

IMPERIAL OIL 1969 STRATIGRAPHIC PARTY
BRITISH AND BARN MOUNTAINS

by
G. M. Staples

TERRITORIES EXPLORATION DISTRICT
EDMONTON, ALBERTA

Department Project No.
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IMPERIAL OIL ENTERPRISES LTD.
PRODUCING DEPARTMENT - WESTERN REGION

IMPERIAL OIL 1969 STRATIGRAPHIC PARTY
BRITISH AND BARN MOUNTAINS

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(IPRNWT-3MG-70)

April 1970

PROPRIETARY

TERRITORIES EXPLORATION DISTRICT
EDMONTON, ALBERTA

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NAMES, LOCATIONS AND TOTAL FOOTAGES OF MEASURED SECTIONS	Following Text
APPENDIX -- Strip Logs of Measured Sections	In Pocket

ILLUSTRATION

Map showing Measured Sections and Work Area
-- Scale 1 inch to 8 miles

Following Text

AREA COVERED

An eight-man stratigraphic party spent two months, May 31 to July 28, doing field work in the British and Barn mountains and on the West Coastal Plain. Geological work was confined to rocks of post-Devonian age outcropping in the mountains and along stream cuts in the 8,000-square-mile area shown by Figure 1.

Two-man and three-man stratigraphic crews measured 43,080 feet of section. The party chief visited 88 locations.

ACCESSIBILITY

Pacific Western Airlines operates a regular airline service between Edmonton and Inuvik. Light aircraft can be chartered at Inuvik. In addition, Imperial Oil's Fairchild F-27 makes several trips a month to Inuvik with drilling department personnel and equipment. The Company Twin Otter is based in Inuvik and is equipped with floats after break-up. Aviation gas is available commercially at Inuvik.

An Imperial Oil seismic camp left over the summer at Stokes Point provided a comfortable base camp for the stratigraphic party. There was a gravel strip available and a small lake where float-equipped aircraft could land. Food was purchased from the Hudson's Bay store in Inuvik and flown to base camp by fixed-wing aircraft. The area was covered using a Hiller F-1100 turbine helicopter for the first five weeks and a Hiller 12-E helicopter for the remainder of the summer. Both machines were chartered from Okanagan Helicopters.

PURPOSE OF STUDY

The objective of the 1969 stratigraphic party was to extend our stratigraphic control in the post-Devonian section exposed in the British and Barn mountains. This surface control can be integrated with our seismic coverage to properly evaluate land held by Imperial Oil on the West Coastal Plain and in the northern Mackenzie River Delta area.

WEATHER

The weather conditions were unpredictable and often were unfavorable for helicopter operations. A heavy snowfall May 31 left a blanket of snow in the mountains so that geological investigations could not begin until the second week of June. Fog rolling in from the ice-bound Beaufort Sea hampered morning helicopter operations so it was often necessary to take advantage of the 24-hour daylight during June and early July. A snow storm in late July left a cover of snow in the mountains, making it difficult to measure the final section.

Altogether, two weeks were lost due to snow and rainstorms. Morning fog resulted in a number of late starts, although the mountains were clear. Lakes were not clear of ice until late June and the ice on the Beaufort Sea lingered into July.

COMMUNICATIONS

Imperial Oil has a single-sideband communication network which operates out of Inuvik on a year-round basis. It is utilized by the drilling department, seismic crews, transportation personnel and the

geological department. All Company aircraft carry radio equipment which takes advantage of these communication channels.

In 1969 an AC-powered Marconi CH-25 transceiver was used as base camp equipment and three more compact Nicad-battery-operated Marconi CP-24's were used on fly camps. Results were satisfactory with atmospheric conditions determining the regularity of communications with the expeditors in Inuvik.

PREVIOUS INVESTIGATIONS

Reconnaissance work by Imperial Oil geologists was conducted in 1961 by B. Gallant and again in 1965 by D. C. Waylett.

Some reconnaissance work was done in the area by the Geological Survey under the direction of D. K. Norris in 1962. A paper was written by E. W. Mountjoy of the GSC (Paper 66-19) on the "Triassic Stratigraphy of Northern Yukon Territory."

STRATIGRAPHY

A total of 43,080 feet of stratigraphic section was measured during the 1969 field season. Of this total, 20,305 feet were covered. Strip logs of the 32 sections measured are enclosed in the pocket attached to this report. The locations of the sections are shown on Figure 1. The geographic coordinates are listed in the table following the text, as well as on the log headings.

A total of 88 stations were established in the area by the party chief as spot checks on lithology, while scouting for control sections.

Correlation between sections, and for purposes of field mapping, was done by following litho-stratigraphic units from the air, by recognizing similar lithologies and vertical successions across structural breaks or covered intervals, and by stratigraphic relationship to the Paleozoic unconformity.

Problems encountered with correlating the section include facies changes of the formations, complex folding within parts of the outcrop belt, lack of outcrop due to talus covered slopes, and the difficulty in separating and correlating repeated shale-siltstone-sandstone sequences with sparse megafossils.

NWT-69 STATION LOCATIONS

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>	<u>Map</u>
NWT-69-101	65°10'	124°00'	F-72	Comp. Map 12
102	65°10'	124°15'	M-72	Comp. Map 12
103	65°30'	125°45'	K-29	Comp. Map 12
104	65°40'	128°15'	G-18	Comp. Map 17
105	64°50'	124°15'	L-40	Comp. Map 12
106	64°50'	124°30'	C-10	Comp. Map 12
107	64°50'	124°15'	K-31	Comp. Map 12
108	64°30'	124°00'	J-61	Comp. Map 12
109	64°20'	126°15'	O-68	Comp. Map 12
110	64°50'	126°45'	O-27	Comp. Map 12
111	65°00'	127°15'	F-10	Comp. Map 12
112	68°20'	131°30'	K-3	Comp. Map 24
113	68°40'	131°00'	N-22	Comp. Map 24
114	68°50'	131°00'	M-3	Comp. Map 24
115	69°00'	130°45'	I-47	Comp. Map 24
116	69°10'	130°45'	J-27	Comp. Map 24
117	68°40'	132°00'	K-11	Comp. Map 24
118	68°40'	133°30'	C-58	Comp. Map 24
119	68°40'	133°45'	E-5	Comp. Map 24
120	68°40'	134°00'	H-19	Comp. Map 24
121	69°00'	134°15'	I-41	Comp. Map 24
122	68°50'	134°15'	P-28	Comp. Map 24
123	68°50'	134°00'	J-55	Comp. Map 24
124	68°10'	133°15'	D-45	Comp. Map 24
125	68°10'	133°15'	D-34	Comp. Map 24
126	68°30'	133°00'	J-39	Comp. Map 24
127	68°40'	133°00'	L-33	Comp. Map 24
128	69°10'	138°00'	C-29	117D/W-SE
129	ALASKA			117B/E-NE
130	68°40'	140°00'	P-57	117B/E-NE
131	68°40'	140°30'	K-59	117B/E-NE
132	69°00'	140°45'	L-22	117B/E-NE
133	ALASKA			117B/E-NE
134	69°00'	140°45'	D-57	117B/E-NE
135	69°10'	138°00'	C-29	117D/W-SE
136	68°40'	139°00'	B-2	117A/W-NW
137	68°40'	139°15'	D-60	117A/W-NW
138	69°00'	139°15'	A-55	117A/W-NW
139	69°00'	139°30'	O-28	117A/W-NW
140	69°00'	139°15'	M-45	117A/W-NW
141	68°50'	139°45'	K-37	117A/W-NW
142	69°30'	139°45'	E-12	117D/W-SW
143	69°30'	140°00'	I-11	117C/E-SE
144	69°30'	140°00'	E-51	117C/E-SE
145	69°30'	140°00'	G-55	117C/E-SE
146	69°00'	139°15'	B-1	117A/W-NW
147	68°50'	138°00'	J-34	117A/W-NE
148	68°40'	139°15'	M-41	117A/E-NW

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>	<u>Map</u>
NWT-69-149	68°20'	137°15'	K-15	117A/E-SW
150	68°10'	137°30'	N-38	117A/E-SW
151	68°40'	136°45'	G-13	117A/E-NE
152	68°50'	137°00'	F-8	117A/E-NW
153	68°40'	138°00'	G-48	117A/W-NE
154	68°30'	138°00'	A-20	117A/W-SE
155	68°30'	138°00'	N-32	117A/W-SE
156	68°30'	138°15'	I-37	117A/W-SE
157	68°10'	137°30'	J-20	117A/E-SW
158	68°40'	138°30'	M-5	117A/W-NE
159	69°30'	140°00'	M-33	117C/E-SE
160	69°30'	140°15'	M-2	117C/E-SE
161	69°30'	140°00'	P-14	117C/E-SE
162	69°10'	138°45'	D-52	117D/W-SE
163	69°00'	138°45'	F-23	117A/W-NE
164	69°10'	138°30'	L-2	117D/W-SE
165	69°00'	138°15'	A-28	117A/W-NE
166	68°50'	137°45'	P-57	117A/E-NW
167	69°00'	137°30'	N-52	117A/E-NW
168	69°00'	137°45'	P-51	117A/E-NW
169	68°50'	137°30'	G-12	117A/W-NE
170	69°30'	138°15'	B-22	117A/W-SE
171	68°20'	138°00'	K-39	117A/W-SE
172	69°40'	140°30'	G-1	117C/E-SE
173	68°40'	136°45'	C-6	117A/E-NE
174	68°50'	136°30'	P-42	117A/E-NE
175	68°50'	136°45'	P-52	117A/E-NE
176	68°40'	137°15'	P-19	117A/E-NW
177	68°40'	138°00'	C-49	117A/W-NE
178	69°40'	139°00'	H-39	117D/W-SW
179	69°40'	139°00'	K-16	117D/W-SW
180	68°30'	137°45'	E-19	117A/E-SW
181	68°40'	137°45'	F-23	117A/E-NW
182	68°40'	137°30'	I-35	117A/E-NW
183	68°30'	137°30'	B-11	117A/E-SW
184	68°30'	137°30'	M-38	117A/E-SW
185	68°40'	140°00'	D-14	117C/E-SE
186	69°40'	140°15'	C-11	117C/E-SE
187	69°30'	140°15'	G-49	117C/E-SE
188	69°30'	140°00'	M-28	117C/E-SE

NWT-69 SECTION LOCATIONS

<u>Section</u>	<u>Name</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>	<u>Map</u>
NWT-69-1	Firth Lookout	69°00'	140°15'	P-26	117B/E-NE
2	Joe Creek - Alaska Border	ALASKA			117B/E-NE
3	Babbage Cache	68°50'	139°00'	F-41	117A/W-NW
4	Bear Creek	69°00'	139°30'	L-37	117A/W-NW
5	Blister Ridge	68°50'	139°00'	G-55	117A/W-NW
6	Canyon Creek	69°10'	139°30'	K-53	117D/W-SW
7	Buckland Lookout	69°00'	139°15'	M-45	117A/W-NW
8	Grizzly Crossing	68°40'	139°00'	N-35	117A/W-NW
9	Moxie	68°50'	139°45'	N-47	117A/W-NW
10	Windy Mesa	68°40'	139°00'	K-23	117A/W-NW
11	Joe Mountain	69°00'	140°45'	H-2	117B/E-NE
12	Caribou Ridge	68°50'	138°00'	O-23	117A/W-NE
13	Mt. Welcome	68°40'	138°15'	E-48	117A/W-NE
14	Topo Heights	68°50'	138°00'	I-42	117A/W-NE
15	Fanny Hill	68°30'	137°40'	F-33	117A/E-NW
16	Wolf Creek	69°10'	140°00'	I-53	117C/E-SE
17	Wood Mountain	68°40'	138°30'	F-27	117A/W-NE
18	Mount Fitton	68°30'	137°45'	H-59	117A/E-SW
19	Walk-Back	68°40'	137°15'	A-23	117A/E-NW
20	Bonnet Pass	68°20'	137°15'	I-53	117A/E-SW
21	Malcolm River	69°20'	140°00'	F-10	117C/E-SE
22	Sister Sedgwick	69°00'	139°00'	O-1	117A/W-NW
23	Trail River	69°00'	138°45'	A-18	117A/W-NE
24	Ladas Creek North	69°00'	138°00'	I-51	117A/E-NE
25	Ladas Creek	68°50'	138°00'	C-40	117A/W-NE
26	Cross Over Creek	68°50'	136°30'	H-12	117A/E-NE
27	Babbage River "A"	69°00'	138°30'	I-13	117A/W-NE
28	Eagle Rock	69°10'	138°30'	O-2	117D/W-SE
29	Eagle Ridge	69°00'	138°15'	D-58	117A/W-NE
30	Babbage R. North	69°00'	138°30'	H-25	117A/W-NE
31	Babbage River "B"	69°00'	138°30'	G-33	117A/W-NE
32	Little Sleepy Mountain	68°50'	138°30'	F-1	117A/W-NE

NWT-69 SECTION STATISTICS

<u>Number</u>	<u>Name</u>	<u>Feet Measured</u>	<u>Total Footage (includes covered)</u>
NWT-69-1	Firth Lookout	395	1,265
2	Joe Creek - Alaska Border	705	1,340
3	Babbage Cache	90	110
4	Bear Creek	660	2,420
5	Blister Ridge	1,070	2,740
6	Canyon Creek	275	925
7	Buckland Lookout	165	1,060
8	Grizzly Crossing	325	750
9	Moxie	290	830
10	Windy Mesa	900	3,950
11	Joe Mountain	3,300	4,100
12	Caribou Ridge	160	680
13	Mt. Welcome	330	330
14	Topo Heights	550	3,010
15	Fanny Hill	1,085	1,480
16	Wolf Creek	235	235
17	Wood Mountain	490	715
18	Mount Fitton	375	490
19	Walk-Back	380	860
20	Bonnet Pass	1,930	3,000
21	Malcolm River	530	980
22	Sister Sedgwick	400	1,020
23	Trail River	1,025	1,345
24	Ladas Creek North	245	245
25	Ladas Creek	350	490
26	Cross Over Creek	3,475	4,820
27	Babbage River "A"	1,120	1,240
28	Eagle Rock	155	155
29	Eagle Ridge	310	355
30	Babbage R. North	505	505
31	Babbage River "B"	65	65
32	Little Sleepy Mountain	885	1,570
TOTAL - 32 Sections Measured		22,775 feet (exposed)	43,080 feet (includes covered)

