

PART A

MANY BEAVERS AREA, NORTHWEST TERRITORIES
SEISMIC PROGRAM, WINTER 1960-61, SUMMER 1961

PART B

REPORT ON THE SURFACE EXPLORATION IN THE
RAMPARTS RIVER, MANY BEAVERS RIVER, WIND RIVER
AND CARIBOU LAKE AREAS

SHELL OIL COMPANY OF CANADA, LIMITED

DECEMBER, 1961

PART A

MANY BEAVERS AREA, NORTHWEST TERRITORIES

SEISMIC PROGRAM, WINTER 1960-61, SUMMER 1961

Shell Oil Company of Canada, Limited
November, 1961

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- Many Beavers Area - Seismic Event "Blue" (Top of Hume-Devonian) - (3 parts - Central, Western and Eastern)
- Many Beavers Area - Seismic Event "Green" (Top of Imperial-Devonian) - (2 parts - Central, Eastern)

MANY BEAVERS AREA, NORTHWEST TERRITORIES

Permits #2402-2409 inclusive, #2418-2440 inclusive

In compliance with Section 54 (1), (2), b, of the Canada Oil and Gas Land Regulations, the following is reported in regards to a geophysical exploration program performed on the subject permits and surrounding area.

WINTER PROGRAM - 1960-61

LOCATION

Work was carried out in the area bounded by latitudes 65°21' and 66°00' N and between longitudes 128°50' and 131°42' W. This area is located approximately 110 air miles northwest of Norman Wells.

DATES OF SURVEY

Field operations were conducted between November 26, 1960 and May 3, 1961 for a total of 137 working days.

FIELD CONDITIONS

(a) Surface Outcrops

Surface formations consisted generally of deposits of glacial till, sand, gravel, muskeg and permafrost underlain by strata of the Cretaceous and Devonian ages.

(b) Type of Terrain

Elevations range from about 180 feet to 3,000 feet above sea level. Streams flow into the Mackenzie River from the Mackenzie Mountains which form the southern boundary of the prospect. West of

the Hume River in the southern part of the prospect a plateau of resistant sandstone resulted in deeply incised streams with valleys up to 500 feet deep.

(c) Available Roads

A "winter road" meandered westerly through the prospect. East of the Hume River a network of old seismic trails dozed by Imperial Oil Limited provided some access to this part of the prospect. Elsewhere new trails had to be cleared by dozers operating with the crew.

(d) Weather

Temperatures to a minimum of -55° F were recorded during the survey period resulting in two days shut-down because of weather. Thawing conditions became common towards the end of the survey period.

FIELD PROCEDURE

(a) Drilling

i. Hole Depth

Holes were drilled from 10 feet to 130 feet with the majority of holes being drilled to 60 feet.

ii. Drilling Equipment

Drilling equipment was supplied by sub-contractor G. W. Garrity and consisted of three truck-mounted Failing CFD 1 drills equipped to drill with either air or water. Each drill was accompanied by one water truck and one power wagon utility vehicle. The drills operated mostly using

ii. Influence of Hole Depth

The best results were obtained from holes loaded at depths ranging from 40 to 65 feet. Deeper holes did not appreciably improve the quality of the results obtained.

iii. Charge Size

Charges ranged from two and one-half pounds to a sum of 250 pounds in the multiple holes. The average charge consisted of 40 pounds in a single hole.

iv. Equipment

General Geophysical model JMH amplifiers and "P" type seismometers were used. The records were taken at a speed of one second per foot. On most profiles a tap test was recorded at station 12 to ensure that the cables were not reversed.

(c) Surveying

Surveying was performed using a Wild TIA theodolite and spreads were laid out using a chain. Vertical and horizontal control were obtained from a system of stations established by a tellurometer survey conducted by the Shell Oil Company of Canada, Limited. Additional control was obtained from the two Imperial Oil well locations: Whirlpool No. 1 and Sans Sault Rapids No. 1.

COMPUTATIONS

(a) Weathering Corrections

First arrival surface to surface times were plotted on

rectilinear paper for every profile shot. Apparently very little V_0 material (i.e. about 2000 feet/second) was present. The lowest refraction velocity indicated was generally about 8000 feet/second and was intermittent. The next velocity recorded ranged from about 10,000 to 13,000 feet/second and was generally correlatable to either shale or sandstone. In most cases this was the only refracted velocity apparent, in which case the uphole method of weathering corrections was used. Where the intermediate 8000 feet/second velocity was indicated the weathering delay time was computed using the following formula:

$$\text{Weathering Delay Time: } \frac{t_i (V_1) + \text{Hole Depth} - \frac{T_2 - 2T_{uh}}{2 \cos_i}}{V_c} - T_{uh}$$

Where T_2 = intercept from 10,000 to 13,000 feet/second velocity slope

T_{uh} = Uphole Time

$$t_i = \frac{T_2 - 2T_{uh}}{2 \cos_i} \quad \text{(Vertical travel time from shot level to highest refractor - 10,000-13,000 feet/sec.)}$$

V_1 = Lowest refraction velocity (about 8000 feet/second)

V_c = Elevation correcting velocity (10,000 feet/second).

$\cos_i$ = Cosine of angle whose sine is V_1/V_2

This method is a modification of the two layer method and assumes that the shot level is beneath the V_0 material which in most cases on this prospect is a valid assumption.

(b) Elevation Corrections

All records were corrected to a datum plane of 1500 feet above sea level using a correction velocity of 10,000 feet per second.

RESULTS

(a) Record Quality

Records were generally fair in quality.

(b) Maps

Maps submitted with this report include:

Topography

Top of Imperial-Devonian

Top of Hume - Devonian

The results of the following summer's shooting have been added to these maps. In the western part of the area only the Hume event could be mapped.

SUMMER SEISMIC PROGRAM, 1961LOCATION

A seismic program was carried out between latitudes 65°20' N and 65°50' N and between longitudes 128°50' and 131°42' W using helicopters for transportation.

DATES OF SURVEY

Field operations were carried out between June 28, 1961 and August 11, 1961 for a total of 45 working days.

FIELD CONDITIONS

(a) Surface

The ground was covered with moss and muskeg to a depth of approximately one foot, where permo frost was encountered. Because of the airborne operation the muskeg did not hamper operations unduly.

(b) Weather

Normal summer weather prevailed throughout the work period with numerous rain storms hampering operations to some extent. Three full days were lost because of rain.

FIELD PROCEDURE

(a) Helicopters (two Bell G3B models)

The G3B model is the latest type being produced. This model was particularly desirable over other models because of its increased power, maintained by a supercharger for operation at high altitudes and in hot weather. The recommended payload was 450 pounds although

loads of 500 to 600 pounds could be carried under favorable conditions.

This model was also desirable because of its vertical take-off performance, decreasing the size of the heliports required.

An undesirable feature of this model was the passenger seating capacity of only two persons.

Associated Helicopters Limited of Edmonton were selected as the aircraft operators, because of their proximity to our office and their desire to cooperate in supplying the equipment required, and in planning of the operation.

One helicopter was on skids while the other one was on floats.

The operation of helicopters presented no problems. Helicopter personnel consisted of a chief pilot, two pilots and two engineers. The chief pilot was available as a spare pilot.

(b) Drilling

In selection of drills to be used it was necessary to keep their weight down to a minimum.

Two Mayhew Model 50 and one Carey Model HHP portable drills were made available.

One Mayhew Model 50 rig had a total weight of approximately 800 pounds. This rig was divided into sling loads of about 400 pounds per load. Hold-down stakes were designed to increase the weight on the drilling bit. Skids were installed on the drill so that it could be moved by means of the cat head from one hole to another of one shot point location. Portable water pumps made by Gorman Rupp were used for mud circulation.

The remainder of the drilling equipment consisting of supplies, drill stem, water pump, gasoline, etc., were to be carried as body

loads on the helicopter.

A drill move required four helicopter loads as follows:

- (a) one man and body load
- (b) mast assembly
- (c) mud pump assembly
- (d) one man and body load.

It was important that the helicopter remained in the field at all times, and that it remained in communication with the drills and survey crews by way of two way portable radios.

A water supply problem was anticipated so water transfer pumps were to be used along with 500 feet of garden hose to supply water to the drills from water holes in the muskeg.

Three and one-eighth insert and three-cone rock bits were used.

Drilling was difficult in shattered sandstone, gravel and sand. Where holes could be spotted on clay locations the drilling was relatively easy.

Shot point elevations were mainly derived from an altimeter survey tied to a number of government bench marks and tellurometer stations established by Shell Oil Company of Canada, Limited. Six Paulin altimeters, Model T5 were used to minimize errors. In addition, the helicopter altimeters were used as checks. Station elevations were established by clinometer.

Horizontal control was established with reference to physical features as noted on aerial photographs. Shot point locations were

to be more accurately determined by photographing targets placed on the shot points.

Surveying by means of a Wild TLA theodolite was conducted in the Yadek Lake region where new program was contiguous to work done in the winter of 1960-61.

The following operational procedures were employed.

- i. Surveyor flies over line, locating shot point sites on aerial photographs; factors considered in selection of shot point sites were density of brush, availability of water, and anticipated drilling conditions.
- ii. Pilot takes two brush cutters in float equipped helicopters, landing on natural clearing on or near the shot point and indicates spread and heliport cutting to be done.
- iii. Surveyor takes elevations by altimeter and places targets for photographing shot points. On return, shot points are photographed.
- iv. Surveyor takes clinometer reading along the spread and compass readings for direction of the spreads which were as near as possible at right angles from the shot point.

(d) Recording

i. Equipment

The recording equipment was to be completely portable. The instruments consisted of two amplifier banks, General Geophysical Type JMH, a power unit, and a camera; each packaged separately for

transportation and assembled by use of plug-in looms. Two 12 volt batteries were carried separately. The developing pots were carried in a wooden case and developing was done by use of a developing sleeve placed over the case.

Breast reels were used for the cables and seismometers were carried in bags. Two marsh type seismometers per station, Electro-Tech 20 cycle, were used for most of the work. Occasionally 6 "P" type General Geophysical seismometers were used per station.

ii. Technique

Seismic surveying was conducted mostly using the jump correlation method, only a few shot points were shot in continuous profile.

For reflection shooting the most common layout consisted of a shotpoint located at the centre of a 2640 foot instrument spread with 24 seismometer groups spaced 110 feet apart and with the distance from the shot point to the closest station being 110 feet. On occasion the instrument spread was shortened to a 50 foot interval between stations.

In refraction shooting the spread consisted of 24 seismometer stations spaced 300 feet apart.

A single hole to a depth of 40 feet was drilled wherever possible, however, due to very difficult drilling conditions three holes at 25 foot spacing were quite often employed.

These holes could generally only be drilled to 10 to 20 feet.

For reflection shots charges ranged from one to 300 pounds, with the average charge being approximately 40 pounds. Charges up to 700 pounds were used for refraction with the average being approximately 350 pounds.

iii. Operation

The instrument crew started work on July 15 on the western reconnaissance program. The skid equipped helicopter was turned over for exclusive use of the instrument crew. The float equipped helicopter remained with the drills.

Four helicopter trips were normally required in moving the recording crew and equipment from shot point to shot point.

- two recorder's helpers, reels, seismometers and part of the recording instruments.
- two recorder's helpers, reel, seismometers and part of the recording instruments.
- observer and recording instruments.
- shooter and recording instruments and dynamite
- a fifth trip was necessary when excessive dynamite was carried.

(d) Camp

The camp was made up of equipment used in previous operations. This was not the lightest available but the short duration of the survey

did not warrant the purchase of special equipment. Articles which could have been lightened were tents, sleeping bags, power plants and welder. Both gasoline and propane cook stoves were used with the former being more satisfactory.

It was originally intended to move the camp onto each line in an effort to decrease flying time. The small load capacity of the helicopter made this type of a move very slow and expensive. Camp was moved in this manner only once. For the remainder of the camp sites, lakes were selected large enough to accomodate float-equipped aircraft.

It was important that all of the above operations be carefully coordinated in order to maintain at a minimum the time waiting for the helicopter and the flying time.

(e) General

In preparation for the operation, helicopter fuel in ten gallon drums had to be stock piled in convenient locations throughout the area. Where possible these locations were selected on lakes on which float-equipped aircraft could be landed and the gasoline placed on the shore. In many places the gasoline was dropped into lakes too small to accommodate float-equipped aircraft. About one third of this gasoline was not useable because of breakage. Besides this, its recovery was often very difficult.

The drill and survey crews were moved in starting June 21 with the intention of drilling the reconnaissance program in the western portion of the area before the instrument crew was to go in. Because of bad flying conditions the move was not completed

until June 28, on which date drilling was started. Much of the equipment was moved in from Inuvik after the airstrip at Norman Wells was rained out.

COMPUTATIONS

The reflections were computed using the same system as discussed previously in the report of the winter's operations.

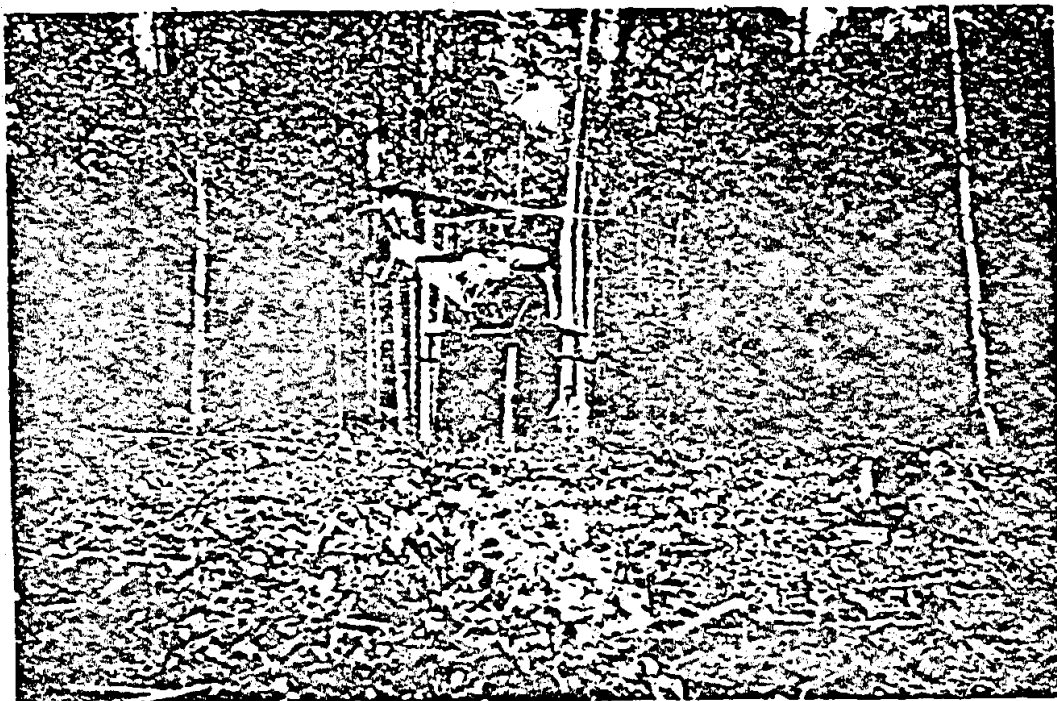
RESULTS

(a) Record Quality

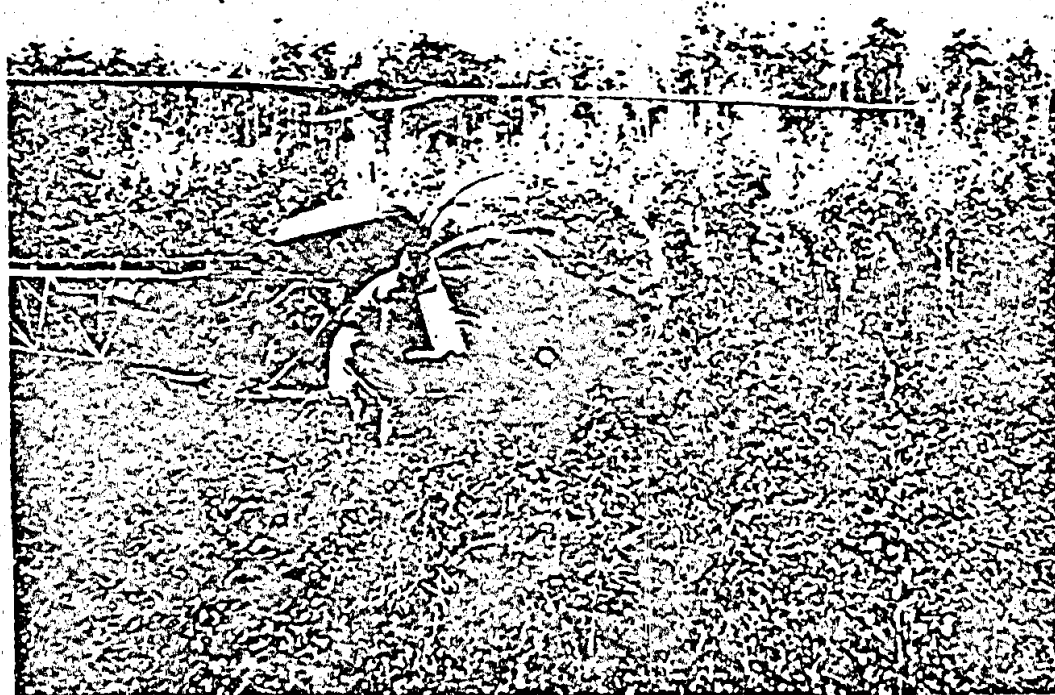
Records were generally very poor in quality due to the shallow depth at which they were shot. Only the Hume event could be mapped.

(b) Maps

These results have been integrated with the previous winter's maps as discussed previously.



BELL G3B HELICOPTER LANDING



RECORDER LOADING INSTRUMENTS

Prepared by Northern Division Geophysical
staff, J. Hamilton Division Geophysicist,
under the supervision of B.M. Veilleux,
Northern Division Exploration Manager,
Shell Oil Company of Canada, Limited,
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PART B

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AND CARIBOU LAKE AREAS

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DECEMBER, 1961

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ENCLOSURES

Map showing area covered by Surface Mapping Project,
Yukon-Northwest Territories 1958, 1959, 1961
Scale 1:500,000

Index Map showing locations of measured sections in
area mapped, Yukon-Northwest Territories 1958, 1959, 1961
Scale 1:500,000

Index Map showing locations of camp sites in area mapped,
Yukon-Northwest Territories, 1958, 1959, 1961
Scale 1:500,000

Index Map showing locations of photographs in area mapped,
Yukon-Northwest Territories, 1961
Scale 1:500,000

Geological Compilation Map, Yukon-Northwest Territories,
1958, 1959, 1961 Scale 1:500,000

STRATIGRAPHIC SECTIONS
(vert. scale 1"=100')

Southern Boundary
Catherine Ridge
Divide Mountain
Gypsum Valley
Bill Mountain
Caribou River
Peel River
Snake River

REPORT ON THE SURFACE EXPLORATION IN THE
RAMPARTS RIVER, MANY BEAVERS RIVER, WIND RIVER
AND CARIBOU LAKE AREAS

Permits No. 2402 to 2409 inclusive, 2418 to 2440 inclusive

The following report is in partial fulfillment of Section 54 of the Canada Oil and Gas Regulations.

54 (d) No aerial photographs were taken on the subject permits or surrounding area.

54 (e) Location:

The area covered in this report lies between 129° 15' and 136° 00' longitude and 65° 00' and 66° 20' latitude with a small eastward extension to 128° 45' longitude and between 65° 00' and 65° 30' latitude. The area was mapped during the 1953, 1959 and 1961 field seasons.

Accessibility

The Mackenzie River flows within a few miles of the eastern edge of the report area and is useful in transporting heavy equipment from Edmonton. No other river in the area is suitable for navigation owing to the fact the headwaters of most of these rivers are within or nearly within the report area.

A winter road runs from the Mackenzie River along the mountain front of the Mackenzie Mountains to the Trevor Mountains just west of the Snake River.

Fixed-wing aircraft provide the most satisfactory transportation to most parts of the area (Photo 17).

Transportation and Communication

All field equipment was transported from Edmonton to Inuvik by a DC-3. From the base camp in Inuvik the supplies were dispatched to the various field camps by Otter. An average of one trip weekly to each camp was maintained throughout each season.

Contract Bell G-2 and Hiller 12E helicopters were used for field mapping, stratigraphic work, establishing gas caches and transporting fly camps. Each party had its own helicopter and in 1961 one helicopter was shared by the parties as an auxiliary. It was used when a camp helicopter was grounded for mechanical reasons or when a party felt two helicopters would aid them in solving a geologic problem involving long distance transportation.

The Hiller was first used by Shell in 1961 and was found to have certain advantages over the G-2. The Hiller is more powerful so that landing in smaller areas or under poor conditions was easier and safer. However, the seating arrangement places the pilot in the centre of the cabin between the two passengers, providing a very cramped condition for mapping. The pilot of a Bell G-2 sits on the extreme left with the mapping geologist on the extreme right leaving one passenger space between the two. The Hiller has the advantage of being able to carry gas drums (10 and 45 gallon) in a sling hanging beneath it (Photos 18 and 19). Fly camp equipment and two geologists may be easily transported in one trip with the Hiller aircraft.

Base camp was equipped with a Marconi CH-16 single side band transreceiver and a 60 watt AM Spillsbury and Tindall MPT-600 transreceiver. The field camps were equipped with a 60 watt Spillsbury and Tindall transreceiver. The field camp radios were powered by a portable gas powered generator. In addition, a small battery-operated transistor receiver monitored while the generator was not operating. A small portable transistor transreceiver. Spillsbury and Tindall TR-100 was used by the fly camps for communication with the field camp. Any of these transreceivers could communicate with the helicopter and the Otter.

Schedules were maintained between fly camp, field camp and base camp twice daily in order to assure the safety of all camps. Radio schedules with the helicopters were arranged by each camp and contact every two hours was common.

Personnel and Camp Equipment

(1) Party 114 (1958) - Party Chief, geologist, helicopter crew (pilot and mechanic) and camp cook.

(2) Party 129 (1959) - Party Chief, geologist, two junior geologists, helicopter crew (pilot and mechanic) and camp cook.

(3) Party 130 (1959) - Party Chief, two geologists, junior geologist, helicopter crew (pilot and mechanic) and camp cook.

(4) Party 225 (1961) - Party Chief, geologist, two junior geologists, helicopter crew (pilot and mechanic) and camp cook.

The field camps were each equipped with three 12' x 12' x 6' sail silk pyramid tents for cooking, dining and office use. Each member of a party had his individual 9' x 9' umbrella-type sleeping tent (Photo No. 15).

Fly camps were equipped with two Logan mountain tents, one of which was used for sleeping, the other for cooking and storage.

A contract catering company supplied food and cook.

Base camp was a portable camp consisting of sleeping units, diner, kitchen, washroom and shower, office, recreation, walk-in freezer and light plant (Photo 16).

Topography

The Mackenzie Mountains in the report area are well drained and rugged, suggesting a mature age. The small streams have cut deep, narrow gorges, but the main rivers have wide flood plains, are braided and display moderate meandering. The dominant drainage pattern runs from south to north cutting across the structural trend of the mountains. The average elevations of the mountains is approximately 5500 feet to 6000 feet and the valley floors are at about 2500 feet.

The Peel Plateau lies between the Richardson Mountains, the Mackenzie Mountain front and a northward convex line running from Taylor Lake to the junction of the Geyna and Mountain Rivers. The plateau is characterized by broad rounded hills at about 2000 to 3000 feet elevation. Streams are incised 500 feet or more below the upland level. A thin ground moraine covers most of the area.

The Peel Plateau plain is a flat, muskeg area which reaches 1000 feet elevation in the southwestern part but slopes gently northeastward towards the Arctic plain.

Vegetation and Animals

In the Mackenzie Mountains trees were relatively sparse even along the valley floors. The tree line lies in the 2500 foot to 3000 foot range. Mosses and grasses covered the gentle slopes above the trees, but mountain tops and ridges were without vegetation with the exception of lichen growths (Photos 4, 7 & 13).

In the lowlands muskeg covers most of the area. Travelling by foot is extremely difficult over muskeg and it is very often difficult or impossible to land a helicopter on it.

Spruce is believed to be the most common tree in the area and jack pine and tamarack have been reported.

Those animals reported by various parties include: moose, caribou, Dall sheep, grizzly and black bear, weasel, marten, fisher, mink, wolverine, otter, fox, wolf, lynx, squirrel, beaver, muskrat, rabbit and porcupine.

Logistics

The following is a breakdown of the summers' operational statistics.

Party 114

Total Days in Field	99
Days weathered in	22
Days grounded (mechanical)	3

Party 120

Not available

Party 130

Total Days in Field	99
Days weathered in	17
Days grounded (mechanical)	10

Party 225

Total Days in Field	22
Days weathered in	10
Days grounded (mechanical)	0

STRATIGRAPHYCAMBRIAN-PRECAMBRIAN

Approximately 3900 feet of unfossiliferous sandstone, siltstones and shales were measured (Catherine Ridge section, IB-2-N61) in what is believed to be the Cambrian-Precambrian unit 1 and unit 2. Below unit 2, two more units, 3 and 4 were recognized. Unit 4 comprises an exposed thickness of 800 feet of whitish weathering silty to sandy dolomite varying to dolomitic quartz sandstone. Unit 3 is a 2300 foot, soft recessive unit of dark shales and orange weathering argillaceous dolomites with a central zone of siltstones and sandstone. Approximately 2400 feet of sandstone, some siliceous, and yellowish weathering shale and siltstone make up unit 2. Section IB-2-N61, Catherine Ridge shows about 1500 feet of this unit.

