay	5'5"	4											
37'1"	41	Clay, 15% l.g.s.													
41	53	Clay, light colour													
53	74	Clay, 5% l.g.s.			Samples not assayed.										
74	78	Clay, 5% l.g.s., few stringers medium grade sand													
78	85	Clay, 5% l.g.s.													
85	85'6"	Quartzite													
85'6"	88	Clay, 10% l.g.s.													
88	92	Clay, 10% l.g.s., few narrow stringers medium grade sand													
92	92'5"	Quartzite													
92'5"	93'5"	Lost core													
93'5"	101	Clay, 15% l.g.s.													
101	104	Bit. sand, low grade, 20% clay	3	5											
104	115	Clay, 20% l.g.s. few stringers medium grade sand													
115	116	Quartzite													
116	121	Bit. sand, medium grade, 5% clay	5	6											
121	124	Clay													

MUSKEG RIVER AREA

HOLE No. M 40

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
124	129	Clay, 5% l.g.s., 5% medium grade sand stringers													
129	134	Bit. sand, very good grade	5	7											
134	139	Clay, light colour													
139	148	Clay, dark bluish colour													
148	151	Clay, light colour, like marl													
151	153	Clay, dark, few grains solid hydrocarbon			Samples not assayed.										
153	155	Clay, 10% low to medium grade stringers													
155	159	Bit. sand, medium grade, 20% clay	4	8											
159	162'6"	Bit. sand, medium grade, slight clay	3'6"	9											
162'6"	168	Clay, dark	3'6"	9											
168	171	Clay, black, few grains solid hydro-carbon													
171	173	Clay, dark													
173	175	Bit. sand, low grade, 50% clay													
175	181	Clay													
181	183	Clay, 20% l.g.s.													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 41

DATE April 21-23 1946 LOCATION on Rd. All., 45'NE of NE Cor. Sec. 25, Tp. 95-11-4 CO-ORDINATES ELEVATION 918' DEPTH 184' DIP 90° CORE RECOVERY 84.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	11	Casing - sand and clay													
11	13'6"	Bit. sand, low grade	2'6"	1											
13'6"	14	Quartzite													
14	36	Clay													
36	38	Lost core													
38	42	Clay, 15% low grade sand													
42	42'8"	Quartzite													
42'8"	55	Clay, 5% low grade sand													
55	61	Clay, 10% low grade sand			Samples not assayed.										
61	70	Clay, 15% medium grade sand in stringers													
70	74	Bit. sand, low grade, 60% clay	4	2											
74	78	Bit. sand, good grade	4	3											
78	82	" " " " slight clay	4	4											
82	86	" " " "	4	5											
86	90	" " " "	4	6											
90	94	" " " "	4	7											
94	97	" " very good grade, 80% liquid bit.	3	8											
97	100	" " " " " 60% " "	3	9											
100	104	" " good grade, 30% clay	4	10											
104	108	" " " " 40% "	4	11											
108	109	Lost core													
109	113	Bit. sand, good grade, 10% clay	4	12											
113	117	" " " " slight clay	4	13											
117	119	Lost core													
119	123	Bit. sand, 5% clay, 10% leached	4	14											
123	124	Lost core													
124	125'6"	Bit. sand, good grade, 30% leached	1'6"	15											

MUSKEG RIVER AREA

HOLE No. M 41

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
125'6"	144	Clay, light color													
144	150	Clay, dark shaly, few stringers solid hydrocarbon a little pyrite in few partings			Samples not assayed.										
150	157	Clay, light													
157	161	Bit. sand, medium grade, 20% clay	4	16											
161	162	Leached sand													
162	184	Lost core, (leached sand)													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 42

DATE April 23-25 1946 LOCATION LS.12,Sec.31,Tp.95-10-4 CO-ORDINATES ELEVATION 941' DEPTH 161' DIP 90° CORE RECOVERY 91.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	5	Casing - sand													
5	9	Bit. sand, low to medium grade	4	1											
9	10	Quartzite													
10	12	Leached sand													
12	16	Bit. sand, low to medium grade	4	2											
16	20	" " " " "	4	3											
20	20'6"	Quartzite													
20'6"	25	Bit. sand, low to medium grade, 25% clay	4'6"	4											
25	27	Clay			Samples not assayed.										
27	29	Clay, 40% leacned l.g.s.													
29	34	Bit. sand, low to medium grade	5	5											
34	37	Clay, 20% l.g.s.													
37	37'2"	Quartzite													
37'2"	39'9"	Clay, 20% l.g.s.													
39'9"	40	Quartzite													
40	45	Clay, 20% l.g.s.													
45	45'5"	Quartzite													
45'5"	49	Clay, 20% l.g.s.													
49	49'3"	Quartzite													
49'3"	57	Clay, 25% l.g.s.													
57	57'4"	Quartzite													
57'4"	60	Clay, 15% l.g.s.													
60	60'4"	Quartzite													
60'4"	69	Clay, 20% l.g.s.													
69	76	Clay, 25% l.g.s.													
76	76'6"	Quartzite													
76'6"	78	Clay, 25% l.g.s.													
78	80	Clay, 25% l.g.s., few medium grade sand stringers	2	6											

MUSKEG RIVER AREA

HOLE No. M 42

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
80	91	Clay, 25% l.g.s.													
91	91'3"	Quartzite													
91'3"	108	Clay, 25% l.g.s.													
108	112	Bit. sand, medium grade, 50% clay	4	7											
112	116	" " " " 30% "	4	8											
116	117	Lost core													
117	120'6"	Bit. sand, medium grade, 50% clay	3'6"	9											
120'6"	121	Quartzite			Samples not assayed.										
121	130	Clay, 15% l.g.s., few narrow stringers medium grade sand													
130	133	Clay, 5% l.g.s.													
133	144	Clay													
144	148	Bit. sand, medium grade, partly leached	4	10											
148	161	Lost core, leached sand													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 43

DATE April 26-30 1946 LOCATION LS.16,Sec.36,Tp.95-11-4 CO-ORDINATES ELEVATION 950' DEPTH 242' DIP 90° CORE RECOVERY 69.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	14'	Sand	14	-											
14'	18'	Bit. sand, medium grade, 20% clay	4	1)											
18'	23'	" " " " 20% "	5	2)	9.8	20	Tr	11	4	2	3	4	28	31	17
23'	31'	Clay, 15% low grade sand	8	-											
31'	32'	Quartzite	1	-											
32'	33'	Leached sand	1	-											
33'	37'	Bit. sand, medium grade, 15% clay	4	3)											
37'	41'	" " " " 15% "	4	4)											
41'	42'	Lost core	1	-)	10.7	15	Tr	5	2	1	5	14	28	28	17
42'	43'6"	Bit. sand, medium grade, 60% clay	1'6"	5)											
43'6"	45'6"	Clay	2	-											
45'6"	46'	Quartzite	0'6"	-											
46'	47'	Clay	1	-											
47'	47'6"	Quartzite	0'6"	-											
47'6"	66'	Clay	18'6"	-											
66'	66'3"	Quartzite	0'3"	-											
66'3"	104'	Clay, 15% low grade sand	37'9"	-											
104'	105'	Lost core	1	-											
105'	106'	Bit. sand, low grade	1	6	10.7		Tr	5	2	1	5	14	28	28	17
106'	121'	Lost core, likely leached sand	5	-											
121'	126'10"	Bit. sand, medium grade	5'10"	7)											
126'10"	134'	Lost core	7'2"	-)	12.6	8	0.2	4	5	4	6	11	42	19	9
134'	136'	Bit. sand, medium grade, 30% clay	2	8)											
136'	142'	Lost core	6	-											
142'	146'	Bit. sand, medium grade	4	9)											
146'	147'	Lost core	1	-)	11.4		0.2	1	14	37	26	10	7	3	2
147'	151'	Bit. sand, medium grade	4	10)											

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MUSKEG RIVER AREA

HOLE No. M 43

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151'	152'	Lost core	1	-											
152'	156'	Bit. sand, medium grade	4	11	12.9		Tr	1	22	28	24	12	10	2	1
156'	158'	Lost core	2	-											
158'	161'	Bit. sand, medium grade	3	12											
161'	163'	Lost core	2	-	12.2		Tr	3	17	32	26	9	7	3	3
163'	166'	Bit. sand, medium grade	3	13											
166'	169'	Lost core	3	-											
169'	171'	Bit. sand, medium grade	2	14											
171'	173'	Lost core	2	-	8.8		Tr	32	26	13	15	5	5	1	3
173'	177'	Bit. sand, medium grade	4	15											
177'	179'	Lost core	2	-											
179'	181'	Bit. sand, good grade	2	16											
181'	184'	Lost core	3	-	11.8		Tr	23	45	19	5	1	2	2	3
184'	187'	Bit. sand, good grade	3	17											
187'	188'	Lost core	11												
188'	193'	Bit. sand, good grade, coarse	5	18											
193'	200'	Lost core	7	-	11.9		Tr	50	31	6	4	2	3	1	3
200'	203'4"	Bit. sand, good grade, 20% clay	3'4"	19											
203'4"	207'	Lost core	3'8"	-											
207'	211'	Bit. sand, good grade, 10% clay	4	20											
211'	215'	" " " " 5% "	4	21	12.5	9	Tr	8	9	16	25	12	4	18	8
215'	216'	Lost core	1	-											
216'	220'	Bit. sand, good grade, slight clay	4	22	14.6		Tr	3	5	10	35	15	19	7	6
220'	222'	Lost core	2	-											
222'	225'	Bit. sand, good grade	3	23											
225'	226'	Lost core	1	-	14.4		Tr	3	4	11	35	14	17	9	7
226'	229'	Bit. sand, good grade	3	24											
229'	242'	Lost core, likely leached sand	13	-											
	242'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 43

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary													
		0' - 121' = 121' Sand and clay including 19'6" of 10% bit. sand													
		121' - 229' = 108' at 11.5% bitumen & 1.3% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 44

DATE May 1 - 4 1946 LOCATION LS.14,Sec.36,Tp.95-11-4 CO-ORDINATES ELEVATION 912' DEPTH 231' DIP 90° CORE RECOVERY 86.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	5	Casing													
5	11	Clay, 25% low grade sand													
11	15'10"	Bit. sand, low to medium grade	4'10"	1											
15'10"	18	Clay, 10% low grade sand													
18	18'6"	Claystone													
18'6"	25	Clay, 10% low grade sand													
25	26	Lost core													
26	54	Clay, 10% low grade sand			Samples not assayed.										
54	60	Clay, 10% low grade sand in form of aggregates or nodules up to 1/4" in diameter.													
60	60'4"	Quartzite													
60'4"	67	Clay, 15% low grade sand													
67	70'7"	Bit. sand, low to medium grade, 15% clay	3'7"	2											
70'7"	84'6"	Clay, 25% low grade sand													
84'6"	85	Quartzite													
85	89	Clay, 20% low grade sand													
89	93	Bit. sand, medium to good grade	4	3											
93	97	Clay, 10% low grade sand													
97	101	Bit. sand, medium to good grade, 10% grit	4	4											
101	105	" " good grade, few grit bands up to 1"	4	5											
105	109	Bit. sand, good grade, few grit bands up to ½"	4	6											
109	114'5"	Bit. sand, good grade, few grit bands up to 3"	5'5"	7											
114'5"	128	Clay													
128	129	Clay, 5% grains of solid hydrocarbon													

MUSKEG RIVER AREA

HOLE No. M 44

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
129	137	Clay													
137	143	Clay, light color													
143	149	Clay, 5% low grade sand													
149	156	Clay, 20% low to medium grade sand													
156	160	Bit. sand, low to medium grade, 15% clay	4	8											
160	162	Lost core													
162	164	Bit. sand, good grade	2	9											
164	168	Lost core													
168	170	Clay													
170	172	Bit. sand, good grade, slight clay	1	10											
172	174	Lost core													
174	176	Clay, 75% leached sand			Samples not assayed.										
176	178	Lost core													
178	182'7"	Bit. sand, good grade, 5% clay	4'7"	11											
182'7"	184	Lost core													
184	186'2"	Bit. sand, good grade	2'2"	12											
186'2"	189	Lost core													
189	193	Leached sand													
193	197	Bit. sand, good grade	4	13											
197	200	Lost core													
200	203	Bit. sand, good grade, slightly leached	3	14											
203	205	Lost core													
205	209	Bit. sand, low grade, leached	4	15											
209	211	Lost core													
211	215	Leached sand, very low grade													
215	220	Lost core													
220	223	Leached sand, very low grade													
223	226	Lost core													
226	231	Leached sand, very low grade													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 45

DATE May 5-8 1946 LOCATION LS.9,Sec.1,Tp.96-11-4 CO-ORDINATES ELEVATION 955' DEPTH 244' DIP 90° CORE RECOVERY 88.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	20	Sand and clay - casing	20	-											
20	24	Clay, 20% low grade sand	4	-											
24	28	Bit. sand, low grade, 50% clay	4	1	10.5)										
28	35	Clay	7	-	)		Tr	17	6	2	2	4	12	31	26
35	39	Bit. sand, low to medium grade	4	2	10.5)										
39	45	Clay, 25% low grade sand	6	-											
45	49	Bit. sand, medium grade, 15% clay	4	3)											
49	53	" " " " 30% "	4	4)	10.0	18	Tr	8	3	1	1	4	0	51	33
53	57	" " low " slight clay	4	5)											
57	61	" " " " " "	4	6)	8.1	05	0.2	8	6	3	12	11	41	13	9
61	65	" " medium " 5% clay	4	7)											
65	67	Lost core	2	-)	11.2	03½	0.8	2	3	16	33	12	12	15	7
67	71	Bit. sand, medium grade, slight clay	4	8)											
71	72	Lost core	1	-											
72	76	Bit. sand, good grade, slight clay	4	9)											
76	80	" " " "	4	10)	13.6		0.4	4	9	6	19	8	30	16	8
80	81	Lost core	1	-											
81	85	Bit. sand, good grade, slight clay	4	11)											
85	89	" " " " " "	4	12)	14.1	01	0.2	4	4	3	7	10	7	52	13
89	93	" " " " " "	4	13)											
93	97	" " " " " "	4	14)	13.1		Tr	6	9	2	13	8	31	20	11
97	101	" " " "	4	15)											
101	105	" " " "	4	16)	13.3		0.2	3	4	3	11	14	0	54	11
105	106	Lost core	1	-											
106	110	Bit. sand, good grade, 5% clay	4	17)											
110	114	" " " " 5% "	4	18)	15.2	2¼	Tr	4	3	1	4	5	46	28	9
114	118	" " " " slight clay	4	19)											
118	122	" " " " 5% clay	4	20)	15.1	3½	0.2	3	1	1	2	11	0	69	13

MUSKEG RIVER AREA

HOLE No. M 45

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
122	126	Bit. sand, medium grade, 25% clay	4	21)											
126	130	" " " " 15% "	4	22)	13.2	9	Tr	4	2	0	4	7	41	27	15
130	134	" " " " 10% "	4	23)											
134	138	" " " " 25% "	4	24)	13.4	10¾	Tr	4	2	1	6	12	17	43	15
138	142	" " " " 20% "	4	25)											
142	146	" " " " 30% "	4	26)	11.9	15½	Tr	8	3	1	3	5	39	26	15
146	150	" " good " 20% "	4	27	14.9)										
150	153'6"	Clay, 40% low grade sand	3'6"	-	)	3¾	Tr	2	2	1	1	10	2	69	13
153'6"	158'7"	Bit. sand, good grade, 5% clay	5'1"	28	14.9)										
158'7"	163'5"	Clay, 15% low grade sand	4'11"	-											
163'5"	164	Quartzite	0'6"	-											
164	165	Clay, 15% low grade sand	1	-											
165	167	Bit. sand, good grade	2	29)											
167	169	Lost core	2	-)											
169	171'3"	Bit. sand, good grade	2'3"	30)	13.9		Tr	6	35	14	13	5	15	6	6
171'3"	174	Lost core	2'9"	-											
174	175	Quartzite	1	-											
175	179	Bit. sand, medium grade, 5% clay	4	31)											
179	184	" " good " slight clay	5	32)	14.6		0.2	4	11	11	12	9	0	39	14
184	185	Lost core	1	-											
185	191	Clay	6	-											
191	192	Lost core	1	-											
192	194	Shale, black, few grains of solid hydrocarbons	2	-											
194	223	Clay	29	-											
223	228'9"	Bit. sand, good grade, 15% clay	5'9"	33	12.3	7¼	Tr	9	30	5	13	9	21	7	6
228'9"	231	Clay	2'3"	-											
231	244	Lost core, likely leached sand	13	-											
	244	End of Hole													

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MUSKEG RIVER AREA

HOLE No. M 45

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 45' = 45' Overburden, including 8' bit. sand @ 10.5% 45' - 150' = 105' @ 12.8% bitumen & 4.5% clay bands 150' - 184' = 34' @ 9.6% bitumen & 1.7% clay bands 45' - 184' = 139' @ 12.3% bitumen & 4% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 46

DATE May 30 - June 2, 1946 LOCATION LS.3,Sec.12,Tp.96-11-4 CO-ORDINATES ELEVATION 920' DEPTH 245' DIP 90° CORE RECOVERY 97.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	12	Clay and some low grade sand	12	-											
12	16	Bit. sand, medium grade, 15% clay	4	1)	10.4	12½	0.1	16	3	1	4	7	39	15	5
16	20	" " " " 10% "	4	2)											
20	20'6"	Quartzite	0'6"	-											
20'6"	22	Lost core	1'6"	-											
22	26	Bit. sand, medium grade, 15% clay	4	3)											
26	30	" " " " 30% "	4	4)											
30	31	Lost core	1	-)	6.7	68¾	Tr	9	3	0	3	5	40	25	15
31	32'6"	Bit. sand, low grade, 75% clay	1'6"	5)											
32'6"	37	Clay, 15% low grade sand	4'6"	-)											
37	41	Bit. sand, medium grade, 30% clay	4	6)											
41	45	" " " " 30% "	4	7)											
45	49	" " " " 25% "	4	8)	8.5	19¾	Tr	14	4	1	3	4	32	22	20
49	50	Clay	1	-											
50	54	Bit. sand, medium grade, 20% clay	4	9)	9.2	21½	0.1	10	3	1	2	1	28	34	21
54	58	" " " " 40% "	4	10)											
58	62'10"	" " " " 40% "	4'10"	11	6.8	8	0.1)								
62'10"	72	Clay	9'2"	-			)	16	4	1	2	1	21	26	29
72	76	Bit. sand, low grade, 25% clay	4	12	6.8	6¼	0.1)								
76	80	" " " " 20% "	4	13)											
80	84	" " " " 20% "	4	14)	9.3		Tr	10	5	1	3	5	42	19	15
84	88	" " medium grade, slight clay	4	15)	11.8	6¼	Tr	4	2	1	4	15	54	12	8
88	92	" " " " 10% clay	4	16)											
92	96	" " " " 15% "	4	17)											
96	97	Lost core	1	-)	10.5	8	Tr	5	11	18	24	10	19	7	6
97	101	Bit. sand, good grade, 10% clay	4	18)											

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MUSKEG RIVER AREA

HOLE No. M 46

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
101	105	Bit. sand, good grade, 10% clay	4	19)											
105	107	Lost core	2	-)	11.1	12½	Tr	4	8	3	14	10	35	14	11
107	111	Bit. sand, good grade, 10% clay	4	20)											
111	115	" " " " slight clay	4	21)											
115	116	Lost core	1	-)	14.3	1¾	Tr	1	9	2	9	9	38	21	11
116	120	Bit. sand, good grade, slight clay	4	22)											
120	124	" " " " 5% clay	4	23)											
124	128	" " " " slight clay	4	24)	14.1	½	Tr	2	8	2	5	7	35	25	16
128	132	" " " "	4	25)											
132	136	" " " "	4	26)	14.4	½	0.1	2	3	0	3	6	48	25	13
136	140	" " " " some clay	4	27)											
140	144	" " " "	4	28)	12.1	10¾	Tr	6	8	2	5	5	41	22	11
144	148	" " " " 15% clay	4	29)											
148	152	" " " " 15% clay	4	30)	11.7	16	Tr	4	2	1	2	6	52	22	11
152	156	" " " " slight clay	4	31)											
156	160	" " " " " "	4	32)	14.8	1	Tr	1	1	1	2	4	53	27	11
160	164	" " " " " "	4	33)											
164	168	" " " " " "	4	34)	14.9	3½	Tr	2	2	0	2	4	46	29	15
168	172	" " " " 5% clay	4	35)											
172	176	" " " " 5% "	4	36)	14.7	7¾	Tr	1	1	0	1	3	48	34	12
176	180	" " " " 10% "	4	37)											
180	184	" " " " 10% "	4	38)	14.7	9¾	Tr	1	1	0	1	2	35	42	18
184	188	" " " " slight clay	4	39)											
188	192	" " " " " "	4	40)	13.7	11½	Tr	2	2	0	2	4	35	36	19
192	196	" " " " 20% clay	4	41)											
196	200	" " " " 30% "	4	42)	11.2	22¼	Tr	3	2	0	2	4	43	29	17
200	204	" " " " 25% "	4	43)											
204	208	" " " " 40% "	4	44)	4.4	29½	Tr	4	3	1	4	3	31	31	23

MUSKEG RIVER AREA

HOLE No. M 46

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
208	212	Bit. sand, good grade, 25% clay	4	45)											
212	216	" " " " 15% "	4	46)	7.2	16¼	Tr	7	3	0	3	7	49	19	12
216	219	" " " " 5% "	3	47)											
219	233	Clay with leached low grade sand	14	-											
233	236	Quartzite	3	-											
236	245	Clay and claystone	9	-											
	245	End of Hole													

Summary

0' - 12' = 12' Overburden
12' - 84' = 72' @ 6.5% bitumen & 37.7% clay bands
84' - 200' = 116' @ 13.1% bitumen & 8.0% clay bands
12' - 200' = 188' @ 10.5% bitumen & 19.4% clay bands.

MUSKEG RIVER AREA

HOLE No. M 47

DATE June 3 - 7 1946 LOCATION LS.10,Sec.12,Tp.96-11-4 CO-ORDINATES ELEVATION 930' DEPTH 258' DIP 90° CORE RECOVERY 98.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	54'	Clay	54	-											
54'	58'	Bit. sand, low grade, 30% clay	4	1	Not assayed very low grade.										
58'	62'	" " medium grade, 25% clay	4	2)											
62'	66'	" " " " 25% "	4	3)	8.5	11½	Tr	9	3	1	4	6	44	18	15
66'	70'	" " " " 25% "	4	4)											
70'	74'	" " " " 25% "	4	5)	9.4	10	0.1	11	2	1	4	7	44	19	12
74'	78'	" " " " 25% "	4	6)											
78'	82'	" " " " 25% "	4	7)	6.8	3¾	0.1	16	4	1	5	7	36	17	14
82'	86'	" " " " 40% "	4	8)											
86'	94'	Clay, 20% medium grade sand	8	-											
94'	98'	Bit. sand, low grade, 35% clay	4	9)											
98'	102'	" " " " 35% "	4	10)	4.6	2¾	0.1	17	6	1	4	5	29	19	19
102'	106'	" " " " 50% "	4	11)											
106'	110'	" " " " 40% "	4	12)	6.0	3¼	Tr	16	6	0	3	2	15	32	26
110'	114'	" " " " 50% "	4	13)											
114'	116'	Clay, 5% low grade sand	2	-)	7.3	4¼	Tr	11	4	0	2	2	14	28	39
116'	120'	Bit. sand, low grade, slight clay	4	14)											
120'	124'	" " " " 10% clay	4	15)											
124'	128'	" " " " 20% "	4	16)	9.7	¾	Tr	11	4	1	2	3	28	27	24
128'	132'	" " " " 10% "	4	17)											
132'	136'	" " medium grade, 50% clay	4	18)	9.9	1¼	Tr	6	3	0	3	8	51	17	12
136'	140'	" " low grade, 50% clay	4	19)											
140'	144'	" " medium grade, 25% clay	4	20)	9.2	1½	Tr	8	31	8	12	6	18	9	8
144'	145'	Lost core	1	-											
145'	149'	Bit. sand, good grade, 5% clay	4	21)											
149'	153'	" " " " 15% "	4	22)	11.5	¾	Tr	5	35	10	14	5	12	8	10
153'	157'	" " " "	4	23)											
157'	161'	" " " " slight clay	4	24)	13.4		Nil	2	5	1	6	9	46	20	11

MUSKEG RIVER AREA

HOLE No. M 47

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
161'	165'	Bit. sand, good grade,	4	25)											
165'	169'	" " " "	4	26)	14.6		Nil	1	2	1	3	5	43	34	11
169'	173'	" " " "	4	27)											
173'	177'	" " " "	4	28)	14.4		Nil	1	2	1	2	4	40	34	16
177'	178'	Lost core	1	-											
178'	182'	Bit. sand, good grade, 15% clay	4	29)											
182'	183'	Lost core	1	-)	13.1	7½	Nil	2	2	1	3	5	39	32	16
183'	187'	Bit. sand, good grade	4	30)											
187'	191'	" " " "	4	31)											
191'	195'	" " " "	4	32)	14.8		Nil	1	2	1	2	5	44	30	15
195'	199'	" " " " slight clay	4	33)											
199'	203'	" " " " " "	4	34)	14.6	1	Nil	1	1	1	4	7	49	25	12
203'	207'	" " " " " "	4	35)											
207'	211'	" " " " " "	4	36)	14.0	1½	Nil	2	2	1	4	7	49	24	11
211'	215'	" " " " " "	4	37)											
215'	219'	" " " " " "	4	38)	14.1	1½	Nil	1	2	1	3	6	48	27	12
219'	223'	" " " " " "	4	39)											
223'	227'	" " " " " "	4	40)	14.4	1	Nil	2	3	0	4	6	46	26	13
227'	231'	" " " " " "	4	41)											
231'	235'	" " " " " "	4	42)	15.2	½	Tr	1	1	1	2	5	46	29	15
235'	239'	" " " " 15% clay	4	43)											
239'	243'	" " " " slight clay	4	44)	14.0	6½	0.4	4	18	7	9	8	34	12	8
243'	245'4"	" " " " " "	2'4"	45)											
245'4"	246'	Clay	0'8"	-											
246'	250'	Lost core	4	-											
250'	251'	Leached sand	1	-											
251'	258'	Lost core	7	-											
	258'	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 47

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 58' = 58' Overburden 58' - 145' = 87' @ 7.0% bitumen & 27.8% clay bands 145' - 245' = 100' @ 14.03% bitumen & 2.27% clay bands 58' - 245' = 187' @ 10.7% bitumen & 14.2% clay bands.													

MUSKEG RIVER AREA

HOLE No. M 48

DATE June 8 - 13 1946 LOCATION LS.14,Sec.12,Tp.96-11-4 CO-ORDINATES ELEVATION 933' DEPTH 217' DIP 90° CORE RECOVERY 95.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	33	Clay with 1'10" quartzite in 3 bands	33	-											
33	38	Clay & leached sand mixture	5	-											
38	42	Bit. sand medium grade, 20% clay	4	1)											
42	46	" " " " 10% "	4	2)	10.0	2½	0.1	10	4	2	2	2	6	38	36
46	50	" " " " 20% "	4	3)											
50	54	" " " " 15% "	4	4)	8.8	1½	0.2	17	4	2	1	-	3	37	37
54	58	" " " " slight clay	4	5)											
58	62	" " " " 5% clay	4	6)	12.0	1	0.1	5	2	1	2	5	48	23	14
62	66	" " " " slight clay	4	7)											
66	70	" " " " " "	4	8)	12.7		Tr	2	1	-	1	8	37	34	15
70	74	" " " " 5% clay	4	9)											
74	78	" " " "	4	10)	12.7	1¾	Tr	1	1	2	5	5	32	33	21
78	82	" " " "	4	11)											
82	86	" " good " 5% clay	4	12)	11.2	15	Tr	3	4	17	29	3	18	20	8
86	87	Lost core	1	-											
87	91	Bit. sand, good grade, slight clay	4	13)											
91	95	" " " " " "	4	14)	12.1	3¾	0.1	23	23	28	23	6	10	4	4
95	96	" " " " " "	1	15)											
96	97	Liquid tar & drill mud	1	-)	15.2		0.2	5	22	29	17	5	0	17	6
97	101	Bit. sand, good grade	4	16)											
102	104	Lost core	2	-											
104	108	Bit. sand, good grade	4	17)											
108	110	Lost core	2	-)	14.9		0.2	4	20	14	17	13	20	6	6
110	114	Bit. sand, good grade	4	18)											
114	118	" " " "	4	19)											
118	122	" " " "	4	20)	14.3		0.2	4	10	9	11	14	10	34	9
122	123	Lost core	1	-											
123	127	Bit. sand, good grade	4	21)											
127	131	" " " " slight clay	4	22)	15.6	2	Tr	6	11	7	12	10	32	12	9

MUSKEG RIVER AREA

HOLE No. M 48

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
131	135	Bit. sand, good grade, 5% clay	4	23)											
135	139	" " " " slight clay	4	24)	14.5	6½	Tr	2	5	7	16	14	35	13	8
139	143	" " " " " "	4	25)											
143	147	" " " "	4	26)	15.1	2	Tr	3	2	3	9	16	44	13	9
147	151	" " " " " "	4	27)											
151	155	" " " " " "	4	28)	16.0	1	Tr	2	2	2	15	16	44	14	7
155	159	" " " " " "	4	29)											
159	163	" " " " " "	4	30)	15.1	3¾	Tr	3	2	4	38	20	22	8	4
163	167	" " " " 5% clay	4	31)											
167	171	" " " " 25% "	4	32)	11.3	21½	Tr	6	2	2	24	15	31	12	8
171	175	" " " " 10% "	4	33)											
175	179	" " " " 15% "	4	34)	12.0	11¾	Tr	6	3	2	5	2	30	37	15
179	180	Lost core	1	-											
180	184	Bit. sand, good grade, slight clay	4	35)											
184	188'4"	" " " " 5% clay	4'4"	36)	10.5	6½	Tr	3	2	7	18	12	25	20	13
188'4"	192	Clay, light colour	3'8"	-											
192	200	Clay, dark colour	8	-											
200	207	Clay, light colour	7	-											
207	213	Clay, dark colour	6	-			Tr	3	2	7	18	12	25	20	13
213	215'7"	Carbonaceous shale & low grade sand	2'7"	37		29	14.7	ash 25.5% V.M. 27%, F.C. 32.8%							
215'7"	217	Clay dark	1'5"	-				Fuel ratio 1.22							
	217	End of Hole													

Summary

0'- 38' = 38' Overburden
38' - 188'4" = 150'4" @ 13.0% bitumen & 3.4% clay bands.

MUSKEG RIVER AREA

HOLE No. M 49

DATE June 18-21 1946 LOCATION LS.10,Sec.13,Tp.96-11-4 CO-ORDINATES ELEVATION 939' DEPTH 143' DIP 90° CORE RECOVERY 97.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	26	Casing - clay and gravel													
26	35	Clay, light coloured, about 50% gravel													
35	41	Clay, light coloured													
41	54	Clay, dark coloured													
54	59	Clay, light coloured													
59	59'5"	Claystone	Samples not assayed												
59'5"	76	Clay, light coloured													
76	81	Clay, dark coloured													
81	82	Lost core													
82	90	Clay, dark coloured													
90	90'6"	Claystone													
90'6"	100	Clay, dark													
100	109	Clay, light													
109	111	Clay, light, little green sand													
111	136	Clay, dark													
136	136'4"	Claystone													
136'4"	138	Clay, dark													
138	140	Lost core													
140	143	Clay, dark													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 50

DATE June 15-17 1946 LOCATION LS.14,Sec.13,Tp.96-11-4 CO-ORDINATES ELEVATION 941' DEPTH 147' DIP 90° CORE RECOVERY 89.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	38	Casing - clay, low grade to medium grade sand and clay													
15	18	Bit. sand, low to medium grade, 20% clay	3	1											
18	31	No core - leached sand													
31	32'6"	Bit. sand, low to medium grade, 15% clay	1'6"	2											
32'6"	38	No core - leached sand													
38	41	Clay, 20% l.g.s.													
41	45	Lost core, leached sand													
45	47	Clay and leached sand mixture													
47	47'4"	Rock													
47'4"	51	Clay, dark colour			Samples not assayed.										
51	62	Clay, light colour, few dark bands													
62	66	Clay, light colour													
66	75	Clay, dark colour													
75	78	Clay, light colour													
78	89	Clay, dark colour													
89	95	Clay, light colour, few bands contain some green sand			Note:	Bedding plane on most of the clay is at an angle of 45° to horizontal.									
95	112	Clay, dark colour													
112	117	Clay, light colour, little green sand													
117	117'4"	Grit													
117'4"	122	Lost core													
122	125	Clay, few narrow bands grit up to ½"													
125	126	Shale, black													
126	127	Lost core													
127	131	Clay and leached sand mixture													
131	134	Lost core													

MUSKEG RIVER AREA

HOLE No. M 50

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
134	138	Clay and leached sand mixture													
138	139	Lost core													
139	144	Clay and leached sand mixture													
144	145	Lost core													
145	147	Clay, black, greasy appearance on bedding planes													
		End of Hole													

MUSKEG RIVER AREA

HOLE No. M 51

DATE June 24- July 7, 1946 LOCATION LS.7, Sec.24, Tp.96-11-4 CO-ORDINATES ELEVATION 942' DEPTH 265' DIP 90° CORE RECOVERY 97.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	75	Standpipe - clay and gravel	75												
75	147	Clay and claystone	72												
147	148	Lost core	1												
148	165	Dark colored clay	17												
165	166	Lost core	1												
166	170	Dark colored clay with 5% l.g.s.	4												
170	174	Bit. sand, good grade, 5% clay	4	1											
174	178	Bit. sand, medium & good grades, some clay	4	2											
178	182	" " " grade, 5% clay in bands	4	3	Samples not assayed.										
182	186	" " " " 5% " "	4	4											
186	187	Lost core	1												
187	191	Bit. sand, medium grade, 10% clay in bands	4	5											
191	195	" " " " 10% "	4	6											
195	199	" " " " 10% "	4	7											
199	203	" " " " 15% "	4	8											
203	207	" " " " 10% "	4	9											
207	215	Clay with 5% l.g.s.	8												
215	219	Bit. sand, low and medium grades, 10% clay	4	10											
219	223	Bit. sand, low grade, 5% clay in small bands	4	11											
223	227	" " " " 10% " in bands	4	12											
227	231	" " " " 5% " " "	4	13											
231	233	Lost core	2												
233	235	Bit. sand, low grade	2	14											
235	265	Dark colored clay	30												
	265	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 52

DATE July 9-13 1946 LOCATION LS.1,Sec.24,Tp.96-11-4 CO-ORDINATES ELEVATION 1038' DEPTH 95' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+48 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	75	Standpipe - clay and gravel	75												
75	85	Sandy clay	10												
85	87	Dark colored clay	2												
87	87'4"	Quartzite	0'4"												
87'4"	94	Dark colored clay	6'8"												
94	95	Gravel	1												
	95	End of Hole													

MUSKEG RIVER AREA

HOLE No. M 54

DATE July 16-24 1946 LOCATION LS.13,Sec.30,Tp.96-10-4 CO-ORDINATES ELEVATION 955' DEPTH 140' DIP 90° CORE RECOVERY 89.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	83'	Standpipe - clay, gravel and rocks	83												
83	100	Cemented gravel - rock up to ½"	17												
100	115	Sand	15												
115	120	Lost core	5												
120	130	Loose gravel	10												
130	132	Lost core	2												
132	140	Loose gravel	8												
	140	End of Hole													

MILDRED-RUTH LAKES AREA

MILDRED-RUTH LAKES AREA

HOLE No. B 1

DATE March 15-16 1946 LOCATION Sec. 10, Tp. 92-10-4 CO-ORDINATES ELEVATION 1003' DEPTH 134' DIP 90° CORE RECOVERY 90.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	41'	Standpipe - muskeg and sand	41												
41'	46'	Bit. sand, low grade, 10% clay	5	1											
46'	49'	Clay	3	-											
49'	53'	Bit. sand, medium grade, 5% clay	4	2											
53'	55'4"	" " " " 5% " in stringers	2'4"	3		Samples not assayed.									
55'	58'	Clay with occasional band of leached sand	2'8"												
58'	61'	Lost core	3												
61'	65'	Clay	4												
65'	66'	Lost core	1												
66'	79'	Clay	13												
79'	83'	Bit. sand, low grade, 5% clay	4	4											
83'	86'	Lost core	3												
86'	90'	Bit. sand, good grade, some clay	4	5											
90'	94'	" " " " 5% clay	4	6											
94'	98'	" " " " some clay	4	7											
98	102'	" " " " " "	4	8											
102'	104'6"	" " " " " "	2'6"	9											
104'6"	118'	Clay	13'6"												
118'	120'	Lost core	2												
120'	131'	Clay	11												
131'	134'	Limestone	3												
	134'	End of Hole													

MILDRED-RUTH LAKES AREA

HOLE No. B 2

DATE March 19-23 1946 LOCATION Sec.16, Tp.92-10-4 CO-ORDINATES ELEVATION 1058' DEPTH 252' DIP 90° CORE RECOVERY 96.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	55'	Standpipe - gravel	55												
55'	65'	Clay	10												
65'	67'	Lost core	2												
67'	71'	Clay and rock	4												
71'	75'	Bit. sand, low & medium grades, 10% clay	4	1	Samples not assayed.										
75'	79'	" " good grade, 5% clay	4	2											
79'	83'	" " low & good grades, some clay													
83'	87'	" " " grade, 5% clay	4	4											
87'	91'	" " " " 5% " in stringers	4	5											
91'	95'	" " " " 15% "	4	6											
95'	96'	Lost core	1												
96'	99'	Bit. sand, low grade, 15% clay	3	7											
99'	105'	Clay with few bands barren sand	6												
105'	106'	Bit. sand, medium grade, 15% clay	1	8											
106'	112'	Clay	6												
112'	116'	Bit. sand, low grade, 25% clay in bands	4	9											
116'	120'	" " " & good grades, 20% clay	4	10											
120'	124'	" " " , medium & good grades	4	11											
124'	179'	Clay with occasional stringer of l.g.s.	55												
179'	181'3"	Clay with l.g.s. bands	2'3"	12											
181'3"	199'	Clay	17'9"												
199'	203'	Bit. sand, low & medium grades, 50% clay in bands	4	13											
203'	207'	Bit. sand, medium grade, 20% clay	4	14											
207'	211'	" " " " 30% "	4	15											
211'	215'	" " " " 30% "	4	16											
215'	219'	" " low , medium & good grades, 50% clay	4	17											
219'	221'	Lost core	2												

MILDRED - RUTH LAKES AREA

HOLE No. B 2

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
221'	225'	Bit. sand, medium & good grades, 50% clay	4	18											
225'	229'	" " good grade, 30% clay	4	19											
229'	233'	" " medium grade, 40% clay	4	20											
233'	235'	" " good grade, 5% clay	2	21											
235'	241'	Clay	6		Samples not assayed.										
241'	245'	Bit. sand, good grade, some clay, coarse sand	4	22											
245'	246'	Lost core	1												
246'	250'	Bit. sand, good grade, coarse sand	4	23											
250'	252'	Lime clay	2												
	252'	End of Hole													

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MILDRED - RUTH LAKES AREA

HOLE No. B 3

DATE March 24 - 28 1946 LOCATION Sec.20, Tp.92-10-4 CO-ORDINATES ELEVATION 1045' DEPTH 260' DIP 90° CORE RECOVERY 93.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	39'	Standpipe - gravel and clay	39												
39'	55'	Clay	16												
55'	59'	Bit. sand, medium grade, slight clay	4	1											
59'	60'	Lost core	1		Samples not assayed.										
60'	64'	Bit. sand, medium grade, 5% clay in stringers	4	2											
64'	65'	Lost core	1												
65'	69'	Bit. sand, low & medium grades	4	3											
69'	70'	Lost core	1												
70'	74'	Bit. sand, low grade, 15% clay	4	4											
74'	76'	Lost core	2												
76'	80'	Bit. sand, low grade, some clay	4	5											
80'	81'	Lost core	1												
81'	85'	Bit. sand, low grade, 15% clay	4	6											
85'	89'	Bit. sand, low & medium grades, 5% clay	4	7											
89'	93'	Bit. sand, medium grade, 5% clay	4	8											
93'	97'	" " " " 15% "	4	9											
97'	101'	" " low & medium grades, 25% clay	4	10											
101'	106'	Clay with traces of bitumen sand	5												
106'	110'	Bit. sand, low & medium grades, 35% clay	4	11											
110'	114'	" " medium & good grades	4	12											
114'	118'	" " " & " "	4	13											
118'	122'	" " low, medium & good grades, some clay	4	14											
122'	126'	" " good grade, 10% clay	4	15											
126'	130'	" " low & good grades, 40% clay	4	16											
130'	134'	" " good grade	4	17											
134'	138'	" " low, medium & good grades, 30% clay	4	18											

MILDRED - RUTH LAKES AREA

HOLE No. B 3

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
138'	140'	Clay and rock	2												
140'	143'	Bit. sand, medium grade, 50% clay	3	19											
143'	175'	Clay with few bands of barren sand	32												
175'	179'	Bit. sand, low & medium grades, 50% clay	4	20											
179'	180'	Lost core	1												
180'	184'	Bit. sand, good grade, 15% clay	4	21											
184'	186'	Lost core	2		Samples not assayed.										
186'	190'	Bit. sand, good grade, 15% clay	4	22											
190'	191'	Lost core	1												
191'	195'	Bit. sand, low & good grades, 25% clay	4	23											
195'	196'	Lost core	1												
196'	200'	Bit. sand, good grade, 10% clay	4	24											
200'	204'	" " " " 5% clay in stringers	4	25											
204'	208'	" " " " 10% clay	4	26											
208'	212'	" " " " 15% "	4	27											
212'	213'	Lost core	1												
213'	217'	Bit. sand, good grade, 5% clay	4	28											
217'	221'	" " " " 10% "	4	29											
221'	223'	Lost core	2												
223'	224'6"	Bit. sand, medium & good grades, 20% clay	1'6"	30											
224'6"	230'	Clay	5'6"												
230'	231'6"	Bit. sand, good grade, 5% clay	1'6"	31											
231'6"	237'	Clay	5'6"												
237'	241'	Bit. sand, good grade, 30% clay	4	32											
241'	242'	Lost core	1												
242'	247'	Bit. sand, good grade	5	33											
247'	255'	Clay with traces of low grade sand	8												
255'	260'	Lime clay	5												
	260'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 4

DATE March 29 - April 12, 1946 LOCATION Sec.29,Tp.92-10-4 CO-ORDINATES N.E.20, + 105.0, -1370.0 ELEVATION 1059' DEPTH 237' DIP 90° CORE RECOVERY 93.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	51	Overburden, gravel & clay													
51	55	Bit. sand, medium grade, 5% clay	4	1)											
55	56	Lost core	1	-											
56	60	Bit. sand, low grade, 50% clay	4	2)	6.1	7⅞	Tr	6	4	23	32	9	14	7	5
60	64	" " " " 30% "	4	3)											
64	68	" " " " 5% "	4	4)											
68	72	" " " " 25% "	4	5)											
72	76	" " " " 20% "	4	6)											
76	80	" " " " 20% "	4	7)											
80	84	" " " " 15% "	4	8)											
84	88	" " " " 20% "	4	9)	3.0	18½	Tr	16	10	2	6	8	37	12	9
88	90	Lost core	2	-											
90	94	Bit. sand, low grade, 25% clay	4	10)											
94	96	Lost core	2	-											
96	100	Bit. sand, medium grade, 15% clay	4	11)											
100	104	" " " " 25% "	4	12)	10.7	21½	Tr	2	1	2	12	15	21	42	5
104	108	" " " " 30% "	4	13)											
108	110	Lost core	2	-											
110	114	Bit. sand, medium grade, 30% clay	4	14)	11.6	31½	Tr	2	1	0	8	17	57	11	4
114	118	" " good grade, some clay	4	15)											
118	122	" " " " 20% clay	4	16)											
122	126	" " " "	4	17)	14.1		Tr	2	1	0	8	22	23	40	4
126	128	Lost core	2	-											
128	132	Bit. sand, good grade, 15% clay	4	18)											
132	136	" " " " 5% "	4	19)	14.7	4	Tr	1	1	0	9	18	56	11	4
136	140	" " " "	4	20)											
140	144	" " " "	4	21)	15.8	1½	Tr	1	0	0	4	15	12	63	5

MILDRED - RUTH LAKES AREA

HOLE No. B 4

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
144	148	Bit. sand, good grade	4	22)											
148	152	" " " " 5% clay	4	23)	15.6	1	Tr	1	1	0	7	15	60	12	4
152	156	" " " " 5% "	4	24)											
156	160	" " " " some clay	4	25)	15.5	1	Tr	1	1	1	7	18	10	58	4
160	164	" " " " 5% clay	4	26	15.5	3	Tr	1	1	1	14	22	50	8	3
164	168	" " " "	4	27	16.1		Tr	0	1	1	27	34	29	6	2
168	172	" " " " 10% "	4	28)											
172	176	" " " " some clay	4	29)	15.4	5¼	Tr	1	1	1	24	23	43	5	2
176	180	" " " "	4	30)											
180	184	" " " "	4	31)	16.4		Tr	1	1	1	27	25	38	5	2
184	188	" " " "	4	32	16.7		Tr	1	3	2	21	20	45	5	3
188	202	Clay	14	-											
202	205	Lost core	3	-											
205	207	Clay	2	-											
207	210	Bit. sand, good grade	3	33	13.4		Tr	1	8	29	47	5	5	4	1
210	218	Clay	8	-											
218	221'8"	Bit. sand, good grade, 10% clay	3'8"	34	13.4	8¾	Tr	1	8	29	47	5	5	4	1
221'8"	237	Clay	15'4"	-											
	237	End of Hole													

Summary

0' - 96' = 96' Overburden & low grade sand
96' - 188' = 92' @ 14.45% bitumen & 6% clay bands.

