

T.R. #3
STRATIGRAPHIC RECONNAISSANCE
of the
NORTHERN MACKENZIE and WERNECKE
MOUNTAINS, Y.T. & N.W.T.

December, 1968 C. R. Swanson

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MARATHON OIL COMPANY

T.R. #3

STRATIGRAPHIC RECONNAISSANCE

of the

NORTHERN MACKENZIE

and

WERNECKE MOUNTAINS

YUKON TERRITORY & NORTHWEST TERRITORIES

Field Report #68-1

by

C. R. Swanson



December, 1968.

Calgary, Alberta.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
Purpose	1
Logistics and Personnel	1
STRATIGRAPHY	3
PRE-CAMBRIAN AND CAMBRIAN	3
SILURO-ORDOVICIAN	3
Ronning Group	4
Road River Formation	6
DEVONIAN	8
Gossage Formation	10
Cranswick Formation	11
Ogilvie Formation	13
Hume Formation	15
Shale Facies	19
Hare Indian Formation	20
Royal Creek Headwater Area	21
CONCLUSIONS	22
REFERENCES	23
APPENDIX	24
ILLUSTRATIONS	

INDEX MAP	1-A
AREA MAP WITH STRATIGRAPHIC LOCALITIES	Pocket
MEASURED SECTIONS	"
CROSS-SECTION A-A'	"
CROSS-SECTION B-B'	"

INTRODUCTION:

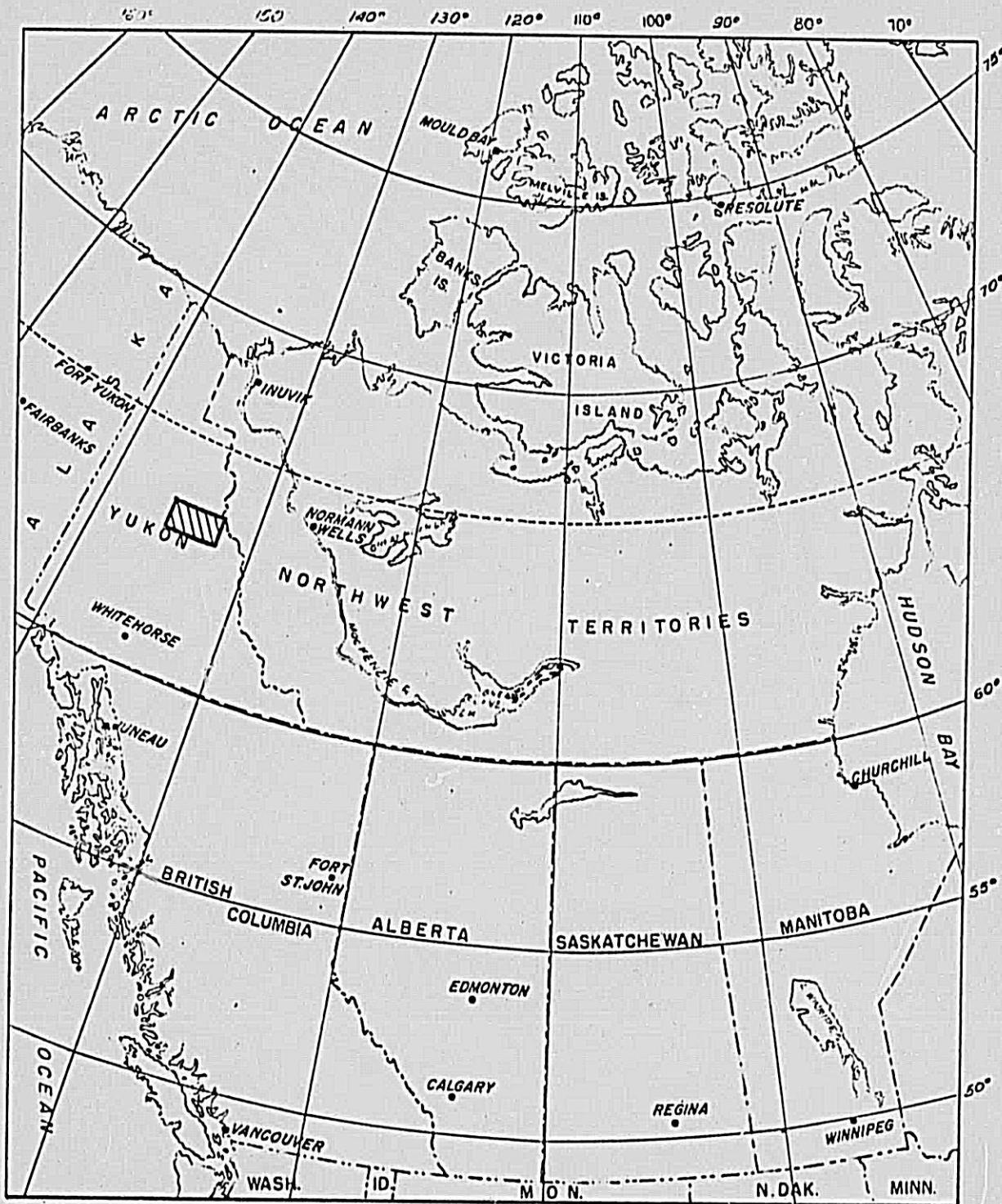
Purpose:

A Marathon Oil Company geological party conducted a stratigraphic reconnaissance of Lower Paleozoic rocks in the area of the northern Mackenzie and Wernecke Mountains, Yukon Territory, during a period of four-and-one-half weeks in the summer of 1968.

The primary objective was to investigate stratigraphic changes which occur in the Lower Paleozoic rocks and to gain information to evaluate Permits 5709 through 5712 located on and near the Trevor and Knorr Ranges. The measured and described stratigraphic and reconnaissance sections have been plotted on columnar sections and together with two stratigraphic cross-sections, are included in this report. The location of these sections and cross-sections is shown on Plate I.

Logistics and Personnel:

Base camp for the entire field period was located on the northern side of a small peninsula projecting from the south shore of Margaret Lake ($65^{\circ}20'$ - $134^{\circ}30'$) Y.T. The localities visited range from 10 to 75 miles from base camp, and most were within 40 minutes flying time from base camp



 - AREA OF REPORT

WESTERN CANADA

Scale \approx 1" to 300 Miles

using a Bell Super G-2 helicopter under charter from Associated Helicopters Ltd. A DeHavilland Beaver chartered from Great Northern Airways on an exclusive basis provided the fuel, food, personnel changes and communication for the camp. Supplies and aircraft fuel were trucked to Dawson City and Mayo and flown into the campsite with the Beaver. The helicopter and Beaver flew a total of 138 and 113 hours, respectively, including ferry time.

Although confronted with rather complex stratigraphy over a large area, the primary project objectives were accomplished within the time limit, due to the exceptional efforts of the following geologists:

W. A. Hogg
H. E. Cook
P. W. Choquette
W. Wilson
W. J. Meyers
P. N. McDaniel

The cook, Rheinhold Kleibl, and the food were supplied by MSP Industrial Consultants, Calgary. Axel Porsild and Ed Szeliga, helicopter pilot and engineer, and Beaver pilots Tom Currie, Noel Langlais and Bruce Busby, provided good flying service and maintenance.

STRATIGRAPHY:

During the field period of four-and-one-half weeks about 22,293 feet of stratigraphic section was measured and approximately 3,530 feet of section was examined in reconnaissance.

Because of our unfamiliarity with the area, and time restrictions, several sections were measured in areas previously described by other workers.

PRE-CAMBRIAN AND CAMBRIAN:

Thick sequences of Pre-Cambrian and Cambrian sediments are present in the Werneck and Mackenzie Mountains, but were not measured. Cambrian rocks were briefly examined at only two localities.

Dark reddish-brown conglomerates were noted in the northern part of the Illtyd Range where they are unconformably overlain by Siluro-Ordovician carbonates. A few feet of dolomite reported to be Cambrian by Norford (1964) were examined in the interior of the Canyon Range immediately below Ordovician limestone.

SILURO-ORDOVICIAN:

Outcrops of Sulurian and Ordovician carbonates and shales make up the greater portion of the Lower Paleozoic stratigraphic section exposed in the area of the Werneck Mountains and northern Mackenzie.

Mountains. Detailed measurement and description of sections were made only in the Canyon, Illtyd and Knorr Ranges. An estimated 1500 feet of Siluro-Ordovician carbonate was examined in the Solo Creek area near the Trevor Range.

Ronning Group:

A composite section of 3300 feet of Lower Paleozoic was measured in the Canyon Range and 1938 feet of carbonate was assigned to this group. The Ronning at this locality is a dark to light gray, fine crystalline partly laminated to massive dolomite with silicified fossils and occasional dark chert zones. The basal 603 feet is a dark gray, thin bedded, limy mudstone with only rare fossils.

The base of the Ordovician is arbitrarily placed at the lithologic change from limestone to dolomite, as Norford (1964) has done. It is not known if Norford's boundary is based on fossil evidence.

The top of the Ronning is placed at the colour change from the predominantly dark gray to the light gray and yellowish-gray weathering dolomites of the Gossage Formation. The scarcity of fossils in the overlying Gossage generally coincides with the colour change at the Siluro-Devonian boundary pick.

In the Illtyd Range extensive exposures of limestone and minor dolomite have been reported by Norford (1964) and Norris (1968), as Silurian, Ordovician, and possible early Devonian. A detailed section of Ronning and Gossage (?) was measured at the southeast end of the Illtyd Range very near where Norford measured his section. Although the underlying Cambrian is not exposed at this locality, a nearly complete Ronning section of 2315 feet was measured, and was found to be predominantly limestone. The Ronning is a light gray or tan to medium dark gray limestone which weathers to a light gray to buff. Lithologies vary from thin evenly bedded to massive non-bedded, laminated mudstone, pellet wackestone to grainstone, and common algal mat-like beds.

The faunas in this carbonate sequence are scarce and difficult to detect in outcrop. Fossils include crinoid ossicles (single axial canals), Favosites sp. corals, horn corals, chain corals, stromatoporoids, strophomenids, Macrurites (?) sp., gastropods, ostracods, and pentamerids. Norford (1964) indicates faunas from this area completely span the Silurian and Ordovician.

Just west of the Trevor Range, Ronning

carbonates are brought to the surface in the core of a north-south anticlinal axis at the headwaters of Solo Creek. At this locality an estimated 1500' of dolomite was examined. The uppermost 300 - 400' is light coloured, coarse crystalline dolomite with some good to excellent vuggy and intercrystalline porosity. The remainder of the section, which may be Ordovician, is poorly exposed but appears to be predominantly dark, cherty, tight dolomite. Fossils observed at this locality are primarily poorly preserved corals, crinoid ossicles (single axial canals), brachiopods and questionable stromatoporoids at the top. The upper portion has been assigned a Silurian age based on lithology and fauna. The basal portion may be Ordovician but evidence is inconclusive. The contact with overlying Devonian shales was not seen and probably is not exposed in this vicinity.

Road River Formation:

The Road River Formation is the shale facies equivalent of the Ronning Group carbonates, and is present only in the western portion of this area. This unit was examined in detail in two localities - on Prongs Creek and in the Knorr Range. At both localities the Road River shale and argillaceous limestone are overlain by a similar Devonian sequence

- the Prongs Creek Formation. The Prongs Creek - Road River contact is within shale and presently drawn at the top of the highest occurrence of monograptids. Until detailed studies of the graptolites from these units have been reported, the top of the Road River Formation can be only arbitrarily positioned.

Lime mudstones, wackestones and packstones with crinoids, brachiopods, corals and stromatoporoids are interbedded with the graptolitic, calcareous shales in the Knorr Range section.

Near the base of the section, many of the limestones are brecciated and conglomeratic with clasts composed of large fossils and a variety of rock types. Some fossils are silicified and chert stringers and nodules are not uncommon. At this locality a large covered interval separates the Road River and Prongs Creek exposures. There is a strong possibility that the Siluro-Devonian boundary lies somewhere within the covered interval which is expressed as a small east-west valley probably underlain by non-resistant shale.

A similar Road River section was measured along the banks of Prongs Creek, a tributary of the Wind River just west of the Illtyd Range where

560' of Road River thin interbedded dark calcareous shales and dark argillaceous limestones occur. Brachiopods, corals, and Thamnopora-like corals, with graptolites are common in the more argillaceous units. Monograptus spiralis and Scutellum sp. were identified in the basal 100' of the section just above Silurian, Ronning limestones. Here again the top of the Road River (Silurian) is placed just above the highest occurrence of graptolites. The overlying Prongs Creek Formation has a similar lithology but is less fossiliferous.

Other occurrences of Road River Formation are present to the southwest in the Royal Creek Area and are well exposed in the type area of the Richardson Mountains, however, time did not permit detailed studies in either of those areas.

DEVONIAN:

Devonian rocks crop out along the northern fronts and in scattered interior localities of both the Werneck and Mackenzie Mountains. Poorly exposed outcrops are also present in the area immediately west of the Trevor Range. Field investigations were confined to the shales and carbonates of the Lower and Middle Devonian. The Upper Devonian Clastics are present in the area

but were not studied.

Lower and Middle Devonian carbonates are present along the northern front of the Mackenzie Mountains from Battleship Creek eastward, and also in isolated localities in the Wernecke Mountains and the Illtyd Range. Shale facies are exposed predominantly in the western portion of the area, particularly in the Knorr Range, Solo Creek, Battleship Creek, Prongs Creek and in some localities along Royal Creek in the Wernecke Mountains.

Recently published GSC and Devonian Symposium works by A. W. Norris have introduced names for some of the Devonian shale and carbonate units in this and adjacent areas. The formation names introduced by Norris have been used where possible in this report.

In the eastern portion of the area the Lower and Middle Devonian carbonate formations in ascending order are as follows: Gossage, Cranswick, Ogilvie and Hume. In the western portion Prongs Creek Formation is applied to the shale facies equivalent of the aforementioned carbonates with the exception of the Hume. In the Battleship Creek area the informal term "Battleship" shale is applied to a shale

sequence of uncertain affinities. Until the age and stratigraphic position of this sequence is clarified, the term "Battleship" shale (Ziegler 1967) is preferred to Norris' Hare Indian Formation.

Gossage Formation:

This unit overlies the Silurian Ronning within the eastern and southern portions of the area and in the southern Illtyd Range. Although diagnostic fossils are rare, the unit has been dated as Lower Devonian and early Middle Devonian by other workers.

The Gossage was studied in the interior of the Canyon Range, Battleship Creek, near the headwaters of Cranswick River, in the south Illtyd Range and in the Royal Creek South area. A complete section was not observed at any one locality, although relatively thick sections were measured at Battleship Creek and in the Canyon Range - 973' and 1362', respectively. It is predominantly dolomite with minor limestone and calcareous dolomite. The medium to light gray and buff weathering, thin bedded dolomites are usually laminated, pelletoid, birdseye mudstones with some silty zones. The calcareous beds are less resistant but similar to the dolomites. Porosity is generally poor and confined to thin intervals. The distinctive uniform gross lithology

contrasts with the underlying and overlying units.

The Gossage upper contact is drawn at the change from the thin bedded, usually buff weathering dolomites, to darker fossiliferous limestones of the Cranswick or Ogilvie. The lower contact is based on a change to slightly darker, more fossiliferous carbonates - usually siliceous. A regional unconformity at the base of the Gossage reported to be present in this area was not seen.

The fauna is sparse and consists of ostracods; some relatively large forms may be Moelleritia sp. (Copeland and Norris), brachiopods and occasionally Amphipora sp. The Gossage Formation in this area has been reported by Norris (1968) to be Lower Devonian and early Middle Devonian (Eifelian) based on the meagre fauna of ostracods, brachiopods and fish remains, and has been correlated with the Bear Rock Formation in the Norman Wells area.

Cranswick Formation:

This unit was named by Norris (1968) for a limestone sequence well exposed in the Battleship Creek area; selected as the type locality. This section and sections at Bioherm Creek and Phylis Creek, and R-4 and R-2 were examined. A partial section was also measured in the Cranswick River

headwaters area. The Cranswick Formation was not recognized in the Royal Creek South area where Ogilvie appears to directly overlie Gossage. The Cranswick is overlain by shales and argillaceous limestones of the Prongs Creek Formation in the Canyon Ranges and appears to grade eastward into the basal Ogilvie. The contact with the underlying Gossage is marked by an abrupt change to thin bedded, dolomite with rare ostracods. Westward from Battleship Creek the Cranswick is represented by shales and argillaceous limestones of the Prongs Creek Formation. The Cranswick is 438 feet thick at Battleship Creek although the upper and lower contacts have been lowered from those of Norris (1968). The unit thins eastward to approximately 200' at section R-2 in the Canyon Range front.

The limestones and minor shales of the Cranswick are very dark gray to dark brown and are composed mainly of mudstones and wackestones with a variety of fossils. Small carbonate buildups are present near the top, in the Bioherm Creek exposure immediately east of Snake River. The fauna consists of brachiopods, crinoid ossicles with single, double, and cross-shaped axial canals, branching and massive corals, massive and bulbous

stromatoporoids, gastropods: Amphipora sp. and Tentaculites sp. in the upper portion.

Ogilvie Formation:

Norris (1968) has proposed a new name - the Ogilvie Formation - for a succession of limestones which overlie either the Cranswick or the Gossage, and underlie the Hume in most localities. Norris selected a locality at Mt. Burgess in the northern Ogilvie Mountains for the type locality.

The Ogilvie Formation is relatively well exposed along the northern front of the Canyon Range between the Snake and Cranswick Rivers. Good outcrops are also present in the area of the Cranswick River headwaters to the southeast. In the Royal Creek South area near where Green and Roddick (1962) described a Lower Paleozoic sequence, over 1300' of limestone was measured and assigned to the Ogilvie on the basis of fauna, stratigraphic position and lithology.

In the Canyon Range front complete sections of Ogilvie were not measured although thick sections estimated at up to 2000' were examined. The upper contact was observed at R-3 section where Ogilvie limestones are in sharp contact with a thin tongue of Prongs Creek (?) shale. In sections R-4 and R-2

Ogilvie limestones grade downward into shale and argillaceous limestones tentatively assigned to Prongs Creek Formation. Reconnaissance in this area indicated an interfingering relationship between the Ogilvie carbonates and Prongs Creek calcareous shales and argillaceous limestones. Further field investigation should be undertaken in this area to better define these facies relationships.

The Ogilvie in the Royal Creek South section consists of limestone, medium to light-gray, thin to medium bedded, mudstone and packstone, partly pelletoid. Crinoids (one and two holed ossicles), Amphipora sp., corals (Hexagonaria sp., Alveolites sp., Thamnopora sp. and cup) nodular and massive stromatoporoids, brachiopods and rare gastropods make up the fauna.

In a section near the headwaters of the Cranswick River the Ogilvie is limestone with some thin dolomite beds in the lower 250' and are mostly wackestones and packstones containing some pellets and birdseye structures. In the upper half of the section crinoid ossicles, gastropods and ostracods are common. In the lower portion corals (Thamnopora - type and massive colonial), massive and tabular

stromatoporoids and brachiopods in addition to crinoid ossicles (single and double axial canals) are common. A little over 1000' was measured in this section with an additional 300' to 400' exposed above. Dark gray slightly argillaceous limestones (Cranswick) conformably underlie the Ogilvie here.