Maroon and green shales, interbedded with thin sandstones and siltstone bands form a distinct, colorful, recessive unit at the base of unit 1. The shales are only 200 feet thick and lie with a sharp contact on the underlying sandstone. The upper contact is gradational to a 600 foot sandstone cliff in which cross-bedding structures are abundant. The upper part of the unit 1 is composed predominantly of shales and siltstone. There is one 230 foot cliff of quartzite and argillaceous sandstone. The top 330 feet is covered. The total thickness for the MacDougall group is 1530 feet.

Snake River Tillite

This tillite outcrops in the upper Snake River area, with an extension of at least 100 square miles. Increasing rapidly in thickness from its northern edge it reaches a fairly persistent thickness of over 3,000 feet towards the south. Its full extent has not yet been recognized.

The contact between the tillite and underlying carbonates is very sharp and marked by an undulating, smooth surface. Grooves could not be observed as only small portions of the contact are exposed. The topmost 1 to 2 feet of the dolomite are brecciated. Angular fragments embedded in a reddish matrix may indicate a fossil soil, evidence of a pre-tillite erosional phase.

The upper limit of the tillite is marked by a sharp contact between a pebbly argillite to mudstone (tillite) and a clean, fine grained quartzite, grading sharply into overlying dolomites and shale containing high Lower Ordovician graptolites. This contact is visibly an angular unconformity.

The Snake River tillite appears as a dark brown to greyish red, highly indurated boulder shale to mudstone (Photos 9 & 10). The matrix of the tillite is a slightly calcareous silty and sandy mudstone. The disseminated embedded pebbles to boulders make up 10 to 20 percent of the total rock volume. In certain, mostly thin, horizons boulders and cobbles are more frequent. Sandy intercalations are very rare and occur only in the lowermost parts of the tillite.

Seen from afar the whole series shows an easily distinguishable bedding.

At several localities scratched pebbles and cobbles have been found: faceted components are common.

The tillite interfingers with the Cambrian-Precambrian clastics (unit 1 and 2) towards the east and pinches out between the Snake River and the Many Beavers River.

CAMBRIAN

Sanguine Formation

The Sanguine formation at MacDougall Canyon, is a series of evaporites and associated clastics which lie disconformably above the MacDougall group and appears to grade into the overlying Ronning carbonates. A gypsum and dolomite unit present near the Snake River may represent the Sanguine in that area. No indication of the presence of Sanguine in the Many Beavers - Arctic Red River area was found.

CAMBRIAN-ORDOVICIAN-SILURIAN

Ronning Group

The Ronning Group was mapped as one lithologic unit, but may be divided into 4 units in the west (O, S-O, S, D-S).

The eastern mapped unit consists almost entirely of banded light and dark grey dolomites and calcareous dolomites with minor interbeds of limestone near the top. The dolomite is generally

very finely crystalline, but coarsely crystalline bands were reported. Some of the dolomite is very siliceous and contains chert nodules in some horizons. The fossils are predominantly silicified corals and minor brachiopod assemblages. A lower Ronning assemblage of *Dicellomus namus*, *Eoorthis rex*, *Lingulella* sp. and *Micromitra* sp. indicates an Upper Cambrian age. No unconformity has been recognized in the lower part of the Ronning, but late Ordovician fossils are known from higher beds. The stratigraphic break at the top of the lower Ordovician, which elsewhere in the region appears to mark the end of a major cycle of sedimentation is unimportant or not present here.

The Ronning varies little in lithology laterally and ranged between 3,000 and 3,300 feet thick. The upper part of this group was established at the point where limestone became the dominant lithology.

In the west the lowest unit "O" includes calcareous shales, dark grey to black, and dark grey limestones, underlain by 200 - 400 feet of dolomite of variable crystallinity, medium dark grey, thick to massive bedded and slightly sandy and silty. This dolomite is in turn underlain by 10 - 400 feet of quartzitic sandstone.

The next unit, "S-O" is a dolomite, light to dark grey becoming calcareous in the lower part. There is a 70 foot brecciated zone in the lower half of this 720 foot unit. The lowest 100 feet is limestone.

Unit "S", composed of 830 feet, is light and dark grey banded, very fine to medium crystalline dolomite which contains silicified corals.

The top unit "D-S", includes a light to dark grey dolomite to limestone which weathers a distinctive grey-yellow to orange. The crystallinity ranges from fine to cryptocrystalline and thin shale intercalations were noted.

DEVONTIAN

Bear Rock Formation

The Bear Rock consists of approximately 1,200'± of predominantly light grey, lutitic limestone with minor fragmental and pelletoidal beds and lesser dolomite and shale. The fragmental content increases to the west. Fauna are not abundant but several zones contained Emsian fossils.

In the extreme eastern part of the area the Bear Rock consists of limestones, dolomites and is interbedded with large amounts of gypsum. Solution of the gypsum is believed to be responsible for the formation of breccias which weather to form striking hoodoos.

It is believed that the Bear Rock rests unconformably on the Renning although no unconformity was observed.

Hume Formation

The Hume is very poorly exposed in this area owing to the argillaceous and shaly nature of the limestone. The calcilutite is dark grey, but weathers brown grey, rubbly, and is normally very fossiliferous. It is believed that the Hume lies conformably on Bear Rock.

Hare Indian Formation

The Hare Indian formation consists of grey and brown weathering, marly to non-calcareous shales with limestone stringers. Brachiopods and Tentaculites are abundant.

The contact with the Hume formation is thought to be conformable, but the Hare Indian is not very resistant and the contact is rarely visible. Because it weathers so readily, thicknesses of 500 feet in the east, diminishing to 150 feet or less in the west should be considered questionable.

Canol Formation

This formation consists essentially of hard, black, platy shales, with a characteristic bright yellow and rusty bloom. The thickness varies from 0 to 250 feet.

Imperial Formation

The Upper Devonian Imperial in the eastern part of the area is a sequence of grey shales, grey-green silty shales and fine grained sandstones in units some hundreds of feet thick. Limy beds in the upper part commonly carry brachiopods. The Imperial formation as a whole, observed from a distance, has a dark purplish weathering tint, contrasting with the black weathering color of the Cretaceous shales.

In the plains area east of the Richardson Mountains, the sandstones, siltstones and shales of the Imperial are overlain by Cretaceous rocks of almost identical lithology. In outcrops which do not bear diagnostic fossils, distinguishing one from the other is extremely difficult.

MISSISSIPPIAN

On the east flank of the South Richardson Mountains a thin clastic unit immediately above the Imperial formation was mapped. Although fossils from at least one locality defines the age of the clastics as Mississippian, it is quite possible that other parts of this mapping unit may be as old as Devonian or maybe younger than Mississippian. In general, the beds consist of yellowish weathering pebbly conglomerate, sandstone, siltstones and shale beds.

MISSISSIPPIAN-DEVONIAN

In the extreme western part of the area, south of Trail River, but present on the Caribou River are black shales a few hundred feet thick. It is indicated that these shales overlie the Imperial formation that outcrops on the Peel River. The Mississippian-Devonian designation was used mainly to distinguish this unit from the overlying Mississippian-Triassic rocks, although all may in fact belong to the same system.

MISSISSIPPIAN-TRIASSIC

This rap unit is restricted to a zone up to 15 miles wide trending northwest-southeast from just north of the Peel River to the northern border of the area; the belt widens from north to south.

The lithology of this unit is basically a coarse sandstone with lesser shale and siltstone. Toward the Peel River the sandstone member diminished in importance and is largely shale with siltstone and shale intercalations.

On Trail River these rocks overlie the Imperial formation with a coarse conglomerate at the base. On Caribou River they overlie the Mississippian-Devonian black shales without a conglomerate.

PERMIAN

In the extreme southwest part of the area about 3700 feet of Permian sandstones and shales containing spirophyton were noted. This unit represents the only known Permian outcrop in the report area.

TRIASSIC

Known Triassic rocks are limited to thin limestone cappings on several mesa-like hills in the west part of the area confronting the Richardson Mountains. Nowhere were these rocks seen in contact with underlying formations, nor were they seen in contact with Cretaceous rocks. An estimated thickness for these limestones is from 100 to 200 feet.

CRETACEOUS

The Cretaceous shales in the western part of the area contain siltstone and ironstone layers, lenses and abundant nodules. In some areas the Cretaceous sandstones south of the west-flowing Snake River form prominent ridges and knolls. North of the river the sandstones are missing. All the fossils collected in the western part of the area indicate that the rocks are Lower Cretaceous.

In the eastern part of the area the Cretaceous sequence commences with a fine grained sandstone or chert pebble conglomerate

at the base. Above this basal sandstone there are thousands of feet of dark shale and mudstone, with zones of silty shale, argillaceous siltstone and minor fine grained argillaceous sandstone. A few hundred feet of very fine to medium grained lithic sandstones make up the highest Cretaceous beds in the area. Incomplete faunal knowledge indicates that the Lower Cretaceous-Upper Cretaceous boundary lies below, but probably within a few hundred feet of the base of these sandstones.

STRUCTURE

The Mackenzie Mountains are formed of broad anticlines (Photo 3) separated by narrow, steep-limbed synclines (Photo 4). The anticlines are deeply eroded exposing beds well down in the Cambrian-Precambrian sequence. Beds as high as the Upper Devonian are preserved in synclines. Faults, which are high angle reverse, are associated with these folds and trend a few degrees off the trend of the mountain range. The majority of faults dip to the southwest, with a few exceptions near the mountain front.

North of the Mackenzie Mountains there is a broad plateau mainly underlain by Cretaceous shales. The main structural feature between the Snake and Ramparts Rivers is the Peel Plateau syncline, a broad gentle syncline with axis lying ten to twenty miles north of the mountain front and trending about 100° E of N.

The South Richardson Mountains consist of a major, regional anticline with some subsidiary high angle faults along the flanks, but are generally a relatively simple geological feature.

- 54 (f) (i) A gravity survey was not conducted.
- (ii) A seismic survey was conducted. It is covered under "Part A" of this report.
- (iii) An aeromagnetic survey was not conducted.

CM-105-N59

65°02' Latitude
130°38' Longitude

SOUTHERN BOUNDARY

0-16' Shale

black, sooty, weathers rusty with yellow patches. Thin bedded, platy, hard, "clinker shale", very fissile, non-calcareous.

16-35' Shale

black, sooty, weathers rusty with yellow patches. Thin bedded, platy, hard, "clinker shale", very fissile, non-calcareous.

35'-150' Shale

black, sooty, weathers rusty with yellow patches. Rust in stream at foot, thin bedded, platy to blocky, very hard, non-calcareous.

150'-386' Shale

becomes softer, less platy, very finely splintery on weathering. Contains abundant Tentaculites at approx. 250', remainder appears to be black argillaceous limestone, soft, brown weathering, surface of slope littered with fossils. Limestone - IA, medium light grey to black, extremely fine to fine crystalline, very fossiliferous, siliceous, irregular bedding planes, weathers light grey with rough surface, abundant fossils, forms prominent resistant ridge.

386'-426' Limestone

IA, black, very fossiliferous, sub-lithographic to extremely fine crystalline, weathers brownish grey, rubbly bedded, very slightly siliceous and argillaceous, rough weathering surface.

426'-429' Shale

covered interval, probably shale, hard easily eroded.

429'-431' Limestone

IA, black, very fossiliferous, sub-lithographic to extremely fine crystalline, weathers brownish grey, rubbly bedded, very slightly siliceous and argillaceous, rough weathering surface.

431'-440'	Shale	covered interval, probably shale, easily eroded.
440'-444'	Limestone	IA, black, very fossiliferous, sub-lithographic to extremely fine crystalline, weathers brownish grey, rubbly bedded, very slightly siliceous and argillaceous, rough weathering surface, secondary white calcite stringers.
444'-456'	Shale	covered interval, probably shaly, easily eroded.
456'-470'	Limestone	IA, black, becoming less fossiliferous, lithographic to extremely fine crystalline, weathers brownish grey, rubbly bedded, very slightly siliceous and argillaceous, rough weathering surface, secondary white calcite stringers.
470'-473'	Shale	covered interval, probably shaly, easily eroded.
473'-493'	Limestone	IA, black, sub-lithographic to extremely fine crystalline, weathering light to dark grey, rubbly bedded with rough bedding surface, slightly argillaceous, fossiliferous.
493'-500'	Shale	covered interval, probably shaly, easily eroded.
500'-512'	Limestone	IA, black, sub-lithographic to extremely fine crystalline, weathering light to dark grey, rubbly bedded with few shaly inter-zones. Shale weathered too badly for sample. Occasional secondary calcite stringers, slightly siliceous.
512'-517'	Shale	covered interval, probably shaly, easily eroded.

517'-520'	Limestone	IA, black, sub-lithographic to extremely finecrystalline, weathering light to dark grey, rubbly bedded with few shaly inter-zones. Shale weathered too badly for sample. Occasional secondary calcite stringers, slightly siliceous.
520'-772'	Covered interval	probably easily eroded shale. Interval is broad valley.
772'-778'	Covered interval	talus indicates an argillaceous limestone, easily eroded.
778'-786'	Limestone	thin bedded, IA, slight more siliceous than above, sub-lithographic to extremely fine crystalline, black, weathering light grey, argillaceous, weathers to a rough surface, thick bedded, non-fossiliferous.
786'-794'	Limestone	sub-lithographic, IA, very argillaceous, non-fossiliferous, regular bedding, black, weathering light grey, thin bedding. few mica flakes, slight pinkish color, easily eroded.
794'-800'	Limestone	IA, sub-lithographic, rough weathering surface and resistant to weathering, argillaceous and slightly siliceous, rubbly bedding.
800'-841'	Limestone	IA, extremely fine to sub-lithographic, black, weathering to light grey, bedding somewhat rubbly to massive, argillaceous and possibly siliceous, non-fossiliferous, some secondary calcite, finely fractured to bedding in places, trace of secondary porosity at 832'. Occasional thin bioclastic bands.
841'-845'	Limestone	IA, sub-lithographic, black, weathers grey brown, thin bedding (1/8"-1").

845'-851'	Limestone	IA, sub-lithographic to extremely fine crystalline, black, bedding variable from massive to 1 foot bands of 1/8" bedding, weathering as above.
851'-857'	Limestone	IA, sub-lithographic, light to dark grey, weathering dark grey, bedding from 6" to 1".
857'-859'	Limestone	IA, sub-lithographic to extremely fine crystalline, dark brownish grey, weathering whitish or very light grey, bedding from 3" to 4".
859'-863'	Limestone	IA, sub-lithographic, black, weathering dark grey to black, bedding slightly contorted, laminations in places roughly parallel to bedding, bedding variable from 1/8" to 4".
863'-870'	Limestone	IA, sub-lithographic, massive bedding, dark grey, weathering light grey, metallic ring when struck.
870'-886'	Limestone	IA, sub-lithographic to extremely fine crystalline, dark grey with extremely fine laminations parallel to bedding plane, weathers light grey, mostly thin bedded (1/8"-1"), also has metallic ring when struck (siliceous).
886'-890'	Limestone	IA, lithographic to sub-lithographic, thin bedded as above.
890'-895'	Limestone	thin bedded as above (1/8"-1").
895'-901'	Limestone	medium thin bedding (2"-4").
901'-911'	Limestone	massive bedding (5"-8") 905-906, thin bedded (1/4"-1/4") band, argillaceous, 909 - limestone becomes articulate.
911'-913'	Dolomite	pale yellow brown, sub-lithographic to lithic, IA, dolomite bioclastic? (bioclastic particulate, sparry calcite 25%), weathers very light grey.

913'-918'	Limestone	IA, pale grey, lithic to sub-lithographic, fine to medium pelletoid, 10% calcite matrix, siliceous?, alternating thin to thick bedding, some shaly breaks.
918'-928'	Limestone	same as above, more massive bedding, massive 2' beds at top and bottom, rubbly weathering in middle, weathers medium grey.
928'-929'	Shale	thin bedded, black, calcareous, weathered out.
929'-936'	Limestone	IA, thin bedded (4"). pale grey, lithic to sub-lithographic, fine to medium pelletoid, 10% calcite matrix, siliceous?, some shaly breaks.
936'-941'	Covered	
941'-954'	Limestone	pale grey, sub-lithographic to fine crystalline, IA, faintly particulate, sparry calcite blebs, faintly bioclastic.
954'-960'	Covered	
960'-981'	Limestone	sub-lithographic to extremely fine crystalline, IA, faintly particulate, becoming more argillaceous, becoming shaly between 963'-967', becomes almost black resulting in indistinct texture.
981'-996'	Limestone	medium grey, IA, sub-lithographic, very faint partings, weathers light grey, thick bedding 6"-11", with few 1" shaly weathered bands.
996'-1011'	Covered	
1011'-1015'	Limestone	medium grey, IA, sub-lithographic to extremely fine crystalline, faintly particulate, argillaceous, calcite infill of vugs and fractures, massive 6" bedding.

1015'-1019' Limestone

black, sub-lithographic, IA, argillaceous? trace siliceous content (very faint partings), shaly appearance, thin $\frac{1}{2}$ "-2" bedding, weathers light grey.

1019'-1024' Limestone

medium brown to grey, IA, fine to medium pelletoid, 10% sub-lithographic matrix, pellets indistinct, weathers light grey, thick bedding.

1024'-1040' Limestone

dark gray to black, IA, sub-lithographic, (may be partings but too dark to tell), argillaceous, slightly siliceous, weathers light grey, blocky to flaggy.

1040'-1043' Limestone

medium grey to brown, IA, fine to medium pelletoidal, 10-20% lithic to sub-lithographic matrix (some very large partings?), argillaceous, slightly siliceous, weathers light grey, massive beds, faint coralline outlines on weathered surface.

1043'-1049' Covered

1049'-1058' Limestone

Limestone, pale yellow brown to medium yellow brown, IA, lithic, (very faint partings), slightly siliceous, thick bedded with rubbly tendency, weathers light grey.

1058'-1059' Limestone

black to dark grey, flaggy.

1059'-1061' Limestone

medium brown to grey, IA, lithic, calcite blebs, massive, weathers light grey.

1061'-1076' Limestone

black, IA, sub-lithographic to extremely fine crystalline, argillaceous, siliceous, very shaly weathering, thin even $\frac{1}{4}$ "- $\frac{1}{2}$ " beds with thicker 2-4" beds at base, weathers out grey in color.

1076'-1082' Limestone

ridge former, medium brown to grey, IA, lithographic to sub-lithographic, massive, weathers light grey.

1082'-1092' Limestone

black, IA, extremely fine to very fine crystalline, minor diastem @ 82', thin shaly 1-3" beds to 86, massive to 92, weathers light grey, calcite infill

1092'-1099' Limestone

medium brown to grey, IA, lithic to sub-lithographic, massive 1" beds, weathers light grey, siliceous?

1099'-1113' Limestone

dark grey to black, IA, sub-lithographic to extremely fine crystalline, calcite veinlets and infill, weathers light grey, argillaceous and siliceous? thin 1-3" beds to 1109 showing laminations, massive from 1109-1113'.

1113'-1123' Limestone

black, IA, sub-lithographic to extremely fine crystalline, argillaceous, siliceous, massive, weathers light grey.

1123'-1124' Shale

calcareous or limestone very argillaceous, black, fissile to thin bedded.

1124'-1126' Limestone

dark brown to grey, IA, sub-lithographic, (partings?), massive, 2' beds, weathers light grey.

1126'-1132' Limestone

very pale grey, IA, lithic to sub-lithographic, argillaceous, 4' beds, rubbly. weathering pale brown, 6" dark limestone band at 1130'

1132'-1155' Limestone

medium brown grey, IA, lithic to sub-lithographic to extremely fine x'11, to fine to medium pelletoidal, argillaceous?, massive 3-4' beds with same lith but shaly weathering zone of few inches every bed, weathers medium grey, strongly fractured with moderate amount of calcite infill.

1155'-1167' limestone

medium brown grey, IA, lithic to sub-lithographic to extremely fine crystalline, fine to medium pelletoidal, argillaceous?, 1' beds with same lith but shaly weathering zone of few inches every bed, weathers medium grey,

- 1167'-1174' Limestone medium yellow brown, IA, lithic to fine to coarse pelletoidal, weathers light brown, massive.
- 1174'-1186' Limestone dark grey to black, IA, extremely fine to very fine crystalline, slabby 2"-6" beds, weathers medium brown grey
- 1186'-1211' Limestone dark brown-grey, IA, lithic to sub-lithographic, argillaceous, siliceous, very massive, becomes thinner bedded (2') at 1201, calcite veining, shaly 2" beds 1203-5, massive at base. strongly calcite veins.
- 1211'-1232' Limestone dark brown-grey, IA, sub-lithographic, extremely fine crystalline, argillaceous, siliceous, weathers pale grey, massive 1' beds, silty laminated to 1222'. heavily fractured and infilled with calcite.
- 1232'-1234' Weathered out
- 1234'-1251' Limestone medium grey, IA, sub-lithographic?, massive 2-3' beds, siliceous, weathers light grey.
- 1251'-1256' Limestone pale brown-grey, 1AtrC, lithic to sub-lithographic, siliceous, slabby to thick bedded, weathers light grey.
- 1256'-1316' Limestone dark brown-grey, IA, sub-lithographic to extremely fine crystalline, siliceous, calcite veinlets, massive 2-3' beds to 1287', 1268-70 and 1273-74 same lith but shaly 2" bedding, from 1287 beds 4-6", 1301-12 massive unit, 1316-13 shaly banded.
- 1316'-1330' Limestone black to very dark grey, weathers medium grey with rough surface, sub-lithographic, some secondary calcite, thick bedded, thin shaly bands, argillaceous.
- 1330'-1363' Limestone IA, black, weathers dark grey, medium bedded, 1" laminations, sub-lithographic, mica common along laminae, minor stylolites, very argillaceous.

1363'-1375' Limestone

IA, light brownish grey, slightly dolomitic, weathers light grey, irregular bedded, sub-lithographic to lithic, slightly argillaceous, minor stylolites.

1375'-1391' Limestone

IA, black, very argillaceous, thinly laminated and thin bedded, weathers light grey with rusty tint, poor exposure, sub-lithographic to lithic.

1391'-1439' Limestone

IA, light to medium brownish grey, sub-lithographic to lithic, thick bedded, weathers light grey, darker color usually accompanied by thinner bedding.

1439'-1442' Limestone

IA, black, weathers dark grey, thin bedded (1"-4"), very argillaceous, sub-lithographic.

1442'-1452' Limestone

IA, medium to brownish grey to black, thick bedded (1'-4'), minor thinner bedded bands, sub-lithographic, very argillaceous, weathers medium grey with rough surface.

1452'-1462' Limestone

IA, light brownish grey, weathers light grey with rough surface, sub-lithographic, bedding indistinct giving massive appearance.

1462'-1478' Limestone

IA, dark to medium brownish grey, sub-lithographic, weathers light grey, medium bedded (4" to 1'), badly fractured towards base.

1478'-1509' Limestone

IA, medium brownish grey, massive, sub-lithographic, weathers light grey, in part thinly laminated, slightly argillaceous? laminae rather indistinct, becomes dark brownish grey towards base.

1509'-1520' Limestone

IA, light brown grey, sub-lithographic, weathers light grey with rough surface, slightly dolomitic, massive bedding, minor thin bands of extremely fine to very fine slightly darker dolomitic limestone.

- 1529'-1531' Limestone
IA, brown black, weathers medium grey with rough surface, thick bedded to massive, moderately dolomitic, very argillaceous, shows indistinct banding on weathered surface.
- 1531'-1543' Limestone
IA, sub-lithographic, light brownish grey, slightly dolomitic, weathers light grey, massive.
- 1543'-1560' Limestone
IA, dark brownish grey to black, sub-lithographic, weathers medium grey.
- 1560'-1569' Limestone
IA, dark brownish grey, sub-lithographic to fine crystalline, argillaceous, massive, abundant white secondary coarse soluble calcite, weathers to medium dark grey.
- 1569'-1609' Limestone
IA, medium grey, sub-lithographic to fine crystalline, weathers light grey, thin bedded (2"-4"), slightly dolomitic and moderately argillaceous, minor secondary white calcite.
- 1609*-1621' Dolomite
IA, medium brownish grey, sub-lithographic to fine crystalline, abundant clear dolomitic infill, thin bedded ($\frac{1}{4}$ "- $\frac{1}{2}$ ") , weathers light grey with rough surface.
- 1621'-1631' Dolomite
IA, sub-lithographic to extremely fine crystalline, dark brown black, moderately calcareous, moderate bedding (3"-4"), weathers medium grey.
- 1631'-1638' Limestone
IA, dark brownish grey, sub-lithographic, weathers light grey with banding, moderately dolomitic, banding probably result of dolomitic content, massive.
- 1638'-1645' Covered
- 1645'-1651' Limestone
IA, dark brown grey, weathers dark grey, thin bedded (1"-2"), sub-lithographic to extremely fine crystalline, easily weathered.

- 1651'-1652' Limestone IA, medium grey brown, lithic to sub-lithographic, weathers light grey with very rough surface, bedding 1'.
- 1652'-1690' Limestone IA, dark grey, weathers light grey, thick bedded (1"-15"), sub-lithographic, partially covered interval.
- 1690'-1703' Dolomite IA, medium brown grey, sub-lithographic, weathers medium light grey, rubbly thick bedded (6"-3'), some secondary dolomite.
- 1703'-1717' Dolomite IA, light to medium grey brown, very thinly laminated, weathers dark to light grey, laminated, slightly calcareous, sub-lithographic.
- 1717'-1732' Dolomite moderately calcareous, light grey, brown to medium grey brown, IA, very fine to fine crystalline, minor secondary calcite, weathers whitish grey to brown, bedding variable (1"-1'), becomes darker and more calcareous at 1732'.
- 1732'-1739' Limestone sub-lithographic to moderately dolomitic, dark brown black, IA, extremely fine to very fine crystalline, weathers medium rusty brown, evenly bedded (1"-6"). some calcareous infill. some laminations.
- 1739'-1744' Dolomite pale grey, IA, very fine crystalline, dark inclusions (anhydrite)?, weathers pale grey, evenly bedded, slabby, heavily fractured.
- 1744'-1752' Dolomite dark brown black, IA, extremely to very fine crystalline, bedding variable from 1' at top to 1" at bottom, weathers dark grey, medium rusty color stain covers rocks at places.
- 1752'-1756' Dolomite pale brown, IA, trace d, sub-lithographic to extremely fine crystalline, very heavily fractured in all directions, calcite veins plentiful, very massive, weathers light brown.

