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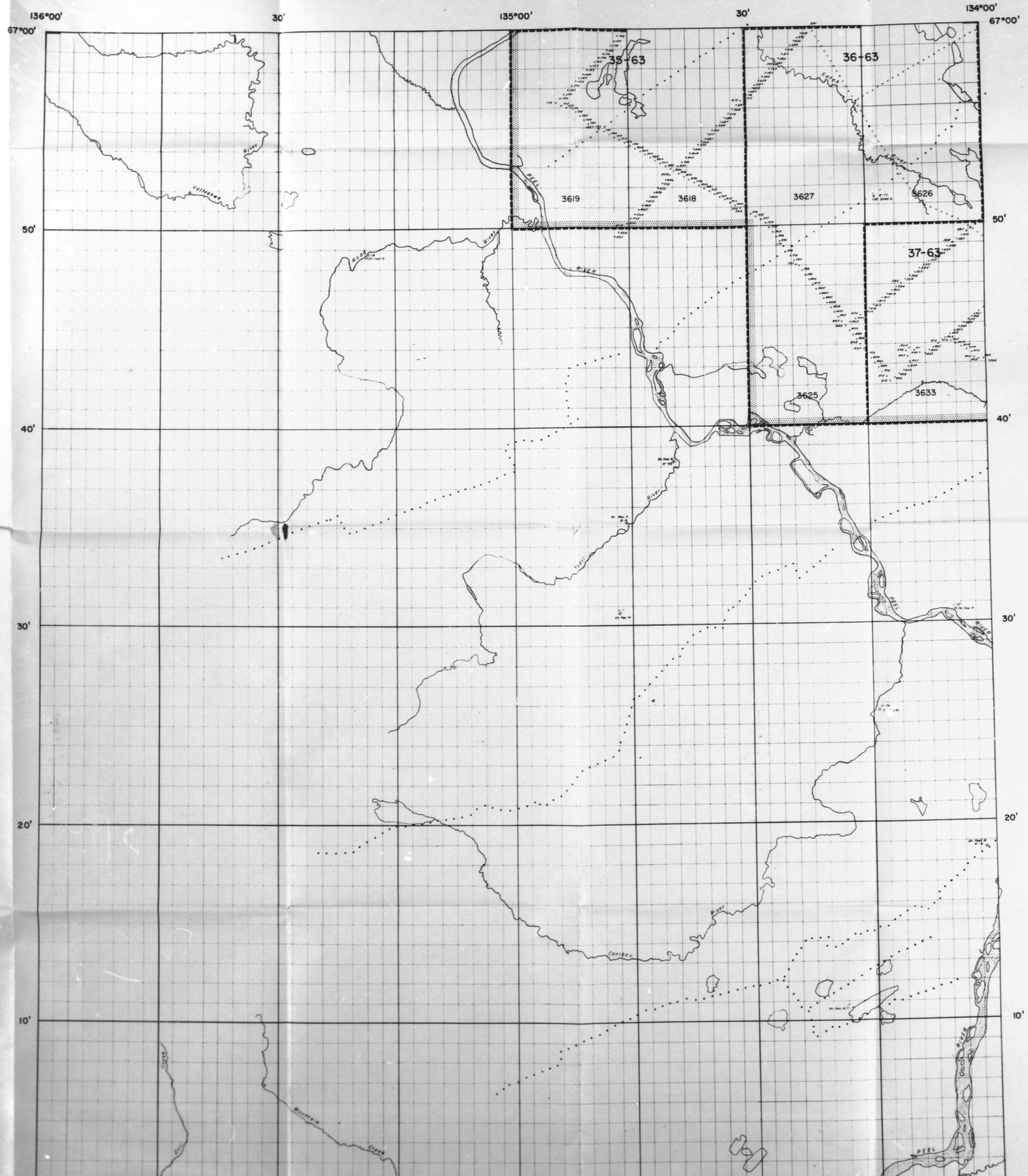
IMPERIAL OIL ENTERPRISES LIMITED
N.W.T. EXPLORATION DISTRICT



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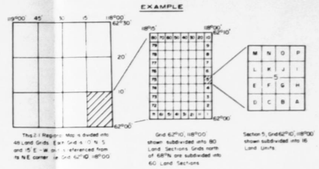

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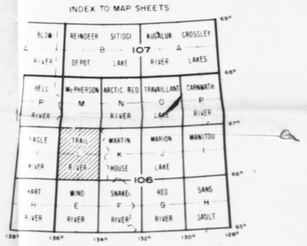

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SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

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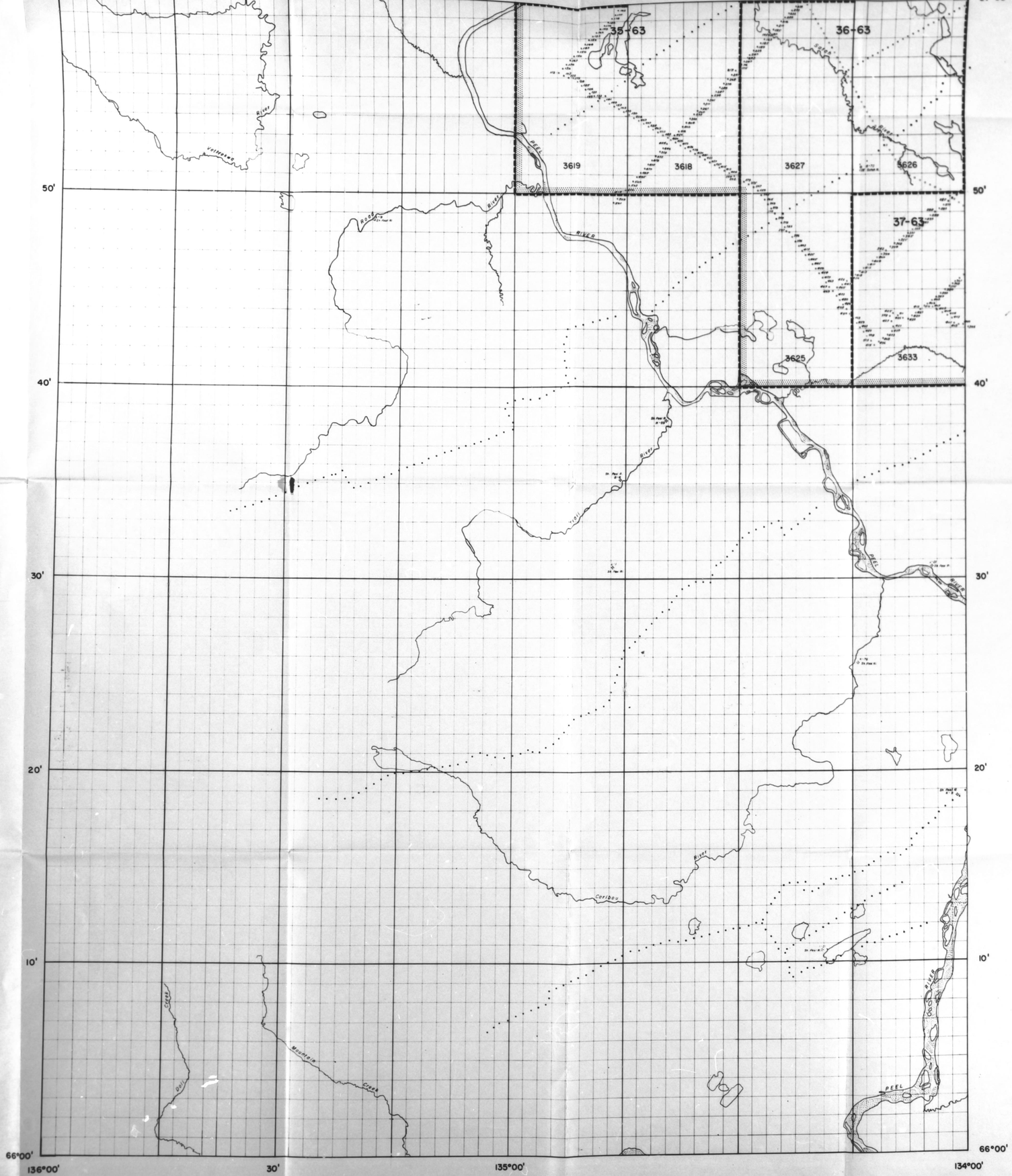

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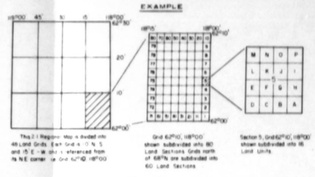

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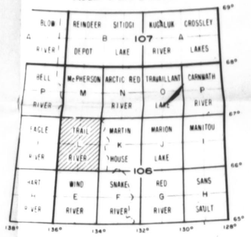

SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums: Plane _____ *Velocity* _____

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2 of 2

106L TRAIL RIVER

2 MILES TO 1 INCH

CONFIDENTIAL

5236

7-6-6-68

CONFIDENTIAL

IMPERIAL OIL ENTERPRISES LTD.

NORTHWEST TERRITORIES EXPLORATION DISTRICT

Report On: Reflection Seismic Program - Peel Plateau and Travaillant Lake Areas - N.W.T. Territorial Oil & Gas Work Bonus Blocks 32-63, 35-63, 36-63, 37-63, 38-63, 39-63, 56-63, 57-63, 58-63, 11-64, 71-64, 18-66 and 19-66. For period August 28, 1964 to April 18, 1967.

By: Peter Stauft

Date: December 20, 1967.

Map References:

106 K Martin House

106 L Trail River

106 M Fort McPherson

106 N Arctic Red River

106 O Travaillant Lake

IMPERIAL OIL ENTERPRISES LTD.

PRODUCING DEPARTMENT - WESTERN REGION

REFLECTION SEISMIC OPERATIONS

PEEL PLATEAU AND TRAVAILLANT LAKE AREAS

N.W.T. Work Bonus Blocks 32-63, 35-63, 36-63, 37-63, 38-63, 39-63, 56-63, 57-63, 58-63, 11-64, 71-64, 18-66 and 19-66.

N.W.T. Permits 3594-3601, 3618-3624, 3625-3631, 3632-3638, 3639-3646, 3647-3654, 3725-3732, 3733-3740, 3741-3746, 3798, 3803, 3923-3927, 3894-3896, 4206, 5389-5393, 5394-5401.

August 28, 1964 - April 18, 1967

By

Peter Stauft

December 20, 1967

NORTHWEST TERRITORIES EXPLORATION DISTRICT

EDMONTON, ALBERTA

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c) 106M Fort McPherson
d) 106N Arctic Red River
e) 106O Travaillant Lake

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A. Reflection Seismic Program, IOE Party No. 23 in Fort McPherson Peel River Areas, from August 28, 1964 to June 30, 1965. Project Work Order 0189-05. In support of Affidavit of Expenditure by Peter C. Campfield dated 28 February 1966.

INTRODUCTION

In preparation for our Peel River area seismic program, stockpiling of fuel and supplies was carried out via the Mackenzie River during the 1964 shipping season. Approximately 252 tons of supplies and equipment and 188 tons of fuel oil and gasoline were shipped to our base camps during the summer.

A base camp was established on the west bank of the Peel River across from Fort McPherson. This was used by our drilling department as well as by our seismic crews. This camp consisted of a cookhouse, a diner, a freezer unit for meat storage, a utility unit, four sleepers and a power plant; these were all skid units.

In attendance was a cook, a camp attendant and an expediter - radio operator.

A temporary airstrip was laid out on a sand bar of the Peel River for use during the freeze-up and winter season; during the summer the planes were equipped with floats.

A fuel depot for gasoline and fuel oil was established in the camp area and a dynamite magazine was set up nearby.

At Inuvik a warehouse was leased for storage of food, drill bits and general supplies. In attendance was an expediter - radio operator. Considerable local help was hired periodically for loading of supplies and food as well as for actual seismic operations in the field.

A magazine to hold about 50,000 lbs. of dynamite was established outside of Inuvik near the airport road.

The seismic party was serviced by Company-owned DC-3 and Otter aircraft. The Otter was used mainly in the North for transporting personnel and supplies from Inuvik to the field. The DC-3 was used primarily for service between Inuvik and Edmonton and Calgary. Commercial planes were chartered periodically when our own aircraft could not provide service required. A helicopter from Okanagan Helicopters was used during freeze-up and break-up. This proved of only limited value because of extremely poor flying conditions during these periods.

A portable camp was used during the months of September and October 1964 and May and June in 1965; i.e. during freeze-up and break-up. This camp consisted of a kitchen, a diner, a utility-sleeper and two sleepers. These were all mounted on Nodwell track units; the power plant was on a Bombardier.

After freeze-up the portable camp was taken to Fort McPherson and was replaced with a mobile camp on sleds. This consisted of a kitchen, diner, washroom, power plant, storage unit, fuel trailer and eight 4-man sleepers. The entire camp was moved by caterpillar tractor in two trains.

During the entire program three DC-6 caterpillar tractors with dozers from Chinchaga Construction were required for moving the camp and bulldozing seismic lines. The camp was moved continually as the shooting progressed; travel time of the shooting crew was accordingly kept to a minimum.

All the seismic field units, including the air drills, were track mounted.

The normal seismic crew in the field was made up of the following 32 people:

Recording and shooting crew	- 12
Cook, cook's helper, camp attendant and two mechanics	- 5
Drilling rigs	- 6
Bulldozer camp	- 8
Party chief	- 1

As personnel were rotated on the basis of 28 days on and 14 days off work schedule, the total number in the crew was actually 43.

Contact with the Inuvik and Fort McPherson base camps was maintained using a single sideband Spilsbury and Tyndall four-channel radio. When reception was good contact was also possible with the Dawson Creek office via radio.

REFLECTION SEISMIC OPERATIONS

The advance party of five men arrived at Fort McPherson on August 28, 1964. The remainder of the crew was flown in on August 30 and September 1.

Actual shooting was started on September 1. The vehicles were driven into the field but the crew was flown back to Fort McPherson by helicopter. The mobile camp was moved to the field the next day; the helicopter was then used to fly in supplies.

Considerable experimental shooting was done during the first three days in the field. It was found that good records could be obtained if the moss was stripped with the bulldozer and geophones

placed on the solid ground. The first hole on the assignment was shot point No. 23-27020 located in Section 74 of Permit 3731, grid area 67°30'N - 135°00'W; this is about 8 miles west of Fort McPherson.

During the next three weeks approximately 37 miles of line were shot in this and the adjoining permit to the west; i.e. Permit 3732. Record quality was quite good for most of this shooting but drilling was often difficult because of gravel and boulders.

On September 20 shooting had reached Section 9 of Permit 3738, grid area 67°30'N - 135°30'W. From here the work continued due west for 8 miles into the foothills, then in a southerly direction for 16 miles to Section 8 of grid area 67°20'N - 135°45'W. A loop was shot on the east side of this line starting at Section 5 in grid area 67°30'N - 135°45'W by proceeding 10 miles east, 5 miles south, then back west to Section 8 where the north-south line terminated. This loop was completed on October 20. During this period the weather was very bad for flying with considerable rain, snow and fog. As the helicopter could not be used supplies were brought in overland by Bombardier, a distance of 50 miles over very rough terrain.

As drilling in the foothills was difficult, two shifts were used on one of the drills to keep ahead of the shooting crew. Record quality was only fair; in some areas it was necessary to re-shoot portions of the lines with deeper holes to obtain acceptable records.

Two more loops were then shot south and east of the previous work; one of these was in Permit 3735, grid area 67°20'N - 135°30'W and the other in Permit 3730 which adjoins on the east. These loops were

completed on November 4 and tied in at Section 8 of Permit 3736, grid area 67°20'N - 135°45'W.

The crew then backtracked to Section 63 of Permit 3735 and shot a line 3 miles south and 10 miles east to terminate in Section 30 of Permit 3727, grid area 67°10'N - 135°15'W. This line completed the foothills shooting on November 8. The greatest problem on the latter part of this program was one of supply. The helicopter was practically useless because of very bad weather and travel overland was extremely slow because of terrain, snow and mud.

During the latter part of the foothills work considerable time was spent in vehicle repair; springs, radiators, motor mounts and wheel bearings gave the most trouble. One drill was down a full week as the replacement parts had to be flown in from outside.

The next assignment started in Section 15 of Permit 3730, grid area 67°20'N - 135°15'W. A four-mile east-west line was first shot, then a 16-mile line in a northerly direction. This line terminated in Section 76 of grid area 67°30'N - 134°45'W which is about 3 miles southwest of Fort McPherson. Records on this line were very good with only small charges.

As the winter camp was located at Fort McPherson the change-over from the mobile camp was made between November 15 and 18. As the tractors were now required to move the camp, a double shift was started on all three units on November 16. On November 15 one of the units fell through the ice off the Peel River but it was recovered.

On November 18 a line was started in Section 5 of Permit 3732; this is only 1 mile north of the original starting point for the season's work. The next three weeks were spent in detail shooting over the north half of this permit and grid area 67°40'N - 135°15'W which is located directly north of Permit 3732.