Between the Snake and Cranswick Rivers along the northern edge of the Canyon Range, three partial sections of Ogilvie were examined and were found to be limestone, medium to thick bedded, medium gray to grayish brown, light gray weathering crinoidal calcarenites and rare pelletoid mudstones. In the R-2 section the basal 150' is partly dolomite and dolomitic limestone with some good moldic porosity in the dolomite zones. The Ogilvie fauna in this area is dominantly crinoidal (single, double and cross-shaped axial canals) commonly with brachiopods, stromatoporoids, corals, favositids, rare gastropods and Amphipora sp. In the R-3 section limestones bear crinoid ossicles with only single axial canals. The Ogilvie spans a time interval of most of the early and late Middle Devonian (Norris 1968).

Hume Formation:

This unit is the uppermost Devonian carbonate present in this area and is best represented in the

extreme eastern part of the area in the front of the Mackenzie Mountains at Flyaway Creek. Further west partially exposed limestones have been tentatively assigned to the Hume on the basis of lithology, stratigraphic position and to some extent on fossils.

At localities just east and west of Snake River the Hume is underlain by shales of the "Battleship" or Prongs Creek. At Terminal Creek section an overlying poorly exposed sequence has been tentatively placed in the Hare Indian Formation. In the Battleship Creek and R-3 sections the upper Hume contact was not seen. At Flyaway Creek the base of the Hume could not be accurately placed because of structural complexities - but the Hume appears to grade into laminated fenestral carbonates of the Ogilvie. The upper contact is either very abrupt or erosional and even though our field evidence is inconclusive, this author supports a disconformity at the base of the overlying Canol shale.

The Hume at Flyaway Creek is composed of argillaceous dark gray and light to medium brown limestone with thin beds of nearly black barren shale. The limestones are irregularly thin to medium bedded. The darker argillaceous limestones usually contain corals of the branching and large

massive types. The lighter coloured units are often laminated mudstones, or pellet wackestones with rare Amphipora sp. and birdseye structures. Shaly intervals are more common in the lower portion of the unit.

The 60' of black non-calcareous, paper-thin shale present in the upper portion is either a tongue or possibly represents a section of Canol repeated by faulting. At the base of this shale unit is a 3 foot zone of laminated calcareous shale with Tentaculites sp. which appears transitional with the underlying limestone. If a fault is present it would lie above this zone in the poorly exposed section at or near the abrupt upper contact. A variety of corals are present (Hexagonaria sp., Thamnopora sp., fasciculates, favositids, and cup) and less commonly massive and tabular stromatoporoids, brachiopods, crinoid ossicles (single axial canals), gastropods, Amphipora sp., Stachyodes sp., and Tentaculites sp.

In the Canyon Range front at section R-3 about 200' of limestone is exposed above a Prongs Creek shale tongue. This limestone is medium bedded, medium to dark brownish-gray, wackestone to packstone with some pellets and abundant brachiopods in a dark muddy matrix. Other common fossils are

massive stromatoporoids, branching corals, crinoid ossicles (single axial canals) ostracods, gastropods and Amphipora sp. This unit is assigned to the Hume on the basis of stratigraphic position, lithology and general fauna.

Farther west along the Canyon Range front at Terminal Creek (about 5 miles east of Snake River) 432' of very fossiliferous limestone and shaly limestone is partly exposed and thought to be Hume on the basis of fauna. The upper contact is placed on the basis of a change to darker, thin, evenly laminated, partly pelletal limestones with crinoids (single axial canals) and rare corals. The basal contact is drawn at the top of a thick covered interval which may represent non-resistant Prongs Creek or "Battleship" shale.

At Battleship Creek 86' of limestone at the top of the section has been tentatively placed in the Hume on the basis of fauna and stratigraphic position. The upper contact was not observed and the lower contact is placed at the base of the resistant cliff. The very dark gray limestone weathers dark to medium gray, to buff, and is irregularly thin to medium bedded wackestone with a rich fauna. The fossils are favositids, Atrypa sp., Spinatrypa sp., Coenites sp.,

Heliophyllum sp., Crytospirifer sp., crinoid ossicles (single axial canals) and gastropods.

Shale Facies:

The Lower and Middle Devonian shale facies of this area is represented mostly by the Prongs Creek Formation named by Norris (1968) for a thick sequence at Royal Mountain. The term "Battleship" shale is applied to the thick tan shales in the upper portion of the Battleship Creek section. Norris (1968) has applied the name Hare Indian to this section, for reasons not entirely clear to the author.

The Prongs Creek is exposed in the western portion of the report area and sections were measured at Prongs Creek, Knorr Range, Solo Creek, Battleship Creek, Bioherm Creek and Phylis Creek. At localities R-4, R-3 and R-2 tongues of Prongs Creek were observed in reconnaissance.

The Prongs Creek shale is underlain by either Road River shale or the Cranswick. In the Canyon Range front between the Snake and Cranswick Rivers shaly units of the Prongs Creek are thought to interfinger with limestones of the Ogilvie Formation. Hume, Ogilvie, "Battleship" shale, and in some areas Upper Devonian rocks overlie the formation.

The Prongs Creek generally consists of very

dark gray to black shale with thin interbeds of dark argillaceous limestone and lime mudstone; thin to platy bedded, weathering gray to buff and usually poorly exposed. Brecciated beds with a variety of lithologies and thicknesses are common in the Knorr Range and Solo Creek localities. The shales and shaly limestones commonly contain a fauna consisting of Tentaculites, sp., Styliolina sp., brachiopods, crinoid ossicles (single, double, cross and star-shaped axial canals) and gastropods. Corals and stromatoporoids are common within the brecciated units. Chert stringers and nodules are also common. The two-hole crinoid ossicles are abundant in the middle and lower portion and provide a rough guide to field correlations in this area. The Prongs Creek ranges from Lower Devonian to Middle Devonian and may even extend into the Upper Devonian (Norris 1968).

Hare Indian Formation:

This unit, which is best developed in the surface and subsurface to the east and northeast (Basset 1961), may be represented in this area by 104' of incompletely exposed argillaceous limestone which overlies the Hume (?) in the Terminal Creek section just east of the Snake River. The limestone is dark gray, thin bedded, well laminated lime mud-

stone containing rare corals, common crinoid ossicles (single axial canals) and occasional pellets. Where best developed outside this area the Hare Indian has been dated as late Middle Devonian (Givetian).

Royal Creek Headwaters Area:

This area is located in the southwestern corner of the report area where a Devonian and older, carbonate to shale facies transition is fairly well exposed in a cirque near the headwaters of Royal Creek, at approximately $64^{\circ}47'30''$ N, $135^{\circ}10'11''$ W. Time and low cloud cover did not permit a detailed lithofacies or biofacies examination nor a complete investigation of the stratigraphic relationships.

The facies relationships are characterized by a thick (1500'+) carbonate sequence of probable Lower and Middle Devonian, and possible Upper Silurian age, in abrupt transition with shales and thin limestones of the Prongs Creek Formation. At the transition thick carbonate debris tongues appear to extend out into the Prongs Creek facies.

Fossils are abundant in both facies and consist of corals (dendroid, massive, fasiculate, solitary) massive and tabular stromatoporoids, straight cephalopods, graptolites, crinoid ossicles, brachiopods, Tentaculites sp., algae, and trilobites. In

the cursory examination it was noted that crinoid ossicles with only single and star-shaped axial canals were present. Near this area the Prongs Creek and Road River shales have been definitely dated by graptolites, brachiopods and conodonts (Lenz 1966, Jackson & Lenz 1962, Klapper 1969). To date, nothing has been published on the carbonate faunas though it may be concluded that most of the carbonate would be of comparable age.

CONCLUSIONS:

From the field reconnaissance of the stratigraphy of the Wernecke and Mackenzie Mountains several conclusions may be drawn:

1. The Lower Paleozoic rocks display two primary facies consisting of marine shale primarily in the western portion and carbonate facies in the eastern portion of the area.
2. The Cranswick, Ogilvie and Hume formations (Middle Devonian) are almost entirely limestone and porosity is rare. The early Devonian Gossage Formation is dolomite and mostly non-porous.

The Ronning Group (Siluro-Ordovician) is composed primarily of dolomite which is often porous.

3. The facies relationships present in the area will assist in the understanding of the subsurface to the north and northeast.
4. Further field work is necessary for a more complete understanding of Silurian - Ordovician facies relationships.
5. Additional biofacies studies of the Lower and Middle Devonian are needed for a better definition of age relationships.

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APPENDIX

MEASURED SECTIONS:

The localities which were visited in the field are listed below from west to east in descending order. Many of the locality names are from well known geographic features and appear on topographic and geologic maps of the area. Other localities were named by the geologists who measured the sections. The numbers which follow the names were assigned by the field parties.

1. PRONGS CREEK 2813
2. SOUTH ILLTYD RANGE 2801
3. ROYAL CREEK SOUTH 2824, 2825
4. SOLO CREEK A 2830 A
5. SOLO CREEK B (Reconn. 2830 B)
6. KNORR RANGE 2800, 2802
7. BATTLESHIP CREEK 2803, 2804,
2808, 2812
8. BIOHERM CREEK 2810
9. TERMINAL CREEK 2816, 2817
10. PHYLIS CREEK 2820
11. CANYON RANGE 2809, 2814, 2815,
2818
12. F-4 CANYON RANGE (Reconn.)
13. R-2 " " "
14. R-3 " " "
15. FLYAWAY CREEK 2821
16. CRANSWICK RIVER HEADWATERS 2822, 2823

STRATIGRAPHIC SECTION: 2813 - PRONGS CREEK Y.T.

LOCATION: $65^{\circ}17'30''$ $135^{\circ}39'41''$

Along banks of Prongs Creek

DATE:

July 12, 1968

MEASUREMENT:

Upper portion - Up section

Lower portion - Down section.

AGE & INTERVALS:

DEVONIAN - L. & M.

Prongs Creek = 1490' (inc)

SILURIAN

Road River = 560'

Total = 2050'

GEOLOGISTS:

W.A. Hogg

P.N. McDaniel

H.E. Cook

W.J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			OVERLYING SECTION NOT EXPOSED	
	2050		18' SHALE: BLACK, SL PLATY TO 1" THK. RECESS PARTLY COVERED	
	2000		65' LIMESTONE, DK GY TO BLK, MUDSTONE, 1" - 1" THK, ARG.	
	1900		67' LIMESTONE & SHALE INTBDD: DK GY TO BLK, BEDS $\frac{1}{2}$ "-1" W/SOME TO 4". // STRATIF, LIME IS MUDST. SHALE, PLATY, BLACK	TENTACULITES SP. COMMON IN SHALE
	1800		25' LST, DK GY TO BLK, 1"-4", SOME CONTORTED BEDS, FEW SHALE STREAKS	
	1700		175' LIMESTONE: DK GY TO BLK, MUDSTONE, EVENLY BEDDED 11-21' BASAL 17' LAMINATED	NONE OBSERVED
GS CREEK			710' COVERED INTERVAL - PROBABLY SHALE	
	1600			
	1500			
	1400			
	1300			
	1200			

10F

ROAD RIVER PRONGS CREEK

1400		
1300		
1200		
1100		
1000		
900	42' COVERED - TALUS SIMILAR TO BELOW	
800	138' SCATTERED EXPOSURES: LIMEY SHALE & SHALY LST, DK GY - BLK POORLY BEDDED TO LAM. & WELL BEDDED. FEW SCATTERED FOSS IN MUD MTX	RARE BRACHS CRINOIDS
700	110' SHALE, LIMEY & ARG LST, V DK GY-BLK 4"-6" BDG. POORLY EXPOSED NO GRAPTOLITES OBSERVED	RARE CRINOIDS & BRACHS TR, THAMN. TYPE CORALS
600	25' LST, DK GY, ARG MUDST.	(R-C) CRINOIDS, BRACHS & THAMN. TYPE
500	92' COVERED	
400	20' LST, ARG, DK GY, THIN BD, MUDST.	RARE-CRIN, BRACHS & THAMN. CORALS
300	67' MOSTLY COVERED - TALUS CONSISTS OF LAM. LST & SH, 13' INT BD LIME MUDST & SH - 1"-4" BDG	(R) GRAPTOLITES (TALUS)
200	73' LIMEST. GLI ARG, W/INTBD LIMEY SH; BD 4"-11", AT BASE SOME BREC FRAGS LIME MUDST W/CRIN. CALCERENITE & OTHER FOSS, SOME GRADED BEDDING	TR, GRAPTOLITES ABUND. CRIN - SOME 2-HOLE (?) (R) BRACH. (R) FACOSITIDS & THAMNOPOORA TYPE STROMS
100	65' COVERED - TALUS SIMILAR TO BELOW	
0	35' LST: DK GY, ARG, BDG - 6"-4", SOME GRADED 45' MOSTLY COVERED INTB. LS & SH AS BELOW. SOME GRADED BEDDING	(R)-BRACHS, HORN CORALS & (C-A) CRIN & FAVOSITIDS (R) CRINOIDS
171' SHALE, LIMEY, V DK GY, LAMINATED. MOSTLY TALUS	AT TOP: (A) BRACHS & CRIN. (R) CORALS BASAL: (R) CRIN.	
	RARE GRAPTOLITES UPPER PART LOWER PORTION SMALL BRACHS & CRINOIDS	
	MONOGRAPTIDS SP 6 M. SPIRALIS	

2 of

RONNING ROAD RIVER

PR

1100			
1000			
900		42 ¹ COVERED - TALUS SIMILAR TO BELOW	
800		130 ¹ SCATTERED EXPOSURES: LIMEY SHALE & SHALY LST, DK GY - BLK POORLY BEDDED TO LAM. & WELL BEDDED. FEW SCATTERED FOSS IN MUD MTX	RARE BRACHS CRINOIDS
700		110 ¹ SHALE, LIMEY & ARG LST, V DK GY-BLK 4 ¹ -6 ¹ BDG. POORLY EXPOSED NO GRAPTOLITES OBSERVED	RARE CRINOIDS & BRACHS TR, THAMN. TYPE CORALS
600		25 ¹ LST, DK GY, ARG MUDST.	(R-C) CRINOIDS BRACHS & THAMN. TYPE
500		92 ¹ COVERED	
400		20 ¹ LST, ARG, DK GY, THIN BD, MUDST.	RARE-CRIN, BRACHS & THAMN. CORALS
300		67 ¹ MOSTLY COVERED - TALUS CONSISTS OF LAM, LST & SH,	(R) GRAPTOLITES (TALUS)
200		13 ¹ INT BDD LIME MUDST & SH - 1 ¹ -4 ¹ BDG 73 ¹ LIMEST, SH ARG, W/INTBD LIMEY SH; BD 4 ¹ -1 ¹ , AT BASE SOME BREC FRAGS LIME MUDST W/CRIN. CALCERENITE & OTHER FOSS. SOME GRADED BEDDING	TR,GRAPTOLITES ABUND. CRIN - SOME 2-HOLE (?) (R) BRACH. (R) FACOSITIDS & THAMNOPORA TYPE STROMS
100		65 ¹ COVERED - TALUS SIMILAR TO BELOW	
0		35 ¹ LCT: DK GY, ARG, BDG - 6 ¹ -4 ¹ . SOME GRADED 45 ¹ MOSTLY COVERED INTB, LS & SH AS BELOW, SOME GRADED BEDDING 45 ¹ LTS, V ARG; SOME BREC @ BASE; SH, CALC. & CHERTY, BLK TO V DK GY, LAM MUDST TO FOSS PACKST. SOME PINCH & SWELL, BREC CLASTS - LIME MUD TO FOSS FRAGS. 80 ¹ LIMESTONE, V ARG & LIMEY SHALE; V DK GY TO BLK, THIN BEDDED TO LAM,MUDST.	(R)-BRACHS,HORN CORALS & (C-A)CRIN & FAVOSITIDS (R) CRINOIDS AT TOP:(A) BRACHS & CRIN.(R) CORALS BASAL:(R) CRIN.
17 ¹ SHALE, LIMEY, V DK GY, LAMINATED. MOSTLY TALUS	MONOGRAPTIDS SP & M SPIRALIS		
25 ¹ COVERED			
18 ¹ LST, V ARG, V DK GY, MUDSTONE	SMALL BRACHS - SCUTELLUM SP		
LIMESTONES, STROM & CORAL RICH - TOP OF RONNING GROUP			

3 of 3

STRATIGRAPHIC SECTION: 2801 - SOUTH ILLTYD RANGE, Y.T.