1756'-1765' Dolomite

dark brown, IA/1/3B, very fine to fine trace medium sucrosic, weathers medium to dark brown.

1765'-1775' Covered

1775'-1783' Dolomite

dark brown, slightly to moderately calcareous, IA, sub-lithographic to extremely fine crystalline, calcareous inclusions (bioclastic replacement?), weathers dark brown.

1783'-1809' Dolomite

calcareous, IA, sub-lithographic to extremely fine crystalline, pale to medium brown, very heavily fractured, abundant calcite infill, weathers light to medium grey, mostly covered interval.

1809'-1862' Dolomite

90% covered, dark brown, IA/1/3, extremely fine to very fine laminated, calcite infill, weathers dark brown.

1862'-1870' Dolomite

light grey, 3B, medium sucrosic dolomite, moderately calcareous cement, weathers grey.

1870'-1880' Covered

1880'-1932' Limestone

IA, extremely fine to very fine crystalline, grey, weathers dark grey to rusty brown to dark grey calcareous dolomite, I/IIIB, very fine bedding badly contorted, massive, heavily fractured, abundant calcite fill.

1932'-1980' Limestone

black, IA, extremely fine to very fine crystalline, argillaceous, thin bedded to flaggy, weathers brown and rubbly.

1980'-2420' Limestone

black, IA, extremely fine to very fine crystalline, argillaceous, thin bedded to flaggy, weathers brown and rubbly.

2420'-2432' Limestone

black, IA, sub-lithographic to extremely fine crystalline, thin bedded 1" to slabby 6", weathers black to dark grey, moderate calcite infill.

2432'-2458'	Covered interval	
2458'-2466'	Limestone	dark brown to black, IA, sub-lithographic to very fine crystalline, black limestone massive, brown limestone 2" beds, both weather brown.
2466'-2477'	Limestone	very dark brown, IA, lithic to sub-lithographic, weathers dark grey, massive at top to thin bedded at bottom, abundant infill of calcite at base, weathers rough.
2477'-2496'	Covered interval	
2496'-2506'	Limestone	very dark brown, IA, sub-lithographic, weathers dark grey, beds 4" to 2", (shaly at base).
2506'-2513'	Limestone	very dark brown, massive, sub-lithographic, weathers grey brown, IA
2513'-2524'	Limestone	dark grey (faintly brown), IA, sub-lithographic to extremely fine crystalline, shaly, 1-2" beds, slighter thicker near base, fine dark laminae, calcite infill, weathers dark grey.
2524'-2530'	Limestone	dark brown, IA, sub-lithographic to extremely fine, laminated, weathers light grey, slabby.
2530'-2542'	Limestone	very dark brown grey, IA, very fine to fine crystalline, abundant calcite infill, weathers dark grey with brown patches, shaly zone at 533-534, bedding variable (1-2" most common).
2542'-2551'	Limestone	interbedded, dark brown, IA, sub-lithographic to extremely fine, with limestone dark brown grey, IA, trace D, extremely fine to very fine, calcite infill, former massive 1'-2' beds, latter thin bedded, averaging 1" beds, both weather dark grey.
2551'-2562'	Covered interval	

2562'-2580' Limestone

dark grey, tinge brown, extremely fine to very fine, IA, weathers medium to dark grey, bedding varies from greater than 1' to 2", 1' of fine laminations at top.

2580'-2586' Covered interval

2586'-2599' Limestone

dark brown, IA, sub-lithographic to very fine, shot with calcite blebs, calcite infill (veining), weathers medium to dark grey, evenly bedded 4"-3", overall shaly appearance.

2599'-2610' Limestone

medium grey brown, IA, medium bioclastic? (ostracods), abundant, lithic to sub-lithographic matrix, weathers light grey, very massive, shaly weathering partings, calcite blebs.

2610'-2686' Covered interval

2686'-2694' Limestone

medium and dark brown, IA, lithic to sub-lithographic, shot with calcite blebs, weathers light to medium grey, massive.

2694'-2696' Limestone

very dark grey (tinge brown), sub-lithographic to extremely fine crystalline, IA, very argillaceous (shaly), 1"-3" beds, weathers light to medium grey.

2696'-2698' Limestone

medium and dark brown, IA, lithic to sub-lithographic, shot with calcite blebs, weathers light to medium grey, massive bedded.

2698'-2718' Limestone

very dark brown to dark grey, IA, sub-lithographic to extremely fine crystalline, argillaceous (shaly unit), 3"-6" beds, 1" most common, weathers medium grey, some calcite infill.

2718'-2736' Limestone

medium brown, IA, sub-lithographic (possibly partings), massive 4" bedding, weathers medium grey, with rough striated surface (siliceous), trace pyrite.

2736'-2738' Limestone

very dark to very brown (shaly unit), weathers brown and recessive.

2738'-2760' Limestone

medium brown to very dark brown, IA, sub-lithographic to extremely fine, massive, weathers medium grey with rough surface.

2760'-2765' Limestone

medium brown, lithic to sub-lithographic, IA, calcite blebs, dark laminae, very massive, weathers medium grey.

2765'-2766' Weathered out

2766'-2777' Limestone

medium brown, lithic to sub-lithographic, IA, calcite blebs, dark laminae - probably fractures, very massive, weathers medium grey.

2777'-2780' Weathered out

2780'-2785' Limestone

medium brown, lithic, trace sub-lithographic, IA, heavily shot with calcite blebs (up to 25%), very massive 1' and greater beds, weathers medium grey.

2785'-2787' Weathered out

2787'-2793' Limestone

medium brown, lithic to sub-lithographic, IA, darker fractures, smaller amount of calcite infill, weathers massive, weathers medium grey with rough surface.

2793'-2804' Limestone

very dark brown, sub-lithographic to extremely fine crystalline, has tendency to weather brownish grey, slightly less resistant than above.

2804'-2816' Limestone

medium brown, IA, lithic to sub-lithographic, some calcite blebs, and small dark fractures, unit weathers medium grey, massive, very heavily fractured.

2816'-2822' Limestone

very dark brown, IA, shaly unit, weathers medium brown grey, flaggy to fissile, sub-lithographic to extremely fine.

- 2822'-2825' Limestone very dark brown, IA, shaly unit, weathers medium brown grey, sub-lithographic to extremely fine, dense massive zone.
- 2825'-2828' Limestone very dark brown, IA, shaly unit, weathers medium brown grey, sub-lithographic to extremely fine
- 2828'-2833' very dark brown, IA, shaly unit, weathers medium brown grey, sub-lithographic to extremely fine, dense massive zone.
- 2833'-2842' Dolomite moderately calcareous, dark grey brown, extremely fine to very fine crystalline, calcareous infill, weathers light to medium brown with thin striae which are dark laminations, shaly in part.
- 2842'-2844' Limestone medium to dark brown, with wavy white inclusions, massive, weathers light brown, sub-lithographic to extremely fine crystalline, IA.
- 2844'-2849' Limestone medium to dark brown, sub-lithographic, IA, calcite blebs, dark stain along small fractures, weathers in massive 2-3 units, weathers light grey.
- 2849'-2865' Limestone very dark black brown, sub-lithographic, to extremely fine crystalline, IA, weathers brown in 2 massive units which frequently break in shaly partings along even dark laminae.
- 2865'-2867' Limestone very dark black brown, sub-lithographic, to extremely fine crystalline, IA, weathers brown in 2 massive units which frequently break in shaly partings along even dark laminae.
- 2867'-2873' Limestone very dark black brown, sub-lithographic, to extremely fine crystalline, IA, weathers brown in 2 massive units which frequently break in shaly partings along even dark laminae.

2873'-2879' Limestone

pale to medium brown at top, grades to medium to dark brown at base, lithic to extremely fine crystalline, IA, weathers medium grey, 2-4" bedding very badly sheared and possibly faulted.

2879'-2882' Covered interval

2882'-2896' Limestone

dark brown, IA, sub-lithographic to extremely fine, dark laminations at top grading to shaly weathering at base, badly fractured, resistant bed, weathers dark grey.

2896'-2906' Limestone

medium brown, IA, lithic? (sub-lithographic), shot with calcite blebs, massive greater than 2' overall. (some 6" beds), weathers medium grey.

2906'-2909' Limestone

medium brown, IA, lithic, shot with calcite blebs, massive, greater than 2' overall (some 6" beds), weathers medium grey.

2909'-2913' Limestone

very dark brown, IA, sub-lithographic to extremely fine crystalline, weathering brown, with shaly weathering surface (to 1") at base.

2913'-2914' Limestone

medium brown, lithic to sub-lithographic, IA, weathers dark grey with light brown patch, massive bedded with argillaceous material along minute fractures, massive unit.

2914'-2920' Limestone

medium brown, lithic to sub-lithographic, IA, weathers dark grey with light brown patch, massive bedded with argillaceous material along minute fractures, massive unit.

2920'-2927' Limestone

very dark brown, sub-lithographic to extremely fine, IA, weathers recessive brown with frequent $\frac{1}{2}$ " to 1" shaly zones.

2927'-2934' Limestone

very dark brown, sub-lithographic, IA, massive, weathering medium grey, fossiliferous.

2934'-2945' Limestone

medium brown, IA, lithic to sub-lithographic, typical resistant unit, calcite blebs, massive, weathers light grey.

2945'-2946.5' Limestone

very dark brown to black, IA, sub-lithographic to extremely fine crystalline, typical shaly unit, weathers brown/grey in 1"-1" beds.

2946.5'-2955' Limestone

medium to dark brown, IA, extremely fine crystalline, weathers overall resistant with minor shaly breaks, calcite blebs, weathering medium grey, slabby.

2955'-2958' Covered interval

2958'-2968' Limestone

medium to dark brown, IA, sub-lithographic to extremely fine crystalline, calcite blebs and veinlets, some stylolites, resistant unit, weathers light to medium grey, thick bedded.

2968'-2973' Covered interval

2973'-2980' Limestone

medium to dark brown, IA, sub-lithographic to extremely fine crystalline, calcite blebs and veinlets, some stylolites, resistant unit, weathers light to medium grey, thick bedded.

2980'-2984' Limestone

medium brown, lithic to sub-lithographic, IA, abundant calcite blebs, resistant unit, 6"-1' beds weathers light to medium grey.

2984'-2991' Limestone

dark brown, sub-lithographic to extremely fine crystalline, IA, shaly unit, mostly weathered out, weathers brown, 4"-6" beds, mostly about 1-2".

2991'-2998' Limestone

medium brown, IA, sub-lithographic to lithic, typical resistant unit, calcite infill, stylitic development, weathers light to medium grey, in 2" beds, badly sheared.

2998'-3003'	Weathered out	
3003'-3014'	Limestone	very dark brown, sub-lithographic to extremely fine, IA, weathers medium grey, trace brown, evenly bedded (1" most common). light shaly unit but is resistant.
3014'-3021'	Limestone	medium and dark brown, lithic to extremely fine, IA, weathers medium grey, laminated, massive.
3021'-3033'	Limestone	very dark brown, IA, sub-lithographic to extremely fine, evenly bedded (2" beds), weathers brown grey, semi-resistant.
3033'-3042'	Limestone	to shale, very dark brownish black, thinner bedded (1" beds).
3042'-3043'	Limestone	medium brown, resistant unit.
3043'-3051'	Limestone	medium brown, resistant unit, shaly unit.
3051'-3053'	Limestone	medium brown but darker than above, resistant unit.
3053'-3058'	Limestone	very dark grey to black, shaly zone, weathers dark brown, very thinly bedded 1/8" to 1/4".
3058'-3071'	Limestone	sub-lithographic to extremely fine, very dark brown, IA, very massive, weathers in 4' units with brown grey color.
3071'-3079'	Limestone	medium brown, IA, sub-lithographic to lithic, calcareous veining and blebs, massive (1 unit), typical resistant, weathers brown grey.
3079'-3088'	Limestone	very dark brown, sub-lithographic to extremely fine, IA, resistant, weathers in 4" to 1' beds, medium grey color.
3088'-3090'	Limestone	very dark brown, sub-lithographic to extremely fine, IA, resistant, weathers in 4" to 1' beds, medium grey color.

3090'-3100'	Limestone	interbedded in 1' beds, medium brown, IA, sub-lithographic to lithic, calcite veining and blebs, massive, weathering brown grey with limestone - very dark brown, sub-lithographic to extremely fine crystalline, IA, resistant, weathers in 4" to 1' beds, medium grey color.
3100'-3114'	Covered interval	
3114'-3128'	Limestone	very dark brown to black, sub-lithographic to extremely fine crystalline, IA, weathers brown grey, fairly massive except for shaly weathering beds, weathers to very rough surface.
3128'-3133'	Limestone	medium and medium to dark brown, IA, pelletal? calcite blebs, weathers massive and brown grey.
3133'-3141'	Limestone	very dark brown, IA, finely laminated, weathers brown grey, with shaly partings.
3141'-3146'	Covered interval	
3146'-3156'	Limestone	dark brown, IA, sub-lithographic, weathers medium grey, thin (1") to thick (1') bedding, laminated.
3156'-3166'	Limestone	medium to dark brown, IA, lithic? (particulate?) (too dark to see!), weathers medium grey in 1' units, fractures, rough weathering surface.
3166'-3173'	Limestone	medium to dark brown, IA, lithic?, weathers medium grey in 1' units, fractures, rough weathering surface.
3173'-3178'	Limestone	dark brown, sub-lithographic, IA, weathers medium grey in 1"-6" beds.
3178'-3180'	Limestone	pale brown, IA, extremely fine crystalline (very fine?), weathers brown, massive.
3180'-3188'	Limestone	medium and medium to dark brown, IA, lithic-sub-lithographic, weathers medium grey in 6"-1' beds.

3188'-3197'	Limestone	medium to dark and very dark brown, IA, sub-lithographic, shaly unit, 1" beds, most common, weathers medium brown to grey, partially weathered out.
3197'-3200'	Limestone	medium brown, IA, extremely fine to very fine crystalline, massive, weathers medium grey.
3200'-3211'	Limestone	very dark brown, sub-lithographic, IA, weathers brown grey, very irregular and uneven bedding, laminated in part.
3211'-3214'	Limestone	medium brown, IA, very fine to extremely fine crystalline, weathers brown grey, massive bed.
3214'-3217'	Limestone	medium brown, to medium dark brown, IA, lithic in 1 unit, weathers light grey.
3217'-3219'	Dolomite	slightly calcareous, pale brown, extremely fine crystalline, weathers pale brown, easily eroded.
3219'-3229'	Limestone	very dark brown, lithic and extremely fine and very fine, weathers grey brown, evenly bedded in 2 to 6" beds, denser limestone usually thicker beds.
3229'-3231'	Limestone	medium to dark brown, lithic, IA, shot with calcite blebs, evenly bedded (3" beds), weathers brown grey.
3231'-3232'	Dolomite	very fine crystalline, IA, weathers very light grey, heavily fractured, easily eroded.
3232'-3236'	Limestone	dark brown, very fine crystalline, IA, laminated, weathers dark brown (6"-1' beds).
3236'-3252'	Dolomite	medium grey brown, IA, very fine, weathers medium brown (6" to 1' unit), from 3242 becomes very coarse laminated, laminae appear darker and more calcareous, weathered out near base.

3252'-3255'	Limestone	medium brown, 1A, lithic to sub-lithographic, weathers medium brown with rough surface.
3255'-3259'	Dolomite	finely sucrosic, with calcareous cement, 3/1B, medium brown, weathers pale brown, easily eroded, laminated.
3259'-3274'	Limestone	interbedded, medium brown, medium/dark brown and very dark brown, lithic to sub-lithographic, 1A, trace pyrite, weathers medium grey, weathers in 6" units, interbedded at 1' intervals.
3274'-3278'	Limestone	very dark brown, 1A, shot with very fine dolomitic rhombs?, weathers pale grey brown, regular bedding.
3278'-3281'	Limestone	medium brown, 1A, lithic to sub-lithographic, shot with calcite blebs, massive bed (1 unit), weathers light grey.
3281'-3282'	Dolomite	very pale brown, medium calcareous content, extremely fine to very fine crystalline, badly fractured, 1 bed.
3282'-3291'	Limestone	dolomite?, medium dark brown, extremely fine crystalline, laminated, badly fractured, 1 large unit with irregular bedding planes.
3291'-3294'	Dolomite	finely sucrosic, with calcareous cement, 1/3B, pale brown with darker brown patches. Irregularly bedded, weathers medium brown.
3294'-3299'	Limestone	medium brown, lithic, 1A, very evenly bedded (1"-4"), becomes moderately dolomitized at 3296. Rock shot with very fine to fine dolomitic rhombs.
3299'-3303'	Limestone	medium brown, 1A, extremely fine to very fine (this may be partially dolomitized), weathers medium dark brown in two units.

3303'-3320'	Limestone	medium brown, IA, extremely fine to very fine, some beds completely dolomitized, weathers medium dark brown in two units.
3320'-3327'	Limestone	very pale brown, slightly dolomitic, IA, extremely fine, massive, weathers light brown, strong calcite filled fractures.
3327'-3346'	Covered	
3346'-3352'	Dolomite	IA, medium grey, weathers medium light grey, extremely fine crystalline, moderately calcareous, slightly argillaceous, thin irregular beds $\frac{1}{4}$ "-4", abundant fractures.
3352'-3360'	Dolomite	IA, medium grey, weathers dark grey, extremely fine crystalline, slightly calcareous, slightly argillaceous, medium bedded 4", abundant fractures with some fracture porosity, weathering surface shows thin laminae. Some surface shows thin laminae, some surface show crystallographic continuity of secondary cementing material.
3360'-3364'	Dolomite	IC, medium grey, weathers medium light grey, medium bedded 4"-1', trace porosity, some faint laminae.
3364'-3375'	Limestone	IA, very dark brownish grey, weathers dark grey, thick bedded 2', fractured perpendicular to bedding, moderately argillaceous, slightly dolomitic, extremely fine crystalline, with thin band (1') of sub-lithographic limestone.
3375'-3384'	Limestone	IA, light brown grey, weathers light grey, lithic to sub-lithographic, very hard, massive.
3384'-3400'	Dolomite	IA, grey, black, massive, abundant fractures healed with secondary calcareous, extremely fine crystalline, highly resistant, with rubbly appearance 1' band of sub-lithographic dolomite.

3400'-3420'	Covered interval.	
3420'-3438'	Dolomite	IA, grey black, sub-lithographic to extremely fine crystalline, massive, fractured giving rubbly appearance on weathering, weathers dark grey, resistant.
3438'-3442'	Dolomite	IA, light grey, sub-lithographic, very thin bedded, thin darker laminae, easily weathered, abundant secondary calcite dolomite, one bedding plane carried abundant giant ostracods?
3442'-3444'	Dolomite	IA, grey black, smooth weathering, weathers dark grey, moderately calcareous, massive, extremely fine to very fine crystalline.
3444'-3455'	Dolomite	IA, light brownish grey, weathers light brown grey, slightly calcareous, abundant white secondary dolomite, (also limy), sub-lithographic to extremely fine crystalline, massive appearance (to thick bedded), fractured.
3455'-3471'	Dolomite	IA, light to medium grey, sub-lithographic to extremely fine crystalline, thinly laminated, thinly bedded (2-4"), easily weathered.
3471'-3479'	Dolomite	IA, very dark grey, minor secondary porosity, extremely fine to very fine crystalline, some brown weathering, coarsely cleavable white calcite, massive.
3479'-3497'	Covered interval	
3497'-3504'	Limestone	IA, light grey, weathers light grey, slightly to moderately dolomitic, becomes more limy towards base, sub-lithographic to extremely fine crystalline, abundant fractures.
3504'-3510'	Dolomite	IA, dark grey, weathers dark grey, massive appearance, fractured, extremely fine to very fine crystalline, moderately argillaceous.

3510'-3513'	Dolomite	IA, medium to dark grey, extremely fine crystalline, thinly laminated, badly fractured, weathers light to dark grey in bands, easily eroded.
3513'-3519'	Dolomite	IA, dark grey, faint laminae, medium bedded (6"-10"), weathers dark grey, extremely fine to very fine crystalline.
3519'-3527'	Dolomite	IC ₁ Dtr, light grey, weathers light grey, thick bedded, 3-4', C porosity developed along fractures, filled with organic material, porosity scattered, some secondary calcite, very fine crystalline.
3527'-3542'	Dolomite	IA, dark grey, weathers very dark grey, extremely fine crystalline, moderately calcareous, fractured perpendicular to bedding, massive, somewhat less resistant than above unit.
3542'-3552'	Limestone	partly covered interval, IA, medium grey, weathers dark grey, thin bedded, 1/2-2", easily weathered, moderately dolomitic, extremely fine crystalline.
3552'-3560'	Dolomite	IA, dark grey, weathers dark grey, massive, extremely fine crystalline.
3560'-3574'	Dolomite	IA, dark grey, slightly calcareous, weathers dark grey, very badly fractured, non resistant, sub-lithographic to extremely fine crystalline. very thinly bedded.
3574'-3586'	Dolomite	medium dark grey, weathers dark grey, sub-lithographic to extremely fine crystalline, very badly fractured and healed with white secondary calcite dolomite.
3586'-3603'	Dolomite	IA, medium dark grey, weathers dark grey, sub-lithographic to extremely fine crystalline, massive, badly fractured and healed with white secondary calcitic dolomite in coarsely cleavable masses.

3603'-3607'	Covered interval	
3607'-3628'	Dolomite	IA, dark grey, weathers dark grey, extremely fine crystalline, massive, badly fractured, resistant, some secondary dolomite healing fractures.
3628'-3654'	Covered interval	
3654'-3672'	Dolomite	IA, dolomite, dark grey, very fine to fine pellets. calcareous cement, weathers dark grey, easily weathered, covered intervals above and below probably represented by very similar material. Badly fractured.
3672'-3702'	Covered interval	
3702'-3713'	Dolomite	IA, dark grey, weathers dark grey, fine crystalline, some bands extremely fine crystalline, slightly calcareous and show faint laminations, massive.
3713'-3717'	Dolomite	IA, dark grey to medium dark grey, weathers dark grey, very thinly bedded, 1/8 to 2", sub-lithographic to extremely fine crystalline.
3717'-3732'	Dolomite	IA, dark grey, weathering dark grey, extremely fine to very fine pellets?, abundant masses of white coarsely cleavable calcite. massive.
3732'-3750'	Dolomite Breccia	breccia blocks 1/2"-4' cemented by white coarsely cleavable calcareous dolomite, massive, breccia fragments. Dolomite - IA, medium dark grey. weathering medium grey. very fine to fine crystalline, tendency to form rectangular blocks. Seems to have less brecciated appearance laterally. Dolomite becomes extremely fine towards base.
3750'-3763'	Dolomite	IA, dark grey, weathers dark grey, extremely fine crystalline, 6" beds, abundant coarse cleavable white calcite, resistant, very calcareous.

- 3763'-3794' Dolomite IA, medium dark grey, weathers dark brownish grey, very fine crystalline, massive, minor brecciation, minor argillaceous laminae, with some white calcite.
- 3794'-3828' Dolomite 80/100 III/IC3D1, medium light grey, weathers dark grey with rough surface, fine to medium sucrosic crystalline, massive, calcareous cement.
- 3828'-3846' Dolomite III/IA, medium light grey, weathers dark grey, very fine to medium sucrosic crystalline, abundant calcareous cement, oil stain? (slight), massive, weathers with rough surface, resistant.
- 3846'-3850' Dolomite 20/100 III/I B6, medium grey, weathers dark grey, laminae on weathered surface only, oil stain?, very fine to medium sucrosic crystalline, abundant calcareous cement, massive and resistant.
- 3850'-3855' Dolomite IA, light grey, weathers dark grey, thinly laminated, thin bedded (2"-4"), minor stringers calcite, very fine to extremely fine crystalline.
- 3855'-3878' Dolomite Ia, medium grey, weathers dark grey laminated showing contortions, very fine crystalline, moderately calcareous, sucrosic bands towards base, thick bedded (2'-4'), trace oil stain.
- 3878'-3885' Dolomite IA, light grey, weathers light grey, hard, sub-lithographic crystalline, abundant clear dolomitic blebs, siliceous?, appears massive, badly fractured.
- 3885'-3899' Dolomite III/IA, extremely fine to sucrosic, abundant calcite cement, medium light grey, weathers dark grey, minor secondary calcareous blebs, 6"-2' beds
- 3899'-3946' Dolomite III/IA, medium to light grey, very fine to fine sucrosic, varies from good crystalline to good sucrosic both vertically and laterally, some secondary calcareous, 6"-2' bedding, weathers dark grey, sucrosic patches,

3899'-3946' cont'd Dolomite

easily weathered allowing erosion of unit, 2' band of sub-lithographic dolomite.

3948'-3975' Covered interval

3975'-3990' Dolomite

IA, light blue grey, weathers medium grey, lithic-sub-lithographic, some bands laminated, approximately 1/4" irregular, some secondary dolomite, slightly calcareous where banded, 4' beds - badly sheared.

3990'-4007' Covered interval

4007'-4025' Dolomite

3A, medium light grey, weathers medium grey, very fine to fine crystalline, sucrosic, irregular patches of white coarsely crystalline calcite, massive, fractured.