LOCATION MAP WEST COASTAL PLAIN

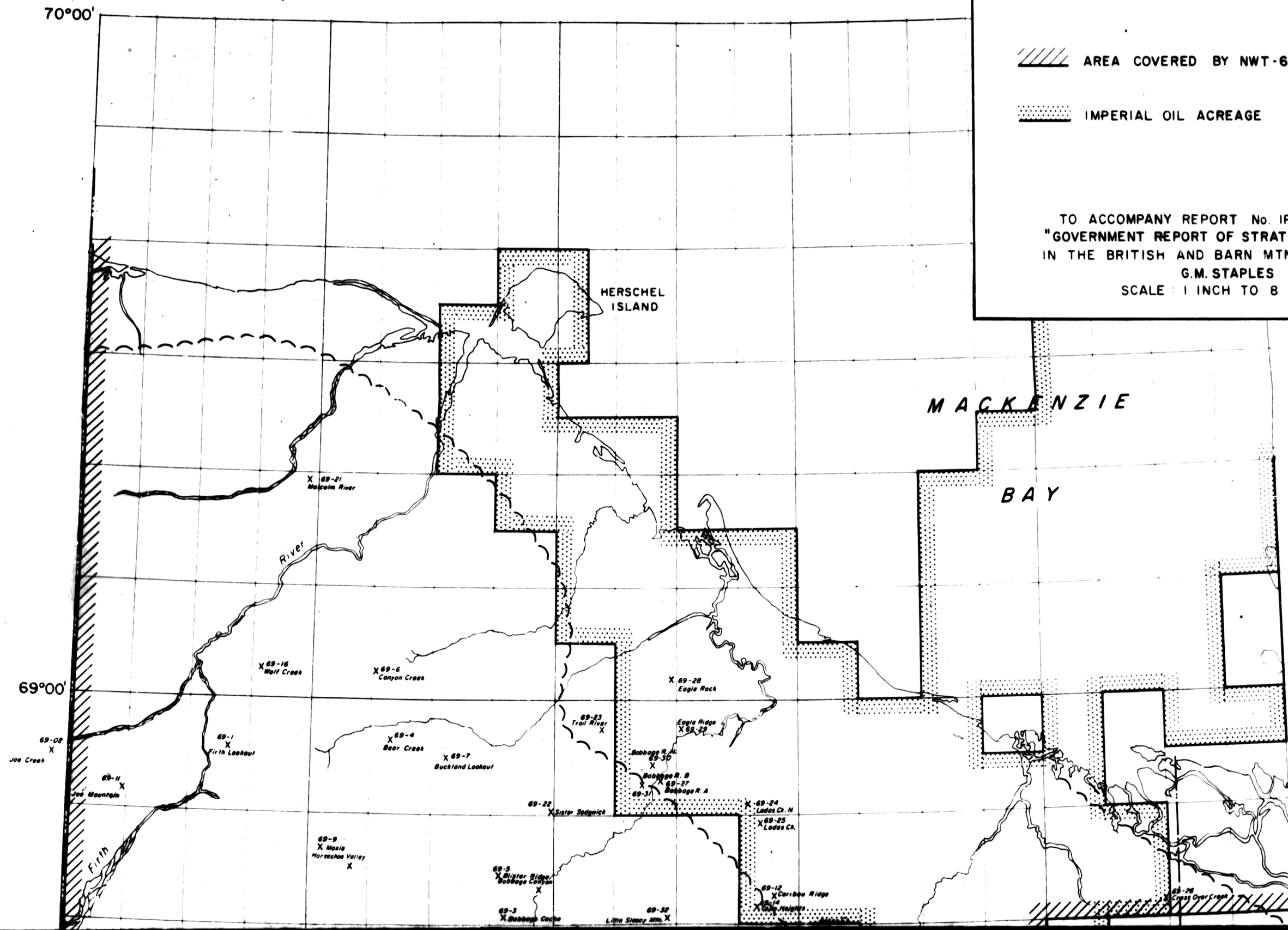
 AREA COVERED BY NWT-69 SURFACE PARTY

 IMPERIAL OIL ACREAGE

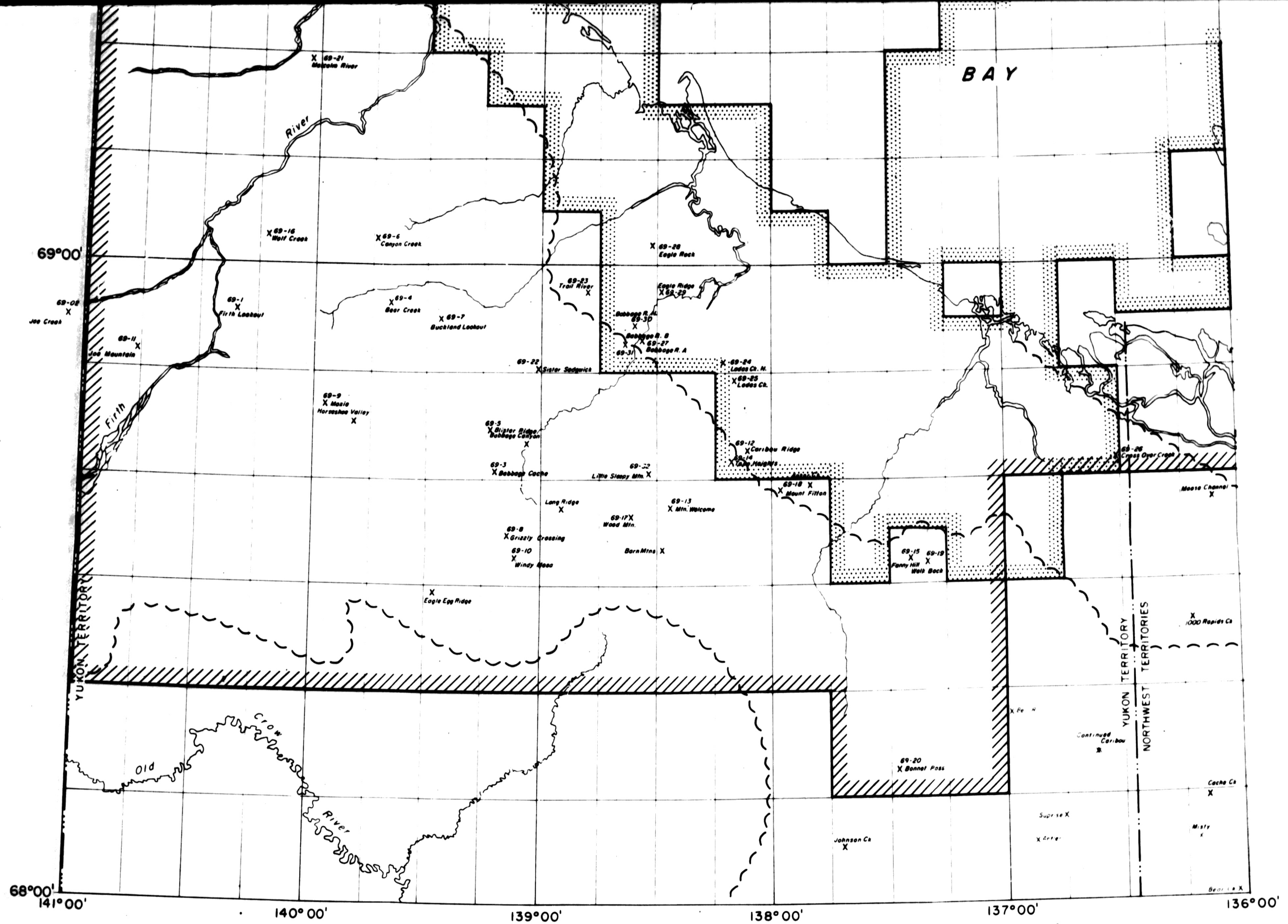
TO ACCOMPANY REPORT No. IPRNWT-3MG-70
"GOVERNMENT REPORT OF STRATIGRAPHIC PARTY
IN THE BRITISH AND BARN MTNS. DURING 1969"

G.M. STAPLES

SCALE: 1 INCH TO 8 MILES



104



LOG OF OUTCROP SECTION

STATION NO. 69-1

FIRTH LOOKOUT

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. P-26
SEC. LAT 69° 00' LONG. 140° 15'

Description of location:

Along lower reach of southwesterly flowing stream which joins Firth River about 5.5 miles downstream from the mouth of Muskeg Creek.

ELEVATION

MEASURED W. ZATULSKY, B. PRYOR
METHOD JACOB STAFF AND BRUNTON

FORMATIONS

LISBURNE 230'
KAVAK 540' +

TO ACCOMPANY REPORT

BY: W.E. MASZCZAK

DATE:

LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	LISBURNE
			Limestone, skeletal, micritic, cherty, with interbedded silty argillite. Medium to dark gray. Thin to medium bedded.
		100	
		200	
			KAVAK
		300	Siltstone, quartzose with shale and micritic limestone interbeds. Light to medium gray. Medium to very thick bedded.
		400	Rip-up clasts and chert

1 of

MISSISSIPPIAN

200

300

400

500

600

700

800

900

1000

1100

1200

1300

1400

1500

KAYAK

Siltstone, quartzose with shale and micritic limestone interbeds. Light to medium grey. Medium to very thick bedded.

Rip-up clasts and chert

Sandy siltstone and argillaceous siltstone. Rip-up clasts.

Section underlies river valley. No exposures

Sandy siltstone and shale, with occasional micritic limestone interbeds. Medium to medium dark grey. Thin, parallel bedded.

INFERRED BASE OF KAYAK

2 of 2

STATION NO. 69-2

LOCATION:	LSD.	SEC.	TWP.	RGE.	W. N.
	UNIT	ZONE	N.T.S.		
	SEC.	LAT	69° 00'	LONG.	141° 00'

FIVE MILES WEST OF ALASKA-YUKON BORDER
AND TWO MILES SOUTH OF JOE CREEK.

MEASURED: F. LANE, G. STAPLES, R. LANDES
METHOD: JACOB'S STAFF & BRAUNTON

FORMATIONS

SADLEROGHIT 1295'

LISBANE 40' +

TO ACCOMPANY REPORT

BY: W. E. MROSZCZAK



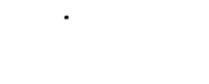

DATE :

LEGEND

1



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	SADLEROCHIT
		0 - 100	Limestone, micritic, locally skeletal. Medium light grey. Even parallel bedding. Argillaceous bands and chert nodules in basal part.
		100 - 200	Shale, dark grey, fissile
		200 - 300	
		300 - 400	Siltstone, quartzo-feldspathic with accessory glauconite and pyrite. Medium grey. Very fine sand of this composition 330-350' contains graded beds and rip-up clasts.

Shale, dark grey, fissile

Siltstone, quartzo-feldspathic with accessory glauconite and pyrite. Medium grey. Very fine sand of this composition 330-350' contains graded beds and rip-up clasts.

Shale, medium dark grey, cherty.

Sand, quartzo-feldspathic. Medium dark grey. Very fine to fine grained. Poorly sorted.

Shale, dark grey, fissile, cherty

Covered by talus, and by valley floor.

LISBURNE

Limestone, micritic, skeletal in part. Medium grey. Medium bedded. Argillaceous.

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-3
BABBAGE CACHE

FORMATIONS

SHUBLIK 110' +

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. F-41
SEC. LAT. 68° 50' LONG. 139° 00'

Description of location:

MEASURED ON SOUTH SHORE AT CONFLUENCE
OF BABBAGE RIVER AND COTTONWOOD CR.

ELEVATION MEASURED W. ZATURECKY, B. PETOVELLO
METHOD TAPE, JACOB'S STAFF, BRUNTON

TO ACCOMPANY REPORT

BY: W. E. MROSZCZAK

DATE:

LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res	Lith	Footage	Description
			Overlain by Jurassic(?) shales.
		0	
		100	Siltstone, shaly, grading downward into silty sandstone. Some shale.
		200	
		300	
		400	

TRIASSIC

STATION NO. 69-4

LOCATION:	LSD.	SEC.	TWP	RGE.	W	M.
	UNIT	ZONE	NTS	L-37		
	SEC	LAT	69°00'	LONG.	139°00'	

West slope of mountain about 2.5 miles
upstream from junction of Bear Creek and
Crow River

ELEVATION MEASURED G. STAPLES, F. LANE
METHOD JACOB'S STAFF & BRUNTON











FORMATIONS

LISBURN 2400'
KAYAK 20' +

TO ACCOMPANY REPORT

BY: W. E. MROSCZAK
DATE:

LEGEND

Coal	Gneiss	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale
									

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	LISBURNE
			Limestone, micritic, skeletal in part. Cherty.
		100	a. a.
		200	a. a.
		300	a. a.
		400	Dolomite breccia. Micritic limestone and dolomite

MISSISSIPPIAN - PENNSYLVANIAN

200

a. a.

300

a. a.

Dolomite breccia. Micritic limestone and dolomite

400

Cherty micritic limestone

500

600

Limestone, micritic, cherty

700

Limestone, vuggy in part. Some carbonate sand. Argillaceous and stylolitic in part.

800

900

1000

1100

Limestone, micritic, some microspar. Some chert. Variable amounts dolomite. Some shale partings.

1200

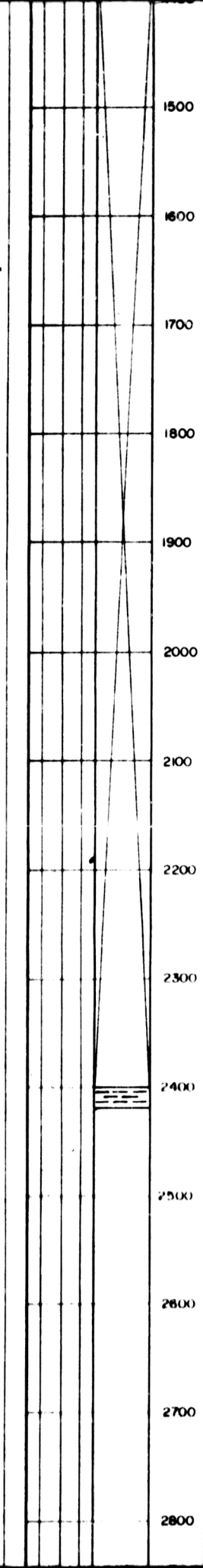
1300

1400

1500

1600

2 of



1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800



KAYAK
Shale, grey, fissile

30/3

LOG OF OUTCROP SECTION

STATION NO. 69-5

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE NTS G-55
SEC LAT 69°50'N LONG 139°00'W

Description of location: SECTION MEASURED ACROSS
HIGH RIDGE LYING NORTHEAST OF NORTH FORK
OF TRIBUTARY TO COTTONWOOD CREEK

ELEVATION MEASURED W ZATURECKY. B. PETOVELLO
METHOD TAPE, BRUNTON, JACOBS STAFF

FORMATIONS

TO ACCOMPANY REPORT

BY: W E MROSZCZAK
DATE:

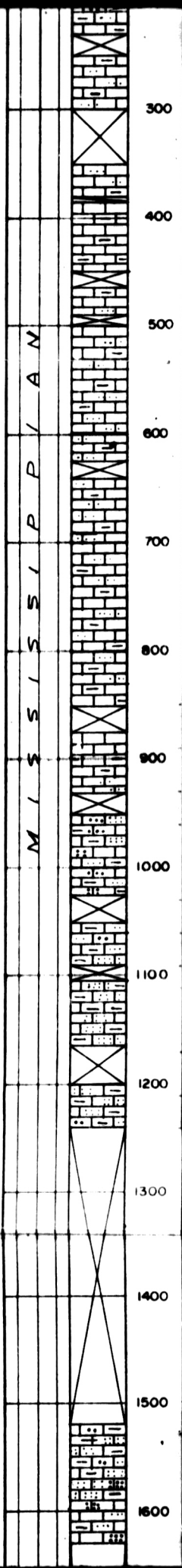
LEGEND

Coal	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale

IMPERIAL OIL ENTERPRISE LTD EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	SHUBLIK FORMATION
			Siltstone, sandy
		100	LISBURNIE GROUP
			Limestone, micritic skeletal
		200	
		300	

10/7



300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

M
S
S
I
P
P
I
A
N

12 of

Siltstone and Shale.



3 of 3

LOG OF OUTCROP SECTION

STATION NO. 69-6

LOCATION: LSD. SEC. TWP RGE. W. M.
UNIT ZONE N.T.S. K-53
SEC. LAT 69°10'N LONG. 139°30'W

Description of location:
IN THE BRITISH MOUNTAINS 5 MILES NORTH OF THE
CROW RIVER AND 4 MILES SOUTH OF CANYON CREEK.

ELEVATION MEASURED F. LANE, G. STAPLES
METHOD

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSZCZAK

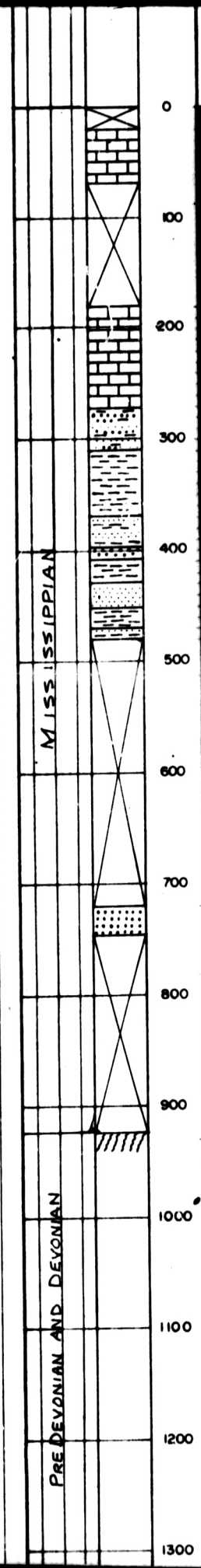
DATE:

LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	LISBURNE GROUP Limestone, micritic.
		100	
		200	Limestone, micritic.
		300	KAYAK FORMATION Interbedded Sandstone, Siltstone, Shale. Shale
		400	Interbedded Shale, Siltstone, Sandstone.



LISBURN GROUP
Limestone, micritic.