8747

MILDRED - RUTH LAKES AREA

HOLE No. B 5

DATE April 13-16 1946 LOCATION LS.13,Sec.28,Tp.92-10-4 CO-ORDINATES N.E.29, +327.0 ; ELEVATION 1048' DEPTH 209' DIP 90° CORE RECOVERY 93.5%
0.1

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	40	Gravel and clay	40	-											
40	44	Bit. sand, low grade	4	1)											
44	48	" " " " 5% clay	4	2)											
48	49	Lost core	1	-)											
49	51	Bit. sand, low grade, 25% clay	2	3)	6.3	10 3/4	Tr	3	4	9	4	4	12	49	15
51	59	Clay with stringers of low grade sand	8	-)											
59	63	Bit. sand, low grade, 10% clay	4	4)											
63	66	Lost core	3	-)											
66	70	Bit. sand, medium grade, 20% clay	4	5)											
70	74	" " " " 10% "	4	6)	11.9	13 1/2	Tr	1	2	1	1	4	21	56	14
74	78	" " " " 25% "	4	7)											
78	79	Lost core	1	-											
79	83	Bit. sand, medium grade, 10% clay	4	8)	12.6	12 1/4	Tr	1	1	1	1	7	48	32	10
83	87	" " " " 20% "	4	9)											
87	91	" " " " some clay	4	10)	14.5	3 3/4	Tr	1	1	1	1	9	1	76	11
91	95	" " " "	4	11)											
95	97	Lost core	2	-											
97	101	Bit. sand, medium grade, 10% clay	4	12)	11.5	10 1/2	Tr	0	1	1	1	19	2	67	9
101	105	" " " " 10% "	4	13)											
105	109	" " " " 15% "	4	14)	13.9	6 3/4	Tr	1	1	1	2	3	34	52	6
109	113	" " " " some clay	4	15)											
113	117	" " " "	4	16)	16.6		Tr	2	1	1	1	9	4	75	7
117	121	" " " " 5% clay	4	17)											
121	122	Lost core	1	-											
122	126	Bit. sand, good grade, 5% clay	4	18)	16.3	1 1/4	Tr	1	1	1	5	9	38	34	11
126	130	" " " " 5% "	4	19)											
130	134	" " " "	4	20)											
134	138	" " " "	4	21)	15.9	3	Tr	1	1	1	13	28	39	14	4

MILDRED - RUTH LAKES AREA

HOLE No. B 5

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
138	142	Bit. sand, good grade, 10% clay	4	22)	14.6	9¾	Tr	2	1	1	6	27	1	57	5
142	146	" " " " 10% "	4	23)											
146	150	" " " "	4	24)											
150	151	Lost core	1	-)	14.0	13½	Tr	1	1	1	12	27	7	49	3
151	155	Bit. sand, good grade, 30% clay	4	25)											
155	159	" " " " 15% "	4	26)											
159	163	" " " " 15% "	4	27)	13.7	13½	Tr	2	1	1	24	29	27	10	6
163	166	Clay	3	-											
166	170	Bit. sand, good grade	4	28)											
170	171	Lost core	1	-)	16.7		Tr	1	1	1	13	8	43	27	6
171	175	Bit. sand, good grade	4	29)											
175	178	" " " "	3	30)											
178	181	Clay	3	-)	16.3		Tr	0	1	4	32	26	0	35	2
181	185	Bit. sand, good grade	4	31)											
185	189	" " " "	4	32)											
189	190	Lost core	1	-)	16.6		Tr	1	2	14	33	6	1	41	3
190	194	Bit. sand, good grade	4	33)											
194	196	" " " "	2	34)											
196	198	Clay	2	-)	16.3		Tr	2	4	22	37	6	12	12	5
198	203	Bit. sand, good grade	5	35)											
203	205	Clay	2	-											
205	209	Limestone	4	-											
	209	End of Hole													

Summary

0' - 70' = 70' Overburden including 22' bit. sand @ 6.3%

70' - 203' = 133' @ 13.8% bitumen & 4.7% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 6

DATE April 20-22 1946 LOCATION LS.7, Sec.4, Tp.93-10-4 CO-ORDINATES N 1/4 33 + 1460.9; +10.4 ELEVATION 1023' DEPTH 180' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0'	21'	Sand and clay	21	-											
21'	23'8"	Bit. sand, low grade, some clay	2'8"	1	6.0	4¾	0.2	15	9	3	8	14	16	26	9
23'8"	33'	Clay with stringers of low grade sand	9'4"	-											
33'	37'	Bit. sand, low grade, 15% clay	4	2)											
37'	41'	" " " " 20% "	4	3)	6.0	25¼	0.2	15	9	3	8	14	16	26	9
41'	45'	" " " " 30% "	4	4)											
45'	77'	Clay with stringers of low grade sand	32	-											
77'	81'	Bit. sand, medium grade	4	5)	13.9		Tr	2	3	2	3	7	11	65	9
81'	85'	" " " "	4	6)											
85'	89'	" " good " some clay	4	7)	14.7		Nil	1	2	1	2	5	60	23	6
89'	93'	" " " "	4	8)											
93'	97'	" " " "	4	9)	15.7		Tr	1	1	0	1	5	62	22	8
97'	101'	" " " "	4	10)											
101'	105'	" " " "	4	11)	16.4		Tr	2	2	0	3	10	57	18	8
105'	109'	" " " "	4	12)											
109'	113'	" " " "	4	13)	15.0	4	Tr	2	2	0	9	14	41	20	12
113'	115'2"	" " " " 15% clay	2'2"	14)											
115'2"	118'	Clay	2'10"	-											
118'	122'	Bit. sand, good grade	4	15)	15.0	8¾	Tr	1	2	1	14	17	49	10	6
122'	126'	" " " " 25% clay	4	16)											
126'	128'2"	" " " " some clay	2'2"	17	15.6		Tr	2	4	30	39	10	4	7	4
128'2"	135'	Clay with low grade sand stringers	6'10"	-											
135'	138'6"	Bit. sand, good grade, some clay	3'6"	18	15.6		Tr	2	4	30	39	10	4	7	4
138'6"	150'	Clay with low grade sand stringers	11'6"	-											
150'	154'	Bit. sand, good grade, 20% clay	4	19)	13.6	11½	Nil	2	2	1	3	5	44	32	11
154'	158'	" " " " 10% "	4	20)											
158'	162'	" " " " some clay	4	21)	15.4		Tr	1	1	1	6	32	2	49	9
162'	166'	" " " " " "	4	22)											

MILDRED - RUTH LAKES AREA

HOLE No. B 6

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
166'	170'	Bit. sand, good grade, 15% clay	4	23)											
170'	174'	" " " " 15% "	4	24)	12.0	12½	Nil	3	6	4	20	18	34	9	7
174'	176'6"	" " medium grade	2'6"	25)											
176'6"	180'	Limestone	3'6"	-											
	180'	End of Hole													

Summary

0' - 77' = 77' Overburden (including 14'8" @ 6% bitumen)

77' - 176'6" = 99'6" @ 11.5% bitumen & 27% clay bands including 3 bands totalling 21'2".

MILDRED - RUTH LAKES AREA

HOLE No. B 7

DATE April 23-28 1946 LOCATION LS.7, Sec.8, Tp.93-10-4 CO-ORDINATES N.E.5, +1487.6; -2012.6 ELEVATION 1035' DEPTH 204' DIP 90° CORE RECOVERY 94.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	37	Sand and clay	37	-											
37	41	Bit. sand, low grade, 15% clay	4	1	7.1	13	Nil								
41	42	Lost core	1	-											
42	46	Bit. sand, low grade, 20% clay	4	2	7.1	20	Nil	13	6	1	2	2	14	29	33
46	52	Clay with few low grade sand bands	6	-											
52	56	Bit. sand, low grade, 30% clay	4	3	7.1	10½	Nil								
56	60	" " medium grade	4	4											
60	62	" " " "	2	5	11.4		Tr	10	4	1	2	7	1	50	25
62	72	Clay with few low grade sand bands	10	-											
72	76	Bit. sand, medium grade, 15% clay	4	6											
76	78	Lost core	2	-	10.7	8¾	Nil	4	2	0	4	8	36	26	20
78	82	Bit. sand, medium grade, slight clay	4	7											
82	86	" " " " 5% clay	4	8											
86	87	Lost core	1	-	14.0	1¼	Nil	3	1	1	6	26	6	46	11
87	90	Bit. sand, medium grade	3	9											
90	94	Clay	4	-											
94	98	Bit. sand, medium grade, 15% clay	4	10											
98	102	" " " " 10% "	4	11	12.2	14¼	Nil	1	1	0	1	2	57	28	10
102	106	" " good " 10% "	4	12											
106	110	" " " " 25% "	4	13	12.7	15	Tr	1	1	0	2	9	21	56	10
110	112	Lost core	2	-											
112	116	Bit. sand, good grade, 10% clay	4	14											
116	120	" " " " some clay	4	15	14.4	5	Nil	1	1	0	6	41	29	18	4
120	124	" " " " 25% clay	4	16											
124	128	" " " " 5% clay	4	17	13.1		Tr	2	1	0	10	29	50	5	3
128	132	" " " "	4	18											
132	136	" " " " 25% clay	4	19	13.0	15	Nil	1	1	1	20	31	9	33	4
136	140	" " " "	4	20											
140	144	" " " "	4	21	16.3		Tr	1	1	1	48	21	22	3	3

MILDRED - RUTH LAKES AREA

HOLE No. B 7

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
144	148	Bit. sand, good grade, 10% clay	4	22)											
148	152	" " " "	4	23)	15.4	¾	Tr	1	1	3	59	19	3	10	4
152	156	" " " "	4	24)											
156	160	" " " "	4	25)	14.9		Nil	1	1	3	57	16	15	4	3
160	162	Lost core	2	-											
162	166	Bit. sand, good grade	4	26)											
166	168	Lost core	2	-)	13.1	12¾	Tr	3	2	4	17	18	29	20	7
168	172	Bit. sand, good grade, 30% clay	4	27)											
172	176	" " " " 30% "	4	28)											
176	180	" " " " 5% "	4	29)	11.2	26¼	Nil	6	3	1	8	16	46	14	6
180	184	" " " " 5% "	4	30)											
184	188	" " " "	4	31)	15.1	¾	Nil	7	5	5	3	6	23	27	23
188	192	" " " "	4	32)											
192	196	" " " "	4	33)	13.0		Nil	11	42	5	15	5	12	6	4
196	199	" " " "	3	34)											
199	204	Lime clay	5	-											
	204	End of Hole													

Summary

0' - 37' = 37' Overburden
37' - 72' = 35' @ 4.2% bitumen including 19½' clay bands
72' - 199' = 127' @ 13.0% & 6.5% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 8

DATE April 28 - May 1, 1946 LOCATION LS.16,Sec.7,Tp.93-10-4 CO-ORDINATES ELEVATION 1018' DEPTH 177' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	33'	Standpipe - clay and rock	33												
33'	42'	Clay	9												
42'	46'	Bit. sand, low grade	4	1											
46'	50'	" " " "	4	2	Samples not assayed.										
50'	54'	" " medium grade	4	3											
54'	58'	" " low grade, partly leached	4	4											
58'	59'	Lost core	1												
59'	63'	Bit. sand, low grade	4	5											
63'	67'	" " " "	4	6											
67'	69'	" " " "	2	7											
69'	86'	Clay with 5% low grade sand	17												
86'	90'	Bit. sand, low & medium grades, 20% clay	4	8											
90'	94'	Bit. sand, low grade	4	9											
94'	98'	" " medium grade	4	10											
98'	102'	" " low & medium grades, some clay	4	11											
102'	106'	" " " grade, 5% clay in bands	4	12											
106'	110'	" " " & medium grades, 5% clay	4	13											
110'	114'	" " " grade, 20% clay	4	14											
114'	125'	Clay	11												
125'	127'	Lost core	2												
127'	152'	Clay	25												
152'	154'	Lost core	2												
154'	177'	Clay	23												
	177'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 9

DATE May 2 - 6 1946 LOCATION LS.16,Sec.8,Tp.93-10-4 CO-ORDINATES N.E.8, -29.3; -95.6 ELEVATION 1037' DEPTH 200' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	24	Overburden, clay and rock	24	-											
24	28	Bit. sand, low grade, 20% clay	4	1	6.8)										
28	37	Clay	9	-	)	45½	1.2	14	4	3	15	16	1	37	10
37	41	Bit. sand, low grade, 20% clay	4	2	6.8)										
41	45	" " medium grade, 10% clay	4	3	6.8)										
45	47	" " low grade, 20% clay	2	4	9.5)										
47	56	Clay with 5% low grade sand	9	-	)										
56	60	Bit. sand, medium grade, 25% clay	4	5	9.5)	36	0.2	11	3	1	4	7	36	23	15
60	64	" " low " 15% "	4	6	9.5)										
64	66	Lost core	2	-	)										
66	70	Bit. sand, medium grade, 15% clay	4	7	9.5)										
70	74	" " " " 10% "	4	8	9.3)										
74	76	" " low " 50% "	2	9	9.3)										
76	94	Clay with leached sand bands	18	-	)	23	Tr	12	5	2	3	8	1	40	29
94	98	Bit. sand, low grade, 5% clay	4	10	9.3)										
98	102	" " medium grade, 10% clay	4	11)	13.4	12	Tr	4	3	0	1	1	13	48	30
102	106	" " " " 30% "	4	12)											
106	107	Lost core	1	-											
107	111	Bit. sand, medium grade, 5% clay	4	13)	14.0	8	Tr	2	2	2	2	1	1	60	30
111	115	" " " " 20% "	4	14)											
115	119	" " " " 5% "	4	15)											
119	123	" " " " 25% "	4	16)	13.5	9	0.2	2	2	1	1	1	13	42	38
123	124	Lost core	1	-											
124	128	Bit. sand, medium grade, 15% clay	4	17)	13.2	11½	Tr	5	4	2	1	1	16	54	17
128	132	" " " " 5% "	4	18)											
132	136	" " " " 5% "	4	19)	13.8	2	Tr	4	5	1	4	5	47	25	15
136	137	Lost core	1	-)											
137	141	Bit. sand, medium grade, 5% clay	4	20)											
141	143	Lost core	2	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 9

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
143	146	Bit. sand, low grade, 20% clay	3	21.	8.3)										
146	152	Clay with 10% low grade sand stringers	6	-	)										
152	156	Bit. sand, low grade, 30% clay	4	22	8.3)	40½	Nil	8	4	2	2	3	15	43	23
156	162	Clay with barren sand stringers	6	-	)										
162	164	Bit. sand, low grade, 35% clay	2	23	8.3)										
164	168	Clay	4	-											
168	172	Bit. sand, low grade, 50% clay	4	24)											
172	177	" " " " 40% "	5	25)	9.7	25½	Tr	11	8	1	6	6	29	20	19
177	186	Clay with barren sand stringers	9	-											
186	190	Bit. sand, good grade	4	26)											
190	194	" " " "	4	27)	13.0		Tr	21	38	14	10	4	1	7	5
194	196	" " " "	2	28)											
196	200	Limestone													
	200	End of Hole													

Summary

0' - 56' = 56' Overburden including 14' @ 7% bitumen

56' - 94' = 38' @ 4.9% bitumen & 61% clay bands

94' - 146' = 52' @ 12.7% bitumen & 7% clay bands

146' - 196' = 50' @ 5.3% bitumen & 61% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 10

DATE May 7 - 13 1946 LOCATION LS.1,Sec.19,Tp.93-10-4 CO-ORDINATES N.E.10, +32.1; -103.1 ELEVATION 1036' DEPTH 260' DIP 90° CORE RECOVERY 97.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	86	Overburden - clay and rocks	86	-											
86	90	Bit. sand, low grade, 10% clay	4	1)											
90	94	" " " " 5% "	4	2)	11.1	8¼	0.2	7	3	1	3	8	28	28	22
94	127	Clay with 15% low grade sand	33	-											
127	130	Bit. sand, low grade, 25% clay	3	3	7.3)										
130	145	Clay with 16% low grade sand	15	-	)										
145	148	Bit. sand, medium grade, 10% clay	3	4	7.3)	50¾	0.2	5	6	4	3	5	36	28	13
148	160	Clay with 5% low grade sand	12	-	)										
160	164	Bit. sand, medium grade, some clay	4	5	7.3)										
164	167	" " " " 30% clay	3	6	12.4)										
167	170	Clay	3	-	)	8¼	Tr	5	7	17	8	3	23	22	15
170	174	Bit. sand, medium grade, 30% clay	4	7	12.4)										
174	178	" " " " 5% "	4	8)											
178	182	" " " " 10% "	4	9)	11.4	2½	0.2	12	12	6	9	7	29	13	12
182	186	" " " " 25% "	4	10)											
186	190	" " good " 5% "	4	11)	11.1	21¼	0.2	3	2	3	5	8	49	20	10
190	194	" " " " 15% "	4	12)											
194	198	" " " " 5% "	4	13)	14.6	7½	0.2	2	1	0	3	12	63	13	6
198	202	" " " " 10% "	4	14)											
202	206	" " " " 35% "	4	15)	11.9	18½	0.2	3	2	1	4	16	44	22	8
206	210	" " " " 10% "	4	16)											
210	214	" " " " 5% "	4	17)	13.2	7¾	Tr	2	35	27	17	5	8	3	3
214	218	" " " " 5% "	4	18)											
218	222	" " " " 35% "	4	19)	11.1	18	0.2	17	10	4	35	13	11	5	5
222	226	" " " " 20% "	4	20)											
226	230	" " " " 10% "	4	21)	13.0	12¼	Tr	2	9	45	27	5	7	3	2
230	234	" " " " 50% "	4	22)											
234	236	Lost core	2	-)	8.3	43	Tr	2	16	37	21	5	11	4	4
236	240	Bit. sand, good grade, 30% clay	4	23)											

MILDRED - RUTH LAKES AREA

HOLE No. B 10

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
240	241	Lost core	1	-											
241	245	Bit. sand, good grade, some clay	4	24)											
245	249	" " " " " "	4	25)	12.5	4¾	0.2	8	24	22	23	6	10	3	4
249	253	" " " "	4	26)											
253	255	" " " "	2	27)	12.9		0.2	18	30	17	13	8	7	3	4
255	260	Lime clay													
	260	End of Hole													

Summary

0' - 170' = 170' clay with 21' of low & medium grade bit. sand

170' - 255' = 85' @ 11.8% bitumen & 13.6% clay bands.

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MILDRED - RUTH LAKES AREA

HOLE No. B 11

DATE May 15-22 1946 LOCATION LS.13,Sec.18,Tp.93-10-4 CO-ORDINATES ELEVATION 995' DEPTH 185' DIP 90° CORE RECOVERY 95.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0'	42'	Standpipe - clay and rocks	42												
42'	55'	Sandy clay with leached sand bands	13												
55'	59'	Bit. sand, low grade, 15% clay	4	1											
59'	63'	Bit. sand, low grade	4	2											
63'	67'	" " " "	4	3											
67'	71'	" " " " partly leached	4	4											
71'	75'	" " " " " "	4	5											
75'	79'	" " " " some clay	4	6	Samples not assayed.										
79'	80'	Lost core	1												
80'	84'	Bit. sand, low & medium grades, 10% clay	4	7											
84'	96'	Clay with small low grade sand stringers	12												
96'	100'	Bit. sand, low grade, 10% clay	4	8											
100'	103'	Lost core	3												
103'	107'	Bit. sand, low grade, 5% clay in stringers	4	9											
107'	109'	Lost core	2												
109'	113'	Bit. sand, low grade, some clay	4	10											
113'	130'	Leached sand & clay	27												
130'	165'	Clay with 5% barren sand	35												
165'	185'	Clay	20												
	185'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 12

DATE May 23-25 1946 LOCATION LS.14, Sec.4, Tp.93-10-4 CO-ORDINATES N.E.5 1 .4; + 2684.0 ELEVATION 1032' DEPTH 211' DIP 90° CORE RECOVERY 97.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	-40 %	+60 %	+80 %	+100 %	+130 %	+200 %	-200 %
0	48	Sandy clay and rock	48	-											
48	61	Bit. sand, low grade	13	1,2,3	Not assayed, very low grade.										
61	65	" " " " 10% clay	4	4)											
65	69	" " " " 10% "	4	5)	9.7	3½	Tr	12	3	2	6	6	30	25	16
69	73	" " medium grade, 10% clay	4	6)											
73	77	" " " " 5% "	4	7)	13.0	3½	Tr	3	1	1	6	13	45	21	10
77	81	" " good grade, 5% clay	4	8)											
81	83	Lost core	2	-)	12.8	6¼	Tr	7	6	4	9	12	25	16	21
83	87	Bit. sand, medium grade, 25% clay	4	9)											
87	91	Clay	4	-											
91	95	Bit. sand, low grade, 5% clay	4	10)											
95	99	" " " " 15% "	4	11)	10.1	20½	Tr	13	4	1	2	2	11	33	34
99	104	Clay	5	-											
104	108	Bit. sand, good grade, 20% clay	4	12	12.1	8	Tr)								
108	139	Clay	31	-			)								
139	141	Bit. sand, good grade, 25% clay	2	13	12.1	9	Tr)	3	2	1	5	12	46	21	10
141	146	Clay	5	-			)								
146	150	Bit. sand, medium grade, 5% clay	4	14	12.1	2½	Tr)								
150	178	Sand clay	28	-											
178	182	Bit. sand, good grade, 15% clay	4	15)											
182	186	" " " " 20% "	4	16)	10.2	25¼	Tr	4	21	30	23	10	6	3	3
186	190	" " " " 5% "	4	17)											
190	191	Lost core	1	-)	13.4	1½	Tr	11	30	35	13	2	5	2	2
191	195	Bit. sand, good grade	4	18)											
195	199	" " " " some clay	4	19)											
199	203	" " " "	4	20)	14.5	1	Tr	6	11	12	24	9	19	9	10

MILDRED - RUTH LAKES AREA

HOLE No. B 12

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
203	207	Bit. sand, good grade	4	21)											
207	210'5"	" " " "	3'5"	22)	15.9		Tr	3	19	11	22	24	13	5	3
210'5"	211	Lime clay	0'7"	-											
	211	End of Hole													

Summary

0' - 61' = Overburden
61' - 178' = 117' @ 4.4% Bitumen & 66% clay bands
178' - 210'5" = 32'5" @ 13.4% Bitumen & 7% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 13

DATE May 26 - 28 1946 LOCATION LS.9,Sec.32,Tp.92-10-4 CO-ORDINATES E.1/4 33 +40.6; -14.2 ELEVATION 1047' DEPTH 223' DIP 90° CORE RECOVERY 99.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	26	Sand	26	-											
26	30	Bit. sand, low grade, 5% clay	4	1)											
30	34	" " " " 5% "	4	2)	Not assayed, very low grade.										
34	38	" " " " 5% "	4	3)											
38	42	" " medium grade, 5% clay	4	4)	11.9	5½	0.1	4	2	0	7	15	53	14	6
42	46	" " " " 15% "	4	5)											
46	50	" " good grade	4	6)	13.5	2¼	0.1	2	1	1	8	23	14	46	5
50	54	" " " " , 10% clay	4	7)											
54	58	" " " " 5% "	4	8)											
58	59	Lost core	1	-)	12.3	6½	0.2	2	1	0	7	15	53	17	5
59	63	Bit. sand, good grade, some clay	4	9)											
63	67	" " " " 5% clay	4	10)	13.0	5¾	Tr	3	1	1	9	18	54	11	3
67	71	" " " " 5% "	4	11)											
71	75	" " " " 10% "	4	12)	14.0	4	0.1	1	1	0	12	16	57	10	3
75	79	" " " "	4	13)											
79	83	" " " " some clay	4	14)	15.0	1½	0.1	1	2	1	16	25	41	9	4
83	87	" " " "	4	15)											
87	91	" " " " " "	4	16)	14.9	¾	0.1	1	1	2	24	34	0	34	4
91	95	" " " "	4	17)											
95	99	" " " " 5% clay	4	18)	14.3	3	Tr	1	1	2	33	26	30	4	3
99	103	" " " " slight clay	4	19)											
103	107	" " " "	4	20)	14.9	3	Tr	1	1	3	34	19	34	6	2
107	111	" " " " 5% clay	4	21)											
111	115	" " " "	4	22)	15.6		Tr	1	1	2	37	19	32	5	3
115	119	" " " "	4	23)											
119	123	" " " "	4	24)	16.0		Tr	1	0	3	45	29	1	18	3
123	127	" " " "	4	25)											
127	131	" " " "	4	26)	16.3		Nil	1	1	3	50	20	20	3	2
131	135	" " " "	4	27)											

MILDRED - RUTH LAKES AREA

HOLE No. B 13

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
135	139	Bit. sand, good grade	4	28)	17.4		Tr	1	1	3	46	24	11	11	3
139	143	" " " "	4	29)											
143	147	" " " "	4	30)	16.5		Tr	0	1	4	54	16	19	4	3
147	151	" " " "	4	31)											
151	155	" " " "	4	32)	17.4		Nil	1	1	12	56	15	0	12	3
155	159	" " " "	4	33)											
159	163	" " " " 5% clay	4	34)	17.5	8¼	Tr	2	15	20	35	9	13	3	3
163	167	" " " " 10% "	4	35)											
167	169'6"	" " " " 25% "	2'6"	36	14.8	6¼	Nil)								
169'6"	179	Sandy clay	9'6"	-			)	4	14	14	22	13	21	9	4
179	183	Bit. sand, good grade	4	37	14.8		Nil)								
183	187	" " " "	4	38)	12.5	½	Tr	13	34	4	10	10	22	4	3
187	191	" " " "	4	39)											
191	195	" " " "	4	40)	14.0		Nil	8	26	8	13	15	12	13	5
195	199	" " " "	4	41)											
199	203	" " " "	4	42)	15.8	¾	Nil	6	7	2	28	20	27	6	4
203	207	" " " " slight clay	4	43)											
207	211	" " " "	4	44)	16.5	5	Nil	2	4	2	21	27	33	7	4
211	215	" " " " 10% clay	4	45)											
215	218	" " " "	3	46)											
218	221	Lime clay	3	-											
221	223	Limestone	2	-											
	223	End of Hole													

Summary

0' - 38' = 38' Overburden
38' - 218' = 180' @ 14.2% bitumen & 6.7% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 14

DATE May 30, June 2, 1946 LOCATION LS.15,Sec.33,Tp.92-10-4 CO-ORDINATES N.1/4 32 0.0; +35.0 ELEVATION 1036' DEPTH 239' DIP 90° CORE RECOVERY 96.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	55	Clay	55	-											
55	59	Bit. sand, low grade	4	1)											
59	63	" " " " slight clay	4	2)	6.5	29	Tr	12	10	22	9	7	29	7	4
63	67	" " " "	4	3)											
67	72	Sandy clay	5	-											
72	76	Bit. sand, low grade	4	4)											
76	80	" " " "	4	5)	1.7	9½	0.2	29	8	7	9	7	4	30	6
80	83	" " " "	3	6)											
83	100	Sandy clay	17	-											
100	104	Bit. sand, medium grade	4	7)											
104	108	" " good " 15% clay	4	8)	10.6	9½	Nil	9	3	2	13	10	27	19	17
108	112	" " " " 20% "	4	9)											
112	116	" " low " 20% "	4	10)	8.4	13¼	0.1	21	4	4	20	9	17	12	13
116	120	" " " " 10% "	4	11)											
120	124	" " " " 30% "	4	12)	8.6	18½	0.04	17	4	3	7	5	13	27	24
124	128	" " medium "	4	13)											
128	131	" " " " 10% "	3	14)	9.9	3½	0.1	15	5	2	4	3	15	31	26
131	133	Sandy clay	2	-											
133	135	Bit. sand, medium grade, 10% clay	2	15	10.2	6	Tr)								
135	155	Sandy clay	20	-			)	10	4	2	9	15	12	28	20
155	159	Bit. sand, medium grade, 5% clay	4	16	10.2	8¼	Tr)								
159	163	" " " " 20% "	4	17)											
163	167	" " " " 5% "	4	18)	10.6	16½	0.1	8	5	2	6	9	32	23	15
167	169	" " " " 50% "	2	19	9.4	7¼	0.2)								
169	182	Sandy clay	13	-			)	15	7	3	6	9	10	35	15
182	186	Bit. sand, medium grade	4	20	9.4		0.2)								
186	190	" " good " 5% clay	4	21)											
190	194	" " " " 5% "	4	22)	14.1	5¾	Tr	6	1	1	18	22	39	8	5

MILDRED - RUTH LAKES AREA

HOLE No. B 14

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
194	198	Bit. sand, good grade, 20% clay	4	23)											
198	200	Lost core	2	-)	11.6	21½	Tr	6	2	1	18	22	0	45	6
200	204	Bit. sand, good grade, some clay	4	24)											
204	215	Sand clay	11	-											
215	219	Bit. sand, good grade	4	25)											
219	223	" " " "	4	26)	16.9		Nil	3	2	3	14	23	36	13	6
223	227	" " " "	4	27)											
227	230	" " " "	3	28)	13.8		Tr	2	22	17	23	13	16	4	3
230	232	Coarse sand	2	-											
232	237	Lost core	5	-											
237	239	Coarse sand	2	-											
	239	End of Hole													

Summary

0' - 100' = 100' Overburden
100' - 182' = 82' @ 5.8% bitumen & 50% clay bands
182' - 230' = 48' @ 10.4% bitumen & 28% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 15

DATE June 7 - 11 1946 LOCATION LS.9,Sec.28,Tp.92-10-4 CO-ORDINATES E.1/4 28, +231.9; +39.0 ELEVATION 1057' DEPTH 245' DIP 90° CORE RECOVERY 96.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	40	Standpipe - sand and clay	40												
40	48	Clay with 5% low grade sand	8												
48	52	Bit. sand, low grade, 10% clay	4	1)	8.7	8¼	0.1	10	4	1	4	18	26	29	9
52	56	" " low & medium grade, 5% clay	4	2)											
56	60	" " medium grade, 5% clay	4	3)	12.8	⅛	0.5	4	1	0	3	11	60	14	7
60	64	" " " " some clay	4	4)											
64	68	" " " " 5% clay	4	5)	12.7	7½	0.1	1	1	1	0	18	5	65	9
68	74	" " " " 20% "	4	6)											
74	76	" " " " some clay	4	7)	13.1	7¼	0.1	1	1	0	2	6	61	21	8
76	80	" " medium & good grade, 5% clay	4	8)											
80	84	" " " " " 5% "	4	9)	13.7	5¼	Tr	0	1	0	2	7	54	26	10
84	88	" " good grade, 5% clay	4	10)											
88	92	" " " " 25% clay	4	11)	12.3	16	0.1	2	1	1	1	5	54	26	10
92	96	" " " " 5% "	4	12)											
96	100	" " " " 5% "	4	13)	13.5	8½	0.1	2	1	1	1	4	55	24	12
100	104	" " " " 10% "	4	14)											
104	105	Lost core	1	-											
105	109	Bit. sand, good grade, 50% clay	4	15)											
109	113	" " medium grade, 50% clay	4	16)	9.0	55	Nil	2	2	1	1	1	44	26	23
113	117	" " " " 30% "	4	17)											
117	119	Lost core	2												
119	123	Bit. sand, medium grade, 20% clay	4	18)	9.6	26½	Nil	8	5	1	1	1	17	29	38
123	127	" " " " 40% "	4	19)											
127	131	" " " " 25% "	4	20)	10.6	26	Nil	4	5	1	2	5	31	27	27
131	133	" " " " 30% "	4	21)											
133	139	" " " " 10% "	4	22)											
139	141	" " good " 20% "	2	23)	10.4	37¾	Nil	4	5	0	8	14	45	15	9
141	145	Lost core	4	-)											
145	149	Bit. sand, good grade, 40% clay	4	24)											

MILDRED - RUTH LAKES AREA

HOLE No. B 15

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
149	153	Bit. sand, good grade, some clay	4	25)	14.2	8½	Nil	1	2	0	23	22	39	7	6
153	157	" " " " 25% clay	4	26)											
157	161	" " " " 5% "	4	27)	16.2	7½	Nil	2	2	2	35	22	29	4	4
161	165	" " " " 15% "	4	28)											
165	170	" " " " 20% "	5	29	12.7	10	Nil	10	18	9	24	12	17	4	6
170	174	Bitumen concentration	4	30)	77.8		14.2								
174	178	" "	4	31)											
178	182	" "	4	32)	83.2		15.9								
182	186	" "	5	33)											
186	191	" "	4	34	66.8		18.4								
191	195	Bit. sand, good grade, some clay	4	35)	14.4		Nil	13	24	15	22	7	9	3	7
195	197	" " " "	2	36)											
197	201	Bitumen concentration	4	37)	77.8		18.7								
201	205	" "	4	38)											
205	209	" "	4	39)	64.3		18.5								
209	211	" "	2	40)											
211	214	Bit. sand, good grade, some clay	3	41	14.5	2	Nil	7	19	9	22	9	20	7	7
214	218	Bitumen concentration	4	42)											
218	222	" "	4	43)	77.5		15.4								
222	224	" "	2	44)											
224	226	Bit. sand, good grade	2	45	16.3		Nil	3	10	6	22	14	28	10	7
226	230	Bitumen concentration	4	46	47.2		16.7								
230	232	Bit. sand, good grade, 50%	2	47	11.6	8	Tr	8	9	5	24	18	24	5	7
232	236	Bitumen concentration	4	48)	74.5	1	19.8								
236	240	" "	4	49)											
240	241	Clay	1												
241	244	Bit. sand, good grade	3	50	16.3	1	Nil	2	3	2	6	10	55	14	8
244	245	Lime clay													
	245	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 15

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 48' = 48' Overburden 48' - 170' = 122' @ 11.85% bitumen & 15.2% clay bands 170' - 244' = 74' @ 60.01% bitumen & 1.2% clay bands 48' - 244' = 196' @30.3% bitumen **Average Assay if Bitumen Concentration is Taken as 18%** 170' - 244' = 74' @ 17.04% & 1.2% clay bands 48' - 244' = 196' @ 13.81% & 10% clay bands												

667

MILDRED - RUTH LAKES AREA

HOLE No. B 16

DATE June 11 - 15 1946 LOCATION LS.16,Sec.28,Tp.92-10-4 CO-ORDINATES N.E.28, +20.0; 0.0 ELEVATION 1062' DEPTH 221' DIP 90° CORE RECOVERY 94.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	43	Sand and clay	43	-											
43	73	Bit. sand, low grade, 5-50% clay	30	1-6	1.8	21 9/4	0.2	26	5	2	3	7	30	9	18
73	75	Lost core	2	-											
75	79	Bit. sand, low grade, 15% clay	4	7)	5.8	23¼	0.2	25	5	2	3	8	26	8	23
79	83	" " " " 10% "	4	8)											
83	84	Lost core	1	-											
84	88	Bit. sand, medium grade, 10% clay	4	9)											
88	92	" " " " 15% "	4	10)	9.9	10½	0.1	18	3	1	6	12	31	10	19
92	96	" " good " 10% "	4	11)											
96	100	" " " " 10% "	4	12)	10.9	18¼	Tr	4	1	1	6	28	47	9	4
100	104	" " " " 40% "	4	13	11.0	22¾	Tr)								
104	107	Clay	3	-			)	2	1	1	5	23	47	14	7
107	111	Bit. sand, good grade	4	14	11.0		Tr)								
111	115	" " " " 25% clay	4	15)											
115	119	" " " "	4	16)	12.5	14¼	Tr	2	1	1	12	21	42	14	7
119	123	" " " " 25% "	4	17)											
123	127	" " " " 25% "	4	18)	10.4	21¼	Tr	9	3	1	6	14	38	17	12
127	131	" " " " 5% "	4	19)											
131	135	" " " "	4	20)	15.1	3	Tr	1	0	0	8	16	59	11	5
135	139	" " " " 20% "	4	21)											
139	143	" " " " 5% "	4	22)	13.4	16	Tr	2	1	1	9	30	42	9	6
143	147	" " " " 5% "	4	23)											
147	151	" " " " 50% "	4	24)	11.7	30¼	Tr	1	1	1	25	28	37	4	3
151	156	Clay with 10% leached sand	5	-											
156	160	Bit. sand, good grade	4	25)											
160	164	" " " " 30% clay	4	26)	11.8	33	Tr	3	1	1	15	32	38	7	3
164	168	" " " " 25% "	4	27)											

500

MILDRED - RUTH LAKES AREA

HOLE No. B 16

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
168	172	Bit. sand, good grade, 20% clay	4	28)											
172	176	" " " " 10% "	4	29)	9.9	47¼	Tr	6	1	1	33	25	28	3	3
176	180	" " " " 35% "	4	30)											
180	184	" " " " 15% "	4	31)											
184	186	" " " " 10% "	2	32)	12.4	14¾	Nil)								
186	198	Clay	12	-			)	4	18	22	19	7	12	3	5
198	202	Bit. sand, good grade	4	33	12.4		Nil)								
202	204	Lost core	2	-											
204	208	Bit. sand, good grade	4	34)											
208	212	" " " "	4	35)	14.6		Nil	10	14	22	31	9	8	3	3
212	216	" " " "	4	36)											
216	220	" " " "	4	37)											
220	221	Limestone	1	-											
	221	End of Hole													

Summary

0' - 75' = 75' Overburden
75' - 84' = 9' low grade bit. sand
84' - 220' = 136' @ 10.5% bitumen & 25% clay bands

MILDRED - RUTH LAKES AREA

HOLE No. B 17

DATE June 16-21 1946 LOCATION LS.3,Sec.34,Tp.92-10-7 CO-ORDINATES N.E.28, +5.2; +2674.0 ELEVATION 1037' DEPTH 257' DIP 90° CORE RECOVERY 91.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	32	Clay and sands	32	-											
32	36	Bit. sand, medium grade, 15% clay	4	1)											
36	38	Lost core	2	-)	11.8	4	Tr	6	3	1	8	18	40	18	6
38	42	Bit. sand, medium grade	4	2)											
42	44	Lost core	2	-											
44	48	Bit. sand, medium grade	4	3)											
48	52	" " " "	4	4)	12.6		Tr	6	2	1	7	16	52	11	5
52	56	" " " " 5% clay	4	5)											
56	60	" " " " some clay	4	6)	11.8	2	Tr	5	2	1	12	15	12	45	7
60	64	" " " " " "	4	7)											
64	68	" " " "	4	8)	13.8	1	Nil	1	2	0	5	13	64	11	4
68	72	" " " "	4	9)											
72	73	Lost core	1	-)	14.4		0.1	1	1	1	7	23	23	40	4
73	77	Bit. sand, good grade	4	10)											
77	81	" " " "	4	11)											
81	85	" " " " some clay	4	12)	14.7	¾	Nil	1	1	0	7	17	58	12	4
85	89	" " " " 10% clay	4	13)											
89	93	" " " " 20% "	4	14)	13.0	12¾	Nil	1	1	1	3	19	5	62	8
93	97	" " " " some clay	4	15)											
97	101	" " " " 15% clay	4	16)	13.5	7¼	Nil	1	1	0	13	20	50	12	3
101	106	Clay	5	-											
106	110	Bit. sand, good grade, 25% clay	4	17)											
110	114	" " " "	4	18)	13.1	10½	Tr	3	4	2	8	16	0	58	9
114	116	Lost core	2	-											
116	120	Bit. sand, good grade, 25% clay	4	19)											
120	121	Lost core	1	-)	11.4	26½	Nil	1	2	1	20	21	43	8	4
121	125	Bit. sand, good grade, 20% clay	4	20)											

MILDRED - RUTH LAKES AREA

HOLE No. B 17

DATE ..... 194 .. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
125	129	Bit. sand, good grade	4	21)											
129	133	" " " " some clay	4	22)	15.6	1¼	Nil	1	1	1	34	25	17	16	4
133	135	Lost core	2	-											
135	139	Bit. sand, good grade	4	23	15.1		Tr	1	1	1	24	21	40	6	6
139	143	" " " " 5% clay	4	24)											
143	144	Lost core	1	-)	15.3	9	Nil	1	1	12	48	12	7	17	2
144	149	Bit. sand, good grade, 20% clay	5	25)											
149	154	Bitumen concentration	5	26	53.5		21.9								
154	158	Bit. sand, good grade	4	27)											
158	169	Lost core	11	-)	17.5		Tr	2	28	22	32	5	7	2	2
169	170	Bit sand, good grade	1	28)											
170	174	Bitumen concentration	4	29)											
174	176	" "	2	30)	56.8		20.3								
176	180	Bit. sand, good grade, 20% clay	4	31	11.3	9½	Tr	4	31	23	20	7	1	10	4
180	183	Bitumen concentration	3	32	69.3		21.3								
183	185	Bit. sand, good grade, 30% clay	2	33	12.3	5¼	Nil	3	21	8	30	12	17	5	4
185	188	Bitumen concentration	3	34	66.6		22.8								
188	192	Bit. sand, good grade, 15% clay	4	35)											
192	194	" " " " 50% "	2	36)	12.6	15½	Nil	12	29	8	12	7	19	9	4
194	198	Bitumen concentration	4	37	68.1		21.5								
198	200	Bit. sand, good grade, 5% clay	2	38	14.1	¾	Nil	7	22	5	18	10	26	7	5
200	205	Bitumen concentration	5	39	63.7		23.6								
205	207	Bit. sand, good grade, 10% clay	2	40	13.9	¾	Nil	11	25	8	19	11	3	17	6
207	211	Bitumen concentration	4	41)											
211	215	" "	4	42)	76.3		22.3								
215	217	" "	2	43)											
217	221	Bit. sand, good grade	4	44)											
221	225	" " " "	4	45)	14.9		Nil	4	8	14	31	18	0	20	6

MILDRED - RUTH LAKES AREA

HOLE No. B 17

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
225	229	Bit. sand, good grade	4	46	14.6		Nil	6	15	8	35	12	17	3	4
229	233	Bitumen concentration	4	47)											
233	237	" "	4	48)	75.4		21.6								
237	241	" "	4	49)											
241	245	Bit. sand, good grade	4	50)											
245	249	" " " "	4	51)	14.3		Nil	5	11	6	21	15	29	6	7
249	253	" " " "	4	52)											
253	256	" " " "	3	53)	14.2		Nil	4	37	22	17	5	7	4	4
256	257	Lime clay & limestone	1	-											
	257	End of Hole													

Summary

0' - 32' = 35' Overburden, clay & sand
32' - 149' = 117' @ 12.86% bitumen & 9.8% clay bands
149' - 241' = 92' @ 42.74% bitumen & 2.9% clay bands
241' - 256' = 15' @ 14.25% bitumen & nil clay bands
32' - 256' = 224' @ 25.2% bitumen & 6.2% clay bands

* Average assay if bitumen concentration is taken as 18%

149' - 241' = 92' @ 16.5% bitumen & 2.9% clay bands
32' - 256' = 224' @ 14.41% bitumen & 6.2% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 18

DATE June 21 - 27 1946 LOCATION LS.15,Sec.28,Tp.92-10-4 CO-ORDINATES N.E.28, -5.5; -2577.0 ELEVATION 1054' DEPTH 236' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	46	Overburden - clay, rock and sand	46	-											
46	50	Bit. sand, medium grade	4	1)											
50	51	Lost core	1	-)	10.8	-	0.1	15	4	2	3	11	44	12	9
51	55	Bit. sand, medium grade	4	2)											
55	59	" " low grade - much clay	4	3)											
59	63	" " " " " "	4	4)											
63	67	" " " " " "	4	5)	4.1	115¾	0.1	14	4	2	5	8	33	11	23
67	71	" " " " " "	4	6)											
71	72	Lost core	1	-											
72	76	Bit. sand, medium grade	4	7)											
76	80	" " " "	4	8)	11.5		0.2	11	2	1	3	5	39	17	22
80	84	" " " " 15% clay	4	9)											
84	88	" " low " 5% "	4	10)	9.2	7½	0.2	21	5	1	4	7	24	11	27
88	92	" " " " 10% "	4	11)											
92	94	Lost core	2	-)	8.9	10¼	0.1	18	4	2	10	17	24	7	18
94	98	Bit. sand, medium grade, 5% clay	4	12)											
98	102	" " " " 10% "	4	13)											
102	106	" " " " some clay	4	14)	9.7	8	0.1	20	4	1	6	17	33	7	12
106	110	" " " " 20% clay	4	15)											
110	114	" " low " 35% "	4	16)	5.7	40¼	0.1	26	6	2	4	1	27	8	26
114	128	Sandy clay	14	-											
128	132	Bit. sand, low grade, 50% clay	4	17)											
132	135	" " " " 5% "	3	18)	7.1	27½	0.1	16	5	2	1	3	21	28	24
135	139	Clay	4	-											
139	143	Bit. sand, medium grade, 20% clay	4	19)											
143	147	" " " " 20% "	4	20)	8.2	37	0.1	7	3	2	1	3	30	36	28
147	150	" " " " 50% "	3	21	8.2	25½									
150	155	Clay	5	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 18