4025'-4033' Dolomite

I/IIID], light grey, weathers medium to dark grey, some places 1/4" banding, appears massive, very fine to fine crystalline.

4033'-4038' Chert

light grey to black, brecciated at base, massive, very hard.

4038'-4046' Covered interval

4046'-4061' Dolomite

IA, medium dark grey, weathers medium dark grey, massive, fossiliferous.

4061'-4100' Dolomite

IA, medium to light grey and blotchy weathers light grey, rare scattered silicified coral remains?, medium bedded 2"-4", trace D porosity in some bands, sub-lithographic to extremely fine crystalline, very resistant.

4100'-41022' Dolomite

IA, medium dark grey, weathers medium grey, sub-lithographic to extremely fine crystalline, abundant coarse white secondary calcite, fairly abundant fossils?, massive.

4122'-4133'	Dolomite	IA, dark grey, weathers medium grey, extremely fine crystalline, thick bedded, faint color banding, massive.
4133'-4140'	Dolomite	IA, lithic to sub-lithographic, medium light grey, weathering medium light grey, with very rough weathering surface, in part silicified, very hard, appears massive.
4140'-4153'	Dolomite	IA, dark grey, weathers dark grey, with smooth surface, sub-lithographic, hard, thin bedded (2-6").
4153'-4161'	Dolomite	IA, light grey, white to dark grey, sub-lithographic, very hard and splintery, thick bedded, 4', thin bands of very fine sucrosic.
4161'-4164'	Dolomite	IA, very dark grey, weathers dark grey sub-lithographic, extremely hard, thin bedded (4").
4164'-4176'	Dolomite	IA, light grey, weathers medium to dark grey, extremely fine crystalline, hard, 4"-4' bedding planes, faint laminae ($\frac{1}{4}$ ").
4176'-4182'	Dolomite	IA, light grey, weathers dark grey, sub-lithographic to extremely fine crystalline, hard, massive.
4182'-4199'	Dolomite	IA, dark grey, weathers medium to dark grey, with rough surface, sub-lithographic to extremely fine crystalline, massive, some bands show thin laminations - argillaceous?
4199'-4209'	Dolomite	IA, dark grey, weathers dark grey, extremely fine to sub-lithographic, massive, moderately argillaceous.
4209'-4218'	Dolomite	IA, medium light grey, weathers light grey with laminae on weathered surface, sub-lithographic, slightly calcareous, medium bedded, 4"-1 $\frac{1}{2}$ ', fractures perpendicular to bedding.

4218'-4268' Dolomite

IA, dark grey, weathers dark grey, sub-lithographic to extremely fine crystalline, massive, some bands contain secondary calcite or chert, chert gives rough weathering surface, calcite leaches out giving porous appearance to these bands.

4268'-4320' Dolomite

IA, medium grey, weathers medium dark grey, sub-lithographic to extremely fine crystalline, common blebs of secondary calcite, rare scattered chert nodules, thick bedded (3-5', 3' predominant), very similar to above unit.

4320'-4323' Dolomite

IA, dark grey, weathers dark grey, with very rough surface, sub-lithographic to extremely fine crystalline, very abundant chert and secondary calcite, comprising 50% of rock, massive.

4323'-4366' Dolomite

IA, very dark grey, extremely fine crystalline, common chert patches which seem to be replacement of corals, bedding very thick, 3-5', some scattered secondary calcite which seems to be replacement of fossils, shows up mostly as curved eroded outlines on weathered surface.

4366'-4398' Dolomite

IA, dark grey, weathers dark grey, sub-lithographic to extremely fine crystalline, very thinly bedded, 1-3", thinly laminated.

4398'-4417' Dolomite

IA, dark brownish grey, weathers grey brown, extremely fine crystalline, medium bedded 1-3', fractured perpendicular to bedding, laminated ($\frac{1}{4}$ ").

4417'-4446' Dolomite

IA, dark grey, weathers dark grey with rough to extremely rough surface. Abundant fossils replaced by white calcite, extremely fine to very fine, thick bedded (1-3').

4446'-4483' Dolomite

IA, dark grey, weathers dark brownish grey, extremely fine crystalline, abundant secondary calcite leached out, developing porosity on surface. fossiliferous, very thickly bedded.

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| 4483'-4497' | Dolomite | IA, dark grey, weathers dark grey, with very rough surface, sub-lithographic to extremely fine crystalline, very abundant chert in small patches, varies from light grey to tripolitic. 2-6' bedding. |
| 4497'-4525' | Dolomite | 1B1C1, dark grey, weathers dark brownish grey, extremely fine crystalline, rare, silicified, 6"-13' bedding. |
| 4525'-4546' | Dolomite | IA, dark grey, weathers dark brownish grey, sub-lithographic, very abundant chert in lensing bands and nodules, thin bedded 2-4". |
| 4546'-4555' | Dolomite | IA, dark grey, weathers light brownish grey, sub-lithographic to extremely fine crystalline, 1-2' beds, non-resistant, some beds appear somewhat rubbly. |
| 4555'-4567' | Dolomite | IA, medium dark grey, weathers dark brownish grey, sub-lithographic to extremely fine crystalline, abundant silicified coral, probably not recognizable, bedding 6"-4', massive appearance. |
| 4567'-4585' | Dolomite | IA, dark grey, weathers medium brownish grey, abundant white tripolitic chert and light grey chert replacing the corals, bedding varies from 6" to 1 1/2', extremely fine crystalline. |
| 4585'-4611' | Dolomite | IA, dark grey, weathers dark brownish grey, extremely fine crystalline, abundant silicified coral remains and breccia chert. 2-3' bedding. |
| 4611'-4649' | Dolomite | IA, dark grey, weathers medium brownish grey, extremely fine to very fine crystalline, rare silicified corals, poorly preserved, rare chert nodules (black and grey), bedding 1-3'. |
| 4649'-4676' | Dolomite | IA, dark grey to grey black, weathers grey black, extremely fine to very fine crystalline, argillaceous, abundant bioclastic fragments chiefly poorly preserved, silicified corals, common chert, 1-3' beds. |

4676'-4710'	Dolomite	IA, light grey, weathering dark grey, extremely fine to very fine crystalline, some bands show faint laminae, badly sheared, perpendicular to bedding. 1' beds.
4710'-4718'	Covered interval	
4718'-4734'	Dolomite	IA, light grey, weathers light grey with somewhat rusty appearance, extremely fine to very fine crystalline, hard, very slightly argillaceous in centre of unit giving banded appearance, thin bedded 6"-1'.
4734'-4744'	Dolomite	IA, light grey, weathers light grey, with rusty color on fresh slump surfaces, sub-lithographic to extremely fine, generally thinly laminated, very thin bedded 1-6", 6" band light grey very fine to fine wuggy dolomite forming resistant ridge at 4748'. Badly fractured.
4744'-4762'	Dolomite	IA, medium light grey, weathers light to dark grey, extremely fine to very fine crystalline, some bands show trace B-C porosity, 6"-2' bedding, badly fractured.
4762'-4780'	Covered interval	
4780'-4788'	Dolomite	III/IA, medium light grey, weathers medium brownish grey, very fine, massive.
4788'-4820'	Dolomite	ICtrDtr, light grey, weathers light to dark grey, sub-lithographic, extremely fine crystalline, scattered porosity, massive and fractured, perpendicular to bedding.
4820'-4859'	Covered interval	
4859'-4869'	Dolomite	IB6, light grey, weathers medium brownish grey, with pitted surface, extremely fine to very fine, 1-2' bedding.
4869'-4882'	Dolomite	IA, medium light to light grey, weathers medium brownish grey, slightly argillaceous?, extremely fine to very fine crystalline, thin bedded 2"-6".

- 4882'-4911' Dolomite III/IBtr, medium dark grey, weathers medium dark grey, very fine to sucrosic, slightly to moderately argillaceous?, thin bedded 4"-1'.
- 4911'-4916' Dolomite IA, medium dark grey, weathers medium dark grey with rusty appearance on freshly eroded surface, extremely fine to very fine crystalline, slightly calcareous, slightly argillaceous, thin bedded 2"-1'.
- 4916'-4934' Dolomite IA, light grey, weathers light grey, sub-lithographic, hard, badly fractured, thin bedded 4-8" in 3-5' bands, separated by 18" bands of III/IA dolomite, medium light grey, weathering light brown grey, very fine to fine crystalline to sucrosic, contains some patches of non-cemented sucrosic dolomite.
- 4934'-4951' Dolomite IA, light grey becoming slightly darker toward base, weathers light grey, badly fractured, sub-lithographic to extremely fine crystalline, tends to break into slabs with conchoidal surfaces, slightly argillaceous toward base, very thin bedded 1"-4".
- 4951'-4960' Dolomite IA, medium dark grey, weathers medium brown grey, sub-lithographic to extremely fine crystalline, moderately argillaceous, 1' beds, poorly exposed in creek bottom.
- 4960'-4975' Dolomite IA, light grey, weathers light brown grey, sub-lithographic, badly fractured and poorly exposed, non resistant.
- 4975'-5013' Dolomite IB3, medium dark grey, weathers medium dark brownish grey, sub-lithographic to extremely fine crystalline, massive, resistant unit.
- 5013'-5021' Dolomite IA, medium light grey, weathers medium grey brown, sub-lithographic, thin bedded 1"-1', badly fractured.

5021'-5049'	Dolomite	IA, medium grey, weathers brownish grey, with rusty patches, sub-lithographic to extremely fine crystalline, slightly calcareous, 1-1 1/2' bedding.
5049'-5054'	Dolomite	186-9, medium grey, weathers medium brown grey, extremely fine crystalline, easily eroded, partially covered interval, bedding not apparent.
5054'-5065'	Dolomite	IA, medium dark grey, weathers medium grey brown, sub-lithographic, thin bedded 2-4", fractured, parallel to bedding.
5065'-5068'	Covered interval	
5068'-5084'	Dolomite	IA, light grey, weathers light greyish brown, sub-lithographic, some secondary dolomite, magnetite finely disseminated?, massive and badly fractured, lower half of interval partially obscure.
5084'-5094'	Dolomite	IA, light grey, weathers medium dark grey, very fine to extremely fine crystalline, some secondary dolomite, 1-2' bedding, has a 1' band of argillaceous medium grey dolomite at top, extremely fine crystalline.
5094'-5097'	Dolomite	III/IA, medium grey, weathers medium grey, very fine to fine, with some coarse secondary material, 1 1/2' beds.
5097'-5101'	Dolomite	IA, light grey, weathers medium grey, sub-lithographic to extremely fine crystalline, common finely disseminated pyrite, thin bedded 6"-1'.
5101'-5106'	Covered interval	
5106'-5112'	Dolomite	ICtr, medium grey, weathers medium grey, sub-lithographic to extremely fine crystalline, somewhat rubbly, weathering upper surface, massive.
5112'-5118'	Dolomite	IA, medium light grey, weathers dark grey, with rusty interval weathering, sub-lithographic, 2-8" bedding.

5118'-5122' Dolomite

IA, light grey, weathers medium brownish grey, sub-lithographic to extremely fine crystalline, top part thinly laminated, easily eroded, thin bedded 2"-1'.

5122'-5127' Dolomite

IC1, light grey, weathers medium to dark grey with rough surface, very fine to fine crystalline, massive, porosity tends to be concentrated giving rough surface.

5127'-5137' Dolomite

IA, light grey, weathering medium grey, thin laminations (faint), sub-lithographic, bedding 2"-8", easily eroded unit.

5137'-5139' Dolomite

medium light grey, weathering medium grey, IA, sub-lithographic, faint color banding (±"), bedding 1'.

5139'-5141' Covered interval

5141'-5152' Dolomite

IA, medium brownish grey, weathers dark grey, calcareous dolomite, secondary patches, extremely fine to very fine crystalline, massive.

5152'-5169' Dolomite

I/ITIB6, medium grey, weathers dark grey with rusty weathering on internal fractures, very fine to fine, massive.

5169'-5179' Dolomite

IA, light grey, weathers light brownish grey-blotchy, sub-lithographic, bedding 4-18".

5179'-5184' Covered interval

5184'-5194' Dolomite

ICtrDtr, medium to dark grey, weathers medium brownish grey, extremely fine crystalline, secondary calcite, white cleavable masses, common disseminated pyrite? in darker beds, bedding 6"-1'.

5194'-5198' Covered interval

5198'-5201' Dolomite

IA, light grey, weathers medium grey, extremely fine crystalline, some secondary calcite patches, bedding 6"-1'.

5201'-5203'	Covered interval	
5203'-5210'	Dolomite	II/IA, dark grey, weathers dark grey with rough surface, very fine sucrosic with secondary infill, 6"-1' bedding.
5210'-5239'	Dolomite	IA, medium light grey, weathers light grey, extremely fine to very fine crystalline, massive, slightly argillaceous?
5239'-5252'	Dolomite	IBtrDtr, light grey, weathering brown grey, extremely fine to very fine crystalline, moderately argillaceous, massive, sheared perpendicular to bedding.
5252'-5259'	Covered interval	
5259'-5267'	Dolomite	IBtrDtr, light grey, weathers light brownish grey to light grey, sub-lithographic to extremely fine crystalline, 1' beds, badly fractured.
5267'-5272'	Covered interval	
5272'-5282'	Dolomite	IA, medium light grey, weathers medium grey, extremely fine crystalline, upper bedding surface irregular, 1-2' bedding, badly fractured.
5282'-5288'	Dolomite	IA, medium grey, weathers light brownish grey, sub-lithographic, in part shows faint laminations, lenses laterally into light grey dolomite weathering medium grey, very fine crystalline, 2-4" bedding, non resistant interval.
5288'-5300'	Dolomite	IA, medium grey, weathers dark grey, extremely fine to fine crystalline, 6"-2' bedding with massive appearance, resistant unit.
5300'-5320'	Dolomite	IIIA, medium grey, weathers medium grey, fine to medium sucrosic, massive, common large patches, white cleavable calcite.

- 5320'-5324' Dolomite IA, medium light grey, weathers medium grey, sub-lithographic to extremely fine crystalline, thin bedded 6"-10", erodes back.
- 5324'-5341' Dolomite IA, light to medium dark grey, weathering from light to dark brownish grey (patchy), sub-lithographic to extremely fine crystalline, massive.
- 5341'-5369' Dolomite IA, medium light grey, weathers medium grey brown to brownish grey, extremely fine to very fine crystalline, massive, resistant.
- 5369'-5380' Dolomite IA, dark brownish grey, weathers medium brownish grey, common secondary calcite, extremely fine crystalline, massive appearance.
- 5380'-5401' Dolomite IBtr, medium grey, weathers medium grey, sub-lithographic to extremely fine crystalline, very thick bedded? with massive appearance.
- 5401'-5422' IA Dolomite IA, medium dark grey, weathers medium grey, sub-lithographic to extremely fine crystalline, organic remains not identifiable, thin bedded (2"-6"), partially covered interval, easily eroded.
- 5422'-5454' Dolomite IA, dark grey, weathers dark grey, sub-lithographic to extremely fine crystalline, bedding varies from 2' to massive.
- 5454'-5474.5' Dolomite III/IA, light grey, weathers light grey, very fine to sucrosic, with thin beds 1-2', sub-lithographic, thinly laminated, hard. Dolomite partially argillaceous and darker colored towards base.
- 5474.5'-5488' Dolomite 50/100IDq, light grey, weathers light grey, extremely fine to very fine crystalline, massive appearance, becomes darker towards top as grades into above interval, vuggy streaks towards bottom and in central part of unit.

5488'-5491' Dolomite

IB3C3D3, medium light grey, weathers dark grey, extremely fine to fine crystalline, massive, 1' of 10/100IC3 dolomite, light grey, with fine color laminations, sub-lithographic to very fine crystalline exposed at base, thin bedded 1-3".

5491'-5509' Covered interval

5509'-5552' Dolomite

IA, medium light grey to medium grey weathers dark grey to black, extremely fine crystalline, trace porosity in streaks, no definite bedding, badly sheared, resistant unit.

5552'-5568' Covered interval

5568'-5574' Dolomite

IA, light grey, weathers light grey, extremely fine crystalline, thin bedded 2-6", contains a few coarse dolomite crystals and a lense of dark brownish grey dark grey weathering dolomite sub-lithographic to extremely fine crystalline. This lense is re-crystallized fine to medium pelletoids with 30% sparry crystalline matrix.

5574'-5584' Dolomite

IC1D1, medium dark grey, weathering medium grey to light brownish grey, rare chert, bedding 2"-1', re-crystallized pelletoids, extremely fine to very fine crystalline.

5584'-5592' Covered interval

5592'-5602' Dolomite

1BtrCtr, dark brownish grey, weathers dark grey with rough surface, extremely fine to very fine crystalline, dead oil in vugs, moderately argillaceous, slight amount of silica, 2"-1' bedding with irregular bedding planes.

5602'-5618' Covered interval

5618'-5630' Dolomite

IA, dark brown grey, weathers dark brown grey, sub-lithographic, contains some silicified organic material, 6'-1' bedding.

5630'-5636'	covered interval	
5636'-5640'	Dolomite	IA, dark grey, weathers dark brownish grey, extremely fine crystalline, contains some organic material (unrecognizable), 2' bedding, some streaks show small amount of porosity.
5640'-5645'	Covered interval	
5645'-5648'	Dolomite	ID6, dark grey, weathers medium brownish grey, sub-lithographic, abundant small inarticulate brachiopods, irregularly bedded.
5648'-5654'	Covered interval	
5654'-5662'	Dolomite	ICtr, dark brown grey, weathers medium brownish grey, extremely fine to very fine crystalline, with fine crystalline material lining vugs, abundant secondary dolomite in blotches. 6"-1' bedding.
5662'-5701'	Covered interval	
5701'-5760'	Covered interval	
5760'-5764'	Dolomite	IA, light grey, weathers dark grey with brown blotches, fine to medium crystalline, bedding massive.
5764'-5768'	Covered interval	
5768'-5771'	Dolomite	I", light grey, weathers medium brown grey, extremely fine to very fine crystalline, secondary very fine to fine dolomite along fractures. 2' beds.
5771'-5776'	Covered interval	
5776'-5784'	Dolomite	IA, medium light grey, weathers medium grey with medium brown along fracture, sub-lithographic to extremely fine crystalline, badly fractured perpendicular to bed, very thick bedded 4-6'.
5784'-5793'	Dolomite	ID3, medium light grey, weathers dark grey with brown blotches. Sub-lithographic, bottom 4' IA, medium bedded 4"-1'.

5793'-5795'	Dolomite	ID1, light grey, weathers light grey, medium to coarse crystalline, re-crystallized, blotch appearance suggests brecciation before recrystallization, irregular bedding.
5795'-5797'	Covered interval	
5797'-5803'	Dolomite	IA, dark grey, weathers medium light grey, abundant light-colored dolomite stringers, brecciated appearance in top foot. Sub-lithographic bottom foot, consists of breccia with matrix of light grey very fine to fine sucrosic dolomite.
5803'-5807'	Dolomite	IA, light grey, weathers with reddish argillaceous stain, sub-lithographic easily eroded 2"-6" beds.
5807'-5809'	Dolomite	IA, medium dark grey, weathers dark grey with rough surface, extremely fine to very fine crystalline, abundant silica, moderate to very argillaceous, re-crystallized, bioclastic?, massive.
5809'-5814'	Dolomite	IA, medium light brown grey, weathers medium grey, sub-lithographic, faint laminations, thick bedded, 1'-3'.
5814'-5817'	Covered interval.	
5817'-5827'	Dolomite	ID3, light grey with mottled appearance, weathers medium dark grey with porous surface, extremely fine to medium crystalline, with medium crystals in vugs, appears thick bedded to massive.
5827'-5831'	Covered interval	
5831'-5835'	Dolomite	ICtr, medium light grey, weathers medium brownish grey, extremely fine to very fine, slightly more resistant than adjacent beds, bedding not apparent.
5835'-839'	Covered interval	

5839'-5845'	Dolomite	IA, medium to light grey mottled, weathers medium light grey, extremely fine crystalline, has secondary dolomite on fracture, thick bedded (3'). has some D vugs in top 3 feet of unit.
5845'-5850'	Dolomite	IIIB6, medium dark grey, weathers medium dark grey with reddish brown on fracture faces, very fine to coarse crystalline, very easily weathered, contains some masses of sub-lithographic material, very irregular bedding.
5850'-5856'	Dolomite	IA, light grey, weathers orange brown, sub-lithographic, with coarse round floating sandstone grains, slabby.
5856'-5858'	Covered interval	
5858'-5868'	Dolomite	IA, light grey, extremely fine to very fine crystalline, weathers orange brown, flaggy to slabby.
5868'-5876'	Covered interval	
5876'-5882'	Dolomite	IA, pale grey brown, sub-lithographic, dolomitic infill, weathers light brown slabby, heavily fractured, blocky at base with brown inclusions.
5882'-5887'	Covered interval	
5887'-5890'	Dolomite	III/IB151, light grey, fine to medium sucrosic, weathers light brown, slabby-blocky.
5890'-5903'	Covered interval	
5903'-5908'	Dolomite	IA, light grey, sub-lithographic to extremely fine, fine to medium floating sandstone grains, weathers medium light brown, slabby, heavily fractured.
5908'-5910'	Covered interval	
5910'-5954'	Dolomite	IA, light grey, sub-lithographic to extremely fine, becomes grey brown in places, weathers light grey to light brown grey, slabby to blocky.

5954'-5960'	Covered interval	
5960'-6015'	Dolomite	medium to dark grey, IA, scattered D, sub-lithographic to extremely fine crystalline, matt type dolomite infill, consistently blocky, weathers reddish brown.
6015'-6051'	Dolomite	medium to dark grey, IA, scattered D, sub-lithographic to extremely fine crystalline, matt-type dolomite infill, consistently blocky, weathers reddish brown, with dark laminae and some calcareous infill.
6051'-6052'	Dolomite	medium to dark grey, IA, more D type porosity than above, sub-lithographic to extremely fine crystalline, consistently blocky, weathers reddish brown, dark laminae, calcareous dolomite infill of pores and fractures
6052'-6162'	Covered interval	
6162'-6172'	Dolomite	light grey, IA, scattered D, sub-lithographic to extremely fine crystalline, dolomitic euhedral infill of pores, slabby to blocky, weathers pale grey, badly fractured.
6172'-6184'	Covered interval	
6184'-6198'	Dolomite	light grey, IA, scattered D, with lenses of ID5, sub-lithographic to extremely fine crystalline, pores infilled with euhedral dolomite and massive dolomite, slabby to blocky with some flaggy rubbly weathering zones, weathers light grey with red stain.
6198'-6203'	Covered interval	
6203'-6220'	Dolomite	pale brown grey, ID1, with frequent lenses ID5, extremely fine to very fine crystalline, with some possible calcareous content. Large inclusions of massive type dolomite, slabby, very badly fractured and weathered, weathers medium grey with red stain, some siliceous corals.

6220'-6224' Covered interval

6224'-6242' Dolomite pale grey, IA with scattered D, extremely fine to fine crystalline, D wigs developed in secondary dolomitic rhombs, parallel to bedding plane, slabby to blocky, badly fractured, weathers rusty brown.

6242'-6247' Covered interval

6247'-6264' Dolomite pale grey, IA, with scattered D, extremely fine to very fine crystalline, growth of disseminated dolomitic rhombs and/or floating sand grains, massive dolomitic infills, badly fractured, weathers rusty brown.

6264'-6279' Dolomite medium to dark grey, IA, sub-lithographic to extremely fine crystalline, concentric banding-possible biohermal development, matt calcite follows banding, massive, weathers brown-grey.

6279'-6280' Dolomite pale to medium grey, IA, pelletoid?, weathers rusty brown.

6280'-6296' Dolomite medium to dark grey, IA, extremely to very fine crystalline?, blocky to massive, weathers rusty brown, with euhedral dolomite infill.

6296'-6330' Covered interval

6330'-6350' Dolomite light grey, IA, extremely fine to very fine crystalline, massive to blocky, weathers rusty brown.

6350'-6360' Dolomite light to medium grey, IA, C pelletoid with 40-60% quartz matrix (possibly replacement of sparry calcite), massive, weathers brown.

CATHERINE RIDGE

65°16' - 65°10' North Latitude
131°30' - 131°35' West Longitude

I.B - 2 - N61

0-8'	Dolomite	fine to microcrystalline, IA, medium grey, weathers medium light grey, thin bedded.
8'-20'	Covered	
20'-88'	Limestone & Dolomite	interbedded, both medium bedded, very fine to microcrystalline, IA, large calcite-filled vugs.
88'-98'	Limestone & Dolomite	interbedded, both medium bedded, very fine to microcrystalline, IA.
98'-108'	Limestone & Dolomite	interbedded, both medium bedded, very fine to microcrystalline, IA.
108'-123'	Dolomite	IA, microcrystalline, calcareous, medium grey, weathers light tan-grey, medium bedded.
123'-133'	Calcilutite	arenitic, medium light grey, weathers light grey, thin bedded, IA, dolomitic
133'-153'	Covered	
153'-167'	Dolomite	fine to microcrystalline, light grey, weathers light to medium tan-grey, medium bedded, non-calcareous.
167'-187'	Dolomite	fine to microcrystalline, light grey, weathers light - medium tan-grey, medium bedded, calcareous, approaching dolomitic limestone.
187'-207'	Dolomite	fine to microcrystalline, light grey, weathers light to medium tan-grey, medium bedded.
207'-217'	Calcilutite	arenitic, fine grained, particules 30%, lutitic 70%, light grey, becoming calcareous dolomite.
217'-237'	Calcilutite	arenitic, fine grained, particules 30%, lutitic 70%, light grey, becoming dolomitic.