Record quality in this area was good and drilling comparatively easy except in the stream and river valleys where gravel is prevalent.

A Nodwell unit fell through the ice of a small lake in deep water. It was necessary to bring in a diver from outside to attach cables to the unit before it could be recovered. The recovery was made in temperatures between 35° and 55° below zero by cutting the ice and pulling the unit to shore under the ice for about 500 feet.

When the temperature dropped to 50° below zero it became very difficult to start the units the next morning; the units were accordingly kept running all night during the cold spells.

On December 15 a new line was tied in at shot point No. 23-27529 in Section 33 of grid area 67°40'N - 135°15'W and shot 14 miles north. The crew then backtracked for 10 miles south and shot a line west for 6 miles to terminate in Section 25 of grid area 67°40'N - 135°30'W.

This was completed on December 26. Record quality was only fair in this area; drilling was difficult, with sandstone being near the surface. Weather was very bad, being either extremely cold or windy with snow; December 27 was a weather day because of a severe blizzard.

From December 28, 1964 until January 4, 1965 was spent in shooting additional detail in the north half of Permit 3732 and the grid area adjoining to the north.

On January 5 the entire camp was moved back to the Fort McPherson area; the temperature was 70° below zero and remained near that temperature for four consecutive days.

On January 6 a new line was tied into Party 26 1964 work in Section 70 of Permit 3624, grid area 67°20'N - 134°30'W at shot point 26-3409. Shooting proceeded east for 15 miles into Permit 3622, grid area 67°20'N - 134°00'W. The crew worked in this general area until February 22. Considerable detailed coverage was obtained in Permits 3622, 3623, 3630, and 3631. Three lines were run east to the Arctic Red River in Permit 3630, grid area 67°20'N - 133°30'W.

Record quality was quite good in this area and drilling comparatively easy. The main problem on this assignment was in keeping the equipment running. Because of the very cold weather a great deal of breakage was experienced, especially with tracks. Several motors also were burnt out and had to be replaced. One of the drills was out for over a week; during this period two shifts were used on the other drill.

Damage to camp units during moves was extremely heavy due to the rough terrain. One sleeping unit was badly damaged by a stump which went through the floor.

On February 23 a new line was started about 6 miles north of Fort McPherson in Section 12 of grid area 67°40'N - 134°30'W. This line crossed the Peel River and continued on west for 14 miles to tie into earlier work in Section 14 of grid area 67°40'N; 135°15'W. Work continued on north and west to tie into the original north-south line at Section 49

of the above grid area. Eight miles north of this point the extension of the original line was started in Section 45 of grid area 67°50'N - 135°15'W. They then made a complete loop by going 3 miles north, 8 miles east, southeast along Husky channel to Phillips channel, along Phillips channel to its confluence with the Peel River, across the Peel and finally tied in at the beginning of the line in Section 12.

Records in the delta were only fair. Bulldozers had difficulty keeping ahead of the crew because of heavy timber along the rivers. When temperatures were above 30° below zero productivity of the crew increased considerably and equipment breakage was noticeably reduced.

On March 20 the crew moved to the last of a new line in Section 65 of Permit 3624, grid area 67°20'N - 134°30'W. The next month was very productive as about 175 miles were shot in Permits 3618, 3619, 3620, 3621 and 3624. Several lines tied Party 26 work with our previous work which was done earlier in the season.

Records were generally good, but trouble was experienced in obtaining reflections and satisfactory drill holes near the streams where gravel beds are prevalent. Ideal weather conditions; i.e. from 0° to 25° below zero, prevailed for most of this month.

The next line commenced in Section 6 of Permit 3633, grid area 66°50'N - 134°00'W. This line and two others which are parallel and spaced about 4 miles apart were shot in a northeast direction and tied into Party 26 lines.

During the second week in May the weather became warm enough to melt the snow, making it very wet in the field. The winter camp

was accordingly replaced with the portable camp from Fort McPherson. The winter camp was moved to Arctic Red River for storage.

As it was no longer safe for conventional aircraft to land on the lakes, the helicopter was brought out to service the crew.

During the period from May 2 to June 5, approximately 123 miles of line were shot. These were primarily fill-in and tie lines. Several ties were made with Party 26 work to the east.

Record quality was fair; considerable interference was caused by high winds and running water. Working conditions were unpleasant and often great difficulty was experienced in crossing streams. Lines became extremely rough when the snow pad melted, resulting in increased bulldozing to make the trails passable.

The last line on the assignment was started in the last week of May in Section 80 of Permit 3631, grid area 67°20'N - 133°45'W. Shooting proceeded northwest for 10 miles and east for 7 miles. This line terminated in Section 50 of Permit 3799, grid area 67°30'N - 133°45'W on June 6; this location is approximately 6 miles northwest of Arctic Red River.

On June 6 the camp was moved to the settlement of Arctic Red River. The next three weeks were spent in overhauling the field units and repairing the trailers. At the end of June all equipment and the mobile camp was loaded onto barges for shipment to Tuktoyaktuk.

As 2,190 locations were shot in 244 days, the average output was approximately 9 locations or 2-1/4 miles per day. Total number of holes drilled was 6,716 and total footage was 305,200 feet; average depth of holes was accordingly 45 feet. The poorest production month was December when only 490 holes were drilled; the best months were April and May as over 1,100 holes were drilled in each of these months.

B. Reflection Seismic Program by Geophysical Services Incorporated Party No. 26 from November 23, 1964 to April 28, 1965. Project Work Order 0190-05. In support of Affidavit of Expenditure by Peter G. Campfield dated 28 February 1966.

INTRODUCTION

During the 1964 shipping season 36 tons of supplies and 192 tons of gasoline and fuel oil were stockpiled for this operation. The remainder of the food and supplies were drawn from our warehouse at Inuvik. Fresh fruit and vegetables were flown in as required. The bulk of the supplies were stockpiled at Arctic Red River. Fuel and gasoline dumps were established at three locations up the Arctic Red River. These were approximately 22, 36 and 50 miles up river from the Arctic Red River settlement.

The party was serviced by Imperial Oil and Pacific Western Airlines Otter aircraft from Inuvik. Crew changes were usually by Imperial Oil DC-3 aircraft which was used between Inuvik and Edmonton or Calgary. Personnel were rotated on the basis of 28 days on and 14 days off work schedule.

The field camp consisted of 12 skid mounted trailers accommodating 26 people. The basic units were:

6 - four-man sleeping trailers
1 - combination, 2-man sleeping and office trailer
1 - storage trailer for spare parts and cold storage
1 - diner
1 - kitchen
1 - generator and shop trailer
1 - utility trailer (wash and shower)
2 - 2,500-gallon fuel sloops

Radio contact was maintained with Imperial Oil's Party 23, the Inuvik warehouse and Dawson Creek office of Imperial Oil using a Marconi single sideband five-channel radio. Inter-unit communication was by Viking Messenger, 5-watt citizen band radios. One set was in each of the recording, shooting and cable units as well as the camp office.

Field equipment consisted of the following units:

3 - F250 Ford pickups (Party manager and two survey units)
3 - F350 Ford pickups (Recording, utility and cable trucks)
1 - F700 Ford (Water truck)
1 - 500 Ford (Shooting truck)
2 - F850 Fords (Drill trucks)
3 - D7 Caterpillar tractors with mounted dozers

The drilling equipment consisted of two Mayhew 1000 air-water combination drills.

Three inline pattern holes spaced 50 feet apart were generally used; two-hole patterns spaced 100 feet apart where hard drilling was encountered. Most holes were 50 feet deep. The most common hole log was muskeg to 10 feet, light shale from 10 to 30 feet and a dark brown or black shale from 30 to 50 feet. Gravel and boulders were common in creek beds but air drilling was used throughout the assignment. Insert-type bits were generally used but 4-3/4-inch rock bits were used when gravel or rocks were encountered.

Surveying was done with plane table and alidade but a transit was used as a check instrument.

SEISMIC OPERATIONS

The camp was moved from Arctic Red River to location on November 23, 1964. By doing experimental shooting on November 23 and 24 it was found that good records could be obtained by using 30 lbs. at 50 feet with 3-hole patterns.

The first shot point was No. 26-4151 which was located in Section 20 of Permit 3630, grid area 67°20'N - 133°30'W; this is approximately 10 miles southeast of Arctic Red River.

The first part of the assignment consisted of a series of northeast-southwest lines between the Arctic Red and Mackenzie Rivers. These were tied together by north-south lines and were also tied to 1964 Party 26 work in Section 31 of Permit 3645, grid area 67°20'N and 133°00'W. By December 31 about 80 miles of shooting was completed in this area. Records were comparatively good except near the rivers where gravel was encountered near the surface.

Weather was cold in this period and during the last week in December two weather days were called when temperature dropped to 55° below zero.

On January 1, 1965 a new line was started in Section 7 of Permit 3643, grid area 67°10'N - 133°00'W. From January 1 to February 4 a series of east-west lines was run approximately parallel to the Mackenzie River. These were tied by north-south lines which were extended north to the Mackenzie. Considerable work was done on Permits 3642 to 3644 inclusive and 3647 to 3651 inclusive.

Reasonably good records were obtained with normal charges. The terrain is quite rough in this area and considerable difficulty was experienced in crossing the Tree River which is in a deep canyon. The drilling was quite hard but good holes were obtained except near the rivers where gravel is prevalent.

The remainder of February was spent in a similar reconnaissance program with most of the work being done on Permits 3647 and 3648. Ties were made with 1964 shooting and earlier lines shot in 1965.

Although the terrain is rough, fair production was obtained as most holes were in shale. Although weather was very cold no weather days were required. There was a great deal of breakage of equipment because of cold weather; this of course slowed down the entire operation.

On March 1 the crew moved to a new assignment south of Martin House. Good coverage was obtained on Permits 3594 to 3599 inclusive by shooting three north-south lines about 6 miles apart and five east-west lines approximately 5 miles apart.

Again records were good except near the Arctic Red River and the other smaller rivers which were crossed at several places. The area generally is quite flat but the rivers all flow in deep canyons; crossing them accordingly entailed detours and a great deal of extra bulldozing.

The weather was quite good during March and April; wind and occassionally blowing snow were the only real problems. It was found that these two months were far better for working in this area than mid-winter, not only because of more moderate temperatures but also because of many more daylight hours. The lack of daylight during December and January was a real hindrance to seismic operations.

The last hole on this assignment was shot point No. 5468 which was located in Section 9 of Permit 3641, grid area 67°00'N - 133°15'W. This was shot on April 23 but it took until April 28 to

complete the move of the equipment to Arctic Red River and prepare it for storage.

The total time spent on this project was 152 days of which 6 days were lost because of adverse weather conditions. Total coverage was 457 miles or 3.13 miles per production day.

The total number of holes drilled was 3,915. As there were 44,615 lbs. of powder used to shoot 1,344 setups the average charge was 33 lbs. per setup or 11.4 lbs. per hole.

C. Reflection Seismic Program by Ray Geophysical Party No. 13 in Arctic Red River - Travaillant Lake Areas from November 27, 1966 to April 18, 1967 - Project Work Order No. 0411-05. In support of Statement of Expenditure by Douglas Hingley dated December 22, 1967.

Department Code No. 76-6-66-1 and 7-6-6-66-7.

INTRODUCTION

In preparation for this program fuel dumps were established at Rabbit Hay River, Tree River and Arctic Red River during the 1966 shipping season. Other supplies and equipment were stored at Arctic Red River on the west bank of the river across from the settlement. A base camp was established here to service our drilling and seismic programs.

Other supplies and food were drawn from our Inuvik warehouse. Fresh fruit, vegetables and meat were flown in on a regular basis from Edmonton and Inuvik.

The crew was serviced by Company-owned Otter aircraft based at Inuvik as well as by chartered commercial aircraft. The Company-owned F-27 Fairchild was used on a regular basis for flights from Edmonton to Inuvik for transfer of personnel and supplies to and from the North.

Conventional truck-mounted seismic equipment was used for the entire program. The drilling was done by Sedco with two air drills. Progressive Construction provided three DC-6 dozer-mounted caterpillar tractors for line clearing and moving camp. Periodically it was necessary to use two DC-7 caterpillars which were supplied by Steinbring Construction.

The camp consisted of six trailers on wheels with enough accommodation for a crew of thirty. Additional equipment included a

power plant and fuel sloop. The bulldozer crew also had their own trailer.

Communication with Inuvik and to Edmonton via CNT channels was with Marconi CH 25 HV radios.

Communication between units and trucks and camp was with Marconi VHF radio.

SEISMIC OPERATIONS:

The first hole of the project was Shot Point No. 13-B-1, which is located in Section 75 of grid area 67°20'N; 132°30'W (Permit 3651) and is just north of the Mackenzie River on the east bank of Rabbit Hay River. The line was shot 11 miles northeast to Section 72 of grid area 67°30'N; 132°15'W. From here a line was first run 4 miles southeast to the Mackenzie River, then 12 miles northwest to Section 1 of grid area 67°40'N; 132°45'W.

It took from November 3, 1966 to December 9, 1966 to complete these lines. Record quality near the rivers was poor but improved to good away from the rivers. Three holes were used at most locations with 10 lbs. of powder per hole at about 60 feet.

Drilling was difficult as many of the holes encountered gravel and boulders. As a result the shooting crew on occasion had to wait on the drills.

The weather was moderate with considerable snow; however, on December 9 the temperature dropped to 40° below zero.

The terrain of this area is quite rough with many small lakes between the hills. Considerable bulldozing was accordingly required to make the lines passable for the trucks.

On December 10, 1966 the crew started work for Chevron and did not work for Imperial again until January 22, 1967.

The first hole on the new assignment; i.e. 13-C-60, is located in Section 10 of grid area 67°40'N; 133°00'W. From this point the line was shot for 26 miles northwest to Section 28 of grid area 68°00'N; 133°30'W where it was tied to a Party 23 line.

Because of rough terrain in this area it was necessary to tow the drills and other trucks with dozers. As one of the drills broke down entirely two shifts were used on the remaining drill; the one drill could not drill enough holes to keep shooting crew fully occupied.

Fairly good records were obtained by using 2 holes per location and 10 lbs. per hole.

Although there was a blizzard on January 26 the weather during this week was moderate with considerable snow.

On January 30 the crew returned back southeast on this line for 17 miles to Shot Point 13-C-79. From here one line was first run directly north for 16 miles and another west for 17 miles. Both of these lines tied into Party 23 lines. Two northwest-southeast lines also were shot tying into the east-west line 5 miles and 11 miles west of Shot Point 13-C-79; each of these lines was approximately 12 miles in length.

This assignment, which was practically all on Work Block 71-64 (Permits 3923-3927), was completed on February 11, 1967.

Fairly good records were obtained in the area using two 45-foot holes loaded with 10 lbs. of powder. The drilling was not difficult as holes logged clay with some rock to 35 feet and hard shale or sandstone for the remaining 10 feet. As lines were rough it was quite often necessary to tow trucks with bulldozers; two additional dozers from Steinbring Construction were accordingly brought over from Arctic Red River.

On February 10 the drills started the long move south to the Martin House area; the recording crew started the move on February 12. The move was completed on February 16; temperature was between 50° and 60° below zero during the entire move.

The first shot point on the Martin House assignment was S.P. 13-C-234 located in Section 74 of grid area 66°50'N; 133°30'W (Permit 3601). A tie was made with previous Party 26 work in Section 65 of the same permit.

Two long east-west lines were shot across the three easterly adjoining grid areas. These are each about 28 miles in length and were tied to Party 26 lines at all intersections. Other short north-south lines tied to previous east-west lines.

A third east-west line was shot to the south across Permits 3596 and 3597 which are grid areas 66°40'N; 132°45'W and 66°40'N; 133°00'W.

This entire program was completed on March 11. Because of rough terrain five bulldozers were required for most of this work as it was quite often necessary to tow the trucks through the rough areas and when crossing the rivers.

The records in the area are good except near the rivers and lakes. As there are numerous lakes in the area, considerable detouring was done to locate the holes some distance from the water; where this was not possible records were poor. Three-hole patterns were used on the north part of the project and 2-hole patterns on the remainder; 10 lbs. of powder were used per hole.

Drilling was good; there is generally about 25 to 35 feet of clay with a few boulders and then hard shale for the remainder of the hole.

On several occasions drills were broken down and it was necessary to use two shifts on the remaining drill. As the one drill could not make sufficient hole, it usually resulted in the recording crew waiting on the drill for several hours during the day.

The weather during this period was quite mild. This caused some difficulty in creek crossings as ice was often not thick enough to hold equipment. On February 26 one of the DC-6 dozers bogged down near a beaver dam and it was necessary to bring two other cats to get it out.

On February 19 the motor went out of the shooting truck and steering went out on the reel truck. Considerable time was lost in repairing these units; however, the overall production on this assignment was quite good.

The 47-mile move to Tree River was made on March 12 and 13.