LOCATION: $65^{\circ} 14' 20''$ $135^{\circ} 11' - 13'$

Southern Illtyd Range - East facing slope,
and part of west dip slope

DATE:

June 24, 25, 28, 29, 1968

MEASUREMENT:

Up section with 5' Jacob Staff

AGE & INTERVALS:

DEVONIAN:

Gossage(?) = 885' (Inc)

SIL-ORD.:

Ronning = 2315' (Inc)

Total = 3200'

GEOLOGISTS:

P. Choquette

W. Wilson

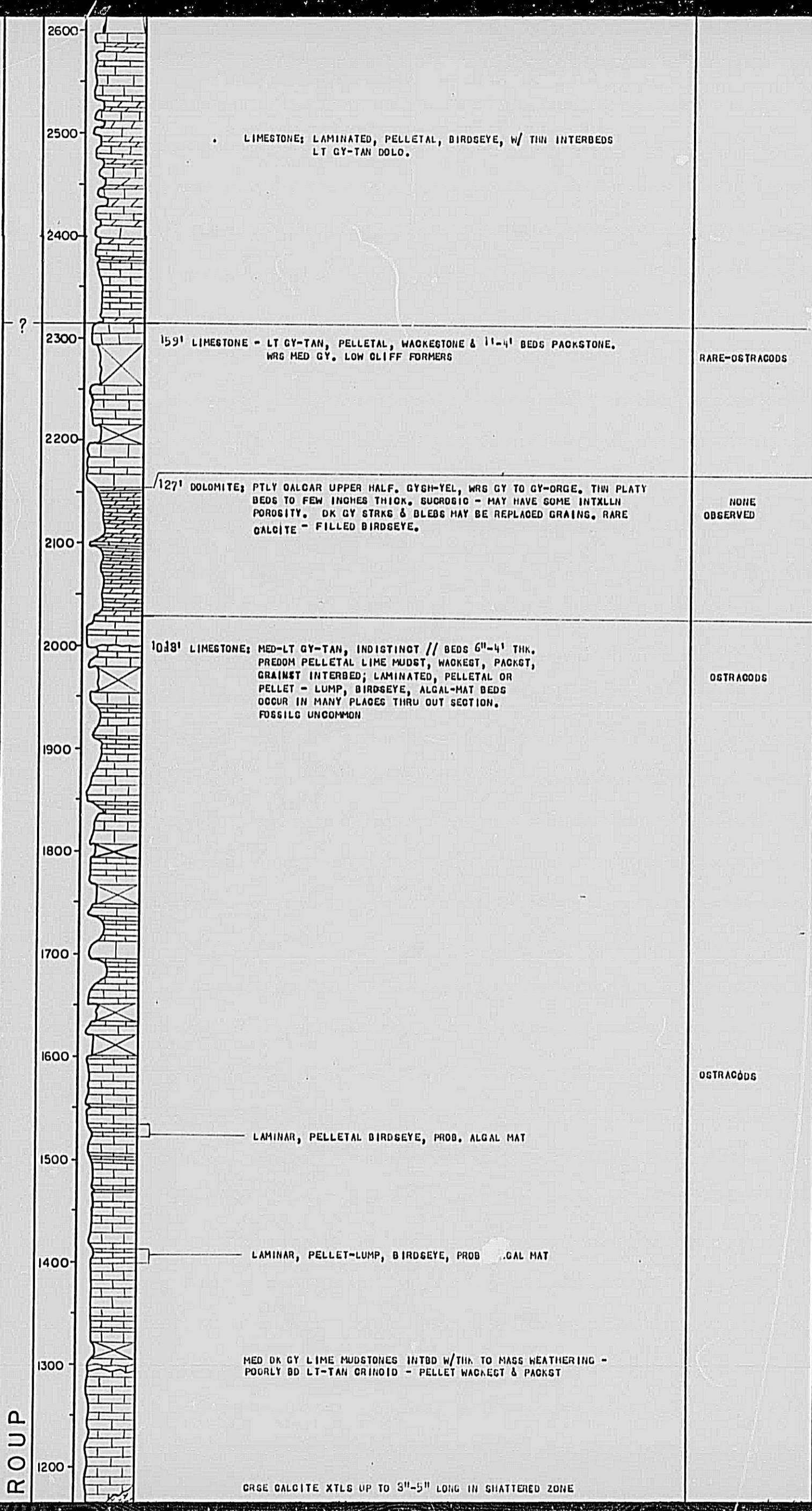
MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

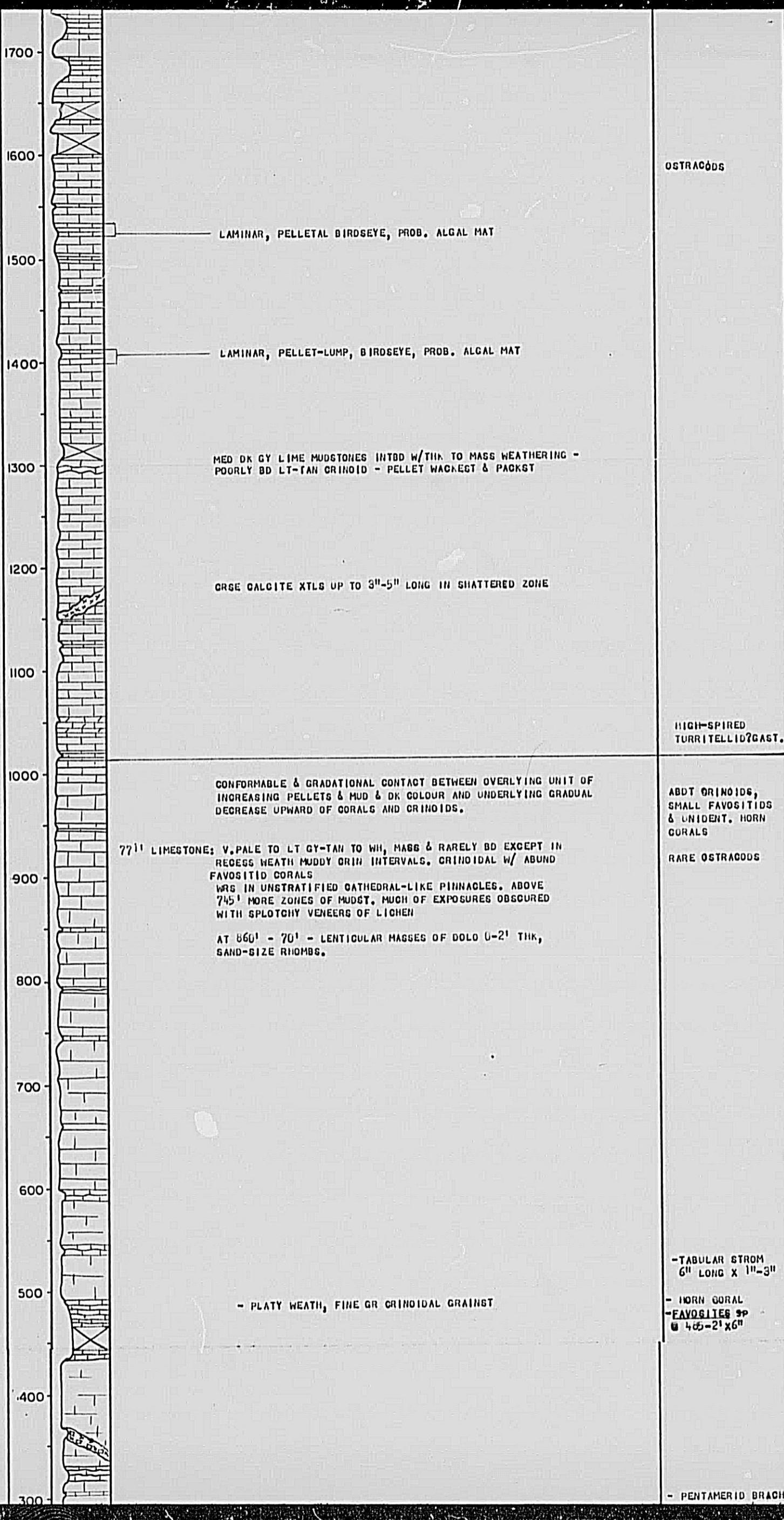
1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			73' LIMESTONE, LT GY TO TAN, WRG LT GY, MASSIVE TO THIN BEDDED, FORMS CLIFFS ON BACK (WEST) SIDE Mtn. LIME MUDSTONE W/RARE PELLETS & OA FILLED BIRDSEYE. SECTION ABOVE MISSING BY EROSION. WRG LT GY.	NONE OBSERVED
	3100		612' LIMESTONE & DOLOMITE - INTERBEDDED, MOSTLY COVERED. INTERVAL FORMS TOP OF Mtn & DIP SLOPE ON BACKSIDE. LIMESTONE GENERALLY FORMS RESISTANT LEDGES - DOLOMITE GENERALLY FORMS TALUS COVERED SLOPES W/SPORADIC SPALLED OUTCROPS. LIMESTONE: LAMINATED PELLETOID, PELLET-LUMP, COMMONLY BIRDSEYE W/ OCCAS. ALGAL-MAT LAM. NO VIS. POROSITY. COMPLETE INFILL OF GRAIN INTERSTICES, AND BIRDSEYE W/ OA. MUDSTONE W/ PELLETS PREDOMINANT. DOLOMITE: GY-TAN TO OCHRE. BRN. WRG DULL GRY-YEL TO GY-ORG. V. FINE TO MED SUCROSIC. NO VISIBLE POROSITY. BEDDED W/ LAMINAR STRUC. & "GHOSTS" OF GRAINS OR CALCITE-FILLED BIRDSEYE SUGGESTING DOLO. SECONDARY. DOLO. CONTENT CHANGES LATERALLY	STROM OR CORAL : RARE HI-SPIRED CAST. & COMMON SMALL OST.
	3000			
	2900			
	2800			
	2700			
	2600			
	2500		LIMESTONE: LAMINATED, PELLETAL, BIRDSEYE, W/ THIN INTERBEDS LT GY-TAN DOLO.	
	2400			
	?			

10F



RONNING GROUP



RONNING GROUP

	1200	ORGIC CALCITE XTLS UP TO 3"-5" LONG IN SHATTERED ZONE	
	1100		HIGH-SPIRED TURRITELLID? GAST.
	1000	CONFORMABLE & GRADATIONAL CONTACT BETWEEN OVERLYING UNIT OF INCREASING PELLETS & MUD & DK COLOUR AND UNDERLYING GRADUAL DECREASE UPWARD OF CORALS AND CRINOIDS.	
	900	77 ¹¹ LIMESTONE: V.PALE TO LT GY-TAN TO WH, MABB & RARELY BD EXCEPT IN RECESSIVE WEATH MUDDY CRIN INTERVALS. CRINOIDAL W/ ABUND FAVOSITID CORALS WRS IN UNSTRATIFIED CATHEDRAL-LIKE PINNACLES. ABOVE 745 ¹ MORE ZONES OF MUDDST. MUCH OF EXPOSURES OBSCURED WITH SPOTTY VENEERS OF LICHEN AT 860 ¹ - 70 ¹ - LENTICULAR MASSES OF DOLO 0-2 ¹ THK, SAND-SIZE RIOMBS.	ABDT ORINOID, SMALL FAVOSITIDS & UNIDENT. HORN CORALS RARE OSTRACODS
	800		
	700		
	600		
	500	- PLATY WEATH, FINE GR CRINOIDAL GRAINST	- TABULAR STROM 6" LONG X 1"-3" - HORN CORAL - FAVOSITES SP @ 465-2 ¹ X 6"
	400		
	300		- PENTAMERID BRACH
	200	26 ¹ LIMESTONE: INDISTINCT BD. MED DK GY, MUDDST TO WACKEST W/ 1-HOLE CRINOIDS 16 ¹ LIMESTONE: AS BELOW, BUT INTERRUPTED IN 500 ¹ WIDE ZONE BY CHANNEL-FILL DEPOSIT - BEDS CONVEX DOWN	- MAGLURITES (?) SP. CHAIN CORAL (?) STROPH. BRACHES GAST, CRINOIDS NONE OBSERVED
	100	123 ¹ LIMESTONE: MED LT GY-TAN, PELLETOIDAL, CHIEFLY WACKESTONE, PACKSTONE; SPAR-FILLED BIRDGEYE COMMON LOWER PORTION OF UNIT: ALGAL MAT(?) LAMINATED PELLETAL LIME. PELLET MUDSTONE FORMS RECESSIVE WEATH, NOTCHES. GRAINST. DOMINANT - 15-50 ¹ DISTINCTLY LAYERED APPEARANCE	BARREN
	0	BASE NOT EXPOSED	4 of 4

STRATIGRAPHIC SECTION: 2824, 2825 ROYAL CREEK SOUTH, Y.T.

LOCATION: $64^{\circ} 53' 30'' - 54' 134^{\circ} 57'$ Along ridge between Royal Creek
and small tributary to south

MEASUREMENT:

Upper half - up section.

Lower half - down section.

Both with 5' Jacob Staff.

GEOLOGISTS:

W. A. Hogg

P. N. McDaniel

H. E. Cook

W. J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

DATE:

July 18, 1968

AGE & INTERVALS:

DEVONIAN:

Ogilvie = 1,063' (Inc.)

Gossage = 282' (Inc.)

Total 1345'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
OGILVIE			TOP OF EXPOSURES 47' LST: MD-DK GY, 1"-6", PRED. MUDST W/ OCCASIONAL CRINOID WACKGT. OR PACKST.	(R) CRINOIDS (R) ALVEOLITES(?) SP
	1300		240' LIMESTONE: MD-LT GY, 6"-2" THICK. - THINNER TOWARDS TOP, MOSTLY CRINOIDS IN MUDST OR WACKGT W/ FEW BEDS PACKST. CRINOIDS DECREASE UPWARDS	(R-V/A) CRINOIDS (R) MASS STROMS
	1200			
	1100			
	1000		36' LGT: MD-LT GY, 6"-2" THICK. CRINOIDS IN DK MUD MATRIX. VERY ABUNDANT BLK CHERT IN UPPER 25'	(V/A) CRINOIDS (R) STROMS
	900		125' COVERED: FLOAT OF THIN BEDDED GY LST W/ CHERT, CRINOIDS, BRACH.	(C) CRINOIDS (R) BRACH.
	800			
	700		102' LIMESTONE: DK-LT GY-TAN, BEDS 1-5' THICK, MOSTLY PELLET GRAINST & PACKST. SOME BIRDSEYE @ BASE, SOME BURROWED & BORED	(R-V/A) AMPHIPORA SP (R-C) THAMnopora(?) & CUP CORALS (R) NOD. STROMS
	600		328' LIMESTONE, LT GY TO MD-DK GY, EVEN PARALLEL STRATIFIED BEDS - 6"-12", MORE FOSSILS IN DARKER-MUDDIER ZONES. PELLETS COMMON TO ABUNDANT.	AMPHIPORA - SP COMMON TO ABUNDANT & CUP RARE NEAR BASE TRACE CORALS & STROMS NEAR TOP
	500			

10F

OGILVIE	1100	36 ¹ LST; MD-LT GY, 6 ¹¹ -2 ¹ THK, CRINOIDS IN DK MUD MATRIX. VERY RBDT BLK CHT IN UPPER 25	(V/A) CRINOIDS (R) STROMS
	1000	125 ¹ COVERED: FLOAT OF THIN BEDDED GY LST W/ CHERT, CRINOIDS, BRACHS.	(C) CRINOIDS (R) BRACH.
	900	185 ¹ LIMESTONE; MD-LT GY, MOD. BEDDED, 1 ¹¹ -8 ¹ MOSTLY WACKST. TO PACKSTONE, PELLETOID & W/ CRINOIDS - 1 & 2 HOLE & + SHAPED	(C-R) CRINOIDS (R-C) CORALS: CUP & HEXACORALLIA SP (R-C) MASS STROMS NEAR TOP (R) GASTROPOD
	800		
	700	102 ¹ LIMESTONE; DK-LT GY-TAN, BEDS 1-5 ¹ THICK, MOSTLY PELLET GRAINST & PACKST. SOME BIRDSEYE @ BASE, SOME BURROWED & BORED	(R-V/A) AMPHIPORA SP (R-C) THAMNOPORA (?) & CUP CORALS (R) NOD. STROMS
	600	328 ¹ LIMESTONE, LT GY TO MD-DK GY, EVEN PARALLEL STRATIFIED BEDS - 6 ¹¹ -1 ¹¹ , MORE FOSSILS IN DARKER-MUDDIER ZONES. PELLETS COMMON TO ABDT.	AMPHIPORA - SP COMMON TO ABUNDANT & BCM RARE NEAR BASE TRACE CORALS & STROMS NEAR TOP
	500		
	400		
	300		
	?	282 ¹ DOLOMITE: LT GY - TAN, BEDS 8 ¹¹ - 2 ¹ THK, EVEN BEDDING & 1 ¹¹ STRATIFIED, RARE FOSSILS, FENESTRAL FABRIC ABUNDANT, SUPRATIDAL BRECCIA & FLAT PEBBLE ONGL COMMON IN SOME ZONES. SOME POOR TO FAIR INTXLN POROSITY.	
GOSSAGE	0		

2 of 2

STRATIGRAPHIC SECTION: 2830A - SOLO CREEK Y.T.

LOCATION: 65° 51' 134° 16'

Along Solo Creek upstream from
resistant limestone cliff

DATE:

July 17, 1968

MEASUREMENT:

Up section with 5' Jacob Staff

AGE & INTERVALS:

DEVONIAN:

Prongs Creek = 1500' (Inc)

Total = 1500'

GEOLOGISTS:

H. E. Cook

W.J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
CREEK	1500		SECTION ABOVE NOT OBSERVED	
	1400		75' - 150' LST: BRECCIA; DK-LT GY, WRG LT GY-BUFF, RESIST CLIFF. CLASTS OF PELLET GRNST, LARGE FOSS, BIOCALCARENITES IN BLK CALC MUD MATRIX. BASE IRREG & CHANNELLED. OVERALL THICKNESS VARIABLE.	(C-A) STRÖMS CORALS CRINOIDS - 2 HOLE & SHAPED
	1300		400' SHALE, LIMEY, THIN, WRG BUFF, WITH CONTORTED ZONES CONTAINING CLASTS CONSISTING OF LARGE BULBOUS STROMS, CORALS AND CRINOIDS WHICH APPEAR AS "CONCRETIONS" WITHIN THE SHALE.	(R-C) CORALS, STROMS CRINOIDS
	1200			
	1100			
	1000			
	900		300' SHALE, LIMEY, PAPER THIN, DK GY-BLK, WRG PALE YEL-DRN	NONE OBSERVED

10F

PRONGS CREEK

1200		
1100		
1000		
900		
800		
700		
600	600'	
500	370'	SHALE, LIMEY; BLK-V DK GY, THN BEDS, WRS DK GY. OCCAS BRECCIA BEDS, SOME WITH CLASTS OF LT COLOURED MUD
400	605'	BRECCIA BED = CONTAINS TAB STROMS, COENITES, CUP CORALS, 1 & 2 HOLE CRINOIDS, + SHAPED CRINOIDS & FAVOSITIDS. ALSO DK MUD CLASTS & BIRDSEYE CLASTS.
300		
200	240'	SHALE, DOLOMITIC: BLK TO V DK GY, THN 4"- 3", WRS PALE BUFF TO MD GY. @ 60' TO 190'; SERIES OF RESIST BRECCIA BEDS, 1"-2" THK, IRREGULAR BASE, GRADED UPWARDS, BRECCIAS ARE PARTLY DOLOM, CONTAIN NUMEROUS FOSS. WRS BUFF, BLK ON FRESH, DAGAL PORTIONS PAACKST. IN BLK DOLO MUD MTX, MANY FOSS DOLO. FEW BEDS ALSO SILICIFIED.
100		
0		

UNDERLYING SECTION NOT EXPOSED.

2 of 2

STRATIGRAPHIC SECTION: 2830 3 - Solo Creek Anticline (Reconn.) Y.T.

LOCATION: 65° 51' 134° 13' 30"

N.W. flank of plateau which forms the core of anticline at Solo Creek headwaters just west of Trevor Range

DATE:

July 16, 1968

MEASUREMENT:

Down section -

* Footages estimated

AGE & INTERVALS:

SILURIAN - ORDOVICIAN (?)

Ronning = 1500' ± (Inc.)