237'-249' Dolomite

IA, light grey, weathers medium light grey, ghost arenites? medium bedded

249'-257' Calcilutite

medium grey, weathers medium light grey, medium bedded.

257'-267' Dolomite

IA, microcrystalline, medium dark grey weathers medium grey, medium bedded, non-calcareous.

267'-317' Dolomite

IA, microcrystalline, medium dark grey, weathers medium grey, medium bedded, calcareous

317'-327' Dolomite

IA, fine to microcrystalline, medium dark grey, weathers medium grey, medium bedded.

327'-337' Dolomite

IA, microcrystalline, medium dark grey, weathers medium grey, medium bedded, calcite-filled vugs.

337'-340' Covered

340'-351' Dolomite

IA, microcrystalline, medium dark grey, weathers medium grey, medium bedded.

351'-374' Covered

374'-381' Dolomite

microcrystalline, dark grey, weathers medium grey, medium bedded, IA

381'-392' Dolomite

IA, microcrystalline, light tan-grey, weathers tan with grey bands, medium bedded, ghost arenitic particles.

392'-395' Covered

395'-403' Dolomite

IIIB5, medium crystalline, light grey, weathers medium light grey, originally a calcarenite?, medium bedded.

403'-407' Covered

407'-418' Dolomite

microcrystalline, IA, medium grey, weathers yellowish grey thin bedded, ghost arenitic particles, scattered outcrop.

418*-430' Covered

- 430'-437' Dolomite microcrystalline, light grey, weathers tan-yellow, very thin bedded, possibly a few arenitic particles, calcite-filled vugs.
- 437'-444' Covered
- 444'-448' Dolomite microcrystalline, light grey, weathers tan-yellow, very thin bedded.
- 448'-459' Dolomite microcrystalline, slightly calcareous, medium grey, weathers light-tan grey, medium to thick bedded.
- 459'-473' Calcarenite IIIB7, clean, medium grey, weathers light tan-grey, thin bedded, fine to medium grained, scattered outcrop.
- 473'-477' Calcarenite, very fine grained, IIIA, P 60%, M 40%, very dolomitic, light tan-grey, weathers tan-grey, thin bedded.
- 477'-488' Covered
- 488'-495' Dolomite medium crystalline (calcarenite), I/IIIA, medium light grey, weathers orange grey, thin bedded.
- 495'-505' Calcarenite IIIA, P. very fine 70%, M 20%, sparry calcite 10%, light tan-grey, weathers same, thin bedded.
- 505'-514' Calcilutite arenitic, P. coarse 20%, M 80%, dark grey, weathers light grey, thin bedded, ostracod? and unrecognizable fossils.
- 514'-524' Calcarenite IIIA, light grey, weathers same, P-very fine 80%, M 20%, thin-medium bedded, dolomitic and in part dolomite
- 524'-534' Calcarenite IIIA, light grey, weathers same, P-very fine 80%, M 20%, thin to medium bedded, slightly dolomitic.
- 534'-554' Calcarenite IIIA, light grey, weathers same, P-very fine 80%, M 20%, thin to medium bedded.
- 554'-565' Calcarenite very fine to medium grained, P-70%, sparry calcite 30%, medium light grey, weathering light grey, massive.

565'-585'	Calclutite	arenitic, P. very fine 40%, A. 60%, medium grey, weathers light grey, massive
585'-593'	Calcarenite	fine grained, IIIB7, light grey, weathers same, massive P. 90%.
593'-603'	Calcarenite	fine to medium grained, IIIA P. 90%, M. 10%, large calcite filled vugs, medium grey, weathers light grey.
603'-613'	Calcarenite	fine to medium grained, IIIA P. 90%, M. 10%, large calcite filled vugs, medium grey, weathers light grey, fossiliferous.
613'-623'	Calcarenite	fine to medium grained, IIIA, P. 90%, M. 10%, large calcite filled vugs, medium grey, weathers light grey.
623'-633'	Covered	
633'-635'	Calcarenite	medium grained, IIIB7, medium grey, weathers light grey, thin bedded.
635'-649'	Calcarenite	fine grained, IIIB2, medium dark grey, weathers light grey, thin to medium bedded, calcite filled vugs.
649'-655'	Limestone & Dolomite	interbedded, both medium grained (calcarenite) IIIA, medium dark grey, weathers medium grey, silicified fossils.
655'-665'	Calcarenite	fine to medium grained, IIIA' medium grey, weathers light grey, massive, thin to medium bedded, no fossils.
665'-675'	Calcarenite	fine to medium grained, IIIA, medium grey, weathers light grey, massive, corals.
675'-685'	Dolomite	IIIB7, slightly calcareous, tan to grey, originally calcarenite?, massive, medium crystalline.
685'-695'	Calcarenite	very fine grained, IIIA, medium light grey, weathers light grey, massive, small chert nodules, 20% calclutite, corals.

695'-705'	Calcarenite	very fine grained, IIIA, medium light grey, weathers light grey, massive, small chert nodules, 20% calcilutite.
705'-715'	Calcarenite	IIIA, fine to medium grained, light grey, weathers same, small chert nodules, a few large calcite-filled vugs, massive.
715'-719'	Covered	
719'-724'	Calcarenite	IIIB10, coarse, light grey, weathers same, bedding poor, weathers nodular.
724'-736'	Breccia	fragments of limestone and dolomite up to 1½ feet in diameter, weathers medium light grey, does not appear to continue laterally, nodular weathering rock takes its place.
736'-742'	Calcarenite	IIIB10, coarse grained, clean, light grey, weathers same, poor bedding, knobby weathered.
742'-749'	Calcarenite	I/IIIB10, finely laminated, thin to thick bedded.
749'-754'	Calcarenite	medium grained, IIIB2, clean, medium grey, weathers medium light grey.
754'-756'	Calcarenite	IIIB7, medium to coarse grained, weathers deep, medium grey, weathers same, thin bedded.
756'-764'	Limestone	very fine crystalline, dark grey, weathers medium light grey, fine wavy algal-like laminations, thin to thick bedded.
764'-771'	Dolomite	very finely crystalline, IA, very light grey, weathers same, thin bedded.
771'-774'	Dolomite	finely crystalline, IIIB3, possible clastic constituents visible, medium grey, weathers medium light grey, medium bedded.
774'-781'	Dolomite	IA, very fine to microcrystalline, very light grey, weathers same, thin bedded.

781'-805'	Dolomite	IA, microcrystalline, medium grey, weathers medium light grey, little to no chert, thin bedded.
805'-815'	Dolomite	IA, microcrystalline, medium grey, weathers medium light grey, irregular chert forms honeycombed weathered surface, thin bedded.
815'-819'	Dolomite	IA, very fine to microcrystalline, medium dark grey, weathers medium light grey, medium bedded, colonial coral collected.
819'-847'	Dolomite	IA, very fine to microcrystalline, medium dark grey, weathers medium light grey, medium bedded, some calcite-filled vugs.
847'-857'	Dolomite	IA, very fine to microcrystalline, medium dark grey, weathers medium brown-grey, medium bedded.
857'-864'	Dolomite	very finely crystalline, IA, medium grey, weathers light grey, thick bedded, irregular chert masses.
864'-869'	Dolomite	IIIB5C1, light grey, weathers very light grey, fine to very finely crystalline, thin to medium bedded.
869'-887'	Limestone & Dolomite	grades from limestone to dolomite, very finely crystalline, IA, dark grey, weathers medium grey, medium bedded, corals.
887'-896'	Limestone	IIIB5C12, very finely crystalline, medium grey, weathers same, silicified brachiopods, chert masses, medium bedded
896'-903'	Calcarenite	70% arenitic, 30% lutitic, arenite fine, IIIB5, medium dark grey, weathers same, medium bedded.
903'-908'	Limestone	medium light grey, weathers same, I/IIIB?, possible clastic particles.
908'-918'	Limestone	dark grey, weathers light grey, slightly dolomitic, IA, fine to microcrystalline, small interbeds of brown weathering dolomite.

918'-936'	Dolomite	very fine to microcrystalline, IA, medium dark grey, weathers medium tan to grey, very thin bedded, scattered outcrop, laminations top 4'.
936'-946'	Dolomite	very fine to microcrystalline, IA, medium dark grey, weathers medium tan grey, very thin bedded, with light grey weathering bands.
946'-956'	Dolomite	very fine to microcrystalline, IA, medium dark grey, weathers medium tan grey, very thin bedded.
956'-965'	Dolomite	IC2, very fine to microcrystalline, dark grey, weathers medium dark grey, few fossil fragments, medium to thick bedded with black chert nodules IC5.
965'-975'	Dolomite	IC2, very fine to microcrystalline, dark grey, weathers medium dark grey, few fossil fragments, medium to thick bedded.
975'-983'	Dolomite	finely crystalline, I/IIIC5D10, very fossiliferous, medium light grey, weathers same, medium to thick bedded.
983'-989'	Dolomite	bioclastic, bioclasts ruditic, matrix finely crystalline, bands of brachiopod coquina, medium grey, weathers same, medium bedded, IC-D5-IC, irregular chert.
989'-1001'	Dolomite	finely crystalline I/IIIB1, dark grey, weathers medium grey, chert, colonial coral, medium bedded.
1001'-1009'	Dolomite	finely crystalline, I/IIIB1, dark grey, weathers medium grey, chert, fossils, medium bedded.
1009'-1017'	Limestone & Dolomite	limestone-fine to very finely crystalline, C-D2, fossils, medium light grey becoming medium dark grey, thin to medium bedded. dolomite-similar but dark grey, weathers medium grey.
1017'-1027'	Limestone & Dolomite	interbedded, limestone - fine to very finely crystalline, I/IIIA, fossils, medium dark grey, weathers light grey, thin to medium bedded. dolomite-similar but dark grey, weathers medium grey.

1027'-1057'	Limestone & Dolomite	limestone - fine to very finely crystalline, III/TIIA, fossils, medium light grey, weathers light grey, thin to medium bedded, dolomite - similar, but dark grey, weathers medium grey, has 4' zone C-D5.
1057'-1067'	Limestone & Dolomite	limestone - fine to very finely crystalline, I/TIIA, corals, medium light grey, weathers light grey, thin to medium bedded, dolomite - similar but dark grey, weathers medium grey.
1067'-1076'	Dolomite	I/IIIA, dark grey, weathers medium grey, finely crystalline, medium bedded, some calcareous zones, scattered poor fossils.
1076'-1088'	Limestone	dolomitic, IA, fine to very finely crystalline, medium dark grey, weathers light grey, chert nodules, medium bedded to thin bedded, fossils.
1088'-1098'	Limestone	dolomitic, IA, fine to very finely crystalline, medium dark grey, weathers light grey, chert nodules, medium bedded to massive, fossils.
1098'-1108'	Dolomite	very calcareous, massive, IA, very finely crystalline, light grey, weathers same, fossiliferous, calcite-filled vugs, black and nodular, with nodular chert bands and chert nodules.
1108'-1115'	Dolomite	calcareous, IA, very finely crystalline, light grey, weathers same, very recessive, thick to medium bedded, calcite-filled vugs.
1115'-1128'	Dolomite	calcareous, IA, very finely crystalline, light grey, weathers same, fossils, medium to thick bedded, calcite-filled vugs.
1128'-1136'	Limestone	dolomitic, very finely crystalline, I/IIIB3, light grey, weathers light tan-grey, thin bedded, calcite veins.

1136'-1142'	Limestone	dolomitic, dark grey, weathers medium grey, IA, very finely crystalline, medium bedded, chert, abundant fossils.
1142'-1147'	Limestone	dolomitic, very finely crystalline, I/IIIB3, light grey, weathers light tan-grey, thin bedded.
1147'-1156'	Limestone	IIIB7, much chert forming rough weathering surface, very finely crystalline, corals.
1156'-1166'	Dolomite	medium light grey, weathers same, finely crystalline. IA grading to I/IIIB3, much chert, colonial corals.
1166'-1176'	Dolomite	medium light grey becoming darker up section, weathers same, finely crystalline, IA, very fossiliferous, irregular chert masses.
1176'-1186'	Dolomite	medium light grey, weathers same, finely crystalline, IA, abundant fossils, irregular chert masses.
1186'-1187'	Covered	
1187'-1196'	Limestone	IIIB3, finely crystalline, medium dark grey, weathers medium light grey, irregular chert, medium bedded, contains one foot deeply recessive zone.
1196'-1201'	Covered	
1201'-1207'	Dolomite	IIIB7, slightly calcareous, dark grey, weathers medium grey, much dark grey chert, medium bedded.
1207'-1217'	Dolomite	I/IIIB1, dark grey, weathers medium grey, finely crystalline, fossiliferous.
1217'-1227'	Dolomite	I/IIIB3, dark grey, weathers medium grey, calcite-filled vugs, some originally organic, irregular chert masses.
1227'-1236'	Limestone	I/IIIA, dark grey, weathers medium light grey, very finely crystalline, small calcite-filled vugs, medium bedded, slightly dolomitic, irregular chert masses.

1236'-1242'	Covered	
1242'-1247'	Dolomite	I/IIIA, finely crystalline, medium dark grey, weathers medium grey, thin bedded
1247'-1249'	Dolomite	very finely crystalline, IA, medium grey, weathers tan-grey, thin bedded.
1249'-1267'	Covered	
1267'-1275'	Dolomite	IA, fine to very finely crystalline, slightly calcareous, medium light grey, weathers same, thin bedded, beds dipping 32° at 210°, calcite filled fracture.
1275'-1285'	Dolomite	IA, fine to very finely crystalline, becoming non-calcareous, medium light grey, weathers same, thin bedded, calcite filled fractures.
1285'-1295'	Dolomite	IA, fine to very finely crystalline, slightly calcareous, medium light grey, weathers same, thin bedded, calcite filled fractures.
1295'-1301'	Covered	
1301'-1333'	Dolomite	IA, very fine to microcrystalline, medium light grey, weathers same, thin bedded.
1333'-1343'	Dolomite	IA, medium grey, weathers medium light tan-grey, very finely crystalline, bands of I/III(BC)3.
1343'-1353'	Dolomite	IA, medium grey, weathers medium light tan-grey, very finely crystalline, no bands, slightly calcareous.
1353'-1363'	Dolomite	IA, medium grey, weathers medium light tan-grey, very finely crystalline, bands of finely crystalline I/IIIA.
1363'-1383'	Dolomite	IA, medium grey, weathers medium light grey, very finely crystalline.
1383'-1393'	Dolomite	IA, medium grey, weathers medium light tan-grey, very finely crystalline.
1393'-1403'	Dolomite	medium light grey, weathers same, finely crystalline, I/III(BC)1-5.

1403'-1413'	Dolomite	medium light grey, weathers same, finely crystalline, slightly calcareous, I/IIIC.
1413'-1421'	Dolomite	medium light grey, weathers same, finely crystalline, I/III(BC)8.
1421'-1431'	Dolomite	IC1, very slightly calcareous, medium grey, weathers medium light grey, very fine to microcrystalline, thin to medium bedded.
1431'-1438'	Dolomite	I/IIIB3, slightly calcareous, disseminated iron, medium grey, weathers medium light grey, very fine to microcrystalline, thin to medium bedded.
1438'-1458'	Dolomite	IA, slightly calcareous, disseminated iron, medium grey, weathers medium light grey, very fine to microcrystalline, thin to medium bedded.
1458'-1468'	Dolomite	finely crystalline, I/IIIB3, medium grey, weathers same, thin to medium bedded, disseminated iron.
1468'-1474'	Dolomite	very fine to microcrystalline, medium light grey, weathers same, slightly siliceous.
1474'-1506'	Covered	
1506'-1528'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey and light tan-grey, thin to medium bedded, siliceous.
1528'-1538'	Dolomite	very fine to microcrystalline, medium grey, weathers light tan-grey, thin to medium bedded, siliceous.
1538'-1548'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, siliceous.
1548'-1550'	Dolomite	very fine to microcrystalline, medium light grey, weathers tan, very siliceous, honeycomb weathering surface, IA.
1550'-1574'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, silty, IA, no chert.

1574'-1584'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, silty, IA, some disseminated chert.
1584'-1604'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, silty, IA.
1604'-1613'	Covered	
1613'-1618'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, silty or siliceous, IA.
1618'-1628'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, thin to medium bedded, silty or siliceous, IA.
1628'-1640'	dolomite	microcrystalline, IA, medium to light grey, weathers same, slightly silty or siliceous.
1640'-1655'	Covered	
1655'-1668'	Dolomite	medium light grey, weathers same, medium bedded, slightly siliceous, IA, microcrystalline.
1668'-1678'	Dolomite	medium light grey, weathers same, medium bedded, slightly siliceous, IA, microcrystalline.
1678'-1682'	Carbonate	silicified carbonate, originally arenitic calcilutite, medium grey, weathers medium light grey, medium bedded.
1682'-1698'	Dolomite	very fine to microcrystalline, slightly calcareous, IA, medium light grey, weathers same, medium bedded, small calcite-filled vugs.
1698'-1708'	Dolomite	very fine to microcrystalline, IA, slightly calcareous, medium light grey, weathers same, medium bedded.
1708'-1718'	Dolomite	very fine to microcrystalline, IA, medium dark grey, weathers same, medium bedded, large calcite masses and medium tan-grey chert.

1718'-1728'	Dolomite	very fine to microcrystalline, IA, calcareous bands, medium light grey, weathers same, medium bedded, some bands show minor vugular porosity.
1728'-1738'	Dolomite	very fine to microcrystalline, IA, calcareous bands, medium light grey, weathers same, medium bedded.
1738'-1746'	Covered	
1746'-1750'	Dolomite	very finely crystalline, IA, medium dark grey, weathers medium grey, calcite filled vugs, medium bedded.
1750'-1754'	Dolomite	medium light grey, weathers light grey, very finely crystalline, thin to medium bedded, trace type B porosity.
1754'-1773'	Dolomite & Limestone	calcareous dolomite and dolomitic limestone, medium grey, weathers light grey, medium bedded, calcite-filled vugs, IA.
1773'-1783'	Dolomite & Limestone	calcareous dolomite and dolomitic limestone, medium grey, weathers light grey, medium bedded, calcite-filled vugs, IA.
1783'-1787'	Dolomite	microcrystalline to very fine crystalline, I/IIIB3C5, vugs lined with dolomite and orthogenic quartz, dark grey, weathers medium grey, deeply weathered.
1787'-1821'	Dolomite	with interbedded dolomitic limestone, medium grey, weathers light grey, calcite filled vugs.
1821'-1831'	Dolomite	interbedded dolomitic limestone, medium grey, weathers light grey, calcite-filled vugs.
1831'-1851'	Dolomite	calcareous, medium grey, weathers light grey, calcite-filled vugs.
1851'-1861'	Dolomite	
1861'-1871'	Dolomite	medium bedded.

1871'-1885'	Dolomite	very finely crystalline, medium grey, weathers light grey, calcite filled vugs, thin bedded, IA, non-calcareous.
1885'-1895'	Dolomite	very finely crystalline, slightly calcareous, medium grey, weathers light grey, calcite-filled vugs, thin bedded, IA.
1895'-1901'	Limestone	finely crystalline, calcite-filled vugs, medium grey, weathers light grey, slightly silty, thin bedded, IA.
1901'-1911'	Dolomite	fine to microcrystalline, light grey, weathers same, thin bedded, calcite blebs, some calcareous beds, IA.
1911'-1921'	Dolomite	IA, microcrystalline, medium light tan-grey, weathers same, thin bedded.
1921'-1931'	Dolomite	Dolomite, IA, microcrystalline, grades to medium light grey, weathers same, thin bedded, calcareous.
1931'-1941'	Dolomite	IA, microcrystalline, medium grey, weathers same, thin bedded.
1941'-1954'	Dolomite	slightly calcareous, medium grey, weathers medium light grey, thin bedded, microcrystalline, IA, grading to light grey up section.
1954'-1961'	Dolomite	interbedded dolomite and calcareous dolomite, medium light tan-grey, weathers medium light grey, microcrystalline, IA, calcite-filled vugs.
1961'-1965'	Covered	
1965'-1975'	Dolomite	grading from dolomitic lime to dolomite, very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA.
1975'-1985'	Dolomite	grading downward to dolomitic lime, very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA.
1985'-1995'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA, in part calcareous.

1995'-2005'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA, non-calcareous.
2005'-2044'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA, calcareous.
2044'-2050'	Dolomite	very fine to microcrystalline, medium grey, weathers light grey, medium bedded, IA.
2050'-2060'	Dolomite	calcareous bands, medium grey, microcrystalline, weathers light grey, slightly mottled, IA, becoming less calcareous up section.
2060'-2069'	Covered	
2069'-2074'	Dolomite	some calcareous bands, medium grey, microcrystalline, weathers light grey, IA.
2074'-2084'	Dolomite	calcareous, medium grey, microcrystalline, weathers light grey, thin bedded, IA.
2084'-2104'	Dolomite	partly calcareous, medium grey, microcrystalline, weathers light grey, thin bedded, IA.
2104'-2109'	Limestone & Dolomite	interbedded, dolomite - calcareous, medium grey, calcite filled vugs, weathers light grey, thin to medium bedded, IA.
2109'-2119'	Dolomite	calcareous, medium grey, calcite-filled vugs, weathers light grey, thin to medium bedded, IA.
2119'-2124'	Limestone	fine crystalline, dark grey, weathering light grey, thin bedding, slightly silty.
2124'-2129'	Dolomite	medium to dark grey, weathering medium grey, thin bedded.
2129'-2134'	Limestone & Dolomite	interbedded - limestone - microcrystalline to sublithic, medium grey, weathering light grey, thin bedded. dolomite - microcrystalline to sublithic, medium to dark grey, weathering medium grey, thin bedded.

2134'-2144' Limestone &
Dolomite

interbedded - limestone - microcrystalline, to sublithic, medium grey, weathering light grey, thin bedded, dolomite - microcrystalline to sublithic, medium to dark grey, weathering medium grey, thin bedded, many calcite-filled vugs.

2144'-2154' Limestone

IA, very fine to microcrystalline, medium grey, weathering medium grey, thick bedded.

2154'-2174' Dolomite

IA, sublithic, medium grey weathering, light grey, very calcareous, enormous vugs filled with calcite up to 6-8' across.

2174'-2184' Dolomite

IA, sublithic, medium grey, weathering light grey, very calcareous, approaching oolitic limestone, calcite-filled vugs.

2184'-2194' Dolomite

IA, microcrystalline, few calcite blebs, medium dark grey, weathering medium grey, medium bedded, interbedded with dark grey calcareous dolomite or dolomitic limestone.

2194'-2214' Dolomite

IA, microcrystalline, few calcite blebs, medium dark grey, weathering medium grey, medium bedded.

2214'-2234' Dolomite

IA, fine to very fine crystalline, medium dark grey, weathering light grey, thin to medium bedded, numerous calcite filled vugs.

2234'-2266' Covered

2266'-2276' Dolomite

I/IIIA, fine to medium crystalline, medium dark grey, weathering light grey, numerous veins and blebs of calcite.

2276'-2286' Dolomite

IA, medium grey, weathering very light grey, medium bedded, fine to very fine crystalline, brown rusty iron staining.

2286'-2308' Covered

2308'-2313' Dolomite

IA, sublithic, medium to dark grey, weathering light grey, bedding poorly developed.

2313'-2323'	Dolomite	IA, sublithic, medium to dark grey, weathering light grey, thin bedded.
2323'-2328'	Covered	
2328'-2348'	Dolomite	IA, microcrystalline, sublithic, few large calcite blebs, medium grey, weathering light grey, thin bedded.
2348'-2353'	Dolomite	IA, sublithic, medium grey, weathering medium light grey, poorly developed thin bedding.
2353'-2363'	Dolomite	IA, sublithic, dark grey, weathering medium to dark grey, calcite veins, poorly developed thin bedding.
2362'-2373'	Dolomite	IA, sublithic, dark grey, weathering medium dark grey, large calcite-filled veins, poorly developed thin bedding.
2373'-2388'	Dolomite	IA, sublithic, medium grey, weathering light grey, poorly developed thin bedding.
2388'-2416'	Covered	
2416'-2419'	Dolomite	IA, very fine to microcrystalline, fine veins and small blebs of calcite, medium to dark grey, weathering light grey, thin bedded.
2419'-2429'	Covered	
2429'-2434'	Dolomite	IA, microcrystalline to very fine crystalline, medium grey, weathering light grey, thin bedded.
2434'-2444'	Dolomite	IA, microcrystalline to very fine crystalline, light to medium grey, weathering light grey, thin bedded.
2444'-2468'	Covered	
2468'-2473'	Dolomite	I/IIIB2C2, medium crystalline, with few dolomite-lined and filled vugs, medium grey, weathering same, vuggy, porosity increasing down section.

2473'-2478'	Covered	
2478'-2481'	Dolomite	sublithic, medium light grey, weathering light grey, medium bedded.
2481'-2517'	Covered	
2517'-2519'	Dolomite	I/IIIB1C2, mottled, light grey to white, weathering light grey, medium bedded
2519'-2526'	Dolomite	IA, very fine to medium crystalline, light grey, weathering very light grey, color banding, thin to medium bedded.
2526'-2535'	Dolomite	IA, very fine to medium crystalline, light grey, weathering very light grey, color banding, thin to medium bedded.
2535'-2537'	Dolomite	I/IIIA, very fine crystalline, light grey tan, weathering light grey, poorly developed medium bedding.
2537'-2540'	Dolomite	microcrystalline, medium light grey, weathering very light grey, thin bedded.
2540'-2545'	Covered	
2545'-2552'	Dolomite	I/IIIB2, microcrystalline, medium grey, weathering light tan grey, thin bedded.
2552'-2573'	Covered	
2573'-2578'	Dolomite	IA, microcrystalline, with few small calcite filled and lined vugs, calcite veins, medium grey, weathering light grey, thin bedded.
2578'-2588'	Dolomite	IA, very fine crystalline, faintly banded, medium grey, weathering light to medium grey, thin bedded.
2588'-2598'	Dolomite	IA, microcrystalline, medium grey, weathering light grey and vesicular, medium bedded.
2598'-2608'	Dolomite	IA, very fine to microcrystalline, medium grey, weathering light grey and vesicular, medium bedded.
2608'-2618'	Dolomite	IA, microcrystalline, sublithographic, medium grey brown, weathering same, poorly developed medium bedding, calcite-filled vugs.