The first hole on the Tree River assignment is Shot Point 13-C-419 which is located in Section 4 of grid area 67°20'N; 132°15'W, (Permit 3650). From this point a line was first shot 9 miles northeast

and then 10 miles southeast to Section 27 of grid area 67°10'N; 132°00'W. From here a line was shot southwest for 10 miles and northeast for 6 miles. This completed the assignment in the Tree River area on March 19.

Good records were obtained by using 10 lbs. of powder per hole with two 45-foot holes per location.

Again the drill broke down several times and held up the recording crew; however, good production was obtained as weather and terrain were reasonably good.

On March 20 the crew moved about 19 miles northeast to Section 19 of grid area 67°20'N; 131°45'W (Permit 5390). From here a line was shot in a northeasterly direction for 16 miles.

As terrain is very rugged and drilling difficult, it took five days to complete this assignment. This area is actually too rough for trucks; on occasion it was accordingly necessary to tow the vehicles with bulldozers.

Records on this line were only fair and drilling was slow because of sticky clay and boulders.

On March 25 the crew moved north across the Mackenzie River. The first shot point on the new project was in Section 13 of grid area 67°30'N; 132°00'W (Permit 3652). This line was shot about 28 miles northeast to Section 9 of grid area 67°40'N; 131°15'W (Permit 5394) and was completed on March 31.

As this area is extremely rough, considerable time was lost due to broken springs, motor mounts and due to trucks requiring tows by the bulldozers.

As weather was good, production improved considerably. Although drilling was easy some trouble was experienced in loading holes because of sticky clay and boulders. Records from this area are only fair; on occasion plugged holes prevented second shots which could have improved record quality.

On April 1st a new line was started in Section 71 of grid area 67°40'N; 131°30'W (Permits 5395) and tied into the previous line. From here it was shot in a northwesterly direction around Travaillant Lake and finally terminated in Section 19 of grid area 68°00'N; 131°45'W (Permit 5400) on April 12.

Records on this line are only fair; this was partly due to high winds which prevailed almost every day. As weather was good and drilling comparatively easy, production was up during this assignment. The crew moved about 70 miles during this 12-day period.

The last line in this area was started in Sectinn 10 of grid area 67°50'N; 131°45'W (Permit 5398) and shot about 12 miles southwest to tie into the previous line. This line was completed on April 14. The only real problem was the very rough terrain which cut down production considerably.

On April 15 the crew moved about 25 miles west to the Rengleng River area. Here two short lines were run in a northwest-southeast direction to confirm information obtained in our reconnaissance program. These lines are in grid area 68°00'N; 133°00'W (Permit 3927) and Permit 3923 which is laterally adjoining to the south.

Record quality was only fair in this area due primarily to high winds. Because of rough terrain it took three days to complete this

10 miles of shooting. As one of the drills was broken down and drilling was difficult, three 8-hour shifts were used on the remaining drill.

Party 13 completed their assignment on April 18. A total of 750 locations were shot with 17,166 lbs. of geogel, for an average of 23 lbs. per location. As 375 miles were shot in 101 days the average output was approximately 3.7 miles per day. This is a considerable increase in production over our previous programs in the area and can be attributed partly to better weather and partly to the fact that 1/2-mile spreads were used.

SUMMARY:

The maps included with this report show all the work done by Imperial in the area. They also include the projects reported on previously but the elevations for those shot points have not been repeated on these location maps.

The data from the following trades is also included and incorporated with the Imperial data for the interpretive maps.

Project No.	Description of Trade	Dept.Code No.
0403-05	B.A. Seismic & Gravity Trade - Mackenzie Delta	7-6-6-66-7
0414-05	Chevron Seismic Trade - Fort Good Hope	45-6-6-66-2

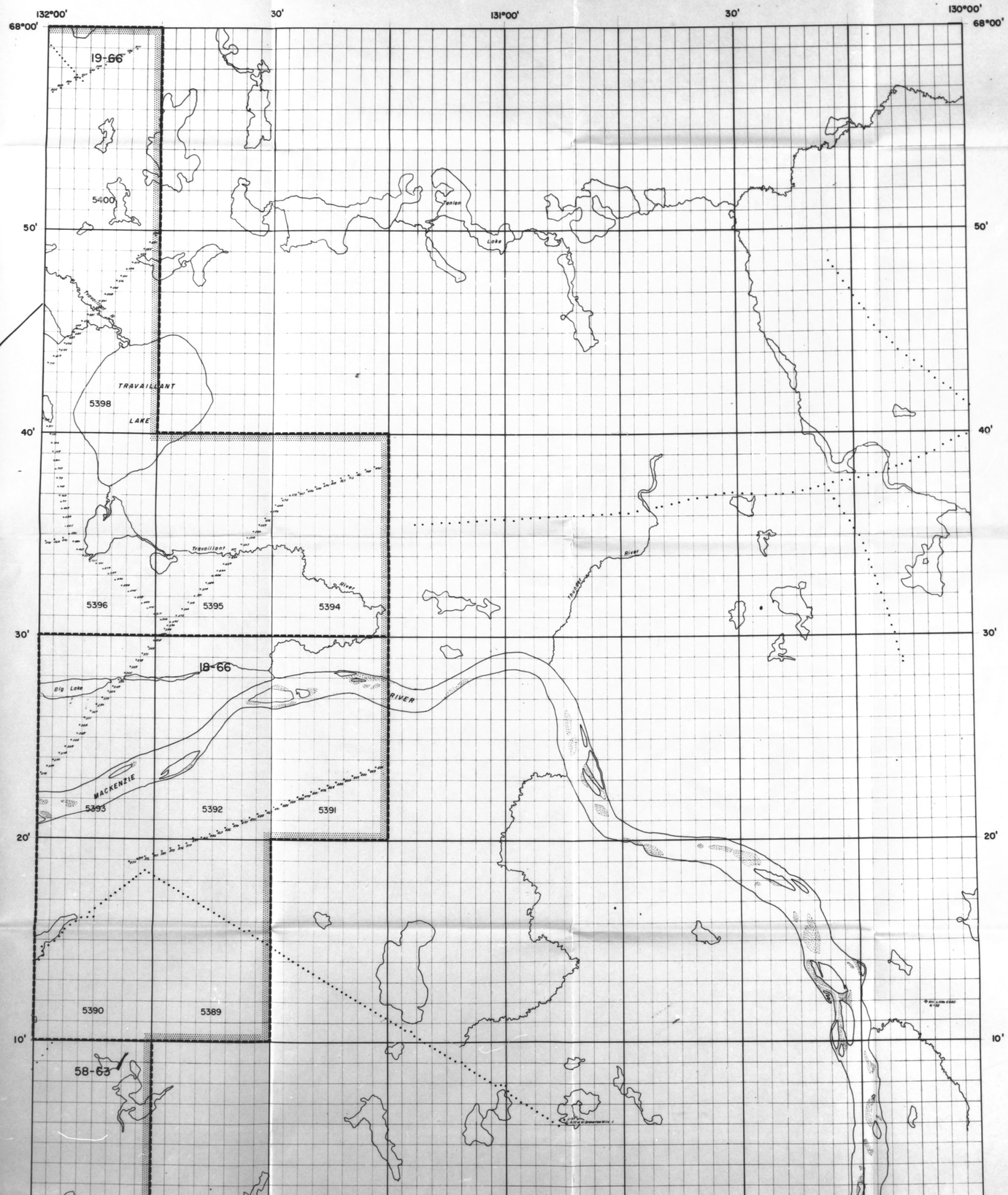
The trade shot points are shown as dots on the location maps whereas the Imperial locations are shown as circles.

Peter Stauft P.Eng.
PETER STAUFT
EXPLORATION SUPERVISOR
N.W.T. EXPLORATION DISTRICT
IMPERIAL OIL ENTERPRISES LTD.

December 20, 1967.

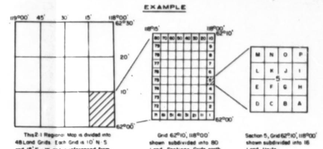
G	106 0	7			L	

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

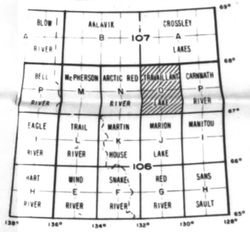


The 2 Regional Map is divided into 48 Land Grids, each Grid is 10' N. S. and 15' E - W and is referenced from its N.E. corner, as Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



107

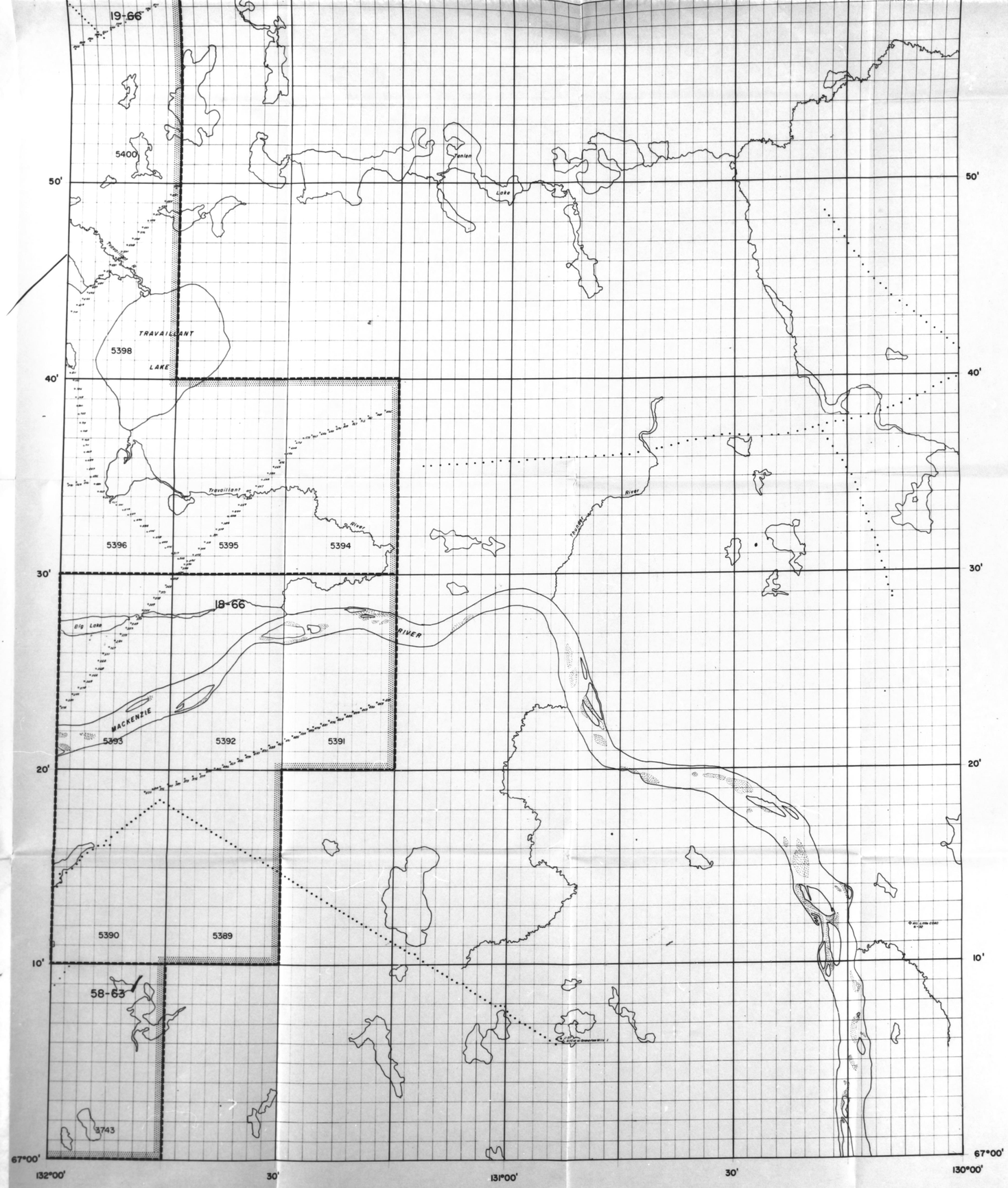
SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

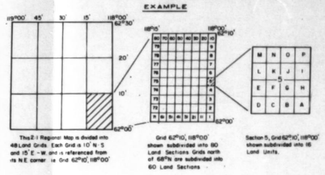
Datums: Plane _____ Velocity _____

REVISED _____



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



The 2:1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner ie Grid 62°10', 118°00'

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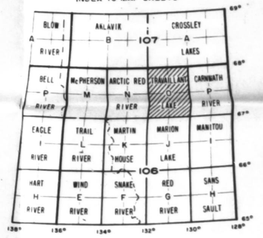


SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

2 of 2

106O TRAVAILLANT LAKE

2 MILES TO 1 INCH

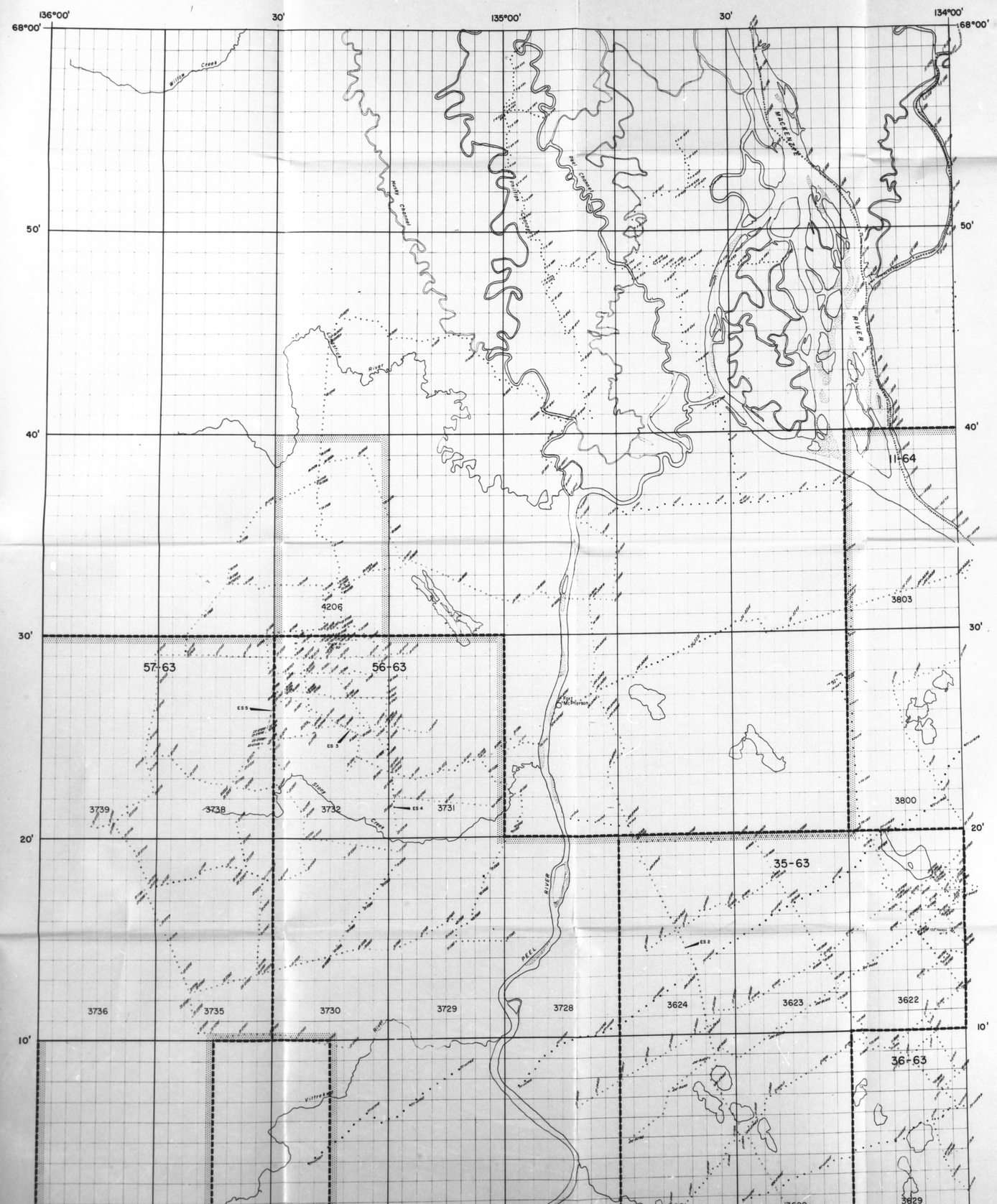
CONFIDENTIAL

6242

PRESS SOFT TO TRACE

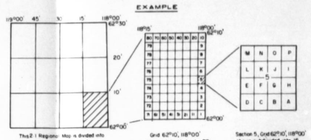
G	106 M	I			L	

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



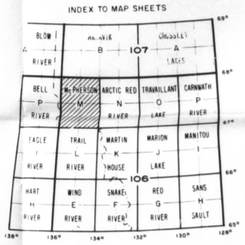
This 2° Regular Block is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner, i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