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
155	159	Bit. sand, medium grade, 10% clay	4	22	8.2	6	0.4	9	4	1	2	4	31	24	25
159	163	" " good " 10% "	4	23	11.7	6									
163	165	Clay	2	-				12	3	1	1	6	37	25	15
165	169	Bit. sand, medium grade, 10% clay	4	24	11.7	9¼	0.1								
169	181	Sandy clay	12	-											
181	185	Bit. sand, good grade, 30% clay	4	25	12.0	16¾									
185	187	Lost core	2	-			0.1	5	2	1	2	9	57	18	6
187	191	Bit. sand, good grade, slight clay	4	26	12.0	2¾									
191	195	" " " " " "	4	27)											
195	199	" " " " " "	4	28)	15.3	1¼	.04	4	2	5	13	23	39	9	15
199	203	" " " " some clay	4	29)											
203	207	" " " " 20% clay	4	30)	14.0	11¾	Tr	3	8	25	20	9	24	7	4
207	209	" " " "	2	31	16.4		Tr	3	8	25	20	9	24	7	7
209	213	Bitumen concentration	4	32	77.9		23.9								
213	215	Bit. sand, good grade	2	33	16.4		Tr	3	8	25	20	9	24	4	4
215	219	Bitumen concentration	4	34	79.4		18.1								
219	223	" "	4	35	59.6		23.6								
223	227	Bit. sand, good grade	4	36)											
227	229	" " " "	2	37)	15.4		Nil	2	4	5	25	21	29	8	6
229	236	Lime clay with fragments of limestone													
	236	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 18

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 46' = 46' Overburden 46' - 72' = 26' at 6.4% bitumen & 37% clay bands 72' - 181' = 109' @ 5.9% bitumen & 47% clay bands 181' - 229' = 48' @ 28.7% bitumen & 5.5% clay bands 72' - 229' = 157' @ 13.5% bitumen & 36% clay bands **Average Assay if Bitumen Concentrations are Taken as 18%** 181' - 229' = 48' @ 15.2% bitumen & 5.5% clay bands 72' - 229' = 157' @ 8.7% bitumen & 36% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 19

DATE June 28, July 7, 1946 LOCATION LS.6, Sec. 34, Tp. 92-10-4 CO-ORDINATES E.1/4 33, -2.1 + 2649.0 ELEVATION 1030' DEPTH 179' DIP 90° CORE RECOVERY 92.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	68	Sand	68	-											
68	72	Bit. sand, medium grade, some clay	4	1)											
72	74	Lost core	2	-)	8.7	17	0.1	16	3	2	6	15	36	11	11
74	78	Bit. sand, medium grade, 5% clay	4	2)											
78	82	" " good " " some clay	4	3)											
82	86	" " " " " "	4	4)	13.5	3¾	Nil	3	1	1	17	22	43	8	5
86	90	" " " " 5% clay	4	5)											
90	94	" " " " some clay	4	6)	14.5	3¾	Nil	3	1	1	16	28	38	7	6
94	98	" " " "	4	7)											
98	102	" " " " some clay	4	8)	14.6	¾	0.1	2	1	1	23	22	39	7	5
102	106	" " " " " "	4	9)											
106	110	" " " "	4	10)	14.4	4	Tr	1	1	1	27	23	37	6	4
110	114	" " " "	4	11)											
114	118	" " " "	4	12)	15.7		0.1	1	1	2	26	20	41	6	3
118	122	" " " " some clay	4	13)											
122	126	" " " " 10% clay	4	14)	14.9	5½	Tr	2	1	5	53	20	10	4	4
126	130	" " " "	4	15)											
130	134	" " " " some clay	4	16)	15.6	1½	0.1	1	0	8	52	19	13	4	3
134	136	Lost core	2	-											
136	140	Bit. sand, good grade, 5% clay	4	17)											
140	144	" " " "	4	18)	15.3	3	0.1	2	1	22	56	7	7	2	3
144	148	" " " " 15% "	4	19)											
148	152	" " " "	4	20)	14.6	8	0.1	1	1	46	35	6	6	2	3
152	156	" " " "	4	21)											
156	158	Lost core	2	-)	11.6	13	0.2	8	24	23	20	6	9	4	6
158	160	Bit. sand, good grade, some clay	2	22)											
160	162	Clay and sand	2	-											
162	166	Bit. sand, good grade, 40% clay	4	23)											
166	170	" " " " 15% "	44	24)	11.2	19½	0.1	6	14	43	23	3	6	2	3

MILDRED - RUTH LAKES AREA

HOLE No. B 19

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
170	174	Bit. sand, good grade, 30% clay	4	25)											
174	176	Lost core	2	-)	7.9	12½	0.2	8	18	38	10	2	8	6	10
176	178	Bit. sand, good grade, some clay	2	26)											
178	179	Clay and limestone	1	-											
	179'	End of Hole													

Summary

0' - 68' = 68' Overburden
68' - 178' = 110' @ 13.% bitumen & 8.8% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 20

DATE July 8 - 13 1946 LOCATION LS.10, Sec.33, Tp.92-10-4 CO-ORDINATES E 1/4 33, + 7.6; -2638.0 ELEVATION 1044' DEPTH 227' DIP 90° CORE RECOVERY 96.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	44	Clay and rocks	44	-											
44	48	Bit. sand, low grade	4	1)											
48	49	Lost core	1	-)	Very low grade, not assayed.										
49	53	Bit. sand, low grade	4	2)											
53	59	Clay with 5% low grade sand	6	-											
59	63	Bit. sand, medium grade, 5% clay	4	3)											
63	67	" " " " 35% "	4	4)	8.1	38	0.2	5	2	1	1	2	35	34	20
67	71	" " " " 20% "	4	5)											
71	75	" " " " 45% "	4	6	7.0	38¼	0.2	10	3	1	1	2	25	32	26
75	76	Lost core	1	-											
76	80	Bit. sand, medium grade, 30% clay	4	7)											
80	84	" " " " 20% "	4	8)	8.4	33¼	0.1	3	2	1	0	2	37	34	21
84	85	Lost core	1	-											
85	89	Bit. sand, good grade	4	9)											
89	93	" " " " 20% clay	4	10)	13.2	7	0.1	3	2	1	1	4	43	31	15
93	97	" " " " 15% "	4	11)											
97	101	" " " " 35% "	4	12)	10.5	21½	0.1	3	4	2	1	4	43	31	12
101	105	" " " " 15% "	4	13)											
105	106	Lost core	1	-)	11.6	13¾	0.1	2	2	1	1	4	45	25	20
106	108	Bit. sand, good grade, 30% clay	2	14)											
108	111	Clay	3	-											
111	115	Bit. sand, good grade, 15% clay	4	15)											
115	119	" " " " 15% "	4	16)	12.8	11¾	0.1	0	0	0	2	6	48	32	12
119	123	" " " " 15% "	4	17)											
123	127	" " " " 25% "	4	18)	10.2	30	Tr	3	1	1	1	4	47	29	14
127	131	" " " " 50% "	4	19)											
131	135	" " " " 15% "	4	20)	10.2	31	Tr	1	1	1	8	15	46	16	12

MILDRED - RUTH LAKES AREA

HOLE No. B 20

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
135	136	Lost core	1	-											
136	140	Bit. sand, good grade	4	21)											
140	144	" " " "	4	22)	15.2		Nil	0	0	0	17	25	43	9	6
144	148	" " " "	4	23)											
148	152	" " " "	4	24)	15.9		Nil	0	0	1	25	26	42	4	2
152	156	" " " " 10% clay	4	25)											
156	160	" " " "	4	26)	14.2	10¾	Nil	2	1	1	28	26	35	5	2
160	164	" " " "	4	27)											
164	168	" " " " 10% "	4	28)	14.4	14¾	Tr	2	1	1	21	24	42	6	3
168	172	" " " " 40% "	4	29)											
172	173	Lost core	1	-)	11.1	33½	Nil	2	1	1	33	26	31	4	2
173	177	Bit. sand, good grade, 30% clay	4	30)											
177	185	Clay	8	-											
185	188	Bitumen concentration	3	31	79.6		14.0	-	29	24	15	6	6	9	9
188	192	Bit. sand, good grade	4	32)											
192	196	" " " " 5% clay	4	33)	16.4	11¾	Nil	2	-	3	40	24	27	2	2
196	198	" " " " 20% "	2	34)											
198	201	Bitumen concentration	3	35	75.7		16.9	-	30	21	20	7	7	8	7
201	205	Bit. sand, good grade, 5% clay	4	36)											
205	208	" " " " 35% "	3	37)	14.4	10½	Nil	1	8	24	41	12	10	2	2
208	222	Basal clay	14	-											
222	227	Limestone	5	-											
	227'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 20

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 59' = 59' Overburden & low grade sand 59' - 85' = 26' @ 7.8% bitumen & 35% clay bands 85' - 208' = 123' @ 15.1% bitumen & 22% clay bands 59' - 208' = 149' @ 13.8% bitumen & 24.5% clay bands **Average Assay if Bitumen Concentrations are Taken as 18%** 85' - 208' = 123' @ 12.2% bitumen & 22% clay bands 59' - 208' = 149' @ 11.4% bitumen & 24.5% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 21

DATE July 17-19 1946 LOCATION LS.16,Sec.33,Tp.92-10-4 CO-ORDINATES N.E.33, 0.0; -46.0 ELEVATION 1004' DEPTH 175' DIP 90° CORE RECOVERY 97.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	30	Overburden, sand and rocks	30	-											
30	34	Bit. sand, medium grade, 10% clay	4	1)											
34	35	Lost core	1	-)	12.7	12½	Tr	2	1	3	3	3	39	33	16
35	39	Bit. sand, medium grade, 5% clay	4	2)											
39	43	" " " " 20% "	4	3)											
43	47	" " low " 30% "	4	4)	9.1	28½	Tr	6	3	1	1	2	28	34	25
47	51	" " medium " 15% "	4	5)											
51	55	" " " " 10% "	4	6)	11.7	11½	0.1	4	4	2	1	1	24	39	25
55	59	" " " " 10% "	4	7)											
59	63	" " " " 30% "	4	8)	9.7	29¾	Nil	4	2	1	0	1	16	42	34
63	65	Lost core	2	-											
65	69	Bit. sand, medium grade, 20% clay	4	9)											
69	73	" " " " 20% "	4	10)	10.2	28¼	Nil	2	1	1	1	4	31	26	24
73	74	Lost core	1	-											
74	78	Bit. sand, medium grade, 5% clay	4	11	13.8	5¾	0.1)								
78	89	Clay	11	-			)	4	2	1	2	7	43	24	17
89	93	Bit. sand, good grade	4	12	13.8		0.1)								
93	97	" " medium grade, 15% clay	4	13)											
97	101	" " " " 15% "	4	14)	8.3	37¾	Tr	9	2	3	14	22	36	8	6
101	105	" " " " 10% "	4	15)											
105	109	" " good " 15% "	4	16)	13.2	12	Tr	3	1	1	35	23	30	4	3
109	113	" " " " 30% "	4	17)											
113	117	" " medium " 30% "	4	18)	8.9	36¾	Nil	4	1	2	31	23	31	4	4
117	121	" " good "	4	19)											
121	125	" " " " 25% "	4	20)	13.6	9¼	Nil	2	1	7	49	17	18	3	3
125	129	" " " " 15% "	4	21)											
129	133	" " " " 30% "	4	22)	11.3	21	Nil	6	1	3	32	20	29	5	4

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MILDRED - RUTH LAKES AREA

HOLE No. B 21

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
133	137	Bit. sand, good grade, 15% clay	4	23)											
137	141	" " " " 10% "	4	24)	11.0	11	Tr	5	2	5	28	24	24	6	6
141	145	" " medium grade, some clay	4	25)											
145	149	" " " " 5% clay	4	26)	10.5	1	Nil	4	2	2	14	17	41	12	8
149	153	" " good " 5% "	4	27)											
153	157	" " " " some clay	4	28)	12.6	3¼	Nil	2	2	4	13	28	33	9	9
157	161	" " " "	4	29)											
161	165	" " " " 5% clay	4	30)	12.9	11½	Nil	2	2	6	35	17	28	6	4
165	169	" " " " 35% "	4	31)											
169	171'6"	" " " " 25% "	2'6"	32)	7.5	27¾	Nil	8	11	23	31	4	12	4	7
171'6"	175	Limestone	3'6"												
	175	End of Hole													

Summary

0' - 30' = 30' Overburden
30' - 89' = 59' @ 8.9% bitumen & 34% clay bands
89' - 165' = 76' @ 11.5% bitumen & 15.7% clay bands
30' - 165' = 135' @ 10.36% bitumen & 24% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 22

DATE July 20 - 25 1946 LOCATION LS.13,Sec.33,Tp.92-10-4 CO-ORDINATES N.E.32, 0.0; +82.0 ELEVATION 1037' DEPTH 223' DIP 90° CORE RECOVERY 86.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	48	Overburden, clay, sand and rocks	48	-											
48	52	Bit. sand, medium grade	4	1)											
52	56	" " " "	4	2)	13.0		0.1	14	3	2	3	12	21	39	6
56	60	" " low " some clay	4	3)											
60	64	" " " " " "	4	4)											
64	68	" " " " 5% clay	4	5)	3.3	9¼	0.1	28	7	4	6	8	21	18	8
68	70	Lost core	2	-)											
70	74	Bit. sand, low grade, 5% clay	4	6)											
74	78	" " " " some clay	4	7)											
78	82	" " " " 10% clay	4	8)	5.4	5¾	0.1	18	9	5	15	12	24	8	9
82	83	Lost core	1	-											
83	87	Bit. sand, low grade, 5% clay	4	9)											
87	88	Lost core	1	-)											
88	92	Bit. sand, low grade, 10% clay	4	10)	1.7	12⅝	Nil	8	3	3	5	10	11	53	7
92	94	" " " " some clay	2	11)											
94	112	Shale	18	12)											
112	116	Bit. sand, medium grade, 10% clay	4	13)											
116	120	" " good "	4	14)											
120	124	" " " "	4	15)	13.3		Nil	1	3	5	4	10	65	12	3
124	128	" " " "	4	16)											
128	132	" " " "	4	17)	14.2		Nil	2	1	1	4	16	57	16	3
132	136	Bit. sand, good grade	4	18)											
136	140	" " " "	4	19)	14.7		Nil	1	1	0	4	15	61	12	6
140	144	" " " "	4	20)											
144	148	" " " " 10% clay	4	21)	14.4	6	Nil	2	1	1	7	15	39	27	8
148	152	" " " " 10% "	4	22	11.3	4¾)									
152	157	Lost core	5	-		)	Nil	3	4	3	17	20	33	11	9
157	161	Bit. sand, medium grade, 30% clay	4	23	11.3	18)									

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MILDRED - RUTH LAKES AREA

HOLE No. B 22

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
161	165	Clay with 15% low grade sand	4	-											
165	166	Lost core	1	-											
166	169	Clay with 15% low grade sand	3	-											
169	171	Lost core	2	-											
171	175	Bit. sand, good grade, some clay	4	24	14.3	1¾	Nil	1	1	1	23	33	28	7	6
175	177	Lost core	2	-											
177	181	Bit. sand, good grade, 10% clay	4	25	14.3	3½									
181	185	" " " "	4	26)											
185	189	" " " "	4	27)	14.9		Nil	2	2	6	38	14	9	23	6
189	193	" " " "	4	28)											
193	197	" " " "	4	29)	13.9		Nil	2	8	24	22	13	15	9	7
197	201	" " " "	4	30)											
201	205	" " " "	4	31)	15.7		Nil	1	1	3	29	20	34	8	5
205	209	" " " "	4	32)											
209	213	" " " " 15% clay	4	33)	13.9	2¼	Nil	1	10	8	21	12	30	10	8
213	220	Lost core, presumably clay	7	-											
220	223	Limestone	3	-											
	223	End of Hole													

Summary

(0' - 48' = 48' clay)
(48' - 116' = 68' low grade sand, 3.6% bitumen) overburden
116' - 161' = 45' @ 13.3% bitumen & 5.3% clay bands
161' - 171' = 10' clay
171' - 213' = 42' @ 14.5% bitumen 1.5% clay bands
116' - 213' = 97' @ 12.47% bitumen & 13.4% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 23

DATE Aug. 2 - 4 1946 LOCATION LS.16, Sec.27, Tp.92-10-4 CO-ORDINATES N.E.27, 0.0; +20.0 ELEVATION 1005' DEPTH 125' DIP 90° CORE RECOVERY 83.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	21	Sand	21	0											
21	24	Bituminous sand	3	-											
24	28	Bit. sand; good grade, 5% clay	4	1)											
28	30	Lost core	2	-)	15.4	1½	Tr	1	1	1	18	21	49	8	3
30	34	Bit. sand, good grade	4	2)											
34	35	Lost core	1	-											
35	39	Bit. sand, good grade, some clay	4	3)											
39	40	Lost core	1	-)	15.2	2¾	Tr	1	1	1	11	32	26	22	6
40	44	Bit. sand, good grade, 5% clay	4	4)											
44	48	" " " " 10% "	4	5)											
48	52	" " " " some clay	4	6)	14.9	4¾	Nil	2	1	1	19	27	40	6	4
52	53	Lost core	1	-											
53	57	Bit. sand, good grade, 10% clay	4	7)											
57	61	Lost core	4	-)	14.9	5¼	Tr	1	1	1	36	21	31	5	4
61	65	Bit. sand, good grade, 10% clay	4	8)											
65	69	" " " " 5% "	4	9)											
69	73	" " " " 10% "	4	10)	14.4	5	Tr	2	1	3	46	23	3	17	5
73	77	" " " " 15% "	4	11)											
77	78	Lost core	1	-)	15.3	6½	Tr	1	1	4	47	17	22	4	4
78	82	Bit. sand, good grade	4	12)											
82	86	" " " "	4	13)											
86	90	" " " " 50% clay	4	14)	12.8	19½	Tr	0	0	4	16	19	26	29	6
90	94	" " " " 10% "	4	15)											
94	96	Lost core	2	-)	15.2	5	Tr	1	8	29	38	9	8	2	4
96	100	Bit. sand, good grade, some clay	4	16)											
100	103	Lost core	3	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 23

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
103	107	Bit. sand, good grade, 15% clay	4	17)											
107	108	Lost core	1	-)	13.9	5¾	Tr	1	17	49	15	5	5	3	5
108	112	Bit. sand, good grade	4	18)											
112	116	Bit. sand, good grade	4	19)											
116	120	" " " "	4	20)	14.3		Tr	5	26	15	18	12	14	3	7
120	123	Lime clay	3	-											
123	125	Limestone	2	-											
	125	End of Hole													

Summary

0' - 21' = 21' Overburden
21' - 120' = 99' @ 14.68% bitumen & 5% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 24

DATE Aug. 5 - 7 1946 LOCATION LS.9,Sec.27,Tp.92-10-4 CO-ORDINATES E.1/4 27, 0.0; -45.0 ELEVATION 1052' DEPTH 164' DIP 90° CORE RECOVERY 99.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	15	Sand and gravel	15	-											
15	17	Bit. sand, low grade, 20% clay	2	1	5.6	24									
17	23	Clay	6	-			Tr	10	4	1	1	2	23	34	25
23	27	Bit. sand, low grade, 10% clay	4	2	5.6	7½									
27	28	Lost core	1	-											
28	32	Bit. sand, medium grade	4	3)											
32	36	" " " "	4	4)	13.3		Tr	3	2	1	1	2	0	77	14
36	40	" " " " 10% clay	4	5)											
40	44	" " " " 10% "	4	6)	9.2	22½	0.1	8	3	1	2	3	45	25	13
44	48	" " " "	4	7)											
48	52	" " " "	4	8)	13.9		Nil	1	1	1	1	6	0	82	8
52	56	" " " " slight clay	4	9)											
56	60	" " " "	4	10)	12.6		Nil	4	3	1	1	3	56	24	8
60	64	" " " " 20% clay	4	11)											
64	68	" " " "	4	12)	13.5	8¼	Nil	2	1	0	1	6	10	73	7
68	72	" " " " some clay	4	13)											
72	76	" " " " " "	4	14)	12.3	14¾	Nil	2	1	0	1	4	62	24	6
76	80	" " " " 10% clay	4	15)											
80	84	" " good " 30% "	4	16)	11.6	22	Nil	1	1	1	4	20	44	23	6
84	88	Bit. sand, good grade	4	17)											
88	92	" " " "	4	18)	14.0		Nil	1	2	1	22	28	40	5	2
92	96	" " " "	4	19)											
96	100	" " " "	4	20)	15.0		Tr	1	1	0	5	31	2	56	4
100	104	" " " "	4	21)											
104	108	" " " " 10% clay	4	22)	15.0		Tr	0	0	0	9	25	56	7	3
108	112	" " " "	4	23)											
112	116	" " " "	4	24)	15.9		Nil	0	0	3	62	21	8	4	2

MILDRED - RUTH LAKES AREA

HOLE No. B 24

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
116	120	Bit. sand, good grade	4	25)											
120	124	" " " "	4	26)	16.2		Tr	1	0	5	46	17	24	5	2
124	128	" " " "	4	27)											
128	132	" " " "	4	28)	15.2		Nil	1	7	16	26	19	20	8	3
132	136	" " " "	4	29)											
136	140	" " " "	4	30)	15.5		Nil	1	33	27	14	7	12	3	2
140	144	" " " "	4	31)											
144	148	" " " "	4	32)	15.1		Tr	6	40	32	10	4	4	2	2
148	152	" " " "	4	33)											
152	156	" " " "	4	34)	13.7		Tr	11	37	14	19	8	8	1	2
156	158'3"	" " " "	2'3"	35	16.0		Nil	4	15	15	36	13	4	10	3
158'3"	159	Lime clay	0'9"												
159	164	Limestone	5	36											
	164	End of Hole													

Summary

0' - 28' = 28' Overburden including 6' @ 5.6% bitumen

28' - 158'3" = 130' @ 14.68% bitumen & 4.3% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 25

DATE Aug. 5-19 1946 LOCATION LS.6,Sec.27,Tp.92-10-4 CO-ORDINATES E.1/4 28, -0.5; + 2637.0 ELEVATION 1061' DEPTH 300' DIP 90° CORE RECOVERY 98.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	46	Clay, sand and boulders	46	-											
46	56	Clay with 20% leached sand	10	-											
56	60	Bit. sand, low grade, 10% clay	4	1)											
60	64	" " medium grade	4	2)	6.6	31½	0.15	18	5	2	3	9	43	11	9
64	68	" " " "	4	3)											
68	72	" " low "	4	4)	5.1	47	0.1	14	4	2	3	12	35	20	10
72	76	" " " "	4	5)	Not assayed, very low grade.										
76	80	" " " " 5% clay	4	6)	"	"	" "	"							
80	91	Clay	11	-											
91	95	Bit. sand, low grade, 10% clay	4	7)											
95	99	" " " " 40% "	4	8)	3.6	36¾	0.1	34	7	3	2	4	10	20	20
99	122	Clay	23	-											
122	126	Bit. sand, low grade	4	9)											
126	130	" " medium grade, 40% clay	4	10)	9.1	30	Nil	8	3	1	2	3	40	27	16
130	134	" " " " 50% "	4	11	6.3	27¼	Nil)								
134	138	Clay	4	-			)	6	12	5	5	6	36	18	2
138	142	Bit. sand, good grade, 40% clay	4	12	6.3	26	Nil)								
142	146	" " " " 30% "	4	13)											
146	150	" " " " 30% "	4	14)	10.9	29½	Nil	3	2	1	2	10	37	35	10
150	154	" " " " 30% "	4	15)											
154	157	" " " " 50% "	3	16)	10.1	30¼	Nil	3	2	1	4	12	59	13	6
157	162	Clay	5	-											
162	166	Bit. sand, good grade, 5% clay	4	17)											
166	170	" " " " 50% "	4	18)	10.4	33	Nil)	2	1	1	20	29	20	22	5
170	174	" " " " 30% "	4	19	13.2	16½	Nil)								
174	175	Lost core	1	-			)	1	0	2	38	21	31	4	3
175	179	Bit. sand, good grade	4	20	13.2		Nil)								

MILDRED - RUTH LAKES AREA

HOLE No. B 25

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
179	183	Bit. sand, good grade, 10% clay	4	21)											
183	187	" " " "	4	22)	15.5	5¼	Tr	1	0	3	37	31	12	14	2
187	191	" " " " 5% "	4	23)											
191	195	" " " " 5% "	4	24)	14.1	4	Tr	2	40	35	8	4	5	2	4
195	199	" " " "	4	25	14.9		Nil	7	47	20	6	4	1	8	7
199	203	" " " " 5% "	4	26)											
203	208	" " " " 5% "	5	27)	11.6	1¾	Tr	12	42	11	7	4	9	5	10
208	210	Bitumen concentration	2	28	74.6		17.4								
210	214	Bit. sand, good grade	2	29)											
214	218	" " " "	4	30)	12.9		Tr	19	44	10	7	4	7	3	6
218	222'6"	Bitumen concentration	4'6"	31	63.6		20.3								
222'6"	225'6"	Bit. sand, good grade, some clay	3	32	13.6		Tr	15	34	17	7	2	5	8	12
225'6"	227'6"	Bitumen concentration	2	33	83.6		15.0								
227'6"	230	Bit. sand, good grade, 5% clay	2'6"	34	14.8	½	0.1	7	42	29	5	3	5	4	5
230	231	Bitumen concentration	1	35	69.1		14.5								
231	235	Bit. sand, good grade, 10% clay	4	36)											
235	237	" " " " 5% "	2	37)	13.5	5¾	Tr	12	26	17	5	3	7	22	8
237	239	Bitumen concentration	2	38	56.1		17.9								
239	243	Bit. sand, good grade, 15% clay	4	39)											
243	247	" " " " 10% "	4	40)	13.1	12½	Tr	7	21	13	4	2	13	25	15
247	251	" " " "	4	41)											
251	253	" " " "	2	42)	12.8	½	Tr	15	41	9	5	3	11	8	8
253	253'6"	Bitumen concentration	0'6"	43	66.9		17.1								
253'6"	258	Bit. sand, good grade	4'6"	44	15.1		Tr	8	28	15	8	4	10	15	12
258	260	Bitumen concentration	2	45	49.5		14.6								
260	264	Bit. sand, good grade	4	46	14.2		Tr	6	29	11	9	4	20	12	9
264	266	Bitumen concentration	2	47	27.2		13.0								
266	268	Bit. sand, good grade	2	48	14.3		Tr	9	22	10	6	4	15	24	10

MILDRED - RUTH LAKES AREA

HOLE No. B 25

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
268	269	Bitumen concentration	1	49	32.8		13.6								
269	273	Bit. sand, good grade, 10% clay	4	50	14.0	4	Tr	2	5	2	1	3	46	32	9
273	275	Bitumen concentration	2	51	79.9		15.7								
275	279	Bit. sand, good grade, 10% clay	4	52	13.8	8	Tr)								
279	283	" " " " 10% "	4	53	13.8	8	Tr)								
283	285	Lost core	2	-			)	2	4	11	10	9	28	26	10
285	288	Bit. sand, good grade, 5% clay	3	54	13.8	2	Tr)								
288	289	Bitumen concentration	1	55	43.7		13.1								
289	293	Bit. sand, good grade	4	56)											
293	294	Lost core	1	-)	15.5	1½	Tr	2	6	10	11	7	43	12	9
294	295	Bit. sand, medium grade	1	57)											
295	300	Limestone	5	-											
	300	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 25

DATE ..... 194. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH- FROM	DEPTH- TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 46' = 46' Overburden 46' - 142' = 96' low grade sand and clay 142' - 162' = 20' @ 7.9% bitumen & 50% clay bands 162' - 295' = 133' @ 20.56% bitumen & 4.85% clay bands 142' - 295' = 153' @ 18.9% bitumen & 11.0% clay bands **Average Assay if Bitumen Concentrations are Taken as 18%** 162' - 295' = 133' @ 14.2% bitumen & 4.85% clay bands 142' - 295' = 153' @ 13.36% bitumen & 11.0% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 26

DATE Sept. 14-18, 1946 LOCATION LS.11,Sec.26,Tp.92-10-4 CO-ORDINATES E.1/4 28, +5.8; -2667.0 ELEVATION 1049' DEPTH 230' DIP 90° CORE RECOVERY 97.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	48	Overburden - sand and clay	48	-											
48	52	Bit. sand, medium grade	4	1)											
52	56	" " " "	4	2)	9.9	10½	Tr	8	3	11	4	10	43	11	10
56	60	" " " " 20% clay	4	3)											
60	64	" " low " much clay	4	4)											
64	65	Lost core	1	-)	Not assayed, mostly clay.										
65	68	Bit. sand, low grade, much clay	4	5)											
68	114	Clay	46	-											
114	132	Sandy clay	18	6	Not assayed.										
132	136	Bit. sand, good grade, 5% clay	4	7)											
136	140	" " " "	4	8)	14.0	4½	Nil	1	0	1	7	11	54	18	8
140	144	" " " " some clay	4	9)											
144	148	" " " " 5% clay	4	10)	14.5	3½	Tr	1	1	1	8	15	47	18	9
148	152	" " " "	4	11)											
152	156	" " " " some clay	4	12)	14.9	2½	Nil	2	1	1	9	14	49	16	8
156	160	" " " " 5% clay	4	13)											
160	164	" " " "	4	14)	14.4	8½	Nil	1	1	1	15	17	55	6	4
164	168	" " " " 5% "	4	15)											
168	172	" " " " 30% "	4	16)	12.9	20½	Tr	1	1	1	24	21	41	6	5
172	176	" " " " 5% "	4	17)											
176	180	" " " " 15% "	4	18)	15.4	7½	Tr	1	1	3	27	7	53	4	4
180	184	" " " " 30% "	4	19)											
184	188	" " " " some clay	4	20)	14.6	14½	Nil	1	15	20	41	7	9	2	5
188	192	" " " " 25% clay	4	21)											
192	193	Lost core	1	-)	9.6	26	Tr	7	3	2	25	24	25	4	10
193	197	Bit. sand, good grade, 20% clay	4	22)											
197	201	" " " " 20% "	4	23)											
201	203	Lost core	2	-)	12.8	14½	Tr	2	2	5	55	14	12	1	9
203	207	Bit. sand, good grade, 20% clay	4	24)											

MILDRED - RUTH LAKES AREA

HOLE No. B 26

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
207	208	Lost core	1	-											
208	212	Bit. sand, good grade	4	25)											
212	216	" " " "	4	26)	15.6		Tr	2	3	10	37	7	26	6	9
216	217	Bitumen concentration	1	27	35.8		12.2	19	15	20	23	6	8	3	6
217	218	Bit. sand, good grade	1	28	14.8		Tr	4	5	7	25	18	24	4	13
218	220	Bitumen concentration	2	29	37.9		11.0	4	13	32	29	7	5	5	5
220	222	Bit. sand, good grade	2	30	15.7		Tr	3	4	11	32	18	20	4	8
222	225	Bitumen concentration	3	31	50.3		13.0	8	19	23	23	9	9	2	7
225	226	Bit. sand, good grade	1	32	17.5		Tr	2	3	5	31	19	27	3	10
226	229	Bitumen concentration	3	33	44.4		12.9	9	15	23	24	9	7	6	7
229	230	Bit. sand, good grade	1	34	14.3	2	Tr	2	2	5	26	15	36	5	9
(229'10"	230')	Lime clay													
	230	End of Hole													

Summary

0' - 132' = 132' Overburden including 12' bit. sand @ 9.9%

132' - 216' = 64' @ 13.78% bitumen & 10% clay bands

216' - 230' = 14' @ 33.8% bitumen & 1% clay bands

132' - 230' = 98' @ 16.64% bitumen & 9% clay bands

Average Assay if Bitumen Concentration are taken as 18%

216' - 230' = 14' @ 17.14% bitumen & 1% clay bands

132' - 230' = 98' @ 14.26% bitumen & 9% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 27

DATE Oct. 4 - 9 1946 LOCATION LS.5, Sec.28, Tp.92-10-4 CO-ORDINATES E.1/4 29, -15.3; +27.0 ELEVATION 1056' DEPTH 245' DIP 90° CORE RECOVERY 99%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	51	Overburden - clay, sand and rocks	51	-											
51	55	Bit. sand, medium grade, some clay	4	1)											
55	59	" " " " " "	4	2)	8.3	9½	Tr	5	5	30	13	7	23	9	8
59	63	" " " "	4	3)											
63	67	" " " "	4	4)	7.7	1	0.1	7	3	3	8	5	52	10	12
67	71	" " " "	4	5)											
71	73	" " " " 50% clay	4	6)	5.2	24½	0.2	11	5	6	9	10	31	8	20
73	123	Sandy clay	50	-											
123	127	Bit. sand, good grade, 25% clay	4	7)											
127	130	" " " " 20% "	3	8)	11.8	19½	Nil	2	1	1	3	6	56	20	10
130	136	Sandy clay	6	-											
136	140	Bit. sand, good grade	4	9)											
140	144	" " " " some clay	4	10)	14.1	½	Tr	1	1	0	3	14	55	7	19
144	148	" " " "	4	11)											
148	152	" " " "	4	12)	15.0	1	Nil	1	1	1	5	13	54	17	8
152	154	" " " " 10% clay	2	13	[illegible]	2	Tr)	1	1	1	3	16	56	11	11
154	158	Shale	4	-			)								
158	162	Bit. sand, good grade, 10% clay	4	14	14.8	3½	Tr)								
162	166	" " " " 15% "	4	15)											
166	170	" " " " 10% "	4	16)	12.4	5	Tr	2	2	1	3	4	51	4	33
170	171	Lost core	1	-											
171	175	Bit. sand, good grade	4	17)											
175	179	" " " " 10% clay	4	18)	15.9	2½	Nil	1	1	1	4	14	54	13	12
179	183	" " " " some clay	4	19)											
183	187	" " " "	4	20)	16.6	1	Nil	1	1	1	3	13	58	13	9
187	188	Lost core	1	-											
188	192	Bit. sand, good grade, 20% clay	4	21)											
192	196	" " " " 20% "	4	22)	14.1	11	Tr	0	0	1	9	25	39	15	11

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MILDRED - RUTH LAKES AREA

HOLE No. B 27

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
196	200	Bit. sand, good grade, 20% clay	4	23)											
200	204	" " " "	4	24)	14.1	8	Nil	0	1	2	17	19	42	5	14
204	208	" " " " 20% "	4	25)											
208	212	" " " "	4	26)	15.1	7¾	Tr	1	1	7	37	20	25	5	4
212	215	" " " " 15% "	3	27	15.5	6	Tr								
215	221	Clay	6	-				0	1	5	49	14	23	3	5
221	225	Bit. sand, good grade	4	28	15.5		Tr								
225	229	" " " "	4	29)											
229	232	" " " "	3	30)	15.1		Nil	5	11	9	25	25	21	2	2
232	236	Shale	4	-											
236	237	Lime clay	1	-											
237	240	Limestone	3	-											
	240	End of Hole													

Summary

0' - 51' = 51' Overburden
51' - 136' = 85' Clay and medium grade sand
136' - 232' = 96' @ 13.2% bitumen & 14% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 28

DATE Sept. 29-Oct. 3, 1946 LOCATION LS.15,Sec.21,Tp.92-10-4. CO-ORDINATES N 1/4 21, -27.2; +14.9 ELEVATION 1062' DEPTH 237' DIP 90° CORE RECOVERY 83.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	45	Overburden - clay and sand	45	-											
45	49	Bit. sand, medium grade	4	1)											
49	50	Lost core	1	-)	6.9	1	Tr	7	4	33	16	2	18	6	14
50	54	Bit. sand, medium grade	4	2)											
54	58	" " low "	4	3)											
58	61	" " " " 50% clay	3	4)	2.3	42	Tr	20	14	20	8	5	19	2	12
61	72	Sandy clay	11	-											
72	76	Bit. sand, low grade, some clay	4	5)											
76	77	Lost core	1	-)	8.9	11	Tr	3	2	2	4	13	51	15	10
77	81	Bit. sand, low grade, 5% clay	4	6)											
81	85	" " " " some clay	4	7)											
85	86	Lost core	1	-)	3.5	29	Tr	21	8	3	6	13	30	1	18
86	90	Bit. sand, low grade, some clay	4	8)											
90	94	" " " " 20% clay	4	9)											
94	98	" " " " 30% "	4	10)	3.5	27½	0.1	21	7	3	7	8	33	7	14
98	102	" " " "	4	11)											
102	106	" " " "	4	12)	3.9	41	Tr	9	4	1	9	16	39	8	14
106	108	Lost core	2	-											
108	112	Bit. sand, low grade	4	13)											
112	113	Lost core	1	-)	3.8	32¾	0.1	16	6	3	8	14	34	6	13
113	117	Bit. sand, low grade	4	14)											
117	121	" " " "	4	15)											
121	125	" " " "	4	16)	5.5	5¾	Tr	18	6	2	9	15	32	2	16
125	127	Lost core	2	-											
127	131	Bit. sand, medium grade, 5% clay	4	17)											
131	135	" " " " some clay	4	18)	8.6	4	Tr	6	2	1	9	22	44	6	10

MILDRED - RUTH LAKES AREA

HOLE No. B 28

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
135	139	Bit. sand, medium grade, some clay	4	19)											
139	143	" " good " " "	4	20)	12.1	2	Nil	3	1	1	14	26	43	3	9
143	147	" " " " slight clay	4	21)											
147	151	" " " " 5% clay	4	22)	14.5	2	Nil	2	1	1	26	15	47	3	5
151	155	" " " "	4	23)											
155	156	Lost core	1	-)	14.3	8¾	Nil	2	1	5	58	15	15	2	2
156	160	Bit. sand, good grade, 20% clay	4	24)											
160	164	" " " " 20% "	4	25)											
164	165	Lost core	1	-)	11.6	19¾	Tr	4	4	9	47	11	17	2	6
165	169	Bit. sand, good grade, 25% clay	4	26)											
169	173	" " " " 10% "	4	27)											
173	175	Lost core	2	-)	11.0	3¾	Tr	28	38	10	10	4	4	2	4
175	179	Bit. sand, good grade, coarse	4	28)											
179	183	" " " " "	4	29)											
183	187	" " " " 5% clay	4	30)	11.2	1¼	Tr	33	23	16	10	4	5	2	7
187	189	Lost core	2	-											
189	193	Bit. sand, good grade, some clay	4	31)											
193	194	Lost core	1	-)	12.9	1	Tr	2	2	25	42	8	9	3	9
194	198	Bit. sand, good grade	4	32)											
198	202	" " " "	4	33)											
202	204	Lost core	2	-)	13.8		Tr	2	3	24	39	4	16	1	11
204	208	Bit. sand, good grade	4	34)											
208	220	Lost core	12	-											
220	224	Bit. sand, good grade	4	35)											
224	225	Lost core	1	-)	16.6		Tr	1	1	2	21	26	38	3	8
225	229	Bit. sand, good grade	4	36)											

MILDRED - RUTH LAKES AREA

HOLE No. B 28

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
229	233	Bit. sand, good grade	4	37)											
233	234	Lost core	1	-)	15.0		Nil	1	2	3	11	15	52	5	11
234	236	Bit. sand, good grade	2	38)											
236	237	Lime clay	1	-											
	237	End of Hole													

Summary

0' - 45' = 45' Overburden
45' - 135' = 90' low grade bituminous sand at 5%
135' - 236' = 101' at 13.28% bitumen & 3.3% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 29

DATE Aug. 19 - 26 1946 LOCATION LS.1,Sec.28,Tp.92-10-4 CO-ORDINATES N.E.21, +20.0; 0.0 ELEVATION 1063'. DEPTH 265' DIP 90° CORE RECOVERY 92.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	45	Overburden - clay and sand	45	-											
45	49	Bit. sand, medium grade	4	1)											
49	53	" " " "	4	2)	11.7		Tr	15	3	1	3	9	49	12	8
53	57	" " low " 20% clay	4	3)											
57	59	" " " " 20% "	2	4)	4.7	4½	Tr)								
59	75	Clay	16	-			)	19	4	3	2	5	3	51	13
75	79	Bit. sand, low grade, 20% clay	4	5	4.7	18	)								
79	83	" " " " 15% "	4	6)											
83	85	Lost core	2	-)	5.0	32½	Tr	23	5	2	3	8	37	11	11
85	89	Bit. sand, low grade, 15% clay	4	7)											
89	93	" " " " 10% "	4	8)											
93	94	Lost core	2	-)	6.1	14¼	Tr	21	5	2	4	11	35	12	10
94	98	Bit. sand, low grade, 15% clay	4	9)											
98	102	" " medium grade, 5% clay	4	10)											
102	104	Lost core	2	-)	11.6	4¾	Tr	8	6	2	8	18	40	8	10
104	108	Bit. sand, good grade, 5% clay	4	11)											
108	112	" " " " 5% "	4	12)											
112	116	" " " " 5% "	4	13)	13.0	3	Tr	2	1	1	15	30	6	37	8
116	120	" " " " 5% "	4	14)											
120	124	" " " " 5% "	4	15)	13.6	4	Nil	2	1	1	14	30	41	5	6
124	128	" " " " some clay	4	16)											
128	132	" " " " 15% clay	4	17)	14.2	5	Tr	1	1	1	17	27	40	7	6
132	136	" " " " some clay	4	18)											
136	140	" " " " 15% clay	4	19)	14.3	5¼	Nil	1	1	1	42	26	23	3	3
140	144	" " " " 15% "	4	20)											
144	148	" " " " 5% "	4	21)	13.8	8¼	Tr	1	1	4	62	17	10	2	3

MILDRED - RUTH LAKES AREA

HOLE No. B 29

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
148	152	Bit. sand, good grade, some clay	4	22)											
152	153	Lost core	1	-)	14.6	1¾	Nil	2	8	19	42	13	1	10	5
153	157	Bit. sand, good grade	4	23)											
157	158	Lost core	1	-											
158	162	Bit. sand, good grade	4	24)											
162	166	" " " "	4	25)	14.1		Nil	7	42	7	19	10	7	2	6
166	170	" " " " 10% clay	4	26)											
170	173	Lost core	3	-)	11.1	9¾	Tr	27	26	12	14	7	3	5	6
173	177	Bit. sand, good grade, 20% clay	4	27)											
177	179	Sandy clay	2	-											
179	183	Bit. sand, good grade, 10% clay	4	28)											
183	184	Lost core	1	-)	13.4	2½	Tr	12	14	5	10	14	30	7	8
184	188	Bit. sand, good grade	4	29)											
188	192	" " " " 5% clay	4	30)											
192	193	Lost core	1	-)	13.5	3	0.1	5	2	1	4	20	30	25	13
193	197	Bit. sand, good grade, 5% clay	4	31)											
197	198	Lost core	1	-											
198	202	Bit. sand, good grade, some clay	4	32)											
202	206	" " " " " "	4	33)	11.8	3	0.1	6	16	11	12	12	26	8	9
206	210	" " " " " "	4	34)											
210	211	Lost core	1	-)	13.1	½	Tr	6	6	7	10	4	49	10	8
211	215	Bit. sand, good grade, slight clay	4	35)											
215	219	" " " " 5% clay	4	36)											
219	220	Lost core	1	-)	13.8	2½	Tr	2	2	1	7	14	49	15	10
220	224	Bit. sand, good grade	4	37)											
224	228	" " medium grade	4	38)											
228	232	" " good grade	4	39)	13.4	6¾	Tr	3	3	5	10	18	7	44	10
232	234	Lost core	2	-											

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MILDRED - RUTH LAKES AREA

HOLE No. B 29

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
234	238	Bit. sand, good grade, some clay	4	40)											
238	242	" " " "	4	41)	14.9	¾	Tr	1	2	4	18	18	39	11	7
242	246	" " " " coarse	4	42)											
246	250'6"	" " " "	4'6"	43)	12.4	1¼	0.06	37	32	12	6	2	3	3	5
250'6"	262	Sandy clay	11'6"	-											
262	265	Lime clay	3	-											
	265	End of Hole													

Summary

0' - 45' = 45' Overburden, sand & clay
45' - 98' = 53' low grade, sand and clay
98' - 250'6" = 152'6" @ 13.25% bitumen & 3.3% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No B 30

DATE Aug. 13 - 18 1946 LOCATION LS.3,Sec.27,Tp.92-10-4 CO-ORDINATES N 1/4 22, +17.7; -14.7 ELEVATION 1066' DEPTH 273' DIP 90° CORE RECOVERY 94.5

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	47	Overburden - clay and sand	47	-											
47	51	Bit. sand, medium grade, some clay	4	1)											
51	55	" " " " " "	4	2)	10.5	10½	Tr	13	3	2	4	12	46	12	8
55	58	Lost core	3	-											
58	62	Bit. sand, low grade	4	3	Very low grade, not assayed, mostly clay.										
62	64	Lost core	2	-											
64	68	Bit. sand, low grade	4	4)											
68	72	" " " " and clay	4	5)	Very low grade, not assayed, mostly clay.										
72	76	" " " " " "	4	6)											
76	80	" " " " " "	4	7)											
80	93	Clay	13	-											
93	97	Bit. sand, good grade, 25% clay	4	8)											
97	101	" " " "	4	9)	12.4	14½	Tr	1	1	1	30	29	31	4	3
101	105	" " " "	4	10)											
105	107	Clay with 30% good grade sand	2	11)	12.4	14½	Tr	1	0	1	51	24	19	3	1
107	116	" " sand stringers	9	-											
116	120	Bit. sand, good grade, 5% clay	4	12)											
120	124	" " " " some clay	4	13)	14.1	2½	Nil	1	1	10	60	10	8	3	7
124	126	Lost core	2	-											
126	130	Bit. sand, good grade	4	14)											
130	134	" " " "	4	15)	15.0	½	Tr	1	2	50	29	6	7	2	3
134	136	Lost core	2	-											
136	140	Bit. sand, good grade	4	16)											
140	144	" " " "	4	17)	15.9	½	Tr	2	7	51	25	5	6	2	2
144	148	" " " "	4	18)											
148	149	Lost core	1	-)	15.2		Tr	0	8	56	20	5	6	3	2
149	153	Bit. sand, good grade	4	19)											

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MILDRED - RUTH LAKES AREA

HOLE No. B 30

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
153	157	Bit. sand, good grade	4	20)											
157	161	" " " "	4	21)	14.0		Tr	2	10	33	24	10	14	4	3
161	165	" " " "	4	22)											
165	169	" " " " some clay	4	23)	16.6	¾	Nil	1	1	8	63	9	12	3	3
169	173	" " " "	4	24)											
173	177	" " " "	4	25)	17.3		Nil	1	1	8	63	13	10	2	2
177	181	" " " "	4	26)											
181	185	" " " " some clay	4	27)	16.6	3	Tr	1	1	8	54	12	16	4	4
185	189	" " " "	4	28)											
189	193	" " " " some clay	4	29)	13.8	1¾	Tr	16	17	18	32	6	6	2	3
193	197	" " " " " "	4	30)											
197	201	" " " "	4	31)	13.7	4	Tr	21	33	15	13	4	7	4	3
201	205	" " " "	4	32)											
205	209	" " " "	4	33)	14.4		Nil	8	35	19	19	6	7	3	3
209	213	" " " " some clay	4	34	14.2	¾	Tr)								
213	238	Clay with 30% of leached sand	25	-			)	8	22	28	20	7	5	5	5
238	242	Bit. sand, medium grade	4	35	14.2	6	Tr)								
242	246	" " " "	4	36	10.2	1¾	Tr)								
246	248	Lost core	2	-			)								
248	252	Bit. sand, medium grade, 50% clay	4	37	10.2	23¾	Tr)	9	22	27	15	5	5	9	8
252	258	Leached sand with clay	6	-			)								
258	262	Bit. sand, good grade, 20% clay	4	38	10.2	4½	Tr)								
262	263	Bitumen concentration	1	39	71.2		13.3								
263	267	Bit. sand, good grade, 25% clay	4	40	11.4	6¾	Tr	3	20	19	18	11	16	5	8
267	269	Bitumen concentration	2	41	70.5		13.3								
269	272	Bit. sand, good grade	3	42	14.4		Tr	6	20	26	20	4	11	8	5
272	273	Lime clay	1	-											
	273	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 30

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 93' = 93' @ Overburden including 8' @ 10.5% bitumen 93' - 116' = 23' @ 7.5% bitumen & 50% clay bands 116' - 213' = 97' @ 15.1% bitumen & 1.2% clay bands 213' - 238' = 25' clay 238' - 272' = 34' @ 16.4% bitumen & 28% clay bands 213' - 272' = 59' @ 9.44% bitumen & 58.5% clay bands or 116' - 272' = 156' @ 12.95% bitumen & 23% clay bands 93' - 272' = 179' @ 12.25% bitumen & 26.3% clay bands.												