2618'-2638'	Dolomite	IA, fine to very fine crystalline, medium grey brown, weathering same, good medium bedding.
2638'-2648'	Dolomite	IA, microcrystalline to sublithographic, medium grey brown, weathering same, poorly developed medium bedding.
2648'-2668'	Dolomite	IA, microcrystalline to sublithographic, medium grey brown, weathering same, poorly developed medium bedding.
2668'-2680'	Covered	
2680'-2690'	Dolomite	I, microcrystalline, medium grey, weathering light grey, thin to medium bedded.
2690'-2695'	Dolomite	20% oolites, medium grey weathering, light grey, particulate size coarse to medium.
2695'-2705'	Dolomite	20% oolites, medium grey weathering, light grey, particulate size coarse to medium
2705'-2725'	Dolomite	IA, microcrystalline, medium grey, weathering light grey and vesicular, medium to thick bedded.
2725'-2747'	Dolomite	IA, fine to medium crystalline, medium light grey, weathering same, few small vugs, with calcite lining, 1" diameter, fine calcite veins.
2747'-2762'	Covered	
2762'-2772'	Dolomite	IA, very fine crystalline, medium light grey, weathering medium grey, thin bedded, no chert.
2772'-2792'	Dolomite	IA, very fine crystalline, medium light grey, weathering medium grey, thin bedded, bands of laminated cherty dolomite.
2792'-2797'	Dolomite	IIIB2, light brown-grey, weathering medium grey, medium bedded, some IA.

2797'-2827'	Dolomite	IA, microcrystalline, medium light grey, weathering light grey, thin to medium bedded.
2827'-2847'	Dolomite	IA, microcrystalline, medium grey, weathering medium grey, thick bedded, bands of fine laminations.
2847'-2850'	Dolomite	IA, sublithographic, light brown to grey, weathering very light brown, thin bedded, finely laminated.
2850'-2854'	Dolomite	IIIB5, microcrystalline with some very fine matrix, medium grey, weathering medium light grey, poorly developed medium bedding.
2854'-2860'	Dolomite	IA, light and medium grey, very fine to sub-lithographic, weathering light grey, poorly developed medium bedding.
2860'-2866'	Dolomite	IA, fine to microcrystalline, medium to light grey, weathering light grey, medium to thick bedded, algal structure??
2866'-2870'	Dolomite	IA, sublithographic, medium light grey, weathering very light tan, thin to medium bedding, calcite filled vugs.
2870'-2875'	Dolomite	IIIB2, fine crystalline, light brown to grey, weathering light brown, poorly developed medium bedding, calcite-filled vugs.
2875'-2880'	Dolomite	IA, microcrystalline, medium grey, weathering tan, thin to medium bedded, poorly developed, calcite-filled vugs.
2880'-2883'	Dolomite	IA, very fine crystalline, medium light grey, weathering same, calcite-filled vugs, poorly developed medium bedding.
2883'-2893'	Dolomite	IA, fine to microcrystalline, medium tan grey, weathering tan, calcite-filled vugs, poorly developed medium bedding, possible algal structures, interbedded with discontinuous bands of dolomite.

2893'-2903'	Dolomite	I/IIIA, medium light grey, weathering light grey, medium to thick bedded, microcrystalline, calcite-filled vugs.
2903'-2913'	Dolomite	sub-lithographic, medium light grey, weathers light tan-grey, thin to medium bedded, thin beds of coarsely crystalline dolomite, brown-grey crystals in microcrystalline matrix, beds less than 1' thick.
2913'-2915'	Covered	
2915'-2923'	Dolomite	medium light grey, weathers light tan-grey, medium bedded, disseminated iron, large (1-2') calcite filled vugs, with large euhedral quartz crystals.
2923'-2931'	Covered	
2931'-2937'	Dolomite	light tan-grey, very fine to microcrystalline, weathers light tan grey, medium bedded, calcite-filled vugs, disseminated brown chert and chert nodules.
2937'-2941'	Covered	
2941'-2950'	Dolomite	light tan grey, very fine to microcrystalline, weathers light tan grey, medium bedded, calcite-filled vugs.
2950'-2961'	Dolomite	lithographic, medium light grey, weathers light tan-grey, very large, numerous calcite filled vugs, silty, iron pods.
2961'-2975'	Dolomite	microcrystalline, sublithographic, medium light grey, weathers very light-tan grey, medium bedded, silty, iron staining on bedding planes, large calcite-filled vugs.
2975'-2985'	Dolomite	microcrystalline, sublithographic, medium light grey, weathers very light tan grey, medium bedded, silty.
2985'-2993'	Dolomite	microcrystalline, light grey, weathers same, medium bedded, possible algal structures (finely laminated hemispherical structures, 1-2' diameter, convex upward).

2993'-3003'	Dolomite	very finely crystalline, light grey, weathers same, medium to thin bedded, type IA.
3003'-3013'	Dolomite	fine to very finely crystalline, type I/IIIA, very light grey, weathers light grey, medium bedded.
3013'-3023'	Dolomite	light grey, very finely crystalline, IC, weathers light grey, medium bedded.
3023'-3039'	Dolomite	microcrystalline, light grey, weathers same, thin to medium bedded, resistant, iron and calcite vug fillings.
3039'-3049'	Dolomite	microcrystalline, light grey, weathers same, thin to medium bedded, resistant
3049'-3053'	Dolomite	fine to medium crystalline, light grey, I/IIIBLOC3.
3053'-3082'	Covered	
3082'-3090'	Dolomite	medium light grey, very sandy, hematitic, on bedding planes, thin to medium bedded, weathers medium grey, IA.
3090'-3100'	Dolomite	medium to light grey, weathers tan-grey, microcrystalline, banded black and tan chert at face, calcite-filled vugs up to 1' diameter, large euhedral quartz crystals, thin to medium bedded, IA.
3100'-3102'	Covered	
3102'-3108'	Covered	
3108'-3127'	Dolomite	microcrystalline, medium light grey, weathers light grey, thin to medium bedded, silty, iron oods, IA
3127'-3129'	Sandstone	fine grained, quartzitic, light grey, weathers tan.
3129'-3134'	Sandstone	dolomitic, light grey, weathers same, thin bedded, grains sub-angular, fair sphericity

- 3134'-3143' Sandstone dolomitic, fine grained, light tan-grey, weathers same, some quartzitic bands, porosity fair to poor, thin bedded.
- 3143'-3153' Sandstone dolomitic, fine grained, light tan-grey, weathers same, some quartzitic bands, porosity poor, thin bedded.
- 3153'-3164' Sandstone quartzitic, clean, very light grey to white, fine to medium grained, weathers light brown, dark lichen, thick bedded, thickness variable.
- 3164'-3184' Dolomite fine to microcrystalline, light to dark grey, weathers light tan-grey, well bedded, thin bedded, I and I/III C5, some nodular bedding.
- 3184'-3194' Dolomite fine to microcrystalline, light to dark grey, weathers light tan-grey, thin bedded, type I and I/III C5, some nodular bedding.
- 3194'-3204' Dolomite light grey, fine to medium crystalline, weathers light to medium tan-grey, a few dense beds, type I/III C2 to C10, nodular weathering.
- 3204'-3239' Dolomite dark grey, microcrystalline, weathers medium grey, slightly silty, calcite-filled vugs, some orthogenic quartz and calcite crystals, some brecciation.
- 3239'-3299' Dolomite dark grey, very fine to microcrystalline, weathers medium grey, slightly silty, dolomite-lined and filled vugs, some orthogenic quartz and calcite crystals, some contortion, some brecciation.
- 3299'-3309' Dolomite dark grey, microcrystalline, weathers medium grey, slightly silty, dolomite-lined and filled vugs, thin bedded, some orthogenic quartz and calcite crystals, some contortion, some brecciation.
- 3309'-3319' Dolomite dark grey, microcrystalline, weathers medium grey, slightly silty, thin bedded, dolomite-lined and filled vugs, some orthogenic quartz and calcite crystals, very little brecciation.

3319'-3329'	Dolomite	dark grey, microcrystalline, weathers medium grey, slightly silty, dolomite-lined and filled vugs, some orthogenic quartz and calcite crystals, some contortion and some brecciation. Upper 6'
3329'-3338'	Covered	
3338'-3363'	Dolomite	dark grey, weathers medium to light grey, many dolomite veins, medium to thick bedded.
3363'-3378'	Dolomite	dark grey, microcrystalline, weathers medium grey, slightly silty, beds highly contorted. scale less than 1', intraformational brecciations, dolomite and orthogenic quartz lined and filled vugs, thin bedded to shaly IG-D.
3378'-3383'	Siltstone	argillaceous, slightly dolomitic?, banded, thin bedded and shaly, dark grey, weathers tan and medium grey.
3383'-3736'	Covered	
3736'-3774'	Shale	medium grey, weathers light greenish tan, dolomitic with sparse calcareous siltstone nodules, less than 4" in diameter.
3774'-3779'	Covered	
3779'-3794'	Shale	medium grey, weathers light greenish tan, dolomitic with sparse calcareous siltstone nodules, less than 4" in diameter.
3794'-3801'	Shale & Siltstone	Siltstone dark grey, very calcareous, weathers tan, nodular concretions and nodular bands. Shale, medium greenish-grey, calcareous, silty, weathers tan.
3801'-3833'	Covered	
3833'-3841'	Shale	with interbedded dark grey and green silty shale.
3841'-3859'	Covered	
3859'-3894'	Shale	with interbedded dark grey and green silty shale.

3894'-3954'	Shale	medium grey, slightly silty, weathers same, interbedded with fine, light greenish grey sand and silt, weathers light greenish-rusty brown, very recessive, thin bands of dark grey, very fissile shale.
3954'-4004'	Shale	medium grey, moderately silty, weathers same, interbedded with fine, light greenish grey sand and silt, weathers light greenish-rusty brown, very recessive,
4004'-4009'	Shale	green, silty, weathers same, interbedded with fine, light greenish sand and silt, weathers light greenish-rusty brown,
4009'-4026'	Covered	
4026'-4095'	Shale	medium grey, slightly silty, weathers same, interbedded with fine, light greenish grey sand and silt, weathers light greenish-rusty brown, very recessive.
4095'-4184'	Covered	
4184'-4191'	Sandstone	quartzitic, some non-quartzitic, fine grained, light grey, weathering tan-grey, dark lichen, fair-poor porosity, thin bedded, ripple marks abundant.
4191'-4195'	Covered	
4195'-4204'	Sandstone	light to medium grey, banded, weathering rust-tan, very fine grained, shale green and grey, very silty, silt bands.
4204'-4236'	Sandstone & Shale	interbedded, sand - fine grained, well sorted, well rounded, fair sphericity, speckled, fair-poor porosity, medium to thick bedded, light grey, weathers rust brown, occasional rounded pebbles, occasional band of coarse sand ripple marks.
4236'-4240'	Covered	
4240'-4243'	Shale	medium and dark brown banded, weathers dark grey, silty.

4243'-4247'	Sandstone	fine grained, well sorted, argillaceous laminations, light grey, weathers greenish grey, thin bedded, ripple marks.
4247'-4260'	Covered	
4260'-4265'	Shale	dark grey, some green silty shale, weathers greenish grey, recessive, mud cracks, scattered outcrop.
4265'-4279'	Covered	
4279'-4284'	Shale	dark grey, weathers greenish grey, fissile, recessive, scattered outcrop.
4284'-4290'	Covered	
4290'-4292'	Sandstone	interbedded, very fine grained sandstone, grey, containing iron and shale, silty, fissile.
4292'-4298'	Covered	
4298'-4318'	Quartzite	light grey to medium grey, thin bedded, cross bedded, bedding highly contorted, weathering light grey, dark lichen, shale (black) interbeds.
4318'-4341'	Sandstone	quartzitic, light grey, minute brown flecks, interbedded, thin bedded, shaly partings, weathering light rusty brown, dark lichen.
4341'-4349'	Siltstone	maroon, very thin bedded, weathering reddish brown, dark lichen, interbeds of sandstone.
4349'-4350'	Sandstone	maroon, coarse to very coarse, with green bands (Glaucinite?). poor sorting, well rounded, good sphericity, thin to medium bedded, weathering dark reddish brown, dark lichen, some mud cracks.
4350'-4351'	Covered	
4351'-4361'	Sandstone	maroon, with green bands (glaucinite?), poor sorting, well rounded, good sphericity, thin to medium bedded, weathering reddish brown, dark lichen, some mud cracks.

4361'-4365'	Sandstone	fine grained, poor sorting, well rounded, good sphericity, maroon, thin bedded, ripple marks and mud cracks, argillaceous, weathering dark maroon, dark lichen, glauconite.
4365'-4390'	Sandstone	quartzitic, light grey to white, iron staining, thick bedded, weathering dark brown with dark lichen.
4390'-4405'	Siltstone	quartzitic, light grey to purple, finely banded, weathering light brown to purple, dark lichen, thin to medium bedded with thin shale interbeds.
4405'-4406'	Conglomerate	dark brown with various colored pebbles, matrix fine grained, pebbles quartzitic, well rounded.
4406'-4421'	Quartzite	white, weathering rusty brown, with dark lichen
4421'-4425'	Quartzite	light grey to white, iron staining, thin bedded, weathering medium grey, dark lichen.
4425'-4455'	Quartzite	interbedded siltstone, very minor shale, thin to medium bedded, shale green and maroon.
4455'-4505'	Siltstone & Quartzite	with some shale partings and interbeds, medium bedded, dark grey to purple, finely banded, weathering medium brown, dark lichen.
4505'-4540'	Sandstone	quartzitic, finely banded, light grey, weathering medium brown, dark lichen, minor interbedded shale (micaceous)
4540'-4555'	Shale	green grey, weathering same, iron "spherulites", sandy
4555'-4605'	Shale	very dark grey, non-silty, good fissility, weathering dark grey, local iron staining, iron spherulites.
4605'-4637'	Shale	medium grey, silty, weathering medium brown, platy, grey weathering bands, thin bands of shale contain iron (pyrite), spherulites (radiating structure).

4637'-4672'	Shale	dark grey, platy, weathering light bluish grey, non-calcareous, non silty, iron staining near top.
4672'-4702'	Covered	
4702'-4706'	Sandstone	quartzitic, medium grey, weathering medium brown, multicolored lichen, angular fracture pattern forming blocks.
4706'-4731'	Shale	medium grey, weathering light grey, waxy, poor fissility, mud cracks.
4731'-4746'	Covered	
4746'-4776'	Siltstone	dark to medium grey, weathering light brown, finely banded, shaly interbeds, chert nodules.
4776'-4786'	Dolomite	argillaceous, microcrystalline, dark grey, weathering light brown, contains shaly interbeds, scattered outcrop, thin bedded.
4786'-4791'	Quartzite	dark grey, weathering black-grey, shale interbeds
4791'-4821'	Siltstone	dark grey, non-calcareous, weathering light brown, shaly interbeds.
4821'-4886'	Shale	dark grey, medium grey
4886'-4931'	Siltstone	light grey, weathering light brown, finely banded, shaly interbeds.
4931'-4981'	Shale	sandy, dark grey tan-brown, very thin bedded, sandstone lenses, lenticular ironstone masses.
4981'-4996'	Covered	
4996'-5001'	Sandstone	quartzitic, medium grey, thin texture, laminated, weathering medium brown, interbedded with very dark grey finely fissile shale, scattered mica flakes, maximum 3" thick.
5001'-5021'	Covered	

5021'-5040'	Sandstone	light grey, speckled, medium grey, medium well rounded, fair sphericity, fair sorting, very good porosity, weathering brown, laminated, thin bedded, small scale cross-bedded, recessive, possible shale interbeds.
5040'-5110'	Sandstone	white, light grey, weathering white, dark lichen, well sorted, not dolomitic, fine grained.
5110'-5125'	Sandstone	light tan grey, fine grey, well sorted, dolomitic, thin bedded.
5125'-5129'	Dolomite	silty, microcrystalline, shaly, light tan grey, weathering medium brown, very recessive.
5129'-5134'	Covered	
5134'-5156'	Sandstone	light tan-white, weathering white, dark lichen, well sorted to size, medium thick bedded.
5156'-5198'	Covered	
5198'-5222'	Sandstone	fine grained, tan-white, dark blotches, weathering light grey, with dark lichen, thin to medium bedded, cross bedded.
5222'-5225'	Shale	green, silty, medium bedded, fine brown sandstone.
5225'-5238'	Sandstone	very light grey to white, fine grained, dark blotches, well sorted, medium to thick bedded, fine brown sandstone.
5238'-5245'	Sandstone	very light grey to white, fine grained, dark blotches, well sorted, very thin to medium bedded, cross-bedded,
5245'-5280'	Covered	
5280'-5292'	Covered	
5292'-5340'	Sandstone	light tan, weathering medium light tan, dark lichen, fine grained, small dark blotches, medium bedded, some beds quartzitic, well sorted to size.

5344'-5374'	Sandstone	greenish grey, highly cross bedded, very little shale, dark brown blotches.
5374'-5424'	Sandstone	greenish grey, highly cross-bedded, very little shale.
5424'-5474'	Sandstone	ripple marks, very thin bedded, few shale partings, more shale in lower part, less in upper.
5474'-5524'	Sandstone Siltstone Shale	interbedded, sandstone-light grey, weathering green-grey, shale-green, silty
5524'-5574'	Sandstone	quartzitic, light grey, weathering tan grey, dark lichen, shale partings-green, cross-bedded, thin even bedding, very resistant, ripple marks.
5574'-5597'	Sandstone Siltstone Shale	interbedded, sandstone-light grey, weathering green-grey, shale-green, silty
5597'-5612'	Shale Sandstone	interbedded, maroon and green shale, silty, some sandstone
5612'-5637'	Shale	maroon, silty, very recessive
5637'-5645'	Sandstone	interbedded, light grey, laminated and shale, maroon, with large oscillating ripples.
5645'-5697'	Shale	maroon, micaceous, very recessive, very fine grained, minor bands of sand, cross-bedded.
5697'-5747'	Shale	maroon, micaceous, very recessive, very fine grained, sand bands.
5747'-5800'	Covered	
5800'-5810'	Shale	olive green, silty, good fissility, weathering olive green.
5810'-5833'	Sandstone	quartzitic, light brown, iron staining, round, medium bedded, light grey weathering, dark lichen.
5833'-5843'	Inaccessible	

5843'-5853'	Sandstone	quartzitic, light grey, large rusty flecks fair porosity, weathering light brown-dark grey, orange lichen, thin bedded.
5853'-5898'	Quartzite	white, minute dark flecks, medium bedded, weathering light grey, dark lichen.
5898'-5900'	Quartzite	dark grey, pink flecks, weathering medium brown, no bedding, medium bedded.
5900'-5904'	Sandstone	quartzitic, light grey, with brown flecks, weathering medium grey, green lichen, very thin bedded with few greenish shaly partings.
5904'-5906'	Quartzite	dark grey, thin bedded, weathering dark grey, orange lichen.
5906'-5949'	Covered	
5949'-5966'	Sandstone	quartzitic, light grey, thin banded, weathering dark grey with dark grey lichen, thin bedded, interbedded with dark grey shale partings containing some mudcracks.
5966'-5973'	Covered	
5973'-6018'	Sandstone	quartzitic, light brown, iron staining, fine dark brown flecks, discontinuous dark brown partings, weathering light grey, with dark lichen.
6018'-6103'	Covered	
6103'-6153'	Quartzitic	light grey, thin bedded, weathering light buff, dark lichen, irregular iron staining (shaly green, micaceous, quartzitic sandstone for 1' interval), scattered outcrop.
6153'-6173'	Covered	
6173'-6193'	Sandstone	light brown, quartzitic, iron staining, dark brown flecks, weathering dark, brwn, dark lichen, thin bedded to medium bedded, even bedded, scattered outcrop.
6193'-6210'	Covered	

6210'-6218'	Sandstone	light brown, iron staining, dark brown flecks, very thin bedded, weathers dark brown, dark lichen.
6218'-6250'	Covered	
6250'-6265'	Sandstone	quartzitic, light grey to light brown, dark brown flecks, thin to medium bedded, ripple marks, weathering medium grey, dark lichen.
6265'-6285'	Covered	
6285'-6295'	Sandstone	slightly quartzitic, light brown, platy, thin laminations, discontinuous bedding, weathering medium brown with dark lichen.
6295'-6325'	Covered	
6325'-6335'	Covered	weathering medium grey
6335'-6355'	Covered	
6355'-6400'	Sandstone	quartzitic, light brown, iron staining, thin bedded, cross-bedded, weathering light grey with dark lichen.
6400'-6450'	Sandstone	quartzitic, light grey to white, medium bedded, cross-bedded, weathering light grey to white, dark lichen.
6450'-6460'	Sandstone	quartzitic, light grey, weathering light grey to white, dark lichen.
6460'-6470'	Sandstone	quartzitic, light medium grey, thin bedded, cross-bedded, weathering medium green with dark lichen.
6470'-6480'	Sandstone	quartzitic, darkish brown, thin bedded, cross-bedded, weathering medium to light grey, dark lichen.
6480'-6490'	Sandstone	quartzitic, light brown to reddish brown, thin bedded, cross-bedded, weathering light grey, dark lichen.
6490'-6500'	Sandstone	quartzitic, light brown to reddish brown, thin bedded, cross-bedded, weathering light grey, dark lichen.

6500'-6510'	Sandstone	quartzitic, light grey to white, medium grey weathering, dark lichen, thin to medium bedded, poor exposure.
6510'-6520'	Sandstone	quartzitic, light brown, weathering medium grey with dark lichen.
6520'-6520'	Sandstone	quartzitic, light brown, weathering medium grey with dark lichen, thin bedded.
6520'-6550'	Covered	
6550'-6552'	Sandstone	quartzitic, white, thin bedded, weathering light grey with dark lichen.
6552'-6572'	Covered	
6572'-6582'	Sandstone	quartzitic, light brown, color banded, weathering light brown with dark lichen.
6582'-6592'	Sandstone	light grey, light grey weathering, iron-staining, dark lichen, thin bedded, cross-bedded, slightly contorted, less quartzitic.
6592'-6617'	Covered	
6617'-6632'	Sandstone	quartzitic, very light grey to white, fine textured, banding, thin bedded, cross bedding, weathering dark grey with dark lichen, poor exposure.
6632'-6642'	Sandstone	quartzitic, very light grey to white, fine textured, banding, thin bedded, cross-bedding, weathering dark grey with dark lichen, poor exposure.
6642'-6652'	Sandstone	quartzitic, medium to light grey, color banding, weathering dark grey with dark lichen, thin bedded.
6652'-6662'	Covered	
6662'-6667'	Covered	
6667'-6677'	Sandstone	quartzitic, approaching quartzite, discontinuous fine beds, very evenly bedded, poor porosity, light grey to white weathering, dark lichen, platy, very thin bedded.

6677'-6687'	Sandstone	quartzitic, approaching quartzite, discontinuous fine bands, poor porosity, light grey to white, weathering white with dark lichen, very thin bedded, platy, cross-bedded.
6687'-6732'	Covered	
6732'-6741'	Sandstone	fine grained, light grey to white, weathering light grey with dark lichen, 15-20 feldspar, well sorted, thin bedded, quartzitic.
6741'-6835'	Covered	
6835'-6849'	Sandstone	very light grey to white, fine grained, fair sphericity, color banding, thin bedded, platy, grey lichen on surface, 10% feldspar.
6849'-6859'	Sandstone	very light grey to white, fine grained, fair sphericity, color banding, thin bedded, platy, grey lichen on surface, 10% feldspar.
6859'-6869'	Sandstone	fine grained, sub-rounded, fair sphericity, color banding (red iron stain), thin bedded, platy, light to medium grey weathering, grey lichen on surface, 10% feldspar.
6869'-6881'	Sandstone	fine grained, sub-rounded, fair sphericity, color banding, (red iron stain), thin bedded, platy, light to medium grey weathering, grey lichen on surface, 10% feldspar.
6881'-7156'	Covered	
7156'-7163'	Sandstone	fine grained, very light grey, weathering light grey, thin bedded, platy, well sorted, sub-rounded, fair sphericity, cross-bedding fair porosity, poor exposure.
7163'-7237'	Covered	
7237'-7264'	Sandstone	fine grained, very light grey, weathering light grey, thin bedded, platy, well sorted, sub-rounded, fair sphericity, cross-bedding, fair-poor porosity, color laminations.

7264'-7294' Sandstone

fine grained, very light grey, weathering
light grey, thin bedded, platy, well
sorted, sub-rounded, fair sphericity,
cross-bedded, fair-poor porosity.