107

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

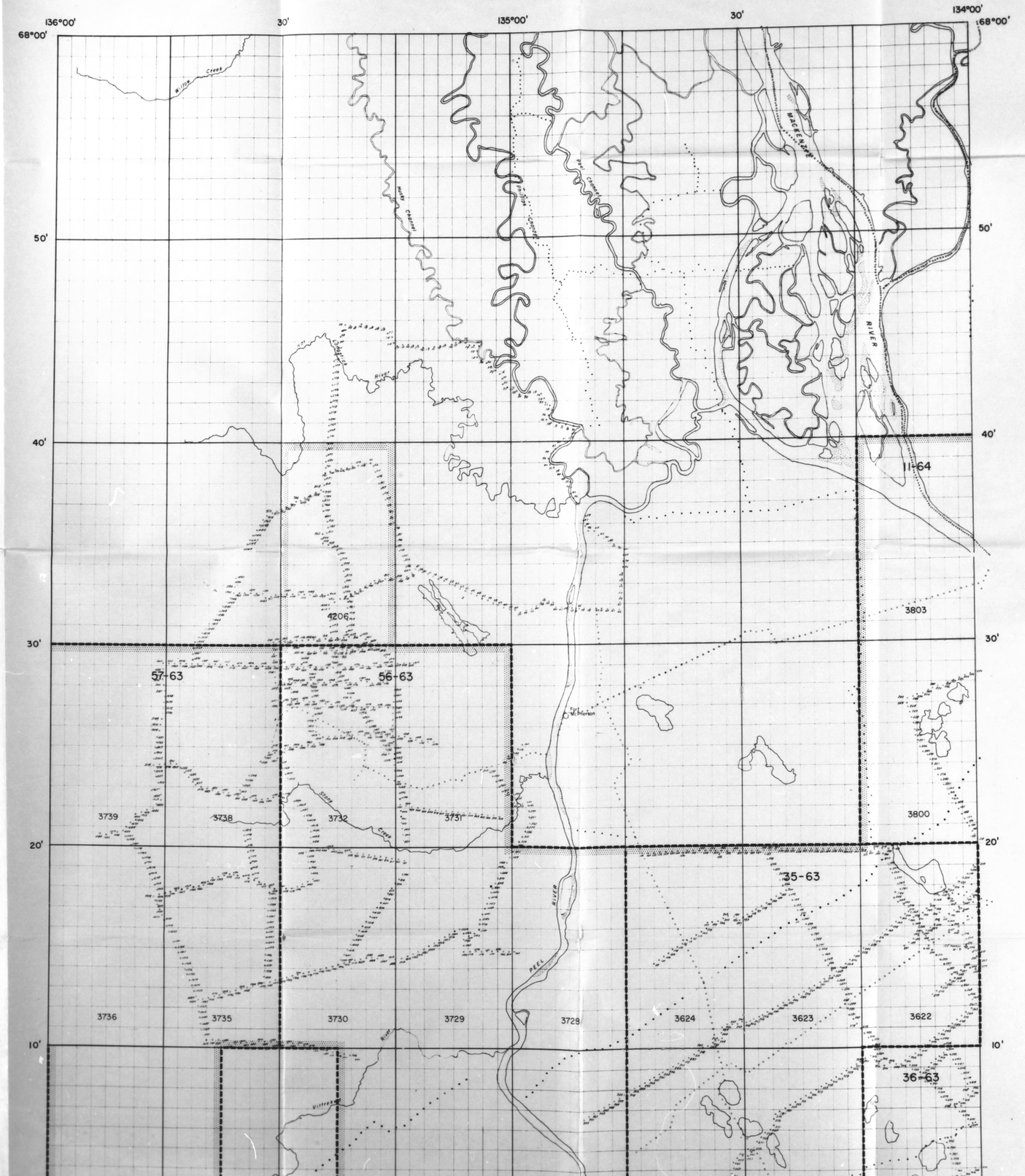
Contour Interval _____ *Velocity* _____
Datum: Plane _____

REVISED ... *June 5, 1962* ----

ES 2 — EXPANDED SPREAD

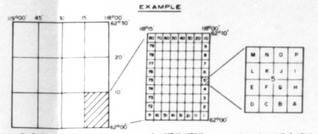
G	106 M	16			L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

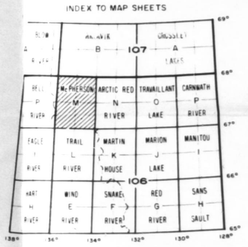


This 2 1 Region was subdivided into 48 Land Grids. Each Grid is 5 miles and 15 E-W and is referenced from its NE corner, e.g. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



107

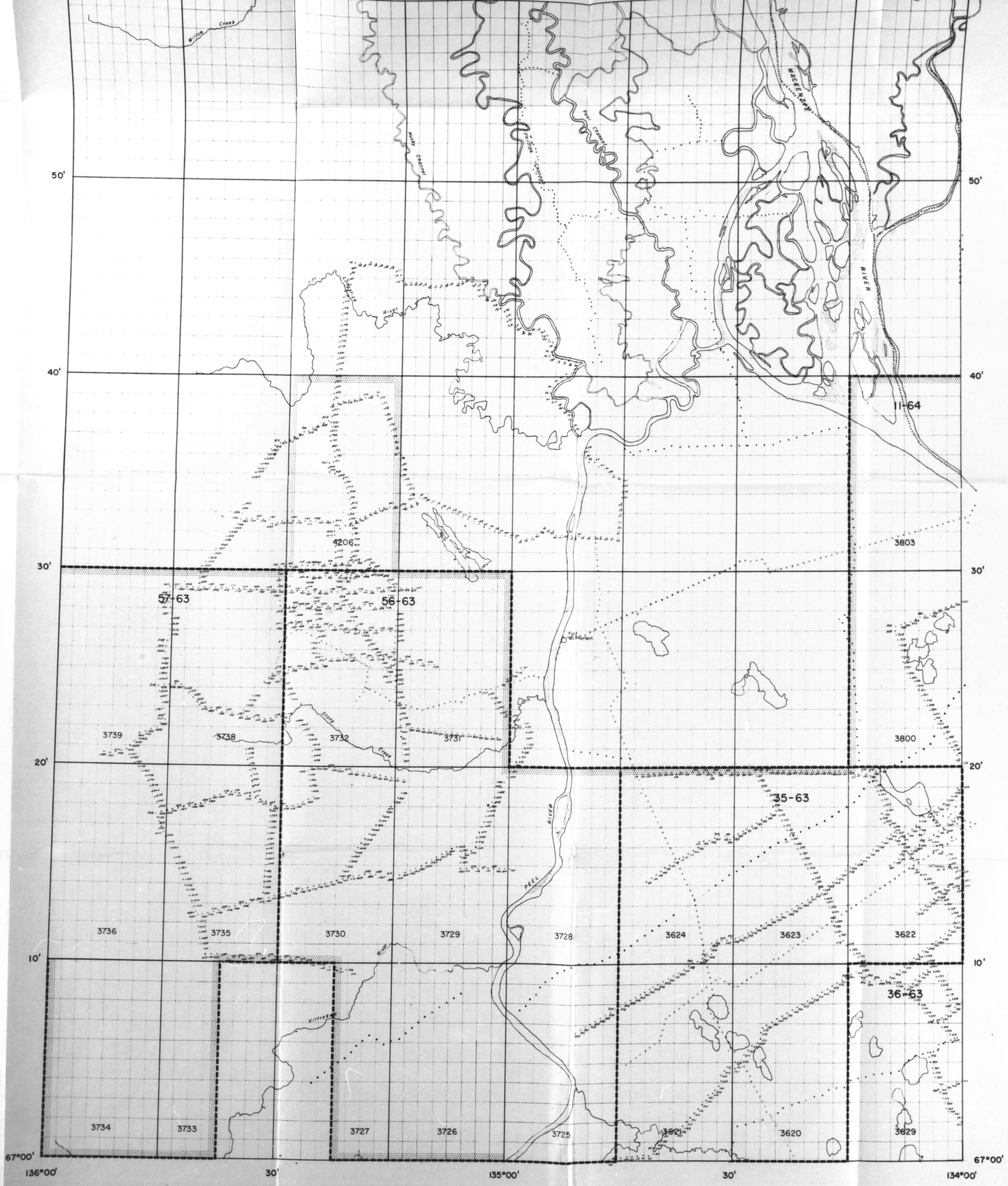
SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums- Plane _____ Velocity _____

REVISED _____

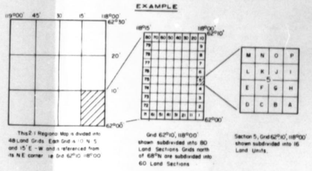


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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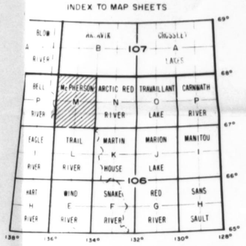


SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

2 of 2

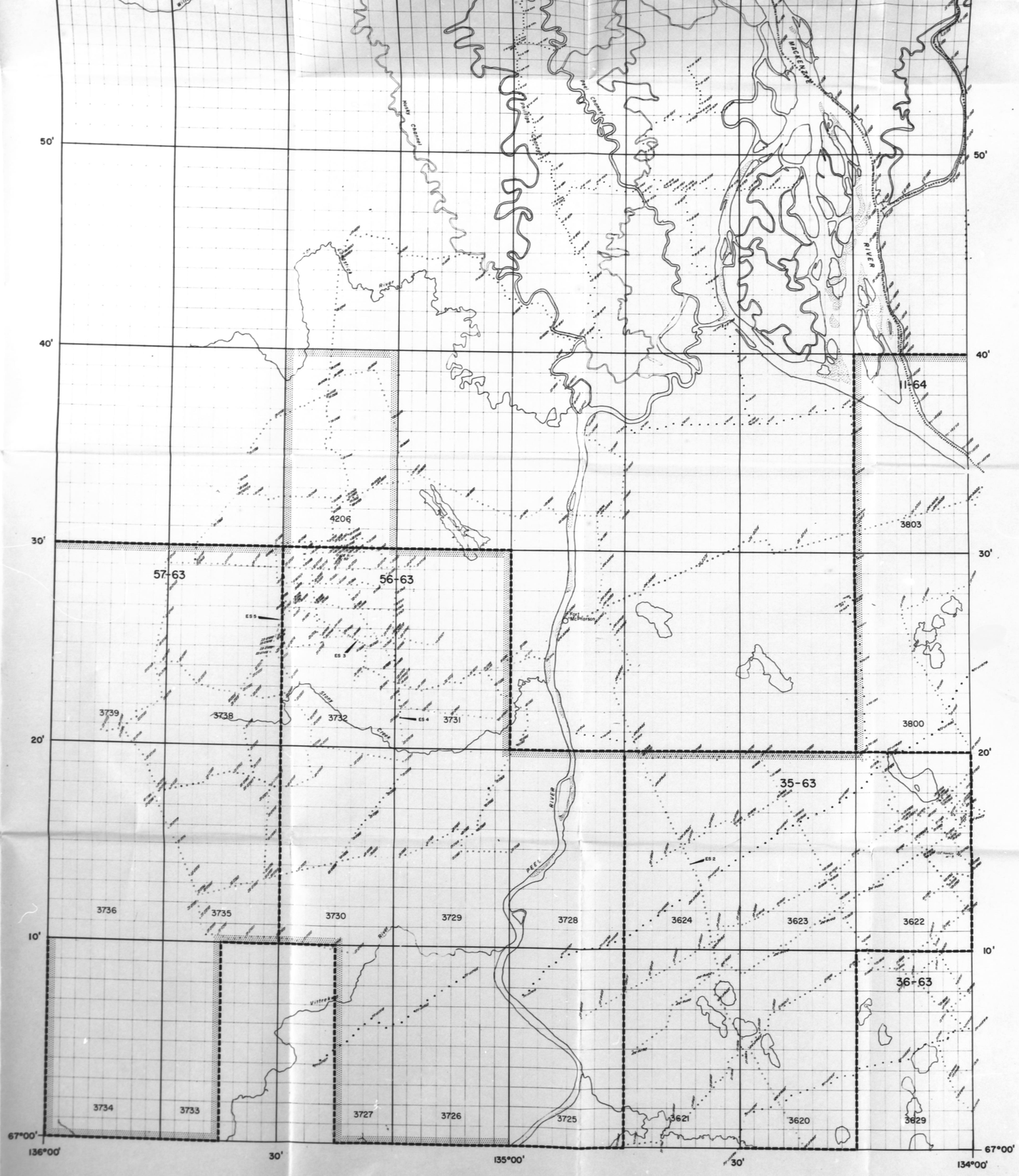
CONFIDENTIAL

106 M FORT McPHERSON

2 MILES TO 1 INCH

CONFIDENTIAL

5238

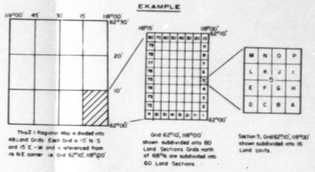


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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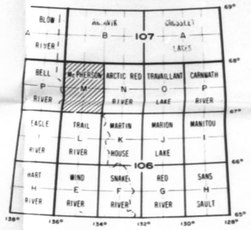


SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED ... June 6, 1965 ...