Total = 1500 ±

GEOLOGISTS:

H. E. Cook

W.J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			TOP OF PLATEAU	
est.				
0			200' ± DOLOMITE; MD-LT GY-TAN INDIST BEDS - 5'-20', CRSE-XLN, FOSS GHOSTS, INTXLN & VUGGY Ø TO 2" DIAM. SOME LGE VUGS SPAR CA FILLED. EUHEDRAL QTZ XTLS, SOME BIOMOLDIC POROSITY EXCELLENT SMALL MINERALIZED ZONE INTQTZ VEIN FILLING	CORALS FAVOSITIDS CRINOIDS STROMS (?)
100				
200			100' ± DOLOMITE; MD-DK GY-BRN WITH PALE BRN TO BUFF IRREGULAR MOTTLING PRODUCED BY ORSE XLINE DOLO INFILL IN VUGS (?) IRREG MD BDD, SOME VUGS Ø - 2" PTLY FILLED W/DOLO XTLS. HAS SOMEWHAT "ZEBRA" APPEARANCE	(R-A) CRINOIDS
300			40' ± DOLO; W/BLK CHRT BANDS; DK BRN-GY MD-THN BEDDED CHRT 1"-2" THK. SOME BRECCIATED CHRT. CUT W/WHCA & DOL VEINS	NO FOSS.
			40' ± DOLO; MD-GY-BRN; MD BDS, MD-XLN, POOR INTXLN Ø	(A-C) CRINOIDS, CORALS
400			1120' ± 1. DOLO; DK BRN-BLK-W/COMMON BLK CHERT STRGS & NODS & BREC. SOME WH DOL & CALCO BANDS CUTTING ACROSS BEDS. WRS BRN-YEL	RARE BRACHS (?) & CRINOIDS (?)
500				
600				
700				
800				
N I N G				

10F

RONNING

	IRREGULAR MOTTLING PRODUCED BY CRSE XLNE DOLO INFILL IN VUGS (?) IRREG MD BDD, SOME VUGS 1"-2" THK FILLED W/DOLO XTLS. HAS SOMEWHAT "ZEBRA" APPEARANCE	(R-A) CRINOIDS
300	40' ± DOLOM: W/BLK CHRT BANDS; DK BRN-GY MD-THN BEDDED CHT 1"-2" THK, SOME BRECCIATED CHT. CUT W/WHCA & DOL VEINS	NO FOSS.
	40' ± DOLO: MD-GY-BRN; MD BDS, MD-XLN, POOR INTXLN	(A-C) CRINOIDS, CORALS
400	1120' ± 1. DOLO: DK BRN-BLK=W/COMMON BLK CHERT STRGS & NODS & BREC. SOME WH DOL & CALC BANDS CUTTING ACROSS BEDS. WRS BRN-YEL	RARE BRACHS (?) & CRINOIDS (?)
500		
600		
700		
800		
900		
1000		
1100		
1200		
1300		
1400		
1500		
	BASE NOT EXPOSED	

2 of 2

STRATIGRAPHIC SECTION: 2800-2802 KNORR RANGE, Y.T.

LOCATION: $65^{\circ} 23' - 24'$ $134^{\circ} 10' - 30'$

On north edge of southern
KNORR RANGE near headwaters
of Noisy Creek.

MEASUREMENT:

Up section - 5' Jacob Staff
and tape for large covered
interval.

GEOLOGISTS:

W. A. Hogg
H. E. Cook

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

DATE:

June 24, 25, 1968

AGE & INTERVALS:

DEVONIAN - M & L
Prongs Creek = 1906' (Inc)

SILURIAN:

Road River = 608'
Total 2514'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			TOP OF SECTION MISSING - ERODED	
2500			34' LIMESTONE: LT GY, 1"-6" BEDS, LIME MUOSTONE, LOWER PORTION W/ MINOR INTRAFORMATIONAL SLUMPING. 6'-8' BED OF MUOSTONE W/ 1"-3" CHERT STRINGERS.	BRACH-CRINOID HASH
			40' LIMESTONE: LT GY, MOSTLY DEVOID OF BEDDING - MASSIVE, MUOSTONE - POSSIBLY A BIOHERM	RARE COLONIAL CORALS (R) CRINOID
			20' LIMESTONE: CONTORTED; MD GY TO LT GY, MUOSTONE	
2400			22'(0-50) LIMESTONE, MEGABRECCIA, IRREG THK, CLASTS OR BLOCKS (TO 5'x10') COMPOSED OF PELLET GRAINST. CLIFF FORMER	CRINOID & FAVOSITIO CORALS
			94' SHALE, V CALC, W/ THIN PLATY ARG LS STRGGS: SHALE DK GY, V. THIN BD (< 1/4")	
2300			11' LIMESTONE: DK GY, LAMINATED, ARG	SPINIFERS-ATRYPIDS RHYNCHONELLIDS
			76' SHALE: BLK, CALCAR, INMBEDDED W/ THIN. BEDS LIMEST. CGL COMPOSED LARGE INTERCLASTS / FOSS. SOME BEDS W/ IRREG TOP/BOTTOM SUGGESTING CHANNEL FILL.	CRINOID-(2 HOLE) CORALS STROMS - BRACHS
2200				
			162' SHALE: BLK, CALCAR, POORLY EXPOSED W/ FEW RESIST LST CGL BEDS OF SAND TO PEBBLE SIZE CLASTS IN MUDDY MATRIX DK GY - WRS BUFF	BRACH-CRINOID (2-HOLE)-CORAL BRACH-CRINOID (2-HOLE & STAR) CORALS
2100				
2000			27' LST: ARG, V DK GY - WACKEST W/ SOME CONTORTED LAM. AT TOP IS BRECCIA BED W/ SAND - PEBBLE SIZE CLASTS OF LST & BLK CHERT. ALSO CLASTS (6" x 12") OF DK LAM ARG. MATERIAL - PARTLY GRADED. MATRIX - BLK ARG. MUOST. SOME PEBBLES OXIDIZED. 31' LIMESTONE: MASS, DK GY, RESISTANT AT BASE CALC. PEBBLE CGL.	ROOT+SHAPED/2 HOLE CRINOID, BRACHS STROMS-RARE-COMM. CORALS-RARE ABDTIBRACHS, CRIN- (STAR+2-HOLE)CORALS
			15' COVERED	
			42' SHALE: V DK GY, THIN BDD, CLASTS COMPOSED OF CRINOID PACKST. GRAINST. SOME FOSS. PYRITIZED. AT TOP A LST CALCIARENITE.	++ STAR SHAPED CRIN. ATRYPIDS, ORTHOIDS. COENITES Sp. ALSO 2 HOLE CRIN
1900			82' COVERED - PROB. NON-RESIST SHALE	+ - SHAPED CRINOID IN FLOAT-
			RESIST BED - INACCESSIBLE	
1800			150' COVERED - PROB. LIMEY MUOSTONE - THIN BDD, AS BELOW	
1700			12' LIMESTONE, DK GY, CALCIARENITE W/ MUD MATRIX, MUD CLASTS, LOW ANGLE	CRINOID

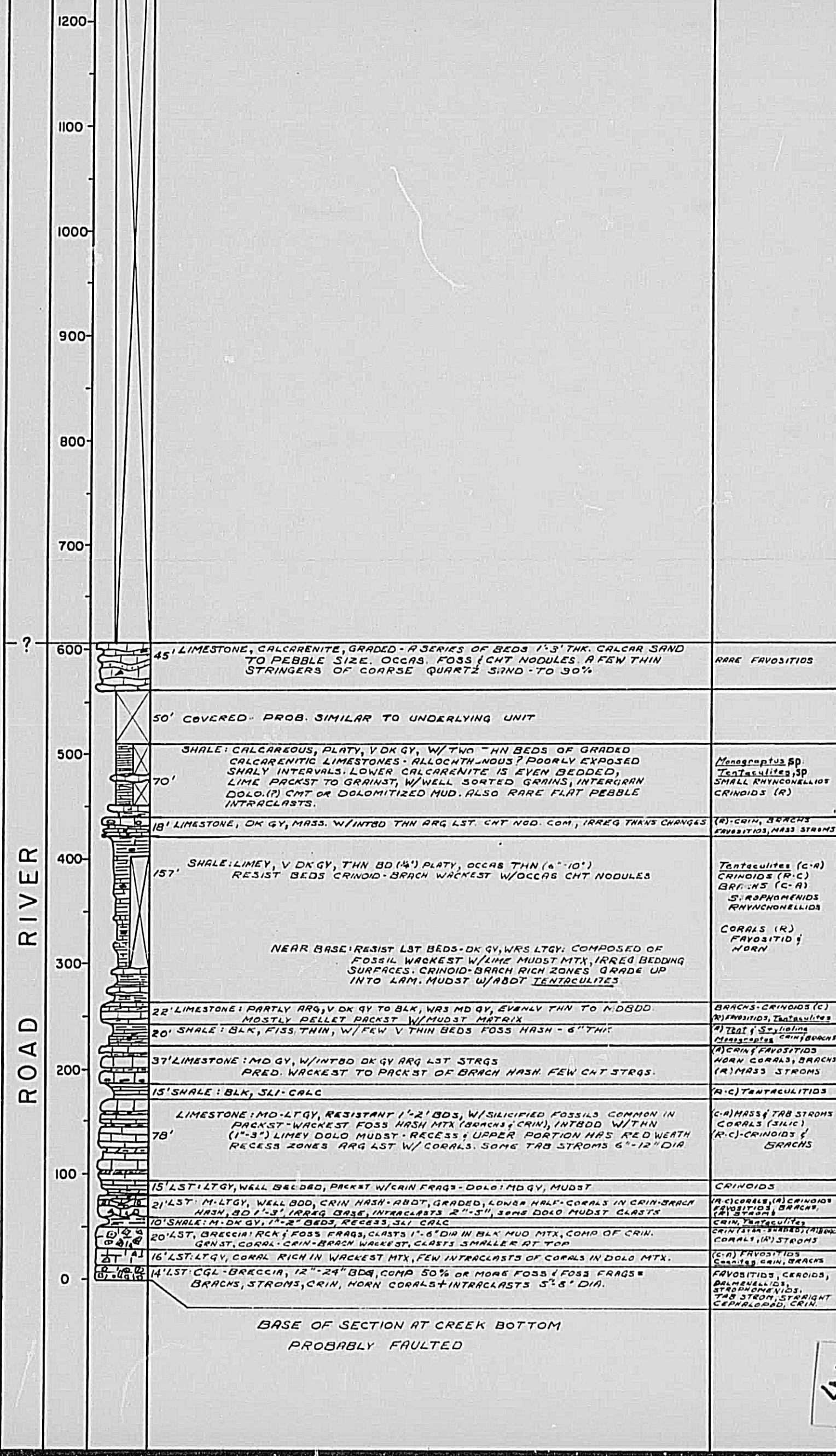
10f

PRONGS CREEK

2000		<p>LST: ARG, V DK GY - WACKEST W/SOME CONTORTED LAM. AT TOP IS BRECCIA BED W/ SAND-PEBBLE SIZE CLASTS OF LST & BLK CHERT. ALSO CLASTS (6"X12") OF DK LAM ARG. MATERIAL - PARTLY GRADED. MATRIX - BLK ARG. MUDST. SOME PEBBLES OXIDIZED.</p> <p>31' LIMESTONE MASS, DK GY, RESISTANT AT BASE CALC. PEBBLE CGL.</p>	<p>ABDT-SHAPED, 2 HOLE CRINOIDS, BRACHS STROMS - RARE - COMM. CORALS - RARE</p> <p>ABDT: BRACHS, CRIN- (STAR + 2 HOLE) CORALS</p>
1900		<p>15' COVERED</p> <p>42' SHALE: V DK GY, THIN BDD, CLASTS COMPOSED OF CRINOID PACKST/ GRAINST. SOME FOSS PYRITIZED. AT TOP A LST CALCARENITE</p>	<p>+ STAR SHAPED CRIN. ATRYPTIDS + ORTHOIDS. Ctenites sp. ALSO 2 HOLE CRIN</p>
1800		<p>82' COVERED - PROB. NON-RESIST SHALE</p> <p>RESIST BED - INACCESSIBLE</p> <p>150' COVERED - PROB LIMEY MUDSTONE - THIN BDD, AS BELOW</p>	<p>+ SHAPED CRINOID IN FLOAT -</p>
1700		<p>12' LIMESTONE, DK GY, CALCARENITE W/MUD MATRIX, MUD CLASTS, LOW ANGLE X-BED. 9 TOP FEW INCHES</p>	<p>(C)-CRINOIDS Tentaculites - ABUND.</p>
1600		<p>280' PRED COVERED SEQUENCE: LIMEY SHALE W/ OCCAS. RESIST LST BEDS, 2"-3" THK. BEDS OFTEN LAMINATED LST. SHALE DK GY-BLK 1/2"-1" THK - BUFF WEATHERING. LAM COMMON WITHIN</p>	
1500		<p>CGL: CHGRST; LST PEBBLE W/ FOSS HASH</p>	
1400		<p>20' SHALE - CALCAREOUS W/ 6' BED LIME & CHERT PEBBLE CGL BASE OF "280"</p>	
1300		<p>788' COVERED - SMALL EAST-WEST VALLEY - TAPE</p> <p>FLOAT IS V DK GY, THIN, PLATY, LIMEY SHALE</p>	
1200			
1100			
1000			
900			
800			
700			

2 of

ROAD RIVER



STRATIGRAPHIC SECTION: 2803, 2804, 2808, 2812
BATTLESHIP CREEK and TRIBUTARY Y.T.

LOCATION: $65^{\circ} 27' 30''$ $133^{\circ} 35' - 36'$ (Prongs Creek)

$65^{\circ} 24' 30''$ $133^{\circ} 36'$ (Cranswick)

$65^{\circ} 25' 30'' - 26'$ $133^{\circ} 37' 30''$ (Gossage)

On N.W. side of Battleship Creek and small tributary to south.

DATE:

July 3, 4, 6, 7, 1968

AGE & INTERVALS:

DEVONIAN - L. and M.

Hume = 86' (Inc)

"Battleship" = 1470'

Prongs Creek = 408'

Cranswick = 438'

Gossage = 973' (Inc)

Total = 3375'

MEASUREMENT:

Up section - 5' Jacob Staff

GEOLOGISTS:

W. A. Hogg

H. E. Cook

W. Wilson

P. W. Choquette

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
? HUME ?			TOP OF SECTION AT 3365': CLIFF-FORMING UNIT AT TOP OF HILL MAYBE HUME FM. 86' LIMESTONE, V DK GY, BLOODY, IRREG BEDDED, DISTINCTIVE, 3"-12", WRS MD GY TO BUFF. RICK FAUNA IN LOWER 16' - DOMINANTLY CORALS & BRACHS. MTX IS WACKETONE	COENITES SP. HELIOPHYLLUM SP. SPINATRYPA(?) SP. ATRYPA ? SP. CYRTOSPIRIFERI SP. FAVOCITIDS - CRIN, GASTROPODS
	3300		1410 COVERED - FLOAT OF BRN SH & BLOODY LST	
	3200			
	3100		290' SHALE; BRN, CALG, SOFT, INDISTINCTLY BEDDED WRS GYSH - YELSH BRN, PLATY TO FISSILE	BARREN
	3000			
	2900			
	2800		4191 SHALE; GLI TO MODERATELY CALCAREOUS MD GY, SOFT, SLOPE FORMER, BEDS 1"-3" THK, MOSTLY INDISTINCT; WEATHERS GY, PLATY TO FISSILE, SOME PARTLY COVERED INTERVALS CONTACT W/ ABOVE UNIT BASED ON ESTIMATED COLOUR CHANGE	NONE OBSERVED
	2700			
	2600			
IP	2500			

10F

"BATTLESHIP"	2900	419 ¹ SHALE; GLI TO MODERATELY CALCAREOUS MD GY, SOFT, SLOPE FORMER, BEDS 2"-3" THK, MOSTLY INDISTINCT; WEATHERS GY, PLATY TO FISSILE, SOME PARTLY COVERED INTERVALS CONTACT W/ ABOVE UNIT BASED ON ESTIMATED COLOUR CHANGE	NONE OBSERVED
	2800		
	2700		
	2600		
	2500		
	2400	63 ¹ SHALE; V CALC, MD-DK GY, EVEN THIN BEDDED 1"-3/4", BRITTLE, WEATHERS TO THIN FLAGS, FORMS LOW CLIFFS	ABUNDANT <u>TENTACULITES</u> SP
	2300	22 ¹ SHALE; SLI CALCAR, DK GY, WRS GY, RECESSIVE 4 ¹ SHALE; V CALCAR, MD GY, EVEN THIN LAM, WEATHERS GYSH-YEL & PLATY 38 ¹ SHALE; MOD CALC, V DK GY, SLOPE FORMER	V ABUNDANT <u>TENTACULITES</u> SP
	2200	285 ¹ SHALE; MD GY, MOD CALC, UPPER PART, NON-CALC LOWER PART, THIN FISSILE, WEATHERS DULL GY TO GYSH-YEL SLOPE FORMER - MOSTLY COVERED	(R-O) CRINOIDS (1-H) (R) BRAUCH & <u>TENTACULITES</u> SP
	2100		RARE <u>TENTACULITES</u> SP
	2000	7 ¹ SHALE; MOD CALC, SOFT, WRS DULL GY TO GYSH-ORG & ELLIPTICAL MASSES 38 ¹ COVERED - DRAB GY SHALE FLOAT	BARREN
	1900	5 ¹ LIMESTONE; SILIO (?), OOL (?), DK GY, THIN LAM, WRS TO BLOCKS - 3 ¹ & BRITTLE FLAGS & DIGITATE GY-YELSH-ORG & OLIVE DRAB	RARE BRACH & <u>TENTACULITES</u> SP
	1800	138 ¹ LIMESTONE; ARG, DK GY, LAM, MUDST, WRS TO FLAGGY TALUS OF DULL YELSH-GY	NONE OBSERVED
	1700	20 ¹ LMST; DK GY, V F GR, VAGUE LAM, LOW CLIFF, WRS LT YELSH-GY	RARE ATRYDIDS (?)
	1600	290 ¹ SHALE; V DK GY, V CALCAR, FISSILE, RECESSIVE. POROSITY V DK GY ARG LGT LEDGES 6"-2" W/ PYR NODULES. <u>TENTACULITES</u> V ABUND LOWER 150 ¹	(R-H) 1-5 MM <u>STYLOLINA</u> SP.
	1500	12 ¹ LST; DK GY, REGIST 4" BDD, MUDST-WACKST, WRS DK GYSH-YEL RIM OF WATERFALL 18 ¹ INTBDD: SH, V CALC, BLK, FISS; LST ARG, 2"-4" FALLS IN 6 ¹ LGT; DK GY, MUDST, UNDUL BDD, REGIST LEDGE GYSH-YEL, LOWER LIP WATERFALL 29 ¹ COVERED	VERY ABUND. <u>TENTACULITES</u> SP RARE ATRYPIDS (?) NONE OBSERVED <u>STYLOLINA</u> (?) SP NONE OBSERVED