PZ - N58

65° 16' Latitude
133° 15' Longitude

DIVIDE MOUNTAIN

100'	PZ-295-N58	Limestone & Chert	dark grey, grey brown weathering, dense to fine crystalline, thin platy to slaty with some flat lenses and beds of black chert. fossiliferous
15'	PZ-296-N58	Limestone	grey to dark grey, light grey weathering, fine crystalline, very massive, fossiliferous.
81'	PZ-297-N58	Shale & Limestone	zone of grey brown to light grey, weathering grey, marles to marly limestone with some intercalations of very fossiliferous limestones.
96'	PZ-298-N58	Limestone	dark grey to black, microcrystalline to dense with frequent partings and flat lenses of black chert, thin bedding to platy, chert disappearing near base.
174'		Shale & Limestone	black, graptolitic shales with some thin limestone intercalations.
105'	PZ-299-N58	Limestone to Limy Dolomite	thin bedded to platy, fine crystalline to dense limestone, toward base dolomitic limestone, dark grey, grey weathering with one somewhat marly interval toward middle of unit.
177'	PZ-300-N58	Dolomite	fine to medium crystalline, toward top one interval slightly limy, grey brown to grey, grey weathering to yellow grey.
375'	PZ-301-N58	Dolomite	grey brown to grey, weathering to medium grey, slightly sandy to silty in lower parts, coarse crystalline, massive to unbedded.
9'	PZ-302-N58	Sandstone	maroon, fine grained, well cemented grains, well rounded - tough-quartzitic.

228'	PZ-303-N58	Shale	maroon brown to brown, massive, hard: silty to sandy in lower parts, containing small pebbles.
165'	PZ-304-N	58Tillite	grey brown to maroon, massive bedding, matrix sandy to silty shale to mudstone components, varying in size from small pebble to boulders with diameter up to 3'. Angular to sub-angular: faceted and striated pebbles are common.
156'		Tillite	same as above, more conglomerate layers.
420'		Tillite	conglomerate layers somewhat less frequent.
291'		Tillite	few conglomerate layers, some sand layers.
177'		Tillite	some sandy intercalations, some horizons rich in pebbles and cobbles
405'		Tillite	cement maroon brown weathering, seldom sandy, very massive, no bedding visible.
183'		Tillite	well scratched pebbles and cobbles.
270'	PZ-306-N58	Tillite	lower part of unit sandstone with frequent pebbles. conglomerate with sandstone cement.
100'	PZ-307-N58	Dolomite	slightly limy. light grey, grey yellow weathering, massive to thickly bedded. top most 2' are brecciated and cemented by maroon shaly material
123'	PZ-308-N58	Shales & Dolomite	maroon to yellowish dolomite with thin shaly partings, bedding planes somewhat rubbly. thin bedded. shale partings somewhat more prominent.
12'	PZ-309-N58	Shale	zone of predominantly red/green shales with few yellowish dolomitic intercalations.
60'	PZ-310A-N58	Dolomite	light grey to grey dolomite, fine crystalline, grey yellow weathering, thin to well bedded.

198'	PZ-310B-N58	Dolomite	yellow ochre weathering, grey to dark grey, shaly, well bedded to thin bedded solintery, conchoidal fracture.
198'	PZ-311-N58	limy Dolomite	grey brown, weathering black to dark grey, thick interval of black shale, conchoidal fracture.
153'	PZ-312-N58	Dolomite	grey to dark grey, weathering grey to grey-yellow, beds of limy dolomite, marly, platy partings, thin to average bedded.
246'	PZ-313-N58	Dolomite	fine crystalline, grey, weathering grey, very massive, almost no shaly partings
156'		Dolomite	grey, weathering grey, fine crystalline.
120'	PZ-314-N58	Dolomite	grey, weathering yellow, intercalations of black and red shales, fine crystalline.
105'	PZ-315-N58	Limestone	grey to yellow weathering, somewhat banded with frequent marly partings, thin bedded.
81'		Shale	black, mostly covered by scree, contains few sandy rusty layers.
144'	PZ-316-N58	Sandstone & Shale	grains rounded, matrix argillite and/or hematite, greenish to maroon, wavy coloring.
	PZ-317-N58	Argillite	silty to shaly siltstone, wavy bedding, matrix shaly to hematitic
196'	PZ-318-N58	Argillite	non-silty, multicolored, grey banded to red brown, rusty weathering, flaky, at base some intercalations of quartzite.
18'	PZ-319-N58	Limestone	medium crystalline.
162'	PZ-320-N58	Argillite	grey to ochre to brown to black, solintery, at base intercalations of sandstone, very fine, greenish
21'	PZ-321-N58	Dolomite	slightly limy, blue grey, orange weathering, fine crystalline

126'	Argillite	grey green to grey to brownish, splintery with some limestone partings toward top and base.
132' PL-356-N58	Dolomite	grey to grey brown, yellow brown weathering, fine crystalline, partly platy with shaly partings, somewhat shaly, somewhat sandy.
75' PL-357-N58	Dolomite	dolomitic sandstone, sandy dolomite, sandstone fine, whitish to yellow brown, weathering same, shale intercalations, dark grey to greenish.
165' PZ-358-N58	Shale	mostly covered by scree, red-violet to green shales to purple, massive, flaky, with sandy layers.
138'	Shale	purple to green, some layers sandy to shaly sandstone, friable, some intercalation of yellow dolomite.
105' PZ-359-N58	C DO LITE	yellow "Rauwacke" and cell dolomite, friable, slightly sandy, platy
28' PZ-360-N58	Dolomite	grey to greenish grey, weathering light grey, fine crystalline, well bedded.
43' PZ-361-N58	Limestone	black, grey blue weathering, fine crystalline, toward base in patches and irregular forms intercalated in dolomite.
64'	Shale	black, dolomitic shale
306'	Cell Dolomite	yellowish, brecciated somewhat limy, very massive, no bedding visible, partly covered by scree.

APPENDIX BINDEX TO PHOTOGRAPHSOF STRUCTURAL INTEREST

1. Looking west, Cambrian-Precambrian tillite faulted (high angle reverse) on Ronning dolomite. Grey strata in lower left is limestone which underlies and shows slight angularity to the tillite.
2. Looking northwesterly; Ronning overlying thin edge of tillite (dark red band) and Cambrian-Precambrian, unit 1. In right background is reverse fault seen in Photo 1.
3. Looking west across Arctic Red River; anticline exposes Cambrian-Precambrian units 1, 2, 3, and 4.
4. Looking east across Arctic Red River at Mackenzie Mountain front. Syncline exposing Ronning, and on south flank, Cambrian-Precambrian 3 and 4.
5. As in Photo 4, but just to south, shows anticline in Cambrian-Precambrian units 3 and 4. Camp at Lake Tawu is on terrace just behind low hills at right edge of photo.
6. Looking west from Many Beavers River. View of gentle syncline at mountain front exposing Ronning dolomite.
7. Looking north: valley at left contains long narrow lake dammed up by rock slide off mountain in centre. Main valley was also dammed and once contained a lake but debris has been cut through.

OF STRATIGRAPHIC INTEREST

8. Looking south towards Catherine Ridge section. Cambrian-Precambrian 3 and 4 exposed.
9. & Two views of Cambrian-Precambrian red conglomerate (tillite).
- 10.
11. Looking south at lower Ronning overlying pinch-out of tillite (very dark band). The tillite interfingers with Cambrian-Precambrian unit 1.
12. Looking west. Cambrian-Precambrian units 1 and 2 faulted (high angle reverse) on Ronning.
13. Looking west across valley. Ronning overlying Cambrian-Precambrian units 1 and 2. Slight angularity can be seen between Cambrian-Precambrian and Cambrian-Ordovician-Silurian Ronning.
14. Mountain front between Many Beavers and Snake Rivers. Bear Rock formation includes uppermost light unit and banded unit. Ronning includes pale yellow and underlying rock.

GENERAL

15. Looking north - camp on Lake Tawu taken at midnight on June 21, 1961.
16. Looking west - Shell base camp at Inuvik - Otter on right supplied camp on Tawu lake.
17. Otter arriving at camp with supplies; will return to Inuvik with rock samples on dock.

18. & Hiller using sling for transporting full 45 gallon drums.

19.

20. Hiller using sling for transporting 6 ten-gallon drums.

Sling was also found to be very effective in moving fly camps.

21. Effect of portable insect sprayer used in camp to help reduce the mosquito population.



Photo 1. Looking west, Cambrian-Precambrian tillite faulted (high angle reverse) on Ronning dolomite. Grey strata in lower left is limestone which underlies and shows slight angularity to the tillite.

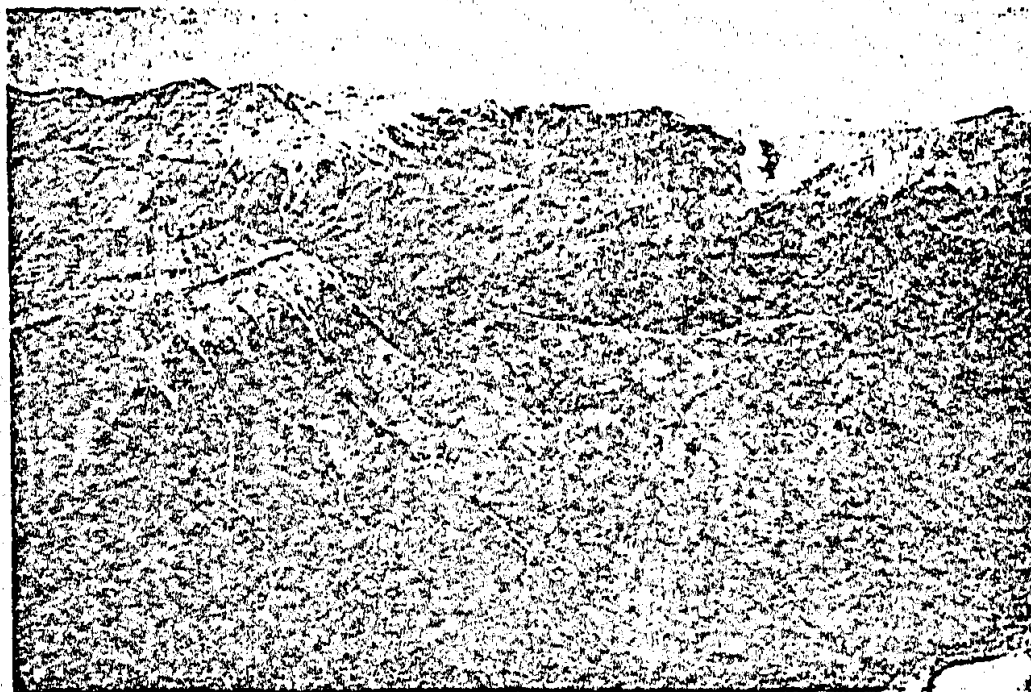


Photo 2. Looking northwesterly; Ronning overlying thin edge of tillite (dark red band) and Cambrian-Precambrian, unit 1. In right background is reverse fault seen in Photo 1.

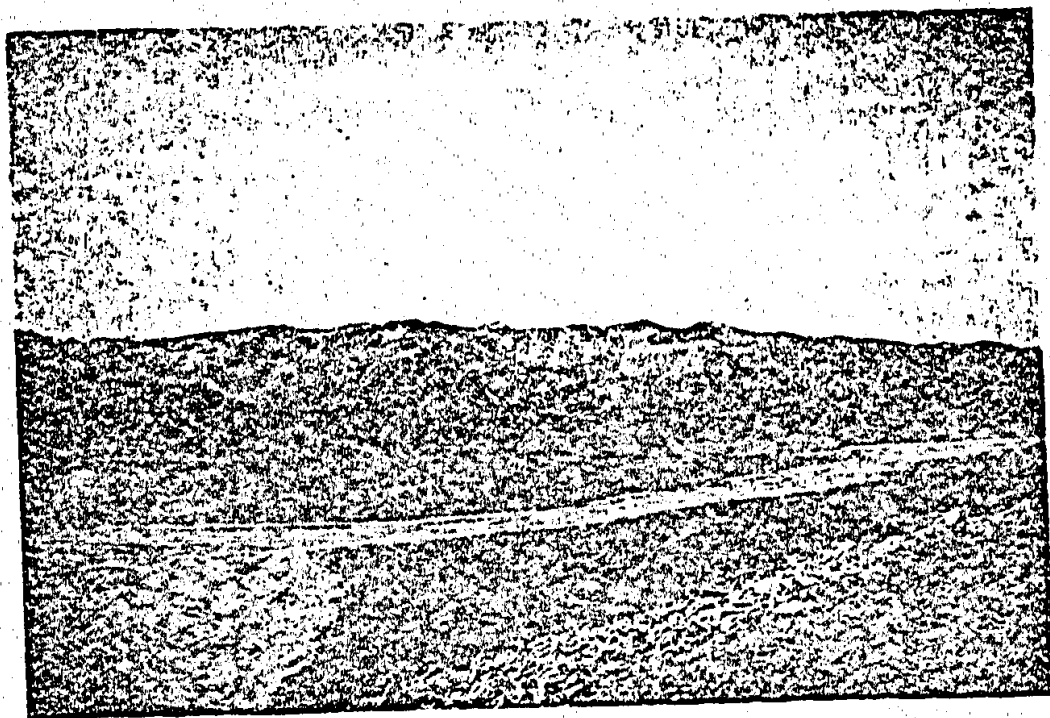


Photo 3. Looking west across Arctic Red River; anticline
exposes Cambrian-Precambrian units 1, 2, 3, and 4.

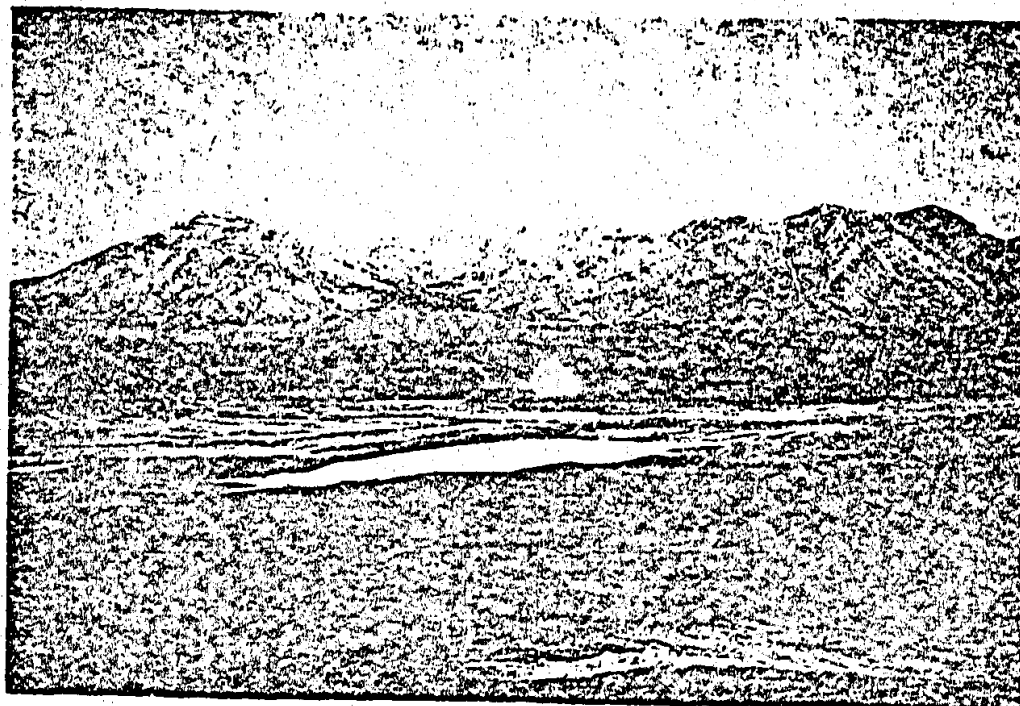


Photo 4. Looking east across Arctic Red River at Mackenzie Mountain front. Syncline exposing Ronning, and on south flank, Cambrian-Precambrian 3 and 4.



Photo 5. As in Photo 4, but just to the south, shows anticline in Cambrian-Precambrian units 3 and 4. Camp at Lake Tawu is on terrace just behind low hills at right edge of photo.

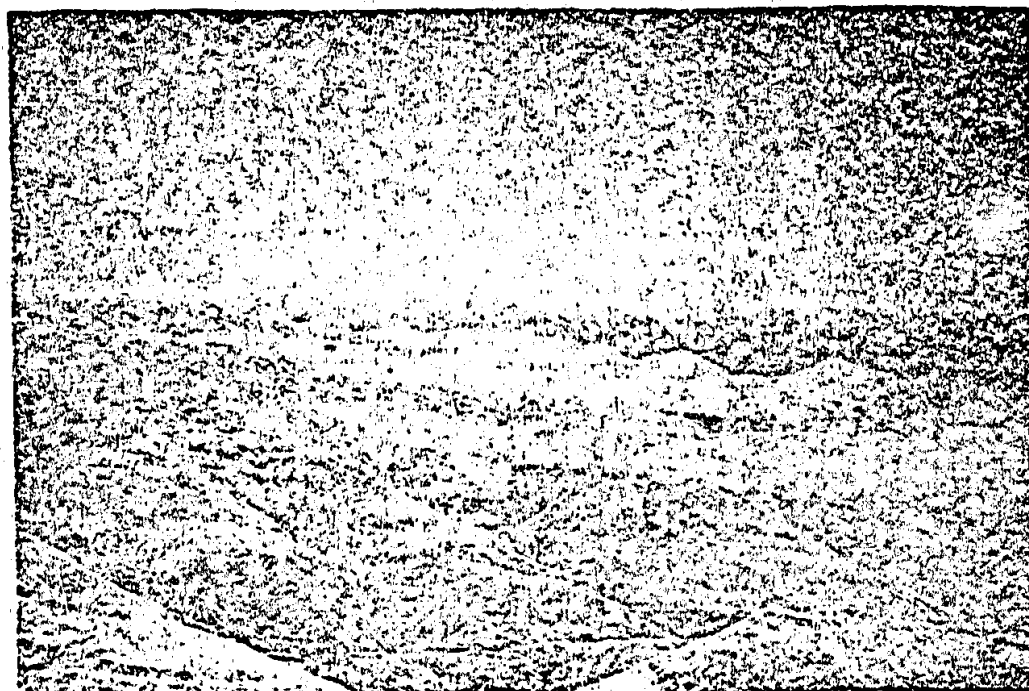


Photo 6. Looking west from Many Beavers River. View of gentle syncline at mountain front exposing Ronning dolomite.

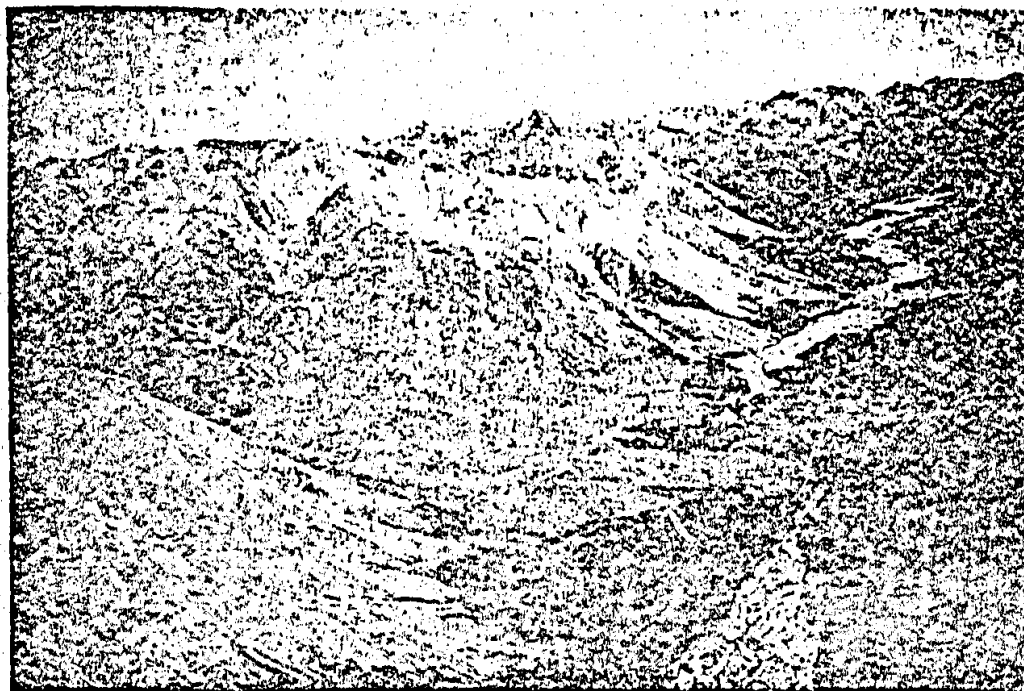


Photo 7. Looking north: Valley at left contains long narrow lake dammed up by rock slide off mountain in center. Main valley was also dammed and once contained a lake but debris has been cut through.

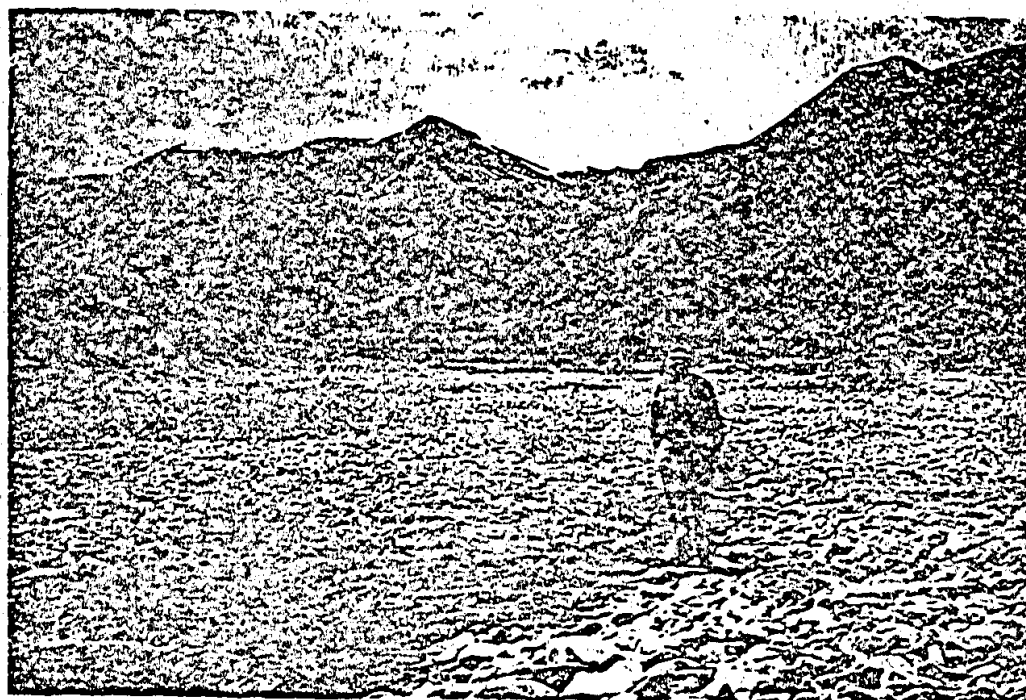


Photo 8. Looking south towards Catherine Ridge section.
Cambrian-Precambrian 3 and 4 exposed.

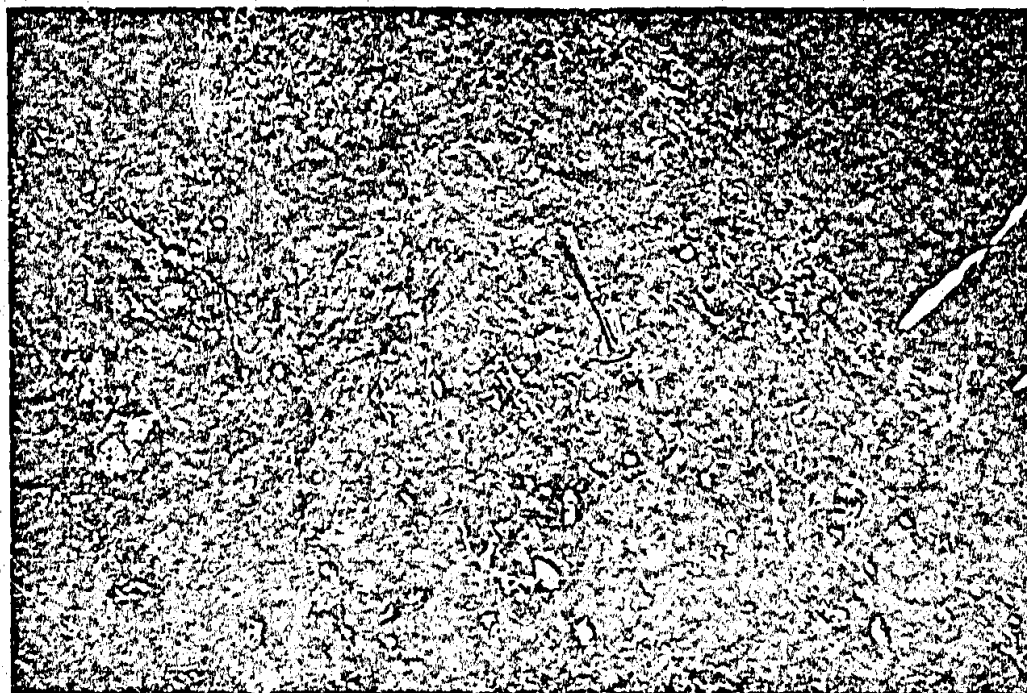


Photo 9. View of Cambrian-Precambrian red conglomerate (tillite).