Limestone, micritic.

KAYAK FORMATION
Interbedded Sandstone, Siltstone, Shale.
Shale

Interbedded Shale, Siltstone, Sandstone.

Sandstone

NERUOKPUK FORMATION

**LOG
OF OUTCROP SECTION
STATION NO. 69-7**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. M-45
SEC. LAT 69°00'N. LONG. 139°25'W

Description of location: Section measured on scarps and north slope of mountain approximately 5.5 miles east northeast of the juncture of the Crow River and a major tributary on the northern border of the Buckland Mountains.

ELEVATION MEASURED: G. STAPLES, F. LANE
METHOD: BRUNTON, JACOBS STAFF.

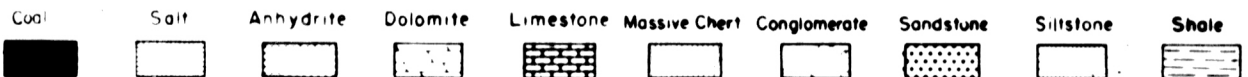
FORMATIONS

TO ACCOMPANY REPORT

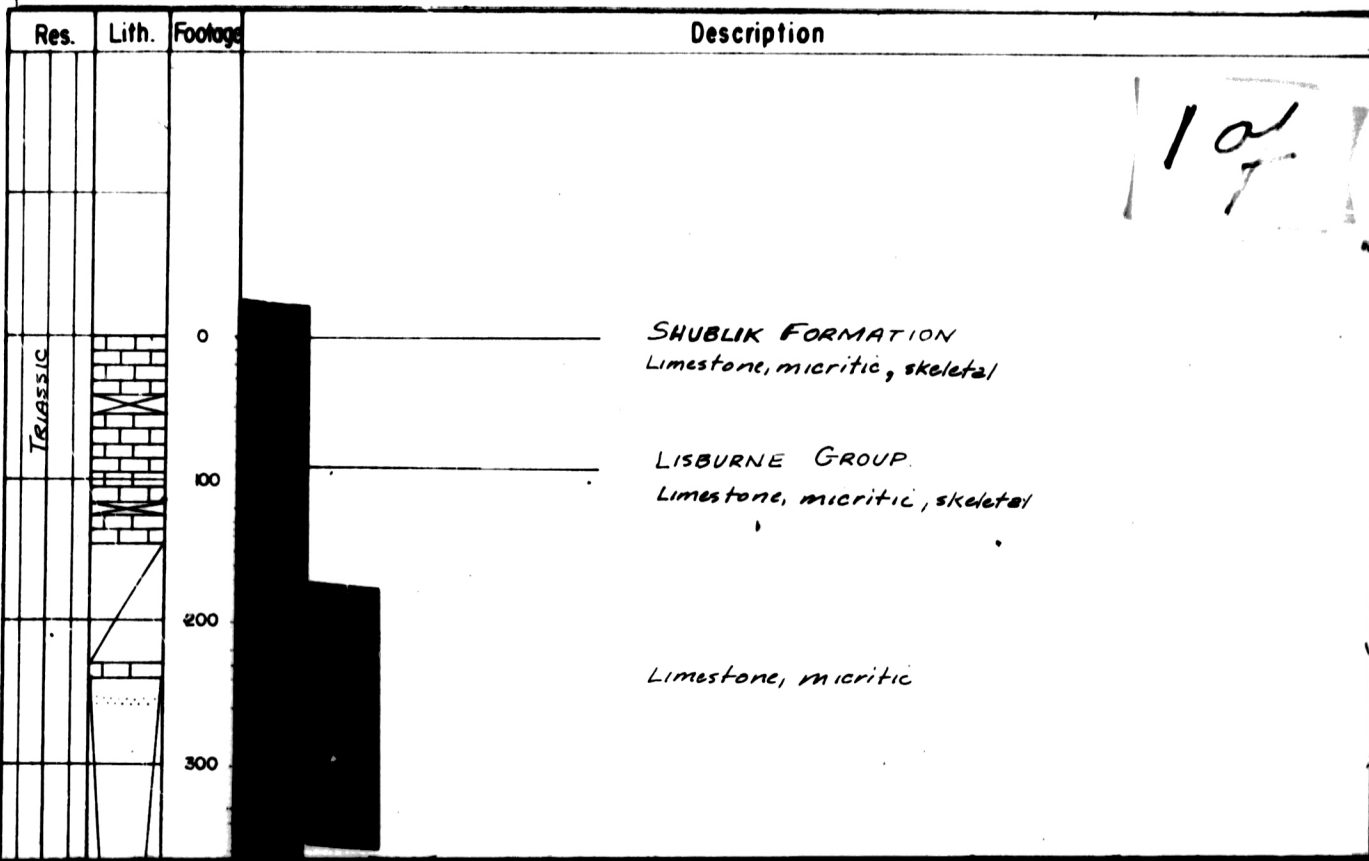
BY: W. E. MROSZCZAK

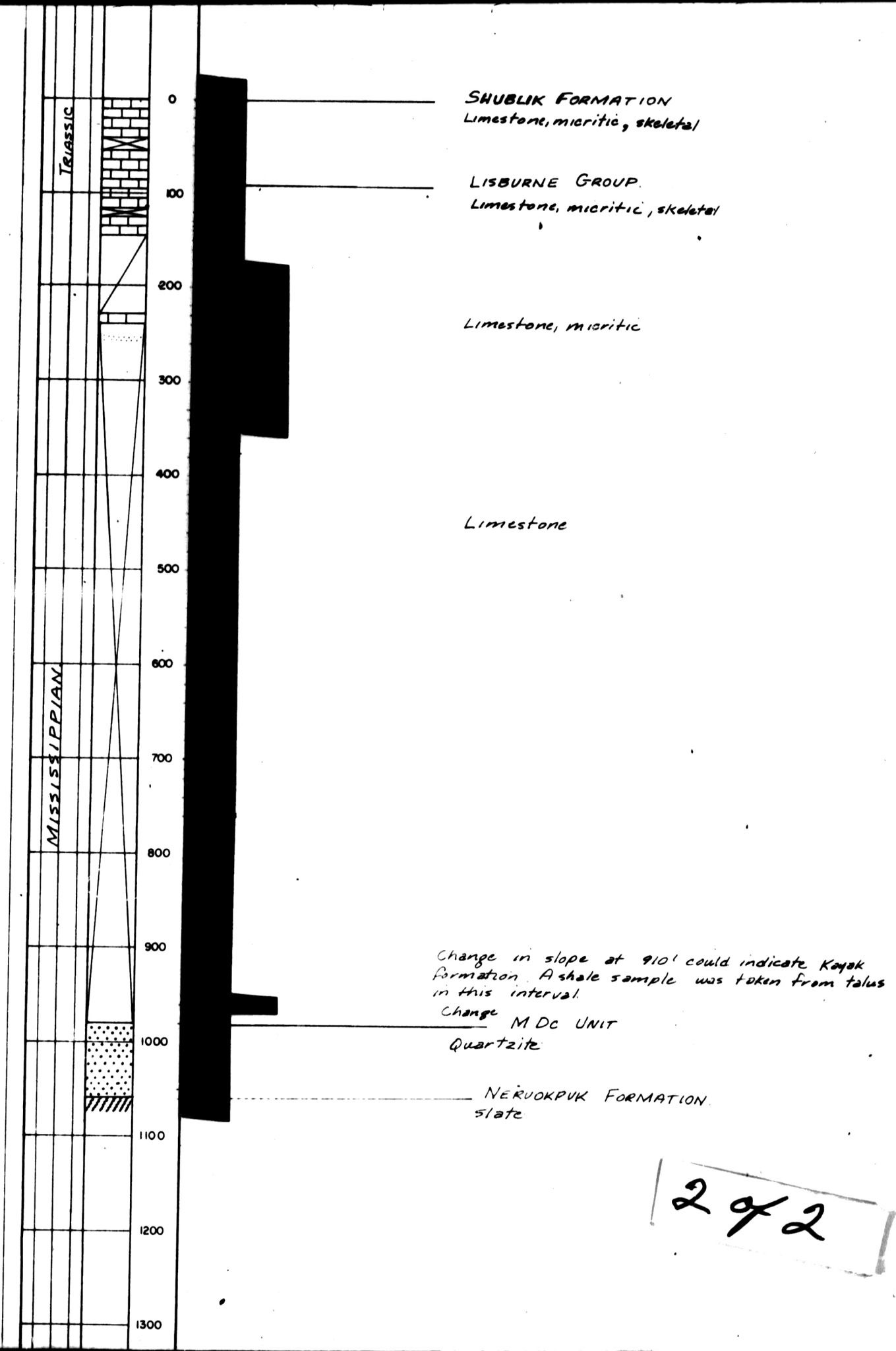
DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION





292

**LOG
OF OUTCROP SECTION
STATION NO. 69-8**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. N-35
SEC. LAT 68°40'N. LONG. 139°00'W

Description of location:
SIX MILES SOUTH OF BABBAGE CACHE (SECTION 9)
ON UNNAMED TRIBUTARY OF BABBAGE RIVER.

ELEVATION: MEASURED W. ZATURECKY, B. PETOVELLO, R. LAND
METHOD: BRUNTON, TAPE, JACOBS STAFF.

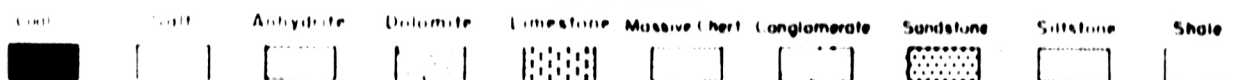
FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSCZAK

DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	<div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; right: 0; font-size: 4em; transform: rotate(-45deg);">10</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%);"> LISBURNE GROUP Limestone, sandy, silty. </div> </div>
		100	
		200	
		300	
		400	Shale, silty, calcareous.

MISSISSIPPIAN

LISBURNE GROUP
Limestone, sandy, silty.

MISSISSIPPIAN

0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300

Shale, silty, calcareous.

Scree samples and slumped blocks indicate silty shale as above, but with less chert. Crinoids still abundant to common.

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-9

LOCATION: LSD SEC. TWP RGE W M.
UNIT ZONE NTS N-47
SEC LAT 68-50'N LONG 139°45'W

Description of location:

SOUTHEASTERN SLOPE OF BRITISH MOUNTAINS
BETWEEN MUSKEG CREEK AND TRAIL RIVER

ELEVATION

MEASURED F. LANE, G. STAPLES
METHOD

FORMATIONS

TO ACCOMPANY REPORT

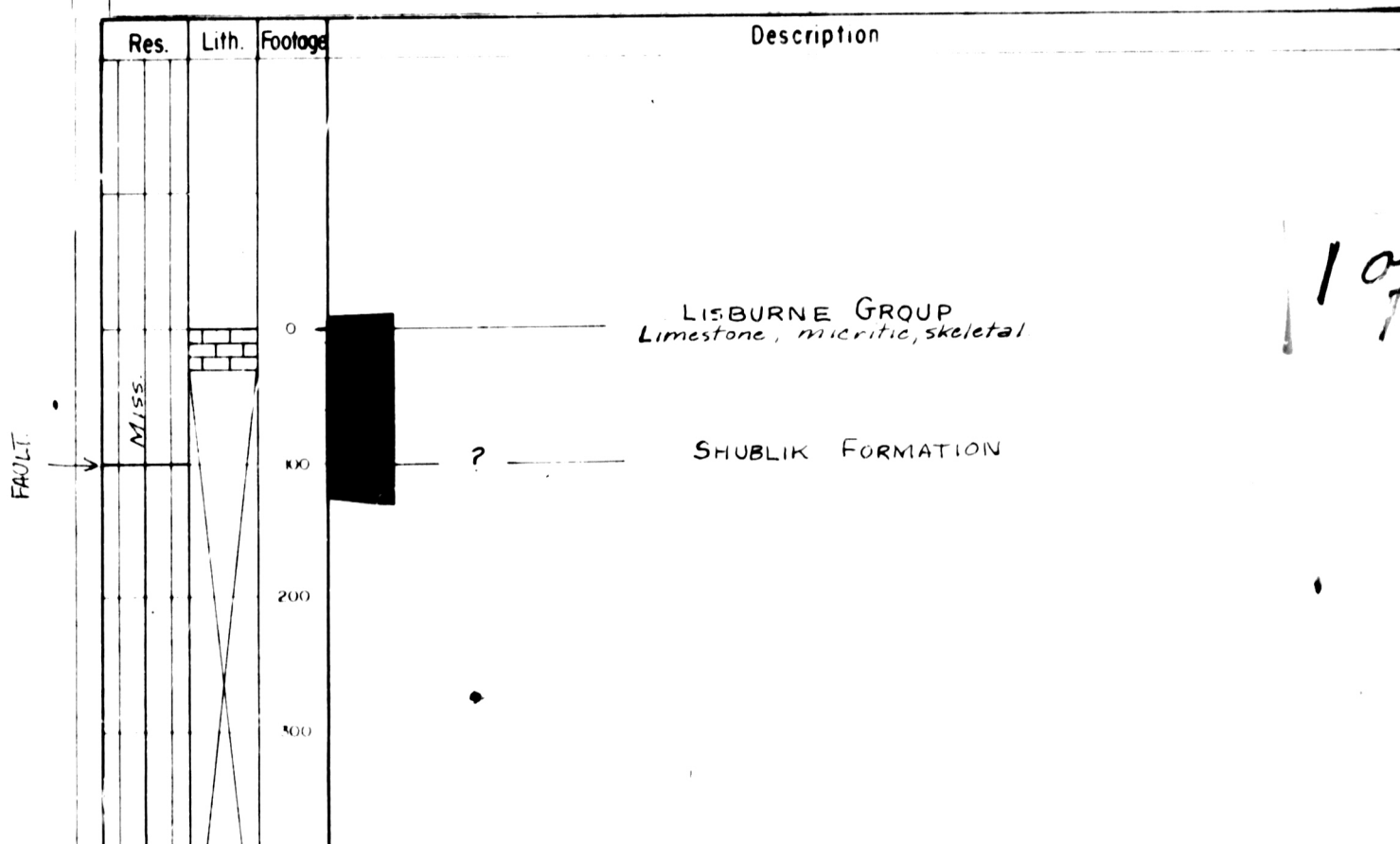
BY: W. E. MROSCZAK

DATE:

LEGEND

Log	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale

IMPERIAL OIL ENTERPRISE LTD EXPLORATION DEPARTMENT PEACE RIVER DIVISION



FAULT

MISS.

PERMIAN

MISS

0

100

200

300

400

500

600

700

800

900

1000

1100

1200

1300

LISBURNE GROUP
Limestone, micritic, skeletal.

?

SHUBLIK FORMATION

SADLEROCHIT FORMATION
Interbedded Siltstone, Shale

Limestone, skeletal, micritic

Shale,

LISBURNE GROUP
Limestone

2 of 2

STATION NO. 69-10

LOCATION: LSD. SEC. TWP. RGE. W. M.
 UNIT ZONE N.T.S K-23
 SEC. LAT 68°40'N LONG. 159°00'W

Description of location:

DESCRIPTION OF LOCATION:
SOUTHWEST SLOPING RIDGE ABOUT 3 MILES EAST
OF THE JUNCTION OF COTTONWOOD CREEK AND
BABBAGE RIVER.

ELEVATION MEASURED B. ZATURECKY, B. PETOVELLO.
METHOD TAPE, BRUNTON, JACOBS STAFF.











FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSCZAK.

DATE:

LEGEND

Coal	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale
									

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Sandstone, silty, very fine to fine grained.
		100	
		200	
		300	
		400	
5			

CRETACEOUS

200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

Siltstone, sandy, grades to Shale.

2 of

A break in slope at the base of the cliff may indicate passage into Jurassic strata.

Shale, silty.

A break in slope at the base of the cliff may indicate passage into Jurassic strata.