2 of

PRONGS CREEK	20'	LMST: DK GY, V F GR, VAGUE LAM, LOW CLIFF, WRG LT YELSH-GY	RARE ATRYPTIDS (?)
	1800'	290' SHALE: V DK GY, V CALCAR, FISSILE, REDESSIVE. SPORADIC V DK GY ARG LST LEDGES 6"-2" W/ PYR NODULES. <u>TENTACULITES</u> V ABDT LOWER 150'	(R-A) 1-5 MM <u>STYLOLINA</u> SP.
	1700'		VERY ABUND. <u>TENTACULITES</u> SP
	1600'		RARE ATRYPTIDS (?)
	1500'	12' LST: DK GY, REGIST 4' BDG, MUDST-WACKST, WRG DK GY-GH-YEL RIM OF WATERFALL 18' INTBDD: SH, V CALO, BLK, FISS; LST ARG, 2"-3": BATTLESHIP CK. 6' LST: DK GY, MUDST, UNDUL BDG, REGIST LEDGE GYH-YEL, LOWER LIP WATERFALL 29' COVERED	NONE OBSERVED <u>TENTACULITES</u> SP <u>STYLOLINA</u> (?) SP NONE OBSERVED
	1400'	17' LST: ARG(?), V DK GY, EVEN THIN LAM (1/4") LM MUDST, PLATY WEATH 36' LST: VARG, V DK GY, V THN BDG, MUDST; WRG 1/6"-2" PLATES YEL-GY-BRN	NONE OBSERVED NONE OBSERVED
	1300'	128' LIMESTONE & SHALE INTERBEDDED: THN EVEN BEDS LIMESTONE, PARTLY ARG, V DK GY, FLAGGY TO BLOCKY 2"-12" SHALE: BLK, CALO, FISSILE - 1"-18"	<u>TENTACULITES</u> SP RARE GASTRO.
	1200'		RARE <u>TENTACULITES</u> SP
	1100'	113' LIMESTONE: DK GY-BRN, LIME MUDST & WACKESTONE, WAVY, NODULAR & RUBBLY WEATHERING. MORE REGIST. THAN UNIT ABOVE. SOME FOSS. SILICIFIED. CHERT NODULES, LENSES & BEDS, THN-MD BD.	RARE CRINOIDS 2-HOLE 1-HOLE & CROSS- SHAPED (R) ATRYPTIDS (?) (R) GASTROP. (R-O) MASS STROMS. (R) FAVERSIDS (R) ATRYPTIDS (R-O) CRIN. 1,2,+ (R) MASS STROMS (R) HORN CORALS
	1000'	48' LIMESTONE: V DK GY-BLK, MUDST W/SILIC. MASS STROMS & CORALS INDISTINCT BDG - 2' - WRG MASS, REGIST, LT GY 28' LIMESTONE: DK BRN-BLK, WRG DK GY, LIME MUDST, BED THN (6"-11) MOD. REGIST. V SLI DOLO. 21' LIMESTONE: DK BRN-BLK, MUDST W/SOME ALGAL MAT & AMPHIPORA - THN (6") WELL BD, SLI REC. SOME POROSITY IN LEACHED LAM. ZONE. RARE PELLETS 20' LMST: MD BRN-BLK, WRG DK GY, LIME MUDST & BASE GRADES UP TO AMPH. WACKST, - FEW PELLETS NEAR TOP, WELL BD - 6"-11	(C) ATRYPTIDS, MASSE BULBOUS STROMS, AMPH. BRACHS CORALS ABNT AMPHIPORA SP. (R) TINY BRACHS AMHIPORA SP.
	900'	15' GAP BETWEEN TOP OF 2803 & BASE OF 2804 - ESTIMATED 29' LIMESTONE: MD BRN-GY TO BLK; WRG DK GY; INT BDG LIME MUDST, & AMHIPORA WKG. SOME LEACHED FOSS = MOLDIC POROSITY	(R-A) AMPHIPORA SP (R) BRANCHING CORALS
	800'	38' LIMEST & DOLO: MD-DK GY, LAM MUDST, AMPHIPORA BDG & STROM BDG, 6"-11, REGIST, SOME FOSS, REPL BY DOLO IN BLK MUDST MTX	(C) AMPHIPORA, STROMS BRANCHING CORALS (R) DOLO.
	700'	80' DOLOMITE: LT-MD GY, WRG DK GY-BUFF, ARG, SILTY, CALO, LAMINATED SP CALO PATCHES, VUG & MOLD FILLINGS	RARE DOLOMITE UPPER PORTION
	600'	85' DOLOMITE: LT-MD GY, WRG LT TO DK GY, SILTY, LAM, MUDST, RARE PELLET BEDS NEAR BASE, FOSS. BIRDSEYE, RECESS BDG 2"-11 THK, TOP 25' SLI LIMY	NONE OBSERVED
	500'	220' DOLO & SHALE: DOL - LT-DK GY TO BRN. WRG GYH-YEL-ORG (UPPER UNIT OF MARKER HORIZON) V F XLN MUDST W/SOME LAM, SL ARG, SL CALO, EVENLY INTBDD W/SH, DOLO, DK GY, SL CALO, BDG 6"-2". UPPER PART MORE SHALY & THICKER	NONE OBSERVED
	400'	WEATHERING BUFF-PALE YEL-BRN - MARKER HORIZON	
	300'	75' DOLOMITE: LT-MD BRN TO LT GY, WRG BRN-GY OR YEL, WELL BEDDED - 2"-11, INTBDD ALGAL MAT BIRDSEYE & ALGAL LAM MUD, SOME MUDST & ARG DOL MUD W/ VAGUE LAM. SOME SILT. BASE OF DISTINCTIVE PALE YEL-ORG WEATH. ZONE IN COGGAGE	
	200'	10' DOL: LT BRN, WRG LT GY, V F XLN, INTBDD ALGAL MAT & ALGAL LAM MUD, 2"-6" BED	
	100'	APPROX 180' CUTOUT BY FAULTING:	
	0'	781. DOLOMITE: LT-DK GY, TO BRN GY, WRG DK GY, INTBDD MUDST, ALGAL MAT,	RARE BRACHS

3 of

CRANSWICK

GOSSAGE

1300		RARE TENTACULITES SP.
1200	113 ¹ LIMESTONE: DK GY-BRN, LIME MUDST & WACKESTONE, WAVY, NODULAR & RUBBLY WEATHERING. MORE RESIST. THAN UNIT ABOVE. SOME FOSS. SILICIFIED. CHERT NODULES, LENSES & BEDS, THIN-MD BD.	RARE CRINOIDS 2-HOLE 1-HOLE & CROSS-SHAPED (R) ATRYPIDS (?) (R) GASTROP. (R-C) MASS STROMS. (R) FAUVITIDS (R) ATRYPIDS (R-C) CRIN. 1, 2, + (R) MASS STROMS (R) HORN CORALS
1100	48 ¹ LIMESTONE: V DK GY-BLK, MUDST W/SILIC. MASS STROMS & CORALS INDISTINCT BDG - 2 ¹ - WRS MASS, RESIST, LT GY 28 ¹ LIMESTONE: DK BRN-BLK, WRS DK GY, LIME MUDST, BED THIN (6 ¹ -11) MOD. RESIST. V SLI DOLO. 21 ¹ LIMESTONE: DK BRN-BLK, MUDST W/SOME ALGAL MAT & AMPHIPORA - THIN (6 ¹) WELL BD, SLI REC. SOME POROSITY IN LEACHED LAM. ZONE, RARE PELLETS 20 ¹ LMST: MD BRN-BLK, WRS DK GY, LIME MUDST @ BASE GRADES UP TO AMPH. WACKEST. - FEW PELLETS NEAR TOP, WELL BD - 6 ¹ -11	ATRYPIDS, MASS BULBOUS STROMS, AMPH. BRACHES CORALS ABNT AMPHIPORA SP. (R) TINY BRACHES AMHIPORA SP
1000	15 ¹ GAP BETWEEN TOP OF 2803 & BASE OF 2804 - ESTIMATED 29 ¹ LIMESTONE: MD BRGH-GY TO BLK; WRS DK GY; INT BDG LIME MUDST. & AMPHIPORA WKST. SOME LEACHED FOSS = MOLDIC POROSITY 38 ¹ LIMEST & DOLO: MD-DK GY, LAM MUDST, AMPHIPORA BDG & STROM BDG, 6 ¹ -11, RESIST, SOME FOSS. REPL BY DOL IN BLK MUDST MTX	(R-A) AMPHIPORA SP (R) BRANCHING CORALS (O) AMPHIPORA, STROMS BRANCHING CORALS (R) BRACH.
900	80 ¹ DOLOMITE: LT-MD GY, WRS DK GY-BUFF, ARG, SILTY, CALC, LAMINATED SP CALC PATCHES, VUG & MOLD FILLINGS	RARE OSTRACODS UPPER PORTION
800	85 ¹ DOLOMITE: LT-MD GY, WRS LT TO DK GY, SILTY, LAM, MUDST, RARE PELLET BEDS NEAR BASE, FOSS. BIRDSEYE, RECESS BDG 2 ¹ - 11 THK, TOP 25 ¹ SLI LIMY	NONE OBSERVED
700	WEATHERS BUFF-PALE YEL-BRN - MARKER HORIZON	
600	75 ¹ DOLOMITE: LT-MD BRN TO LT GY, WRS BRN-GY OR YEL, WELL BEDDED - 2 ¹ -11, INTBD ALGAL MAT BIRDSEYE & ALGAL LAM MUD, SOME MUDST & ARG DOL MUD W/ VACUUM LAM. SOME SILT. BASE OF DISTINCTIVE PALE YEL-ORG WEATH. ZONE IN GOSSAGE	
500	10 ¹ DOL: LT BRN, WRS LT GY, V F XLN, INTBD ALGAL MAT & ALGAL LAM MUD, 2 ¹ -6 ¹ BED APPROX 180 ¹ CUTOUT BY FAULTING:	
300	78 ¹ DOLOMITE: LT-DK GY, TO BRN GY, WRS DK GY, INTBD MUDST, ALGAL MAT, LAM MUDST; RARE BRECCIA; BDG 6 ¹ -2 ¹	RARE BRACHES
200	70 ¹ DOLOMITE: MD-DK BRN, WRS BRGH-GY, INTBD ALGAL MAT, LAM MUDST, INTRA-FM CGL, BEDS 1 ¹ -2 ¹ MASS. RESIST. GOOD BIRDSEYE	RARE OSTRACODS - MOELLERITIA ? SP.
100	50 ¹ DOL: SLI TO MUD SILTY, LT BRN TO BLK, WRS BRN-GY TO DK GY, INTBD ALGAL MAT BIRDSEYE & MUDST, BDG 1 ¹ -2 ¹ THK, MOD. RESIST.	NONE OBSERVED
0	35 ¹ DOL: LT-MD BRN, WRS LT GY, V F XLN, INTBD MUDST, MICRO-BIRDSEYE, MUDST; RARE PELLETS, DOL BRECC. RECESS, THIN BD. 2 ¹ -6 ¹ , UPPER UNIT SLI SILTY. 26 ¹ DOL: LT-MD BRN; WRS LT GY BRN. F XLN, MUD & ALGAL MAT W/BIRDSEYE. BASAL 5 ¹ - SILTY MUD 53 ¹ DOL: GY-BRN TO RDGH-BRN, WRS YEL-BRN V F-F XLN, SILTY, RESIST BDG 6 ¹ -11, RARE LAM UPPER UNIT - COMMON LOWER 15 ¹ DOL: LT BRN-GY, WRS LT GY-TAN, V F XLN MUDST W/LAM INTBD ALGAL MAT, BIRDSEYE FILLED W/SP OA, BDG 2 ¹ -6 ¹ , SL SILTY	

BASE NOT EXPOSED

4 of 4

STRATIGRAPHIC SECTION: 2810 - BIOHERM CREEK, Y.T.

LOCATION: $65^{\circ} 29'$ $133^{\circ} 23'$ Small creek flowing north off Canyon Range
just east of Snake River

DATE:

July 12, 1968

MEASUREMENT:

Up section 5' Jacob Staff

AGE & INTERVALS:

DEVONIAN:
Prongs Creek = 406' (Inc)
Cranswick = 340'
Total = 746'

GEOLOGISTS:

H. E. Cook

W. A. Hogg

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
PRONGS CREEK ?			42' + LIMESTONE, V ARG TO LIMEY SHALE, V DK GY, THIN BEDDED, WRG BUFF, SEQUENCE ABOVE LIMIER THAN TO WEST	
	700	L	78' LIMESTONE, GY, MASS, WACKESTONE	ABUNDANT CRINOIDS & BRACHS, LARGE FAVOSITIDS @ TOP
	600	H	42' LIMESTONE: DK GY, MUDST-WACKEST. MED. BEDDED	ABUND. BRACHS & CRINOIDS (L-HOLE)
	500	L	144' LIMESTONE, MOSTLY COVERED, MD-DK GY, WRG LT GY, MOD. THK, IRREGULAR BEDDING.	VERY ABUNDANT CRINOIDS, ATRYPID BRACHS; CORALS THRU OUT
	400	L	100' COVERED W/ FEW RESIST LST LEDGES AS ABOVE	GAST. & STRAIGHT CEPHALOPODS
	300	L	112' LIMESTONE, LT GY, MASS, BIOHERMAL	ABUNDANT: MASS STROMS, CORALS, CRINOIDS, BRACHS
	200	L	30' LST: GY, SIMILAR TO BELOW - PARTLY COVERED	
		L	23' LST: MD GY, IRREG BGS - 11-31, MUDST - WACKEST	COMMON 2-HOLE CRINOIDS
		L	17' LST: MD GY, 6"-12" BGS, WACKEST. BULBOUS STROMS @ BASE	ABUND. CORALS
		L	30' LST: MD GY, LIME MUDST, THIN BOD, 3"-6", BIRDSEYE W/RARE AMPHIPORA IN THIN STROMS IN MIDDLE, LAMINATED	(R) AMPHIPORA SP.
CRANSWICK	100	L	25' BRECCIA, LST: QRG WH OA XTLS - BGD PLANE FAULT (?) REMAINDER SIMILAR TO ABOVE	
	23'	L	23' LST: MD BRN - GY, REGIST MUDSTONE, 6"-2", WAVY LAM.	(R) CRINOIDS & AMPHIPORA SP.
	35'	L	35' COVERED WITH TALUS - BIRDSEYE DOLO AT BASE	
	20'	L	20' LST: LT BRN-GY, WRG LT GY-TAN, LIME MUDST, WAVY LAMINATIONS, SL DOLO LOWER UNIT THIN LAM - 2"-6"	NONE OBSERVED
	0	L	25' MOSTLY COVERED - DK GY MUDST - PROB. NEAR CRANSWICK-GOSSEAGE CONTACT	DOLOMITE - GOSSEAGE

STRATIGRAPHIC SECTION: 2816, 2817 - TERMINAL CREEK, Y.T.

LOCATION: $65^{\circ}30'30''$ $133^{\circ}17'$

Along small north flowing creek off front of
Canyon Range east of Snake River

DATE:

June 29, 1968

MEASUREMENT:

Upper part with 5' Jacob Staff

Lower part with 50' tape

AGE & INTERVALS:

DEVONIAN:

Hare Indian ? = 104' (Inc)

Hume ? = 432'

Prongs Creek = 689' (Inc)

Total = 1225'

GEOLOGISTS:

W. A. Hogg

H. E. Cook

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

HARE INDIAN ?	FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
		1200		104' LIMESTONE; DK GY, MUDST, THIN BDD, WELL LAM. MOSTLY BARREN, LAM & EVEN BEDDING IN CONTRAST TO UNDERLYING SECTION. SOME PELLETS	RARE CORALS CRINOIDS (C)
		1100		35' LGT: MD-LT BRN-GY, THIN-TIK BED, WACKEST-MUD & FOSS HASH MTX W/V LGE CORAL HDS- GROWTH POSITION.	(A) BRACHIS (C) AMPHIPORA SP. (A) CACTROPODS
		1000		50' COVERED - PROB SIMILAR TO UNDERLYING	
		900		30' LG: MD-LT BRN-GY & BUFF MOTTLED, THIN IRREG BD.	(A) CORALS, DENDROID BRACHIS
		800		35' COVERED: ABUNDANT FOSSILS IN FLOAT	ADIGONOPHYLLUM RECTUM, BILLINGSASTREA SP, COENITES SP, THAMNOPORA SP, BRACHIS, CRIN, HEXAGONARIA SP
		700		25' UPPER THIN BDD: LGT: DK BRN-GY TO LT GY-BRN, MUDST & WACKEST, THIN IRREG BDD. LOWER TIK: MD BRN-GY, FOSS COMMON IN DIOLASTIC MTX.	(A) MASS STROMS, TETRA CORALS & BRACHIS, (R) CRIN.
		600		55' POORLY EXPOSED - RECESSIVE LGT; ARG, MD BRN-GY, WRS YEL-ORG, MUDSTONE, $\frac{1}{2}$ -2", PLATY	(R-C) CRINOIDS
		500		17' LGT, MD BRN-GY, WRS GY-BUFF, W/YEL-ORG MOTTLING, IRREG BD.	(A) TAB E BULBOS STROMS, BRACHIS, CORALS, CRINOIDS
		400		83' COVERED - FLOAT - SHALY LGT, BUFF WEATH.	BRACHIS HEXAGONARIA SP.
HUME ?		1000		26' LGT: DK BRN, WRS MD BRN-GY, THIN-MD BED, MTX PRED FOSS CALCAR. BDM DK & LESS FOSS UPWARDS, CRINOID WACKEST @ TOP	(R-C) CRIN, BRACHIS CORALS
		900		17' COVERED	
		800		55' LIMESTONE: DK CHOC BRN, WRS MD BRN-GY TO BUFF W/YEL PATCHES THIN-TIK BDD (6"-5") ABUND. FOSS - DECREASE UPWARDS, IN MT, OF ABDS. FOSS HASH - WACKEST TO PACKST.	(C-A) ATRYPTIDS, SPINATRYPTIDS, COENITES SP E. LIMITARIS, CRINOIDS (R)
		700		689' COVERED - TAPED INTERVAL THICKNESS SEEMS TOO THIN - A POSSIBILITY OF FAULTING	
		600			
		500		46b' FROM BASE: SMALL OUTCROP ALONG STREAM: LGT, ARG, BLK, MUDST W/ FOSS STYLIOLINA	
		400			

10F

HARE INDIAN	1200	104' LIMESTONE; DK CY, MUDST, THIN BDD, WELL LAM. MOSTLY BARREN, LAM & EVEN BEDDING IN CONTRAST TO UNDERLYING SECTION. SOME PELLETS	RARE CORALS CRINOIDS (C)
	1100	35' LST; MD-LT BRN-GY, THIN-THK BED, WACKEST-MUD & FOSS HASH MTX W/V LGE CORAL NODS. GROWTH POSITION.	(A) BRACHIS (C) AMPHIPORA SP. (A) CANGROPODS
HUME ?	50'	COVERED - PROB SIMILAR TO UNDERLYING	
	1000	30' LG; MD-LT BRN-GY & BUFF MOTTLED, THIN IRREG BD.	(A) CORALS, DENDROID BRACHIS
	35'	COVERED: ABUNDANT FOSSILS IN FLOAT	(A) DIPLOPHYLLOM. RECTUM, BILLINGSASTREA SP, COENITES SP, THAMNOPORA SP, BRACHIS, CRIN, HEXAGONARA SP
	25'	UPPER THIN BDD; LST; DK BY-BRN TO LT GY-BRN, MUDST & WACKEST, THIN IRREG BDD. LOWER THK; MD BRN-GY, FOSS COMMON IN BIOLASTIC MTX.	(A) MASS STROMS, TETRA CORALS & BRACHIS, (R) CRIN.
	55'	Poorly exposed - RECESSIVE LST; ARC, MD BRN-GY, WRS YEL-ORG, MUDSTONE, 1-2", PLATY	(R-C) CRINOIDS
	17'	LST, MD BRN-GY, WRS GY-BUFF, W/YEL-ORG MOTTLING, IRREG BD.	(A) TAB & BULBOS STROMS, BRACHIS, CORALS, CRINOIDS
	83'	COVERED - FLOAT - SHALY LST, BUFF WEATH.	BRACHIS HEXAGONARA SP.
	26'	LST; DK BRN, WRS BUFF-GY, THIN-MD BED, MTX PRED FOSS CALCAR. BGM DK & LESS FOSS UPWARDS. CRINOID WACKEST @ TOP	(R-C) CRIN, BRACHIS CORALS
	17'	COVERED	
	55'	LIMESTONE; DK CHOC BRN, WRS MD BRN-GY TO BUFF W/YEL PATCHES THIN-THK BDD (6"-5") ABUND. FOSS - DECREASE UPWARDS, IN MTX OF ABDT. FOSS HASH - WACKEST TO PACKST.	(C-A) ATTRYPIDS, SPINATTRYPIDS, COENITES SP F. LIMITARIS, CRINOIDS (R)
PRONGS CREEK ?	669'	COVERED - TAPED INTERVAL THICKNESS SEEMS TOO THIN - A POSSIBILITY OF FAULTING	
	466'	FROM BASE; SMALL OUTCROP ALONG STREAM: LST, ARC, BLK, MUDST W/ FOSS STYLIOLINA	
	0	LST; DK GY, WRS LT GY, RESIST CLIFF, BLK CHT NODS.	