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MILDRED - RUTH LAKES AREA

HOLE No. B 31.

DATE Aug. 9 - 12 1946 LOCATION LS.64,Sec.26,Tp.92-10-4 CO-ORDINATES N.E.22, +25.0; 0.0 ELEVATION 1057' DEPTH 165' DIP 90° CORE RECOVERY 94.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	32	Overburden, clay	32	-											
32	36	Bit. sand, medium grade	4	1)											
36	40	" " " " 5% clay	4	2)	13.9	4	Tr	1	1	1	1	2	53	29	12
40	44	" " " " 15% "	4	3)											
44	48	" " " " 5% "	4	4)	11.0	13½	Tr	3	2	1	2	3	34	29	26
48	52	" " good " slight clay	4	5)											
52	56	" " " " 40% clay	4	6)	9.8	45¾	Tr	2	1	1	1	6	48	27	14
56	60	" " " " 50% "	4	7)											
60	64	" " " " 20% "	4	8)											
64	67	Lost core	3	-)	12.4	13½	Nil	2	2	4	12	13	28	21	18
67	71	Bit. sand, good grade, some clay	4	9)											
71	75	" " " " 5% clay	4	10)											
75	77	Lost core	2	-)	14.0	2	Nil	2	1	0	1	9	47	27	13
77	81	Bit. sand, good grade	4	11)											
81	85	" " " "	4	12)											
85	89	" " " "	4	13)	14.8		Tr	1	1	0	7	23	49	13	6
89	93	" " " " 40% clay	4	14)											
93	97	" " " " some clay	4	15)	11.6	21	0.1	3	1	0	14	25	48	6	3
97	101	" " " " 20% clay	4	16)											
101	105	" " " " 50% "	4	17)	10.8	36¼	Tr	4	1	1	20	30	34	7	3
105	109	" " " " 20% "	4	18)											
109	113	" " " "	4	19)											
113	117	" " " "	4	20)	15.4		Nil	1	0	1	35	24	34	4	2
117	121	" " " " 25% clay	4	21)											
121	125	" " " " 25% "	4	22)	11.5	40¾	Tr	1	1	1	25	26	35	6	5
125	129	" " " " 20% "	4	23)											

MILDRED - RUTH LAKES AREA

HOLE No. B 31

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
129	131	Lost core	2	-											
131	135	Bit. sand, good grade, 5% clay	4	24)											
135	139	" " " "	4	25)	15.5	4	Nil	0	1	4	31	22	27	7	8
139	143	" " " "	4	26)											
143	147	" " " "	4	27)	16.4		Tr	0	0	4	32	22	32	4	6
147	152	" " " "	5	28	16.4		Tr	0	1	6	31	22	28	8	4
152	155	Bitumen concentration	3	29	73.6		17.3								
155	160	Bit. sand, good grade, some clay	5	30	17.0	½	Tr	2	7	9	24	18	30	6	4
160	165	Lime clay	5	-											
	165'	End of Hole													

<u>Summary</u>

0' - 32' = 32' Overburden
32' - 160' = 128' @ 14.54% bitumen & 11.8% clay bands

<u>Assay if Bitumen Concentration is Taken as 16%</u>

32' - 160' = 128' @ 13.24% bitumen & 11.8% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 32

DATE Aug. 6 - 8 1946 LOCATION LS.3, Sec.26, Tp.92-10-4 CO-ORDINATES N 1/4 23 +30.0; 0.0 ELEVATION 1019' DEPTH 130' DIP 90° CORE RECOVERY 90.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	9	Overburden, clay and sand	9	-											
9	13	Bit. sand, medium grade, 15% clay	4	1)											
13	17	" " " " 35% "	4	2)	10.3	29	0.2	1	1	1	1	6	28	49	13
17	21	" " " " 20% "	4	3)											
21	23	Lost core	2	-)	10.6	15¾	0.2	4	2	1	1	2	26	38	26
23	27	Bit. sand, medium grade, 25% clay	4	4)											
27	31	" " good " some clay	4	5)											
31	35	" " " " 5% clay	4	6)	13.1	4	0.2	1	1	1	1	10	36	38	12
35	39	" " " " 5% "	4	7)											
39	43	" " " " some clay	4	8)	13.9	2	Tr	1	1	0	3	14	55	18	8
43	45	Lost core	2	-											
45	49	Bit. sand, good grade	4	9)											
49	53	" " " " 25% clay	4	10)	12.8	10	0.1	1	1	1	2	9	10	64	13
53	57	" " " " 25% "	4	11)											
57	59	" " " " 5% "	2	12)	13.7	8	Tr)								
59	61	Clay	2	-			)	1	1	0	5	12	57	17	7
61	65	Bit. sand, good grade, 5% clay	4	13	13.7	2	Tr)								
65	69	" " " " 15% "	4	14)											
69	73	" " " " 25% "	4	15)	13.0	21	Tr	1	1	1	8	26	4	54	5
73	76	Lost core	3	-											
76	80	Bit. sand, good grade, 25% clay	4	16)											
80	84	" " " " slight clay	4	17)	13.6	11¾	Nil	0	0	1	14	26	50	6	3
84	88	" " " " 30% clay	4	18)											
88	89	Lost core	1	-)	10.0	32½	Nil	3	1	1	17	23	23	26	6
89	93	Bit. sand, good grade, 30% clay	4	19)											
93	97	" " " "	4	20)											
97	101	" " " " 10% "	4	21)	14.8		0.1	6	1	1	16	24	35	6	11

MILDRED - RUTH LAKES AREA

HOLE No. B 32

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
101	105	Bit. sand, good grade, 35% clay	4	22)											
105	109	" " " " 15% "	4	23)	10.8	29¾	Tr	4	1	1	26	29	25	6	7
109	110	Lost core	1	-											
110	114	Bit. sand, good grade, 30% clay	4	24)											
114	118	" " " " 10% "	4	25)	11.8	20½	Tr	8	4	3	39	16	22	3	5
118	122	" " " " 15% "	4	26)											
122	124	Lost core	2	-)	14.3	7	Nil	3	22	17	19	16	10	6	7
124	128	Bit. sand, good grade	4	27)											
128	130	Limestone	2	-											
	130	End of Hole													

Summary

0' - 9' = 9' Overburden

9' - 128' = 119' @ 12.3% bitumen & 13.4% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 33

DATE Aug. 27-31 1946 LOCATION LS.1, Sec.34, Tp.92-10-4 CO-ORDINATES N.E.28, +9.8; +4013.0 ELEVATION 1036' DEPTH 267' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	36	Gravel and clay	36	-											
36	40	Bit. sand, medium grade	4	1)											
40	41	Lost core	1	-)	12.2		Tr	10	2	1	6	14	47	13	7
41	45	Bit. sand, medium grade	4	2)											
45	49	" " " " some clay	4	3)											
49	53	" " " " 5% clay	4	4)	10.9	3	Tr	9	2	1	6	17	47	11	7
53	55	Lost core	2	-											
55	59	Bit. sand, good grade, 25% clay	4	5)											
59	63	" " medium " some clay	4	6)	10.6	11½	Tr	5	2	1	10	18	16	41	7
63	67	" " good "	4	7)											
67	71	" " " "	4	8)	12.5		Tr	3	1	1	12	24	47	7	5
71	75	" " " " some clay	4	9)											
75	79	" " " " " "	4	10)	12.5	2¾	Tr	4	1	1	19	2	4	64	5
79	83	" " " " 15% clay	4	11)											
83	87	" " " " 5% "	4	12)	12.6	6¾	Tr	4	1	1	29	26	31	4	4
87	91	" " " " some clay	4	13)											
91	95	" " " " 10% clay	4	14)	14.3	3¾	Nil	1	1	1	27	4	41	22	3
95	99	" " " " some clay	4	15)											
99	103	" " " " 15% clay	4	16)	13.9	4¼	Nil	3	1	1	24	26	37	4	4
103	107	" " " " some clay	4	17)											
107	111	" " " "	4	18)	14.5	4¾	Tr	3	1	4	48	14	12	15	3
111	115	" " " "	4	19)											
115	119	" " " " some clay	4	20)	14.7	1½	Tr	1	1	3	47	2	20	23	3
119	123	" " " "	4	21)											
123	127	" " " " 5% clay	4	22)	14.3	4	Nil	2	1	3	37	23	29	3	2
127	128	Lost core	1	-											
128	132	Bit. sand, good grade, some clay	4	23)											
132	136	" " " " " "	4	24)	14.1	10	Nil	2	1	11	58	12	12	2	2

MILDRED - RUTH LAKES AREA

HOLE No. B 33

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
136	140	Bit. sand, good grade	4	25)											
140	144	" " " " some clay	4	26)	16.2	¾	Tr	2	1	20	54	7	0	12	2
144	148	Lost core	4	-											
148	152	Bit. sand, good grade	4	27)											
152	156	" " " "	4	28)	15.8		Nil	1	1	12	55	0	22	5	4
156	160	" " " "	4	29)											
160	164	" " " "	4	30)	16.5		Nil	1	0	9	47	17	20	3	3
164	168	" " " "	4	31)											
168	172	" " " "	4	32)	15.4		Tr	2	1	47	32	6	7	3	2
172	176	" " " "	4	33)											
176	180	" " " "	4	34)	15.9	½	Tr	2	7	43	29	8	8	1	2
180	184	" " " "	4	35)											
184	188	" " " "	4	36)	16.1		Tr	1	10	51	21	7	6	2	2
188	192	" " " "	4	37)											
192	196	" " " "	4	38)	16.0		Tr	1	3	28	23	17	0	15	3
196	200	" " " "	4	39)											
200	204	" " " "	4	40)	15.5		Tr	1	13	20	36	13	13	2	2
204	208	" " " "	4	41)											
208	212	" " " " 10% clay	4	42)	15.6	3¾	Tr	8	14	15	28	9	8	15	3
212	216	" " " "	4	43)											
216	220	" " " " some clay	4	44)	16.5	¾	Tr	2	6	13	37	17	1	19	5
220	224	" " " " 40% clay	4	45)											
224	228	" " " "	4	46)	11.4	17	Tr	5	32	9	16	11	14	5	8
228	232	" " " " 5% clay	4	47)											
232	236	" " " " 15% "	4	48)	12.6	7	Tr	6	28	12	9	2	5	28	10
236	240	" " " " slight clay	4	49)											
240	244	" " " " 25% clay	4	50)	12.9	11½	Tr	9	18	7	7	6	26	11	16

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MILDRED - RUTH LAKES AREA

HOLE No. B 33

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
244	248	Bit. sand, good grade, 30% clay	4	51)											
248	252	" " " " 15% "	4	52)	12.0	19½	Tr	6	22	6	8	10	24	14	10
252	253	Lost core	1	-											
253	257	Bit. sand, good grade, 5% clay	4	53)											
257	261	" " " " some clay	4	54)	14.4	5½	Tr	10	10	22	12	1	12	22	11
261	265	" " medium grade, 10% clay	4	55	9.8	6¾	Tr	34	12	26	13	2	1	7	5
265	267	Lime clay	2	-											
	267	End of Hole													

Summary

0' - 36' = 36' Overburden
36' - 220' = 184' @ 14.37% bitumen & 2.6% clay bands
220' - 265' = 45' @ 12.4% bitumen & 12.5% clay bands
36' - 265' = 229' @ 13.98% bitumen & 4.56% clay bands

MILDRED - RUTH LAKES AREA

HOLE No. B 34

DATE Sept. 3 - 5 1946 LOCATION LS.7,Sec.34,Tp.92-10-4 CO-ORDINATES N.E.28, +1326.1; +3976.0 ELEVATION 1015' DEPTH 227' DIP 90° CORE RECOVERY 95.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	28	Sand	28	-											
28	32	Bit. sand, medium grade, 10% clay	4	1)											
32	36	" " " " 15% "	4	2)	11.7	10	Tr	6	4	3	14	17	4	46	6
36	37	Lost core	1	-											
37	41	Bit. sand, medium grade	4	3)											
41	45	" " good "	4	4)	13.4		Tr	3	4	2	25	23	35	5	3
45	49	" " " "	4	5)											
49	53	" " " "	4	6)	15.4		Tr	2	1	1	25	26	37	3	5
53	54	Lost core	1	-											
54	58	Bit. sand, good grade	4	7)											
58	62	" " " " some clay	4	8)	14.3	1¾	Tr	2	1	1	35	34	11	13	3
62	66	" " " " 10% clay	4	9)											
66	70	" " " " 10% "	4	10)	13.8	11	Tr	1	1	1	40	25	28	2	2
70	74	" " " " some clay	4	11)											
74	78	" " " "	4	12)	15.6	1	Tr	1	1	3	39	9	4	41	2
78	82	" " " " some clay	4	13)											
82	86	" " " " " "	4	14)	14.9	3¾	Tr	1	1	2	57	19	16	2	2
86	90	" " " " 10% clay	4	15)											
90	94	" " " "	4	16)	15.9	5¾	Tr	1	1	2	42	22	11	18	3
94	98	" " " " 5% clay	4	17)											
98	102	" " " "	4	18)	15.8	3	Tr	1	0	3	55	17	20	1	3
102	106	" " " "	4	19)											
106	110	" " " "	4	20)	17.0		Nil	1	1	4	51	20	2	19	2
110	114	" " " "	4	21)											
114	118	" " " " 10% clay	4	22)	16.0	3¼	Nil	2	1	6	62	15	11	1	2
118	122	" " " "	4	23)											
122	126	" " " " 5% clay	4	24)	16.2	2	Nil	1	0	13	61	10	2	11	2

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MILDRED - RUTH LAKES AREA

HOLE No. B 34

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
126	130	Bit. sand, good grade	4	25)											
130	134	" " " "	4	26)	16.0		Nil	0	0	6	50	21	20	2	1
134	138	" " " " 15% clay	4	27)											
138	140	Lost core	2	-)	15.6	5¾	Nil	1	1	8	54	16	17	1	2
140	144	Bit. sand, good grade	4	28)											
144	148	" " " "	4	29)											
148	152	" " " "	4	30)	16.7		Tr	0	0	36	46	5	4	6	3
152	156	" " " "	4	31)											
156	160	" " " "	4	32)	16.5		Tr	3	14	37	33	4	5	1	3
160	164	" " " " 10% clay	4	33)											
164	168	" " " " 25% "	4	34)	12.3	19½	Tr	14	31	13	7	5	4	19	7
168	172	" " " " 5% "	4	35)											
172	175	" " " " 35% "	3	36)	12.9	13¼	Tr	6	41	24	15	4	5	2	3
175	182	Shale with stringers of good grade sand	7	-											
182	186	Bit. sand, good grade, 10% clay	4	37)											
186	190	" " " " 10% "	4	38)	12.3	7½	Tr	4	42	16	7	5	4	15	7
190	194	" " " " 5% "	4	39)											
194	198	" " " " 20% "	4	40)	19.1	7	Tr	5	41	19	15	6	8	1	5
198	202	" " " " 30% "	4	41)											
202	205	Lost core	3	-)	10.9	18¼	Tr	12	19	12	11	14	2	22	8
205	209	Bit. sand, good grade, 15% clay	4	42)											
209	213	" " " "	4	43)											
213	214	Lost core	1	-)	13.8	7	Tr	7	14	6	5	9	31	19	9
214	218	Bit. sand, good grade, 20% clay	4	44)											
218	223	" " " " 30% "	5	45	11.1	18	Tr	6	12	8	9	6	20	30	9
223	226	Lime clay	3	-											
226	227	Limestone	1	-											
	227	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 34

DATE ..... 194 LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary													
		0' - 28' = 28' Overburden													
		28' - 160' = 132' @ 15.4% bitumen & 3.1% clay bands													
		160' - 223' = 63' @ 11.7% bitumen & 7.5% clay bands													
		28' - 223' = 195' @ 14.2% bitumen & 5.9% clay bands													

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MILDRED - RUTH LAKES AREA

HOLE No. B 35

DATE Sept. 6 - 13 1946 LOCATION LS.6, Sec.34, Tp.92-10-4 CO-ORDINATES N.E.28, +1327.0; +2642.0 ELEVATION 1038' DEPTH 257' DIP 90° CORE RECOVERY 94.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	39	Sandy clay	39	-											
39	43	Bit. sand, low grade, 25% clay	4	1)											
43	47	" " " " 25% "	4	2)	2.2	5½	0.2	45	7	2	2	3	10	6	25
47	51	" " " " 10% "	4	3)											
51	55	" " " " 10% "	4	4)	7.1	3¼	Tr	36	5	2	4	0	18	16	19
55	57	Lost core	2	-											
57	61	Bit. sand, medium grade, 5% clay	4	5)											
61	65	" " " " 10% "	4	6)	10.2	10¼	Tr	13	3	1	12	19	37	3	12
65	66	Lost core	1	-											
66	70	Bit. sand, good grade	4	7)											
70	74	" " " "	4	8)	10.3		Tr	18	3	2	15	18	32	4	8
74	78	" " " " some clay	4	9)											
78	82	" " " " " "	4	10)	11.8	1	Tr	9	2	2	17	17	4	42	7
82	83	Lost core	1	-											
83	87	Bit. sand, good grade	4	11)											
87	91	" " " "	4	12)	13.3		Tr	4	1	2	25	27	6	30	5
91	95	" " " "	4	13)											
95	99	" " " " some clay	4	14)	13.8	½	Tr	2	1	3	50	18	22	1	3
99	103	" " " " " "	4	15)											
103	107	" " " " 5% clay	4	16)	14.5	2	Nil	3	1	3	51	8	7	24	3
107	111	" " " "	4	17)											
111	115	" " " "	4	18)	15.1		Tr	1	1	2	57	18	17	2	2
115	119	" " " "	4	19)											
119	122	Lost core	3	-)	15.0		Tr	1	1	5	49	8	11	22	3
122	126	Bit. sand, good grade	4	20)											
126	130	" " " "	4	21)											
130	134	" " " "	4	22)	14.0		Tr	0	1	4	54	19	19	1	2
134	138	" " " "	4	23)											
138	142	" " " "	4	24)	14.4		Nil	1	1	3	52	21	2	19	1

MILDRED - RUTH LAKES AREA

HOLE No. B 35

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
142	146	Bit. sand, good grade	4	25)											
146	150	" " " " 10% clay	4	26)	14.9	4	Tr	2	1	3	53	19	19	1	2
150	154	" " " "	4	27)											
154	158	" " " "	4	28)	15.8		Tr	2	3	11	56	1	3	22	2
158	162	" " " "	4	29)											
162	166	" " " "	4	30)	15.5		Tr	1	42	37	9	4	5	1	1
166	170	" " " " some clay	4	31)											
170	171	Lost core	1	-)	15.9	¾	Tr	2	4	41	37	6	1	6	3
171	175	Bit. sand, good grade	4	32)											
175	179	" " " "	4	33)											
179	180	Lost core	1	-)	12.8	15¾	Tr	4	20	27	31	5	8	2	3
180	184	Bit. sand, good grade, 30% clay	4	34)											
184	187	Shale	3	-											
187	191	Bit. sand, good grade, 20% clay	4	35)											
191	192	Lost core	1	-)	12.1	10	Tr	12	20	39	15	2	1	8	3
192	196	Bit. sand, good grade, some clay	4	36)											
196	198	Lost core	2	-											
198	202	Bit. sand, good grade	4	37)											
202	203	Lost core	1	-)	14.4		Tr	11	28	23	16	6	9	2	5
203	207	Bit. sand, good grade	4	38)											
207	211	" " " "	4	39)											
211	215	" " " " some clay	4	40)	13.1	1¼	Tr	12	17	25	18	2	2	20	4
215	219	" " " " " "	4	41)											
219	223	" " " "	4	42)	14.6	2¼	Tr	9	10	8	21	18	25	4	5
223	227	" " " "	4	43)											
227	231	" " " " 10% clay	4	44)	12.8	6	Tr	24	18	18	15	3	2	15	5
231	232	Lost core	1	-											
232	236	Bit. sand, good grade, coarse	4	45	11.9		Tr	45	31	6	4	2	3	2	7

MILDRED - RUTH LAKES AREA

HOLE No. B 35

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
236	239	Bit. sand, good grade, 30% clay	3	46	10.7	8¾	Tr)								
239	249	Shale	10	-			)	19	26	17	19	6	4	4	5
249	253	Bit. sand, good grade, 25% clay	4	47	10.7	10	Tr)								
253	254	Lime clay	1	-											
254	257	Limestone	3	-											
	257'	End of Hole													

Summary

0' - 47' = 47' Overburden
47' - 57' = 10' @ 7.1% bitumen & 3% clay bands
57' - 239' = 182' @ 13.36% bitumen & 4.5% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 36

DATE Sept. 13-18 1946 LOCATION LS.5, Sec.34, Tp.92-10-4 CO-ORDINATES N.E.28, +1327.2 +1324.0 ELEVATION 1044' DEPTH 234' DIP 90° CORE RECOVERY 94.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	35	Overburden - sand and rocks	35	-											
35	39	Clay with low grade bit. sand	4	1	Not assayed, mostly clay.										
39	41	Lost core	2	-											
41	45	Bit. sand, low grade, much clay	4	2)											
45	49	" " " " " "	4	3)	3.5	68½	Tr	24	7	2	2	2	10	4	49
49	53	" " " "	4	4)											
53	55	Lost core	2	-											
55	59	Bit. sand, low grade, much clay	4	5	3.4	30	Tr)								
59	61	Lost core	2	-			)	20	5	3	6	12	24	7	23
61	65	Bit. sand, low grade, some clay	4	6)			)								
65	69	" " medium grade, some clay	4	7)	8.8	3	Tr)								
69	72	Lost core	3	-											
72	76	Bit. sand, good grade, some clay	4	8)											
76	80	" " " "	4	9)	13.2	1¾	Tr	2	2	1	19	28	39	4	5
80	84	" " " "	4	10)											
84	88	" " " " 10% clay	4	11)	11.7	5½	Tr	7	3	3	25	14	38	3	7
88	92	" " " " 5% "	4	12)											
92	96	" " " "	4	13)	14.1	2	Tr	5	2	3	34	24	25	1	6
96	100	" " " " 5% "	4	14)											
100	104	" " " "	4	15)	13.5	7	Tr	1	1	2	41	13	36	0	6
104	105	Lost cofe	1	-											
105	109	Bit. sand, good grade	4	16)											
109	113	" " " " slight clay	4	17)	14.8	1¾	Tr	1	1	3	49	19	21	0	6
113	117	" " " " 5% clay	4	18)											
117	121	" " " " some clay	4	19)	14.7	2⅝	Tr	1	0	7	57	11	19	2	3
121	125	" " " "	4	20)											
125	129	" " " "	4	21)	15.0		Nil	1	1	10	56	11	16	2	3
129	133	" " " "	4	22)											
133	137	" " " "	4	23)	16.1		Tr	0	1	9	57	1	28	2	2

MILDRED - RUTH LAKES AREA

HOLE No. B 36

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
137	141	Bit. sand, good grade	4	24)											
141	145	" " " "	4	25)	16.5		Tr	0	0	23	51	8	12	1	4
145	149	" " " " 10% clay	4	26)											
149	153	" " " "	4	27)	14.4	4¼	Tr	0	1	40	44	4	6	1	3
153	157	" " " "	4	28)											
157	161	" " " "	4	29)	16.4		Tr	0	1	55	29	3	9	2	1
161	165	" " " " some clay	4	30)											
165	169	" " " " " "	4	31)	15.7	1	Tr	2	34	40	9	4	7	2	2
169	173	" " " "	4	32)											
173	177	" " " "	4	33)	15.6		Tr	3	4	10	33	2	37	6	5
177	181	" " " " " "	4	34)											
181	185	" " " "	4	35)	14.8	1	Tr	4	9	15	33	10	20	4	5
185	189	" " " " 10% clay	4	36)											
189	193	" " " " 10% "	4	37)	11.8	17½	Tr	4	3	5	11	2	35	22	18
193	197	" " " " 10% "	4	38)											
197	201	" " " "	4	39)	15.5	1¾	Nil	2	4	15	31	6	19	1	22
201	205	" " " "	4	40)											
205	209	" " " "	4	41)	16.7		Nil	2	2	5	50	8	26	1	6
209	213	" " " "	4	42)											
213	217	" " " "	4	43)	17.0		Tr	3	3	4	36	23	25	4	2
217	221	" " " "	4	44	17.4		Tr	3	4	8	42	17	22	2	2
221	225	" " " " 20% clay	4	45)											
225	230	" " " " 30% "	5	46)	13.2	19	Nil	2	2	3	37	22	24	5	5
230	234	Limestone	4	-											
	234	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 36

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 61' = 61' Overburden & very low grade bituminous sands 61' - 72' = 11' @ 8.8% bitumen & 2.3% clay bands 72' - 230' = 158' @ 14.8% bitumen & 3.4% clay bands.													

MILDRED - RUTH LAKES AREA

HOLE No. B 37

DATE Sept. 19-25 1946 LOCATION LS. Sec.27,Tp.92-10-4 CO-ORDINATES N.E.28, -0.4; +1324.0 ELEVATION 1057' DEPTH 251' DIP 90° CORE RECOVERY 97.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	34	Overburden - sand and clay	34	-											
34	38	Bit. sand, medium grade, some clay	4	1	9.1	3	Tr	11	4	2	4	12	46	8	13
38	40	Lost core	2	-											
40	44	Bit. sand, low grade, much clay	4	2)	Not assayed, very low grade.										
44	48	" " " " " "	4	3)											
48	52	" " " " " "	4	4)											
52	56	" " " " " "	4	5)	3.1	46½	0.1	27	8	2	5	10	22	4	22
56	60	" " " " 20% clay	4	6)											
60	64	" " " " 20% "	4	7)	4.9	22⅜	Tr	27	8	2	5	10	22	4	22
64	68	" " medium grade	4	8)											
68	72	" " " "	4	9)	11.1		Tr	5	2	1	13	25	39	4	11
72	76	" " good " 5% clay	4	10)											
76	80	" " " " 10% "	4	11)	13.1		Tr	1	1	1	8	12	63	9	5
80	84	" " " " 10% "	4	12)											
84	88	" " " " 10% "	4	13)	13.2	9	Tr	1	1	0	5	14	64	7	8
88	92	" " " "	4	14)											
92	96	" " " " 30% "	4	15)	11.9	18⅜	Tr	0	0	1	6	12	66	8	7
96	100	" " " " 25% "	4	16)											
100	101	Lost core	1	-)	10.0	27	Tr	3	1	1	10	22	52	1	10
101	105	Bit. sand, good grade, 30% clay	4	17)											
105	106	Lost core	1	-											
106	110	Bit. sand, good grade, 10% clay	4	18)											
110	114	" " " " 15% "	4	19)	13.2	12½	Tr	1	1	1	6	11	67	7	6
114	118	" " " " 35% "	4	20)											
118	122	" " " "	4	21)	14.0	15¾	Tr	1	1	1	7	24	55	7	4
122	126	" " " " 10% "	4	22)											
126	130	" " " " 20% "	4	23)	14.0	13¼	Tr	1	1	1	16	4	66	7	4

MILDRED - RUTH LAKES AREA

HOLE No. B 37

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
130	134	Bit. sand, good grade	4	24)											
134	138	" " " " 10% clay	4	25)	15.6	2	Tr	1	1	1	24	28	38	0	7
138	142	" " " " some clay	4	26)											
142	146	" " " " 35% clay	4	27)	13.7	13¾	Tr	1	1	1	23	29	35	6	4
146	148	Lost core	2	-											
148	152	Bit. sand, good grade, 45% clay	4	28)											
152	156	" " " " 10% "	4	29)	12.6	27½	Tr	1	1	1	40	25	26	2	4
156	160	" " " "	4	30)											
160	164	" " " " 20% "	4	31)	15.6	9	Tr	1	1	1	39	26	29	2	2
164	169	Clay with bands of leached sand	5	-											
169	173	Bit. sand, good grade, 15% clay	4	32)											
173	177	" " " " 30% "	4	33)	8.4	34¼	Tr	7	3	11	28	22	19	3	7
177	181	" " " "	4	34)											
181	185	" " " " 15% "	4	35)	14.5	6½	Nil	3	20	53	10	3	6	2	3
185	188	Sandy clay	3	-											
188	192	Bit. sand, good grade, 25% clay	4	36)											
192	196	" " " " 15% "	4	37)	11.3	15¾	Nil	17	26	23	12	6	7	1	8
196	200	" " " " some clay	4	38)											
200	204	" " " "	4	39)	14.7	1½	Nil	8	23	40	19	4	3	1	2
204	208	" " " " 15% clay	4	40)											
208	212	" " " "	4	41)	13.7	6	Nil	9	13	33	23	5	12	2	3
212	216	" " " "	4	42)											
216	220	" " " "	4	43)	13.6		Tr	11	22	20	16	10	13	3	5
220	224	" " " "	4	44)											
224	228	" " " " some clay	4	45)	15.5	½	Nil	7	10	15	22	13	23	2	8
228	232	" " " " 15% clay	4	46	13.7	5½	Tr	20	26	20	17	3	6	2	6
232	233	Sandy clay	1	-											

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MILDRED - RUTH LAKES AREA

HOLE No. B 37

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
233	234	Bitumen concentration	1	47	26.5		10.9	67	16	4	3	1	2	3	4
234	246	Sandy clay	12	-											
246	249	Bit. sand, good grade, 10% clay	3	48	13.9	4	Tr	6	24	23	20	3	16	1	7
249	251	Limestone	2	-											
	251	End of Hole													

Summary

0' - 34' = 34' Overburden
34' - 64' = 30' very low grade sand and clay
64' - 234' = 170' @ 12.5% bitumen & 15.4% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 38

DATE Aug. 24-26 1946 LOCATION LS.15,Sec.27,Tp.92-10-4 CO-ORDINATES N.E.28, -1312.4; +3973.1 ELEVATION 1043' DEPTH 236' DIP 90° CORE RECOVERY 98.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	31	Overburden - sand and clay	31	-											
31	35	Bit. sand, low grade, 5% clay	4	1)											
35	37	Lost core	2	-)	7.0	24¼	0.1	22	5	2	2	3	29	23	14
37	41	Bit. sand, medium grade, 20% clay	4	2)											
41	45	" " low grade, 10% clay	4	3)											
45	49	" " " " 15% "	4	4)	6.9	23½	Tr	16	4	2	1	2	28	30	17
49	53	" " medium grade, 5% clay	4	5)											
53	57	" " " " 10% "	4	6)	10.9	8½	Tr	9	3	1	1	3	41	27	15
57	61	" " " " 15% "	4	7)											
61	65	" " " " 15% "	4	8)	11.3	12	Tr	8	2	1	1	4	23	47	13
65	69	" " " "	4	9)											
69	73	" " " " 15% "	4	10)	11.4	12½	Tr	5	2	1	1	4	52	23	12
73	77	" " good " 10% "	4	11)											
77	81	" " " "	4	12)	12.0	3½	Tr	4	3	2	2	5	6	65	13
81	85	" " " "	4	13)											
85	89	" " " " some clay	4	14)	13.2	1	Tr	3	3	2	3	12	52	16	9
89	93	" " " " " "	4	15)											
93	97	" " " " " "	4	16)	14.2	¾	Tr	4	1	1	1	6	30	48	9
97	101	" " " "	4	17)											
101	105	" " " " 20% clay	4	18)	12.7	11¼	Tr	3	1	0	4	16	56	14	6
105	109	" " " " 20% "	4	19)											
109	113	" " " "	4	20)	12.3	16¾	Nil	1	0	0	5	9	45	35	5
113	117	" " " "	4	21)											
117	121	" " " " 20% "	4	22)	12.9	13¼	Tr	2	1	1	12	22	48	10	4
121	122	Lost core	1												
122	126	Bit. sand, good grade, 20% clay	4	23)											
126	130	" " " " 20% "	4	24)	13.8	13¾	Tr	2	1	1	10	2	19	60	5

MILDRED - RUTH LAKES AREA

HOLE No. B 38

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
130	134	Bit. sand, good grade, 30% clay	4	25	14.0	13½	Nil)								
134	137	Shale	3	-			)	0	0	1	16	25	47	7	4
137	141	Bit. sand, good grade, some clay	4	26	14.0	1	Nil)								
141	145	" " " " 15% clay	4	27)											
145	149	" " " " 15% clay	4	28)	13.8	6¼	Tr	6	1	16	29	14	20	10	4
149	153	" " " " 25% "	4	29)											
153	157	" " " "	4	30)	13.2	10¼	Tr	4	22	49	11	4	6	2	2
157	161	" " " " some clay	4	31)											
161	165	" " " "	4	32)	14.0	1	Nil	9	40	22	12	7	5	3	2
165	169	" " " "	4	33)											
169	173	" " " " " "	4	34)	14.0	¾	Tr	19	7	5	25	17	18	5	4
173	177	" " " " " "	4	35)											
177	181	" " " "	4	36)	15.4		Tr	4	6	10	21	2	1	50	6
181	185	" " " "	4	37	14.1		Tr	9	17	12	18	11	20	8	5
185	189	" " " " 30% clay	4	38	5.1	30½	Nil	9	17	12	18	11	20	8	5
189	193	" " medium grade, 15% clay	4	39)											
193	197	" " " " 25% "	4	40)	8.0	18¾	Tr	14	14	13	6	4	0	34	15
197	201	" " " " 20% "	4	41)											
201	205	" " " " 15% "	4	42)	9.0	17	Tr	10	19	5	4	7	30	14	11
205	209	" " " " 25% "	4	43)											
209	213	" " " " 25% "	4	44)	6.1	36¼	Tr	13	8	3	2	2	5	48	19
213	217	" " " " 25% "	4	45)											
217	221	" " low " 30% "	4	46)	6.4	35¾	Tr	11	4	1	1	2	33	27	21
221	225	" " medium " 30% "	4	47)											
225	229	" " low & medium grade, 10% clay	4	48)	6.9	42¼	Tr	8	3	1	1	3	15	46	23
229	231	" " medium grade, 30% clay	2	49)											
231	232	Clay	1	-											
232	236	Limestone	4	-											
	236✓	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 38

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 31' = 31' Overburden - sand and clay 31' - 49' = 18' @ 7.0% bitumen & 22% clay bands 49' - 185' = 136' @ 12.8% bitumen & 10% clay bands 185' - 231' = 46' @ 7.1% bitumen & 33% clay bands 49' - 231' = 182' @ 11.36% bitumen & 15.6% clay bands.													

MILDRED - RUTH LAKES AREA

HOLE No. B 39

DATE Aug. 20-23 1946 LOCATION LS.14, Sec.27, Tp.92-10-4 CO-ORDINATES N.E.28, -1311.6; + 2646.1 ELEVATION 1055' DEPTH 293' DIP 90° CORE RECOVERY 96.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	32	Overburden - sandy clay	32	-											
32	36	Bit. sand, low grade	4	1)											
36	37	Lost core	1	-)	8.4		Tr	22	6	2	4	8	41	10	7
37	41	Bit. sand, medium grade	4	2)											
41	45	" " low " and clay	4	3)											
45	47	Lost core	2	-)											
47	51	Bit. sand, low grade and clay	4	4)	3.2	85¾	Tr	29	5	3	5	12	4	34	8
51	55	" " " " " "	4	5)											
55	59	" " medium grade	4	6)											
59	60	Lost core	1	-)	9.6	1½	Tr	17	4	1	6	14	42	9	7
60	64	Bit. sand, medium grade, some clay	4	7)											
64	68	" " good " 50% clay	4	8)											
68	72	" " " " some clay	4	9)	11.6	5	Tr	7	2	1	6	25	12	41	6
72	76	" " " " 5% clay	4	10)											
76	80	" " " " 5% "	4	11)	11.9	6½	Tr	6	2	0	4	19	54	10	5
80	84	" " " " 5% "	4	12)											
84	85	Lost core	1	-)	12.1	10	Nil	3	1	0	3	16	25	43	9
85	89	Bit. sand, good grade, 5% clay	4	13)											
89	94	Lost core	5	-											
94	98	Bit. sand, good grade, 25% clay	4	14)											
98	102	" " " " 10% "	4	15)	11.5	18¼	Tr	4	2	1	2	11	60	15	5
102	106	" " " " 10% "	4	16)											
106	110	" " " " some clay	4	17)	13.1	5¾	Tr	7	3	2	3	5	31	43	6
110	114	" " " " " "	4	18)											
114	118	" " " " 15% clay	4	19)	13.1	5	Tr	12	2	1	5	19	38	16	7
118	122	" " " " 10% "	4	20)											
122	126	" " " " 10% "	4	21)	14.4	7¼	Tr	2	1	0	4	16	60	12	5

MILDRED - RUTH LAKES AREA

HOLE No. B 39

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
126	130	Bit. sand, good grade, 20% clay	4	22)											
130	134	" " " " 30% "	4	23)	11.0	23¾	Tr	4	1	1	6	21	41	20	6
134	138	" " " " some clay	4	24)											
138	142	" " " "	4	25)	15.3	1	Tr	2	1	1	6	16	58	11	5
142	146	" " " " 20% clay	4	26)											
146	150	" " " " 25% "	4	27)	11.6	20½	Tr	1	1	1	9	30	37	17	4
150	154	" " " " some clay	4	28)											
154	158	" " " " 20% clay	4	29)	14.4	10½	Nil	1	1	1	30	23	19	22	3
158	162	" " " " 30% "	4	30)											
162	165	" " " " 40% "	3	31)	10.7	30½	Nil	2	2	1	15	24	47	6	3
165	168	Clay	3	-											
168	172	Bit. sand, good grade, 30% clay	4	32)											
172	176	" " " " 15% "	4	33)	13.8	17	Tr	1	1	1	21	33	29	11	3
176	180	" " " " 10% "	4	34)											
180	184	" " " " 5% "	4	35)	11.5	5½	0.1	22	3	1	17	22	26	4	5
184	188	" " " " 10% "	4	36)											
188	192	" " " " 20% "	4	37)	12.5	6¾	Tr	19	3	10	18	20	16	8	6
192	196	" " " " 10% "	4	38)											
196	200	" " " "	4	39)	15.3	4	Tr	1	1	11	37	19	25	3	3
200	203	" " " " some clay	3	40	13.4	1	Tr)								
203	207	Clay	4	-			)	10	17	25	19	10	8	7	4
207	211	Bit. sand, good grade, 25% clay	4	41	10.8	10¼	Tr)								
211	215	" " " " 15% "	4	42)											
215	219	" " " " 5% "	4	43)	11.2	12¼	Tr	13	26	11	7	8	21	9	5
219	223	" " " " some clay	4	44)											
223	227	" " " " 10% clay	4	45)	10.4	7¼	Tr	17	28	21	6	4	6	10	8
227	231	" " " " 10% "	4	46)											
231	235	" " " "	4	47)	11.6	8	Tr	12	28	14	13	9	16	5	3

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MILDRED - RUTH LAKES AREA

HOLE No. B 39

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
235	239	Bit. sand, good grade	4	48)											
239	243	" " " "	4	49)	13.6		Tr	7	13	9	11	15	18	20	7
243	247	" " " "	4	50)											
247	251	" " " "	4	51)	14.1		Tr	9	12	4	14	19	28	9	5
251	255	" " " "	4	52)											
255	259	" " " " some clay	4	53)	15.0	2	Tr	4	10	4	13	18	38	9	4
259	263	" " " "	4	54)											
263	267	" " " "	4	55)	15.4		Tr	4	7	6	12	12	9	44	6
267	271	" " " "	4	56)											
271	275	" " " "	4	57)	16.5		Tr	3	5	6	10	14	11	46	5
275	279	" " " "	4	58)											
279	283	" " " " some clay	4	59)	16.5	¾	Tr	1	3	3	8	11	48	18	8
283	287	" " " " " "	4	60)											
287	290	" " " " " "	3	61)	14.7	3	Tr	4	4	4	6	19	33	22	8
290	293	Lime clay	3	-											
	293	End of Hole													

Summary

0' - 32' = 32' Overburden - sandy clay
32' - 55' = 23' @ 5.2% bitumen & 31% clay bands
55' - 290' = 235' @ 12.5% bitumen & 7.6% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 40

DATE Sept.26, Oct. 1, 1946 LOCATION LS.13,Sec.27,Tp.92-10-4 CO-ORDINATES N.E.28, -1312.2 +1317.1 ELEVATION 1064' DEPTH 287' DIP 90° CORE RECOVERY 95.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	52	Clay and sand	52	-											
52	56	Bit. sand, medium & low grades	4	1)											
56	60	" " " grade	4	2)	9.4		Tr	9	3	1	3	12	51	10	11
60	64	" " low grades	4	3)											
64	68	" " " "	4	4)	2.7	95¼	0.1	10	5	2	2	10	47	13	11
68	72	" " " "	4	5)											
72	76	" " medium "	4	6)											
76	80	" " " "	4	7)	10.1	1½	Tr	5	2	1	2	17	49	15	9
80	84	" " " "	4	8)											
84	88	" " " " some clay	4	9)	10.3	5	Tr	3	2	1	3	18	55	10	8
88	92	" " " " " "	4	10)											
92	96	" " " "	4	11)	9.7	4½	Tr	4	2	1	7	17	53	3	13
96	100	" " good " slight clay	4	12)											
100	101	Lost core	1	-)	12.2	4	Tr	2	1	1	10	15	58	8	5
101	105	Bit. sand, good grade, slight clay	4	13)											
105	109	" " " "	4	14)											
109	113	" " " "	4	15)	14.1		Tr	1	1	1	13	26	50	5	3
113	117	" " " " some clay	4	16)											
117	121	" " " " 15% clay	4	17)	11.4	9½	Nil	9	18	15	27	7	16	3	5
121	122	Lost core	1	-											
122	126	Bit. sand, good grade	4	18)											
126	130	" " " " 15% clay	4	19)	13.6	6½	Tr	0	0	1	8	22	58	3	8
130	134	" " " "	4	20)											
134	138	" " " " 10% "	4	21)	14.1	3	Tr	1	0	0	11	28	50	6	4
138	142	" " " " 30% "	4	22)											
142	146	" " " " 35% "	4	23)	10.6	30¼	Tr	4	1	0	9	25	48	7	6
146	150	" " " " 5% "	4	24)											
150	154	" " " "	4	25)	13.2	12½	Tr	2	1	1	18	8	59	3	8