JURASSIC

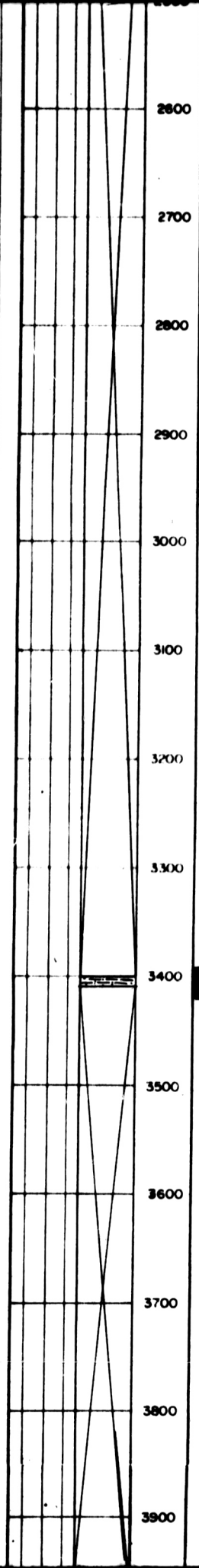
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700

Shale, silty.

Shale, silty.

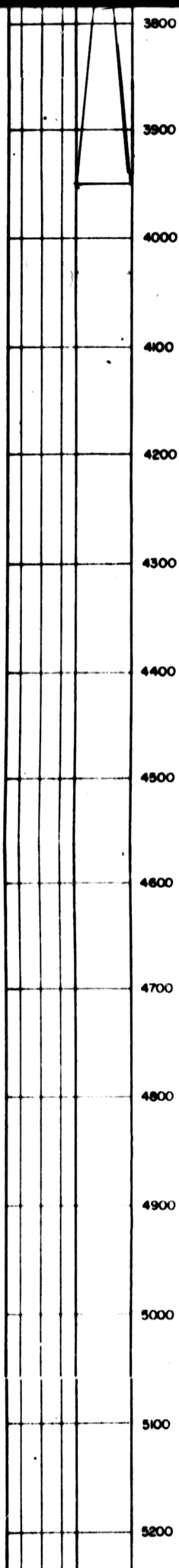
Shale, silty.

305



shale, silty.

14 of



The Lisburne outcrops across creek south of measured slope. There is an estimated 200' more section between Lisburne outcrop and base of measured section.

5 of 5

STATION NO. 69-11

Description of location:

THREE MILES EAST OF ALASKA BORDER AND THREE
MILES SOUTH OF JOE CREEK.

ELEVATION MEASURED F. LANE, P. MCGILL, H. TURNBULL
METHOD TAPE, BRINTON, JACOBS STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSCZAK.

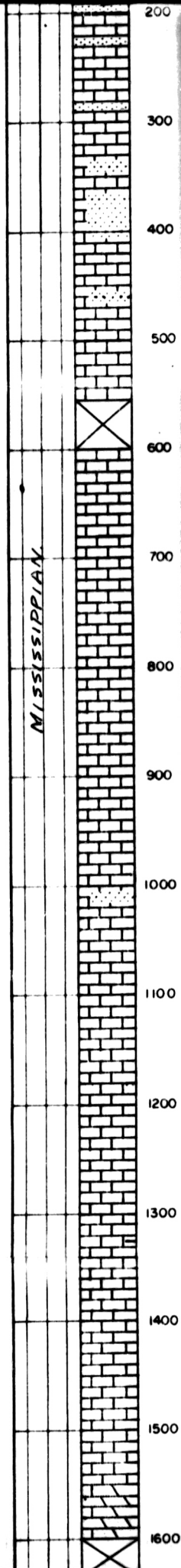
DATE:

LEGEND

Coal	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	LISBURNE GROUP
			Limestone, micritic, skeletal.
		100	Siltstone,
		200	Limestone interbedded with Siltstone
		300	
		400	Siltstone, calcareous.



Siltstone, calcareous.

Limestone, micritic, skeletal.

Siltstone,

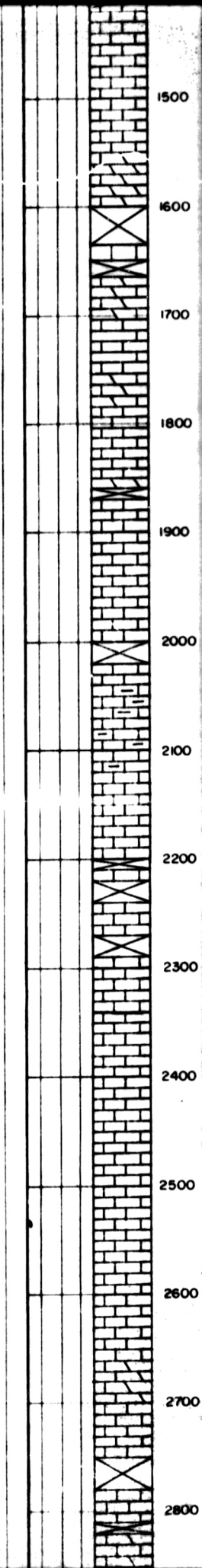
Limestone, skeletal, micritic

Limestone, skeletal, micritic.

2 of

Limestone, micritic, skeletal

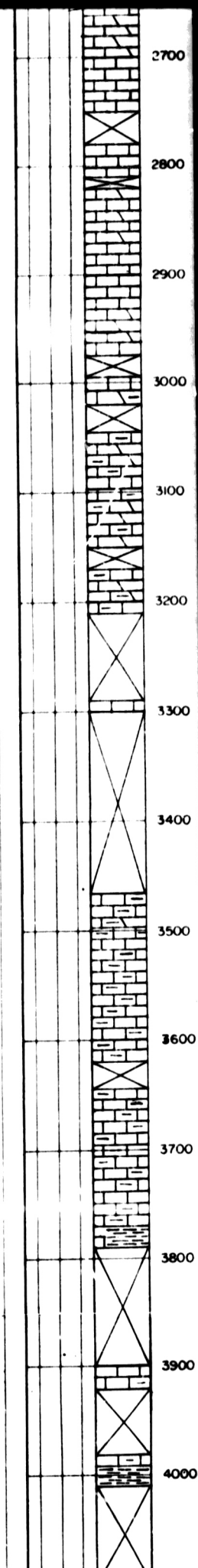
Dolomite



Dolomite

Limestone, micritic to skeletal.

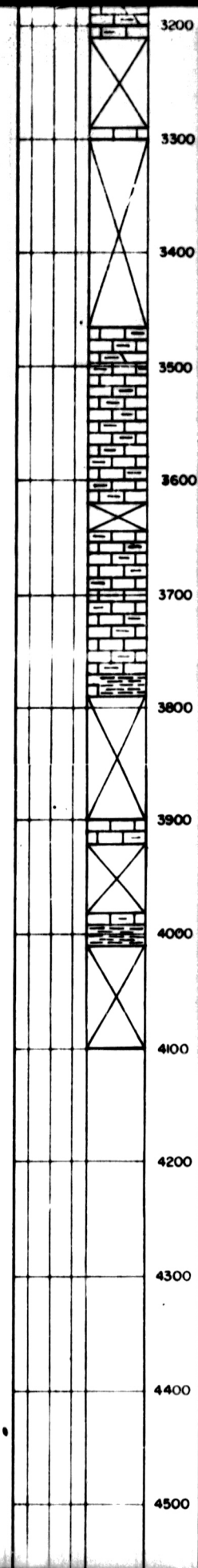
304



Limestone, micritic, skeletal

KAYAK FM

4 of



Limestone, micritic, skeletal.

KAYAK FM

Bottom of an eroded anticline. From this point on beds are on the other limb of the fold and continue up the section.

50/5

**LOG
OF OUTCROP SECTION
STATION NO. 69-12**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. O-23
SEC. LAT 68°50'N. LONG. 138°00'W

Description of location:
Section measured on ridge and in stream cut on mountain
flanking Coastal Plain approximately 5 miles east of Sleepy
Mountain

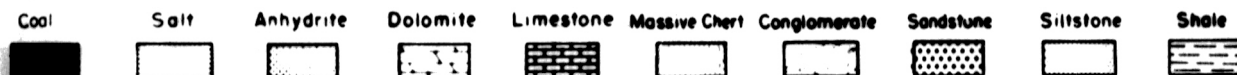
ELEVATION MEASURED: G. STAPLES, R. LANDES.
METHOD: BRUNTON, JACOBS STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSCZAK
DATE:

LEGEND

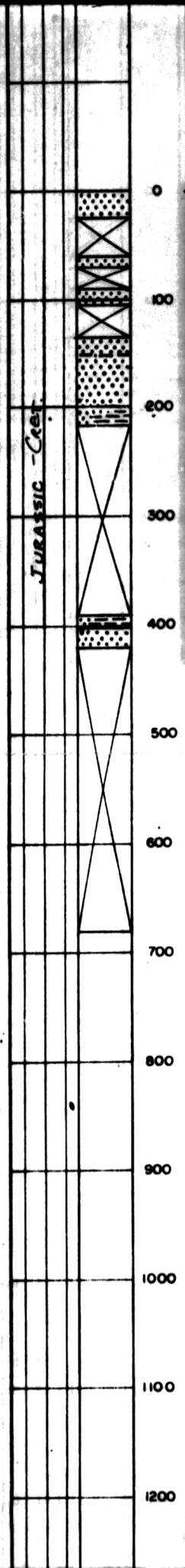


IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Sandstone, very fine grained.
		100	
		200	Shale, sandy.
		300	
		400	Shale.

1 of 1

JURASSIC - CRET.



Sandstone, very fine grained.

Shale, sandy.

Shale
Sandstone,

Covered interval measured to creek at bottom of hill

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-13

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. E-48
SEC. LAT 68°40'N. LONG. 138°15'W

Description of location:
Section at Mt. Welcome, lying at the headwaters of Spruce Creek.

ELEVATION: MEASURED: W. ZATURECKY, B. PETOVELLO
METHOD: BRUNTON, JACOBS STAFF.

FORMATIONS

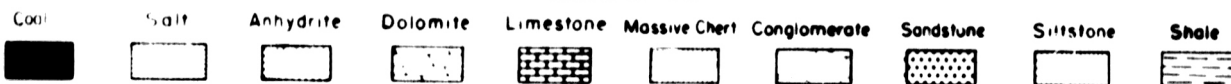
TO ACCOMPANY REPORT

Section comprises upwards of 300' (est.) of badly faulted strata. This description is fictitious in part, interpolated parts having been inserted into their relative stratigraphic position: within a single fault block.

BY: W.E. MAROSZCZAK

DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	SHUBLIK FORMATION
			Limestone
			Siltstone, sandy
			Limestone, micritic
		100	
		200	Quartzite
			Siltstone, shaly
		300	

LISBURNE GROUP

M.D.C.

10/7

Siltstone, shaly

DEV.

300

400

500

600

700

800

900

1000

COMPOSITE SECTION - MAXIMUM EXPOSURE; NON-CORRELATED.

Siltstone, sandy,

Limestone, shale

1100

Limestone, shaly

1200

Shale, silty

1300

sandstone.

siltstone, shaly.

1400

1500

1600

TR

MISSISSIPPIAN

MDC

292

**LOG
OF OUTCROP SECTION
STATION NO. 69-14**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. I-42
SEC. LAT 68°50'N LONG. 138°00'W

Description of location:
Section measured along ridge and in stream cut below triangulation station (2970') on mountain approximately 3.8 miles east southeast of Sleepy Mountain. Extension measured on series of ridges to the northeast.
ELEVATION MEASURED G. STAPLES, R. Landes.
METHOD Tape, Brunton, Jacob staff.

FORMATIONS

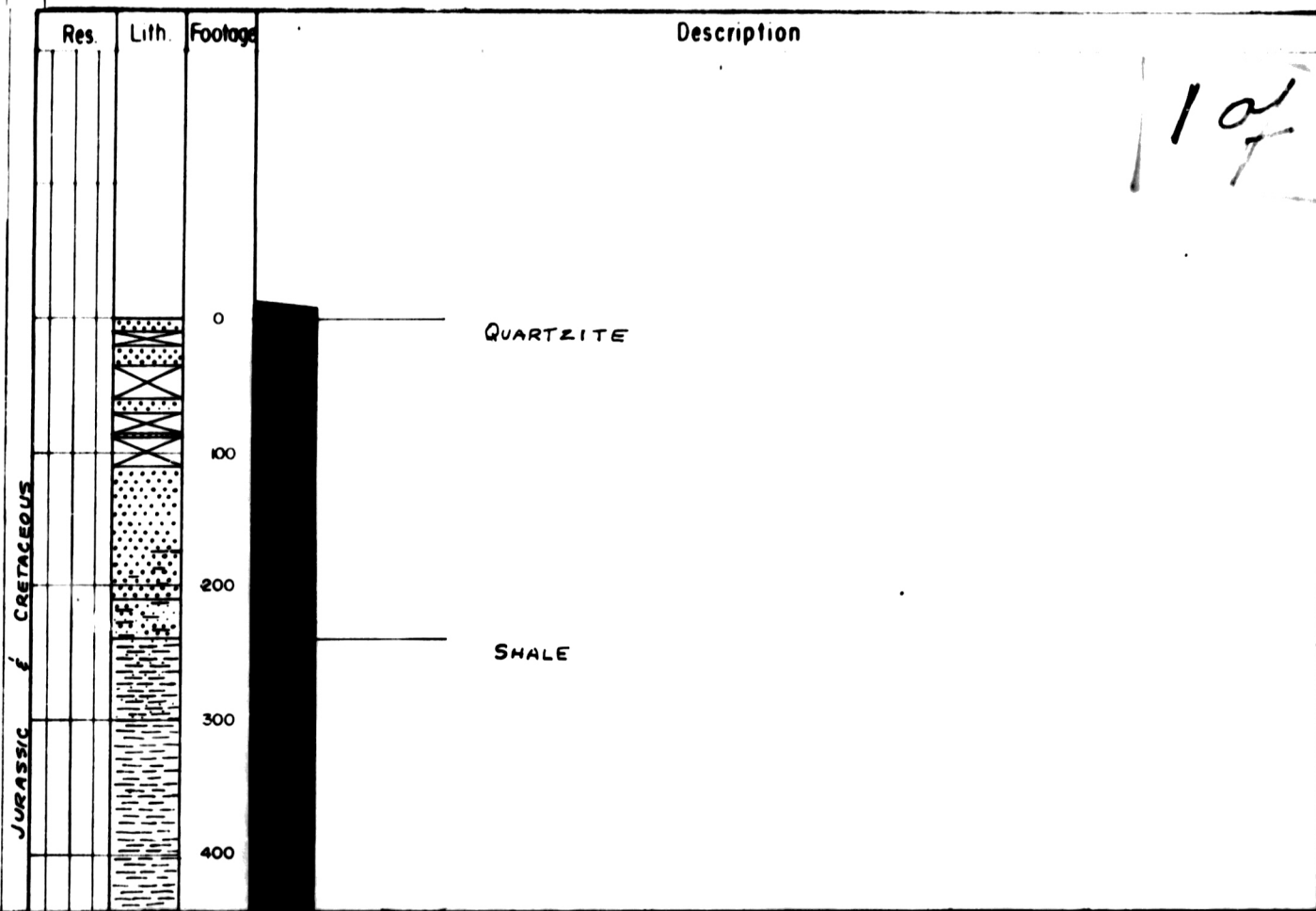
TO ACCOMPANY REPORT

BY: W. E. MROSCZAK
DATE:

LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

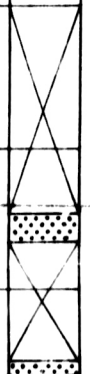
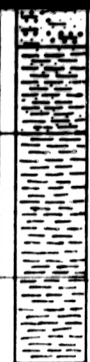
IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION



JURASSIC

SHALE

300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600



Section 14-2

Extension of Section 14 to tie with Section 12.