STRATIGRAPHIC SECTION: 2820 PHYLLIS CREEK, Y.T.

LOCATION: $65^{\circ} 30' 30'$ $133^{\circ} 11'$ Small north flowing creek along front
of Canyon Range

DATE:

July 14, 1968

MEASUREMENT:

Up section with 5' Jacob Staff and 50' tape

AGE & INTERVALS:

DEVONIAN:

Prongs Creek = 1098' (Inc)

Cranswick = 280'

Total = 1378'

GEOLOGISTS:

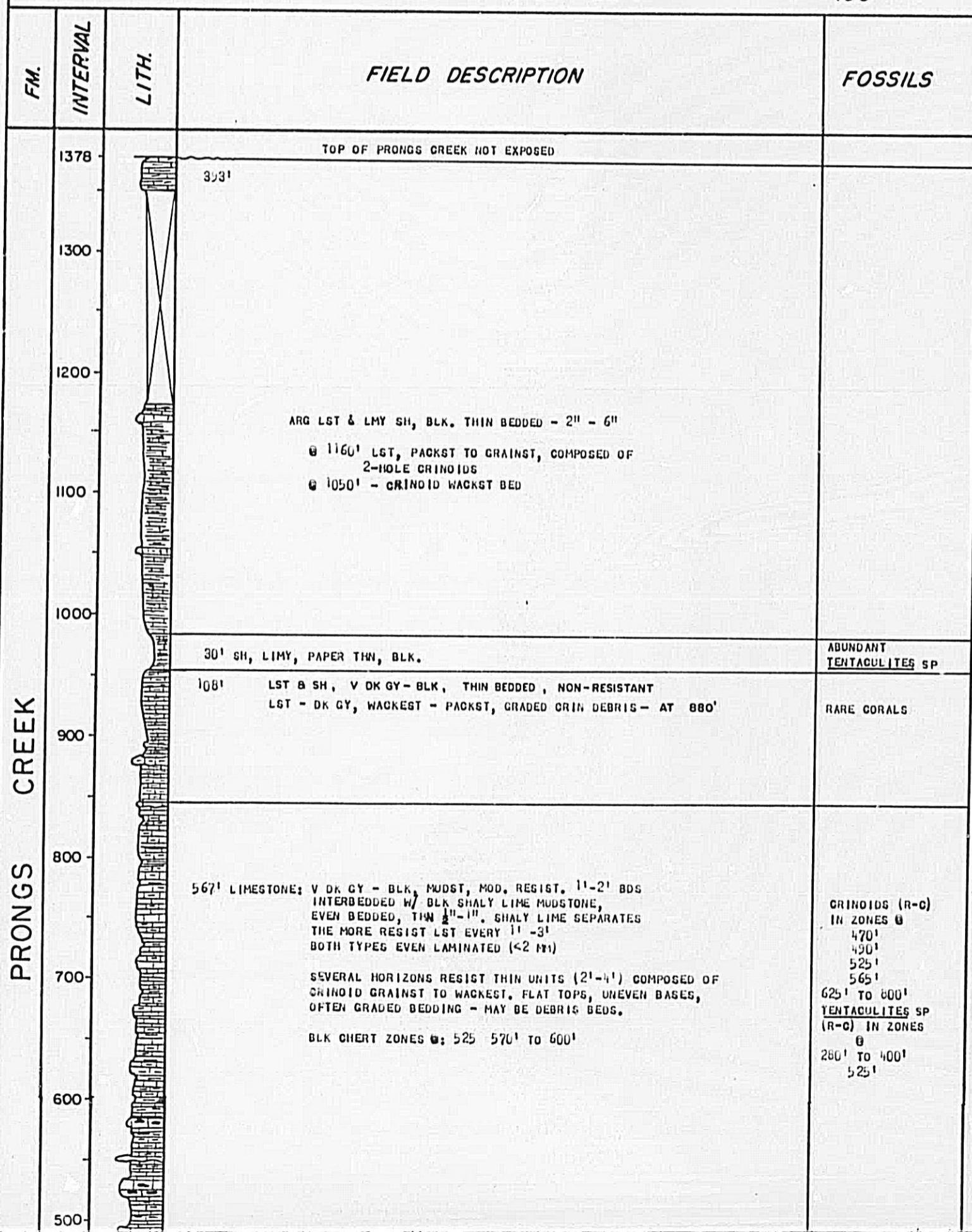
H.E. Cook

W.J. Meyers

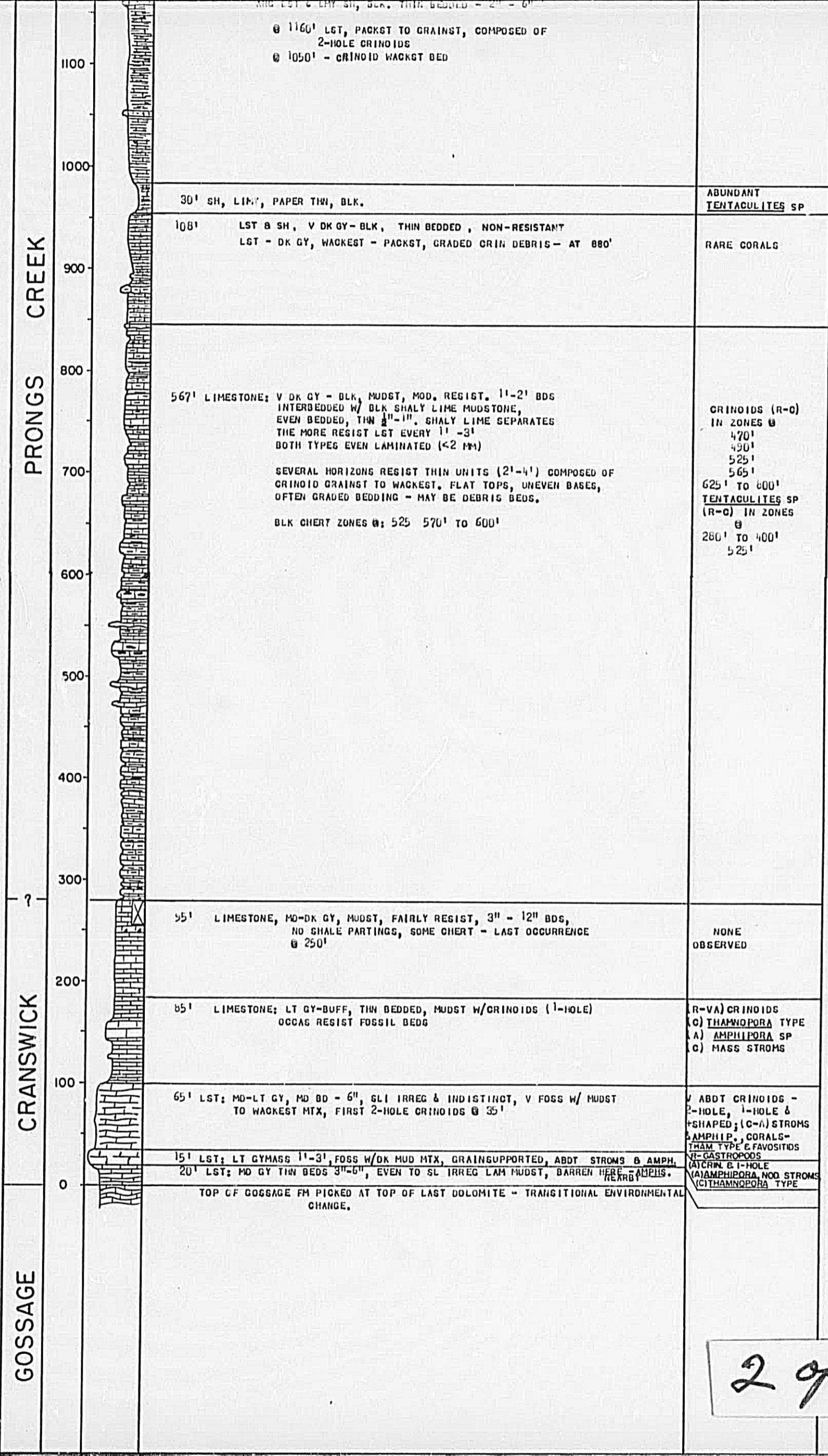
MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'



10F



2 of 2

STRATIGRAPHIC SECTION: 2809, 2814, 2815, 2818 (composite)
CANYON RANGE, Y.T.

LOCATION:

Basal portion: $65^{\circ} 28' 15''$ $132^{\circ} 57' - 58'$
Upper : $65^{\circ} 29'$ $132^{\circ} 59'$ to $65^{\circ} 30'$ $133^{\circ} 01'$
in mountains between Snake and Cranwick rivers.

DATE:

July 7, 9, 14, 1968

AGE & INTERVALS:

DEVONIAN:

Gossage = 1362' (Inc)

SIL-ORD:

Ronning = 1938'

Total = 3300'

MEASUREMENT:

Up section 5' Jacob Staff
with taped intervals.

GEOLOGISTS:

W. A. Hogg
H. E. Cook
P. N. Mc Daniel
W. Wilson
P. W. Choquette

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

AGE	FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
		3300		SECTION ENDS AT CONICAL PEAK ON HIGHEST PART OF RIDGE NEAR FRONT OF CANYON RANGE	
		3811		DOLOMITE, w/ LIMESTONE; MD-DK GY-BRN WRG GY TO BUFF, LAMIN MUDST & OCCAS ALGAL MAT BEDS w/ LEACHED BIRDSEYE & INTXLN POROSITY. RARE SILT & SP GA THRUOUT, MOD REGIST BEDS 1"-2" THK.	
		3200			
		3100			
		3000		DOL.-GY BRN, OALO, LAM MUDST, RARE PELLETS & MICRO-BIRDSEYE	
		2900		2961 DOLO. MINOR LST, YEL-BUFF MARKER OF GOSSAGE, PRED. GY-BRN, WRG BUFF, ORG. OR YEL. MUDST, LAM, SOME BIRDSEYE & MICRO-BIRDSEYE, STROMATAOTIS, MOD. REGIST BEDS - 2"-2" THK. RARE PELLETS, RARE SILT	RARE OSTRACTOUS
		2800			
		2700			
		2600		301 DOLO; LT GYSH-BRN, WRG LT GY w/ORG PATCHES, MUDST, BLEED & STROMATOLITES DOLO. BEDS 1"-2", MOD REGIST, SL SILTY. 621 DOLO; LT-DK GY, WRG LT-DK GY & ORG MOTTLED, LAM MUDST, SOME LST UPPER HALF, BGS MOD REGIST 2"-1" THK	
		2500		451 LST; LT GY-BRN, WRG LT GY, MUDST, F-ORG LAMINAE NETWORK OF FINE SP CALC VEINS & ALONG LAMIN. SOME OF SP GA IS DOLOMIT. REESEGS, 1"-6"	
		611		611 DOLO; LT-DK GY, WRG LT GY, MOTTLED LT GY & LT ORG-GY, MUDST. SOME LAM BGS NEAR BASE - BGS THIN & SL OALC NEAR TOP. MOD REESEGS, 6" - 11" THK.	

107

GOSSAGE

2600	30 ¹ DOLO: LT GYSH-DRN, WRG LT GY W/ORG PATCHES, MUDST, BLEEDS & STRGRS CRSE ORG WEAT DOLO. BDDS 1 ¹ -2 ¹ , MOD RESIST. SL SLTY. 62 ¹ DOLO: LT-DK GY, WRG LT-DK GY & ORG MOTTLED. LAM MUDST, SOME LST UPPER HALF, BDDS MOD RESIST 2 ¹ -1 ¹ THK	
2500	45 ¹ LST: LT GY-DRN, WRG LT GY, MUDST, F-ORSE LAMINAE NETWORK OF FINE SP CALC VEINS & ALONG LAMIN. SOME OF SP OA IS DOLOMIT. RECESS, 1 ¹ -6 ¹	
2400	61 ¹ DOLO: LT-DK GY, WRG LT GY, MOTTLED LT GY & LT ORG-GY, MUDST. SOME LAM BDG NEAR BASE - BDM THN & SL CALC NEAR TOP. MOD RECESS, 6 ¹ - 1 ¹ THK.	
2300	202 ¹ COVERED - GRASSY SLOPE	
2200	5 ¹ DOL: MD GY, WRG LT GY, V F XLN MUDST W/CRSE DOL PATCHES - WRG ORG & WH, MAYBE STROMATAQTIS, MOD RESIST 1 ¹ -2 ¹ THK 25 ¹ DOL: MD-DK DRN-GY, WRG BUFF-GY, INTBD MASS & LAM, W/THN ZONE TR δ , AMPHIPORA PAKSTONE, RARE BIRDSEYE, THN-THK BDDS, RESIST TO REOEGS 30 ¹ COVERED - TALUS OF VARIOUS TYPES DOLO	(C) AMPHIPORA SP
2100	32 ¹ DOLO: DK-LT GY ALT BANDS, SOME W/SILIC FOSS - OTHERS F XLN GUCROSIC NON-FOSS. POOR INTXLN POROSITY 28 ¹ COVERED - DOLO. FLOAT 40 ¹ DOLO: DK-DRN-GY, WRG DK GY, IRREG V. DISTINCT THN LAM. SILIC. TURRITELLIDS (?) W/ PREFERRED ORIENT	(R) BRACHS, CRIN. FOSS TAB. STROM. (C) HELIOPHYLLUM (?) SP CAST.
2000	15 ¹ TALUS COVERED 55 ¹ DOLO: LT GY, WRG LT YELGH-GY W/OCCAG GY MOTTLING POORLY BDD. F XLN GUCROSIC. WRG TO RHOMBOID BLOCKS & IRREG PLATES	(C) CASTROPODS (R) BRACHS, CRIN. FOSS. COENITES SP BARREN
?	55 ¹ COVERED - FLOAT GY-BUFF WEATH DOLO 70 ¹ DOLO: DK GY, WRG DULL GY, POORLY BDD TO WELL LAMINATED SOME OA FILLED FOSS MOLDS POORLY EXPOSED	RARE CASTROP. & BRACH
1900	20 ¹ DOLO: LT GY, WRG DRAB TO LT GY, GUCROSIC, IRREG & THN LAM. THN ZONE EDGEWISE COL. POOR VUGGY POROSITY	(R) BRACHS & SMALL COILED CEPHALOPOD
1800	75 ¹ DOLO: MOTTLED LT & MD GY, WELL BDD 3 ¹ -12 ¹ W/THN FOSS BU	ABDT: CORAL & STROM
1700	10 ¹ DOL: MD GY, WACKEST-PACKST, W/ABDT FOSS. MOST NOT IN GROWTH POSITION 115 ¹ DOL: MD-LT GY, THN IRREG LAM. FAIR INTXLN POROSITY	(A) NOD & TAB STROMS CUP(?) CORALS
1600	70 ¹ DOLO: MD GY, WACKEST, MD-MASS BDD, W/ABUNDANT FOSS.	(R-B) BRACHS (A) CRINOID (A-O) CUP & FINGER CORALS (C) STROMS
1500	71 ¹ DOLO: UPPER 20 ¹ = BRECCIA, FLAT COBBLE, CLASTS TO 12 ¹ DIA, COMP. OF BIRDSEYE - MOST δ OA FILLED, SOME LEACHED δ MIDDLE ZONE 5-10 ¹ - MOLDIC BIRDSEYE δ TO 2 MM. LOWER ZONE: BANDED, IRREG LAM, MUDST. BDG 1 ¹ -3 ¹ MD GY, WRG LT GY NON δ	
1400	166 ¹ DOLO: MD-LT GY, WRG LT GY; F XLN UPPERPART - VAGUE 11-31 BDDS, LOWER PART WELL BDD THN 3 ¹ - 6 ¹ SILIC FOSS UPPER 2/3. RARE CHIT STRGR. IN LOWER 1/2 - POOR INTXLN δ	(R-O) CRINOID CORALS (?) STROMS
1300	77 ¹ DOLO: MD GY, F XLN, IRREG WELL BDD 6 ¹ -2 ¹ LAMIN, DK & LT ALT INTBD, LOWER PART WRG VUGGY	(R) CRIN & CORALS @ BASE
	105 ¹ DOLO: MD-LT GY, F XLN, GOOD INTXLN δ , BDG TO 5 ¹ AND INDISTINCT, SILIC FOSSIL SOME ZONES, SOME VUGGY δ IN ZONES, FEW THIN BLK CHIT STRGR. LFT THIN BRECCIA ZONES	(C-A) BRACHS CRINOID FACICULATE