ES 2 — EXPANDED SPREAD

CONFIDENTIAL

2 of 2

106 M FORT McPHERSON

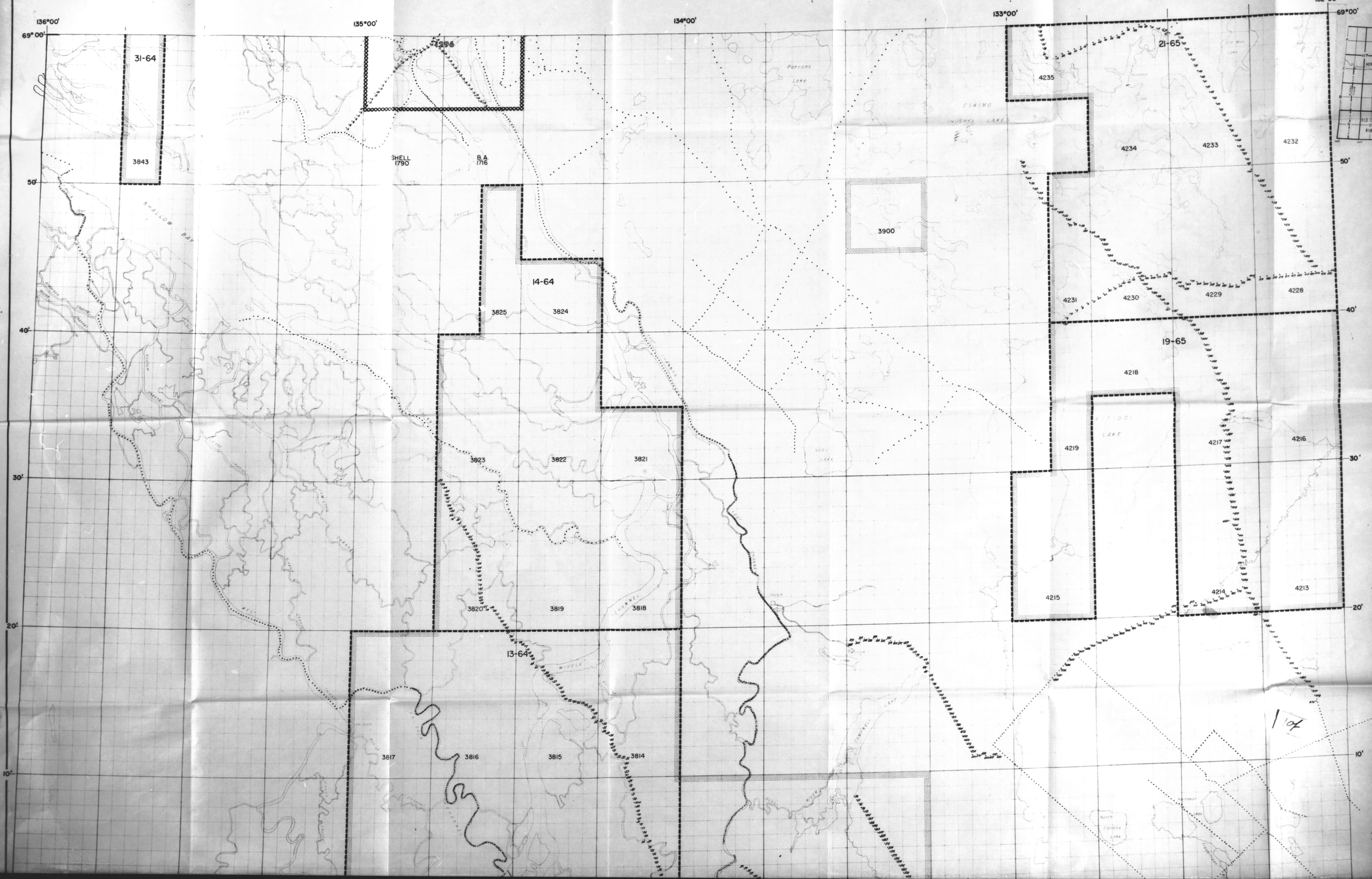
2 MILES TO 1 INCH

CONFIDENTIAL

5239			5238

G 107 B

IMPERIAL OIL E
N.W.T. EXPLO



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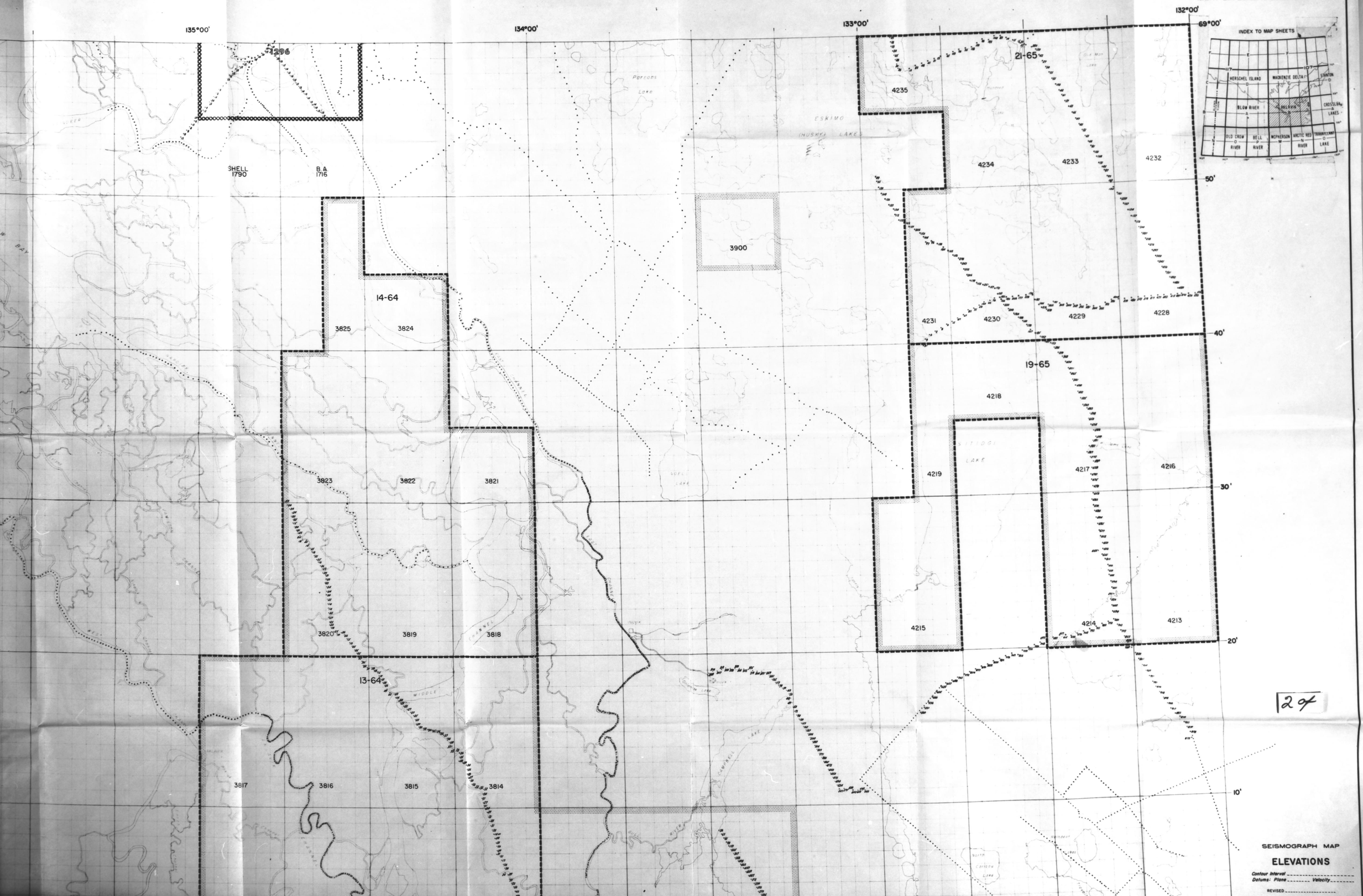
G	107 B	13			L

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



2 of

SEISMOGRAPH MAP

ELEVATIONS

Contour Interval _____
Datums: Plane _____ Velocity _____

REVISED _____

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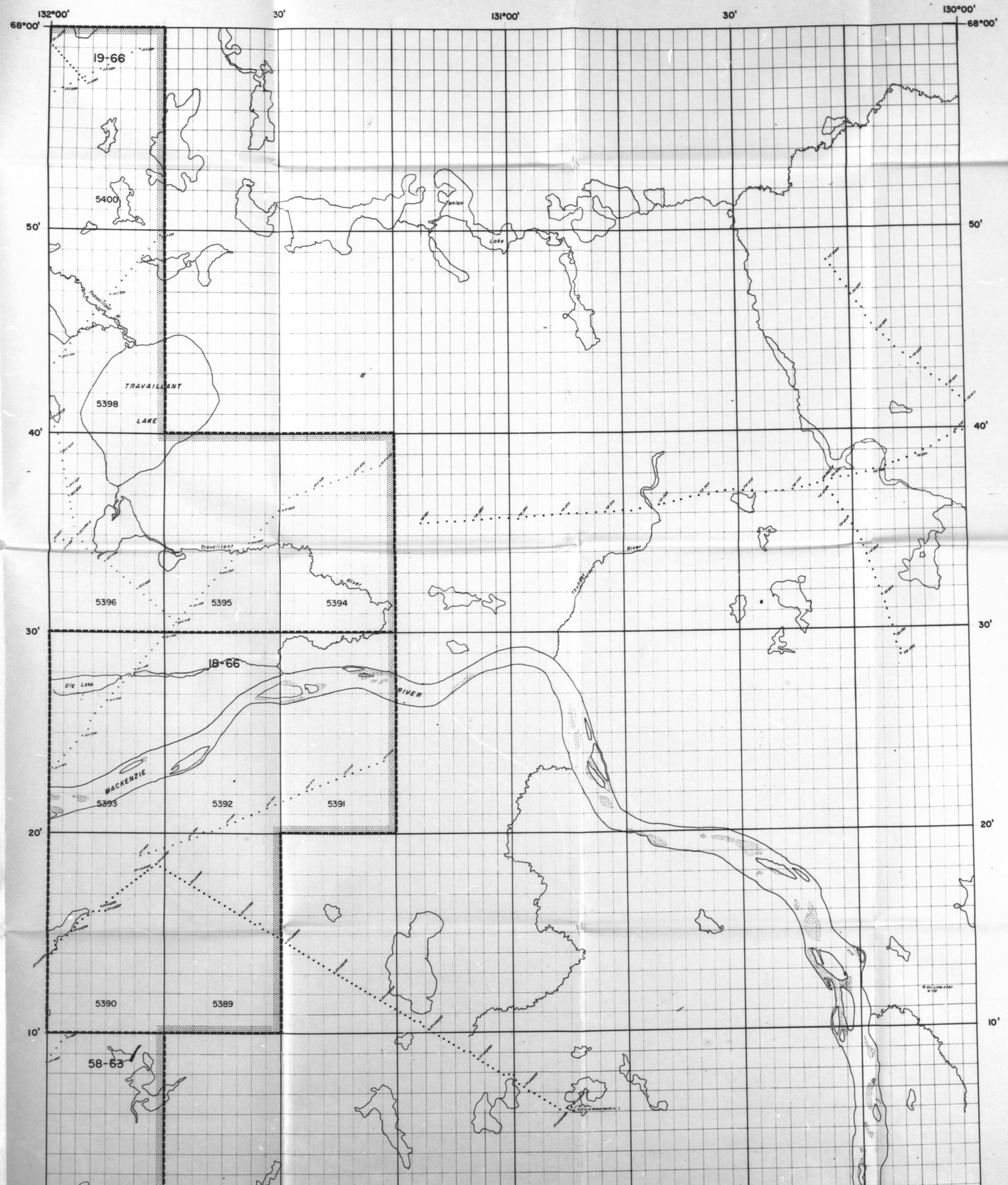
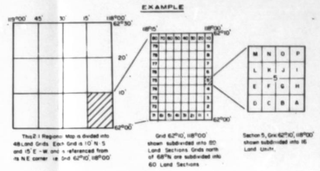
IMPERIAL OIL ENTERPRISES LIMITED
N.W.T. EXPLORATION DISTRICT



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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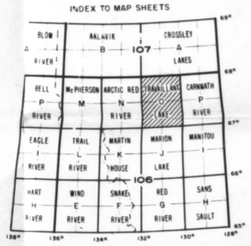
INDEX TO MAP SHEETS



SEISMOGRAPH MAP

Contour Interval _____
Datums: Plane _____ Velocity _____

REVISED ___May, 1962___


31-64
3843
SHELL
1790
B.A.
1716
21-65
4235
4234
4233
4232
3900
14-64
3825
3824
4231
4230
4229
4228
19-65
4218
3823
3822
3821
4219
4217
4216
3820
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4214
4213
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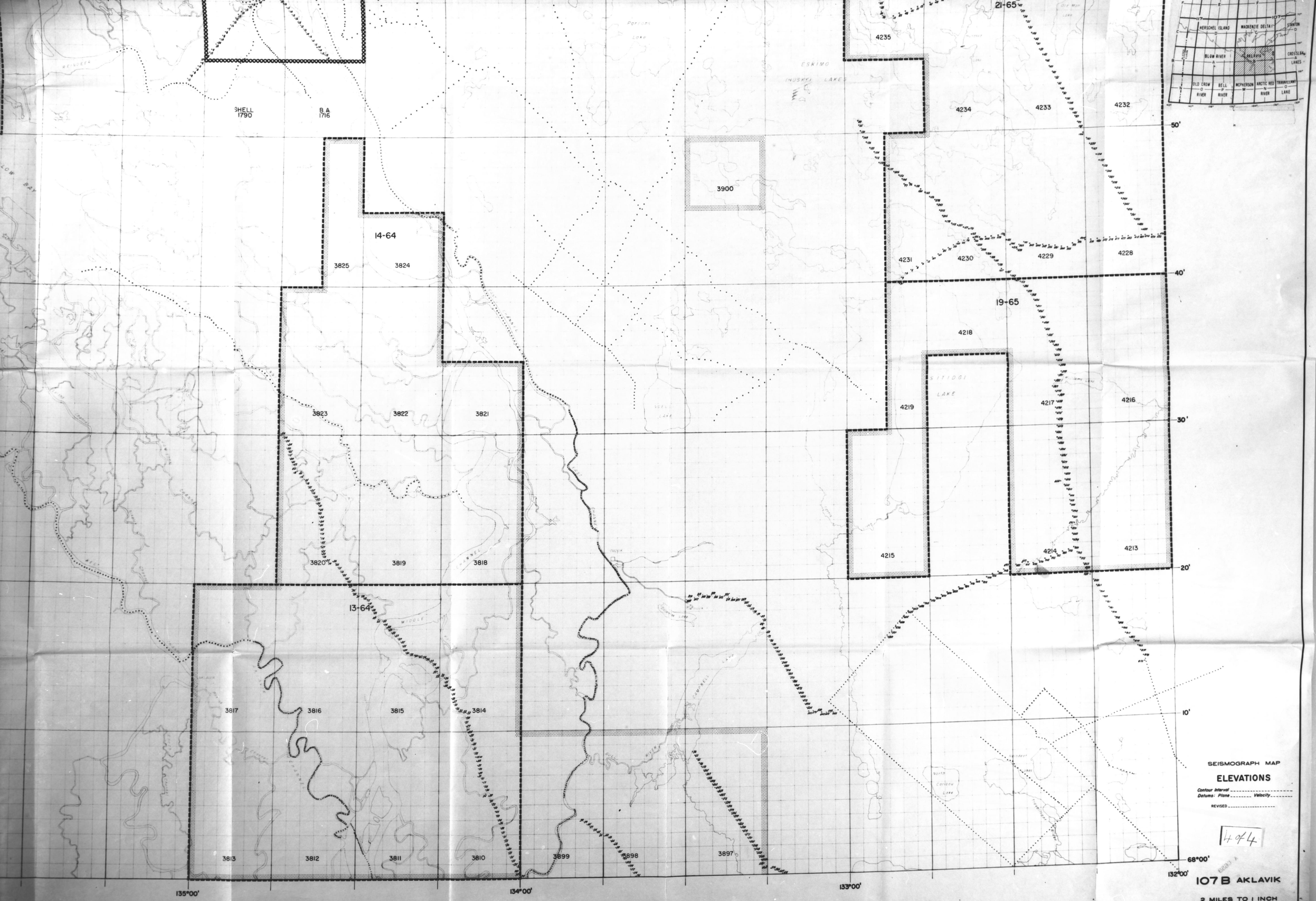
134°00'
133°00'
132°00'

3 of


SEISMOGRAPH MAP
ELEVATIONS
Contour Interval
Datums: Plane Velocity
REVISED
107 B AKLAVIK
2 MILES TO 1 INCH
21-65
19-65
14-64
13-64
HERSCHEL ISLAND
MACKENZIE DELTA
STANTON
BLOW RIVER
ARGYLE
CROSSLEY LAKES
OLD CROW RIVER
BELL RIVER
MCPHERSON
ARCTIC RED RIVER
TRAVELLING LAKE
ESKIMO
HUSKYI LAKES
SITIOGI LAKE
SHELL 1790
B.A 1716
4235
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30'
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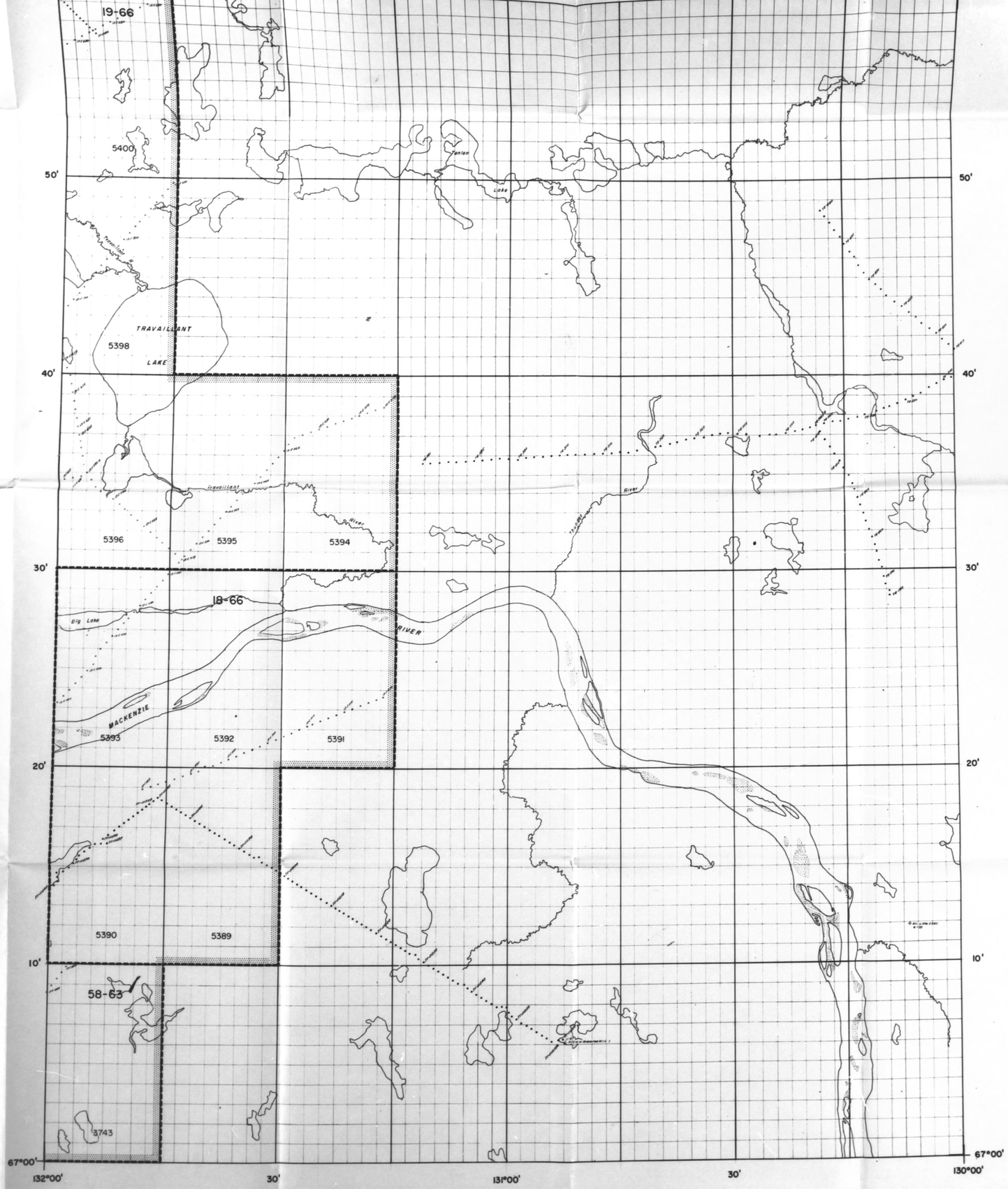
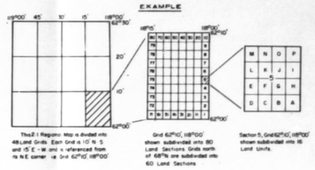
10'
68°00'
132°00'
133°00'
134°00'
135°00'
4 of 4