Sandstone, very fine grained.

sandstone

2 of

Sandstone

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

2500

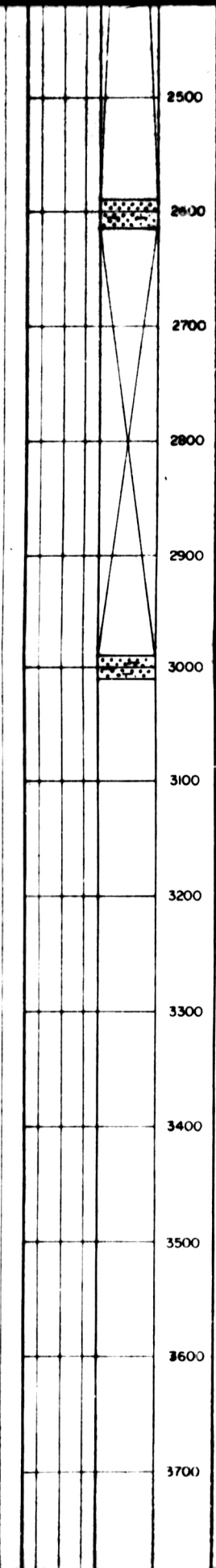
2600

2700

2800

Sandstone

304



2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

Sandstone

Sandstone

4 of 4

LOG OF OUTCROP SECTION

STATION NO. 69-15

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S F-35
SEC. LAT 68°30' N. LONG. 137°40' W

Description of location: JUST SOUTHEAST OF
TRIANGULATION STATION ABOUT 14 MILES SOUTH
OF THE JUNCTION OF BLOW RIVER AND
PURKISS CREEK

ELEVATION MEASURED W. ZATURECKY, B. PETOVELLO
METHOD BRUNTON, JACOBS STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSZCZAK

DATE:

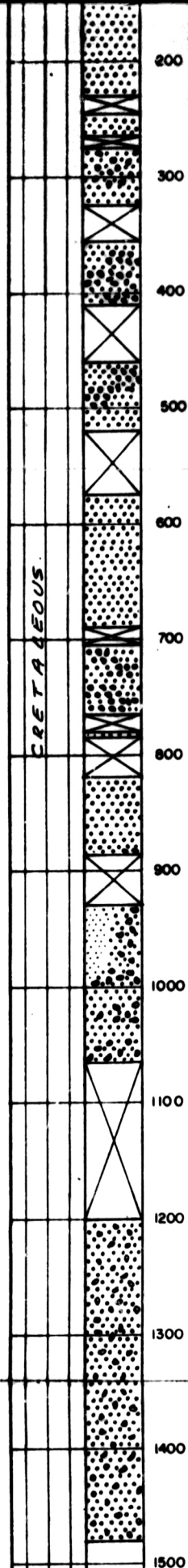
LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Sandstone
		100	
		200	
		300	Sandstone and Conglomerate
		400	Conglomerate and Sandstone

10/



Sandstone and Conglomerate

Conglomerate and Sandstone

Sandstone and Conglomerate

Sandstone

Sandstone and Conglomerate

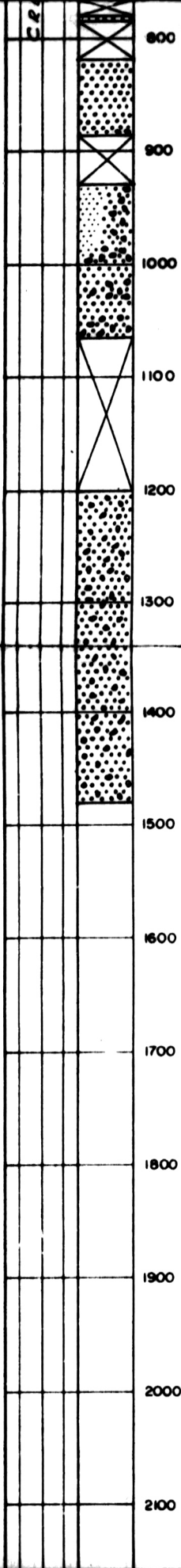
Sandstone

Sandstone, Conglomerate

Sandstone and Conglomerate

2 of.

Fossil current indicators in upper 1000 feet show progressive (stratigraphic) shift in direction from ENE (N48°E) to NNE (N18°E) suggesting a source somewhere near the position of



Sandstone

Sandstone, Conglomerate

Sandstone and Conglomerate

Fossil current indicators in upper 1000 feet show progressive (stratigraphic) shift in direction from ENE (N48°E) to NNE (N18°E) suggesting a source somewhere near the position of the present Barn Mountains.

30/3

LOG OF OUTCROP SECTION

STATION NO. 69-16

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. I-53
SEC. LAT 69°10'N LONG. 140°00'W

Description of location: Section measured along ridge near Wolf Creek approximately 6 miles east of the junction of Joe Creek and the Firth River

ELEVATION: MEASURED G. STAPLES, R. LANDES
METHOD BRUNTON, JACOB STAFF

FORMATIONS

TO ACCOMPANY REPORT

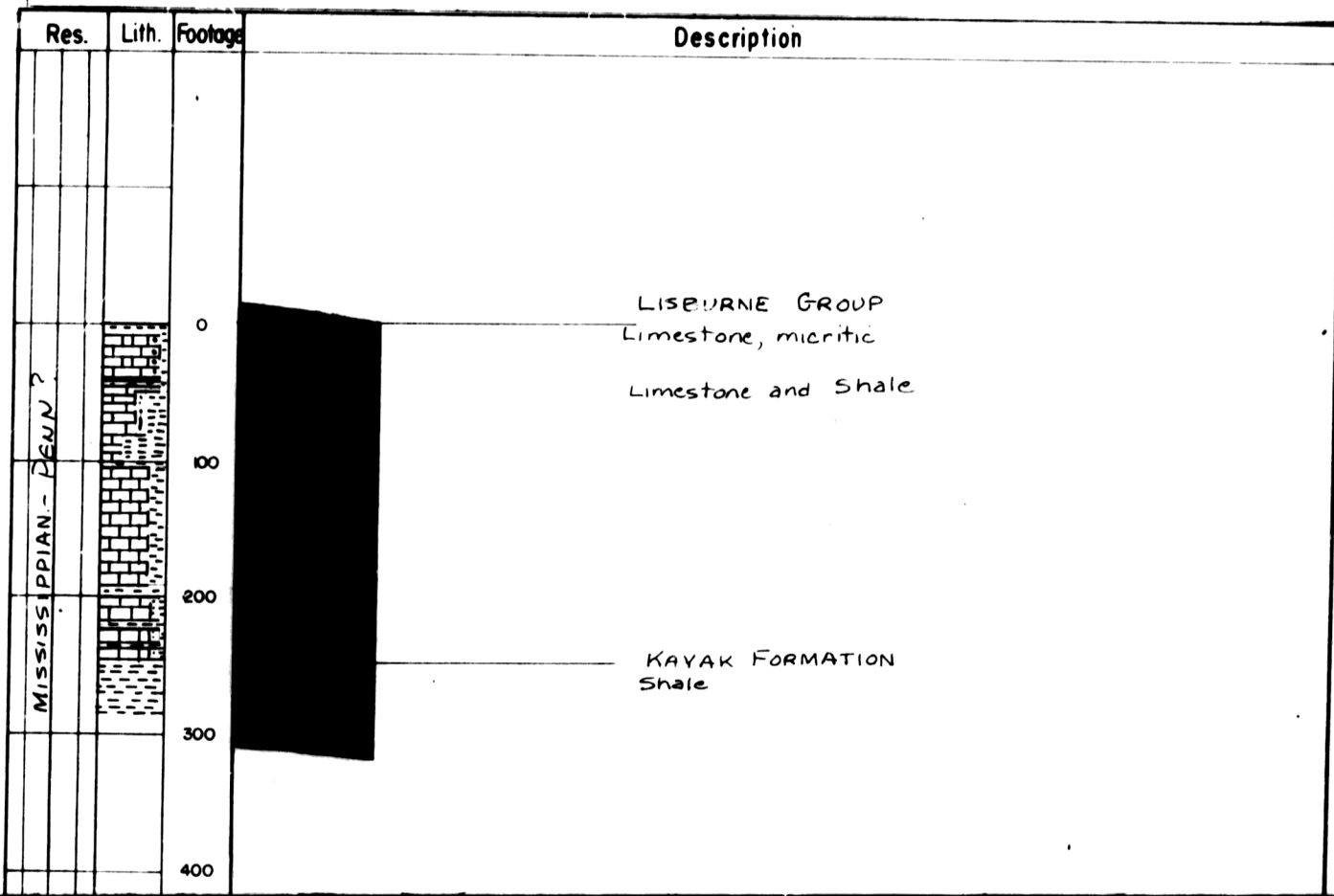
BY: W.E. MROSZCZAK

DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION



LOG OF OUTCROP SECTION

STATION NO. 69-17

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. F-17
SEC LAT 68°40'N LONG. 138°30'W

Description of location: HALF WAY BETWEEN WOOD AND
SPRUCE CREEKS 4 1/2 MILES SOUTHWEST OF MOUNT WELCOME
ON THE WESTERN EDGE OF THE BARNI MOUNTAINS

ELEVATION MEASURED F. LANE, P. MCGILL, H. TURNBULL
METHOD TAPE, BRUNTON, JACOB STAFF

FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSZCZAK

DATE:

LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	LISBURNE GROUP Limestone, micritic skeletal
		100	Interbedded Limestone and Dolomite.
		200	Limestone, micritic, skeletal
		300	Limestone and Dolomite.
SHIPPIAN			

107

MISSISSIPPIAN

0
100
200
300
400
500
600
700
800
900
1000
1100
1200

LISBURNE GROUP
Limestone, micritic skeletal

Interbedded Limestone and Dolomite.

Limestone, micritic, skeletal

Limestone and Dolomite.

Limestone, micritic, skeletal

KAYAK FORMATION.

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-18

Mount Fitten

FORMATIONS

MDC Unit - 490

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. 4-59
SEC. LAT 68°50'N LONG. 137°45'W

Description of location:

Section measured on north slope of mountain approximately 1.5 northwest of Mount Fitten.

ELEVATION MEASURED: G. STAPLES, R. LANDES
METHOD BRUNTON AND JACO STAFF

(RCAF Air Photo A14406-65)

TO ACCOMPANY REPORT

BY: W. E. Mroszczak.

DATE:

LEGEND

Coal	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	MDC Unit - 490'
		100	Conglomerate, lithic, quartzose, cherty. Local graded bedding near base.
		200	Shale, dark grey to greyish black, fissile. Interbedded sandstone.
		300	
		400	

107

0

MDc Unit - 490'

Conglomerate, lithic, quartzose, cherty.
Local graded bedding near base.

100

200

Shale, dark gray to grayish black, fissile.
Interbedded sandstone.

300

400

500

Neruokpuk Formation
Red and green slates.
Angular unconformity.

600

700

800

900

1000

1100

1200

1300

2 of 2

STATION NO. 69-19

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. A-23
SEC. LAT 68°40'N LONG. 137°15'W

Description of location: JUST SOUTH OF TRIANGULATION STATION (3106') ABOUT 14 MILES SOUTH OF THE JUNCTION OF THE BLOW RIVER AND PURKIS CREEK

FORMATIONS

TO ACCOMPANY REPORT

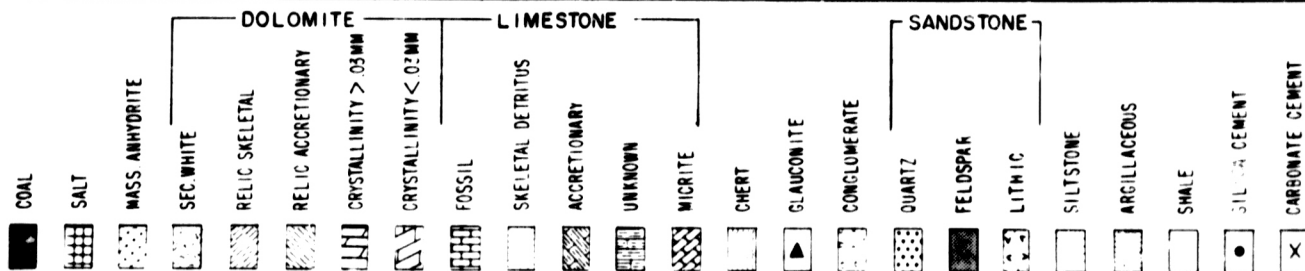
BY:

DATE : .

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BY:

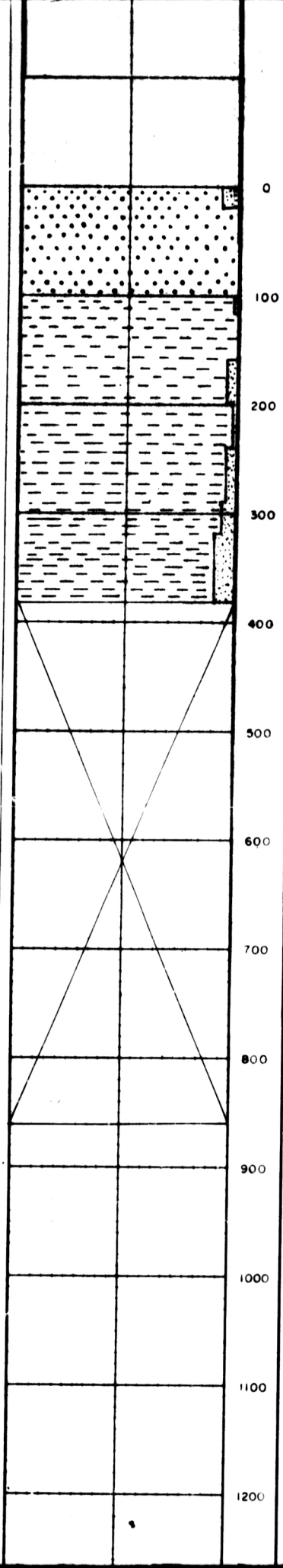
DATE:



IMPERIAL OIL LIMITED - N.W.T. EXPLORATION DISTRICT

Resistance	Lithopercantage	Footage	Samples	Description
		0		Sandstone
		100		Shale, silty
		200		
		300		
		400		

JURASSIC - CRETACEOUS



0

100

200

300

400

500

600

700

800

900

1000

1100

1200

Sandstone

Shale, silty

Base of measured section at base
of scree slope.

2 of 2

STATION NO. 69-20

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. I - 53
SEC. LAT 68°20'N LONG. 137°15'W

Description of location: SECTION MEASURED ALONG
RIDGE AND DOWN STREAMCUT ON MOUNTAIN
APPROXIMATELY 12 MILES EAST NORTHEAST OF
BONNET LAKE.

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSCZAK

DATE :

DESCRIBED

BY: G. STAPLES, R. LANDES

DATE:

DOLOMITE		LIMESTONE		SANDSTONE	
COAL		CRYSTALLINITY > 0.5MM	CRYSTALLINITY < 0.5MM	QUARTZ	FELDSPAR
SALT		FOSSIL	SKELETAL DETRITUS	GLAUCONITE	LITHIC
MASS ANHYDRITE		ACCRETIONARY	ACCRETIONARY	CONGLOMERATE	SILTSTONE
SEC WHITE		UNKNOWN	UNKNOWN		ARGILLACEOUS
RELIC SKELETAL		MICRITE	MICRITE		SHALE
RELIC ACCRETIONARY		CHERT	CHERT		SILICA CEMENT
					CARBONATE CEMENT

IMPERIAL OIL LIMITED - N.W.T. EXPLORATION DISTRICT

Resistance	Litho percentage	Footage	Samples	Description
		0		Quartzite
				Sandstone, shale
		100		Sandstone,
				Sandstone and Shale
		200		Sandstone
		300		Shale
				Sandstone
		400		Sandstone

LITHOPERCENTAGE LOG OF OUTCROP SECTION

STATION NO. 69-20

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. I - 53
SEC. LAT 60°20'N LONG. 107°15'W

Description of location: SECTION MEASURED ALONG
RIDGE AND DOWN STREAMCUT ON MOUNTAIN
APPROXIMATELY 12 MILES EAST NORTHEAST OF
BONNET LAKE.