2 of

RONNING GROUP	1600	70' DOLO: MD GY, WACKEST, MD-MASS BDD, W/ABUNDANT FOSS.	(R-b) BRACHS (A) CRINOIDS (A-C) CUP & FINGER CORALS (C) STROMS
	71'	DOLO: UPPER 20' = BRECCIA, FLAT COBBLE, CLASTS TO 12" DIA, COMP. OF BIRDSEYE - MOST \downarrow CA FILLED, SOME LEACHED \downarrow MIDDLE ZONE 5'-10' - MOLDIC BIRDSEYE \downarrow TO 2 MM. LOWER ZONE: BANDED, IRREG LAM, MUDST. BDD 1"-3" MD GY, WRS LT GY NON \downarrow	
	1500	166' DOLO: MD-LT GY, WRS LT GY; F XLN UPPERPART - VAGUE 11-31 BDD, LOWER PART WELL BDD THN 3" - 6" SILIC FOSS UPPER 2/3 RARE CHT STRCR. IN LOWER 1/2 - POOR INXLN \downarrow	(R-C) CRINOIDS CORALS (?) STROMS
	1400		
	1300	77' DOLO: MD GY, F XLN, IRREG WELL BDD 6"-21 LAMIN, DK & LT ALT INTBD, LOWER PART WRS VUGGY	(R) CRIN & CORALS @ BASE
	1200	105' DOLO: MD-LT GY, F XLN, GOOD INTXLN \downarrow , BDD TO 5' AND INDISTINCT, SILIC FOSSILS SOME ZONES, SOME VUGGY \downarrow IN ZONES, FEW THN DLK CHT STRCS, FEW THIN BREO-CGL ZONES	(C-A) BRACHS CRINOIDS FAGCICULATE CORALS
	1100	60' COVERED	
	1000	100' DOLO: LT GY, V CRSE XLN, THK BD - VAGUE 3'-10' GOOD INTXLN \downarrow OVER MUCH OF INTERVAL CHERT SEAMS COMMON, ON WEATH SURFACE SOME FOSS HAVE BIOMOLDIC \downarrow THIS UNIT MAY BE ABOUT SAME POSITION AS NORFORD'S DAGAL SILURIAN	(C) BRACHS CRINOIDS STROMS (R) STRAIGHT CEPHALOPODS CUP CORAL
	900	15' DOLO: MD GY LAM	CRINOIDS (?)
	800	40' COVERED	
	700	45' DOLO: LT-MD GY, 6"-15" BDD, SUGGESTION OF FOSSILS, LAM ABUND, SOME HIGH L BDDG	
	600	38' COVERED	
	500	58' TECTONIC BRECCIA: FRACS FILLED W/CALCITE & DOLO, A FEW CLASTS LGT MUDST.	
	400	45' COVERED W/ DOLO BLOCKS - PROB FROM OVERLYING ZONE	
	300	43' DOLO: MD GY, RUBBLY WEATH, CA VEINS COMMON	CRINOIDS (?)
	200	12' TECT. BRECCIA, V ABUND FRACS, CHERT, CA & DOLO FILLING	
	100	70' DOLO: MD GY-BUFF, NODULAR IN LOWER UNIT, WELL BDD, ALT. BANDS GY & BUFF-GY WEATH. ABUND. CRINOIDS IN UPPER & LOWER ZONES	
	0	30' DOL: BUFF-GY CRSE XLN, 1"-3" BDD, NO LAM, F GR QTZ CRNS (5-10%), THIN WISPY LAYERS SILIC. MATERIAL	
	272'	LIMESTONE: MD-DK GY, MUDST, THIN BDD (1"-6") EVEN LAM. (1-2 MM) SOME RIPPLE MARKS LOWER PORTION, FAIRLY RESIST. @ 35' FROM TOP - YEL-BUFF WEATH LEDGE W/ V ABUND BRACH FRACS	BARREN EXCEPT FOR 5' ZONE W/ ABDT BRACHS
	96'	COVERED - WITH OCCAS. OUTCROP EXPOSED BY FROST HEAVE @ 300' = MD GY LIME MUDSTONE, 2" BDD, ABDT FOSS	(A) COENITES(?) SP

3 of

RONNING GROUP	1000	CHERI SEA'S COMMON, ON WEATH SURFACE SOME FOSS HAVE BIOMOLDIC ♀ THIS UNIT MAY BE ABOUT SAME POSITION AS NORFORD'S BASAL SILURIAN	STROMS (R) STRAIGHT CEPHALOPODS CUP CORAL
	151	DOLO: MD GY LAM	CRINOIDS (?)
	401	COVERED	
	451	DOLO: LT-MD GY, 6"-15" BGS, SUGGESTION OF FOSSILS, LAM ABUND, SOME HIGH L BGS	
	381	COVERED	
	581	TECTONIC BRECCIA: FRACS FILLED W/CALCITE & DOLO, A FEW CLASTS LGT MUDST.	
	461	COVERED W/ DOLO BLOCKS - PROB FROM OVERLYING ZONE	
	431	DOLO: MD GY, RUBBLY WEATH, OA VEINS COMMON	CRINOIDS (?)
	121	TECT. BRECCIA, V ABUND FRACS, CHERT, OA & DOL FILLING	
	701	DOLO: MD GY-BUFF, NODULAR IN LOWER UNIT, WELL BGS, ALT. BANDS GY & BUFF-GY WEATH, ABUND. CRINOIDS IN UPPER & LOWER ZONES	
	301	DOL: BUFF-GY CRSE XLN, 1"-3" BGS, NO LAM, F GR QTZ GRNS (5-10%), THIN WISPY LAYERS SILIC. MATERIAL	
	2721	LIMESTONE: MD-DK GY, MUDST, THIN BGS (1"-6") EVEN LAM. (1-2 MM) SOME RIPPLE MARKS LOWER PORTION, FAIRLY RESIST. @ 351 FROM TOP - YEL-BUFF WEATH LEDGE W/ V ABUND BRACH FRACS	BARREN EXCEPT FOR 51 ZONE W/ ABDT BRACHS
	3001	COVERED - WITH OCCAS. OUTCROP EXPOSED BY FROST HEAVE @ 3001 = MD GY LIME MUDSTONE, 1" BGS, ABDT FOSS	(A) COENITES (?) SP.
	2331	POORLY EXPOSED ALONG GADDLE. TAPED INTERVAL. LIMESTONE: V DK GY, MD-DK GY WEATH, PLATY, 1" BGS, MUDST. OCCAS THIN ZONES CHERT	NONE OBSERVED
	1021	@ 1021 - MOTTLED BUFF & GY, SMALL 1/4" VUGG SOME FILLED W/ PYRITIZED LIMONITE, WRG BUFF FROM 601 - 1001: THIN BGS, DK GY LIME MUDSTONE	
	0	DOLOMITE WITH SOME LGT; V DK GY, BLOODY WEATH, 1"-2" BGS CAMBRIAN PICKED BY NORFORD ON BASIS OF LAST OCCUR DOLO. FOSS BASIS ?	
CAMBRIAN			4 of 4

STRATIGRAPHIC SECTION: R-4

CANYON RANGE FRONT Y.T.
Reconnaissance SectionLOCATION: 65° 30' 45" 132° 52'At northern edge of Canyon Range
2 miles west of the R-2 sectionMEASUREMENT:

Estimated

DATE:

July 20, 1968

AGE & INTERVALS:

DEVONIAN:

Ogilvie = 350' + (Inc)
 Prongs Creek = 480' ±
 Cranswick = 200' ±
 Total = 1030'

GEOLOGISTS:

W.J. Meyers

H.E. Cook

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
OGILVIE	1030		TOP OF RIDGE	
	1000		230' ± LST: MD-LY BRN, WRG LT GY, BEDS 11-3' PRED CRINOID WACKEST TO GRAINST. SOME MTX BEDS PELLETED. FEW BEDS OF BROWN MUDST OR PELLET CALCAR.	(C) CRINOIDS, (1 & 2 HOLE)
	900			
	800		80' ± LST: MD GY, WRG LT GY, 11-3' BDG, CRINOID PACKSTONE TO GRAINSTONE	(A) (1 & 2 & +)- CRINOIDS - (R) FAVOSITIDS
	700		40' ± LST: MD TO LT GY, MASSIVE BEDDED, WACKESTONE TO PACKSTONE	(C) CRIN (1,2,+) (C) BRACHG (R) GASTROPODS
	600		60' ± LST: DK GY, MUDSTONE, THIN BEDDED, PLATY WEATHERING	(R) CRINOIDS (1,2,+)
	500		15' ± LST: MD GY, V FINE PELLET PACKST. 65' ± LST: MD-DK GY, INTBOD CRINOIDAL CALCARENITE & PLATY MUDSTONE WITH <u>TENTACULITES</u> SP.	(C-R) CRINOIDS - (2-H) (C-R) TENTACULITES SP
	400		90' ± LST: INTBOD BRECCIA BDG & DK ARG PLATY MUDST. BRECCIAG: NUMEROUS FOSSILS W/CLASTS OF LIME MUDST & CRIN WACKEST. IN MTX OF CRIN WACKST TO PACKST. SOME FOSS SILICIFIED	(S-A) CRINOIDS (1&2-H & +) (C) STROMS FAVOSITIDS ALVEOLITES (?) SP
	300		50' ± LST; ARG: DK GY, SOME CHT, FEW CRIN. PACKST.	(R-C) CRINOIDS (1-2 HOLE) (C) TENTACULITES SP
	200		20' ± LST, GL. DOLO: MED GY, WACKESTONE 60' ± LST: GY, WACKEST TO PACKST.	CRINOIDS - (A) CRINOIDS - 1,2 & + SHAPED
PRONGS CREEK	200		80' ± LST: GL. DOLO; DK BRN, MUDSTONE 20' ± LST; MD-GY-BRN, PACKST, WRG RUBBLY	(R) CRINOIDS & BRACHS (R) FAVOSITIDS (C) CRINODS 1&2-HOLE (C) 1&2-HOLE CRINOIDS, BRACHS, GASTRO

10f

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
OGILVIE	1030		TOP OF RIDGE	
	1000		230 [±] LST: MD-LT BRN, WRG LT GY, BEDS 11-31 PRED CRINOID WACKEST TO GRAINST. SOME MTX BEDS PELLETED. FEW BEDS OF BROWN MUDST OR PELLET CALCAR.	(C) CRINOIDS, (1 & 2 HOLE)
	900			
	800		80 [±] LST: MD GY, WRG LT GY, 11-31 BEDS, CRINOID PACKSTONE TO GRAINSTONE	(A) (1 & 2 & +)- CRINOIDS - (R) FAVOSITIDS
	700		40 [±] LST: MD TO LT GY, MASSIVE BEDDED, WACKESTONE TO PACKSTONE	(C) CRIN (1,2,+) (C) BRACHS (R) GASTROPODS
	600		60 [±] LST: DK GY, MUDSTONE, THIN BEDDED, PLATY WEATHERING	(R) CRINOIDS (1,2,+)
	500		15 [±] LST: MD GY, V FINE PELLET PACKST.	
	450		85 [±] LST: MD-DK GY, INTBDD CRINOIDAL CALCARENITE & PLATY MUDSTONE WITH <u>TENTACULITES</u> SP.	(C-R) CRINOIDS - (2-11) (C-R) TENTACULITES SP
	500		90 [±] LST: INTBDD BRECCIA BEDS & DK ARG PLATY MUDST. BRECCIAS: NUMEROUS FOSSILS W/CLASTS OF LIME MUDST & CRIN WACKEST. IN MTX OF CRIN WACKST TO PACKST. SOME FOSS SILICIFIED	(S-A) CRINOIDS (1&2-H & +) (C) STROMS FAVOSITIDS ALVEOLITES (?) SP
	400		50 [±] LST; ARG: DK GY, SOME CHT, FEW CRIN. PACKST.	(R-C) CRINOIDS (1-2 HOLE) (C) TENTACULITES SP
PRONGS CREEK	300		20 [±] LST, SL. DOL: MED GY, WACKESTONE	CRINOIDS -
	250		60 [±] LST: GY, WACKEST TO PACKST.	(A) CRINOIDS - 1,2 & + SHAPED
	200		80 [±] LST: SL. DOL: DK BRN, MUDSTONE	(R) CRINOIDS & BRACHS (R) FAVOSITIDS
	150		20 [±] LST, MD-GY-BRN, PACKST, WRG RUBBLY	(C) CRINOIDS 1&2-HOLE
	100		20 [±] LST, SL. DOL MOTTLING: DK GY-BRN 60 [±] LST: MDGY, WRG LT GY, LAMINATED BEDS & PELLET PACKST TO GRAINST.	(C) 1&2-HOLE CRINOIDS, BRACHS, GASTRO
CRANSWICK	100		80 [±] LST, DOLOMITIC: MD GY-BRN, FOSSILS IN MATRIX OF PREDOMINANTLY DOLOMITIC LIMESTONE. AMPHIPORA CONTENT INCREASES UPWARDS	(C-A) AMPHIPORA SP (R) STROMS & CORALS
	0		40 [±] LST & DOL: LAMINATED, V LT - MD BRN, SOME CGL	
			TRANSITION WITH LT GY-TAN. LAMINATED DOLOMITES OF GOSSAGE.	

STRATIGRAPHIC SECTION: R-2 CANYON RANGE (Reconn.) Y.T.

LOCATION: 65° 30' 30" 132° 48'

Approximately 2 miles east of R-4

DATE: July 19, 1968MEASUREMENT:

Footage estimated

AGE & INTERVALS:

MIDDLE DEVONIAN:

Ogilvie = 300' ± (Inc)

Prongs Creek = 200' ±

Cranswick = 200' ±

Total = 700' ±

GEOLOGISTS:

H. E. Cook

W. J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
OGILVIE			TOP NOT SEEN	
	700		150' ± LST; MD GY-BRN, WRS LT GY, CRINOIDAL CALCIARENITE W/CORAL BEDS	(A) CRINOIDS (C) CORALS
	600			
	500		150' ± LST, W/DOLO LST & DOLO, MOTTLED; MD BRN-GY, ABUND. CRINOID BEDS AS PACKST - OR GRAINST. V LGE STROMS & CORALS NEAR BASE. GOOD CRINOIDAL MOLDIC POROSITY IN DOLOMITE ZONES	(R-C) STROMS CORALS (A) CRINOIDS - (1 & 2 HOLE & + SHAPED CANALS)
PRONGS CREEK?	400		200' ± LST, ARG: MD-OK BRN, WEATHERS DARK BROWN, CHERTY MUDSTONE	(R-C) CRINOIDS (2-HOLE) (R) DENDROID CORALS (R) STROMS
	300			
CRANSWICK	200		200' ± DOLO & LST; MD GY-BRN, GENERALLY LAMINATED, AMPHIPORA COMMON IN SOME BEDS. MORE DOLO & AMPHIPORA IN THIS SECTION THAN SEEN ELSEWHERE. SOME BIOMOLDIC POROSITY.	(O) AMPHIPORA SP.
	0		COGGAGE UNDERLYING - DOLOMITE	

STRATIGRAPHIC SECTION: R-3 CANYON RANGE (Reconn.) Y.T.

LOCATION: $65^{\circ} 30' 45''$ $132^{\circ} 41'$

About 3 miles east of R-2

DATE:

July 19, 1968

MEASUREMENT:

Footages estimated

AGE & INTERVALS:

MIDDLE DEVONIAN:

Hume (?) = $200 \pm$ (Inc)

Prongs Creek (?) = $100 \pm$

Total = $300 \pm$

GEOLOGISTS:

H.E. Cook

W.J. Meyers

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

$1'' = 100'$

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
HUME ?	0		TOP NOT EXPOSED	
	200 ¹⁺	LGT: MD-DK BRN-GY, WACKEST TO PACKET PELLETS RARE TO COMMON W/ ABDT BRACHS. FOSSILS IN DARK MUD MATRIX		(R-C) AMPHIPORA, SP. (C) MASS STROMS, BRANCH CORALS, (C-A) CRINOIDS, OSTRACODS, GASTROPODS
PRONGS CREEK ? TONGUE	100			
	200	100 ¹ ± SHALE: CALCAREOUS, THIN TO BLOCKY, MED TO DARK BROWNISH-GRAY		NONE OBSERVED
	300	LGT: MD-LT GY-BRN, WACKEST, RARE PELLETS, SIMILAR SECTION BELOW FOR ABOUT 2000 ¹ - APPEARS TO BE OGILVIE		(R) AMPHIPORA SP. CRINOIDS, OSTRACODS
OGILVIE	400			

STRATIGRAPHIC SECTION: 2821 - FLYAWAY CREEK, N.W.T.

LOCATION: 65° 26' 45" 132° 02' 30"Along west bank of creek above falls,
and along east bank below falls.DATE:

July 13, 1968

MEASUREMENT:

Up section with 5' Jacob Staff

AGE & INTERVALS:

DEVONIAN:

Canol = 100' (Inc.)

Hume = 535' (Inc.)

Total = 635'

GEOLOGISTS:

W. J. Meyers

P. N. McDaniel

MARATHON OIL CO.

TO ACCOMP. REPORT 68-1

1" = 100'

<i>Fm.</i>	<i>INTERVAL</i>	<i>LITH.</i>	<i>FIELD DESCRIPTION</i>	<i>FOSSILS</i>
CANOL	635		BLACK GH ABOVE - WRG YEL-BRN - NOT MEASURED	
	600	100'	SHALE; BLK, NON-CALC, PAPER THIN	BARREN
	500		145' LST: DK QY, W/FEW INTBDD MD QY ZONES. THIN-MD BD. NOT AS WELL EXPOSED AS CARB BELOW. DARKER BEDS WITH CORALS & GASTROPODS. LIGHTER COLOURED MOSTLY BARREN - SOME BIRDSEYE	SCATTERED - MOSTLY IN LOWER PORTION: (R) <i>HEXAGONARIA</i> SP. FASCICULATE & FAVOSITIDS (R) <i>THAMNOPODIA</i> SP. (R) BRACHS & CRINOIDS @ TOP
	400		60' SHALE: NON-CALC, BLACK, PAPER-THIN, V. REDESSIVE, FORMS NARROW ABRUPT CANYON, BASEL 3' = SHY LAM LST. UPPER CONTACT: NOT EXPOSED - COULD BE FAULT. LOWER CONTACT: ABRUPTLY TRANSITIONAL - NOT EROSIONAL AND NOT A FAULT	BARREN (R) <i>TENTACULITES</i> SP IN BASAL 3'
HUME	300		330' LST: LT-MD BRN TO DK GRAY, INTBDD, DARK BEDS MORE ARC, CORALS OOM.; LT BDG ARE MUDGT TO PELLET WACKGT W/ (R) <i>AMPH.</i> , BIRDSEYE & LAM. IRREG. BEDDING OVERALL 6" - 2", WITH INTERBEDS OF BLK BARREN SHALE - MOST COMMON IN LOWER 150'. UPPER PORTION LT COLOURED - FEWER CORALS - SHALLOWER WATER. FOSSILS, ESP. CORALS, ABUNDANT - MANY LARGE HEADS - 6" - 2"	(R-C) BRACHS (V/R) CRINOIDS (C-R) FAVOSITIDS (C-R) <i>HEXAGONARIA</i> SP. (R) <i>THAMNOPODIA</i> SP. (C-R) FASCICULATE (R) <i>AMPHIPORA</i> SP. (R) <i>STACHYODIA</i> SP. (R) MAGG & TAB STROMS (R) GASTROPODS (R) HORN CORALS
	200			
	100			
	0			
OGILVIE	?		BASE OF HUME NOT MEASURED - STRUCTURALLY COMPLEX - BUT APPEARS TRANSITIONAL WITH BIRDSEYE & LT LAM LST OF OGILVIE BELOW.	

STRATIGRAPHIC SECTION: 2822, 2823 CRANSWICK RIVER HEADWATERS

LOCATION: $65^{\circ} 07' 45''$ $132^{\circ} 18'-19'$

N.W.T.