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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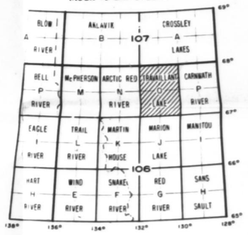

SEISMOGRAPH MAP

Contour Interval _____ Velocity _____
Datums: Plane _____ Velocity _____
REVISED ...ALL...1962

2 of 2

106 O TRAVAILLANT LAKE

2 MILES TO 1 INCH

CONFIDENTIAL

5243			5242

NOTE: SCALE 1/8 INCH

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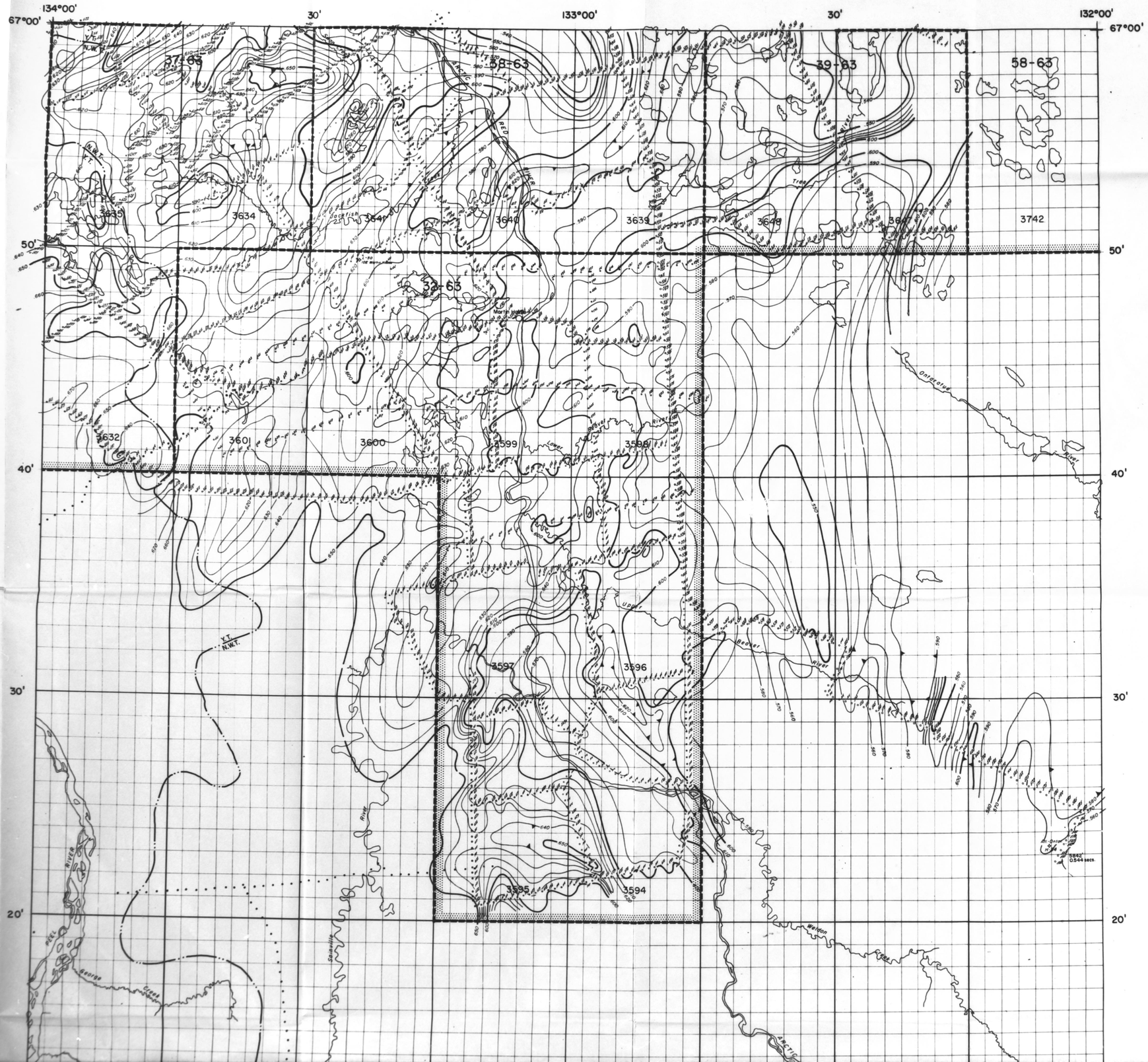
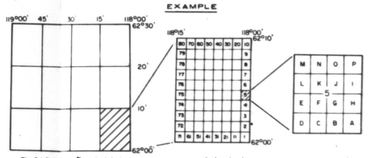
IMPERIAL OIL ENTERPRISES LIMITED
N.W.T. EXPLORATION DISTRICT



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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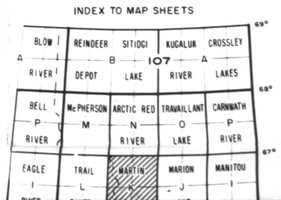

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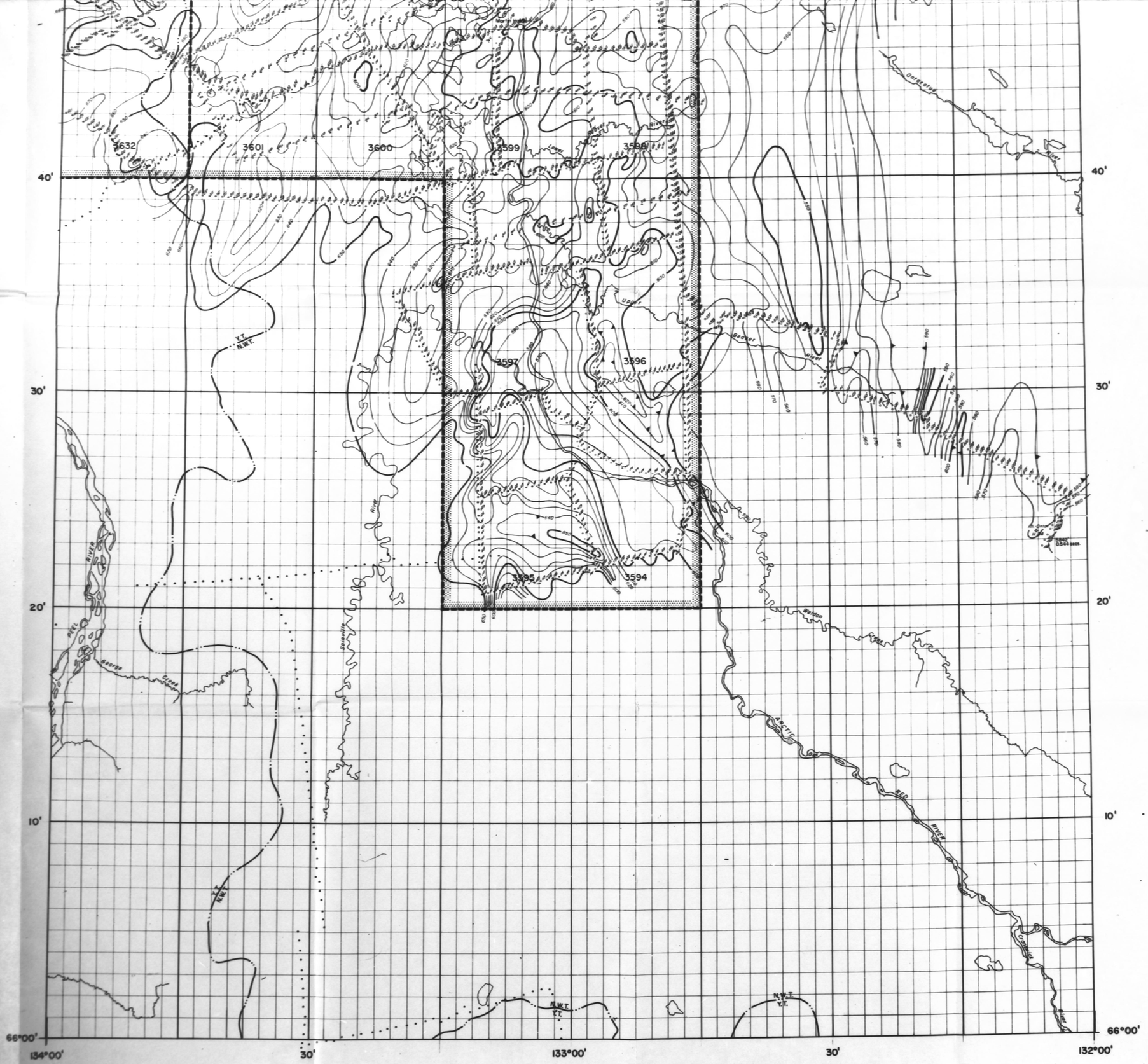
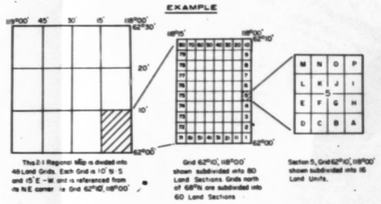


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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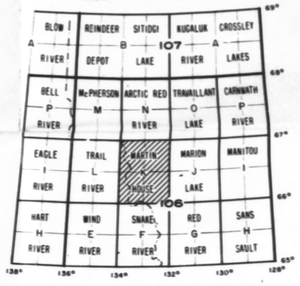


SEISMOGRAPH MAP

ISOCHRON

BEAR ROCK — CAMBRIAN SHALE

Contour Interval _____

Datum: Plane _____ *Velocity* _____

REVISED JUNE 9 1959

2 of 2

106 K MARTIN HOUSE

2 MILES TO 1 INCH

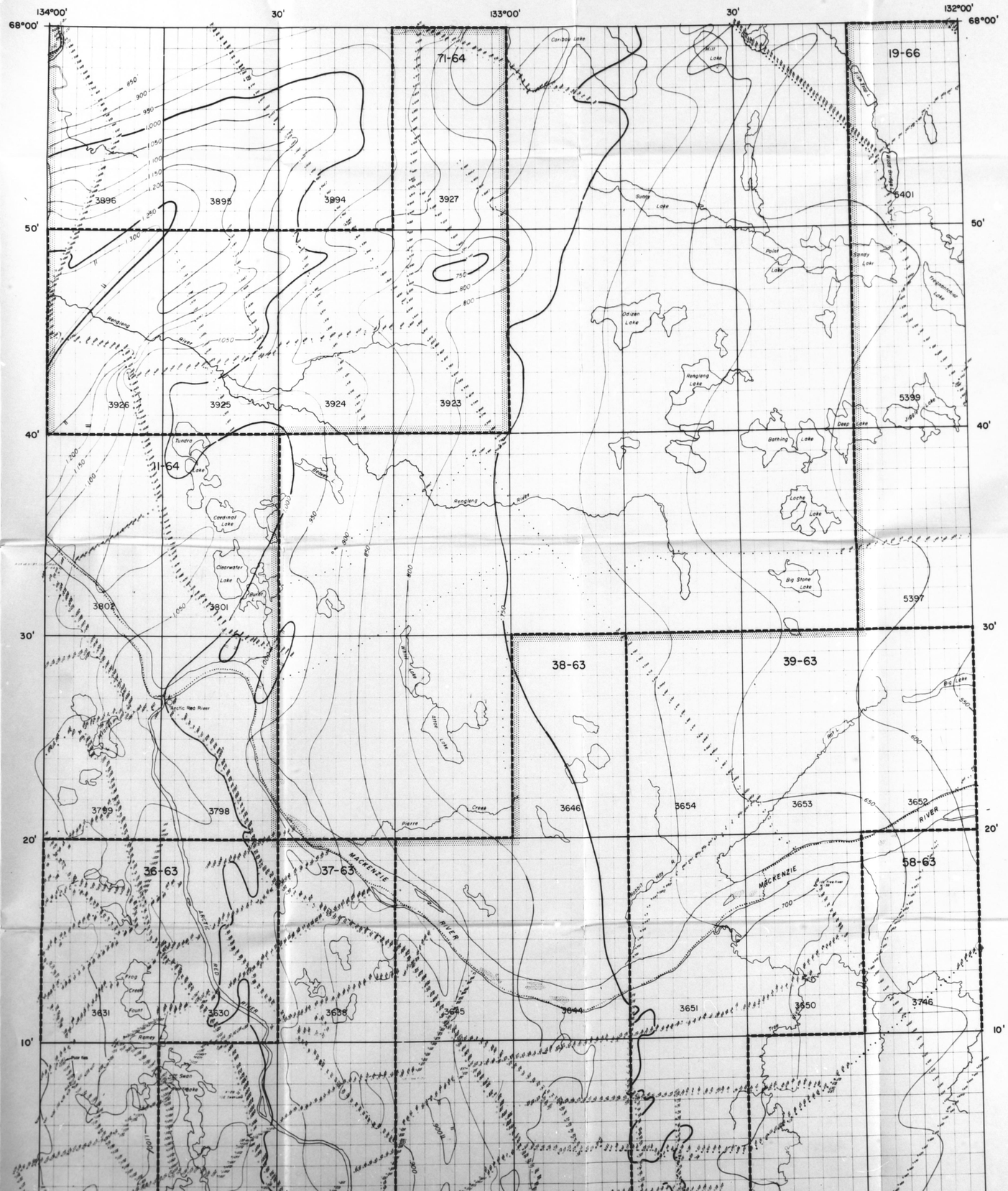
CONFIDENTIAL

		5449	5234

W.L.L.S. APRIL 18, 1966

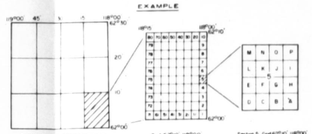
G	106 N	3B	V	C	L

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

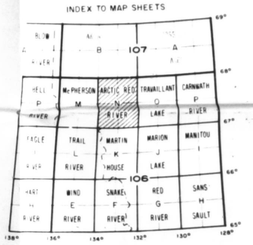


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS



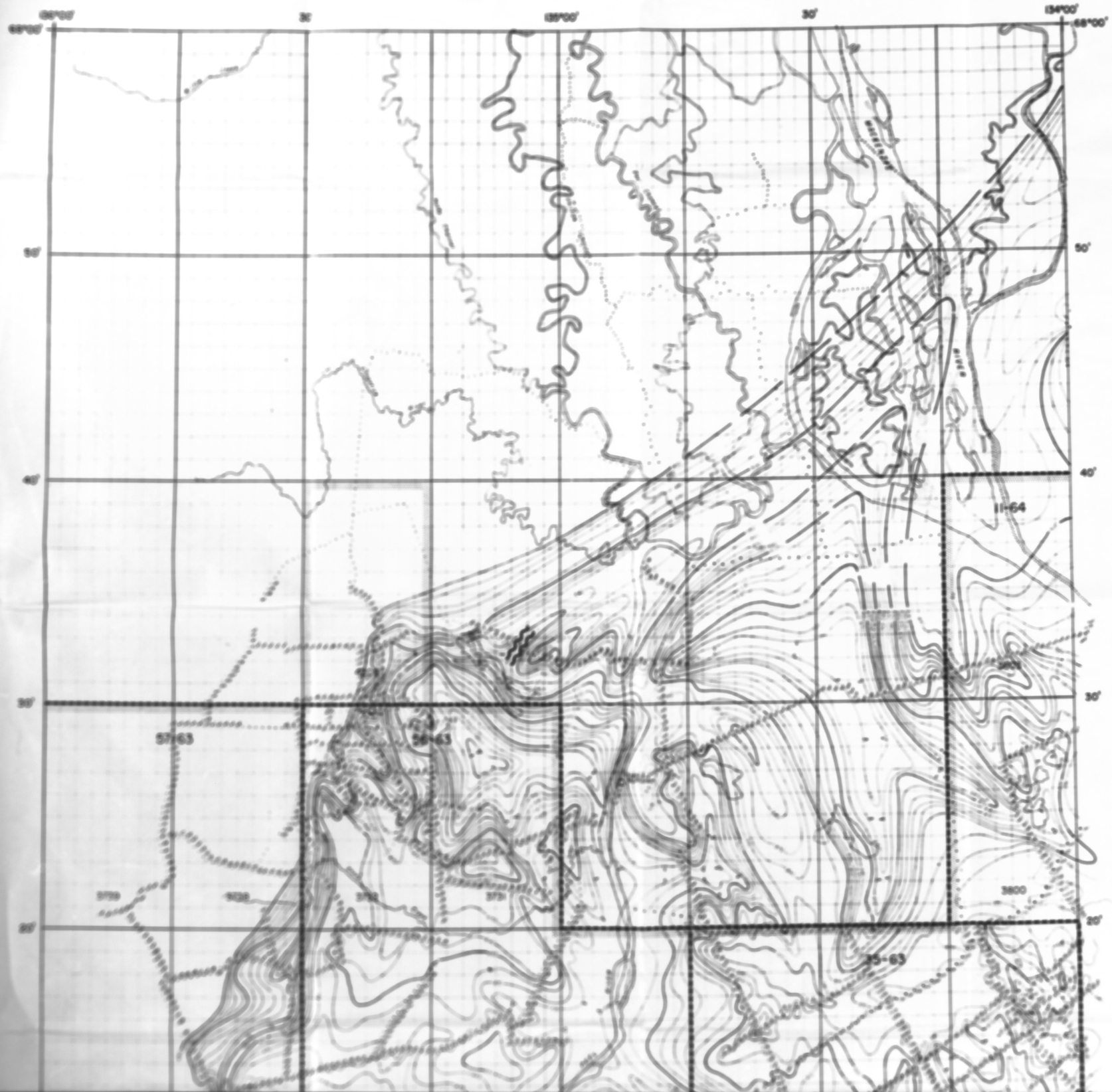
107

SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval _____
Datums: Plane 1000 ____ Velocity 10000 ft.
REVISED AUG 10 1967