FORMATIONS

TO ACCOMPANY REPORT

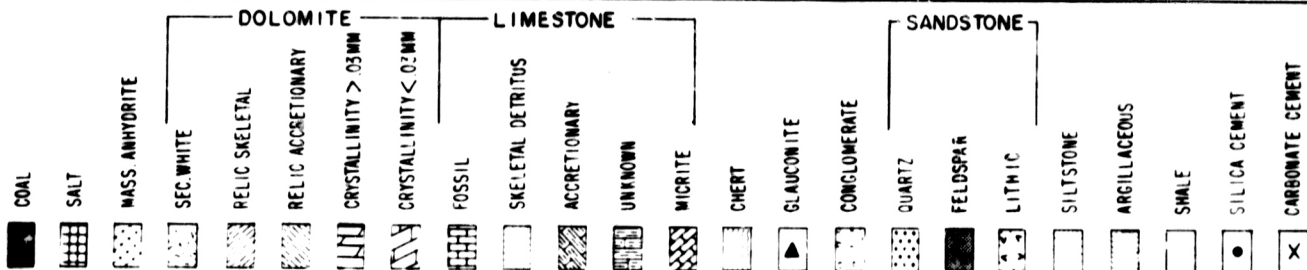
BY: W.E. MROSZCZAK

DATE:

DESCRIBED

BY: G. STAPLES, R. LANDES

DATE:

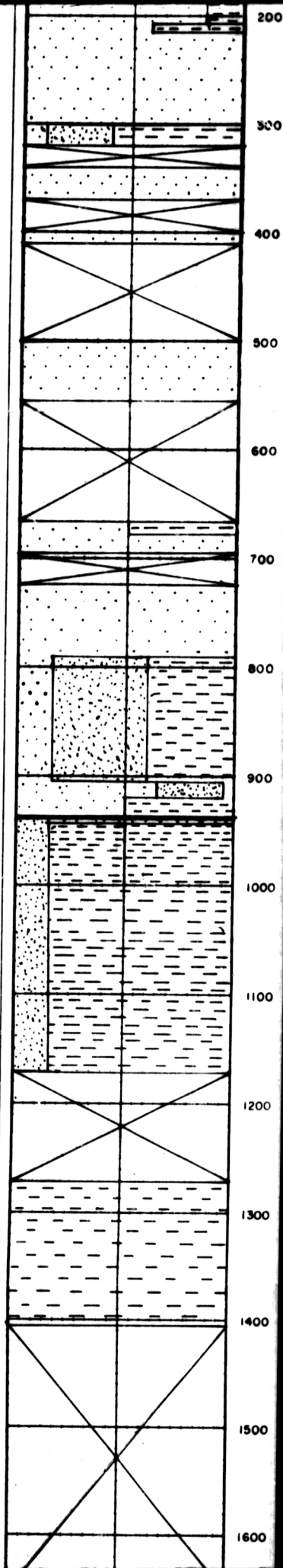


IMPERIAL OIL LIMITED - N.W.T. EXPLORATION DISTRICT

Resistance	Lithopercantage	Footage	Samples	Description
		0		Quartzite
				Sandstone, shale.
		100		Sandstone,
				Sandstone and Shale
		200		Sandstone
		300		Shale
				Sandstone
		400		Sandstone

107

at Base?



Sandstone

Shale

Sandstone

Sandstone

Sandstone

Shale
Sandstone

Sandstone

Shale, Silty

Sandstone, Shale

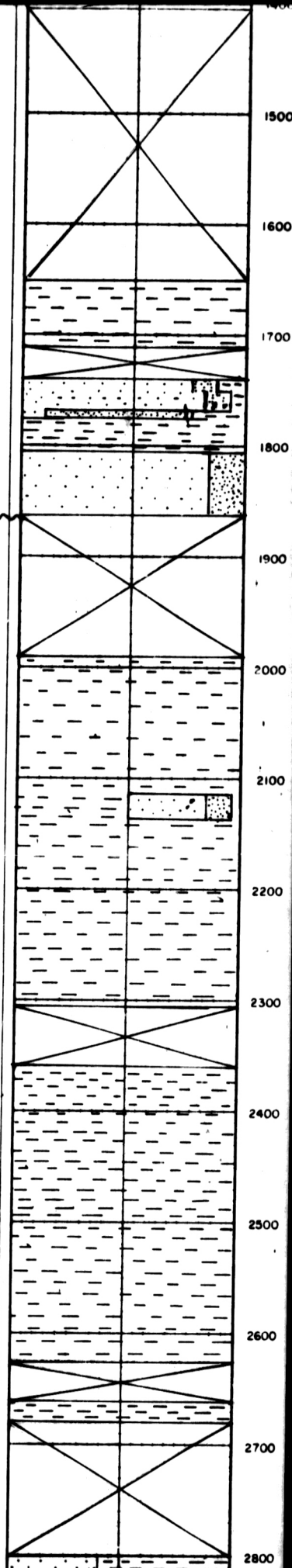
Coal
Shale

Shale

12 of

JURASSIC - CRET Base?

AGE UNKNOWN - UPP. DEV? P?



Shale

Sandstone, very fine grained

Shale

Sandstone.

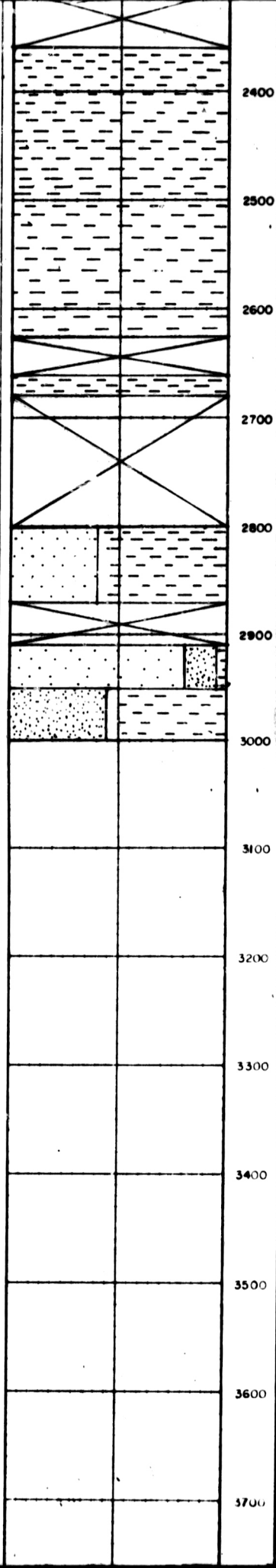
Shale

Shale

301

Interbedded Shale and Sandstone

AGE UNKNOWN - Opp. DEV?



Shale

Interbedded Shale and Sandstone

Sandstone

Shale, silty

494

LITHOPERCENTAGE LOG OF OUTCROP SECTION STATION NO. 69-21

MALCOLM River

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT. ZONE N.T.S. F-10
SEC. LAT. 69°20'N LONG. 140°00'W

Description of location: Approx 140° 06'E 69° 22'N
Ridge 2 miles east of Malcolm River
30 miles from Arctic Ocean.

RCAP Air Photo A 14341-21

FORMATIONS

LISBURNE GROUP (705')
KAYAK FORMATION (215')
BASAL QUARTZITE

TO ACCOMPANY REPORT

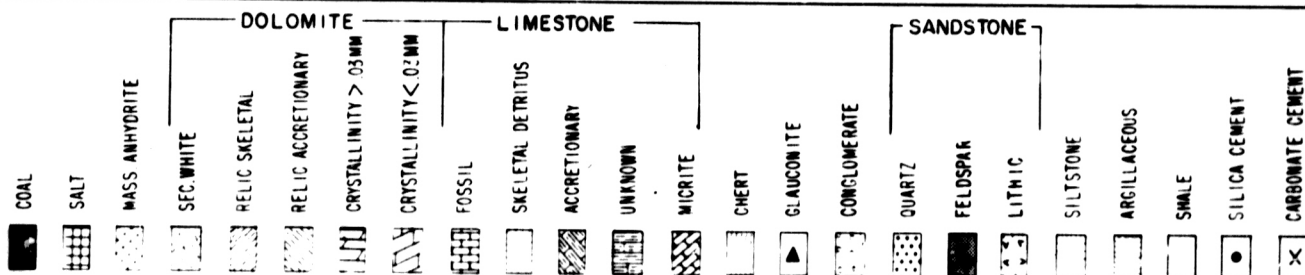
BY: W. E. MROSZCZAK

DATE:

DESCRIBED

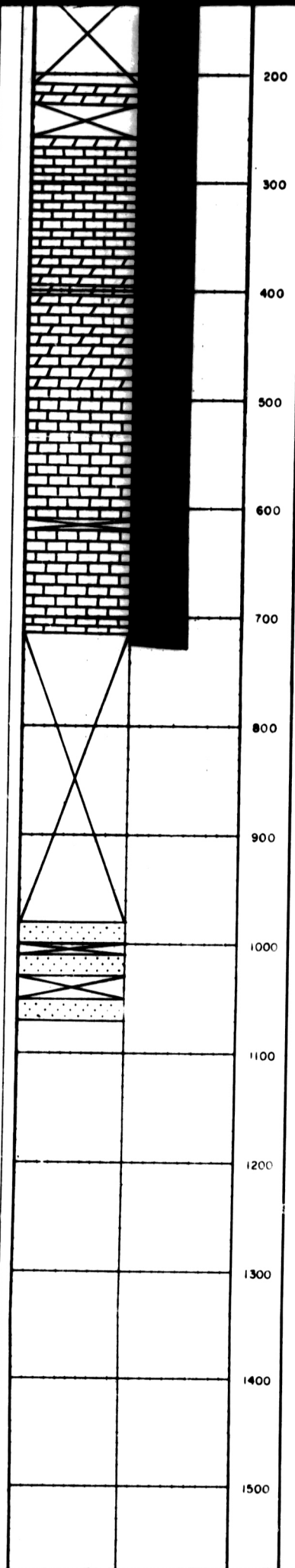
BY: F. LANE, P. McGill.

DATE: July 4, 1969.



IMPERIAL OIL LIMITED - N.W.T. EXPLORATION DISTRICT

Resistance	Lithopercantage	Footage	Samples	Description
				<p>107</p> <p>TRIASSIC (10')</p> <p>Sandstone, brown, argillaceous, calcareous.</p> <p>LISBURNE GROUP (705')</p> <p>Limestone, medium dark grey, lime mud, chert.</p> <p>Delomite, medium dark grey, chert</p> <p>Limestone, light to medium dark grey, lime mud, locally dolomitic laminated.</p>
		0		
		100		
		200		
		300		
		400		



Dolomite, medium dark grey, chert

Limestone, light to medium dark grey, lime mud, locally dolomitic laminated.

? — KAYAK FORMATION (215'?)

— BASAL QUARTZITE
Light grey, locally laminated.

2 of 2

LITHOPERCENTAGE LOG OF OUTCROP SECTION

STATION NO. 69-22

SISTER SEDGWICK

FORMATIONS

LISBURN
KAYAK.

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S.
SEC. LAT. LONG.

Description of location:

Section is located about 3 miles ESE of
Mount Sedgwick, along the Trail River.

RCAF Photo R.E.E. N 117.

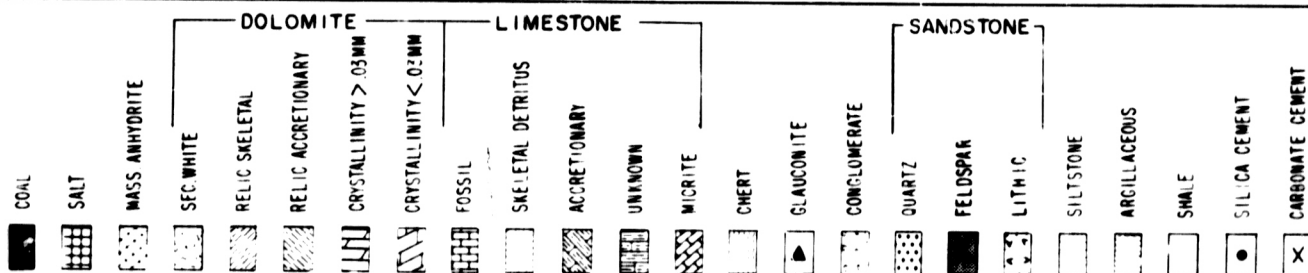
TO ACCOMPANY REPORT

BY: W. E. Mroczek

DATE:

DESCRIBED

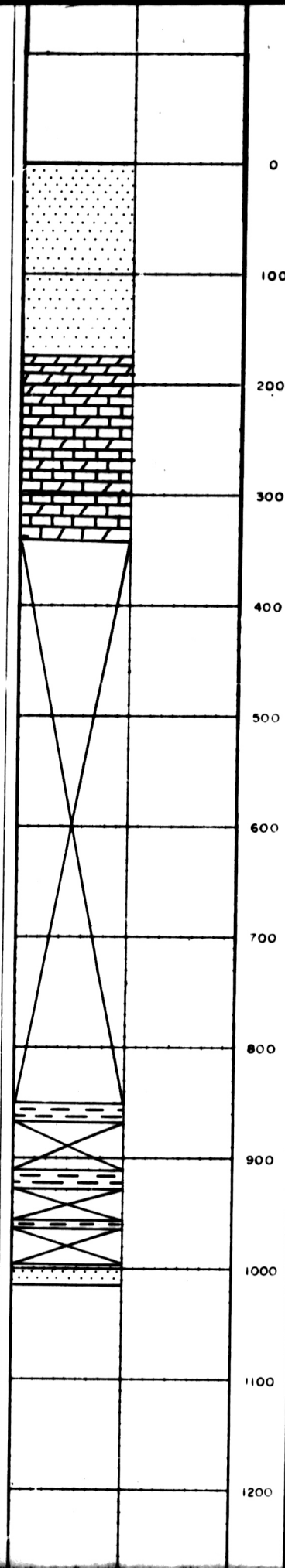
BY: W. Zaturecky, B. Petavello DATE: July 4, 1969.



IMPERIAL OIL LIMITED - N.W.T. EXPLORATION DISTRICT

Resistance	Lithopercantage	Footage	Samples	Description
				Jacob Staff, tape and Brunton.
		0		LISBURN
		100		Sandstone, lithic, pale yellow brown, cherty, laminated. Locally limestone dolomite breccia.
		200		Dolomite, light gray, cherty.
		300		Dolomitic limestone, light gray, cherty.

107



LISBURN

Sandstone, lithic, pale yellow brown.
cherty, laminated. Locally limestone
dolomite breccia.

Dolomite, light gray, cherty.

Dolomitic limestone, light gray,
cherty.

Shale, medium to medium dark gray.

Sandstone, quartz-lithic, olive gray.

NERUOKPUK

Phyllite and slate.

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-23

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. A-18
SEC LAT 69°00'N LONG. 138°45'W

Description of location:

ELEVATION

MEASURED W. ZATURECKY B. PETOVELLO
METHOD TAPE, BRUNTON, JACOBS STAFF

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSZCZAK

DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	
		100	
		200	
		300	
		400	

Siltstone, muddy, sandy

107

JURASSIC - LOWER CRETACEOUS

300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

Interbedded Sandstone and Siltstone.