MILDRED - RUTH LAKES AREA

HOLE No. B 40

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
154	158	Bit. sand, good grade	4	26)											
158	162	" " " "	4	27)	15.2		Nil	1	1	1	15	27	47	5	3
162	166	" " " "	4	28)											
166	168	Lost core	2	-)	13.5	13	Tr	1	1	1	24	4	64	3	2
168	172	Bit. sand, good grade, 25% clay	4	29)											
172	176	" " " "	4	30)											
176	178	Shale	2	-)	13.0	17½	Tr	4	1	1	26	28	35	1	4
178	182	Bit. sand, good grade, 35% clay	4	31)											
182	184	Shale	2	-											
184	188	Bit. sand, good grade, 20% clay	4	32)											
188	192	" " " " 5% "	4	33)	14.2	10	Tr	3	1	1	45	15	30	2	3
192	196	" " " " 15% "	4	34)											
196	200	" " " " 30% "	4	35)	11.2	20	Tr	7	3	3	26	25	25	1	10
200	204	" " " " 5% "	4	36)											
204	205	" " " " 50% "	1	37)	13.7	9¼	Tr	3	1	6	37	7	40	3	3
205	210	Clay with 15% low grade sand	5	-											
210	214	Bit. sand, good grade, slight clay	4	38)											
214	218	" " " "	4	39)	14.7	1¼	Tr	1	20	21	34	10	12	1	1
218	222	" " " "	4	40)											
222	226	" " " " 10% clay	4	41)	15.3	4½	Tr	2	14	20	41	9	10	1	3
226	230	" " " " 15% "	4	42)											
230	234	" " " " 10% "	4	43)	14.6	11½	Tr	2	23	31	31	0	10	1	2
234	238	" " " " 5% "	4	44)											
238	242	" " " "	4	45)	15.4	3½	Tr	6	20	17	14	3	19	11	10
242	245	" " " " 15% "	3	46	12.4	6	Tr)								
245	250	Clay	5	-			)	17	22	11	10	5	14	10	11
250	254	Bit. sand, good grade, 10% clay	4	47	12.4	3¾	Tr)								

MILDRED - RUTH LAKES AREA

HOLE No. B 40

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
254	256	Lost core	2	-											
256	260	Bit. sand, good grade, 5% clay	4	48)											
260	262	" " " " 20% "	2	49)	11.5	11¼	Tr	14	25	15	28	3	6	2	7
262	269	Sandy clay	7	-											
269	271	Bit. sand, good grade, 40% clay	2	50	10.6	10¼	Tr)								
271	275	Shale	4	-			)								
275	279	Bit. sand, good grade, some clay	4	51	10.6	1	Tr)	9	27	11	25	8	12	3	5
279	282	Lost core	3	-			)								
282	283	Bit. sand, good grade, 25% clay	1	52	10.6	4	Tr)								
283	287	Limestone	4	-											
	287	End of Hole													

Summary

0' - 52' = 52' Overburden - clay and sand
52' - 72' = 20' @ 5.4% bitumen & 40% clay bands
72' - 283' = 211' @ 11.7% bitumen & 19.6% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 41

DATE Oct. 16-21 1946 LOCATION LS.5,Sec.27,Tp.92-10-4 CO-ORDINATES E 1/428 -1.2; +1317.0 ELEVATION 1061' DEPTH 278' DIP 90° CORE RECOVERY 99.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	47	Overburden - sandy clay	47	-											
47	51	Bit. sand, low & medium grades	4	1)											
51	52	Lost core	1	-)	10.5	5½	Tr	1	1	0	1	11	57	14	15
52	56	Bit. sand, medium grade	4	2)											
56	60	" " low grade	4	3)											
60	61	Lost core	1	-)											
61	65	Bit. sand, low grade	4	4)	3.2	75	Tr	4	2	1	3	5	48	15	22
65	68	" " medium grade, 35% clay	4	5)											
68	124	Sandy clay	56	-											
124	128	Bit. sand, good grade, 25% clay	4	6	12.2	6½	Nil)	1	1	1	8	1	64	15	9
128	129	Sandy clay	1	-			)								
129	132	Bit. sand, good grade, 25% clay	4	7	12.2	6¼	Nil)								
132	146	Sandy clay	14	-											
146	149	Bit. sand, good grade, 15% clay	3	8	12.4	4½	Tr)								
149	158	Sandy clay	9	-			)	1	0	0	9	25	44	5	16
158	162	Bit. sand, good grade, 20% clay	4	9	12.4	10	Tr)								
162	166	" " " " 30% "	4	10)											
166	167	Lost core	1	-)	13.0	16¾	Nil	1	1	1	25	7	54	2	9
167	171	Bit. sand, good grade, 10% clay	4	11)											
171	175	" " " " some clay	4	12)											
175	179	" " " " slight clay	4	13)	16.4		Tr	0	0	1	26	28	38	2	5
179	183	" " " " 10% clay	4	14)											
183	187	" " " " 10% "	4	15)	15.0	7	Tr	0	0	2	46	6	39	3	4
187	191	" " " "	4	16)											
191	195	" " " " 15% "	4	17)	15.1	5	Tr	2	8	21	35	13	15	2	4
195	199	" " " " 15% "	4	18)											
199	203	" " " "	4	19)	14.0	6	Tr	3	19	30	28	1	14	2	3
203	207	" " " " 10% "	4	20)											
207	211	" " " " some clay	4	21)	13.0	3½	Tr	12	35	22	9	8	8	1	5

MILDRED - RUTH LAKES AREA

HOLE No. B 41

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
211	215	Bit. sand, good grade, 5% clay	4	22)											
215	219	" " " "	4	23)	10.6	2½	Nil	5	9	9	23	22	18	1	13
219	223	" " " " some clay	4	24)											
223	227	" " " "	4	25)	14.7	½	Tr	5	9	10	24	3	35	5	9
227	231	" " " "	4	26	17.2		Tr	10	27	16	12	12	13	4	6
231	235	" " " " 2" bit. concentration	4	27)											
235	239	" " " "	4	28)	15.2		Tr	4	9	10	19	8	36	6	8
239	243	" " " "	4	29)											
243	245	" " " " 30% clay	2	30)	14.5	6	Tr	5	5	3	10	20	42	2	13
245	258	Clay	13	-											
258	262	Bit. sand, good grade, 10% clay	4	31)											
262	266	" " " " 10% "	4	32)	11.6	9	Tr	18	33	16	9	4	10	2	8
266	270	" " " " 10% "	4	33)											
270	273'6"	" " " " 25% "	3'6"	34)	9.1	22	Tr	19	42	13	6	4	4	2	10
273'6"	274	Bitumen concentration	0'6"	35	51.7		17.6	37	22	13	9	3	8	2	6
274	277'4"	Bit. sand, good grade, 20% clay	3'4"	36	11.1	9	Tr	11	32	28	11	1	9	2	6
277'4"	278	Lime clay	0'8"	-											
	278	End of Hole													

Summary

0' - 47' = 47' Overburden - sandy clay
47' - 158' = 111'; 88' of clay & 23' of bit. sand
158' - 245' = 87' @ 14.2% bitumen & 5.5% clay
245' - 258' = 13' clay
258' - 277' = 19' @ 11.56% bitumen & 16.7% clay
158' - 277' = 119' @ 12.2% bitumen & 17.6% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 42

DATE Oct. 10-14 1946 LOCATION LS.4, Sec.27, Tp.92-10-4 CO-ORDINATES E 1/4 28 -1323.0; +1303.0 ELEVATION 1051' DEPTH 290' DIP 90° CORE RECOVERY 98.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	52	Overburden - clay and rocks	52	-											
52	56	Bit. sand low grade	4	1)											
56	60	" " " "	4	2)	7.7	31	0.1	11	6	2	4	14	46	0	17
60	64	" " " "	4	3)											
64	68	" " " "	4	4)	Not assayed all clay.										
68	72	" " " "	4	5)											
72	76	" " " " 25% clay	4	6	4.9	13½	0.1)								
76	81	Clay with 15% low grade sand	5	-			)	8	3	1	2	2	31	20	33
81	85	Bit. sand, low grade	4	7	4.9	21½	0.1)								
85	98	Clay	13	-											
98	102	Bit. sand, medium and good grades, 20% clay	4	8	10.4	3¼	Tr)								
102	135	Sand clay with 5% low grade sand	33	-			)	5	2	1	2	5	47	19	19
135	139	Bit. sand, good grade, 20% clay	4	9	10.4	15	Tr)								
139	143	" " " " some clay	4	10)											
143	147	" " " " " "	4	11)	14.6	9¾	Nil	1	1	1	4	12	62	12	7
147	151	" " " " 15% clay	4	12)											
151	155	" " " " some clay	4	13)	13.7	10	Nil	1	1	1	1	18	58	7	13
155	159	" " " " " "	4	14)											
159	163	" " " "	4	15)	15.3	1	Nil	1	1	1	11	4	67	6	9
163	167	" " " "	4	16)											
167	171	" " " " 20% clay	4	17)	14.8	7½	Tr	1	1	1	23	3	61	3	7
171	175	" " " " 15% "	4	18)											
175	179	" " " " some clay	4	19)	15.0	6	Tr	1	1	3	56	18	14	3	4
179	180	Lost core	1	-											
180	184	Bit. sand, good grade	4	20)											
184	188	" " " "	4	21)	15.4		Tr	2	6	39	37	1	9	2	4
188	190	Bitumen concentration	2	22	73.9		14.5	7	29	22	8	4	11	4	15
190	193'3"	Bit. sand, good grade, 5% clay	3'3"	23	12.3	3¾	Tr	4	26	16	20	11	12	1	10

MILDRED - RUTH LAKES AREA

HOLE No. B 42

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
193'3"	193'6"	Bitumen concentration	0'3"	24	29.1		15.4	2	22	33	23	4	7	2	7
193'6"	197	Bit. sand, good grade, 5% clay	3'6"	25)											
197	201	" " " " some clay	4	26)	13.1	2	Tr	7	19	15	27	3	21	3	5
201	201'6"	Bitumen concentration	0'6"	27	33.3		12.9	40	39	7	4	1	3	2	4
201'6"	203	Bit. sand, good grade, 5% clay	1'6"	28	11.3	2	Tr	19	37	11	9	6	6	2	10
203	205	Bitumen concentration	2	29	66.0		19.3	18	27	14	14	4	9	5	9
205	209	Bit. sand, good grade	4	30	13.1		Nil	18	37	11	10	5	9	3	7
209	211	Bitumen concentration	2	31	54.5		12.7	33	32	9	8	4	5	2	7
211	214	Bit. sand, good grade	3	32	13.2		Nil	9	27	20	7	1	23	2	11
214	215	Bitumen concentration	1	33	27.0		12.3	21	31	19	6	4	3	8	8
215	219	Bit. sand, good grade	4	34)											
219	220'6"	" " " " some clay	1'6"	35)	12.5	½	Nil	3	13	8	5	12	28	4	27
220'6"	221'6"	Bitumen concentration	1	36	59.6		15.5	17	17	17	14	3	3	17	12
221'6"	226	Bit. sand, good grade	4'6"	37	13.5		Nil	9	14	13	10	3	25	11	15
226	226'3"	Bitumen concentration	0'3"	38	52.1		14.7	10	23	20	13	4	8	9	13
226'3"	230	Bit. sand, good grade, some clay	3'6"	39	14.0	1½	Tr	5	13	6	5	11	40	2	18
230	232	Bitumen concentration	2	40	36.8		19.8	34	32	14	6	1	2	7	4
232	234'8"	Bit. sand, good grade, slight clay	2'8"	41	12.1		Tr	8	16	14	7	4	30	6	15
234'8"	235	Bitumen concentration	0'4"	42	38.7		15.3	6	19	17	14	8	14	14	8
235	239	Bit. sand, good grade	4	43)											
239	243	" " " " some clay	4	44)	13.7	3	Tr	3	5	3	5	11	43	16	14
243	244	Lost core .	1	-											
244	248	Bit. sand, good grade, slight clay	4	45)											
248	249	Lost core	1	-)	13.4	2¼	Tr	3	4	6	6	7	43	17	14
249	251'7"	Bit. sand, good grade, 10% clay	2'7"	46)											
251'7"	252	Bitumen concentration	0'5"	47	43.9		15.1	2	16	14	14	7	14	13	20
252	254	Bit. sand, good grade	2	48	13.6		Tr	2	6	5	7	9	40	1	30
254	254'4"	Bitumen concentration	0'4"	49	40.1		12.7	16	27	14	14	5	14	5	5

MILDRED - RUTH LAKES AREA

HOLE No. B 42

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
254'4"	255'6"	Bit. sand, good grade	1'2"	50	12.6	½	Nil	2	4	5	7	1	48	14	19
255'6"	258'6"	Bitumen concentration	3'0"	51	48.4		14.7	9	27	18	13	5	5	16	7
258'6"	262	Bit. sand, good grade	3'6"	52)											
262	264	" " " "	2	53)	14.4		Tr	1	4	4	8	13	47	3	20
264	267	Bitumen concentration	3	54	47.4		14.7	9	40	13	16	7	9	2	4
267	271	Bit. sand, good grade	4	55)											
271	275	" " " "	4	56)	15.6		Tr	1	2	6	19	7	52	7	6
275	276	Bitumen concentration	1	57	31.2		12.6	20	24	15	16	8	9	3	5
276	280	Bit. sand, good grade	4	58)											
280	281'4"	" " " "	1'4"	59	14.9	2½	Tr	1	2	5	18	18	42	6	8
281'4"	282'2"	Bitumen concentration	0'10"	60	50.0		13.8	11	12	23	21	9	4	9	11
282'2"	284'4"	Bit. sand, good grade, 5% clay	2'2"	61	14.3	2	Tr	1	2	7	47	14	21	3	5
284'4"	285	Bitumen concentration	0'8"	62	69.2		13.3	28	14	10	16	7	9	5	11
285	287	Shale	2	-											
287	290	Lime clay	3	-											
	290 ✓	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 42

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 52' = 52' Overburden 52' - 135' = 83' low grade sand and clay 135' - 188' = 53' @ 14.47% bitumen & 7.7% clay bands 188' - 285' = 97' @ 21.5% bitumen & 1.7% clay bands 135' - 285' = 150' @ 19.01% bitumen & 3.8% clay bands **Average Assay if Bitumen Concentration (20'7") are Taken as 18%** 188' - 285' = 97' @ 14.57% bitumen & 1.7% clay bands 135' - 285' = 150' @ 14.53% bitumen & 3.8% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 43

DATE Aug.28-Sept. 9, 1946 LOCATION LS.4,Sec.27,Tp.92-10-4 CO-ORDINATES E 1/4 28 -1323.0; 0.0 ELEVATION 1055' DEPTH 272' DIP 90° CORE RECOVERY 95.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	52	Overburden - gravel & clay	52	-											
52	55	Bit. sand, low grade, 20% clay	3	1	7.9	8	Tr								
55	72	Sandy clay	17	-				15	6	4	5	8	31	15	16
72	76	Bit. sand, low grade, 25% clay	4	2	7.9	13½	Tr								
76	89	Sandy clay	13	-											
89	93	Bit. sand, medium grade, 50% clay	4	3											
93	97	" " " " 25% "	4	4	8.6	31½	Tr	4	3	2	4	15	6	57	9
97	101	" " low " 30% "	4	5											
101	103	" " medium " 50% "	4	6	6.2	44	Tr								
103	111	Sandy clay	8	-				5	3	2	5	13	50	15	7
111	115	Bit. sand, medium grade, 40% clay	4	7	6.2	22	Tr								
115	119	" " good " some clay	4	8											
119	123	" " " " " "	4	9	13.7	1½	Tr	1	1	1	11	22	19	41	4
123	127	" " " " 20% clay	4	10											
127	131	" " " " 10% "	4	11	11.3	22½	Tr	2	1	1	14	21	51	7	3
131	135	" " " " 20% "	4	12											
135	136	Lost core	1	-	7.9	41½	Tr	4	2	1	11	6	11	60	5
136	140	Bit. sand, good grade, 25% clay	4	13											
140	144	" " " " 15% "	4	14											
144	148	" " " " 15% "	4	15	10.6	22½	Tr	6	2	1	16	22	41	6	6
148	150	Lost core	2	-											
150	154	Bit. sand, good grade, some clay	4	16											
154	158	" " " " 15% clay	4	17	13.3	9	Tr	3	2	2	23	34	4	28	4
158	162	" " " " 5% "	4	18											
162	166	" " " " 10% "	4	19	13.9	3½	Tr	4	2	2	19	24	40	5	4
166	170	" " " " 20% "	4	20											
170	174	" " " "	4	21	14.6	7½	Tr	1	1	2	27	5	37	24	3

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MILDRED - RUTH LAKES AREA

HOLE No. B 43

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
174	178	Bit. sand, good grade	4	22)											
178	182	" " " "	4	23)	16.6		Tr	1	1	3	41	22	26	4	2
182	186	" " " " 30% clay	4	24)											
186	190	" " " " 20% "	4	25)	12.3	21¾	Tr	8	4	29	35	11	3	7	3
190	191	Lost core	1	-											
191	195	Bit. sand, good grade	4	26)											
195	196	Lost core	1	-)	12.6	1¼	Tr	30	21	18	10	2	3	7	4
196	200	Bit. sand, good grade, some clay	4	27)											
200	204	" " " " " "	4	28)											
204	207'6"	" " " "	3'6"	29)	14.8	1	Tr	6	13	11	30	14	21	2	3
207'6"	208	Bitumen concentration	0'6"	30	65.8		22.3	37	26	10	11	3	7	3	3
208	212'8"	Bit. sand, good grade, 10% clay	4'8"	31	12.1	6	Tr	7	10	12	28	19	1	19	4
212'8"	213	Bitumen concentration	0'4"	32	23.4		9.1	20	10	16	20	9	4	16	5
213	217	Bit. sand, good grade	4	33	15.5		Tr	4	8	7	24	18	24	9	6
217	221	" " " "	4	34)											
221	224	" " " "	3	35)	15.2		Tr	3	4	5	16	16	13	38	5
224	224'6"	Bitumen concentration	0'6"	36	41.2		15.3	11	29	19	19	7	9	3	3
224'6"	226	Bit. sand, good grade	1'6"	37	14.0		Tr	2	5	4	11	19	38	10	11
226	228	Bitumen concentration	2	38	48.3		17.4	24	29	16	11	5	6	5	4
228	232	Bit. sand, good grade, some clay	4	39)											
232	236	" " " "	4	40)	14.7		Tr	1	4	5	7	13	6	55	9
236	240	" " " " 10% clay	4	41)											
240	244	" " " " 15% "	4	42)	13.4	6¾	Tr	8	16	17	10	10	26	2	11
244	245	Lost core, presumably bitumen concentrate	1	-											
245	248	Bitumen concentration	3	43	54.0		21.9	13	37	17	13	5	7	3	5
248	250	Bit. sand, low grade, 50% clay	2	44	Not assayed, very low grade.										
250	253	Shale	3	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 43

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
253	256	Lost core	3	-											
256	263	Shale	7	45											
263	267	Clay with 30% low grade sand	4	-											
267	272	Limestone	5	-											
	272'	End of Hole													

Summary

0' - 115' = 115' Overburden & low grade sand

115' - 207'6" = 92'6" @ 12.7% bitumen & 11.8% clay bands

207'6" - 248' = 40'6" @ 20.85% bitumen & 2.6% clay bands

115' - 248' = 133' @ 15.2% bitumen & 9.0% clay bands

Average Assay if Bitumen Concentration is Taken as 18%

207'6" - 248' = 40'6" @ 14.85% bitumen & 2.6% clay bands

115' - 248' = 133' @ 13.4% bitumen & 9.0% clay bands.

574

MILDRED - RUTH LAKES AREA

HOLE No. B 44

DATE Sept. 10-13 1946 LOCATION LS.2, Sec.28, Tp.92-10-4 CO-ORDINATES E. 1/4 28 -1321.0; -1324.0 ELEVATION 1053' DEPTH 223' DIP 90° CORE RECOVERY 95.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	50	Clay, rocks and sand	50	-											
50	55	Bit. sand, low grade, 30% clay	5	1	9.2	20	Tr	6	5	3	9	12	41	16	8
55	62	Clay	7	-											
62	63	Lost core	1	-											
63	83	Clay	20	-											
83	84	Lost core	1	-											
84	89	Clay	5	-											
89	90	Lost core	1	-											
90	99	Clay	9	-											
99	102	Lost core	3	-											
102	113	Sandy clay	11	-											
113	117	Bit. sand, good grade, 10% clay	4	2	15.0	2½	Tr	6	5	3	9	12	41	16	8
117	121	" " " " 40% "	4	3)											
121	122	Lost core	1	-)	11.1	24¾	Tr	1	1	1	11	15	4	62	5
122	126	Bit. sand, good grade, 5% clay	4	4)											
126	128	Lost core	2	-											
128	132	Bit. sand, good grade, 10% clay	4	5)											
132	136	" " " " 5% "	4	6)	14.0	9½	Tr	2	1	1	18	19	43	10	6
136	140	" " " "	4	7)											
140	144	" " " " some clay	4	8)	15.5	1	Tr	2	1	2	20	5	50	16	4
144	148	" " " " " "	4	9)											
148	152	" " " " " "	4	10)	15.6	1	Nil	1	1	1	22	24	42	6	3
152	156	" " " " " "	4	11)											
156	160	" " " " 10% clay	4	12)	15.6	4½	Nil	1	1	1	33	35	14	12	3
160	164	" " " " some clay	4	13)											
164	168	" " " "	4	14)	15.9	¾	Nil	2	3	3	33	26	28	3	2
168	172	" " " "	4	15)											
172	176	" " " " 10% clay	4	16)	15.9	6½	Tr	1	2	4	32	26	19	14	2

MILDRED - RUTH LAKES AREA

HOLE No. B 44

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
176	180	Bit. sand, good grade, some clay	4	17)											
180	184	" " " " 20% clay	4	18)	14.1	10½	Tr	2	27	22	32	7	7	1	2
184	188	" " " " 10% "	4	19)											
188	192	" " " " some clay	4	20)	14.3	3½	Tr	5	14	41	26	5	3	3	3
192	196	" " " "	4	21)											
196	200	" " " "	4	22)	14.5		Tr	9	33	29	19	3	4	1	2
200	204	" " " "	4	23	16.7		Tr	3	4	9	40	9	6	26	3
204	208	" " " "	4	24)											
208	210	" " " "	2	25)	16.9		Tr	4	7	8	30	19	24	4	4
210	215	Bitumen concentration	5	26	56.4		22.4	13	28	25	15	3	5	5	5
215	217	Bit. sand, good grade, 10% clay	2	27	13.3		Tr	8	3	5	18	10	25	16	5
217	220	Leached sand with clay	3	-											
220	223	Lime clay	3	-											
	223	End of Hole													

<u>Summary</u>

0' - 113' = 113' Overburden - clay
113' - 217' = 104' @ 17.3% bitumen & 5.1% clay bands

<u>Assay if Bitumen Concentration is Taken as 18%</u>

113' - 217' = 104' @ 15.48% bitumen & 5.1% clay bands.

576

MILDRED - RUTH LAKES AREA

HOLE No. B 45

DATE Sept. 19-27 1946 LOCATION LS.9,Sec.28,Tp.92-10-4 CO-ORDINATES E.½28; +0.2; -1317.0 ELEVATION 1051' DEPTH 220' DIP 90° CORE RECOVERY 97.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	37	Overburden - clay and sand	37	-											
37	41	Bit. sand, medium grade	4	1)											
41	42	Lost core	1	-)	9.2	1¾	0.1	11	5	3	3	10	46	8	14
42	46	Bit. sand, medium grade, slight clay	4	2)											
46	50	" " low "	4	3)	Not assayed, laboratories report as all clay.										
50	54	" " " " 10% clay	4	4)											
54	60	Sandy clay	6	-											
60	64	Bit. sand, good grade, 20% clay	4	5)											
64	68	" " medium grade	4	6)	12.4	8	Tr	5	2	1	1	3	53	20	15
68	72	" " good " 15% clay	4	7)											
72	76	" " medium " some clay	4	8)	12.5	5¾	Tr	5	1	1	1	3	46	0	43
76	77	Lost core	1	-											
77	81	Bit. sand, good grade, 20% clay	4	9)											
81	85	" " " " 5% "	4	10)	12.5	10¼	Tr	2	1	1	1	3	48	28	16
85	89	" " " " 5% "	4	11)											
89	93	" " " " 10% "	4	12)	13.7	5¼	Tr	2	1	0	1	4	60	19	13
93	97	" " " " 10% "	4	13)											
97	98	Lost core	1	-)	11.2	18½	Nil	3	1	1	1	14	58	14	8
98	102	Bit. sand, good grade	4	14)											
102	106	" " " "	4	15)											
106	110	" " " "	4	16)	14.1	½	Tr	2	1	1	3	11	63	1	18
110	114	" " " "	4	17)											
114	118	" " " "	4	18)	10.4		Tr	10	4	2	3	4	57	6	14
118	122	" " " " some clay	4	19)											
122	126	" " " " 40% clay	4	20)	12.1	22½	Tr	2	1	1	5	19	61	1	10
126	127	Lost core	1	-											
127	131	Bit. sand, good grade	4	21)											
131	135	" " " " 30% clay	4	22)	14.1	14½	Tr	0	1	1	22	23	45	5	2

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MILDRED - RUTH LAKES AREA

HOLE No. B 45

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
135	139	Bit. sand, good grade, 20% clay	4	23)											
139	143	" " " " 15% "	4	24)	14.3	13½	Tr	1	1	1	30	14	49	3	1
143	147	" " " "	4	25)											
147	151	" " " " 20% "	4	26)	15.8	8¾	Nil	1	1	1	20	27	45	2	3
151	155	" " " " 20% "	4	27)											
155	156	Lost core	1	-)	14.9	12	Nil	1	1	2	56	21	15	2	2
156	160	Bit. sand, good grade, 10% clay	4	28)											
160	162	" " " " 50% "	2	29	14.8		Tr)								
162	165	Clay	3	-			)	2	1	16	49	13	16	2	1
165	169	Bit. sand, good grade	4	30	14.8	9½	Tr)								
169	173	" " " "	4	31	16.4		Tr	1	1	32	42	12	8	2	2
173	177	" " " " 5% clay	4	32)											
177	179	" " " "	2	33)	13.7	3¾	Tr	14	37	20	16	4	5	1	3
179	182	Bitumen concentration	3	34	35.8		20.2	41	27	8	6	6	5	2	5
182	183	Bit. sand, good grade, 50% clay	1	35	11.5	1	0.1	6	30	26	13	2	10	3	10
183	186	Bitumen concentration	3	36	44.3		19.2	26	21	17	15	5	2	9	5
186	187	Bit. sand, good grade, 40% clay	1	37	11.5	4½	Tr)	21	39	14	8	3	5	2	8
187	190	Sandy clay	3	-			)								
190	194	Bit. sand, good grade	4	38	11.5		Tr)								
194	198	" " " "	4	39)											
198	202	" " " "	4	40)	13.8		Nil	10	14	15	24	4	22	6	5
202	206	" " " "	4	41)											
206	210	" " " "	4	42)	15.0		Tr	7	5	7	31	19	21	6	4
210	214	" " " "	4	43)											
214	218	" " " "	4	44)	15.4		Tr	4	7	6	36	14	27	4	2
218	220	Lime clay and limestone	2	-											
	220	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 45

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 60' = 60' Overburden including 9' bit. sand @ 9.2% 60' - 218' = 158' @ 14.01% bitumen & 11.1% clay bands													
		Average Assay if 6' of Bitumen Concentration is Taken as 18% 60' - 218' = 158' @ 13.18% bitumen & 11.1% clay bands.													

MILDRED - RUTH LAKES AREA

HOLE No. B 46

DATE Oct. 10 - 14 1946 LOCATION LS.15, Sec.28, Tp.92-10-4 CO-ORDINATES N.E.28, -1313.3; -1321.9 ELEVATION 1053' DEPTH 226' DIP 98.3% CORE RECOVERY 98.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	36	Overburden - sand and clay	36												
36	40	Bit. sand, medium grade	4	1)											
40	44	" " " "	4	2)	11.8		Tr	6	3	1	5	13	53	9	10
44	48	" " " "	4	3)											
48	52	" " " " 25% clay	4	4)	8.2	14	0.1	20	5	3	3	7	42	9	11
52	56	" " low " much clay	4	5	4.1	40	Tr)								
56	57	Lost core	1	-			)								
57	61	Bit. sand, low grade, 25% clay	4	6	4.1	47	Tr)	6	2	1	2	3	28	24	34
61	72	Clay with 15% low grade sand	11	-			)								
72	76	Bit. sand, low grade, 10% clay	4	7	4.1		Tr)								
76	79	" " medium grade, 30% clay	3	8	10.2	9¼	Tr)								
79	108	Sandy clay	29	-			)	4	3	2	2	2	46	24	17
108	112	Bit. sand, good grade, 25% clay	4	9	10.2	11	Tr)								
112	116	" " " " 25% "	4	10)											
116	118	Lost core	2	-)	12.5	13	Tr	9	3	1	1	5	47	1	33
118	122	Bit. sand, good grade, slight clay	4	11)											
122	124	" " " " 40% clay	2	12	9.8	7¾	Tr)								
124	145	Sandy clay	21	-			)	16	2	1	4	7	43	16	11
145	149	Bit. sand, low & good grades, 25% clay	4	13	9.8	11	Tr)								
149	151	" " " " " " 40% "	2	14	13.9	9¼	Tr)								
151	154	Shale	3	-			)	2	2	1	10	16	53	1	15
154	158	Bit. sand, good grade, some clay	4	15	13.9	1	Tr)								
158	162	" " , medium & good grades, 20% clay	4	16)											
162	166	" " good grades, 25% clay	4	17)	11.2	20½	Tr	7	1	1	10	9	45	15	12
166	170	" " " " some clay	4	18)											
170	174	" " " " " "	4	19)	15.8	2½	Tr	4	1	1	40	17	28	2	7

MILDRED - RUTH LAKES AREA

HOLE No. B 46

DATE ....194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
174	179	Bit. sand, good grade, 20% clay	5	20	11.4	11¾	Tr)								
179	184	Sandy clay	5	-			)	5	12	12	21	10	24	6	10
184	189	Bit. sand, good grade, 25% clay	5	21	11.4	15¼	Tr)								
189	191	Sandy clay	2	-											
191	195	Bit. sand, good grade, 15% clay	4	22)											
195	199	" " " "	4	23)	12.5	6	Tr	12	13	32	26	5	6	2	4
199	203	" " " "	4	24)											
203	207	" " " "	4	25)	14.2		Nil	10	6	13	45	5	14	2	5
207	211	" " " " 5% clay	4	26)											
211	215	" " " "	4	27)	15.9	2¾	Nil	3	2	5	57	14	13	4	2
215	219	" " " "	4	28)											
219	222	" " " "	3	29)	16.6		Nil	3	3	5	44	18	15	1	11
222	226	Limestone	4	-											
	226	End of Hole													

Summary

0' - 36' = 36' Overburden
36' - 145' = 109' @ 3% bitumen
145' - 222' = 77' @ 11.8% bitumen & 21.4% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 47

DATE Oct. 2 - 9, 1946 LOCATION LS.16,Sec.28,Tp.92-10-4. CO-ORDINATES N.E.28, -1314.0; -2.9 ELEVATION 1063' DEPTH 234' DIP 90° CORE RECOVERY 98.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	28	Overburden - sand and clay	28	-											
28	32	Bit. sand, low grade	4	1)											
32	34	Lost core	2	-)	5.0		0.1	16	7	3	4	8	42	10	10
34	38	Bit. sand, low grade	4	2)											
38	42	" " " " 10% clay	4	3)											
42	46	" " " " 10% "	4	4)	3.0	36½	0.1	40	7	8	4	2	19	11	9
46	50	" " " " 15% "	4	5)											
50	54	" " medium grade	4	6)	8.2	6¼	Tr	4	2	0	1	7	53	1	32
54	58	" " " " some clay	4	7)											
58	59	Lost core	1	-)	12.0	¾	Tr	2	1	1	1	14	54	17	10
59	63	Bit. sand, good grade	4	8)											
63	67	" " " "	4	9)											
67	71	" " " " 15% clay	4	10)	13.3	5	Tr	1	1	1	3	11	60	15	8
71	75	" " " " some clay	4	11)											
75	79	" " " " 25% "	4	12)	12.2	11½	Tr	2	2	1	1	11	50	19	14
79	83	" " " " 15% "	4	13)											
83	87	" " " " 20% "	4	14)	12.1	14	Tr	1	1	0	1	5	47	25	20
87	91	" " " " some clay	4	15)											
91	95	" " " " 15% clay	4	16)	12.9	9½	Tr	1	1	0	2	10	52	17	17
95	99	" " " " 15% "	4	17)											
99	103	" " " " 15% "	4	18)	13.0	13¼	Tr	1	1	1	2	8	55	12	20
103	107	" " " " some clay	4	19)											
107	111	" " " " 30% clay	4	20)	13.5	13¾	Tr	1	1	1	2	18	52	18	7
111	115	" " " "	4	21)											
115	119	" " " " 15% clay	4	22)	15.6	6¼	Nil	1	1	1	6	15	56	5	15
119	123	" " " " 60% "	4	23)											
123	127	" " " " 30% "	4	24)	9.3	43¾	Tr	1	1	1	12	35	39	6	5
127	131	" " " "	4	25)											
131	135	" " " "	4	26)	17.5		Tr	1	0	1	13	25	51	6	3
135	139	" " " "	4	27)											
139	143	" " " "	4	28)	17.3		Tr	0	0	1	9	22	57	7	4

MILDRED - RUTH LAKES AREA

HOLE No. B 47

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
143	147	Bit. sand, good grade, 5% clay	4	29)											
147	151	" " " " 15% "	4	30)	14.4	10	Tr	3	1	1	22	27	39	4	3
151	155	" " " "	4	31)											
155	159	" " " " 30% "	4	32)	14.3	10	Nil	1	1	2	36	11	43	3	3
159	163	" " " " 5% "	4	33)											
163	167	" " " "	4	34)	15.8	3 3/4	Tr	1	1	3	46	21	24	2	2
167	171	" " " "	4	35)											
171	175	" " " " 10% clay	4	36)	15.8	4 3/4	Tr	1	1	19	36	12	27	2	2
175	179	" " " "	4	37)											
179	183	" " " " 15% "	4	38)	14.1	12 1/2	Nil	5	13	15	23	16	21	3	4
183	187	" " " " 5% "	4	39)											
187	191	" " " " 25% "	4	40)	11.9	12 1/2	Nil	7	18	43	13	1	10	3	5
191	195	" " " " 20% "	4	41)											
195	199	" " " " 10% "	4	42)	13.2	11	Tr	7	32	34	13	3	5	1	5
199	203	" " " "	4	43)											
203	207	" " " "	4	44)	13.4		Nil	12	23	27	16	7	9	0	6
207	211	" " " "	4	45)											
211	215	" " " "	4	46)	14.2		Tr	8	10	7	27	15	24	5	4
215	219	" " " "	4	47)											
219	223	" " " "	4	48)	15.0	1/2	Tr	5	5	10	38	10	25	3	4
223	227'2"	" " " " some clay	4'2"	49	13.0	1/2	Tr	5	6	5	7	5	41	6	25
227'2"	228	Shale	0'10"	-											
228	230	Lime clay	2	-											
230	234	Limestone	4	-											
47	234'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 47

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 28' = 28' Overburden 28' - 54' = 26' @ 5% bitumen 54' - 227' = 173' @ 13.8% bitumen & 8.8% clay bands.													

MILDRED - RUTH LAKES AREA

HOLE No. B 48

DATE Oct. 16-19 1946 LOCATION LS.7,Sec.33,Tp.92-10-4 CO-ORDINATES E +33; +3.5; -1323.0 ELEVATION 1051' DEPTH 234' DIP 90° CORE RECOVERY 97.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	31	Overburden - sand and clay	31	-											
31	35	Bit. sand, medium grade	4	1)											
35	36	Lost core	1	-)	6.3	36¼	Tr	10	3	2	3	8	48	13	12
36	40	Bit. sand, low & medium grades, 10% clay	4	2)											
40	76	Sandy clay	36	-											
76	80	Bit. sand, good grade	4	3)											
80	81	Lost core	1	-)	14.8		Tr	4	5	2	3	6	52	7	21
81	85	Bit. sand, good grade	4	4)											
85	89	" " " " 5% clay	4	5)											
89	93	" " low & medium grades, 35% clay	4	6)	10.6	25	Nil	4	2	1	4	9	45	20	15
93	95	Sandy clay	2	-											
95	99	Bit. sand, good grade, some clay	4	7)											
99	103	" " " "	4	8)	14.6	1½	Nil	4	4	2	4	4	58	8	15
103	107	" " " "	4	9)											
107	111	" " " "	4	10)	15.6		Tr	2	4	2	6	17	54	0	15
111	115	" " " "	4	11)											
115	117	Lost core	2	-)											
117	121	Bit. sand, good grade, 10% clay	4	12)	14.7	6½	Tr	2	2	2	11	19	52	8	4
121	125	" " " " 30% "	4	13)											
125	129	" " " " some clay	4	14)	12.9	22½	Tr	4	2	2	12	21	47	5	7
129	133	" " " "	4	15)											
133	137	" " " "	4	16)	16.2		Tr	1	1	2	36	6	46	4	4
137	141	" " medium & good grades, 20% clay	4	17)											
141	145	" " good grade, 10% clay	4	18)	12.0	13¼	Tr	2	1	17	60	6	9	1	4
145	149	" " " "	4	19)											
149	153	" " " "	4	20)	14.9	1	Tr	2	4	36	46	6	4	1	1
153	154	Lost core	1	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 48

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
154	156	Bit. sand, good grade, 10% clay	2	21	16.0	2	Tr)								
156	186	Sandy clay	30	-			)	3	7	11	14	12	42	4	7
186	190	Bit. sand, good grade	4	22	15.3		Tr)								
190	194	" " " "	4	23)											
194	198	" " " "	4	24)	16.8		Nil	2	2	3	12	2	65	10	4
198	202	" " " "	4	25)											
202	206	" " " " some clay	4	26)	18.1	1½	Tr	3	3	4	28	17	37	1	7
206	210	" " " "	4	27)											
210	214	" " " "	4	28)	16.5		Tr	3	3	6	31	24	24	5	4
214	218	" " " "	4	29)											
218	220	" " " "	2	30)	17.8		Tr	1	1	3	44	16	29	0	6
220	220'3"	Lime clay	0'3"	-											
220'3"	224	Limestone	3'9"	-											
	224'	End of Hole													

Summary

0' - 76' = 76' Overburden
76' - 156' = 80' @ 13.77% bitumen & 9.7% clay bands
156' - 186' = 30' clay
186' - 220' = 34' @ 17.03% bitumen & .03% clay bands
76' - 220' = 144' @ 11.67% bitumen & 27.3% clay bands.

HILDRED - RUTH LAKES AREA

HOLE No. B 49

DATE Oct. 21-24 1946 LOCATION LS.3,Sec.33,Tp.92-10-4 CO-ORDINATES N.E.28, +1311.8; -2649.0 ELEVATION 1048' DEPTH 225' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	43	Overburden - clay and rocks	43	-											
43	47	Bit. sand, medium grade	4	1)											
47	51	" " " "	4	2)	9.1	16	Tr	4	3	2	2	10	55	13	11
51	53	Lost core	2	-											
53	57	Bit. sand, medium grade, much clay	4	3	1.1	44¼	Tr)								
57	63	Clay and rocks	6	-			)	2	2	1	2	5	60	11	17
63	67	Bit. sand, medium grade, 10% clay	4	4	10.5	8⅛	Tr)								
67	71	" " " " slight clay	4	5)											
71	75	" " " " 5% clay	4	6)	13.3	1¼	Tr	2	1	1	2	4	66	16	8
75	79	" " " "	4	7)											
79	83	" " " "	4	8)	13.9		Tr	1	1	0	1	12	63	14	8
83	87	" " " "	4	9)											
87	89	" " " " 40% clay	2	10)	12.3	9	Tr	1	1	1	1	10	64	11	11
89	90	Clay	1	-											
90	94	Bit. sand, medium grade	4	11)											
94	98	" " " " 40% clay	4	12)	11.6	20	Nil	0	0	0	0	10	68	14	7
98	100	Clay	2	-											
100	102	Bit. sand, medium grade, 45% clay	2	13	11.2	6	Nil)								
102	106	Clay	4	-			)	4	2	1	2	4	64	9	14
106	110	Bit. sand, medium grade, 25% clay	4	14	11.2	12	Nil)								
110	114	" " good grade, 5% clay	4	15)											
114	118	" " " " 20% "	4	16)	13.3	14¾	Nil	1	1	0	1	4	50	17	26
118	120	Lost core	2	-											
120	122	Bit. sand, good grade, 40% clay	2	17	13.1	5	Tr)								
122	124	Clay	2	-			)	1	1	1	2	2	65	16	12
124	126	Bit. sand, good grade, 20% clay	2	18	13.1	3	Tr)								
126	127	Clay	1	-											
127	131	Bit. sand, good grade, 10% clay	4	19)											
131	135	" " " " 25% "	4	20)	14.6	11	Nil	1	0	0	5	17	54	9	14

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MILDRED - RUTH LAKES AREA

HOLE No. B 49

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
135	138	Bit. sand, good grade, 25% clay	3	21	13.4	8	Nil								
138	141	Clay	3	-				1	0	0	7	17	57	9	9
141	145	Bit. sand, good grade, 20% clay	4	22	13.4	6¼	Nil								
145	147	Lost core	2	-											
147	150	Bit. sand, good grade, 30% clay	3	23	12.9	9	Tr								
150	154	Clay	4	-				0	0	0	6	17	53	11	8
154	157	Bit. sand, good grade, 30% clay	3	24	12.9	8	Tr								
157	168	Sandy clay	11	-											
168	172	Bit. sand, good grade, 10% clay	4	25	13.2	2	Tr								
172	191	Clay	19	-				7	3	1	10	10	52	6	11
191	195	Bit. sand, good grade	4	26	13.2	6¼	Tr								
195	199	" " " " 30% clay	4	27											
199	203	" " " " 25% "	4	28	10.2	16½	Tr	7	5	3	34	15	20	2	14
203	207	" " " " slight clay	4	29	14.6		Tr	3	15	13	24	3	31	3	8
207	211	" " " " 25% clay	4	30											
211	215	" " " " 20% "	4	31	12.6	17	Tr	7	15	7	27	17	18	3	6
215	216	Lost core	1	-											
216	220	Bit. sand, good grade, 15% clay	4	32											
220	223	" " " " 5% "	3	33	14.2	5¼	Tr	8	9	8	36	8	24	3	4
223	224'8"	Lime clay	1'8"	-											
224'8"	225	Limestone	0'4"	-											
	225'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 49

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 63' = 63' Overburden 63' - 150' = 87' @ 10.96% bitumen & 23.4% clay bands 150' - 191' = 41' clay with 7' of 13% bit. sand (average 2.2%) 191 - 223' = 32' @ 12.67% bitumen & 11.6% clay bands 63' - 223' = 160' @ 9.1% bitumen & 36.3% clay bands.													