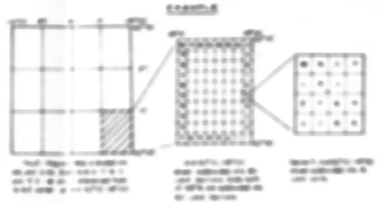
G	106 M	10	V	C	L

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



NW.T LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



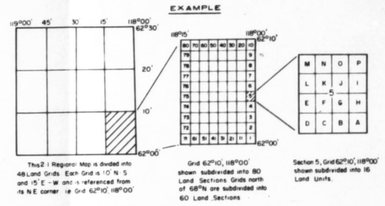
107

N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

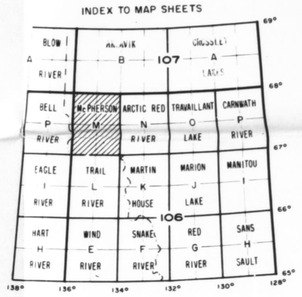


This 2 : 1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N - S and 15' E - W and is referenced from its N.E. corner i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

ISOCHRON

BEAR ROCK—CAMBRIAN SHALE

(OR FIRST CARBONATE BELOW HUME)

Contour Interval 100 SECS.

Datums: Plane _____ *Velocity* _____

REVISED *Mar. 26, 1966*

2 of 2

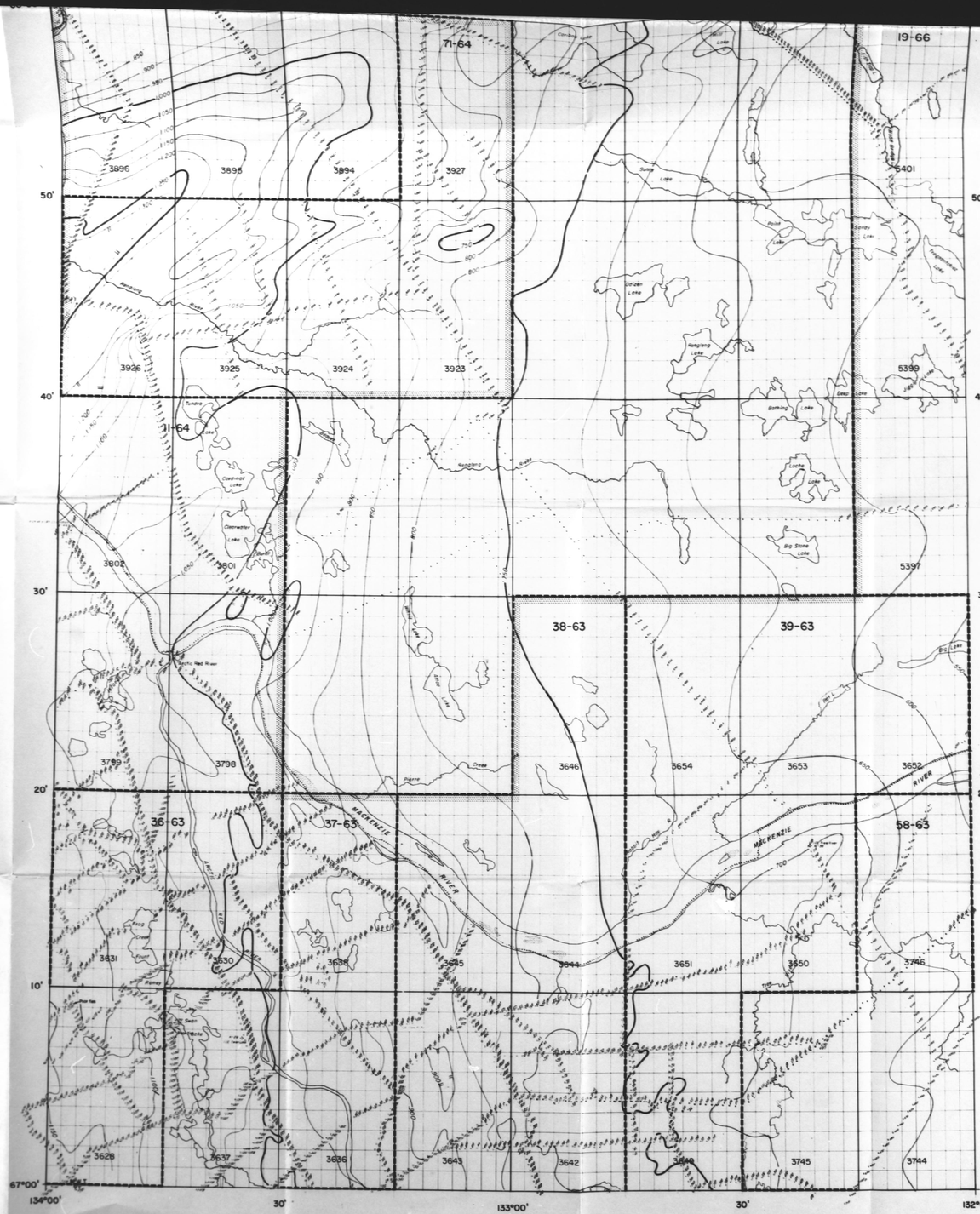
CONFIDENTIAL

106 M FORT McPHERSON

2 MILES TO 1 INCH

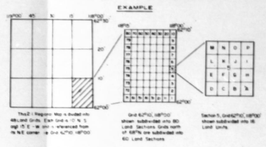
CONFIDENTIAL

	5455	5455	5238

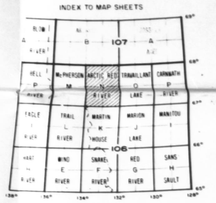


N.W.T. LAND REFERENCING SYSTEM
(AS APPLIED TO)
TERRITORIAL OIL & GAS REGULATIONS.

EXAMPLE



INDEX TO MAP SHEETS



SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval _____
Datum: Plane 5000'..... Velocity 10000'/s.
REVISED 062.10.1967

2 of 2

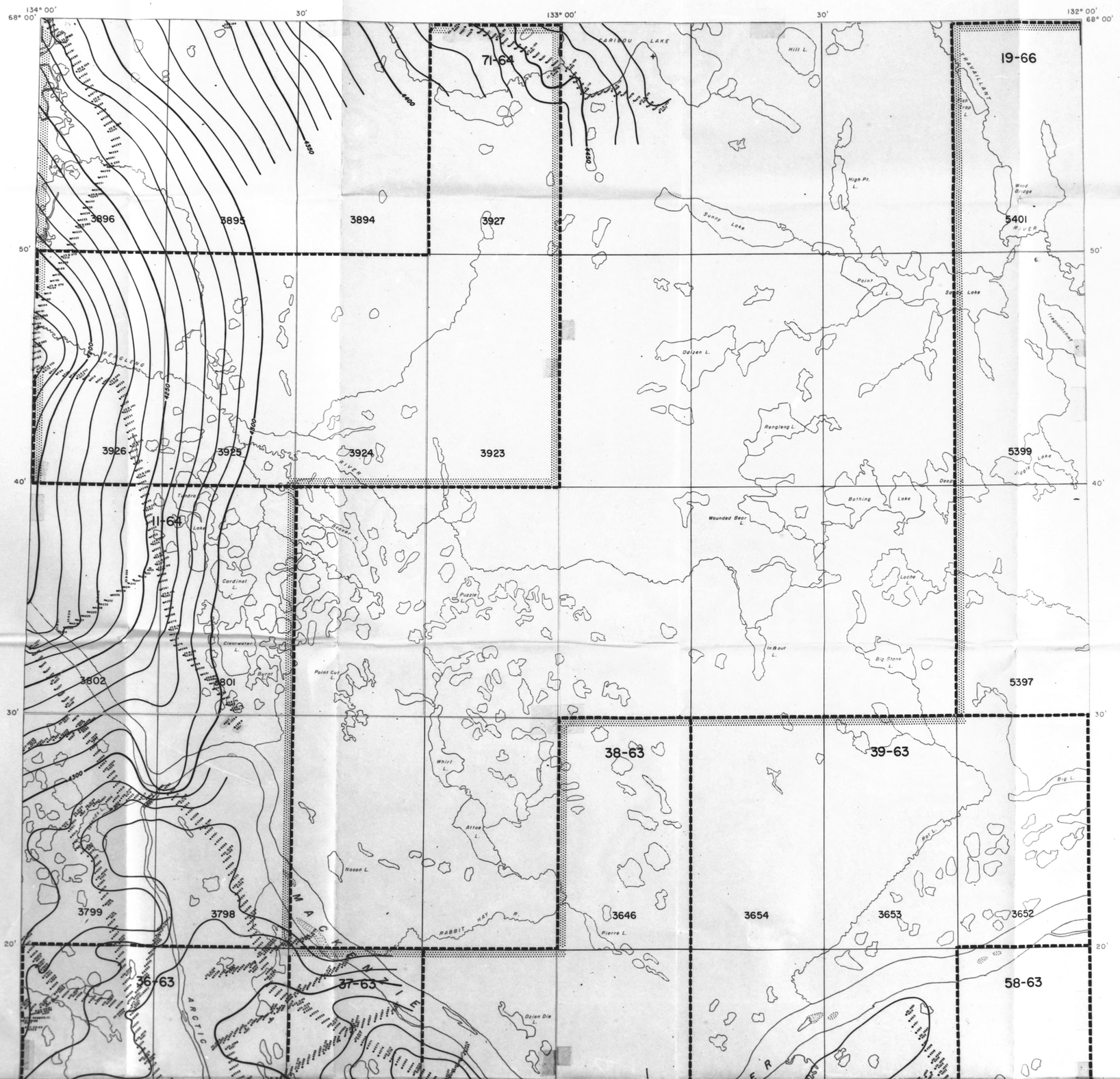
106 N ARCTIC RED RIVER

2 MILES TO 1 INCH

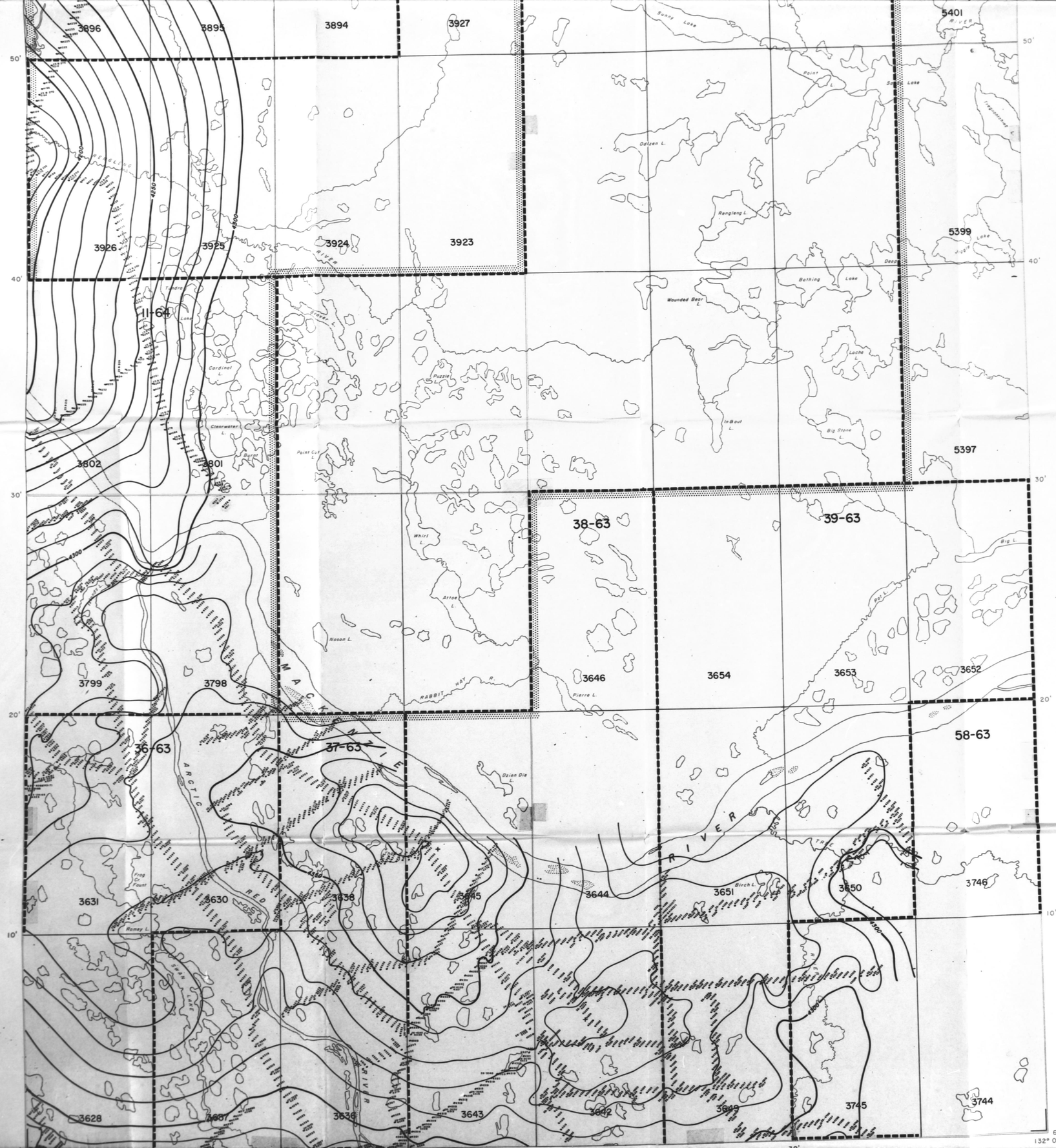
CONFIDENTIAL

	5459	5240

HOUSE LINE 1.1.67


134° 00'
133° 00'
132° 00'
68° 00'
30'
50'
40'
20'
71-64
19-66
11-64
38-63
39-63
36-63
37-63
58-63
3896
3895
3894
3927
5401
3926
3925
3924
3923
5399
3802
3801
5397
3799
3798
3646
3654
3653
3652
4400
4350
4300
4250
4200
4150
4100
CARIBOU LAKE
Hill L.
High Pt. L.
Sunny Lake
Point L.
Odzen L.
Rengleng L.
Wounded Bear L.
Bathing Lake
Loche L.
Big Stone L.
In Bout L.
Piezie L.
Point Cut L.
Whirl L.
Attoe L.
Nesen L.
Pierre L.
Big L.
Big Lake
Cardinal L.
Clearwater L.
Beaver L.
Deep Lake
Jigg L.
Lake
RIVER
RABBIT HAY R.
MACKENZIE
ARCTIC