Shale

2 of 2

**LOG
OF OUTCROP SECTION
STATION NO. 69-24**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. I-51
SEC. LAT 69°00'N LONG. 138°00'W

Description of location: SECTION MEASURED ON
NORTH BANK OF LADAS CREEK, ABOUT 8 MILES
UPSTREAM FROM ITS JUNCTION WITH THE BASSAGE
RIVER, AND 2 MILES DOWNSTREAM FROM SECTION 25

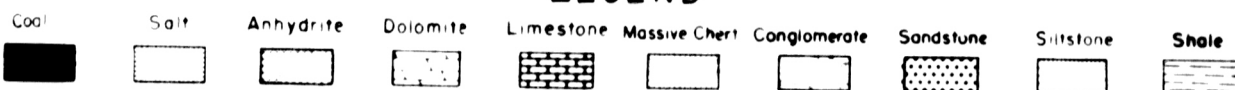
ELEVATION: MEASURED: D. MURPHY, S. SWINDEN.
METHOD: BRUNTON, JACOBS STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W. E. MROSZCZAK
DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Conglomerate
			Sandstone and Siltstone
			Conglomerate
			Siltstone
		100	Conglomerate
			Siltstone
			Conglomerate
			Sandstone and Conglomerate
		200	Sandstone
		300	
		400	

UPPER OR LOWER?
CRETACEOUS

STATION NO. 69-25

LOCATION: LSD. SEC. TWP. RGE. W. M.
 UNIT ZONE N.T.S. C-40
 SEC. LAT 68°50'N LONG. 188°00'W

Description of location: Section measured on recent slip at meander on Ladas Creek approximately 4 miles northwest of Hidden Lake

ELEVATION

MEASURED G. STAPLES, R. LANDES.
METHOD BRUNTON, JACOBS STAFF











FORMATIONS

TO ACCOMPANY REPORT

BY :

DATE :

LEGEND

Coal	Salt	Anhydrite	Dolomite	Limestone	Massive Chert	Conglomerate	Sandstone	Siltstone	Shale
									

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Conglomerate
			Sandstone
		100	
			Sandstone, very fine grained
		200	
			Sandstone, Shale, Conglomerate
		300	
			Conglomerate
			Sandstone
			Conglomerate, Sandstone, Shale

STATION NO. 69-25

ELEVATION

MEASURED G. STAPLES, R. LANDES.
METHOD BRUNTON, JACOBS STAFFFORMATIONSTO ACCOMPANY REPORTBY :
DATE :

LEGEND

Coal

Salt

Anhydrite

Dolomite

Limestone

Massive Chert

Conglomerate

Sandstone

Siltstone

Shale

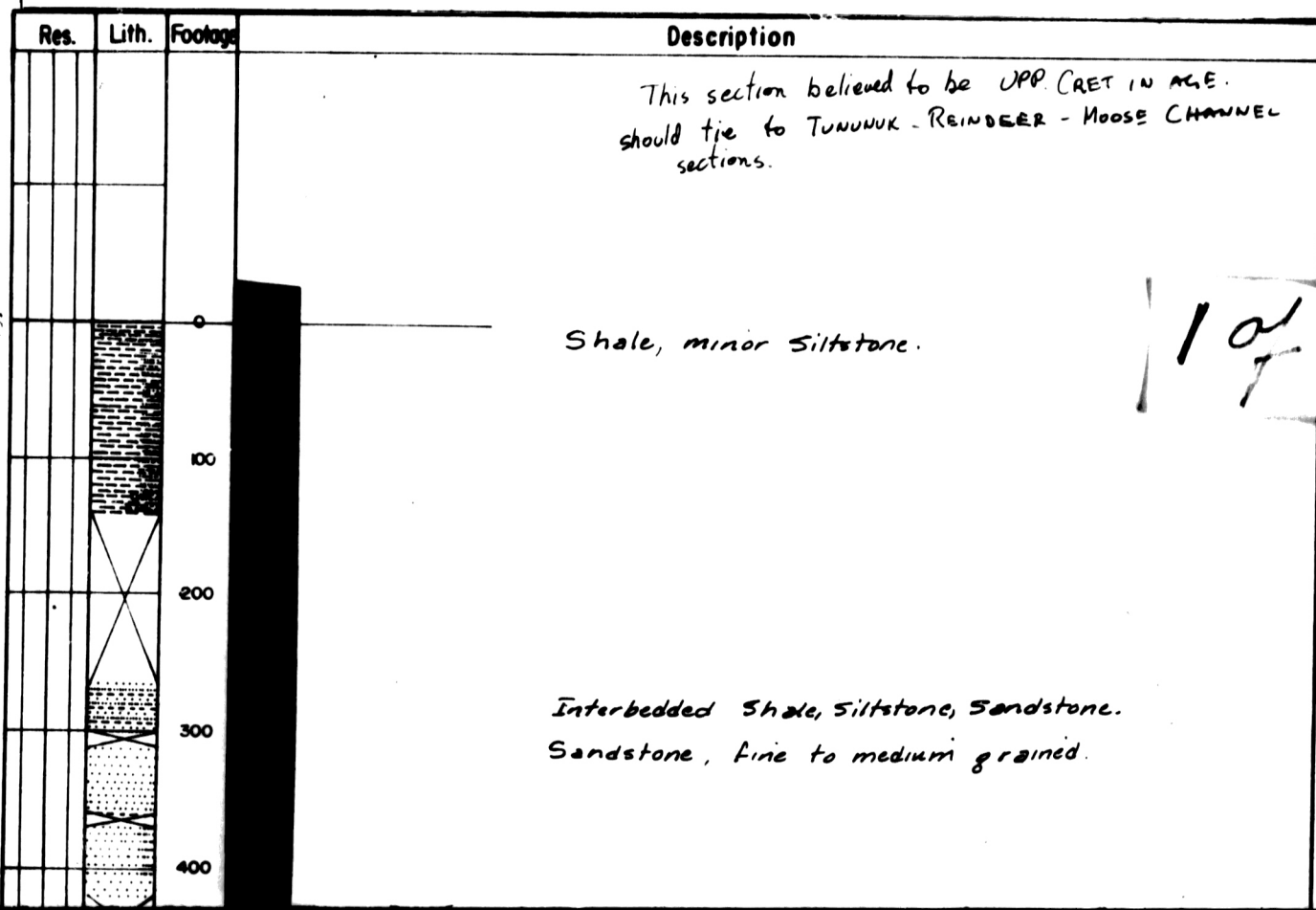


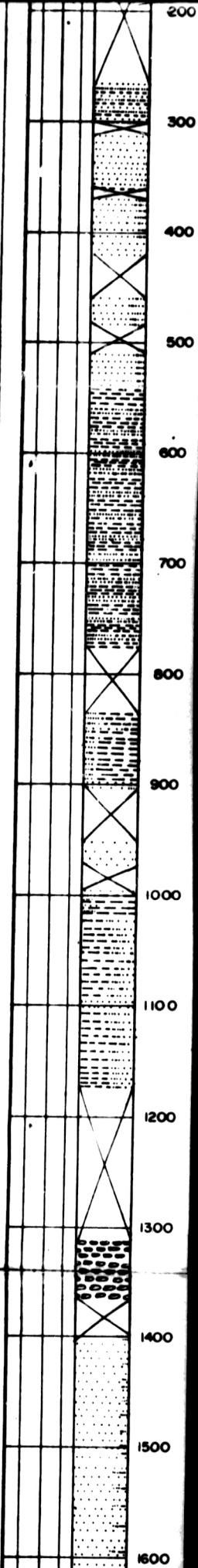
IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Conglomerate
			Sandstone
		100	
		200	Sandstone, very fine grained
		300	Sandstone, Shale, Conglomerate
		400	Conglomerate
			Sandstone
		500	Conglomerate, Sandstone, Shale

UPPER or LOWER?
CRETACEOUS

292





Interbedded Shale, Siltstone, Sandstone.
Sandstone, fine to medium grained.

Interbedded Shale and Siltstone.

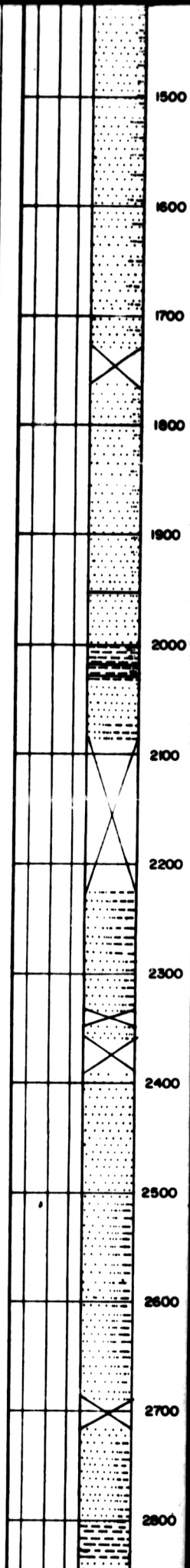
Sandstone, fine grained.

Shale and Sandstone.

Conglomerate.

Sandstone, fine to medium grained.

2 of



Coal
Sandstone,
Shale

Interbedded Shale, Siltstone, and Sandstone

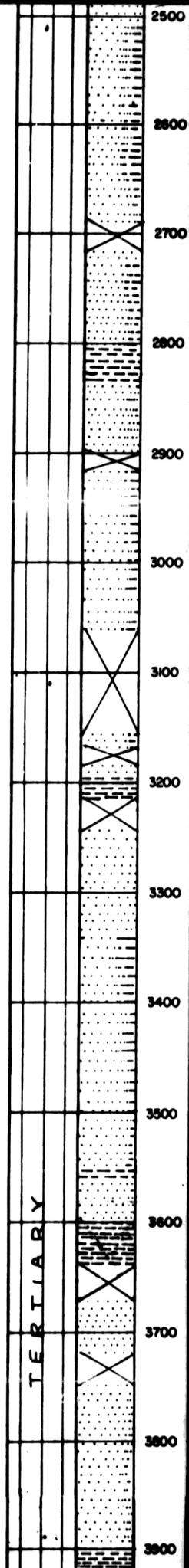
Sandstone and Shale

Sandstone

Sandstone, Siltstone

shale

301



Sandstone, siltstone

shale

Sandstone, silty.

Shale

Sandstone

Shale

Shale

Sandstone

Sandstone

Shale

14 of

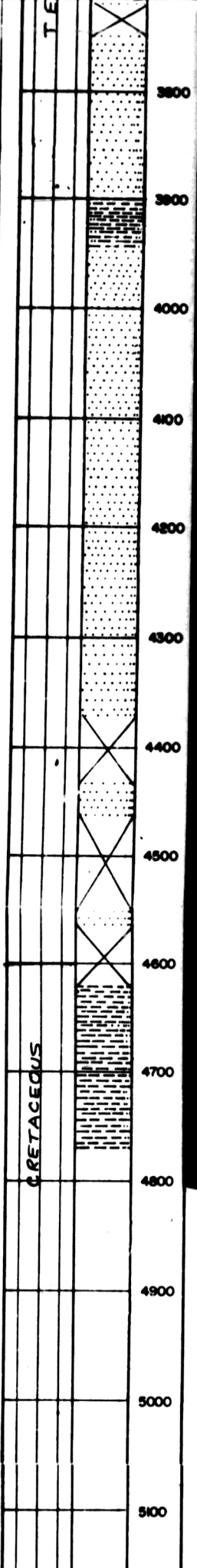
Sandstone

Shale

Sandstone

Shale

50x5



LOG OF OUTCROP SECTION

STATION NO. 6927/31

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE NTS. G-33
SEC. LAT 69°00'N LONG. 138°30'W

Description of location: Section measured on east bank of river approximately 4 miles northeast of Trout Lake. Section is disrupted by numerous minor normal faults downstream to the south.

ELEVATION: MEASURED D. MURPHY, S. SWINDEN.
METHOD BRUNTON, JACOB STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSZCZAK

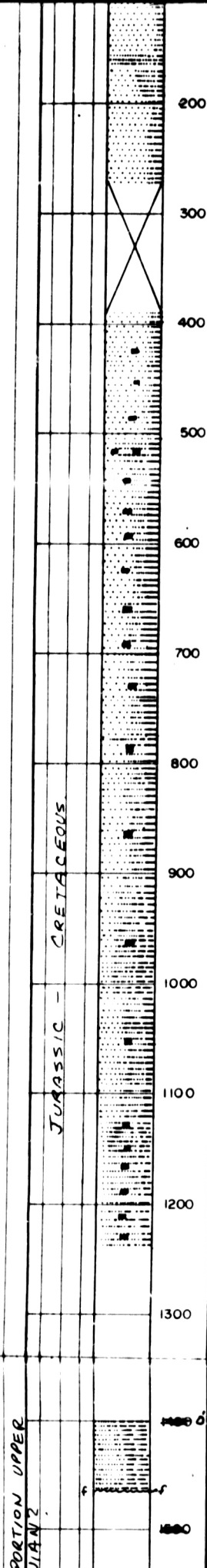
DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Siltstone, sandy
		100	Sandstone, very fine grained
		200	Siltstone
		200	Sandstone, siltstone
		300	
		400	Sandstone, minor siltstone



Siltstone
Sandstone, siltstone.

Sandstone, minor siltstone

Siltstone, sandy

Siltstone

Sandstone, silty
Siltstone, sandy

Siltstone, muddy

12 of.

SECTION # 31 (0' MAY BE EQUIVALENT TO 1120' ON SECTION # 27.)

Major Fault at 65 feet.

GRAB SAMPLES.

CRETACEOUS

JURASSIC -

IS THIS PORTION UPPER
DEVONIAN?

800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

Siltstone

Sandstone, silty
Siltstone, sandy

Siltstone, muddy

SECTION # 31 (0' MAY BE EQUIVALENT TO 1120' ON SECTION # 21.)

Major Fault at 65 feet

GRAB SAMPLES

3 of 3

**LOG
OF OUTCROP SECTION
STATION NO. 6928**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. O-2
SEC. LAT 69°10'N. LONG. 138°30'W

Description of location: SECTION MEASURED ON SCARP
ALONG TRAIL RIVER APPROXIMATELY 8 MILES
UPSTREAM FROM ITS JUNCTURE WITH THE
BABBAGE RIVER.

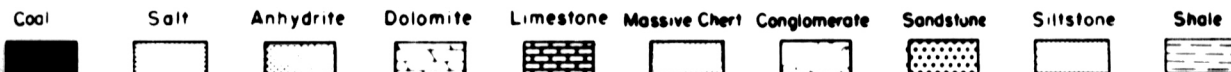
ELEVATION: MEASURED: G. STAPLES, R. LANDES.
METHOD: BRUNTON, JACOB STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSZCZAK
DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Conglomerate Sandstone,
		100	Conglomerate
		200	
		300	
		400	

UPPER LOWER
CRETACEOUS

LOG OF OUTCROP SECTION

STATION NO. 69-29

LOCATION: TWP. SEC. RGE. W. M.
UNIT ZONE N.T.S. D-SS
SEC. LAT. LONG. 100° 15' W

Description of location: Section measured on steep
along Babbage River approximately 6 miles upstream
from its juncture with the Leech River

ELEVATION

MEASURED: P. ZAKUS, B. PETOVELLO
METHOD: BRUNTON, JACOBS STAFF

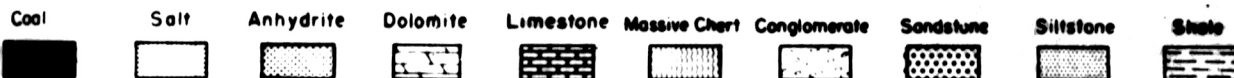
FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSCZAK

DATE:

LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Shale
			Sandstone, very fine grained
			Shale
		100	Sandstone, very fine grained
		200	
		300	
		400	Shale

CRETACEOUS

**LOG
OF OUTCROP SECTION
STATION NO. 69-30**

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S H - 25
SEC. LAT 69°00'00" LONG. 138°30'

Description of location: SECTION MEASURED ON WEST BANK OF BABBAGE RIVER APPROXIMATELY MIDWAY BETWEEN SECTIONS 27 AND 29 OR 1 MILE NORTH OF JUNCTION OF PHILLIP CREEK AND BABBAGE RIVER.

ELEVATION: MEASURED: D. MURPHY, S. SWINDEN
METHOD: BRUNTON, JACOB STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY: W.E. MROSZCZAK
DATE:

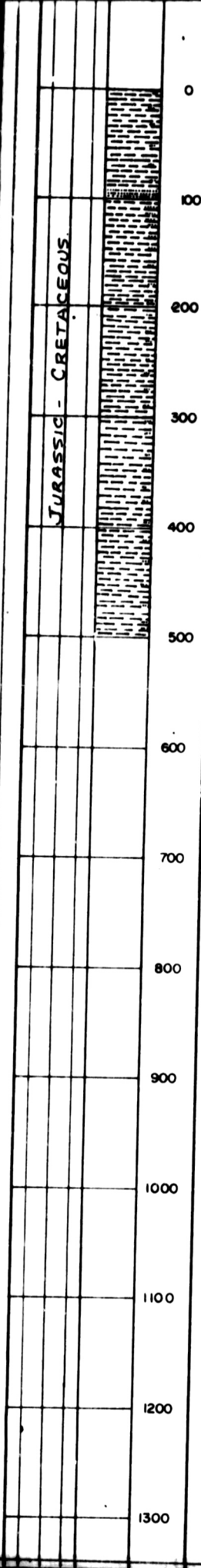
LEGEND



IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Shale
		100	Siltstone Shale
		200	
		300	
JURASSIC - CRETACEOUS			

107



Shale

Siltstone
Shale

2 of 2

LOG OF OUTCROP SECTION

STATION NO. 69-32

LOCATION: LSD. SEC. TWP. RGE. W. M.
UNIT ZONE N.T.S. F-1
SEC LAT 68°50' N LONG. 139°00' W

Description of location: Section measured along ridge and down stream cut on mountain approximately 5 miles west southwest of Sleepy Mountain and 4 miles north northwest of Mount Welcome.

ELEVATION MEASURED G. STAPLES, R. LANDES
METHOD BRUNTON, JACOBS STAFF.