MILDRED - RUTH LAKES AREA

HOLE No. B 50

DATE Oct. 25-28 1946 LOCATION LS.2, Sec.33, Tp.92-10-4 CO-ORDINATES N.E.28, +1318.9; -1322.0 ELEVATION 1057' DEPTH 228' DIP 90° CORE RECOVERY 96.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	68	Overburden - sand & clay	68	-											
68	72	Bit. sand, medium grade, some clay	4	1)											
72	76	" " " " " "	4	2)	11.8	2	Nil	3	2	1	1	3	59	14	17
76	80	" " " " 5% clay	4	3)											
80	83	Lost core	3	-)	12.5	4⅜	Tr	2	1	0	1	3	62	14	17
83	87	Bit. sand, good grade, 10% clay	4	4)											
87	91	" " " " some clay	4	5)											
91	95	" " " " slight clay	4	6)	11.5	1½	Nil	3	2	0	1	14	55	16	9
95	99	" " " " " "	4	7)											
99	103	" " " " 5% clay	4	8)	14.1	3	Tr	1	0	0	7	1	68	13	10
103	107	" " " " 25% "	4	9)											
107	111	" " " " 25% "	4	10)	11.3	19½	Tr	0	1	0	3	13	55	19	9
111	115	" " " "	4	11)											
115	119	" " " " 20% "	4	12)	13.2	7¼	Tr	2	1	0	5	0	68	8	16
119	123	" " " " some clay	4	13)											
123	127	" " " " 30% clay	4	14)	12.2	13½	Tr	2	1	1	2	11	55	18	10
127	131	" " " " 5% clay	4	15)											
131	134	" " " " 15% clay	4	16)	13.8	8	Tr	2	1	1	5	14	58	11	8
134	137	Sandy clay	3	-											
137	138	Bit. sand, good grade, 45% clay	1	17	14.6	3	Tr)	1	1	0	8	19	51	13	7
138	148	Sandy clay	10	-			)								
148	152	Bit. sand, good grade, 5% clay	4	18	14.6	2½	Tr)								
152	156	" " " " 15% "	4	19)											
156	160	" " " " some clay	4	20)	15.3	7⅜	Tr	1	1	1	9	1	72	1	14
160	162	" " " " 20% clay	2	21	15.6	4	Tr)								
162	167	Sandy clay	5	-			)	1	1	1	6	4	73	7	7
167	171	Bit. sand, good grade, 10% clay	4	22	15.6	4¼	Tr)								

MILDRED - RUTH LAKES AREA

HOLE No. B 50

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
171	175	Bit. sand, good grade, some clay	4	23)											
175	179	" " " " 5% clay	4	24)	15.0	4½	Tr	1	1	1	16	24	40	8	9
179	183	" " " " 30% "	4	25)											
183	187	" " " " 25% "	4	26)	9.0	28¾	0.2	10	8	9	23	0	39	1	10
187	189	Lost core	2	-											
189	193	Bit. sand, good grade, 30% clay	4	27	9.9	12	0.2	12	21	6	19	13	15	4	10
193	195	Bitumen concentration	2	28	51.9		15.1	13	52	14	7	0	8	1	5
195	200	Bit. sand, good grade	5	29	14.1		Tr	12	47	11	7	5	10	2	6
200	206'3"	Bitumen concentration	6'3"	30	56.0		20.7	23	39	11	7	3	7	2	8
206'3"	208	Bit. sand, good grade, 20% clay	1'9"	31	10.3	4½	Tr	9	30	5	10	14	16	5	11
208	211	Bitumen concentration	3	32	63.6		23.1	4	29	10	17	11	10	6	13
211	213'2"	Bit. sand, good grade, some clay	2'2"	33	13.2	1	Tr	2	5	2	22	21	26	6	15
213'2"	213'9"	Bitumen concentration	0'7"	34	67.6		20.7	9	29	9	14	11	12	5	11
213'9"	214'3"	Bit. sand, good grade	0'6"	35	16.7		Tr	2	4	2	26	27	28	3	8
214'3"	217'3"	Bitumen concentration	3	36	71.0		23.4	7	31	7	11	18	11	4	11
217'3"	218'9"	Bit. sand, good grade	1'6"	37	15.7		Tr	3	9	3	17	31	26	4	7
218'9"	221	Bitumen concentration	2'3"	38	60.5		22.7	2	28	17	16	7	15	6	9
221	224	Bit. sand, good grade	3	39	15.0		Tr	3	5	4	17	4	51	5	11
224	224'4"	Bitumen concentration	0'4"	40	62.2		25.7	3	27	14	10	18	11	6	11
224'4"	225	Bit. sand, good grade, 20% clay	0'8"	41	15.9	½	Nil								
225	226'2"	Lime clay	1'2"	-											
226'2"	228	Limestone	1'10"	-											
	228	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 50

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 68' = 68' Overburden - clay & sand 68' - 134' = 66' @ 12.5% bitumen & 7.5% clay 134' - 148' = 14' clay (including 1 foot of bituminous sand) 148' - 193' = 45' @ 11.6% bitumen & 7.3% clay 193' - 225' = 32' @ 39.63% bitumen & 1.5% clay 68' - 225' = 157' @ 16.7% bitumen & 14.5% clay **Average Assay if Bitumen Concentrations (17'5") are Taken as 18%** 193' - 225' = 32' @ 16.37% bitumen & 1.5% clay 68' - 225' = 157' @ 11.9% bitumen & 14.5% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 51

DATE Oct. 22-24 1946 LOCATION LS.8, Sec.33, Tp.92-10-4 CO-ORDINATES N.E.28, +1337.0; 0.0 ELEVATION 1050' DEPTH 217' DIP 90° CORE RECOVERY 96.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	48	Overburden - sand and clay	48	-											
48	63	Clay with 10% low grade sand	15	-											
63	67	Bit. sand, low grade, 15% clay	4	1)											
67	71	" " medium grade, 5% clay	4	2)	7.8	35½	Tr	4	3	1	2	5	45	3	37
71	72	Lost core	1	-											
72	76	Bit. sand, medium grade, 10% clay	4	3)											
76	80	" " " " 10% "	4	4)	10.6	13½	Tr	3	3	2	2	3	33	23	31
80	84	" " low " 10% "	4	5)											
84	88	" " " " 10% "	4	6)	10.1	2¼	Tr	4	4	2	1	4	13	19	53
88	92	" " medium " 20% "	4	7)											
92	96	" " good " 15% "	4	8)	11.6	15	Nil	1	1	1	16	9	43	14	15
96	100	" " " "	4	9)											
100	104	" " " " some clay	4	10)	13.5	1½	Nil	1	1	1	14	32	39	1	11
104	108	" " " " 25% clay	4	11)											
108	112	" " " " 10% clay	4	12)	10.9	20¾	Tr	2	1	1	9	12	61	8	6
112	116	" " " "	4	13)											
116	120	" " " " 10% "	4	14)	13.3	5½	Tr	5	2	1	18	17	46	6	5
120	124	" " " "	4	15)											
124	128	" " " "	4	16)	14.7	1¼	Tr	1	1	3	52	6	32	1	4
128	132	" " " " 15% "	4	17)											
132	136	" " " "	4	18)	13.1	10¾	Tr	2	1	3	53	18	17	2	4
136	140	" " " " some clay	4	19)											
140	144	" " " " " "	4	20)	14.8	1½	Nil	1	1	9	54	17	10	3	5
144	145	Lost core	1	-											
145	150	Bit. sand, good grade, 10% clay	5	21	14.6	5½		1	1	19	61	7	6	0	5
150	150'6"	Bitumen concentration	0'6"	22	49.2		20.5	11	24	26	15	7	7	4	6
150'6"	151'6"	Bit. sand, good grade	1	23	16.0		Nil	1	1	35	52	2	6	1	2

MILDRED - RUTH LAKES AREA

HOLE No. B 51

DATE ..... 194.. LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151'6"	152	Bitumen concentration	0'6"	24	54.3		19.9	10	6	30	14	11	10	7	13
152	156	Bit. sand, good grade	4	25)											
156	157	Lost core	1	-)	16.1	1	Tr	1	2	36	45	4	6	2	4
157	160	Bit. sand, good grade	3	26)											
160	160'6"	Bitumen concentration	0'6"	27	28.9		17.3	2	58	19	8	3	4	2	4
160'6"	164	Bit. sand, good grade, 5% clay	3'6"	28)											
164	165	Lost core	1	-)	14.4	1	Tr	4	49	20	7	5	7	1	7
165	167	Bit. sand, good grade	2	29)											
167	170	Bitumen concentration	3	30	45.7		19.0	9	43	25	9	0	9	2	4
170	173'4"	Bit. sand, good grade	3'4"	31	14.4		0.2	12	30	14	11	2	18	2	11
173'4"	174	Bitumen concentration	0'8"	32	33.3		17.5	28	37	15	7	2	6	1	4
174	178	Bit. sand, good grade	4	33	15.3		Tr	5	24	13	14	6	28	3	7
178	179'2"	Bitumen concentration	2'2"	34	56.3		20.8	15	27	13	7	16	10	4	8
179'2"	183	Bit. sand, good grade	3'10"	35)											
183	185	" " " " 10% clay	2	36)	15.0	4¾	Nil	7	9	4	20	26	25	3	6
185	186	Bitumen concentration	1	37	47.9		16.7	20	40	14	11	0	9	1	5
186	190	Bit. sand, good grade	4	38	15.9		Nil	8	14	6	20	16	24	6	6
190	191	Lost core	1	-											
191	195	Bit. sand, good grade, 10% clay	4	39)											
195	196	Lost core	1	-)	13.3	6	Nil	9	19	10	7	20	21	5	9
196	199	Bit. sand, good grade, 5% clay	3	40)											
199	201	Bitumen concentration	2	41	42.1		18.3	14	50	13	6	7	4	2	4
201	205	Bit. sand, good grade	4	42	13.2		Nil	12	28	14	9	5	15	1	16
205	209	" " " " 5% clay	4	43)											
209	213	" " low grade, 15% "	4	44)	8.4	30¼	Tr	13	10	2	2	2	19	24	28
213	217	Limestone	4	-											
	217	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 51

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 63' = 63' Overburden - sand & clay 63' - 72' = 9' @ 7.8% bitumen & 33% clay 72' - 150' = 78' @ 12.67% bitumen & 8.3% clay 150' - 205' = 55' @ 20.23% bitumen & 2% clay 72' - 205' = 133' @ 15.8% bitumen & 5.6% clay **Average Assay if Bitumen Concentration (10'A") are Taken as 18%** 150' - 205' = 55' @ 14.37% bitumen & 2% clay 72' - 205' = 133' @ 13.37% bitumen & 5.6% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 52

DATE Nov. 2 - 4 1946 LOCATION LS.1, Sec.34, Tp.92-10-4 CO-ORDINATES N.E.27, +1319.0 +12.6 ELEVATION 993' DEPTH 163' DIP 90° CORE RECOVERY 93.7%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	38	Overburden - sand and clay	38	-											
38	40	Bit. sand, good grade, some clay	2	1)											
40	44	" " " "	4	2)	14.1	1½	Nil	5	19	18	15	10	20	7	6
44	48	" " " " 10% clay	4	3)											
48	52	" " " " 10% "	4	4)	14.1	8¼	Nil	1	1	1	22	25	39	6	5
52	56	" " " "	4	5)											
56	60	" " " "	4	6)	15.6		Tr	0	0	2	32	20	26	6	4
60	64	" " " "	4	7)											
64	68	" " " "	4	8)	15.8		Tr	1	1	3	36	25	25	5	4
68	72	" " " " some clay	4	9)											
72	73	Lost core	1	-											
73	77	Bit. sand, good grade	4	10)	15.9	1¼	Tr	1	1	2	32	23	30	6	5
77	81	" " " " some clay	4	11)											
81	85	" " " " " "	4	12)	16.6	1¾	Tr	0	1	4	45	23	22	3	2
85	89	" " " "	4	13	16.8		Tr	0	1	9	46	19	15	6	4
89	90	Lost core	1	-											
90	94	Bit. sand, good grade	4	14)											
94	98	" " " "	4	15)	16.3		Tr	1	2	8	40	15	26	4	4
98	100	Lost core	2	-											
100	104	Bit. sand, good grade	4	16)											
104	106	Lost core	2	-)	15.6		Tr	2	5	22	41	13	12	3	2
106	110	Bit. sand, good grade	4	17)											
110	114	" " " "	4	18)											
114	118	" " " "	4	19)	11.4		Tr	2	9	24	42	9	10	2	2
118	120	Lost core	2	-											
120	124	Bit. sand, good grade	4	20)											
124	128	" " " "	4	21)	17.2		Tr	1	3	21	42	18	10	2	3

MILDRED - RUTH LAKES AREA

HOLE No. B 52

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
128	132	Bit. sand, good grade	4	22)											
132	133'8"	" " " "	1'8"	23)	16.2	3½		2	9	21	42	10	12	2	2
133'8"	146	Clay with 15% low grade sand	12'4"												
146	150	Bit. sand, low grade, 20% clay	4	24)											
150	153	" " " " 25% "	3	25)	8.4	30									
153	161	Clay	8	-											
161	163	Lime clay	2	-											
	163'	End of Hole													

Summary

0' - 38' = 38' Overburden
38' - 133'8" = 95'8" @ 15.1% bitumen & 1.6% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 53

DATE Oct. 28- Nov. 2, 1946 LOCATION LS.3,Sec.34,Tp.92-10-4 CO-ORDINATES N.E.28, +655.6; +2043.0 ELEVATION 1044' DEPTH 252' DIP 90° CORE RECOVERY 97.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	36	Overburden - clay and rocks	36	-											
36	40	Bit. sand, low grade, 10% clay	4	1)											
40	44	" " " " 10% "	4	2)	5.7	10	0.2	37	10	3	2	6	11	8	23
44	46	Lost core	2	-											
46	50	Bit. sand, low & good grades, 5% clay	4	3)											
50	54	" " good grade	4	4)	12.9	3½	Tr	2	0	0	34	0	53	3	8
54	58	" " " "	4	5)											
58	62	" " " "	4	6)	14.7		Tr	0	0	0	21	27	37	6	8
62	66	" " " "	4	7)											
66	67	Lost core	1	-)	14.4		Tr	0	0	1	26	2	60	5	6
67	71	Bit. sand, good grade	4	8)											
71	72	Lost core	1	-											
72	76	Bit. sand, good grade, some clay	4	9)											
76	80	" " " "	4	10)	14.1	2	Tr	0	1	1	28	36	26	4	4
80	84	" " " "	4	11)											
84	88	" " " " 20% clay	4	12)	13.0	9½	Tr	0	1	0	28	32	30	5	4
88	92	" " " " 20% "	4	13)											
92	93	Lost core	1	-)	11.9	14¾	Tr	0	1	1	39	27	23	2	8
93	95	Bit. sand, good grade, 30% clay	2	14)											
95	97	Clay	2	-											
97	101	Bit. sand, good grade, 10% clay	4	15)											
101	105	" " " "	4	16)	15.2	½	Tr	0	1	1	9	26	50	7	6
105	109	" " " "	4	17)											
109	113	" " " "	4	18)	15.7		Tr	0	0	1	10	28	49	5	7
113	117	" " " "	4	19)											
117	121	" " " " 10% clay	4	20)	14.4	5	Tr	1	1	1	0	18	69	1	9
121	125	" " " " 20% "	4	21)											
125	129	" " " "	4	22)	13.2	12¾	Nil	1	1	1	42	7	36	2	10

MILDRED - RUTH LAKES AREA

HOLE No. B 53

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
129	133	Bit. sand, good grade	4	23	15.4		Nil	1	1	2	40	28	18	4	6
133	137	" " " " 10% clay	4	24)											
137	140	" " " "	3	25)	14.5	6	Tr	0	1	1	42	16	29	1	10
140	140'3"	Bitumen concentration	0'3"	26	42.7		13.6	6	11	13	28	11	15	5	11
140'3"	141'3"	Bit. sand, good grade, 40% clay	1	27	9.4	4¾	Tr	1	1	2	38	3	37	5	13
141'3"	143	Bitumen concentration	1'9"	28	36.1		17.2	16	15	15	27	6	6	4	11
143	147	Bit. sand, good grade	4	29	15.1		Tr	0	0	2	47	22	16	4	9
147	151	" " " "	4	30)											
151	152'6"	" " " "	1'6"	31)	15.8		Tr	0	1	3	44	25	16	4	7
152'6"	154	Bitumen concentration	1'6"	32	44.3		20.1	3	17	31	28	5	8	3	5
154	159	Bit. sand, good grade	5	33	15.3		Nil	1	1	2	35	27	20	5	9
159	160'8"	Bitumen concentration	1'8"	34	41.0		17.5	3	19	20	27	11	9	4	7
160'8"	165	Bit. sand, good grade, 25% clay	4'4"	35	12.1	10½	Nil	1	1	8	42	7	29	2	10
165	165'8"	Bitumen concentration	0'8"	36	28.1		20.3	1	18	13	25	9	10	6	18
165'8"	169	Bit. sand, good grade, 15% clay	3'4"	37)											
169	171	" " " " slight clay	2	38)	15.1	3	Tr	0	1	3	40	26	18	4	8
171	172'6"	Bitumen concentration	1'6"	39	37.0		20.5	1	30	26	17	6	7	4	9
172'6"	176	Bit. sand, good grade	3'6"	40	14.3	2	Tr	3	23	24	21	0	20	0	9
176	178	Bitumen concentration	2	41	44.1		18.8	10	30	29	12	3	6	3	7
178	182	Bit. sand, good grade	4	42)											
182	183	Lost core	1	-)	13.7		Nil	11	17	31	20	3	9	1	8
183	184	Bit. sand, good grade	1	43)											
184	186	Bitumen concentration	2	44	56.0		17.5	8	34	27	12	3	7	3	6
186	191	Bit. sand, good grade, 10% clay	5	45	13.7	3	Nil	7	25	27	20	5	6	4	6
191	196'7"	Bitumen concentration	5'7"	46	37.3		15.5	34	38	13	5	3	3	1	3
196'7"	198	Bit. sand, good grade, 15% clay	1'5"	47	11.6	2	Nil	8	21	31	17	2	10	2	9
198	200'4"	Bitumen concentration	2'4"	48	37.8		14.0	24	32	23	9	2	5	2	3

MILDRED - RUTH LAKES AREA

HOLE No. B.53.

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
200'4"	201	Bit. sand, good grade	0'8"	49	14.3		Tr	8	13	14	28	2	20	3	12
201	202	Bitumen concentration	1	50	21.5		14.8	20	42	21	7	2	4	2	2
202	205'5"	Bit. sand, good grade, 10% clay	3'5"	51	12.7		Tr	14	18	22	12	6	11	7	10
205'5"	207	Bitumen concentration	1'7"	52	38.0		14.4	22	29	20	11	4	8	3	3
207	211	Bit. sand, good grade	4	53)											
211	212'5"	" " " "	1'5"	54)	13.6		0.12	5	18	20	19	7	18	6	7
212'5"	217	Bitumen concentration	4'7"	55	53.1		17.1	20	27	22	12	4	8	3	4
217	217'9"	Bit. sand, good grade	0'9"	56	14.4		0.1	7	14	24	21	8	15	5	6
217'9"	220'1"	Bitumen concentration	2'4"	57	22.9		18.9	11	30	11	16	13	8	3	8
220'1"	224	Bit. sand, good grade, 25% clay	3'11"	58)											
224	227	" " " " 35% "	3	59)	10.7	21¼	Tr	8	23	16	17	8	15	5	8
227	227'8"	Bitumen concentration	0'8"	60	20.3		21.1	38	34	10	5	3	5	2	3
227'8"	232	Bit. sand, good grade, 25% clay	4'4"	61	11.9	8	0.1	10	23	24	11	6	13	5	8
232	235	Sandy clay	3	-											
235	239	Bit. sand, low grade, 35% clay	4	62)											
239	242	" " good grade, 30% clay	3	63)	5.4	49	Tr	9	31	21	15	5	7	4	7
242	243	Bitumen concentration	1	64	53.7		21.0	9	38	28	9	8	4	2	3
243	246'4"	Bit. sand, good grade	3'4"	65	13.7	1	Tr	7	26	33	16	4	7	3	4
246'4"	246'8"	Bitumen concentration	0'4"	66	30.5		14.8	20	26	15	10	3	7	4	15
246'8"	249	Bit. sand, low & good grades	2'4"	67	7.4	11½	Tr	9	22	22	17	6	9	3	12
249	252	Lime clay	3	-											
	252	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 53

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 46' = 46' Overburden, including 10' of low grade sand 46' - 140' = 94' @ 12.7% bitumen & 7.0% clay 140' - 232' = 92' @ 23.03% bitumen & 4.5% clay 232' - 246'8" = 14'8" @ 10.05% bitumen & 48.9% clay 46' - 232' = 186' @ 17.8% bitumen & 5.7% clay 46' - 246'8" = 200'8" @ 17.25% bitumen & 8.9% clay *Average Assay if Bitumen Concentrations to 232' (29'5") are Taken as 18% 140' - 232' = 92' @ 15.0% bitumen & 4.5% clay 232' - 246'8" = 14'8" @ 7.3% bitumen & 48.9% clay 46' - 232' = 186' @ 13.85% bitumen & 5.7% clay 46' - 246'8" = 200'8" @ 13.35% bitumen & 8.9% clay.													

MILDRED - RUTH LAKES AREA

HOLE No. B 54

DATE Oct.29-Nov.1,194 6 LOCATION LS.2,Sec.34,Tp.92-10-4 CO-ORDINATES N.E. 28, +653.2; +3371.0 ELEVATION 1041' DEPTH 259' DIP 90° CORE RECOVERY 95.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	36	Overburden, sand and clay	36	-											
36	42	Clay with 15% low grade sand	6	-											
42	46	Bit. sand, medium grade, 10% clay	4	1)											
46	48	Lost core	2	-)	8.8	1½	Tr	5	4	2	9	19	31	9	21
48	52	Bit. sand, medium grade	4	2)											
52	56	" " " "	4	3)											
56	60	" " " " 5% clay	4	4)	12.4	1¾	Tr	1	1	1	18	30	33	6	10
60	64	" " good "	4	5)											
64	68	" " " "	4	6)	13.1		Tr	1	1	1	20	31	32	6	8
68	72	" " " " 5% "	4	7)											
72	76	" " " " some clay	4	8)	12.9	3¼	Tr	1	1	1	25	24	35	6	7
76	80	" " " " 10% clay	4	9)											
80	84	" " " " some clay	4	10)	11.8	5½	Tr	2	3	2	21	29	29	5	9
84	88	" " " "	4	11)											
88	89	Lost core	1	-)	13.9		Tr	0	0	1	24	26	40	5	4
89	93	Bit. sand, good grade	4	12)											
93	97	" " " "	4	13)											
97	101	" " " "	4	14)	13.8		0.1	0	1	0	13	30	41	7	8
101	105	" " " "	4	15)											
105	109	" " " "	4	16)	14.9		0.2	1	1	1	16	19	48	8	6
109	113	" " " "	4	17)											
113	117	" " " "	4	18)	15.0		Tr	0	1	1	30	32	25	5	6
117	118	Lost core	1	-											
118	122	Bit. sand, good grade, 5% clay	4	19)											
122	126	" " " " 20% "	4	20)	14.3	10	Tr	0	0	1	37	23	34	3	2
126	130	" " " " 10% "	4	21)											
130	134	" " " " 20% "	4	22)	13.8	14	Tr	0	0	1	32	24	37	1	5

MILDRED - RUTH LAKES AREA

HOLE No. B 54

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
134	136	Lost core	2	-											
136	140	Bit. sand, good grade	4	23)											
140	141	Lost core	1	-)	16.5		Tr	1	1	1	25	31	34	4	3
141	145	Bit. sand, good grade	4	24)											
145	149	" " " " 5% clay	4	25)											
149	153	" " " " some clay	4	26)	15.8	3½	Nil	1	1	10	34	19	28	4	3
153	157	" " " "	4	27)											
157	161	" " " "	4	28)	16.0		Tr	0	1	20	49	13	11	3	3
161	165	" " " " some clay	4	29)											
165	169	" " " " " "	4	30)	15.5	3¼	Tr	0	1	40	42	5	6	2	2
169	173	" " " "	4	31)											
173	177	" " " "	4	32)	16.4		Tr	0	1	50	34	6	5	2	2
177	181	" " " "	4	33)											
181	185	" " " " 5% clay	4	34)	15.5	1¾	Tr	1	13	46	21	5	8	3	3
185	189	" " " " 30% "	4	35)											
189	190	Lost core	1	-)	13.1	14½	Tr	2	22	30	22	9	9	3	3
190	193	Bit. sand, good grade, 25% clay	3	36)											
193	197	Clay	4	-											
197	202	Bit. sand, good grade, 15% clay	5	37	13.2	4½	Tr	11	30	25	16	5	7	3	3
202	204	Bitumen concentration	2	38	70.4		15.9	22	26	17	9	6	4	9	6
204	207	Bit. sand, good grade	3	39	13.6		0.1	5	44	11	11	9	11	5	4
207	209	Bitumen concentration	2	40	52.8		13.2	21	36	15	9	5	5	4	5
209	212	Bit. sand, good grade	3	41	15.3		Tr	3	23	20	18	9	17	5	5
212	213	Bitumen concentration	1	42	65.8		19.2	32	23	13	8	9	5	5	5
213	216	Bit. sand, good grade, 20% clay	3	43	14.9	2	0.1	0	1	1	21	29	36	7	5
216	220	Bitumen concentration	4	44	45.9		16.6	10	27	20	15	8	8	4	8
220	222'10"	Bit. sand, good grade	2'10"	45	15.5		Tr	5	14	15	20	12	23	6	5
220'10"	224'8"	Bitumen concentration	1'10"	46	54.7		18.1	9	32	22	16	4	9	3	4

MILDRED - RUTH LAKES AREA

HOLE No. B 54.

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
224'8"	229	Bit. sand, good grade	4'4"	47	15.5		0.1	4	9	6	25	16	28	7	5
229	233	Lost core	4	-											
233	237	Bit. sand, good grade	4	48	15.6		Tr	4	6	6	23	18	31	8	4
237	241	" " " "	4	49)											
241	245	" " " "	4	50)	16.2		Tr	2	6	3	18	24	35	7	5
245	249	" " " "	4	51)											
249	253	" " " "	4	52)	16.4		Tr	3	5	4	14	19	40	9	6
253	256	Bitumen concentration	3	53	69.2		21.0	25	13	10	10	10	18	7	7
256	259	Bit. sand, good grade, 20% clay	3	54	14.4	7	Nil	1	4	3	16	26	36	7	7
258'9"	259	Lime clay													
	259	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 54

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary													
		0' - 42' = 42' Overburden 42' - 52' = 10' @ 8.8% bitumen & 1.2% clay 52' - 202' = 150' @ 14.0% bitumen & 6.1% clay 202' - 259' = 57' @ 25.9% bitumen & 1.3% clay 52' - 259' = 207' @ 17.3% bitumen & 4.3% clay													
		Average Assay if Bitumen Concentrations (13'10") are Taken as 18%													
		202' - 259' = 57' @ 16.2% bitumen & 1.3% clay 52' - 259' = 207' @ 14.6% bitumen & 4.3% clay.													

MILDRED - RUTH LAKES AREA

HOLE No. B 55

DATE Nov. 2 - 5 1946 LOCATION LS.1,Sec.34,Tp.92-10-9 CO-ORDINATES N.E.28, +651.7; +4683.0 ELEVATION 1009' DEPTH 214' DIP 90° CORE RECOVERY 96.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	33	Overburden - sand and clay	33	-											
33	37	Bit. sand, medium grade	4	1)											
37	38	Lost core	1	-)	11.5		Nil	1	1	1	11	15	50	11	10
38	42	Bit. sand, medium grade	4	2)											
42	46	" " " "	4	3)											
46	50	" " " "	4	4)	12.3		Tr	1	1	1	12	21	45	11	8
50	54	" " good "	4	5)											
54	58	" " " " 25% clay	4	6)	13.1	9	Nil	0	0	1	18	21	49	8	3
58	62	" " " " 5% "	4	7)											
62	66	" " " " 30% "	4	8)	12.5	13¾	Tr	0	0	1	6	21	55	12	5
66	71	" " " " 10% "	5	9	13.7	4	Tr)								
71	75	Clay	4	-			)	0	1	1	5	14	58	15	6
75	77	Bit. sand, good grade, 10% clay	2	10	13.7	2½	Tr)								
77	80	Clay	3	-											
80	84	Bit. sand, good grade	4	11)											
84	88	" " " "	4	12)	15.2		Nil	0	1	1	3	19	54	16	6
88	92	" " " "	4	13)											
92	96	" " " "	4	14)	16.0		Tr	1	1	0	3	9	57	20	9
96	100	" " medium & good grades, 20% clay	4	15)											
100	104	" " " " " " 20% "	4	16)	10.9	31¼	Tr	1	1	2	14	23	41	12	6
104	108	" " good grade	4	17)											
108	112	" " " "	4	18)	14.0		Tr	1	0	7	48	18	15	4	7
112	116	" " " "	4	19)											
116	120	" " " "	4	20)	14.5		Tr	0	0	5	53	15	17	3	7
120	124	" " " "	4	21)											
124	128	" " " "	4	22)	16.8		Tr	1	1	3	45	24	17	4	5
128	132	" " " "	4	23)											
132	135	Lost core	3	-)	16.0	2	Tr	0	1	1	4	13	62	13	6
135	139	Bit. sand, good grade, some clay	4	24)											

MILDRED - RUTH LAKES AREA

HOLE No. B 55

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
139	143	Bit. sand, good grade, some clay	4	25)											
143	147	" " " " " "	4	26)	15.2	1¼	Tr	2	12	38	22	10	8	3	4
147	148	Lost core	1	-											
148	152	Bit. sand, good grade	4	27)											
152	156	" " " "	4	28)	16.2	¾	Tr	6	25	26	11	7	17	3	5
156	160	" " " " some clay	4	29)											
160	164	" " " " 15% clay	4	30)	14.1	6¾	Nil	6	13	20	13	9	22	9	8
164	165	Lost core	1	-											
165	169	Bit. sand, good grade	4	31)											
169	172	" " " "	3	32)	17.2		Nil	1	1	1	6	12	55	17	7
172	172'4"	Bitumen concentration	0'4"	33	44.1		15.7	40	23	15	4	8	5	2	3
172'4"	177	Bit. sand, good grade	4'8"	34	16.7		Nil	1	1	4	17	26	35	10	6
177	178	Bitumen concentration	1	35	52.7		19.2	20	38	17	10	3	6	2	3
178	182	Bit. sand, good grade	4	36	16.7		Nil	0	2	17	40	12	20	5	4
182	183'6"	Bitumen concentration	1'6"	37	66.6		19.2	17	18	17	17	5	12	5	9
183'6"	187	Bit. sand, good grade	3'6"	38	17.5		Tr	1	1	15	47	17	11	5	3
187	189'6"	Bitumen concentration	2'6"	39	50.4		17.7	7	21	28	20	7	8	3	6
189'6"	194	Bit. sand, good grade	4'6"	40	16.7		Tr	5	8	12	27	14	25	5	4
194	195'6"	Bitumen concentration	1'6"	41	58.1		18.4	14	24	19	16	5	12	4	6
195'6"	199	Bit. sand, medium grade, 15% clay	3'6"	42	12.9	7¾	Nil	8	7	12	18	16	22	9	8
199	199'9"	Bitumen concentration	0'9"	43	54.2		19.5	17	17	20	13	5	13	7	8
199'9"	204	Bit. sand, good grade	4'3"	44	14.5		Nil	4	2	2	6	4	35	25	22
204	208	" " medium grade	4	45)											
208	212	" " good grade, coarse	4	46)	10.6	2	0.1	32	12	17	11	6	5	8	9
212	212'4"	Bitumen concentration	0'4"	47	49.7		21.5	30	21	15	12	6	6	4	6
212'4"	212'7"	Bit. sand, low grade	0'3"	48	-	3									
212'7"	214	Lime clay	1'5"	-											
	214	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 55

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 33' = 33' Overburden - sand & clay 33' - 172' = 139' @ 13.35% bitumen & 9.3% clay bands 172' - 212'4" = 40'4" @ 22.4% bitumen & 2% clay bands 33' - 212' = 179' @ 15.9% bitumen & 9.9% clay bands **Average Assay if Bitumen Concentrations (8'11") are Taken as 18%** 172' - 212' = 40'4" @ 15.1% bitumen & 2% clay bands 33' - 212' = 179'4" @ 13.77% bitumen & 9.9% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 56

DATE Oct. 25 - 27 1946 LOCATION LS.15,Sec.28,Tp.92-10-4 CO-ORDINATES N.E.28, -0.5; -1322.0 ELEVATION 1058' DEPTH 220' DIP 90° CORE RECOVERY 100%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	24	Overburden - sand and clay	24	-											
24	45	Sandy clay with 10% low grade sand	21	-											
45	49	Bit. sand, medium grade	4	1)											
49	53	" " good grade	4	2)	11.3		Tr	4	4	4	6	4	57	6	15
53	57	" " " "	4	3)											
57	61	" " medium " 15% clay	4	4)	10.3	6	Tr	1	2	1	1	7	57	16	15
61	65	" " low " 50% "	4	5)	Not assayed, mostly clay.										
65	69	" " " " 50% "	4	6)											
69	73	" " low & medium grades, 20% clay	4	7)											
73	77	" " " " " 15% "	4	8)	9.3	1½	Tr	5	4	2	1	2	17	9	60
77	81	" " " " " 20% "	4	9)											
81	85	" " " " " 15% "	4	10)	7.0	12¾	0.1	7	5	2	2	4	18	12	50
85	89	" " " " " 20% "	4	11)											
89	93	" " " " " 15% "	4	12)	6.8	8¼	0.1	6	5	4	5	4	25	9	42
93	97	" " " " " 10% "	4	13)											
97	101	" " " " " 10% "	4	14)	6.1	6½	Tr	6	6	3	3	8	32	2	40
101	105	" " " " " 30% "	4	15	11.0	9½	Tr)								
105	114	Sandy clay	9	-			)	1	1	1	2	10	51	16	18
114	118	Bit. sand, medium grade, some clay	4	16	11.0	1½	Tr)								
118	122	" " " " 15% clay	4	17)											
122	126	" " " " 20% "	4	18)	11.3	12¾	Tr	1	2	1	1	8	39	22	26
126	130	" " good " 35% "	4	19)											
130	134	" " medium & good grades, 15% clay	4	20)	11.6	18	Tr	1	2	1	1	8	51	22	14
134	138	" " good grade	4	21)											
138	142	" " medium & good grades, 20% clay	4	22)	11.1	21	Nil	2	2	1	1	12	50	20	12
142	146	" " good grade	4	23)											
146	150	" " " " 15% clay	4	24)	13.7	6½	Tr	2	2	2	2	2	50	24	16

MILDRED - RUTH LAKES AREA

HOLE No. B 56

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
150	154	Bit. sand, good grade, 30% clay	4	25)											
154	158	" " " " 50% "	4	26)	9.4	32¾	Tr	1	1	1	5	7	55	7	19
158	162	" " " " 15% "	4	27)											
162	166	" " " "	4	28)	14.9	6¾	Tr	1	1	0	3	32	50	8	5
166	170	" " " " 40% "	4	29)											
170	174	" " " " 35% "	4	30)	7.3	46	Tr	4	3	1	9	11	53	8	11
174	178	" " " "	4	31	13.6	1½	0.1)								
178	180	Clay	2	-			)	4	3	1	20	27	29	6	10
180	184	Bit. sand, good grade, 5% clay	4	32	13.6	½	0.1)								
184	188	" " " " slight clay	4	33)											
188	192	" " " " 10% clay	4	34)	13.4	6¾	Tr	2	4	8	20	2	50	3	11
192	196	" " " " some clay	4	35)											
196	200	" " " " " "	4	36)	13.9	1¼	Tr	5	26	26	12	1	19	0	11
200	201	Bitumen concentration	1	37	49.6		19.3	38	35	10	6	3	5	2	2
201	203	Bit. sand, good grade	2	38	12.5		Tr	23	30	7	8	10	9	4	9
203	204'6"	Bitumen concentration	1'6"	39	50.3		18.9	21	36	11	9	1	10	3	8
204'6"	206	Bit. sand, good grade, some clay	1'6"	40	7.4	¾	Tr	12	46	8	6	3	13	3	9
206	209'4"	Bitumen concentration	3'4"	41	20.5		11.9	38	28	12	9	4	5	1	3
209'4"	211	Bit. sand, good grade	1'8"	42	5.6	4¾	Nil	11	54	6	5	6	8	3	7
211	213	Bitumen concentration	2	43	28.8		20.2	36	42	7	5	3	3	2	4
213	217	Bit. sand, good grade	4	44)											
217	218'4"	" " " " some clay	1'4"	45)	15.4	1¾	Nil	9	16	10	23	18	14	4	6
218'4"	219	Bitumen concentration	0'8"	46	29.6		9.4	33	34	11	9	3	4	2	4
219	220	Lime clay	1	-											
	220	End of Hole													

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MILDRED - RUTH LAKES AREA

HOLE No. B 56

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 45' = 45' Overburden 45' - 61' = 16' @ 10.8% bitumen & 3% clay 61' - 114' = 53' @ 5.2% bitumen & 38% clay 114' - 200' = 86' @ 11.7% bitumen & 18.3% clay 200' - 219' = 19' @ 20.66% bitumen & 3% clay 114' - 219' = 105' @ 13.3% bitumen & 15.6% clay **Average Assay if Bitumen Concentrations (8'6") are Taken as 18%** 200' - 219' = 19' @ 14.4% bitumen & 3% clay 114' - 219' = 105' @ 12.2% bitumen & 15.6% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 57

DATE Nov. 5 - 8 1946 LOCATION LS.14, Sec.27, Tp.92-10-4 CO-ORDINATES N.E. 28, -641.4; +2062.0 ELEVATION 1058' DEPTH 281' DIP 90° CORE RECOVERY 99.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	58	Overburden - sand and clay	58	-											
58	65	Sand with 10% low grade sand	7	-											
65	69	Bit. sand, medium grade	4	1)											
69	73	" " " "	4	2)	11.4		0.1	6	1	2	9	16	47	11	8
73	74	Lost core	1	-											
74	78	Bit. sand, medium grade	4	3)											
78	82	" " " "	4	4)	10.8		Tr	2	3	2	9	11	47	15	11
82	83	Lost core	1	-											
83	87	Bit. sand, medium & good grades	4	5)											
87	91	" " good grade	4	6)	11.3		Nil	2	1	1	3	18	49	15	11
91	95	" " " "	4	7)											
95	99	" " " "	4	8)	11.0		Nil	3	2	3	11	23	35	13	9
99	103	" " " " 10% clay	4	9)											
103	107	" " " " 30% "	4	10)	9.3	16¾	Nil	4	2	2	22	19	39	6	6
107	111	" " " " 25% "	4	11)											
111	115	" " " " 15% "	4	12)	10.2	6¾	Tr	6	3	6	22	27	21	6	9
115	119	" " " " 10% "	4	13)											
119	123	" " " " some clay	4	14)	14.2	5½	Nil	1	1	1	22	28	39	3	5
123	127	" " " " " "	4	15)											
127	131	" " " " " "	4	16)	14.9	2¾	Tr	1	2	3	24	28	32	4	6
131	135	" " " " 20% clay	4	17)											
135	139	" " " " 5% "	4	18)	14.9	8¾	Tr	2	1	4	49	19	21	2	2
139	143	" " " "	4	19)											
143	147	" " " "	4	20)	15.6		Tr	2	1	3	44	25	15	5	5
147	151	" " " " some clay	4	21)											
151	155	" " " "	4	22)	17.8	2	Tr	2	1	2	44	20	23	3	5
155	159	" " " "	4	23)											
159	163	" " " "	4	24)	16.1	1½	Tr	1	1	3	46	27	13	3	6

MILDRED - RUTH LAKES AREA

HOLE No. B 57

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
163	167	Bit. sand, good grade, 5% clay	4	25)											
167	171	" " " "	4	26)	16.1	2	Tr	3	3	3	52	16	15	3	5
171	175	" " " "	4	27	16.1		Tr	1	1	3	53	23	8	6	5
175	179	" " " "	4	28)											
179	180'6"	" " " "	1'6"	29)	16.9		Tr	0	1	3	45	18	24	3	6
180'6"	181'6"	Bitumen concentration	1	30	32.7		16.1	21	15	22	23	5	7	3	4
181'6"	185	Bit. sand, good grade, 30% clay	3'6"	31)											
185	189	" " " " 20% "	4	32)	14.9	13½	Tr	1	1	5	51	20	18	2	2
189	193	" " " "	4	33)											
193	197	" " " "	4	34)	15.9		Tr	1	1	9	40	22	17	5	5
197	201	" " " "	4	35	15.1		Tr	1	2	12	35	19	23	3	5
201	205	" " " "	4	36)											
205	207'8"	" " " "	2'8"	37)	15.4	1	Tr	1	4	25	28	16	17	3	6
207'8"	208	Bitumen concentration	0'4"	38	39.5		12.9	6	11	24	25	15	10	4	5
208	212	Bit. sand, good grade	4	39	15.1		Tr	0	1	6	36	22	25	5	5
212	216	" " " "	4	40)											
216	220	" " " " some clay	4	41)	17.5	3½	Nil	2	19	25	18	16	13	2	5
220	220'7"	Bitumen concentration	0'7"	42	46.1		15.1	19	40	19	9	2	4	3	4
220'7"	225	Bit. sand, good grade	4'5"	43)											
225	230	" " " " 20% clay	5	44)	13.0	22	Tr	6	29	24	22	5	6	2	6
230	230'9"	Bitumen concentration	0'9"	45	37.8		16.7	17	20	22	19	10	6	2	4
230'9"	233	Bit. sand, good grade	2'3"	46	13.4		Tr	13	29	29	8	5	4	3	7
233	233'7"	Bitumen concentration	0'7"	47	44.9		14.0	21	29	19	12	5	5	4	6
233'7"	249	Shale	15'5"	48											
249	253	Bit. sand, good grade, 50% clay	4	49	8.9		Tr)								
253	256	Shale	3	-			)	41	18	8	5	3	12	8	5
256	258	Bit. sand, medium grade, some clay	2	50	8.9		Tr)								

MILDRED - RUTH LAKES AREA

HOLE No. B 57

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
258	260	Bitumen concentration	2	51	53.8		21.8	40	17	10	9	4	9	3	8
260	263	Bit. sand, good grade	3	52	12.5		Tr	23	34	22	10	1	2	2	6
263	263'4"	Bitumen concentration	0'4"	53	28.8		11.0	31	44	9	6	2	3	2	3
263'4"	268	Bit. sand, good grade, 15% clay	4'8"	54	13.7	4	Tr	15	47	26	2	3	1	2	4
268	270	Bitumen concentration	2	55	66.0		19.8	33	21	15	8	4	7	3	9
270	275	Bit. sand, good grade, 40% clay	5	56	6.1	27¼	Tr	18	14	15	15	4	12	7	15
275	275'6"	Bitumen concentration	0'6"	57	31.4		12.3	7	21	39	15	5	5	3	5
275'6"	280	Bit. sand, good grade, some clay	4'6"	58	16.9	2½	Tr	4	4	10	54	10	10	3	5
280	281	Lime clay	1	-											
	281	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 57

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 65' = 65' Overburden 65' - 180'6" = 115'6" @ 13.5% bitumen & 3% clay 180'6" - 233'7" = 53'1" @ 16.6% bitumen & 6.3% clay 233'7" - 256' = 22'5" shale with 4' low grade sand 256' - 280' = 24' @ 20.44% bitumen & 11.5% clay 180'6" - 280' = 99'6" @ 14.3% bitumen & 24.7% clay 65' - 280' = 215' @ 13.8% bitumen & 13.1% clay **Average Assay if Bitumen Concentrations (8'1") are Taken as 18%** 180'6" - 233'7" = 53'1" @ 15.3% bitumen & 6.3% clay 233'7" - 256' = 22'5" shale with 4' low grade sand 256' - 280' = 24' @ 13.02% bitumen & 11.5% clay 180'6" - 280' = 99'6" @ 11.56% bitumen & 11.5% clay 65' - 280' = 215' @ 12.6% bitumen & 13.1% clay.													