Along sharp high ridge just east of headwaters
of Cranswick

DATE:

July 15, 1968

MEASUREMENT:

Up section with 5' Jacob Staff

AGE & INTERVALS:

DEVONIAN:

Ogilvie = 947' (Inc)

Cranswick = 78' (Inc)

Total = 1025'

GEOLOGISTS:

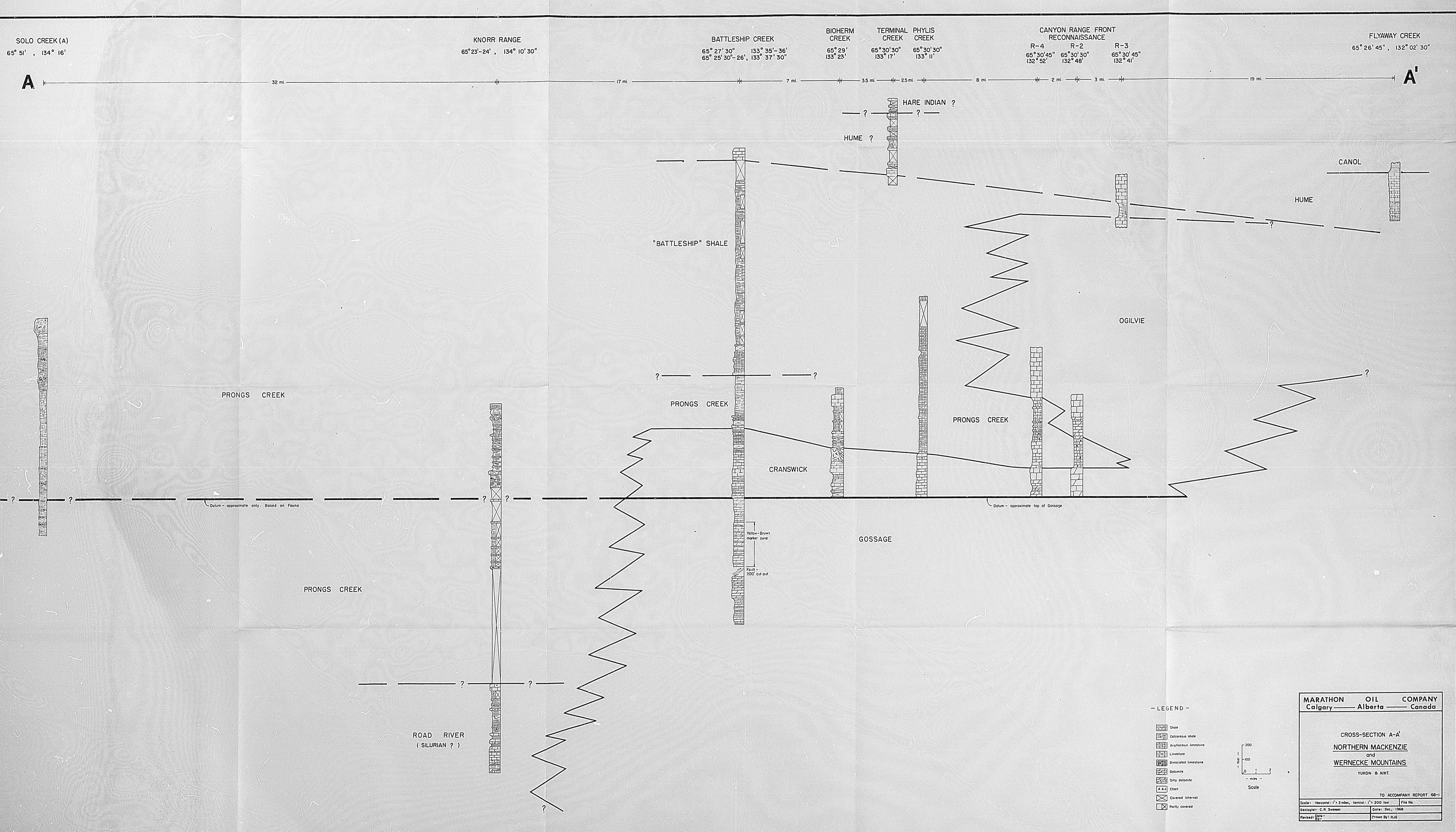
W.A. Hogg
P.N. Mc Daniel
H.E. Cook
W.J. MeyersMARATHON OIL CO.
TO ACCOMP. REPORT 68-1

1" = 100'

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			AN ESTIMATED 250'-300' OF OVERLYING SECTION WAS NOT MEASURED	
OGILVIE	1000		80' LIMESTONE: MD-LT GY, W/ SOME DK GY. EVEN BEDDED, // STRATIF. ZONES OF ALGAL MAT DECREASING. WHCKE ST TO PACK ST, W/ SOME FENESTRAL FABRIC. ONE ZONE W/ ABOT PELLETS.	(C-A) BRACHS (A) CRINOIDS (C-A) OSTRACODS (C) GASTROPODS
	900		20' LST: MD-DK GY, WHCKE ST, 6"-2' THK BOS., EVEN // STRAT.	(C-A) OSTRACODS (C) GASTROPODS
	900		90' LIMESTONE: MO-LT GY, 1"-3' EVEN, // BOS. MOSTLY PELLET PACKST. W/ FENESTRAL FABRIC, FEW STRKS DARK MUDIER ROCKS. THN ZONE <u>AMPH.</u> WHCKE ST @ TOP	(C) GASTROPODS (C-A) OSTRACODES
	800		SECTION SHIFTS $\frac{1}{2}$ MILE NW FROM UNDERLYING.	
	800		25' LST: MD-DK GY, EVEN 6"-2' BOS, MOSTLY CRIN. WHCKE ST. W/ SOME PACKST.	ABUNDANT CRINOIDS
	800		80' LIMESTONE: MO-LT GY, EVEN 1"-4' BOS, ABUNDANT FENESTRAL FABRIC = ALGAL MAT? INTBD. W/ PELLET GRNST TO WHCKE ST	(A) CRINOIDS IN THN ZONE OSTRACODS (A) NEAR BASE
	700		32' LST: MD-LT GY, 6"-2' EVEN BEDS, INTERBEDDING OF PELLET GRNST & LAM FENESTRAL LS.	NONE OBSERVED
	700		48' LST: LT-MD GY, 1"-4' BEDS // STRATIF, FEW PELLETS & OBSCURE FOSS. IN WHCKE ST.	(R-C) CORAL (R) GASTROPOD (C-R) OSTRACOD
	600		35' LST: LT GY, 2"-5' BEDS // STRATIF, FENESTRAL FABRIC W/ VAGUE PELLET-LIKE GRNS COMMON - WHCKE ST - MUDST.	NONE OBSERVED
	600		25' LST: MD-LT GY, MOSTLY WHCKE ST, THN 6"-8", FEW PELLETS; BIRDSEYE, THN BED BRN DOL @ TOP UNDERLAIN BY RED-BRN "WEATH" ZONE	(R) GASTROPODS
	500		50' LST: LT GY, MASS 1"-3' THK, BIRDSEYE COMMON AND RARE PELLETS NEAR BASE	TRACE BRACH; CRINOID IN BASAL 5'
	500		15' LST, SHY, DK GY, WAVY THN BEDS. FEW BIRDSEYE	(C) Thamnopora Type
	500		37' LIMESTONE, MD-LT GY, 2"-4' BEDS, WHCKE ST, TR DOLO, BURROWING IN UPPER 10', RARE PELLETS TOP, RARE BIRDSEYE	TRACE CRINOID (R) MASS STROM
	400		13' LST: MD-DK GY, THN-MD BED, MOST W/ FEW FOSS	(R) 2-HOLE CRINOID (R) BRACHS
	400		75' LIMESTONE: DK-MD GY, THK-MASS BOS 2"-5', WHCKE ST, RARE BIRDSEYE, WITH FEW THIN RECESS COVERED ZONES	(R) 1-HOLE CRIN. (R-A) 2-HOLE CRIN. (R-A) MASS CORALS; STROMS (R-C) TAB STROMS 1-ZONE Thamnopora ST
	300		10' COVERED	
	300		10' LST: MD GY, 2' THK, WHCKE ST, W/ BIRDSEYE / POSS. PELLETS, FOSS DEBRIS	(R) MASS STROM
	300		10' DOLO: MD BRN-GY, WHCKE ST, EX MOLDIC / INTRXLN POROSITY	(A) 2-HOLE CRIN
	300		35' COVERED	
	300		38' LST: MD-LT GY, 1' BEDS, WHCKE ST TO PACKST, SOME PELLETS	(R-C) BRACHS (C-A) CRIN-1/2 HOLES (R) MASS STROM
	300		47' DOLO: LT BRN-GY, SLI LIMY, 6"-8" BEDS, TR. POOR POROSITY	ABUNDANT - 2-HOLE CRINOID
	300		20' LST, PARTLY DOLO, 6"-8" POORLY BEDDED, TR GOOD MOLDIC / INTRXLN	ABUNDANT 2-HOLE CRIN

10F

FM.	INTERVAL	LITH.	FIELD DESCRIPTION	FOSSILS
			AN ESTIMATED 250'-300' OF OVERLYING SECTION WAS NOT MEASURED	
	1000		80' LIMESTONE: MD-LT GY, W/SOME DK GY. EVEN BEDDED, // STRATIF. ZONES OF ALGAL MAT DECREASING. WACKEST TO PACK ST, W/SOME FENESTRAL FABRIC. ONE ZONE W/ABOT PELLETS.	(C-A) BRACHS (A) CRINOIDS (C-A) OSTRACODS (C) GASTROPODS
	900		20' LST: MD-DK GY, WACKEST, 6"-2' THK BOS., EVEN // STRAT.	(C-A) OSTRACODS (C) GASTROPODS
	900		90' LIMESTONE: MD-LT GY, 1"-5' EVEN, //BEDS. MOSTLY PELLET PACKST. W/FENESTRAL FABRIC, FEW STRKS DARK MUDIER ROCKS. THN ZONE <u>Amph.</u> WACKEST @ TOP	(C) GASTROPODS (C-A) OSTRACODS
OGILVIE			SECTION SHIFTS $\frac{1}{2}$ MILE NW FROM UNDERLYING.	
	800		25' LST: MD-DK GY, EVEN 6"-2' BEDS, MOSTLY CRIN. WACKEST. W/SOME PACKST.	ABUNDANT CRINOIDS
	800		80' LIMESTONE: MD-LT GY, EVEN 1"-4' BOS, ABUNDANT FENESTRAL FABRIC = ALGAL MAT? INTBD. W/ PELLET GRNST TO WACKEST	(A) CRINOIDS IN THN ZONE OSTRACODS (A) NEAR BASE
	700		32' LST: MD-LT GY, 6"-2' EVEN BEDS, INTERBEDDING OF PELLET GRNST / LAM FENESTRAL L.S.	NONE OBSERVED
	700		48' LST: LT-MD GY, 1"-4' BEDS // STRATIF, FEW PELLETS & OBSCURE FOSS. IN WACKEST.	(R-C) CORAL (R) GASTROPOD (C-R) OSTRACOD
	600		35' LST: LT GY, 2'-5' BEDS // STRATIF, FENESTRAL FABRIC W/ VAGUE PELLET-LIKE GRNS COMMON -WACKEST-MUDST.	NONE OBSERVED
	600		25' LST: MD-LT GY, MOSTLY WACKEST, THN 6"-8", FEW PELLETS & BIRDSEYE, THN BED BRN DOL @ TOP UNDERLAIN BY RED-BRN "WEATH" ZONE	(R) GASTROPODS
	500		50' LST: LT GY, MASS 1"-3' THK, BIRDSEYE COMMON AND RARE PELLETS NEAR BASE	TRACE BRACH! CRINOID IN BASAL 5'
	500		15' LST, SHY, DK GY, WAVY THN BEDS. FEW BIRDSEYE	(C) Thamnopora type
	500		37' LIMESTONE, MD-LT GY, 2"-4' BEDS, WACKEST, TR DOLO, BURROWING IN UPPER 10', RARE PELLETS TOP, RARE BIRDSEYE	TRACE CRINOID (R) MASS STROM
CRANSWICK	500		13' LST: MD-DK GY, THN-MD BED, MUDST W/FEW FOSS	(A) 2-HOLE CRINOIDS (A) BRACHS (R) BRACHS (R) 1-HOLE CRIN. (R-A) 2-HOLE CRIN. (R-A) MASS CORALS, STROMS (R-C) TAB STROMS 1-ZONE Thamnopora SF
	400		10' COVERED	
	400		10' LST: MD GY, 2' THK, WACKEST, W/BIRDSEYE & POSS. PELLETS, FOSS DEBRIS	(R) MASS STROM
	400		10' DOLO: MD BRN-GY, WACKEST, EX MOLDIC & INTRXLN POROSITY	(A) 2-HOLE CRIN
	35'		35' COVERED	
	300		38' LST: MD-LT GY, 1' BEDS, WACKEST TO PACKST, SOME PELLETS	(R-C) BRACHS (C-A) CRIN-1/2 HOLES (A) MASS STROM
	300		47' DOLO: LT BRN-GY, SLI LIMY, 6"-8" BEDS, TR. POOR POROSITY	ABUNDANT - 2-HOLE CRINOIDS
	200		20' LST, PARTLY DOLO, 6"-8" POORLY BEDDED, TR GOOD MOLDIC & INTRXLN &	ABOT 2-HOLE CRIN
	200		50' COVERED	
	100		55' LST + DOL (LITH FROM TALUS - IN PLACE ??) BLOCKS OF CRIN WACKEST - PACKST, STROMS, SOME ALGAL MAT LT-MD BRN-GY	ABOT-2-HOLE CRIN (C) MASS STROMS
	100		47' COVERED: TALUS ON DIP SLOPE	
	0		78' LIMESTONE: DK-U DK GY, SL ARG, BEDS 5"-1', WRS RUBBLY, WACKEST-MUDST	(R-C) BRACHS (R-C) 1/2 HOLE CRIN (R-C) <u>Tentaculites</u> sp (R) TRILOBITE PYGIDIUM
CRANSWICK OUTCROP CONTINUES BELOW NOT MEASURED				2 of 2



PRONGS CREEK
65° 17' 30", 135° 39'-41'

ILLYTD RANGE
65° 14' 20", 135° 11'-13'

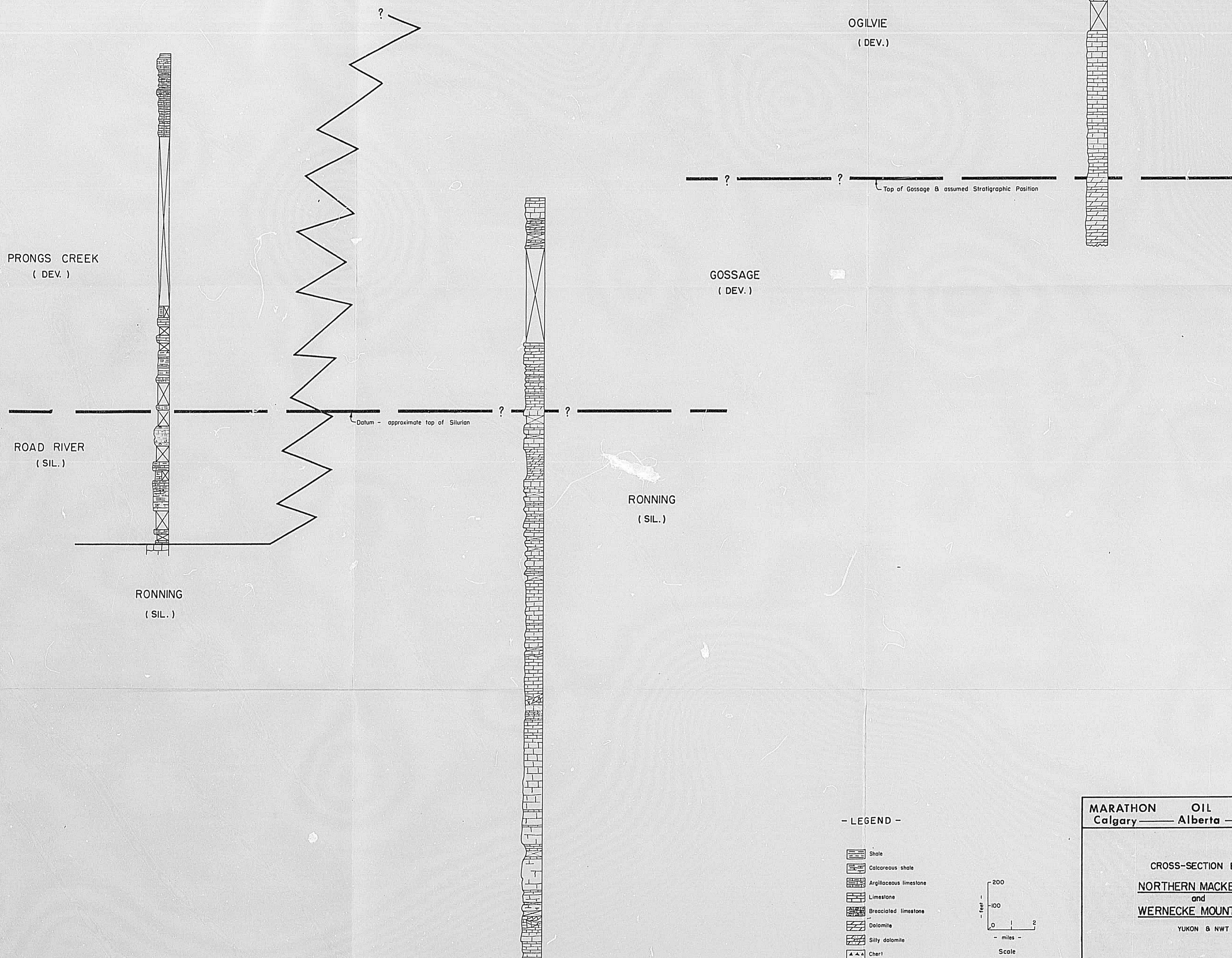
ROYAL CREEK SOUTH
64° 53' 30"-54', 134° 57'

B

16 mi.

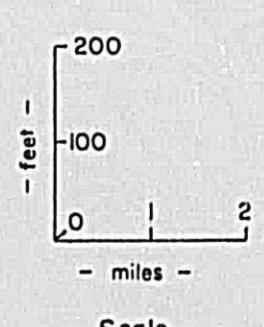
B'

24 mi.



- LEGEND -

- Shale
- Calcareous shale
- Argillaceous limestone
- Limestone
- Brachiopod limestone
- Dolomite
- Silty dolomite
- Chert
- Covered interval
- Partly covered



MARATHON OIL COMPANY	
Calgary	Alberta
Canada	
CROSS-SECTION B-B'	
NORTHERN MACKENZIE	
and	
WERNECKE MOUNTAINS	
YUKON & NWT	
TO ACCOMPANY REPORT 68-1	
Scale: Horizontal: 1" = 2 miles, Vertical: 1" = 200 feet	File No. _____
Geologist: C.R. Swanson	Date: Dec., 1968
Revised: _____	Drawn By: R.J.G.

PRONGS CREEK

ILLTYD RANGE

ROYAL CREEK SOUTH
64° 53' 30" - 54', 134° 57'

B

— 16 —

111

— 24 m

B

PRONGS CREEK
(DEV.)

ROAD RIVER
(SIL.)

RONNING
(SIL.)

Datum = approximate top of Silu

GOSSAGE
(DEV.)

RONNING
(SIL.)

- LEGEND -

	Shale
	Calcareous shale
	Argillaceous limestone
	Limestone
	Brecciated limestone
	Dolomite
	Silty dolomite
	Chert
	Covered interval
	Partly covered

A vertical scale bar with a bracket on the left labeled "feet" and a bracket on the right labeled "miles". The scale is marked at 0, 100, and 200.

MARATHON OIL COMPANY
Calgary — Alberta — Canada

CROSS-SECTION B-B'
NORTHERN MACKENZIE
and
WERNECKE MOUNTAINS

NIKON 8 MM

TO ACCOMPANY

" : 200 feet File No.

Scale: Horizontal: 1" = 2 miles, Vertical: 1" = 200 feet	File No.
Geologist: C.R. Swanson	Date: Dec., 1968
Revised: Date - By -	Drawn By: RJG