FORMATIONS

TO ACCOMPANY REPORT

BY:
DATE:

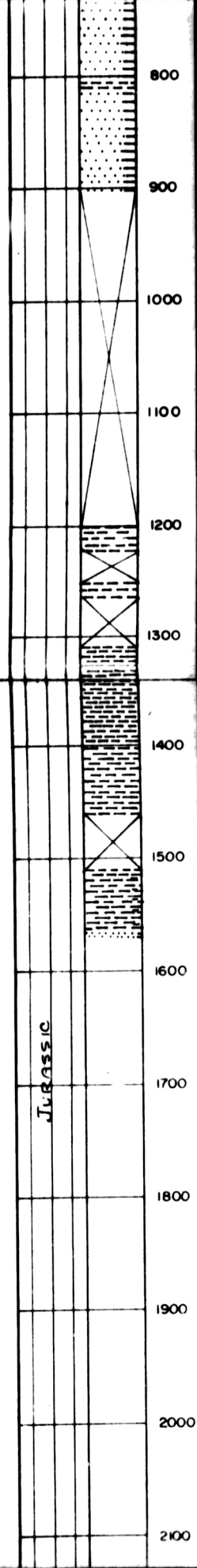
LEGEND

Coal Salt Anhydrite Dolomite Limestone Massive Chert Conglomerate Sandstone Siltstone Shale

IMPERIAL OIL ENTERPRISE LTD. EXPLORATION DEPARTMENT PEACE RIVER DIVISION

Res.	Lith.	Footage	Description
		0	Quartzite, very fine grained.
		100	
		200	
		300	
		400	

107



Shale
Quartzite

Shale present in talus on grass covered slope.

Shale

Shale

Shale

Quartzite, very fine grained.

3073

IMPERIAL OIL ENTERPRISES LTD.
PRODUCING DEPARTMENT - WESTERN REGION

IMPERIAL OIL 1969 STRATIGRAPHIC PARTY
BRITISH AND DARN MOUNTAINS

by

G. M. Staples

(IPRNWT-3MG-70)

April 1970

PROPRIETARY

TERRITORIES EXPLORATION DISTRICT
EDMONTON, ALBERTA

TABLE OF CONTENTS

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STRATIGRAPHY	3
NAMES, LOCATIONS AND TOTAL FOOTAGES OF MEASURED SECTIONS	Following Text
APPENDIX -- Strip Logs of Measured Sections	In Pocket

ILLUSTRATION

Map showing Measured Sections and Work Area
-- Scale 1 inch to 8 miles

Following Text

AREA COVERED

An eight-man stratigraphic party spent two months, May 31 to July 28, doing field work in the British and Barn mountains and on the West Coastal Plain. Geological work was confined to rocks of post-Devonian age outcropping in the mountains and along stream cuts in the 8,000-square-mile area shown by Figure 1.

Two-man and three-man stratigraphic crews measured 43,080 feet of section. The party chief visited 88 locations.

ACCESSIBILITY

Pacific Western Airlines operates a regular airline service between Edmonton and Inuvik. Light aircraft can be chartered at Inuvik. In addition, Imperial Oil's Fairchild F-27 makes several trips a month to Inuvik with drilling department personnel and equipment. The Company Twin Otter is based in Inuvik and is equipped with floats after break-up. Aviation gas is available commercially at Inuvik.

An Imperial Oil seismic camp left over the summer at Stokes Point provided a comfortable base camp for the stratigraphic party. There was a gravel strip available and a small lake where float-equipped aircraft could land. Food was purchased from the Hudson's Bay store in Inuvik and flown to base camp by fixed-wing aircraft. The area was covered using a Hiller F-1100 turbine helicopter for the first five weeks and a Hiller 12-E helicopter for the remainder of the summer. Both machines were chartered from Okanagan Helicopters.

PURPOSE OF STUDY

The objective of the 1969 stratigraphic party was to extend our stratigraphic control in the post-Devonian section exposed in the British and Barn mountains. This surface control can be integrated with our seismic coverage to properly evaluate land held by Imperial Oil on the West Coastal Plain and in the northern Mackenzie River Delta area.

WEATHER

The weather conditions were unpredictable and often were unfavorable for helicopter operations. A heavy snowfall May 31 left a blanket of snow in the mountains so that geological investigations could not begin until the second week of June. Fog rolling in from the ice-bound Beaufort Sea hampered morning helicopter operations so it was often necessary to take advantage of the 24-hour daylight during June and early July. A snow storm in late July left a cover of snow in the mountains, making it difficult to measure the final section.

Altogether, two weeks were lost due to snow and rainstorms. Morning fog resulted in a number of late starts, although the mountains were clear. Lakes were not clear of ice until late June and the ice on the Beaufort Sea lingered into July.

COMMUNICATIONS

Imperial Oil has a single-sideband communication network which operates out of Inuvik on a year-round basis. It is utilized by the drilling department, seismic crews, transportation personnel and the

geological department. All Company aircraft carry radio equipment which takes advantage of these communication channels.

In 1969 an AC-powered Marconi CH-25 transceiver was used as base camp equipment and three more compact Nicad-battery-operated Marconi CP-24's were used on fly camps. Results were satisfactory with atmospheric conditions determining the regularity of communications with the expeditors in Inuvik.

PREVIOUS INVESTIGATIONS

Reconnaissance work by Imperial Oil geologists was conducted in 1961 by B. Gallant and again in 1965 by D. C. Waylett.

Some reconnaissance work was done in the area by the Geological Survey under the direction of D. K. Norris in 1962. A paper was written by E. W. Mountjoy of the GSC (Paper 66-19) on the "Triassic Stratigraphy of Northern Yukon Territory."

STRATIGRAPHY

A total of 43,080 feet of stratigraphic section was measured during the 1969 field season. Of this total, 20,395 feet were covered. Strip logs of the 32 sections measured are enclosed in the pocket attached to this report. The locations of the sections are shown on Figure 1. The geographic coordinates are listed in the table following the text, as well as on the log headings.

A total of 88 stations were established in the area by the party chief as spot checks on lithology, while scouting for control sections.

Correlation between sections, and for purposes of field mapping, was done by following litho-stratigraphic units from the air, by recognizing similar lithologies and vertical successions across structural breaks or covered intervals, and by stratigraphic relationship to the Paleozoic unconformity.

Problems encountered with correlating the section include facies changes of the formations, complex folding within parts of the outcrop belt, lack of outcrop due to talus covered slopes, and the difficulty in separating and correlating repeated shale-siltstone-sandstone sequences with sparse megafossils.

TABLE 67. STATION LOCATIONS

Station	Latitude	Longitude	Location	Map
NWT-69-101	65°10'	124°00'	F-72	Comp. Map 12
102	65°10'	124°15'	H-72	Comp. Map 12
103	65°30'	125°45'	K-29	Comp. Map 12
104	65°40'	128°15'	G-18	Comp. Map 17
105	64°50'	124°15'	L-40	Comp. Map 12
106	64°50'	124°30'	C-10	Comp. Map 12
107	64°50'	124°15'	K-31	Comp. Map 12
108	64°30'	124°00'	J-61	Comp. Map 12
109	64°20'	126°15'	O-63	Comp. Map 12
110	64°50'	126°45'	O-27	Comp. Map 12
111	65°00'	127°15'	F-10	Comp. Map 12
112	68°20'	131°50'	K-3	Comp. Map 24
113	68°40'	131°00'	H-22	Comp. Map 24
114	68°50'	131°00'	H-3	Comp. Map 24
115	69°00'	130°45'	L-47	Comp. Map 24
116	69°10'	130°45'	J-27	Comp. Map 24
117	68°40'	132°00'	K-11	Comp. Map 24
118	68°40'	133°30'	C-56	Comp. Map 24
119	68°40'	133°45'	E-5	Comp. Map 24
120	68°40'	134°00'	H-12	Comp. Map 24
121	69°00'	134°15'	L-41	Comp. Map 24
122	68°50'	134°15'	P-23	Comp. Map 24
123	68°40'	134°00'	J-55	Comp. Map 24
124	68°10'	133°15'	D-45	Comp. Map 24
125	68°10'	133°15'	D-34	Comp. Map 24
126	68°20'	133°00'	J-39	Comp. Map 24
127	68°40'	133°00'	L-23	Comp. Map 24
128	69°10'	138°00'	C-29	1170/A-13
129	ALASKA			1171/B-12
130	68°40'	140°00'	P-57	1171/B-12
131	68°40'	140°30'	K-59	1171/B-12
132	69°00'	140°45'	L-22	1171/B-12
133	ALASKA			1171/B-12
134	69°00'	140°45'	D-57	1171/B-12
135	69°10'	138°00'	C-29	1170/A-13
136	68°40'	139°00'	P-2	1171/A-13
137	68°40'	139°15'	D-60	1171/A-13
138	69°00'	139°15'	A-55	1171/A-13
139	69°00'	139°30'	O-23	1171/A-13
140	69°00'	139°15'	H-45	1171/A-13
141	68°50'	139°45'	E-37	1171/A-13
142	69°30'	139°45'	E-12	1170/A-13
143	69°30'	140°00'	L-11	1170/A-13
144	69°30'	140°00'	E-51	1170/A-13
145	69°30'	140°00'	G-55	1170/A-13
146	69°00'	139°15'	H-1	1171/A-13
147	68°50'	138°00'	J-34	1171/A-13
148	68°40'	139°15'	H-41	1171/A-13

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>	<u>Map</u>
NWT-69-149	68°20'	137°15'	K-15	117A/E-3W
150	68°10'	137°30'	N-38	117A/E-3E
151	68°40'	136°45'	G-13	117A/E-4E
152	68°50'	137°00'	F-8	117A/E-4W
153	68°40'	138°00'	G-48	117A/N-3E
154	68°30'	138°00'	A-20	117A/N-3E
155	68°30'	138°00'	N-32	117A/N-3E
156	68°30'	138°15'	I-37	117A/N-3E
157	68°10'	137°30'	J-20	117A/E-3W
158	68°40'	138°30'	M-5	117A/N-4E
159	69°30'	140°00'	M-33	117C/E-3E
160	69°30'	140°15'	M-2	117C/E-3E
161	69°30'	140°00'	P-14	117C/E-3E
162	69°10'	138°45'	D-52	117D/N-3E
163	69°00'	138°45'	F-23	117A/N-3E
164	69°10'	138°25'	L-2	117D/K-3E
165	69°00'	138°15'	A-28	117A/E-4E
166	68°50'	137°15'	P-57	117A/E-4W
167	69°00'	137°30'	N-52	117A/E-4W
168	69°00'	137°45'	P-51	117A/E-4W
169	68°50'	137°45'	G-12	117A/E-4E
170	69°20'	138°15'	B-22	117A/N-3E
171	68°20'	138°00'	K-39	117A/E-4E
172	69°40'	140°30'	G-1	117C/E-3E
173	68°40'	136°45'	C-6	117A/E-4E
174	68°50'	136°30'	P-42	117A/E-4E
175	68°50'	136°45'	P-52	117A/E-4E
176	68°40'	137°15'	P-19	117A/E-4E
177	68°40'	138°00'	C-49	117A/E-4E
178	69°40'	139°00'	H-39	117D/E-4E
179	69°40'	139°00'	K-16	117D/N-3E
180	68°30'	137°45'	E-19	117A/N-3E
181	68°40'	137°45'	F-23	117A/E-4E
182	68°40'	137°30'	I-35	117A/E-4E
183	68°30'	137°30'	B-11	117A/E-4E
184	68°30'	140°00'	H-38	117A/E-4E
185	68°40'	140°00'	D-14	117C/E-3E
186	69°40'	140°15'	C-11	117C/E-3E
187	69°30'	140°15'	G-49	117C/E-3E
188	69°30'	140°00'	H-23	117C/E-4E

NWT-69 SECTION LOCATIONS

<u>Section</u>	<u>Name</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>	<u>Map</u>
NWT-69-1	Firth Lookout	69°00'	140°15'	P-26	117B/E-NE 117B/E-NE
2	Joe Creek - Alaska Border	ALASKA			
3	Babbage Cache	68°50'	139°00'	F-41	117A/W-NW
4	Bear Creek	69°00'	139°30'	L-37	117A/W-NE
5	Blister Ridge	68°50'	139°00'	G-55	117A/W-NW
6	Canyon Creek	69°10'	139°30'	K-53	117D/W-SW
7	Buckland Lookout	69°00'	139°15'	M-45	117A/W-NE
8	Grizzly Crossing	68°40'	139°00'	N-35	117A/W-NE
9	Moxie	68°50'	139°45'	N-47	117A/W-NW
10	Windy Mesa	68°40'	139°00'	K-23	117A/W-NE
11	Joe Mountain	69°00'	140°45'	H-2	117B/E-NE
12	Caribou Ridge	68°50'	138°00'	O-23	117A/W-NE
13	Ht. Wellcome	68°40'	138°15'	E-48	117A/W-NE
14	Topo Heights	68°50'	138°00'	I-42	117A/W-NE
15	Fanny Hill	68°30'	137°40'	F-33	117A/E-NE
16	Wolf Creek	69°10'	140°00'	I-53	117C/E-SW
17	Wood Mountain	68°40'	138°30'	F-27	117A/W-NE
18	Mount Fitton	68°30'	137°45'	H-59	117A/E-SW
19	Walk-Back	68°40'	137°15'	A-23	117A/E-NE
20	Bonnet Pass	68°20'	137°15'	I-53	117A/E-SW
21	Malcolm River	69°20'	140°00'	F-10	117C/E-SW
22	Sist & Sedgwick	69°00'	139°00'	O-1	117A/W-NE
23	Trail River	69°00'	138°45'	A-18	117A/W-NE
24	Ladas Creek North	69°00'	138°00'	I-51	117A/W-NE
25	Ladas Creek	68°50'	138°00'	C-40	117A/W-NE
26	Cross Over Creek	68°50'	136°30'	H-12	117A/E-NE
27	Babbage River "A"	69°00'	138°30'	I-13	117A/W-NE
28	Eagle Rock	69°10'	138°30'	O-2	117D/W-SE
29	Eagle Ridge	69°00'	138°15'	D-58	117A/W-NE
30	Babbage R. North	69°00'	138°30'	H-25	117A/W-NE
31	Babbage River "B"	69°00'	138°30'	G-33	117A/W-NE
32	Little Sleepy Mountain	68°50'	138°30'	F-1	117A/W-NE

NWT-69 SECTION STATISTICS

<u>Number</u>	<u>Name</u>	<u>Feet Measured</u>	<u>Total Footage (includes covered)</u>
NWT-69-1	Firth Lookout	395	1,265
2	Joe Creek - Alaska Border	705	1,340
3	Babbage Cache	90	110
4	Bear Creek	660	2,420
5	Blister Ridge	1,070	2,740
6	Canyon Creek	275	925
7	Buckland Lookout	165	1,060
8	Grizzly Crossing	325	750
9	Moxie	290	830
10	Windy Mesa	900	3,950
11	Joe Mountain	3,300	4,100
12	Caribou Ridge	160	680
13	Mt. Welcome	330	330
14	Topo Heights	550	3,010
15	Fanny Hill	1,085	1,480
16	Wolf Creek	235	235
17	Wood Mountain	490	715
18	Mount Filton	375	490
19	Walk-Back	380	860
20	Bonnet Pass	1,930	3,000
21	Malcolm River	530	980
22	Sister Sedgwick	400	1,020
23	Trail River	1,025	1,345
24	Ladas Creek North	245	245
25	Ladas Creek	350	490
26	Cross Over Creek	3,475	4,820
27	Babbage River "A"	1,120	1,240
28	Eagle Rock	155	155
29	Eagle Ridge	310	355
30	Babbage R. North	505	505
31	Babbage River "B"	65	65
32	Little Sleepy Mountain	885	1,570
TOTAL - 32 Sections Measured		22,775 feet (exposed)	43,080 feet (includes covered)

LOCATION MAP WEST COASTAL PLAIN

AREA COVERED BY NWT-69 SURFACE PARTY

IMPERIAL OIL ACREAGE

TO ACCOMPANY REPORT No. IPRNWT-3MG-70
"GOVERNMENT REPORT OF STRATIGRAPHIC PARTY
IN THE BRITISH AND BARN MTNS. DURING 1969"
G.M. STAPLES
SCALE: 1 INCH TO 8 MILES