MILDRED - RUTH LAKES AREA

HOLE No. B 58

DATE Nov. 5 - 9 1946 LOCATION LS.15, Sec.27, Tp.92-10-4 CO-ORDINATES N.E.28, -633.5; + 3379.0 ELEVATION 1044' DEPTH 270' DIP 90° CORE RECOVERY 92.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	46	Overburden - sand and clay	46	-											
46	50	Bit. sand, low & medium grades	4	1)											
50	54	" " " " "	4	2)	10.0	3	Tr	9	4	2	10	15	44	9	7
54	58	" " medium & good grades, some clay	4	3)											
58	60	Lost core	2	-)	12.4	2	Tr	4	2	1	11	16	53	8	5
60	64	Bit. sand, good grade, 5% clay	4	4)											
64	68	" " " " 10% "	4	5)											
68	72	" " " " 5% "	4	6)	12.1	3¾	Tr	2	1	1	13	24	44	8	7
72	74	Lost core	2	-											
74	78	Bit. sand, good grade, 10% clay	4	7)											
78	79	Lost core	1	-)	14.6	2¼	0.1	1	1	2	20	26	41	4	5
79	83	Bit. sand, good grade	4	8)											
83	87	" " " " 20% clay	4	9)											
87	91	" " " " 20% "	4	10)	12.0	15	Tr	1	1	1	7	19	51	11	9
91	95	" " " "	4	11)											
95	97	Lost core	2	-)	12.7	2¾	Tr	1	1	0	8	15	50	12	13
97	101	Bit. sand, good grade, some clay	4	12)											
101	105	" " " " 40% clay	4	13)											
105	109	" " " " 50% "	4	14)	7.0	35¾	Tr	2	2	2	10	26	43	11	4
109	111	Lost core	2	-											
111	115	Bit. sand, good grade, some clay	4	15)											
115	119	" " " " 25% clay	4	16)	15.1	6	Nil	1	1	2	7	16	61	8	4
119	123	" " " " 35% "	4	17)											
123	127	" " " " some clay	4	18)	13.8	15	Nil	3	1	2	33	24	28	6	3
127	128	Lost core	1	-											
128	132	Bit. sand, good grade, 15% clay	4	19)											
132	136	" " " " some clay	4	20)	15.2	5	Tr	1	2	1	28	31	22	5	10

MILDRED - RUTH LAKES AREA

HOLE No. B 58

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
136	137	Lost core	1	-											
137	141	Bit. sand, good grade, 20% clay	4	21)											
141	145	" " " "	4	22)	15.3	8½	Nil	1	1	1	25	23	39	6	4
145	146	Lost core	1	-											
146	148	Bit. sand, good grade, 30% clay	2	23	13.4	4	Tr)								
148	155	Shale	7	-			)	4	3	4	24	22	30	6	7
155	159	Bit. sand, good grade, 10% clay	4	24	13.4	3¾	Tr)								
159	163	" " " " 10% "	4	25)											
163	167	" " " " 20% "	4	26)	13.3	11	Tr	3	3	7	30	17	28	5	7
167	171	" " " "	4	27)											
171	175	" " " " 10% "	4	28)	15.0	3½	Nil	1	1	4	30	18	32	5	9
175	176	Lost core	1	-											
176	180	Bit. sand, good grade	4	29	14.8		Tr	2	29	24	13	11	12	5	4
180	180'4"	Bitumen concentration	0'4"	30	35.3		16.1	8	62	14	5	2	4	2	3
180'4"	181'4"	Bit. sand, good grade	1	31	13.7		0.2	4	48	22	6	4	9	3	4
181'4"	185	Bitumen concentration	3'8"	32	26.4		20.8	23	51	17	3	2	2	1	1
185	189	Bit. sand, good grade	4	33)											
189	193	" " " " some clay	4	34)	13.0	1½	Tr	12	37	18	8	5	10	5	5
193	193'8"	Bitumen concentration	0'8"	35	18.5		15.5	25	54	10	4	1	3	1	2
193'8"	196	Bit. sand, good grade	2'4"	36)											
196	200	" " " "	4	37)	12.6		Tr	17	37	17	7	4	10	4	4
200	204	" " " "	4	38)											
204	208	" " " "	4	39)	12.5		Nil	27	35	17	5	5	4	3	4
208	209	Lost core	1	-											
209	213	Bit. sand, good grade	4	40)											
213	217	" " " "	4	41)	13.3	1½	Nil	21	32	17	7	4	11	4	4
217	221	" " " " 25% clay	4	42)											
221	222'6"	" " " "	1'6"	43)	11.1	10¾	Nil	15	22	8	6	5	31	7	6

MILDRED - RUTH LAKES AREA

HOLE No. B 58

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
222'6"	222'9"	Bitumen concentration	0'3"	44	30.7		16.4	18	40	19	7	4	7	2	3
222'9"	227	Bit. sand, good grade	4'3"	45	12.0		Nil	17	27	12	8	6	12	15	3
227	229	" " " " some clay	2	46)											
229	232	Lost core	3	-)	11.7	4½	Tr	16	21	9	7	7	29	6	5
232	236	Bit. sand, good grade	4	47)											
236	240'6"	" " " "	4'6"	48	13.9		Tr	7	18	13	6	10	29	11	6
240'6"	241	Bitumen concentration	0'6"	49	27.7		11.2	26	44	12	6	2	6	2	2
241	245	Bit. sand, good grade	4	50	13.6	½	Tr	10	23	9	7	8	26	11	6
245	250	" " " "	5	51	14.9		Nil	7	21	10	8	8	27	11	8
250	250'10"	Bitumen concentration	0'10"	52	62.1		13.9	11	26	19	9	12	9	7	7
250'10"	255	Bit. sand, good grade	4'2"	53	15.5		Tr	3	15	11	5	15	24	20	7
255	260	" " " " 5% clay	5	54	15.3	3	Tr	3	9	5	7	11	40	11	14
260	264	Bitumen concentration	4	55	51.9		14.9	6	46	17	9	5	8	5	4
264	265	Bit. sand, good grade	1	56	11.3		Tr	12	5	4	13	12	27	9	18
265	265'9"	Bitumen concentration	0'9"	57	32.1		16.7	17	57	10	4	3	1	5	3
265'9"	268	Bit. sand, low & medium grades	2'3"	58	9.4	2	Tr	11	9	9	11	12	21	8	19
268	270	Lime clay	2	-											
	270	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 58

DATE ..... 194... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 46' = 46' Overburden - sand & clay 46' - 180' = 134' @ 12.3% bitumen & 12.7% clay 180' - 268' = 88' @ 16.2% bitumen & 2.2% clay 46' - 268' = 222' @ 13.84% bitumen & 8.6% clay **Average Assay if Bitumen Concentrations (10'2") are Taken as 18%** 180' - 268' = 88' @ 13.6% bitumen & 2.2% clay 46' - 268' = 222' @ 12.82% bitumen & 8.6% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 59

DATE Nov. 20 - 27 1946 LOCATION LS.15,Sec.28,Tp.92-10-4 CO-ORDINATES ELEVATION 1051' DEPTH 234' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	59	Overburden, clay, sand & rocks	59	-											
59	63	Bit. sand, medium grade	4	1)											
63	67	" " " " 10% clay	4	2)	8.9	10½	Tr	17	7	5	9	15	29	12	6
67	71	" " low " 10% "	4	3)											
71	75	" " " " 5% "	4	4)	8.5	9	Tr	23	9	4	4	5	17	14	24
75	77	" " " " 15% "	2	5)											
77	132	Sandy clay	57	-											
132	136	Bit. sand, good grade, 30% clay	4	6)											
136	140	" " " " 35% "	4	7)	10.8	22¾	Tr	1	1	3	4	15	44	28	4
140	144	" " " " 25% "	4	8)											
144	145	Lost core	1	-)	10.3	17¾	Nil	6	4	3	6	15	40	15	11
145	149	Bit. sand, good grade, 30% clay	4	9)											
149	153	" " " " 15% "	4	10)											
153	157	" " " " 25% "	4	11)	13.0	10¼	Tr	2	1	2	7	15	37	26	10
157	161	" " " " 15% "	4	12)											
161	165	" " " " some clay	4	13)	14.2	4	Nil	1	1	1	7	20	44	16	10
165	169	" " " " 5% "	4	14)											
169	173	" " " " 40% "	4	15)	13.9	13	Nil	1	1	23	34	15	17	3	6
173	177	Lost core	4	-											
177	179	Bit. sand, good grade, 40% clay	2	16	13.9	4¾	Tr)								
179	192	Sandy clay	13	-			)	6	5	18	33	16	11	3	6
192	197	Bit. sand, good grade, 5% clay	5	17	13.9	1	Tr)								
197	202	Bitumen concentration	5	18	33.2		24.1	97	1	1	1	0	0	0	0
202	202'3"	Clay	0'3"	19											
202'3"	202'9"	Bitumen concentration	0'6"	20	21.2		13.4	64	13	6	6	2	4	2	3
202'9"	206	Bit. sand, good grade	3'3"	21)											
206	210	" " " " 10% clay	4	22)	14.2	6	Tr	9	11	24	23	12	4	14	3
210	211	Lost core	1	-											

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MILDRED - RUTH LAKES AREA

HOLE No. B 59

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
211	215	Bit. sand, good grade, some clay	4	23)											
215	219	" " " "	4	24)	16.7		Nil	2	1	6	41	27	15	6	2
219	223	" " " "	4	25	17.4		Nil	0	1	3	31	29	12	19	5
223	224	Lost core	1	-											
224	228	Bitumen concentration	4	26	68.7		25.0	85	2	3	2	2	2	2	2
228	228'8"	Bit. sand, good grade	0'8"	27	17.0		Nil	1	1	4	31	14	43	4	2
228'8"	234	Limestone	5'4"	-											
	234	End of Hole													

Summary

0' - 132' = 132' Overburden including 18' of medium grade sand

132' - 228'8" = 96'8" @ 15.1% bitumen & 20.1% clay

Average Assay if Bitumen Concentrations (9'6") are Taken as 18%

132' - 228'8" = 96'8" @ 12.2% bitumen & 20.1% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 60

DATE Nov. 14-19 1946 LOCATION LS.9,Sec.28,Tp.92-10-4 CO-ORDINATES ELEVATION 1057' DEPTH 222' DIP 90° CORE RECOVERY 83.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	30	Overburden - sand and clay	30	-											
30	34	Bit. sand, good grade	4	1)											
34	38	" " " "	4	2)	11.1		Nil	6	3	2	3	12	25	38	11
38	42	" " medium grade, 5% clay	4	3)											
42	46	" " low grade, 5% clay	4	4)	6.0	40½	Nil	22	8	4	3	4	17	25	17
46	54	Sandy clay	8	-											
54	55	Lost core	1	-											
55	59	Sandy clay	4	-											
59	62	Lost core	3	-											
62	64	Sandy clay	2	-											
64	68	Bit. sand, medium grade, 20% clay	4	5	6.0	6	Nil	22	8	4	3	4	17	25	17
68	72	" " good " 15% "	4	6)											
72	76	" " " " 5% "	4	7)	12.0	8½	Tr	5	3	2	1	4	15	51	19
76	80	" " " " 5% "	4	8)											
80	84	Lost core	4	-)	15.0	4¼	Nil	1	2	1	2	4	41	34	15
84	88	Bit. sand, good grade, 15% clay	4	9)											
88	90	Lost core	2	-											
90	94	Bit. sand, good grade, some clay	4	10)											
94	97	" " " " 30% clay	3	11)	12.4	16	Tr	1	2	2	6	4	49	16	8
97	100	Sandy clay	3	-											
100	104	Bit. sand, good grade, 10% clay	4	12)											
104	106	Lost core	2	-)	13.8	7½	Nil	1	1	1	1	7	42	35	12
106	110	Bit. sand, good grade, 10% clay	4	13)											
110	111	Lost core	1	-											
111	115	Bit. sand, good grade, 30% clay	4	14)											
115	119	" " " " 5% "	4	15)	14.0	6¼	Nil	4	2	2	8	17	52	11	4
119	120	Lost core	1	-											
120	124	Bit. sand, good grade	4	16)											
124	128	" " " " 15% clay	4	17)	14.8	5½	Nil	1	2	2	12	28	29	23	3

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MILDRED - RUTH LAKES AREA

HOLE No. B 60

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
128	132	Bit. sand, good grade, some clay	4	18)											
132	136	" " " "	4	19)	15.4	¾	Nil	1	1	1	11	41	37	4	4
136	137	Shale	1	-											
137	141	Bit. sand, good grade, 25% clay	4	20)											
141	145	" " " " 25% "	4	21)	13.4	17	Nil	2	1	2	31	21	29	11	3
145	147	Lost core	2	-											
147	151	Bit. sand, good grade, 15% clay	4	22)											
151	152	Lost core	1	-)	15.1	8½	Nil	1	1	4	58	22	11	1	2
152	156	Bit. sand, good grade, some clay	4	23)											
156	160	" " " " " "	4	24)											
160	164	" " " " 15% clay	4	25)	14.8	6¼	Nil	1	1	8	51	16	19	2	2
164	168	" " " " 30% "	4	26)											
168	172	" " " " 5% "	4	27)	15.5	4⅜	Nil	0	1	30	41	14	11	2	1
172	173	Lost core	1	-											
173	177	Bit. sand, good grade, 5% clay	4	28)											
177	179	Lost core	2	-)	15.3	3½	Nil	1	23	60	7	3	1	4	1
179	183	Bit. sand, good grade, some clay	4	29)											
183	187	" " " " 10% clay	4	30)											
187	189	Lost core	2	-)	14.9	8	Nil	2	15	55	16	4	4	1	3
189	193	Bit. sand, good grade, 30% clay	4	31)											
193	195	Lost core	2	-											
195	199	Bit. sand, good grade, 20% clay	4	32)											
199	200	Lost core	1	-)	15.9	9¾	Tr	14	23	26	17	7	5	2	6
200	204	Bit. sand, good grade	4	33)											
204	205	Lost core	1	-											
205	209	Bit. sand, good grade	4	34	15.9		Nil	8	13	18	26	14	11	4	6
209	212	Lost core	3	-											
212	216	Bit. sand, good grade	4	35)											
216	218	Lost core	2	-)	14.7	3	Tr	9	14	25	28	7	4	8	5
218	220	Bit. sand, good grade, 10% clay	2	36)											

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MILDRED - RUTH LAKES AREA

HOLE No. B 60

DATE.....194..... LOCATION..... CO-ORDINATES..... ELEVATION..... DEPTH..... DIP..... CORE RECOVERY.....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
220	220'10"	Lime clay	0'10"	-											
220'10"	222	Limestone	1'2"	-											
	222	End of Hole													

Summary

0' - 30' = 30' Overburden
30' - 68' = 38' Clay with some bituminous sand
68' - 220' = 152' @ 14.17% bitumen & 8.6% clay.

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MILDRED - RUTH LAKES AREA

HOLE No. B 61

DATE Nov. 10-14 1946 LOCATION LS.12, Sec.27, Tp.92-10-4 CO-ORDINATES ELEVATION 1064' DEPTH 261' DIP 90° CORE RECOVERY 97.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	46	Overburden - sand and clay	46	-											
46	50	Bit. sand, medium grade	4	1)											
50	54	" " " "	4	2)	9.7		Tr	9	3	2	3	9	54	12	8
54	58	" " low "	4	3)	Mostly clay not assayed.										
58	62	" " " "	4	4)											
62	64	Lost core	2	-											
64	68	Bit. sand, low grade, 15% clay	4	5)											
68	72	" " " & medium grades	4	6)	7.2	10	Tr	17	5	3	2	10	37	18	8
72	76	" " medium grade	4	7)											
76	80	" " " "	4	8)	10.7		Tr	5	2	1	7	14	54	10	7
80	84	" " medium & good grades	4	9)											
84	88	" " " " " some clay	4	10)	13.4	1½	Tr	4	2	11	2	21	48	11	11
88	92	" " good grade, 15% clay	4	11)											
92	96	" " " " 20% "	4	12)	12.6	12¼	Tr	1	1	1	2	10	66	10	9
96	97	Lost core	1	-											
97	101	Bit. sand, good grade, 30% clay	4	13)											
101	105	" " " "	4	14)	12.0	16	Tr	2	2	2	3	17	50	10	14
105	106	Lost core	1	-											
106	110	Bit. sand, good grade, 10% clay	4	15)											
110	114	" " " " 20% "	4	16)	13.1	8	Tr	1	1	1	4	10	59	15	9
114	118	" " " " 15% "	4	17)											
118	122	" " " " 15% "	4	18)	13.7	9½	Tr	2	1	2	2	17	47	5	24
122	126	" " " " 25% "	4	19)											
126	130	" " " " 5% "	4	20)	12.3	14½	Nil	5	2	1	2	7	51	21	11
130	134	" " " " 10% "	4	21)											
134	138	" " " " 25% "	4	22)	12.8	13½	Tr	3	2	1	2	7	29	38	18
138	139	Lost core	1	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 61

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
139	143	Bit. sand, good grade, 30% clay	4	23)											
143	147	" " " " 50% "	4	24)	9.4	31¾	Tr	5	3	2	2	6	43	22	17
147	151	" " " " 25% "	4	25)											
151	155	" " " " 10% "	4	26)	14.2	13	Tr	2	1	2	5	20	38	23	9
155	159	" " " "	4	27)											
159	163	" " " "	4	28)	15.9		Nil	10	2	2	3	10	56	14	3
163	167	" " " " 25% "	4	29)											
167	171	" " " " 40% "	4	30)	11.6	20	0.1	7	2	1	2	14	46	17	11
171	175	" " " " 40% "	4	31)											
175	179	" " " " 15% "	4	32)	12.1	12¼	0.1	8	2	4	18	18	35	7	8
179	183	" " " " 10% "	4	33)											
183	187	" " " " 65% "	4	34)	9.6	27¼	0.1	7	3	3	13	21	20	15	13
187	192	" " " " 5% "	5	35	16.5	1½	Tr	2	1	22	19	19	25	7	6
192	192'8"	Bitumen concentration	0'8"	36	16.2		18.6	43	18	9	10	6	6	2	6
192'8"	197	Bit. sand, good grade, 15% clay	4'4"	37	12.7	10¾	Tr	3	1	4	24	51	1	9	7
197	198	Lost core	1	-											
198	203	Bit. sand, good grade, some clay	5	38	16.6	¾	0.1	1	1	10	30	15	30	7	6
203	203'6"	Bitumen concentration	0'6"	39	28.9		17.7	13	10	20	21	9	11	4	11
203'6"	207	Bit. sand, good grade	3'6"	40	14.8		Tr	1	1	22	34	27	1	3	7
207	212'6"	Bitumen concentration	5'6"	41	31.4		15.5	39	15	18	13	4	5	3	3
212'6"	215	Bit. sand, good grade	2'6"	42	15.5		Tr	1	1	30	46	6	6	2	7
215	217'6"	Bitumen concentration	2'6"	43	17.7		13.0	29	30	14	12	6	4	2	3
217'6"	219	Bit. sand, good grade	1'6"	44	13.1		Tr	8	19	24	27	5	9	3	5
219	219'4"	Bitumen concentration	0'4"	45	44.7		19.6	47	25	11	5	2	3	2	3
219'4"	221	Bit. sand, good grade	1'8"	46	15.9		Tr	11	29	19	16	15	1	4	4

MILDRED - RUTH LAKES AREA

HOLE No. B 61

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
221	224	Bitumen concentration	3'0"	47	35.4		17.3	31	21	23	11	5	3	3	2
224	228	Bit. sand, good grade, 20% clay	4'0"	48)											
228	229'9"	" " " " 65% "	1'9"	49)	10.8	17	Tr	7	9	14	23	34	0	9	4
229'9"	230	Bitumen concentration	0'3"	50	27.2		13.7	3	2	4	3	5	5	11	67
230	233	Bit. sand, medium grade, 25% clay	3'0"	51	9.4	12¾	Tr	12	18	37	9	3	9	4	8
241	241'4"	Bitumen concentration	8'4"	52	56.8		17.3	51	20	13	4	4	2	3	3
241'4"	243	Bit. sand, good grade	1'8"	53	15.9		Tr	22	24	32	10	2	3	2	5
243	246	Bitumen concentration	3'0"	54	57.5		17.6	37	28	14	7	5	4	2	3
246	246'6"	Bit. sand, good grade	0'6"	55	16.7		Tr	11	23	48	10	1	2	1	4
246'6"	247	Bitumen concentration	0'6"	56	45.3		14.0	26	34	26	4	2	3	2	3
247	248	Bit. sand, good grade, some clay	1'0"	57	14.3	½	Tr	22	29	31	7	2	4	1	4
248	249'2"	Bitumen concentration	1'2"	58	61.1		20.3	59	18	9	4	3	3	1	3
249'2"	251	Bit. sand, good grade, 50% clay	1'10"	59	8.7	8¾	Tr	4	7	79	4	1	1	1	3
251	253'4"	Bitumen concentration	2'4"	60	64.3		16.1	50	21	12	5	3	4	2	3
253'4"	257	Bit. sand, medium grade, 50% clay	3'8"	61)											
257	259	" " low " and shale	2'0"	62)	8.3	29½	Tr	3	4	22	23	13	18	6	10
259	261	Shale	2												
	261'	End of Hole													

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MILDRED - RUTH LAKES AREA

HOLE No. B 61

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 72' = 72' Overburden with 16' of low grade sand 72' - 192' = 120' @ 12.5% bitumen & 12.6% clay 192' - 253'4" = 61'4" @ 27.8% bitumen & 6.8% clay 72' - 253'4" = 181'4" @ 17.7% bitumen & 10.6% clay **Average Assay if Bitumen Concentrations (28'1") are Taken as 18%** 192' - 253'4" = 61'4" @ 15.4% bitumen & 6.8% clay 72' - 253'4" = 181'4" @ 13.5% bitumen & 10.6% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 62

DATE Nov. 10-14 1946 LOCATION LS.11, Sec.27, Tp.92-10-4 CO-ORDINATES ELEVATION 1064' DEPTH 289' DIP 90° CORE RECOVERY 98.4%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	48	Overburden, sand and clay	48	-											
48	52	Bit. sand, medium grade	4	1)											
52	56	" " " "	4	2)	9.8		Tr	10	4	3	4	9	30	28	12
56	60	" " " "	4	3)											
60	62	" " " " 20% clay	2	4)	7.3	12	Tr	19	8	5	5	10	35	9	9
62	96	Sandy clay with 25% of leached sand	34	-											
96	100	Bit. sand, medium grade, 20% clay	4	5)											
100	104	" " " " 10% "	4	6)	10.4	10¼	Tr	3	2	1	1	2	4	58	29
104	108	" " medium & low grades, 20% clay	4	7)											
108	110	" " " grade, 60% clay	2	8)	6.8	30½	Tr	8	3	2	1	2	27	34	23
110	147	Sandy clay	37	-											
147	151	Bit. sand, good grade, 25% clay	4	9	10.3	7¼	Nil	3	2	2	2	18	36	11	19
151	159	Sandy clay	8	-											
159	161	Bit. sand, good grade, 30% clay	2	10	10.3	7	Nil	3	2	2	2	18	36	11	19
161	168	Sandy clay	7	-											
168	170	Bit. sand, medium grade, 35% clay	2	11	10.3	6¾	Nil	3	2	2	2	18	36	11	19
170	180	Sandy clay	10	-											
180	184	Bit. sand, good grade, 10% clay	4	12)											
184	188	" " " " 15% "	4	13)	13.4	10½	Tr	1	1	2	25	29	21	11	10
188	192	" " " " 5% "	4	14)											
192	196	" " " " 5% "	4	15)	15.0	3	Nil	2	1	12	42	17	5	16	5
196	198	Lost core	2	-											
198	202	Bit. sand, good grade	4	16)											
202	206	" " " " some clay	4	17)	15.1	1¾	Nil	6	12	23	37	4	11	2	5
206	210	" " " " 15% clay	4	18)											
210	214	" " " " 20% "	4	19)											
214	216	Lost core	2	-)	11.3	22¾	Tr	14	29	30	8	5	1	9	4
216	218	Bit. sand, good grade, 50% clay	2	20)											

MILDRED - RUTH LAKES AREA

HOLE No. B 62

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
218	226	Bitumen concentration	8	21	37.9		18.1	38	27	13	8	4	4	3	3
226	230	Bit. sand, good grade	4	22)											
230	234	" " " "	4	23)	12.8		Tr	6	16	12	16	13	18	10	9
234	238'8"	" " " "	4'8"	24	14.5		Nil	5	8	8	23	19	12	15	10
238'8"	239'5"	Bitumen concentration	0'9"	25	52.1		14.8	35	18	13	13	3	9	5	4
239'5"	241	Bit. sand, good grade	1'7"	26	13.8		Nil	4	9	8	22	20	16	10	11
241	241'6"	Bitumen concentration	0'6"	27	50.7		16.4	60	9	6	7	5	5	5	3
241'6"	245	Bit. sand, good grade	3'6"	28	14.4		Nil	4	9	9	13	20	12	25	8
245	249	" " " "	4	29)											
249	251	" " " "	2	30)	16.2		Tr	3	8	9	20	19	26	10	5
251	252'6"	Bitumen concentration	1'6"	31	56.1		16.0	42	20	16	9	3	5	2	3
252'6"	256	Bit. sand, good grade	3'6"	32)											
256	260	" " " "	4	33)	18.6		Nil	6	7	8	5	20	39	10	5
260	263'2"	" " " "	3'2"	34	17.2		Nil	1	2	4	6	24	49	11	3
263'2"	265	Bitumen concentration	1'10"	35	56.1		19.9	72	5	5	5	3	5	3	2
265	269	Bit. sand, good grade	4	36)											
269	273	" " " " 20% clay	4	37)	17.2	9½	Nil	4	5	13	35	19	17	4	3
273	277	" " " " some clay	4	38)											
277	278'6"	" " " " 10% clay	1'6"	39)	14.0	2	Nil	10	14	21	26	11	12	4	2
278'6"	279'3"	Bitumen concentration	0'9"	40	50.0		16.6	40	15	13	8	5	7	4	6
279'3"	280	Bit. sand, low grade, 50% clay	0'9"	41	All clay										
280	285	Bitumen concentration	5	42	63.7		21.0	64	11	8	4	3	3	3	4
285	286	Lime clay	1	-											
286	289	Limestone	3	-											
	289'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 62

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 48' = 48' Overburden 48' - 180' = 132' sandy clay & medium grade sand, av. 3.2% 180' - 218' = 38' @ 13.5% bitumen & 8.3% clay 218' - 285' = 67' @ 24.75% bitumen & 2.5% clay 180' - 285' = 105' @ 20.7% bitumen & 4.6% clay **Average Assay if Bitumen Concentrations (18'4") are Taken as 18%** 218' - 285' = 67' @ 16.1% bitumen & 2.5% clay 180' - 285' = 105' @ 15.1% bitumen & 4.6% clay.												

MILDRED - RUTH LAKES AREA

HOLE No. B 63

DATE Nov.28-Dec.4 1946 LOCATION LS.8,Sec.28,Tp.92-10-4 CO-ORDINATES ELEVATION 1056' DEPTH 220' DIP 90° CORE RECOVERY 98.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	36	Overburden - sand and clay	36	-											
36	40	Bit. sand, medium grade, some clay	4	1)											
40	44	" " " "	4	2)	9.4	6	Tr	12	5	4	6	11	45	11	6
44	48	" " low " 15% clay	4	3)											
48	52	" " medium "	4	4)											
52	56	" " low " 30% clay	4	5)	4.9	43¼	Tr	20	9	6	8	6	31	10	10
56	59	" " medium " 35% "	3	6)											
59	130	Sandy clay	71	-											
130	134	Bit. sand, good grade, 15% clay	4	7)											
134	135	Lost core	1	-)	15.4	6½	Nil	1	1	1	25	30	30	6	6
135	139	Bit. sand, good grade, 10% clay	4	8)											
139	143	" " " "	4	9)											
143	147	" " " " 10% "	4	10)	15.6	4	Nil	1	1	1	23	34	25	9	6
147	151	" " " "	4	11)											
151	155	" " " " 15% "	4	12)	15.4	4¾	Tr	2	1	2	28	27	13	21	6
155	156	Lost core	1	-											
156	160	Bit. sand, good grade	4	13)											
160	164	" " " "	4	14)	16.5		Tr	1	0	2	32	11	47	3	4
164	168	" " " "	4	15)											
168	172	" " " " 5% clay	4	16)	15.9	7½	Nil	1	1	5	38	20	14	18	3
172	176	" " " " 15% "	4	17)											
176	178	" " " " 25% "	2	18)	14.2	8	Nil	2	1	17	52	14	9	3	2
178	179	Bitumen concentration	1	19	40.5		15.6	8	16	26	23	10	6	5	6
179	183	Bit. sand, good grade, some clay	4	20)											
183	185'6"	" " " "	2'6"	21)	14.4	½	Nil	7	6	44	25	6	6	2	4
185'6"	188	Bitumen concentration	2'6"	22	21.3		12.6	24	28	25	14	4	2	1	2
188	189	Bit. sand, good grade, 5% clay	1	23	19.2		0.1	11	12	29	26	7	4	4	7
189	189'6"	Bitumen concentration	0'6"	24	38.1		11.0	17	14	32	11	4	4	2	2

MILDRED - RUTH LAKES AREA

HOLE No. B 63

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
189'6"	192	Bit. sand, good grade, some clay	2'6"	25	13.7	¾	Nil	7	5	23	24	10	16	7	8
192	195'6"	Bitumen concentration	3'6"	26	41.1		13.9	32	34	14	7	3	5	2	3
195'6"	199	Bit. sand, good grade, some clay	3'6"	27)											
199	203	" " " " slight clay	4	28)	15.6	½	Nil	1	4	11	33	21	20	6	4
203	204	Lost core	1	-											
204	206'6"	Bitumen concentration	2'6"	29	29.3		14.0	7	20	26	25	8	7	3	3
206'6"	210	Bit. sand, good grade, 5% clay	3'6"	30	16.0	1½	Tr	2	2	7	34	21	27	4	3
210	219	Sandy clay	9	-											
219	220	Lime clay	1	-											
	220'	End of Hole													

Summary

0' - 130' = 130' Overburden, including 23' of low grade sand

130' - 210' = 80' @ 17.7% bitumen & 3.5% clay

Average Assay if Bitumen Concentrations (10'0") are Taken as 18%

130' - 210' = 80' @ 15.77% bitumen & 3.5% clay.

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MILDRED - RUTH LAKES AREA

HOLE No. B 64

DATE Nov.15-Dec.6, 1946 LOCATION LS.5, Sec.27, Tp.92-10-4 CO-ORDINATES ELEVATION 1058' DEPTH 266' DIP 90° CORE RECOVERY 97.6%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	138	Overburden - sand and clay	138	-											
138	142	Bit. sand, good grade, 15% clay	4	1)											
142	146	" " " " 25% "	4	2)	13.4	12¾	Nil	2	1	1	8	24	44	16	4
146	150	" " " " 25% "	4	3)											
150	154	" " " " 75% "	4	4)	10.1	36	Nil	1	1	2	13	18	48	13	4
154	158	" " " " 20% "	4	5)											
158	162	" " " " 15% "	4	6)	12.4	11½	Tr	5	4	3	12	25	34	9	8
162	166	" " " " 20% "	4	7)											
166	170	" " " " 15% "	4	8)	12.0	12¼	Tr	5	5	8	31	17	21	5	8
170	174	" " " " 5% "	4	9)											
174	176	" " " " some clay	2	10)	14.2	3½	Nil	1	1	11	58	15	6	2	6
176	176'6"	Bitumen concentration	0'6"	11	34.6		11.8	66	8	8	7	3	2	3	3
176'6"	180	Bit. sand, good grade, 5% clay	3'6"	12)											
180	181	Lost core	1	-)											
181	185	Bit. sand, good grade	4	13)	12.0	1¼	0.2	28	20	20	17	4	4	3	4
185	187	" " " " 15% clay	2	14	11.4	4	Tr)								
187	191	Sandy clay with leached low grade sand	4	-			)	18	16	21	23	9	7	2	4
191	195	Bit. sand, good grade, 15% clay	4	15	11.4	5½	Tr)								
195	197	Lost core	2	-											
197	201	Bit. sand, good grade	4	16)											
201	205	" " " " some clay	4	17)	13.1	1½	Nil	17	19	22	11	8	13	5	5
205	209	" " " "	4	18)											
209	213	" " " "	4	19)	14.0	¾	Nil	5	6	9	29	15	23	5	8
213	217	" " " "	4	20	14.3		Tr	4	6	8	12	16	38	9	7
217	221	" " " "	4	21)											
221	224'4"	" " " "	3'4"	22)	14.5		Nil	1	2	4	15	25	34	12	7

MILDRED - RUTH LAKES AREA

HOLE No. B 64

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
224'4"	225'10"	Bitumen concentration	1'6"	23	61.1		23.6	74	9	6	3	2	3	1	2
225'10"	230	Bit. sand, low & good grades, 30% clay	4'2"	24	9.2	36	Nil	20	32	24	5	3	7	3	6
230	234	Clay and sand	4	-											
234	238	Bit. sand, good grade, 10% clay	4	25	9.2	6	Nil	20	32	24	5	3	7	3	6
238	239	Lost core	1	-											
239	241	Bit. sand, good grade, 5% clay	2	26	9.2	½	Nil	20	32	24	5	3	7	3	6
241	243	Bitumen concentration	2	27	39.1		21.0	64	20	11	2	1	2	0	1
243	247	Bit. sand, good grade, 5% clay	4	28)											
247	248	Lost core	1	-)											
248	251	Bit. sand, medium grade, 30% clay	3	29)	9.4	21½	Nil	28	37	18	4	2	4	3	4
251	251'6"	Bitumen concentration	0'6"	30	12.1		13.5	63	10	8	6	3	4	2	4
251'6"	254	Bit. sand, good grade, 50% clay	2'6"	31	9.7	14¾	Tr)								
254	261	Sandy clay	7	-			)	17	23	39	8	3	3	3	4
261	265	Bit. sand, good grade, 15% clay	4	32	14.8	11	Tr)								
265	266	Lime clay	1	-											
	266'	End of Hole													

Summary

0' - 138' = 138' Overburden
138' - 254' = 116' @ 12.4% bitumen & 17.8% clay

Average Assay if Bitumen Concentrations (4'0") taken as 18%

138' - 254' = 116' @ 11.4% bitumen & 17.8% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 65

DATE Dec. 7-15 1946 LOCATION LS.9,Sec.21,Tp.92-10-4 CO-ORDINATES ELEVATION 1065' DEPTH 273' DIP 90° CORE RECOVERY 98.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	74	Overburden - clay and sand	74	-											
74	78	Bit. sand, low grade, 20% clay	4	1)											
78	82	" " medium grade	4	2)	6.2	32½	Tr	11	4	4	5	8	54	10	4
82	86	" " " "	4	3)											
86	90	" " " "	4	4)	9.5	6¾	Tr	12	4	4	4	10	47	14	5
90	94	" " low "	4	5)											
94	96	" " " " much clay	2	6)	Clay - not assayed.										
96	99	Sandy clay	3	-											
99	102	Bit. sand, low grade, 30% clay	3	7	6.0	10¾	Tr)								
102	209	Sandy clay	107	-			)	22	11	6	5	8	19	13	16
209	213	Bit. sand, medium grade, some clay	4	8	6.0	8¼	Tr)								
213	217	" " good " 5% clay	4	9)											
217	218	Lost core	1	-)	12.1	6½	Tr	13	20	25	8	6	15	6	7
218	219'5"	Bit. sand, good grade, 40% clay	1'5"	10)											
219'5"	220	Bitumen concentration	0'7"	11	18.5		19.3	17	19	46	5	2	3	2	6
220	222	Bit. sand, good grade, 5% clay	2	12)											
222	226	" " " " 10% "	4	13)	13.1	2¼	Tr	15	29	38	9	2	2	2	3
226	230	" " " " 10% "	4	14)											
230	234	" " " "	4	15)	15.4	3	Nil	5	18	50	15	2	3	2	4
234	238	" " " "	4	16)											
238	240	" " " " 25% "	2	17)	12.9	4½	Nil	16	17	47	14	1	2	1	2
240	240'6"	Bitumen concentration	0'6"	18	44.3		15.3	66	8	9	3	1	3	2	8
240'6"	244	Bit. sand, good grade	3'6"	19)											
244	247	Lost core	3	-)	14.4		Nil	3	7	17	21	16	19	9	8
247	251	Bit. sand, good grade	4	20)											
251	255'4"	" " " " 5% clay	4'4"	21	14.0	2	Tr	4	8	11	18	14	29	9	7

MILDRED - RUTH LAKES AREA

HOLE No. B 65

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
255'4"	256	Bitumen concentration	0'8"	22	48.6		15.6	30	15	15	12	8	6	5	6
256	260	Bit. sand, good grade	4	23	12.9		Tr	4	4	11	19	13	31	10	8
260	261	Bitumen concentration	1	24	43.8		17.6	61	8	7	7	1	8	3	5
261	263	Bit. sand, good grade	2	25	16.7		Nil	3	3	6	31	21	24	6	6
263	264'6"	Bitumen concentration	1'6"	26	39.3		22.4	68	11	6	4	2	3	2	4
264'6"	268	Bit. sand, good grade	3'6"	27)											
268	271'6"	" " " " 15% clay	3'6"	28)	15.2	3½	Tr	2	2	4	22	20	34	7	9
271'6"	272	Lime clay	0'6"	-											
272	273	Limestone	1	-											
	273'	End of Hole													

Summary

0' - 213' = 213' Overburden with 23' of low grade bituminous sand

213' - 271'6" = 58'6" @ 15.87% bitumen & 3.1% clay

Average Assay if Bitumen Concentrations (4'3") are Taken as 18%

213' - 271'6" = 58'6" @ 14.3% bitumen & 3.1% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 66

DATE Jan. 1-3 1947 LOCATION LS.11,Sec.22,Tp.92-10-4 CO-ORDINATES ELEVATION 1067' DEPTH 219' DIP 90° CORE RECOVERY 95.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	61	Overburden - sand, gravel and clay	61	-											
61	65	Bit. sand, good grade, 10% clay	4	1)											
65	69	" " medium grade, 10% clay	4	2)	11.1	6¾	Nil	7	3	2	2	6	45	25	10
69	71	Lost core	2	-											
71	75	Bit. sand, medium grade, 5% clay	4	3)											
75	79	" " good " 5% "	4	4)	12.4	1½	Tr	5	2	1	2	19	45	17	7
79	80	Lost core	1	-											
80	84	Bit. sand, good grade	4	5)											
84	88	" " " " 10% clay	4	6)	14.2	1½	Nil	2	1	1	5	14	36	35	6
88	92	" " " " 5% "	4	7)											
92	96	" " " "	4	8)	13.8		Nil	2	1	1	6	20	41	22	7
96	100	" " " "	4	9)											
100	104	" " " "	4	10)	13.9		Nil	1	0	1	27	24	30	14	3
104	105	Lost core	1	-											
105	109	Bit. sand, good grade	4	11)											
109	113	" " " "	4	12)	14.6		Nil	0	0	1	35	37	21	4	2
113	117	" " " "	4	13)											
117	121	" " " "	4	14)	15.6		Nil	0	0	3	56	20	6	13	2
121	122	Lost core	1	-											
122	126	Bit. sand, good grade	4	15)											
126	130	" " " "	4	16)	15.0		Nil	0	1	8	65	15	8	1	2
130	134	" " " "	4	17)											
134	135	Lost core	1	-)	15.7		Nil	1	0	15	62	11	3	6	2
135	139	Bit. sand, good grade	4	18)											
139	143	" " " "	4	19)											
143	145	Lost core	2	-)	15.2		Nil	1	1	21	64	7	4	1	1
145	149	Bit. sand, good grade	4	20)											

MILDRED - RUTH LAKES AREA

HOLE No. B 66

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
149	153	Bit. sand, good grade	4	21)											
153	157	" " " "	4	22)	16.3		Nil	1	1	44	42	5	4	1	2
157	161	" " " "	4	23)											
161	165	" " " "	4	24)	15.8		Nil	1	1	40	46	3	5	2	2
165	169	" " " "	4	25)											
169	173	" " " "	4	26)	15.4		Nil	1	1	79	12	2	2	2	1
173	177	" " " "	4	27)											
177	181	" " " "	4	28)	17.1		Nil	1	3	73	15	2	3	2	1
181	185	" " " " 25% clay	4	29	12.7	10	Nil	2	3	73	11	4			
185	189	" " " " 15% "	4	30	12.8	3	Nil)								
189	191	Shale	2	-			)	5	20	34	17	5	9	3	6
191	192'6"	Bit. sand, good grade, 65% clay	1'6"	31	12.8	14	Nil)								
192'6"	196	Bitumen concentration	3'6"	32	25.5		12.2	23	42	20	7	1	4	1	2
196	198'6"	Bit. sand, good grade	2'6"	33	9.7	3½	Tr	34	21	15	6	3	2	5	14
198'6"	200	Bitumen concentration	1'6"	34	64.0		18.8	36	23	17	6	3	4	5	6
200	201	Bit. sand, good grade	1	35	13.9		Tr	28	21	19	8	4	10	3	3
201	203	Bitumen concentration	2	36	35.8		13.3	22	36	23	7	3	5	1	3
203	207	Bit. sand, good grade, 25% clay	4	37)											
207	211	" " " " 50% "	4	38)	9.0	23½	Tr	28	24	19	6	4	4	6	9
211	215	Sandy clay	4	-											
215	219	Lime clay	4	-											
	219'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 66

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 61' = 61' Overburden 61' - 192'6" = 131'6" @ 14.3% bitumen & 4.4% clay bands 192'6" - 211' = 18'6" @ 19.8% bitumen & 12.2% clay bands 61' - 211' = 150' @ 14.97% bitumen & 5.3% clay bands **Average Assay if Bitumen Concentrations (6'6") are Taken as 18%** 192'6" - 211' = 18'6" @ 12.8% bitumen & 12.2% clay bands 61' - 211' = 150' @ 14.1% bitumen & 5.3% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 67

DATE Dec. 29-31 1946 LOCATION LS.14, Sec.15, Tp.92-10-4 CO-ORDINATES ELEVATION 1061' DEPTH 206' DIP 90° CORE RECOVERY 99.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	51	Overburden - sand and clay	51	-											
51	55	Bit. sand, medium grade, some clay	4	1)											
55	59	" " " " 30% clay	4	2)	6.2	40	Tr	10	5	2	3	6	38	25	11
59	63	" " good " 10% "	4	3)											
63	67	" " " " 10% "	4	4)	11.2	7	Nil	8	39	33	8	2	3	2	5
67	71	" " " " 10% "	4	5)											
71	75	" " medium " 5% "	4	6)	9.6	12½	Tr	8	4	1	3	12	43	19	10
75	79	" " good " 5% "	4	7)											
79	83	" " " " 5% "	4	8)	12.6	1¼	Nil	3	2	1	3	13	40	30	8
83	87	" " " " some clay	4	9)											
87	91	" " " " 10% clay	4	10)	13.2	2½	Nil	1	1	1	9	20	50	10	8
91	95	" " " "	4	11)											
95	99	" " " "	4	12)	14.2		Nil	0	1	1	19	26	30	20	3
99	103	" " " " some clay	4	13)											
103	107	" " " " " "	4	14)	15.2	½	Tr	0	1	1	9	34	42	11	2
107	111	" " " "	4	15)											
111	115	" " " "	4	16)	15.4		Nil	0	0	1	19	26	38	12	4
115	119	" " " "	4	17)											
119	123	" " " "	4	18)	15.7		Nil	1	1	3	27	35	24	6	3
123	124	Lost core	1	-											
124	128	Bit. sand, good grade	4	19)											
128	132	" " " "	4	20)	15.1		Nil	0	0	2	30	27	27	12	2
132	136	" " " "	4	21)											
136	140	" " " " 10% clay	4	22)	14.6	2¼	Nil	3	1	1	25	24	39	4	3
140	144	" " " " 15% "	4	23)											
144	148	" " " "	4	24)	14.0	4½	Nil	1	1	8	16	27	31	12	4
148	152	" " " "	4	25)											
152	156	" " " "	4	26)	14.8		Nil	0	1	2	31	17	42	5	2

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MILDRED - RUTH LAKES AREA

HOLE No. B 67

DATE.....194..... LOCATION..... CO-ORDINATES..... ELEVATION..... DEPTH..... DIP..... CORE RECOVERY.....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
156	160	Bit. sand, good grade	4	27)											
160	164	" " " "	4	28)	15.7		Nil	1	1	6	39	22	22	5	2
164	168	" " " "	4	29)											
168	172	" " " "	4	30)	15.9		Nil	0	1	13	48	8	26	3	1
172	176	" " " "	4	31)											
176	180	" " " "	4	32)	16.1		Nil	1	1	59	26	5	3	3	2
180	184	" " " "	4	33)											
184	188	" " " "	4	34)	18.9		Nil	1	1	68	19	3	5	2	1
188	192	" " " "	4	35)											
192	196	" " " "	4	36)	16.7		Nil	1	1	76	14	2	3	1	2
196	200	" " " "	4	37)											
200	203	" " " " 5% clay	3	38)	13.6	1½	Nil	5	13	57	5	5	8	3	4
203	206	Lime clay	3	-											
	206	End of Hole													

Summary

0' - 51' = 51' Overburden
51' - 59' = 8' @ 6.2% bitumen & 42.0% clay
59' - 203' = 144' @ 14.6% bitumen & 1.8% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 68

DATE Jan. 4-6 1947 LOCATION LS.9,Sec.22,Tp.92-10-4 CO-ORDINATES ELEVATION 1058' DEPTH 169' DIP 90° CORE RECOVERY 97.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	44	Overburden - sand and clay	44	-											
44	48	Bit. sand, medium grade	4	1)											
48	52	" " " " some clay	4	2)	12.9	1¾	Nil	2	1	1	30	27	31	5	3
52	56	" " " "	4	3)											
56	60	" " good "	4	4)	12.5		Nil	1	1	4	45	21	1	24	3
60	64	" " " "	4	5)											
64	68	" " " "	4	6)	14.2		Nil	1	1	3	41	26	23	3	2
68	72	" " " " 10% clay	4	7)											
72	76	" " " " 10% "	4	8)	13.3	7½	Nil	1	1	2	38	25	16	14	3
76	80	" " " " some clay	4	9)											
80	84	" " " " 15% clay	4	10)	13.1	9½	Nil	2	1	3	45	25	19	2	3
84	88	" " " "	4	11)											
88	92	" " " "	4	12)	15.4		Nil	1	1	4	51	21	16	4	2
92	96	" " " "	4	13)											
96	97	Lost core	1	-)	15.1		Tr	0	1	6	63	16	11	2	1
97	101	Bit. sand, good grade	4	14)											
101	105	" " " "	4	15)											
105	109	" " " "	4	16)	15.3		Nil	0	0	5	60	19	1	14	1
109	111	Lost core	2	-											
111	115	Bit. sand, good grade	4	17)											
115	119	" " " "	4	18)	15.2		Nil	0	1	5	64	18	8	2	1
119	120	Lost core	1	-											
120	124	Bit. sand, good grade	4	19)											
124	128	" " " "	4	20)	16.7		Nil	0	0	4	63	19	4	7	3
128	132	" " " "	4	21)											
132	136	" " " "	4	22)	16.2		Nil	1	1	4	43	2	42	4	3
136	140	" " " "	4	23)											
140	144	" " " "	4	24)	16.9		Nil	0	1	17	62	9	4	4	3

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MILDRED - RUTH LAKES AREA

HOLE No. B 68

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
144	148	Bit. sand, good grade, 5% clay	4	25)											
148	152	" " " "	4	26)	16.5	1½	Nil	0	1	66	24	0	7	1	1
152	156	" " " "	4	27	16.4		Nil	3	2	73	11	3	3	2	3
156	160	" " " "	4	28)											
160	162	" " " "	2	29)	16.6		Nil	1	10	72	7	3	2	3	2
162	165	Bitumen concentration	3	30	55.6		18.2	14	35	29	7	3	5	3	4
165	167'6"	Bit. sand, good grade	2'6"	31	15.1		Tr	7	34	46	5	2	3	3	2
167'6"	169	Lime clay	1'6"	-											
	169	End of Hole													

Summary

0' - 44' = 44' Overburden
44' - 167'6" = 123'6" @ 16.0% bitumen & 1.3% clay

Average Assay if Bitumen Concentrations (3') is Taken as 18%

44' - 167'6" = 123'6" @ 15.1% bitumen & 1.3% clay.