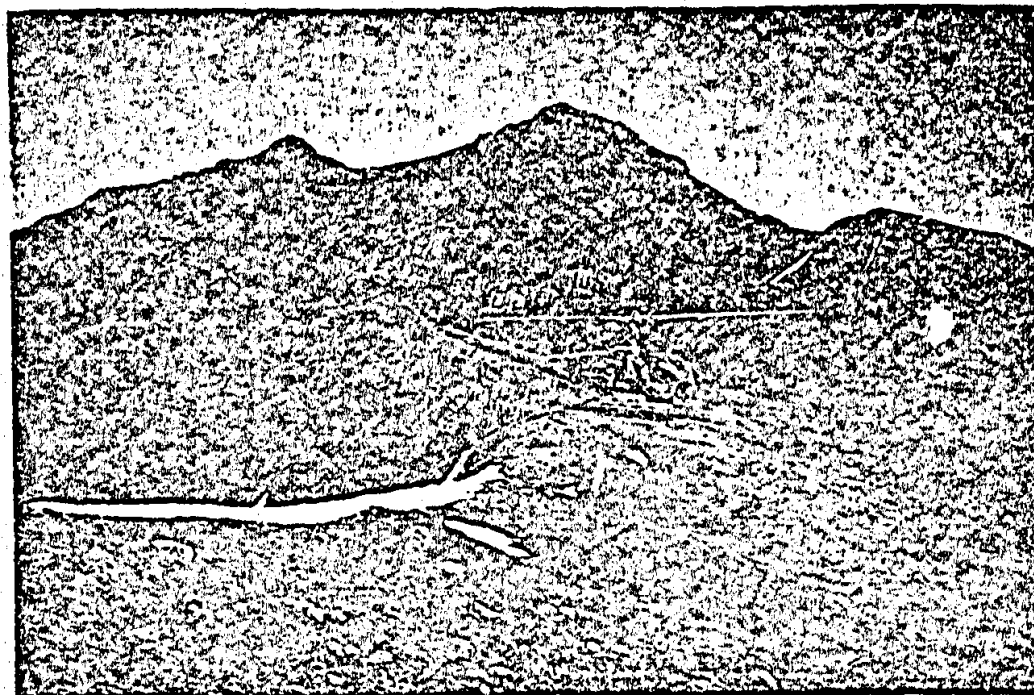


Photo 10. View of Cambrian-Precambrian red conglomerate (tillite).

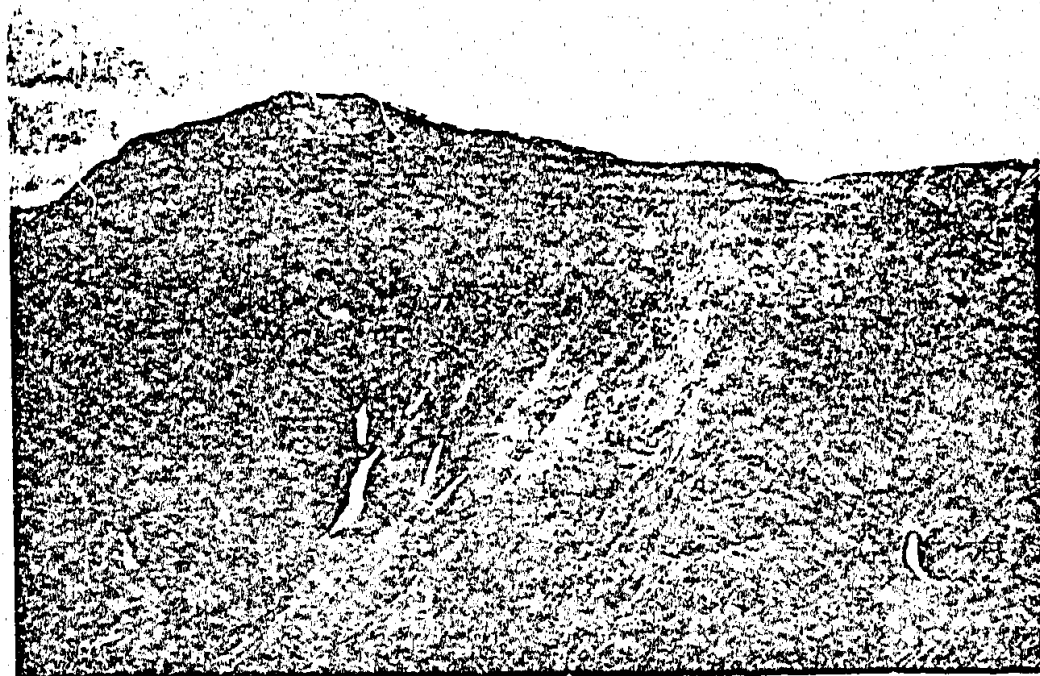


Photo 11. Looking south at lower Ronning overlying pinchout of tillite (very dark band). The tillite inter-fingers with Cambrian-Precambrian unit 1.

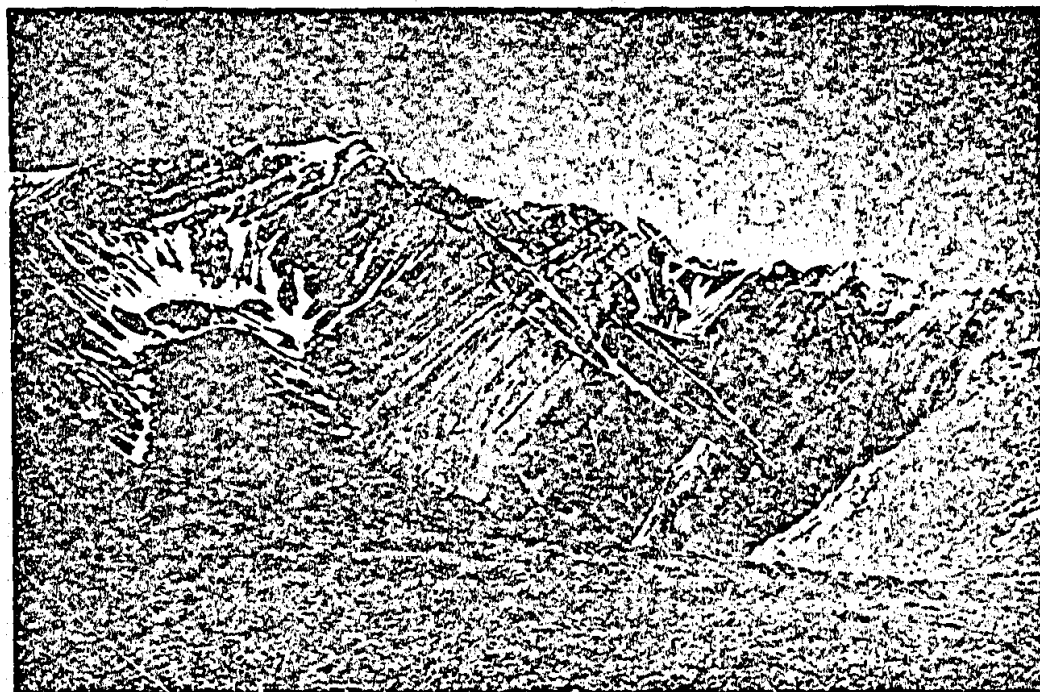


Photo 12. Looking west. Cambrian-Precambrian units 1 and 2 faulted (high angle reverse) on Ronning.

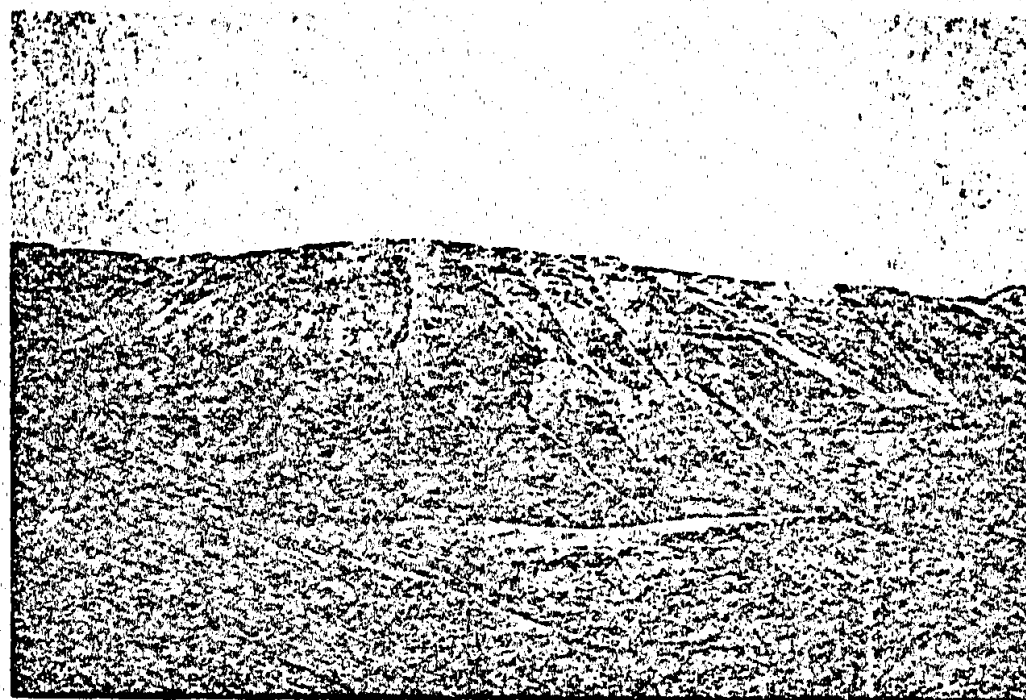


Photo 13. Looking west across valley. Ronning overlying Cambrian-Precambrian units 1 and 2. Slight angularity can be seen between Cambrian-Precambrian and Cambrian-Ordovician-Silurian Ronning.

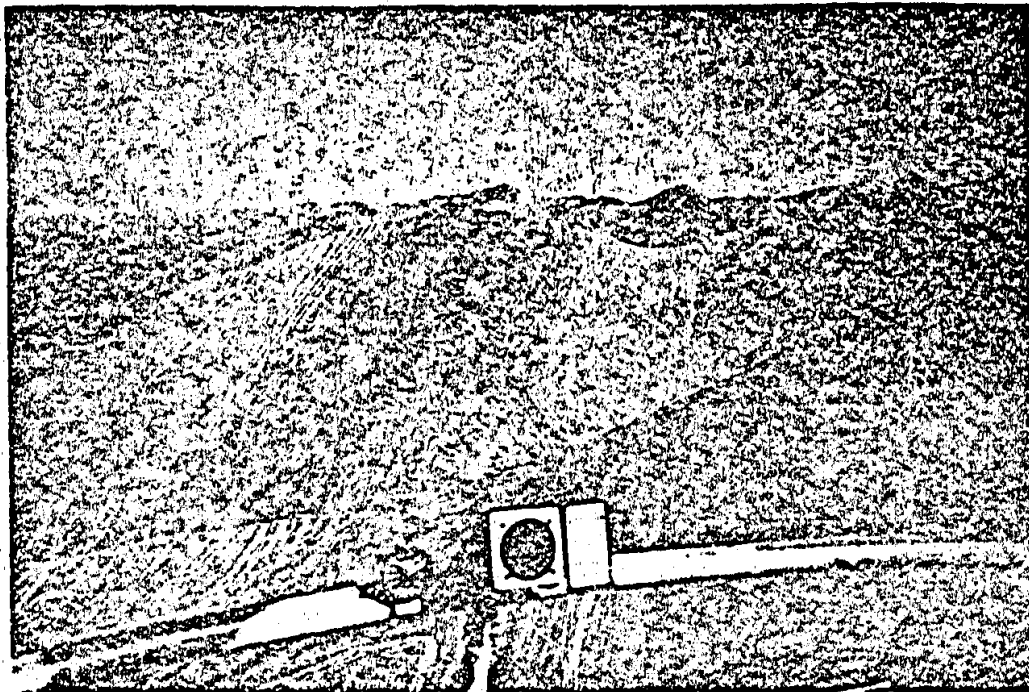


Photo 14. Mountain front between Many Beavers and Snake Rivers. Bear Rock formation includes uppermost light unit and banded unit. Ronning includes pale yellow and underlying rock.

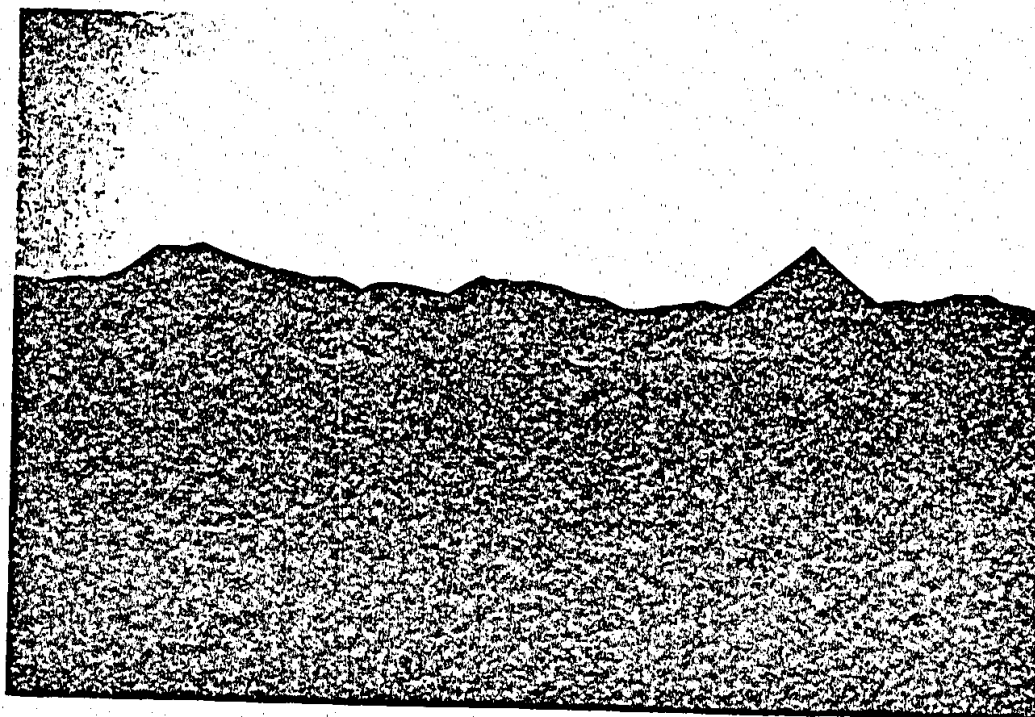


Photo 15. Looking north - camp on Lake Tawu taken at
midnight on June 21, 1961.

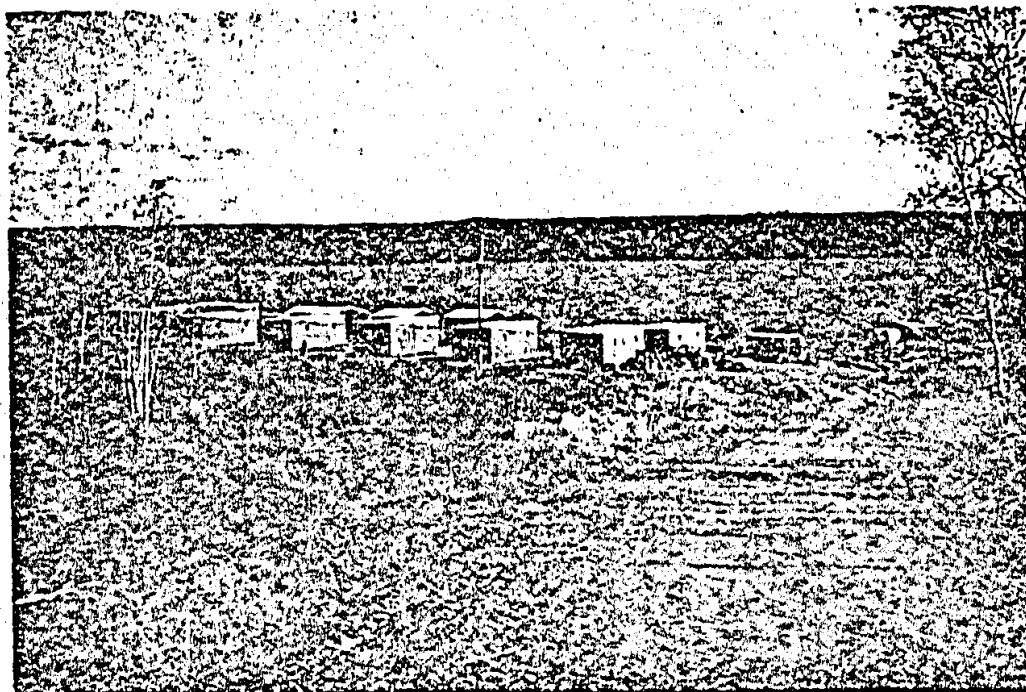


Photo 16. Looking west - Shell base camp at Inuvik - Otter
on right supplied camp on Tawu Lake.

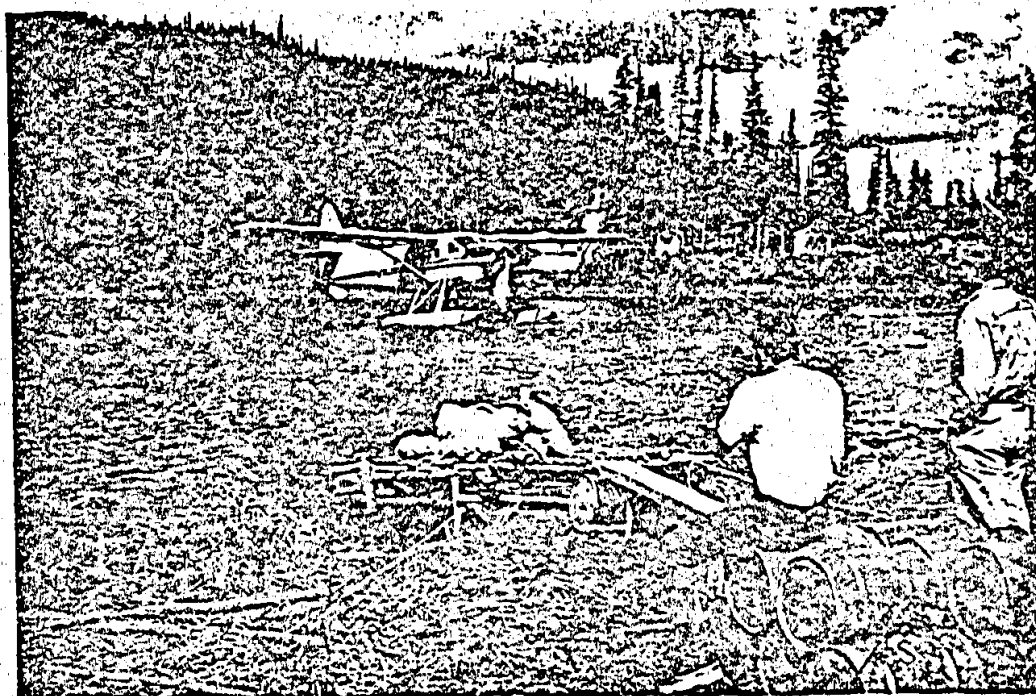


Photo 17. Otter arriving at camp with supplies; will return to Inuvik with rock samples on deck.

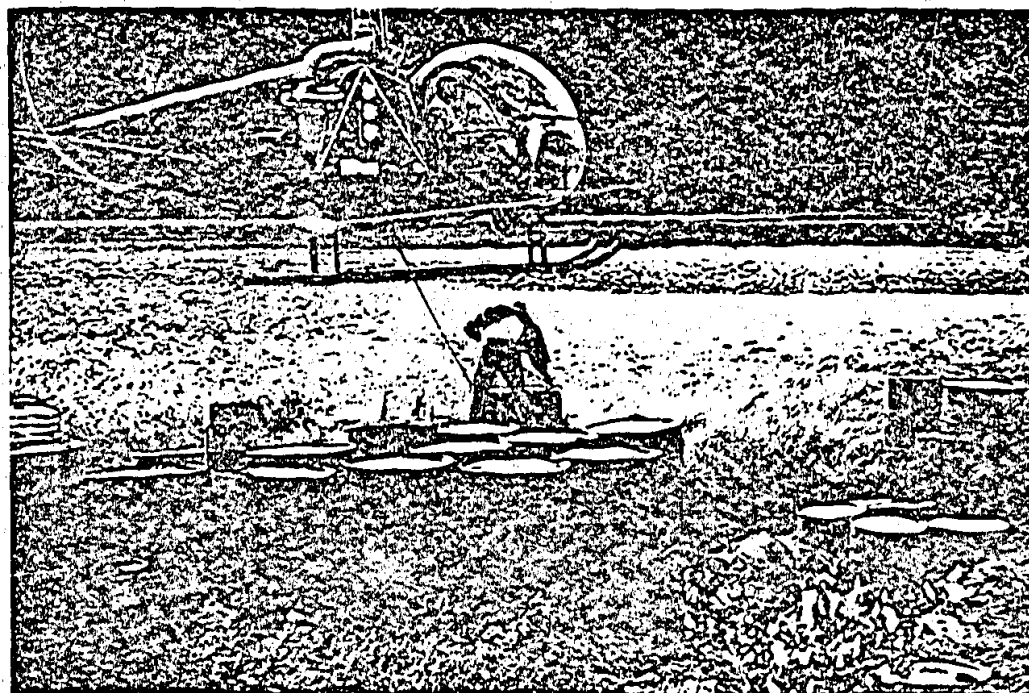


Photo 18. Hiller using sling for transporting full 45 gallon drum.

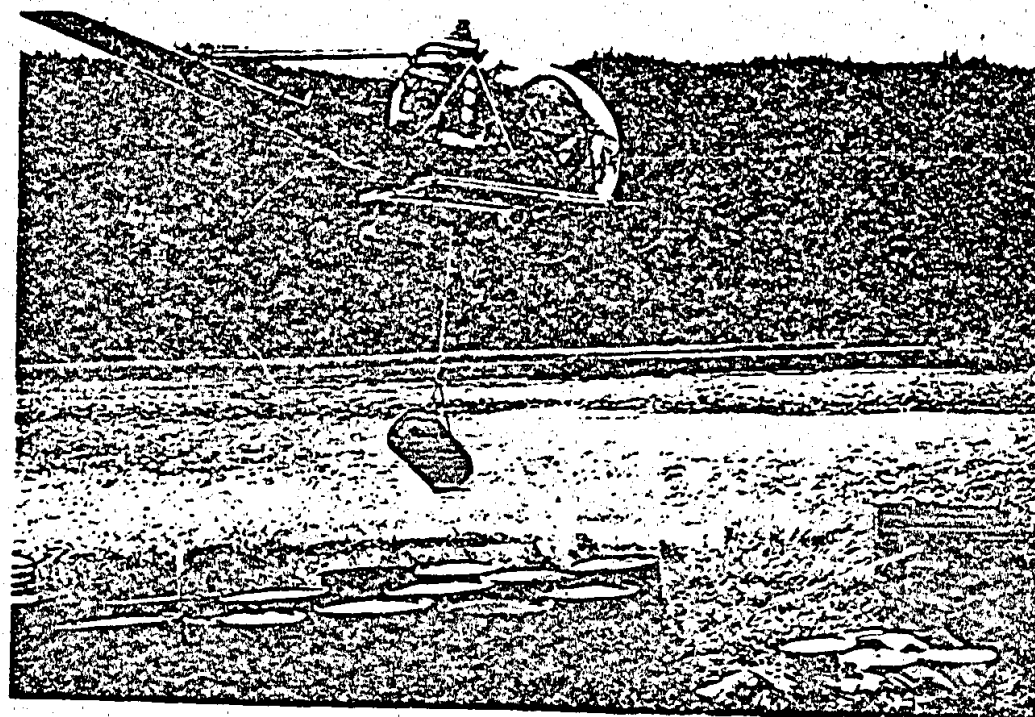


Photo 19. Hiller using sling for transporting full 45 gallon drum.

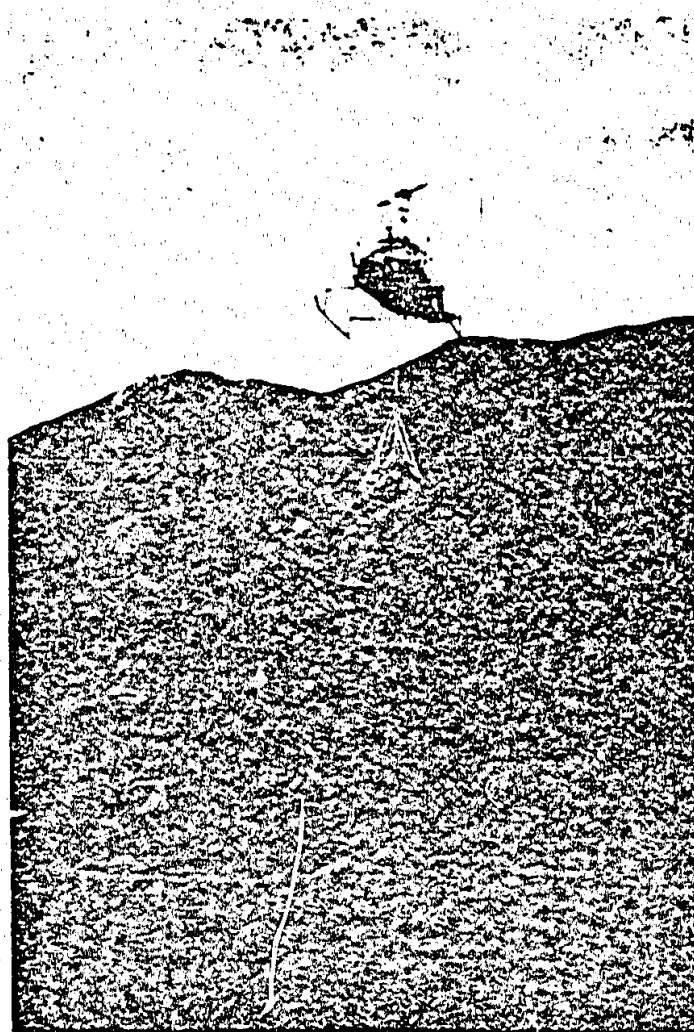


Photo 20. Hiller using sling for transporting 6 ten-gallon drums. Sling was also found to be very effective in moving fly camps.



Photo 21. Effect of portable insect sprayer used in camp to help reduce the mosquito population.

Prepared by Northwest Territories District
staff, D.H. Shouldice, District Geologist
under the supervision of B. M. Veilleux,
Northern Division Exploration Manager, -
Shell Oil Company of Canada, Limited,
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