MILDRED - RUTH LAKES AREA

HOLE No. B 69

DATE Jan. 7-9 1947 LOCATION LS.16,Sec.15,Tp.92-10-4. CO-ORDINATES ELEVATION 1059' DEPTH 171' DIP 90° CORE RECOVERY 93.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	46	Overburden, sand and clay	46	-											
46	50	Bit. sand, medium grade	4	1)											
50	54	" " " "	4	2)	12.7		Nil	1	1	2	19	23	38	11	5
54	58	" " " "	4	3)											
58	62	" " good "	4	4)	12.8		Tr	2	2	2	15	19	16	36	8
62	66	" " " "	4	5)											
66	70	" " " " some clay	4	6)	13.3	1¾	Nil	1	1	2	15	23	36	16	6
70	74	" " " " 5% clay	4	7)											
74	78	" " " " 5% "	4	8)	13.4	3½	Nil	1	1	1	21	21	30	20	5
78	82	" " " " some clay	4	9)											
82	86	" " " "	4	10)	14.5		Nil	1	1	1	20	23	38	12	4
86	90	" " " "	4	11)											
90	94	" " " " 30% clay	4	12)	10.6	14¼	Nil	2	1	2	24	23	11	32	5
94	98	" " " "	4	13)											
98	102	" " " "	4	14)	14.2		Nil	0	1	3	44	26	20	4	2
102	106	" " " "	4	15)											
106	110	" " " "	4	16)	14.6		Tr	0	0	5	51	20	17	5	2
110	114	" " " "	4	17)											
114	118	" " " " some clay	4	18)	15.2	1½	Nil	1	1	7	54	20	13	2	2
118	122	" " " "	4	19)											
122	126	" " " "	4	20)	15.0		Nil	0	1	7	59	17	12	2	2
126	130	" " " "	4	21)											
130	132	Lost core	2	-)	15.8		Nil	0	0	19	64	10	5	1	1
132	136	Bit. sand, good grade	4	22)											
136	137	Lost core	1	-											
137	141	Bit. sand, good grade	4	23)											
141	143	Lost core	2	-)	15.7		Nil	0	1	44	39	6	4	3	3
143	147	Bit. sand, good grade	4	24)											
147	148	Lost core	1	-											

MILDRED - RUTH LAKES AREA

HOLE No. B 69

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
148	152	Bit. sand, good grade	4	25)											
152	154	Lost core	2	-)	16.4		Nil	1	4	36	32	10	12	2	3
154	158	Bit. sand, good grade	4	26)											
158	162	" " " "	4	27)											
162	164	" " " "	2	28)	16.9		Tr	3	21	56	7	4	4	2	3
164	168	Bitumen concentration	4	29	67.5		20.4	59	12	7	2	2	2	2	4
168	170	Bit. sand, good grade	2	30	17.1		Tr	3	28	41	8	2	8	5	5
170	171	Limestone	1	-											
	171 ✓	End of Hole													

Summary

0' - 46' = 46' Overburden
46' - 170' = 124' @ 16.18% bitumen & 1.4% clay bands

Average Assay if Bitumen Concentration (4') is Taken as 18%

46' - 170' = 124' @ 14.6% bitumen & 1.4% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. B 70

DATE Jan. 17-18 1947 LOCATION LS.11,Sec.23,Tp.92-10-4. CO-ORDINATES ELEVATION 1058' DEPTH 158' DIP 90° CORE RECOVERY 97.3%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	5	Overburden, sand & low grade sand	5	-											
5	9	Bit. sand, medium grade, 5% clay	4	1)											
9	13	" " " "	4	2)	11.6	7½	Tr	3	2	1	2	7	38	30	17
13	17	" " good " 5% "	4	3)											
17	21	" " " "	4	4)	13.9	1	Tr	1	1	1	2	5	35	34	21
21	25	" " medium " 15% "	4	5)											
25	29	" " " " some clay	4	6)	10.1	16½	Tr	3	2	1	4	14	35	24	17
29	33	" " " " 20% "	4	7)											
33	37	" " " " 15% "	4	8)	8.9	16½	Tr	6	3	2	4	11	34	25	15
37	41	" " good "	4	9)											
41	45	" " " "	4	10)	14.1		Nil	2	2	2	4	17	45	16	12
45	49	" " " "	4	11)											
49	53	" " " "	4	12)	14.1		Tr	1	1	2	4	15	44	24	9
53	57	" " " " some clay	4	13)											
57	61	" " " "	4	14)	12.8		Tr	2	2	3	10	18	50	9	6
61	65	" " medium "	4	15)											
65	69	" " " "	4	16)	11.8		Tr	2	2	1	8	20	35	22	10
69	73	" " " "	4	17)											
73	77	" " " " 5% clay	4	18)	12.1	1¾	Tr	3	2	2	10	21	42	9	11
77	81	" " " " some clay	4	19)											
81	85	" " good " 15% clay	4	20)	10.7	4½	Tr	10	4	3	15	20	25	13	10
85	86	Lost core	1	-											
86	90	Bit. sand, good grade	4	21)											
90	94	" " " "	4	22)	14.4		Tr	3	3	3	19	11	44	10	7
94	98	" " " "	4	23)											
98	102	" " " "	4	24)	14.7		Tr	1	1	2	18	26	13	33	6
102	106	" " " "	4	25	15.4		Tr	0	1	1	29	30	34	4	5

MILDRED - RUTH LAKES AREA

HOLE No. B 70

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+5 %	+200 %	-200 %
106	110	Bit. sand, good grade	4	26)											
110	114	" " " "	4	27)	15.2		Tr	0	1	3	36	24	19	14	3
114	118	" " " " some clay	4	28)											
118	120	" " " "	2	29)	16.5	1½	Tr	1	4	46	20	21	1	2	5
120	121	Bitumen concentration	1	30	33.8		12.2	16	8	21	34	8	7	3	3
121	125	Bit. sand, good grade, 10% clay	4	31)											
125	126	Lost core	1	-)	15.6	3	Tr	3	2	6	56	13	5	11	4
126	130	Bit. sand, good grade	4	32)											
130	131	Bitumen concentration	1	33	61.5		25.9	62	6	12	10	3	5	1	1
131	135	Bit. sand, good grade, 10% clay	4	34)											
135	139	" " " "	4	35)	16.1	4	0.1	2	2	20	47	10	8	4	7
139	139'6"	Bitumen concentration	0'6"	36	56.2		27.7	49	15	20	7	3	4	1	1
139'6"	143	Bit. sand, good grade, 5% clay	3'6"	37)											
143	145	Lost core	2	-)	14.0	3	Tr	2	6	60	11	5	3	7	6
145	146	Bit. sand, good grade	1	38)											
146	147	Bitumen concentration	1	39	62.1		28.5	64	7	12	3	3	5	3	3
147	148	Bit. sand, good grade	1	40	13.9		Tr	7	15	21	21	9	14	4	9
148	150	Bitumen concentration	2	41	55.3		38.1	25	23	27	6	4	2	6	4
150	154	Bit. sand, good grade, 25% clay	4	42	11.3		0.1	5	25	26	11	9	12	4	8
154	158	Lime clay													
	158	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. B 70

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 5' = 5' Overburden 5' - 120' = 115' @ 12.9% bitumen & 3.6% clay bands 120' - 154' = 34' @ 21.04% bitumen & 2.4% clay bands 5' - 154' = 149' @ 14.8% bitumen & 3.3% clay bands **Average Assay if Bitumen Concentrations (5'6") are Taken as 18%** 120' - 154' = 34' @ 15.24% bitumen & 2.4% clay bands 5' - 154' = 149' @ 13.45% bitumen & 3.3% clay bands.												

MILDRED - RUTH LAKES AREA

HOLE No. B 71

DATE Jan. 11-15 1947 LOCATION LS.2,Sec.23,Tp.92-10-4 CO-ORDINATES ELEVATION 1056' DEPTH 168' DIP 90° CORE RECOVERY 90.9%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	58	Overburden, gravel and boulders	58	-											
58	62	Bit. sand, medium grade, 10% clay	4	1)											
62	64	Lost core	2	-)	12.6	7	Nil	1	1	1	12	21	43	14	7
64	68	Bit. sand, good grade, 10% clay	4	2)											
68	69	Lost core	1	-											
69	73	Bit. sand, good grade, some clay	4	3)	14.0	2½	Tr	1	1	1	10	29	40	13	5
73	77	" " " " 5% clay	4	4)											
77	81	" " " " 5% "	4	5)											
81	85	" " " " some clay	4	6)	13.4	3¼	Tr	2	1	1	14	22	10	44	6
85	89	" " " " 5% clay	4	7)											
89	93	" " " " some clay	4	8)	15.6	¾	Tr	3	1	1	15	27	43	8	3
93	97	" " " "	4	9)											
97	101	" " " "	4	10)	14.7		Tr	2	1	1	28	23	27	14	4
101	105	" " " " some clay	4	11)											
105	109	" " " "	4	12)	13.9	3¾	Tr	2	1	2	22	29	27	12	5
109	110	Lost core	1	-											
110	114	Bit. sand, good grade, some clay	4	13)											
114	118	" " " " " "	4	14)	14.1	2½	Tr	1	1	1	19	20	37	16	5
118	122	" " " "	4	15)											
122	126	" " " "	4	16)	15.6		Tr	1	1	2	21	27	36	8	4
126	130	" " " " some clay	4	17)											
130	134	" " " " " "	4	18)	13.9		Tr	7	3	3	29	20	27	5	6
134	138	" " " "	4	19)											
138	139	Lost core	1	-)	16.5		Nil	1	2	3	23	32	25	11	3
139	143	Bit. sand, good grade	4	20)											
143	147	" " " "	4	21)											
147	151	" " " "	4	22)	16.5		Tr	1	1	4	39	26	20	8	1

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MILDRED - RUTH LAKES AREA

HOLE No. B 71

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
151	155	Bit. sand, good grade	4	23)	17.9		Tr	1	3	11	47	17	17	2	2
155	156	Lost core	1	-											
156	160	Bit. sand, good grade	4	24)											
160	164	Lost core	4	-)	16.7	2¾	Tr	1	4	16	35	16	8	16	4
164	167'8"	Bit. sand, good grade, some clay	3'8"	25)											
167'8"	168	Lime clay	0'4"	-											
	168	End of Hole													

Summary

0' - 58' = 58' Overburden
58' - 167'8" = 109'8" @ 14.9% bitumen & 1.4% clay bands.

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MILDRED - RUTH LAKES AREA

HOLE No. B 72

DATE Jan. 19-21 1947 LOCATION LS.9,Sec.23,Tp.92-10-4 CO-ORDINATES ELEVATION 1018' DEPTH 124' DIP 90° CORE RECOVERY 98.0%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	24	Overburden - gravel & boulders	24	-											
24	28	Bit. sand, medium grade, some clay	4	1)											
28	32	" " " "	4	2)	11.8	1½	Tr	4	2	3	25	21	27	10	8
32	33	Lost core	1	-											
33	37	Bit. sand, medium grade	4	3)											
37	41	" " " "	4	4)	11.8		Tr	3	3	3	19	19	36	12	5
41	45	" " " " slight clay	4	5)											
45	49	" " good "	4	6)	13.2	1¾	0.1	3	2	4	24	22	32	9	4
49	53	" " " " 5% clay	4	7)											
53	57	" " " "	4	8)	15.4		Tr	1	1	6	28	21	34	6	3
57	61	" " " "	4	9)											
61	65	" " " "	4	10)	15.0		Tr	1	1	4	28	23	28	8	8
65	69	" " " "	4	11)											
69	72'6"	" " " "	3'6"	12)	15.2		Nil	1	1	4	29	23	30	7	5
72'6"	73	Bitumen concentration	0'6"	13	48.4		12.6	3	16	31	27	8	6	3	4
73	77	Bit. sand, good grade	4	14)											
77	81	" " " "	4	15)	18.9		Nil	1	1	9	50	18	10	8	3
81	85	" " " "	4	16)											
85	89	" " " "	4	17)	16.3		Nil	2	1	9	50	19	12	4	3
89	90	Lost core	1	-)											
90	90'6"	Bit. sand, good grade	0'6"	18)											
90'6"	91	Bitumen concentration	0'6"	19	30.8		13.9	2	5	37	40	6	6	1	3
91	92	Bit. sand, good grade	1	20	15.6		Tr	1	1	11	35	18	18	9	7
92	93	Bitumen concentration	1	21	75.2		15.7	69	4	7	9	2	2	4	4
93	97	Bit. sand, good grade, some clay	4	22)											
97	101	" " " "	4	23)	16.3	¾	Tr	1	1	16	50	14	8	7	3
101	105	Bit. sand, good grade	4	24)											
105	109'6"	" " " "	4'6"	25)	19.0		Nil	1	1	11	38	17	21	5	6

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MILDRED - RUTH LAKES AREA

HOLE No. B 72

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
109'6"	113	Bitumen concentration	3'6"	26	42.8		24.3	7	31	34	15	4	4	1	3
113	117	Bit. sand, good grade	4	27	16.8		Nil	2	12	23	20	10	14	12	7
117	121	Bitumen concentration	4	28	46.1		20.6	41	22	19	8	4	4	1	1
121	124	Lime clay	3	-											
	124'	End of Hole													

Summary

0' - 24' = 24' Overburden
24' - 75'6" = 48'6" @ 13.67% bitumen & 0.5% clay
72'6" - 121' = 48'6" @ 23.4% bitumen & 0.5% clay
24' - 121' = 97' @ 18.5% bitumen & 0.5% clay

Average Assay if Bitumen Concentrations are Taken as 18%

72'6" - 121' = 48'6" @ 17.56% bitumen & 0.5% clay
24' - 121' = 97' @ 15.6% bitumen & 0.5% clay.

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MILDRED - RUTH LAKES AREA

HOLE No. B 73

DATE Jan. 22-24 1947 LOCATION LS.16,Sec.14,Tp.92-10-4 CO-ORDINATES ELEVATION 1042' DEPTH 141' DIP 90° CORE RECOVERY 98.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	14	Overburden, sandy clay & gravel	14	-											
14	18	Bit. sand, low grade, 15% clay	4	1)											
18	19	Lost core	1	-)	8.2	10½	Nil	16	8	3	3	1	11	30	28
19	23	Bit. sand, low grade, 15% clay	4	2)											
23	27	" " " " 15% "	4	3)											
27	31	" " " " 15% "	4	4)	9.0	3¾	Tr	2	2	1	2	2	30	43	18
31	35	" " " " 10% "	4	5)											
35	39	" " medium " 15% "	4	6)											
39	43	" " " " 10% "	4	7)	10.2	21¾	Tr	2	2	1	2	3	33	41	16
43	47	" " " " 15% "	4	8)											
47	51	" " " " 5% "	4	9)											
51	55	" " " " 20% "	4	10)	8.3	3¾	Tr	3	3	1	3	4	25	41	20
55	59	" " " " 15% "	4	11)											
59	63	" " " "	4	12)											
63	67	" " " "	4	13)	12.8		0.1	0	1	1	2	4	37	41	14
67	71	" " " " 10% clay	4	14)											
71	75	" " " " 20% "	4	15)	9.8	18½	Tr	5	3	1	3	5	33	34	16
75	79	" " " " 10% "	4	16)											
79	83	" " " " 30% "	4	17)	7.5	23	Nil	7	4	2	5	8	28	31	15
83	87	" " good " 15% "	4	18)											
87	91	" " " " 15% "	4	19)	12.0	14	Tr	1	1	1	8	11	35	31	12
91	92	Lost core	1	-											
92	96	Bit. sand, good grade, 10% clay	4	20)											
96	100	" " " " 25% "	4	21)	13.1	12¼	Nil	0	1	1	7	13	34	36	8
100	104	" " " " 5% "	4	22)											
104	108	" " " " 5% "	4	23)	14.7	3¼	Tr	2	2	1	11	13	35	28	8
108	112	" " " " 25% "	4	24)											
112	116	" " " " 5% "	4	25)	13.1	10¾	0.1	3	2	2	14	16	30	26	7

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MILDRED - RUTH LAKES AREA

HOLE No. B 73

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
116	120	Bit. sand, good grade, some clay	4	26)											
120	124	" " " " " "	4	27)	15.0	1¼	Tr	2	2	1	12	17	33	26	7
124	128	" " " " 5% clay	4	28	14.7	1	0.2	2	1	1	16	18	11	40	11
128	132	" " " " some clay	4	29)											
132	136	" " " " " "	4	30)	13.5	7¾	0.1	3	1	4	30	20	15	19	18
136	138	Sandy clay	2	-											
138	141	Lime clay	3	-											
	141	End of Hole													

Summary

0' - 14' = 14' Overburden
14' - 83' = 69' @ 9.34% bitumen & 17.6% clay bands
83' - 136' = 53' @ 13.62% bitumen & 8.0% clay bands
14' - 136' = 122' @ 11.2% bitumen & 13.3% clay bands.

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MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 A

DATE Feb.26-Mar.2, 1947 LOCATION LS.3, Sec.34, Tp.92-10-4 CO-ORDINATES ELEVATION 1037' DEPTH 255' DIP 90° CORE RECOVERY 92.8%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	32	Overburden - sand and boulders	32												
32	36	Bit. sand, low grade, 15% clay	4	1)											
36	40	" " medium grade, 5% clay	4	2)	8.1	4	Tr	15	9	3	5	10	33	10	15
40	43	Lost core	3	-											
43	47	Bit. sand, medium grade	4	3)											
47	48	Lost core	1	-)	11.5	5	Tr	3	2	1	6	19	31	26	12
48	52	Bit. sand, medium grade	4	4)											
52	56	" " " " some clay	4	5)											
56	60	" " good "	4	6)	11.8	½	Tr	4	2	1	11	23	18	37	4
60	64	" " " "	4	7)											
64	68	" " " "	4	8)	14.5		0.2	1	0	1	15	34	41	6	2
68	69	Lost core	1	-											
69	73	Bit. sand, good grade, 5% clay	4	9)											
73	77	" " " "	4	10)	13.7	1¾	Tr	1	0	0	8	32	43	11	5
77	81	" " " "	4	11)											
81	85	" " " " 10% "	4	12)	14.0		Tr	1	1	1	5	20	39	27	6
85	89	" " " " 25% "	4	13)											
89	93	" " " " 40% "	4	14)	10.6	26½	0.1	2	1	0	12	24	46	11	4
93	97	" " " " 40% "	4	15)											
97	101	" " " " 30% "	4	16)	10.0	31¾	Tr	1	1	1	24	26	32	9	6
101	102	Lost core	1	-											
102	106	Bit. sand, good grade, 15% clay	4	17)											
106	107	Lost core	1	-)	11.0	26	Tr	1	1	1	31	38	18	9	1
107	111	Bit. sand, good grade, 45% clay	4	18)											
111	115	" " " " some clay	4	19)											
115	119	" " " " 50% clay	4	20)	12.6	18¾	Tr	2	1	1	35	25	24	7	5
119	123	" " " "	4	21)											
123	127	" " " " 5% clay	4	22)	14.8	1½	Nil	1	1	2	28	29	25	6	8

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 A

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
127	131	Bit. sand, good grade, 15% clay	4	23)											
131	135	" " " " 15% "	4	24)	11.4	18½	Nil	2	1	3	37	22	18	6	11
135	139	" " " "	4	25)											
139	143	" " " "	4	26)	14.5		Nil	1	1	1	26	34	27	4	6
143	147	" " " "	4	27)											
147	151	" " " "	4	28)	15.2		Nil	0	0	2	30	29	14	16	9
151	152	Lost core	1	-											
152	156	Bit. sand, good grade, 10% clay	4	29)											
156	160	" " " " 20% "	4	30)	13.1	11	Tr	1	1	4	47	23	15	3	6
160	162	" " " " 5% "	2	31	15.3		Nil	2	1	9	44	17	12	6	9
162	163	Bitumen concentration	1	32	64.3		18.7	61	6	6	6	6	6	4	4
163	167	Bit. sand, good grade	4	33)											
167	171	" " " " 25% clay	4	34)	13.4	7¾	Tr	2	4	35	26	8	12	5	8
171	172	Bitumen concentration	1	35	42.4		15.1	10	13	20	26	9	13	3	6
172	177	Bit. sand, good grade, 70% clay	5	36	9.5	18	Nil	6	7	16	21	12	7	18	13
177	180	Bitumen concentration	3	37	62.8		21.0	40	15	17	10	3	3	6	6
180	183	Bit. sand, good grade, 25% clay	3	38	13.2	4¼	Tr	8	17	12	15	11	19	6	12
183	185	Bitumen concentration	2	39	37.0		14.4	22	27	22	12	7	1	6	3
185	189	Bit. sand, medium grade, 10% clay	4	40											
189	191	" " good " some clay	2	41	14.6	3	Nil	4	5	5	9	23	23	20	12
191	192	Bitumen concentration	1	42	41.3		16.7	25	10	28	15	6	6	4	6
192	196	Bit. sand, good grade, 25% clay	4	43)											
196	197	Lost core	1	-)	11.5	10½	Nil	11	26	15	10	8	9	10	11
197	201	Bit. sand, good grade, 5% clay	4	44)											
201	204	Lost core	3	-											
204	208	Bit. sand, good grade	4	45)											
208	209	Lost core	1	-)	13.0		Nil	8	16	14	20	8	13	11	10
209	213	Bit. sand, good grade	4	46)											

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 A

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
213	214	Lost core	1	-											
214	217	Bit. sand, good grade	3	47	13.3		Nil	3	4	15	16	16	10	13	13
217	218'3"	Bitumen concentration	1'3"	48	29.9		10.0	23	34	21	11	4	3	2	2
218'3"	222	Bit. sand, good grade	3'9"	49	14.3		Nil	5	8	17	26	19	15	4	6
222	222'10"	Bitumen concentration	0'10"	50	68.8		20.5	54	5	5	7	7	7	5	10
222'10"	227	Bit. sand, good grade	4'2"	51	16.4		Nil	2	3	8	18	27	6	29	7
227	228'9"	Bitumen concentration	1'9"	52	35.4		13.8	26	42	15	6	3	2	2	3
228'9"	229'10"	Bit. sand, good grade	1'1"	53	23.6		Tr	11	8	5	14	21	30	5	6
229'10"	230'4"	Bitumen concentration	0'6"	54	49.8		15.8	30	28	15	8	6	6	3	4
230'4"	232	Bit. sand, good grade	1'8"	55	25.1		Tr	8	6	10	10	14	21	20	10
232	233'6"	Bitumen concentration	1'6"	56	35.8		12.9	20	28	16	14	9	9	2	2
233'6"	237	Bit. sand, good grade	3'6"	57)											
237	238	Lost core	1	-)											
238	242	Bit. sand, good grade, some clay	4	58)	12.9	24½	Nil	15	16	12	17	3	22	4	8
242	243	Lost core	1	-)											
243	247	Bit. sand, good grade, 25% clay	4	59)											
247	250	Lime clay	3	-											
250	255	Limestone	5	-											
	255'	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 A

DATE ..... 194 .... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 32' = 32' Overburden 32' - 162' = 130' @ 12.37% bitumen & 9.3% clay 162' - 247' = 85' @ 19.98% bitumen & 6.6% clay 32' - 247' = 215' @ 15.38% bitumen & 8.2% clay **Average Assay if Bitumen Concentrations (13'0") are Taken as 18%** 162' - 247' = 85' @ 15.18% bitumen & 6.6% clay 32' - 247' = 215' @ 13.48% bitumen & 8.2% clay.												

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MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 B

DATE Feb. 17-24 1947 LOCATION LS.2, Sec.34, Tp.92-10-4 CO-ORDINATES ELEVATION 1036' DEPTH 262' DIP 90° CORE RECOVERY 96.1%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE No.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	32	Overburden, sand and boulders	32	-											
32	36	Bit. sand, medium grade, some clay	4	1)											
36	38	Lost core	2	-)	10.5		Nil	11	4	3	6	8	51	11	6
38	42	Bit. sand, medium grade	4	2)											
42	46	" " " "	4	3)											
46	50	" " " "	4	4)	12.3		Nil	5	3	3	6	15	26	34	8
50	54	" " " "	4	5)											
54	58	" " " "	4	6)	12.3		Tr	4	3	2	13	24	33	15	6
58	62	" " " " some clay	4	7)											
62	66	" " good "	4	8)	14.0	1	Nil	1	1	2	8	19	40	25	4
66	70	" " " " 5% clay	4	9)											
70	74	" " " " some clay	4	10)	14.0	2¾	Nil	2	1	1	16	21	49	8	2
74	78	" " " " 10% clay	4	11)											
78	80	Lost core	2	-)	13.1	6½	Nil	1	1	1	7	19	13	52	6
80	84	Bit. sand, good grade, 15% clay	4	12)											
84	88	" " " " 5% "	4	13)											
88	89	Lost core	1	-)	14.8	1¾	Nil	1	1	1	35	33	19	8	2
89	93	Bit. sand, good grade, 5% clay	4	14)											
93	97	" " " "		15)											
97	101	" " " " 25% "	4	16)	13.6	5¼	Nil	1	1	2	12	28	25	25	6
101	105	" " " "	4	17)											
105	109	" " " " 40% "	4	18)	11.4	17	Tr	5	6	4	11	10	49	14	1
109	113	" " " "	4	19)											
113	117	" " " "	4	20)	13.8		Tr	6	5	5	8	15	31	20	10
117	121	" " " " 30% clay	4	21)											
121	125	" " " " slight clay	4	22)	13.4	11¾	Tr	3	3	2	9	18	47	12	6
125	129	" " " " 5% clay	4	23)											
129	133	" " " " some clay	4	24)	15.2	3¼	Nil	3	2	3	15	19	30	22	6

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 B

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
133	137	Bit. sand, good grade, some clay	4	25)											
137	141	" " " " 5% clay	4	26)	16.6	¾	Tr	1	1	2	35	23	21	11	7
141	145	" " " " 10% "	4	27)											
145	149	" " " " some clay	4	28)	15.1	2¼	Nil	4	1	5	42	24	3	18	2
149	153	" " " "	4	29)											
153	157	" " " "	4	30)	15.2		Nil	1	1	11	57	13	9	3	5
157	161	" " " "	4	31)											
161	165	" " " "	4	32)	16.5		Tr	0	1	19	61	4	6	2	9
165	169	" " " " some clay	4	33)											
169	173	" " " "	4	34)	16.2	1½	Tr	1	1	13	58	15	6	4	1
173	176'10"	" " " "	3'10"	35	17.3		Tr	2	1	41	33	3	9	3	8
176'10"	177'6"	Bitumen concentration	0'8"	36	33.7		18.4	2	21	51	15	3	1	4	3
177'6"	181	Bit. sand, good grade	3'6"	37)											
181	185	" " " "	4	38)	17.1		Nil	1	5	49	35	4	2	3	1
185	189	" " " "	4	39	17.0		Nil	1	2	10	40	14	25	3	5
189	189'6"	Bitumen concentration	0'6"	40	42.4		16.2	13	38	21	13	2	7	2	4
189'6"	193	Bit. sand, good grade	3'6"	41)											
193	195	" " " "	2	42)	17.4		Tr	17	19	19	21	10	5	5	4
195	196'3"	Bitumen concentration	1'3"	43	52.6		18.5	13	16	18	22	5	14	3	9
196'3"	199	Bit. sand, good grade	2'9"	44	14.2		Tr	30	27	24	12	6	6	2	2
199	201'8"	Bitumen concentration	2'8"	45	38.9		15.4	12	34	30	12	3	1	5	3
201'8"	204	Bit. sand, good grade, 50% clay	2'4"	46	6.7	15¾	Tr	22	12	26	26	4	1	3	4
204	208	Bitumen concentration	4	47	54.2		16.1	18	31	20	12	5	6	4	4
208	209	Bit. sand, good grade, 50% clay	1	48	12.2	2½	Tr	28	21	12	16	8	7	3	5
209	214	Bitumen concentration	5	49	50.6		15.4	19	22	21	16	8	6	6	2
214	219	Bit. sand, good grade	5	50	15.5		Tr	9	10	17	18	9	17	14	6
219	221'6"	Bitumen concentration	2'6"	51	34.7		10.4	37	23	15	10	4	6	3	2
221'6"	222'8"	Bit. sand, good grade	1'2"	52	15.3		Tr	5	6	8	17	12	30	12	10

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 B

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
222'8"	223'10"	Bitumen concentration	1'2"	53	44.6		12.7	31	34	17	5	4	5	2	2
223'10"	224	Bit. sand, good grade	0'2"	54	17.3		Tr	3	6	12	28	17	9	14	11
224	228	Bitumen concentration	4	55	58.2		19.1	46	23	12	9	2	2	3	1
228	229	Bit. sand, good grade	1	56	16.1		Tr	8	7	9	34	13	17	6	6
229	230	Bitumen concentration	1	57	48.9		13.7	19	32	23	11	4	5	3	3
230	234	Bit. sand, good grade	4	58	19.5		Nil	7	6	7	18	11	30	9	12
234	235	Lost core	1	-											
235	235'9"	Bitumen concentration	0'9"	59	42.5		14.4	15	35	21	15	6	5	2	1
235'9"	237'11"	Bit. sand, good grade	2'2"	60	19.1		Tr	2	2	5	23	23	23	15	7
237'11"	238'9"	Bitumen concentration	0'10"	61	35.0		13.1	17	19	19	20	12	6	4	3
238'9"	239	Bit. sand, good grade	0'3"	62	15.8		Nil	4	3	6	28	21	24	5	9
239	241'8"	Bitumen concentration	2'8"	63	40.4		17.6	17	37	20	12	7	4	1	2
241'8"	244	Bit. sand, good grade	2'4"	64	17.6		Nil	5	6	6	19	24	20	17	2
244	248'3"	Bitumen concentration	4'3"	65	60.1		21.1	40	16	12	12	7	3	7	3
248'3"	249	Bit. sand, good grade	0'9"	66	16.8		Nil	7	6	10	25	25	17	4	6
249	252	Lost core	3	-											
252	256	Bitumen concentration	4	67	45.6		18.7	22	24	18	16	8	4	4	3
256	257	Bit. sand, good grade, some clay	1	68	19.5		Tr	7	6	8	21	26	24	5	3
257	261'4"	Bitumen concentration	4'4"	69	52.3		19.7	14	34	22	11	5	2	7	5
261'4"	261'6"	Bit. sand, good grade	0'2"	70	14.8		Nil	9	7	10	30	21	15	4	4
261'6"	262	Limestone	0'6"	-											
	262	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 B

DATE 194 LOCATION CO-ORDINATES ELEVATION DEPTH DIP CORE RECOVERY

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
		Summary 0' - 32' = 32' Overburden 32' - 176'10" = 144'10" @ 14.3% bitumen & 3.1% clay 176'10" - 261'6" = 84'8" @ 31.6% bitumen & 1.8% clay 32' - 261'6" = 229'6" @ 20.5% bitumen & 2.6% clay **Average Assay if Bitumen Concentrations (39'7") are Taken as 18%** 176'10" - 261'6" = 84'8" @ 17.2% bitumen & 1.8% clay 32' - 261'6" = 229'6" @ 15.2% bitumen & 2.6% clay.												

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MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 C

DATE March 10-14 1947 LOCATION LS.14, Sec.27, Tp.92-10-4 CO-ORDINATES ELEVATION 1043' DEPTH 272' DIP 90° CORE RECOVERY 85.5%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
0	35	Overburden, sand, clay & boulders	35	-											
35	39	Bit. sand, low grade, 25% clay	4	1)											
39	43	" " " " 15% "	4	2)	4.4	32	0.6	23	8	4	3	6	31	16	9
43	47	" " medium grade, some clay	4	3)											
47	51	" " " "	4	4)	11.5	½	Nil	3	2	1	4	14	55	13	8
51	55	" " " "	4	5)											
55	59	" " " "	4	6)	9.4		0.2	7	3	2	8	20	36	15	9
59	63	" " " "	4	7)											
63	67	" " " "	4	8)	11.4		0.1	3	1	1	10	28	44	9	4
67	68	Lost core	1	-											
68	72	Bit. sand, good grade, some clay	4	9)											
72	74	Lost core	2	-)	12.6		Nil	2	1	1	5	18	37	26	10
74	78	Bit. sand, good grade, some clay	4	10)											
78	82	" " " " 25% clay	4	11)											
82	83	Lost core	1	-)	12.0	4½	Nil	5	2	1	8	28	32	15	9
83	87	Bit. sand, good grade, 10% clay	4	12)											
87	91	" " " " some clay	4	13)											
91	95	" " " " " "	4	14)	13.7	1	Nil	1	1	1	4	18	45	16	13
95	99	" " " " 20% clay	4	15	11.3	8¾	Nil)								
99	104	Shale	5	-			)	1	1	1	5	23	47	13	9
104	108	Bit. sand, good grade, 25% clay	4	16	11.3	11	Nil)								
108	111	Lost core	3	-											
111	115	Bit. sand, good grade, 15% clay	4	17)											
115	119	" " " "	4	18)	14.9	6	Nil	1	1	1	11	28	38	16	4
119	123	" " " " 20% "	4	19)											
123	127	" " " " 10% "	4	20)	13.0	15¾	Nil	3	1	1	28	16	44	4	3

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 C

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
127	131	Bit. sand, good grade, 5% clay	4	21											
131	132	Lost core	1	-	15.0	3½	Tr	0	0	1	33	30	18	14	4
132	136	Bit. sand, good grade	4	22											
136	140	" " " " some clay	4	23											
140	144	" " " " 15% clay	4	24	13.5	3½	Tr	4	2	3	37	28	15	5	5
144	148	" " " " some clay	4	25											
148	149	Lost core	1	-	14.2	2	Nil	3	2	6	54	16	7	7	5
149	153	Bit. sand, good grade	4	26											
153	154	Lost core	1	-											
154	158	Bit. sand, good grade	4	27											
158	162	" " " "	4	28	16.1		Nil	2	1	8	63	10	11	2	2
162	166	" " " " 25% clay	4	29											
166	170	" " " " 10% "	4	30	14.4	10½	Tr	3	1	16	55	11	5	4	5
170	174	" " " " some clay	4	31											
174	175	Lost core	1	-	14.5	3½	Nil	1	1	7	52	15	12	3	7
175	179	Bit. sand, good grade, some clay	4	32											
179	180	Lost core	1	-											
180	184	Bit. sand, good grade	4	33											
184	188	" " " "	4	34	15.5		Nil	1	2	7	40	21	15	8	6
183	192	" " " "	4	35											
192	196	Lost core	4	-											
196	200	Bit. sand, good grade	4	36	15.9		Tr	2	19	15	32	16	4	5	3
200	204	" " " " some clay	4	37											
204	208	" " " " 25% clay	4	38	13.1	11½	Tr	8	14	15	24	14	16	4	5
208	212	Lost core	4	-											
212	216	Bit. sand, good grade, 5% clay	4	39											
216	219	Lost core	3	-	13.2	1½	Nil	11	27	19	14	4	14	5	6
219	223	Bit. sand, good grade, some clay	4	40											

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 C

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
223	227	Bit. sand, good grade	4	41)											
227	228	Lost core	1	-)	14.2		Tr	6	11	18	20	10	18	8	9
228	230	Bit. sand, good grade	2	42)											
230	233	Lost core	3	-											
233	237	Bit. sand, good grade	4	43)											
237	238	Lost core	1	-)	16.5		Nil	3	5	9	28	24	22	5	4
238	242	Bit. sand, good grade	4	44)											
242	246	" " " "	4	45)											
246	247	Lost core	1	-)	15.7	2	Tr	5	6	8	18	27	26	4	6
247	251	Bit. sand, good grade, some clay	4	46)											
251	252	Lost core	1	-											
252	256	Bit. sand, good grade	4	47)											
256	260	" " " " some clay	4	48)	14.9	½	Tr	8	10	22	29	7	15	4	5
260	261	Lost core	1	-											
261	265	Bit. sand, good grade, 15% clay	4	49)											
265	268	Lost core	3	-)	12.0	12½	Tr	10	11	22	21	9	6	12	9
268	271'6"	Bit. sand, good grade, 25% clay	3'6"	50)											
271'6"	272	Lime clay	0'6"	-											
	272 ✓	End of Hole													

Summary

0' - 43' = 43' Overburden & low grade bituminous sand

43' - 271'6" = 228'6" @ 14.4% bitumen & 5.8% clay bands.

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 D

DATE March 3-8 1947 LOCATION LS.3,Sec.34,Tp.92-10-4 CO-ORDINATES ELEVATION 1038' DEPTH 251' DIP 90° CORE RECOVERY 92.2%

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
0	32	Overburden, sand, gravel and boulders	35	-											
32	36	Bit. sand, low grade, 10% clay	4	1)											
36	40	" " " "	4	2)	7.2	2½	Tr	16	6	4	4	11	20	22	16
40	44	" " " " 5% clay	4	3)											
44	48	" " medium grade	4	4)	9.7		Nil	6	5	2	8	23	37	9	9
48	49	Lost core	1	-											
49	53	Bit. sand, medium grade	4	5)											
53	57	" " " "	4	6)	12.0		Nil	3	1	1	3	17	49	12	13
57	61	" " " "	4	7)											
61	65	" " " "	4	8)	11.6	1½	Nil	3	2	1	7	22	44	11	10
65	69	" " " "	4	9	13.0		Nil	0	1	1	2	7	35	40	14
69	73	" " good " some clay	4	10)											
73	77	" " " " 10% clay	4	11)	14.0	2¾	Tr	1	1	3	20	30	22	14	9
77	78	Lost core	1	-											
78	82	Bit. sand, good grade, some clay	4	12)											
82	86	" " " " 10% clay	4	13)	12.9	5	Nil	1	1	1	2	16	22	41	16
86	90	" " " " 20% "	4	14)											
90	94	" " " " 20% "	4	15)	12.9	14¼	Nil	1	1	0	6	30	43	13	6
94	96	Lost core	2	-											
96	99	Bit. sand, good grade, 30% clay	3	16	12.5	13	Nil)								
99	105	Shale	6	-			)	1	1	0	20	27	19	27	5
105	109	Bit. sand, good grade, some clay	4	17	12.5	½	Nil)								
109	113	" " " "	4	18)											
113	117	" " " " 15% clay	4	19)	15.3	3¾	Nil	1	1	1	18	34	32	8	4
117	121	" " " " some clay	4	20)											
121	125	" " " "	4	21)	16.2	1¼	Tr	1	1	1	7	24	39	20	7
125	129	" " " "	4	22)	16.6		Nil	0	0	1	16	30	40	8	5
129	133	" " " " 15% clay	4	23)											

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 D

DATE ..... 194 ..... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
133	137	Bit. sand, good grade, 10% clay	4	24)											
137	141	" " " " some clay	4	25)	15.8	5	Nil	1	1	4	56	18	10	5	5
141	145	" " " " " "	4	26)											
145	149	" " " " 10% clay	4	27)	15.8	5¾	Nil	2	1	7	62	10	11	3	3
149	153	" " " " 15% "	4	28)											
153	154	Lost core	1	-)	13.7	7¼	Nil	1	1	12	63	10	4	5	4
154	155	Bit. sand, good grade	1	29)											
155	155'6"	Bitumen concentration	0'6"	30	43.1		11.2	16	21	25	20	5	6	3	4
155'6"	160	Bit. sand, good grade, 15% clay	4'6"	31	13.3	8½	Tr	3	2	16	61	6	5	2	5
160	161	Bitumen concentration	1	32	53.4		18.8	31	8	25	17	5	4	4	5
161	165	Bit. sand, good grade, 25% clay	4	33	11.2	10½	Tr	1	1	29	48	5	4	3	9
165	166	Bitumen concentration	1	34	44.6		16.6	22	12	34	13	5	8	3	3
166	170	Bit. sand, good grade	4	35	18.7		Nil	0	0	29	51	2	6	4	8
170	170'8"	Bitumen concentration	0'8"	36	50.4		17.2	42	4	25	10	5	4	3	7
170'8"	175	Bit. sand, good grade, 30% clay	4'4"	37)											
175	179	" " " " 30% "	4	38)	12.8	9¼	Tr	4	3	11	34	14	9	14	11
179	180	Lost core	1	-											
180	184	Bit. sand, good grade, 30% clay	4	39	11.8	7¾	Tr	11	16	21	20	9	9	3	9
184	185	Bitumen concentration	1	40	58.9		21.7	37	18	11	10	3	9	5	7
185	189	Bit. sand, good grade, 5% clay	4	41	12.2	2¾	Tr	21	21	25	12	5	3	4	9
189	193	Lost core	4	-											
193	197	Bit. sand, good grade, 5% clay	4	42)											
197	198	Lost core	1	-)	24.4	2¼	Nil	7	27	14	16	8	19	5	7
198	199	Bit. sand, good grade, 30% clay	1	43)											
199	199'10"	Bitumen concentration	0'10"	44	41.2		17.2	48	20	11	7	3	5	2	4
199'10"	204	Bit. sand, good grade, 15% clay	4'2"	45	9.5	4¾	Nil	31	26	13	15	4	7	2	2
204	205	Lost core	1	-											

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 D

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

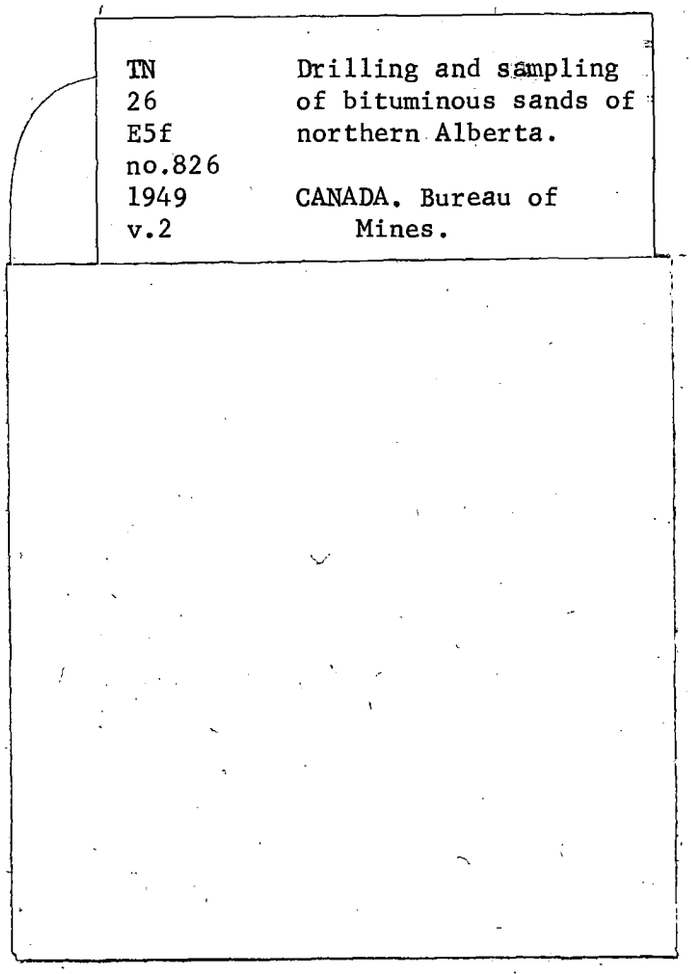
DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	-200 %
205	206	Bitumen concentration	1	46	27.3		14.6	12	38	20	11	6	7	3	3
206	207'4"	Bit. sand, good grade	1'4"	47	13.3		Tr	6	11	9	16	21	18	9	10
207'4"	209	Bitumen concentration	1'8"	48	29.1		14.4	18	41	17	9	5	6	2	2
209	210'4"	Bit. sand, good grade, some clay	1'4"	49	13.3		Tr	14	33	12	11	3	12	5	9
210'4"	213	Bitumen concentration	2'8"	50	50.9		19.0	21	24	22	9	5	4	6	9
213	215'8"	Bit. sand, good grade	2'8"	51	14.4		Tr	7	16	17	19	10	13	7	10
215'8"	217'3"	Bitumen concentration	1'7"	52	33.9		12.5	61	15	8	5	2	3	2	4
217'3"	219'5"	Bit. sand, good grade	2'2"	53	15.6		Tr	7	9	11	37	13	20	6	7
219'5"	220'8"	Bitumen concentration	1'3"	54	32.8		12.1	21	20	23	19	5	1	7	4
220'8"	221	Bit. sand, good grade	0'4"	55)											
221	225	Lost core	4	-)	15.9		Tr	13	13	16	23	11	10	7	7
225	226'6"	Bit. sand, good grade	1'6"	56)											
226'6"	229'6"	Bitumen concentration	3	57	33.9		13.9	19	33	21	13	5	5	2	3
229'6"	230	Bit. sand, good grade	0'6"	58	16.8		Tr	5	6	7	27	8	21	16	11
230	232'6"	Bitumen concentration	2'6"	59	49.2		14.0	28	15	19	13	8	7	5	5
232'6"	235	Bit. sand, good grade, 5% clay	2'6"	60)											
235	236	Lost core	1	-)	9.2	17¼	Nil	23	12	8	8	8	19	8	14
236	240'2"	Bit. sand, medium grade, 15% clay	4'2"	61)											
240'2"	241'4"	Bitumen concentration	1'2"	62	39.4		14.2	36	23	14	10	6	4	4	2
241'4"	245	Bit. sand, medium grade, 15% clay	3'8"	63)											
245	247	" " good " 65% "	2	64)	7.3	30½	Tr	16	18	9	22	9	7	6	12
247	250'8"	Shale	3'8"	-											
250'8"	251	Lime clay	0'4"	-											
	251	End of Hole													

MILDRED - RUTH LAKES AREA

HOLE No. Abasand B 17 D

DATE ..... 194.... LOCATION ..... CO-ORDINATES ..... ELEVATION ..... DEPTH ..... DIP ..... CORE RECOVERY .....

DEPTH FROM	DEPTH TO	CONDENSED FIELD LOG	FOOTAGE	SAMPLE NO.	BITUMEN DRY BASIS %	CLAY BANDS, INCHES	WATER %	SCREEN ANALYSIS MINERAL MATTER +20 %	+40 %	+60 %	+80 %	+100 %	+150 %	+200 %	−200 %
		Summary 0' - 40' = 40' Overburden & 8' of low grade bituminous sand 40' - 155' = 115' @ 12.9% bitumen & 9.7% clay bands 155' - 241'4" = 86'4" @ 20.12% bitumen & 6.1% clay bands 40' - 241'4" = 201'4" @ 16.04% bitumen & 8.2% clay bands. **Average Assay if Bitumen Concentrations (19'10") are Taken as 18%** 155' - 241'4" = 86'4" @ 14.3% bitumen & 6.1% clay bands 40' - 241'4" = 201'4" @ 13.54% bitumen & 8.2% clay bands.												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Drilling and sampling of bituminous sands of northern Alberta.

CANADA. Bureau of Mines.