107



2 of 2

ARCTIC RED RIVER

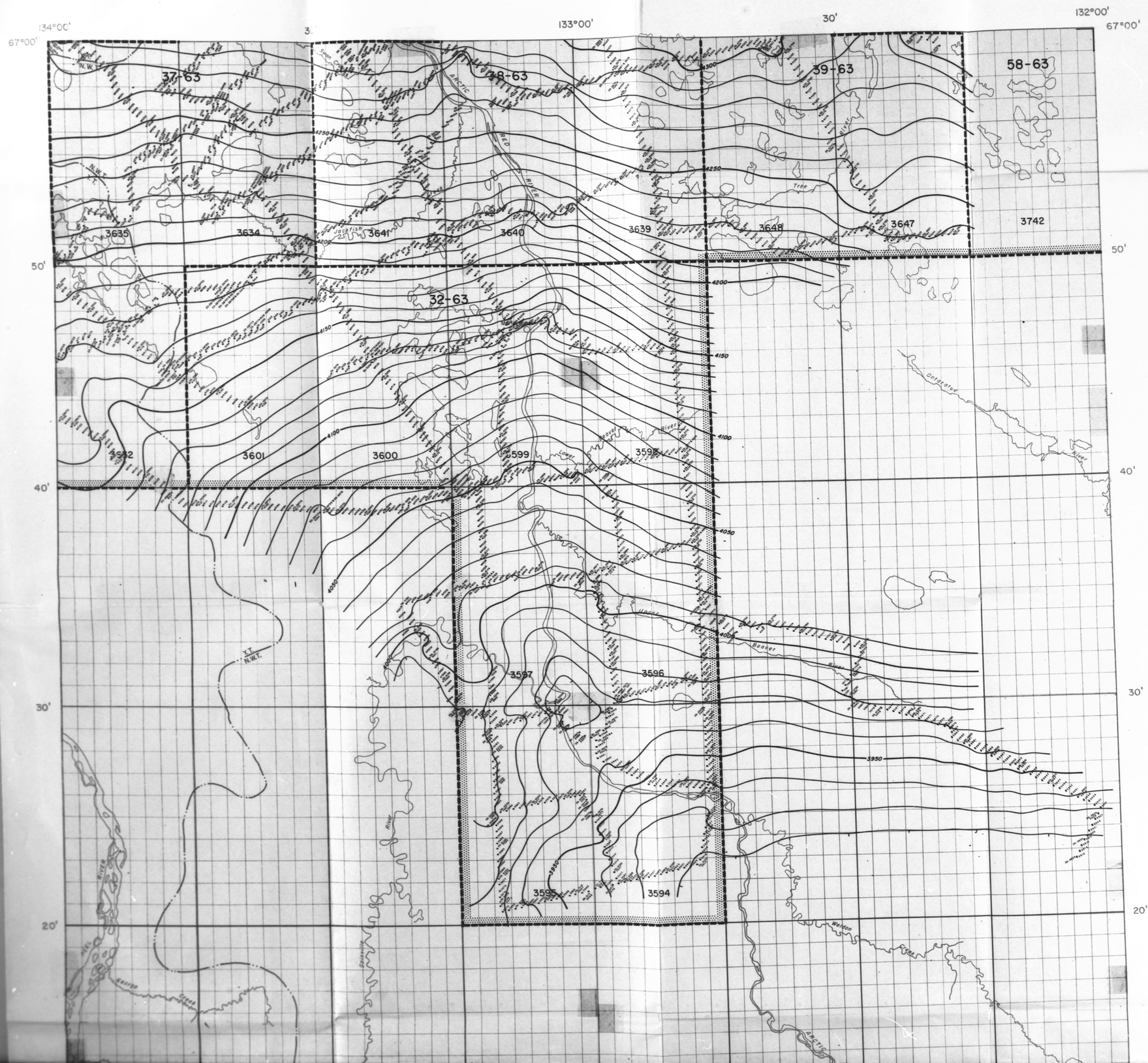
Scale: 1 Inch = 2 Miles

GRAVITY VALUES

G 106 K

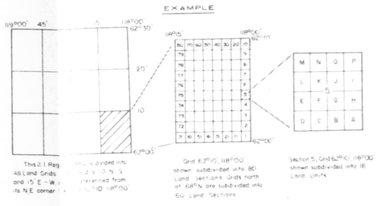
L

IMPERIAL OIL ENTERPRISES LTD.
EXPLORATION DEPARTMENT PEACE RIVER DIVISION



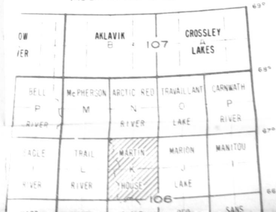
N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



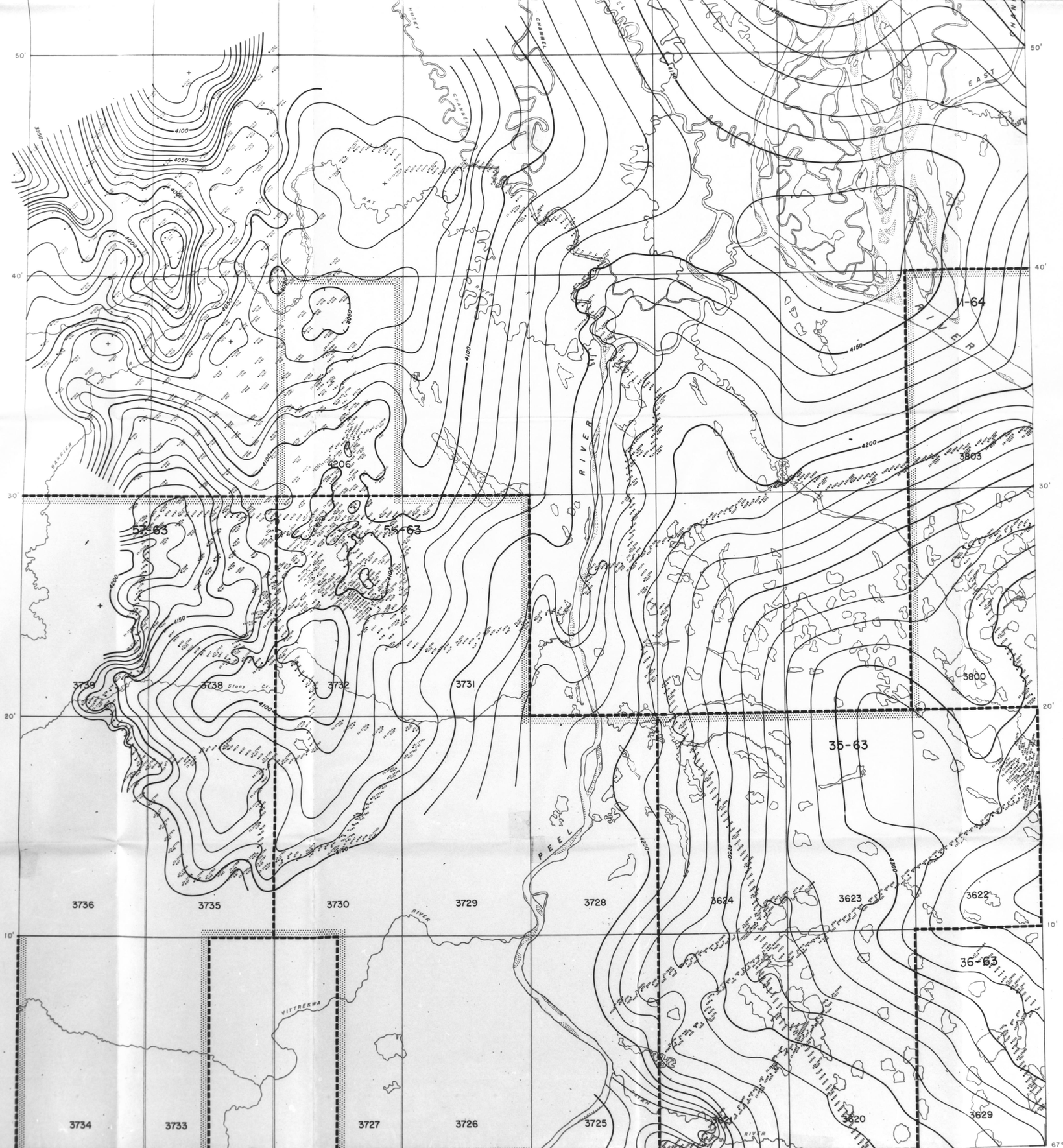
107

INDEX TO MAP SHEETS



136° 00'
68° 00'
30'
135° 00'
30'
134° 00'
68° 00'
50'
40'
30'
20'
WILLOW
PHILLIPS
HICKEY
CHANNEL
PEEL
CHANNEL
MACKENZIE
RIVER
EAST
CHANNEL
RIVER
BARRIER
4100
4050
4000
4150
4200
11-64
3803
57-63
56-63
3738
3738 Stony Cr.
3732
3731
3800
35-63

107



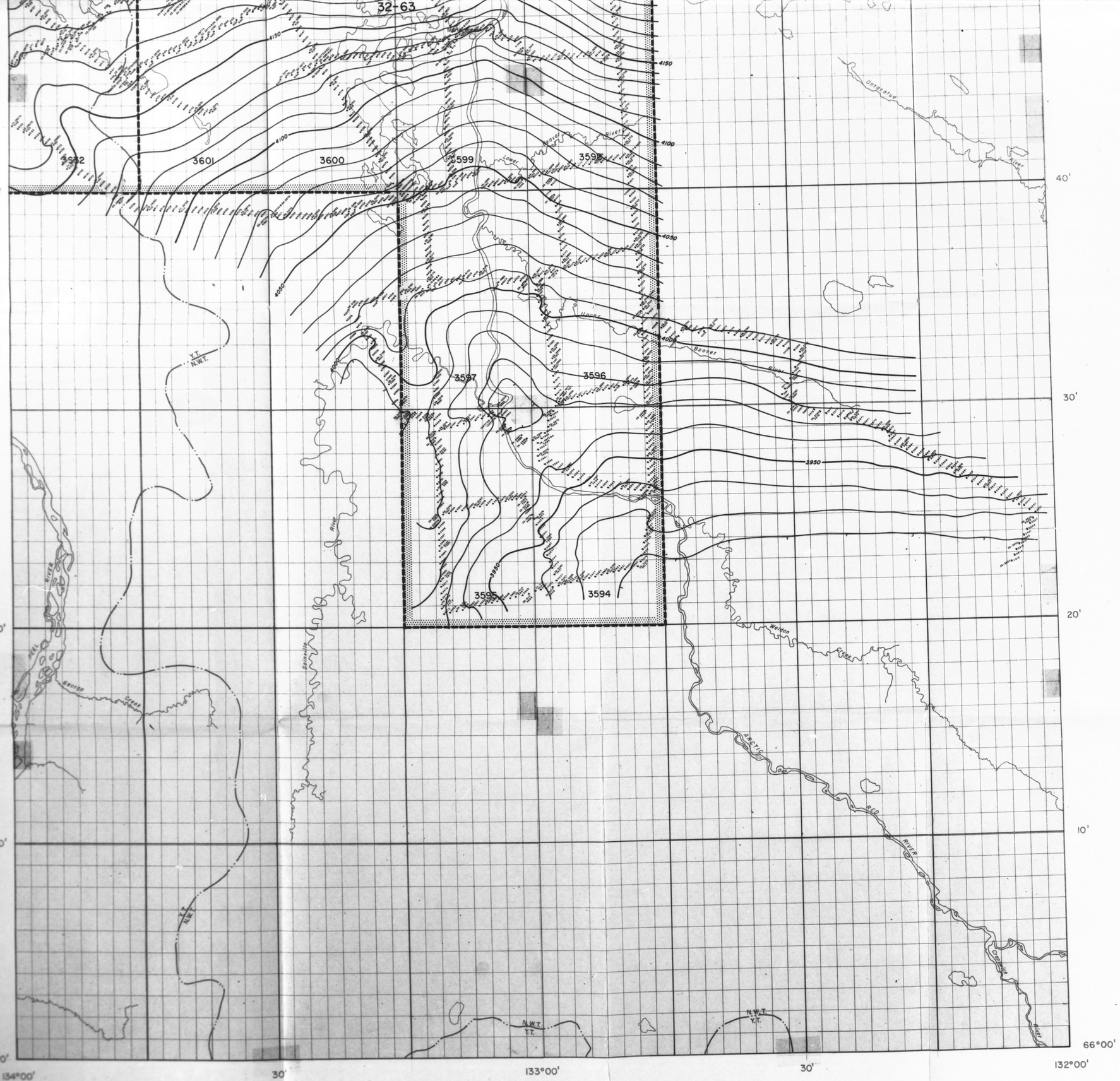
2 of 2

FORT McPHERSON

SCALE : 1 Inch = 2 Miles

GRAVITY VALUES


VITTREKWA

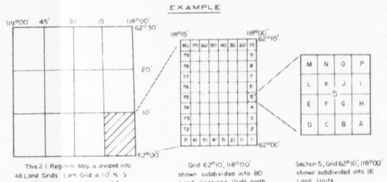


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

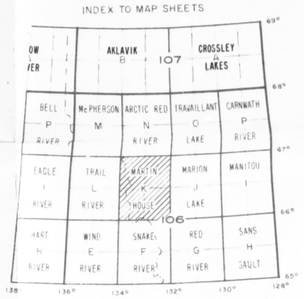


This 2.1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner i.e. Grid 62°10', 118°00'.

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



12 of 2

106 K MARTIN HOUSE

2 MILES TO 1 INCH

GRAVITY VALUES

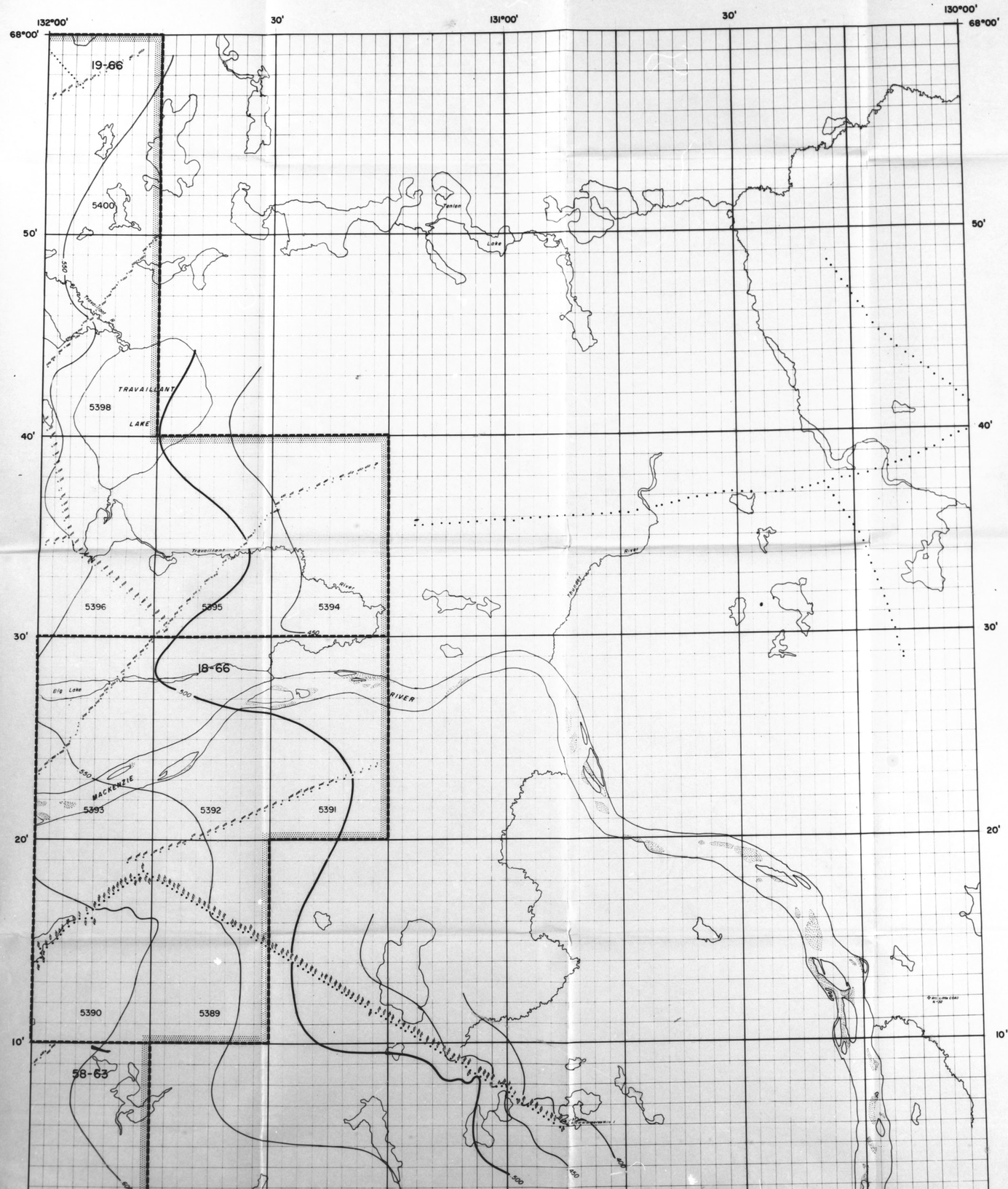
CONFIDENTIAL

14961

TRAVAILLANT LK. - STR. BEAR ROCK 2 MI. TO 1 INCH

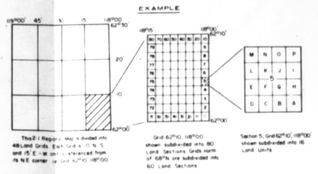
G	106 O	2	V	C	L

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

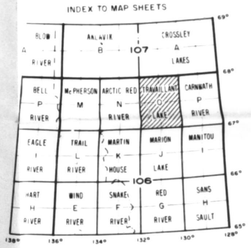


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS

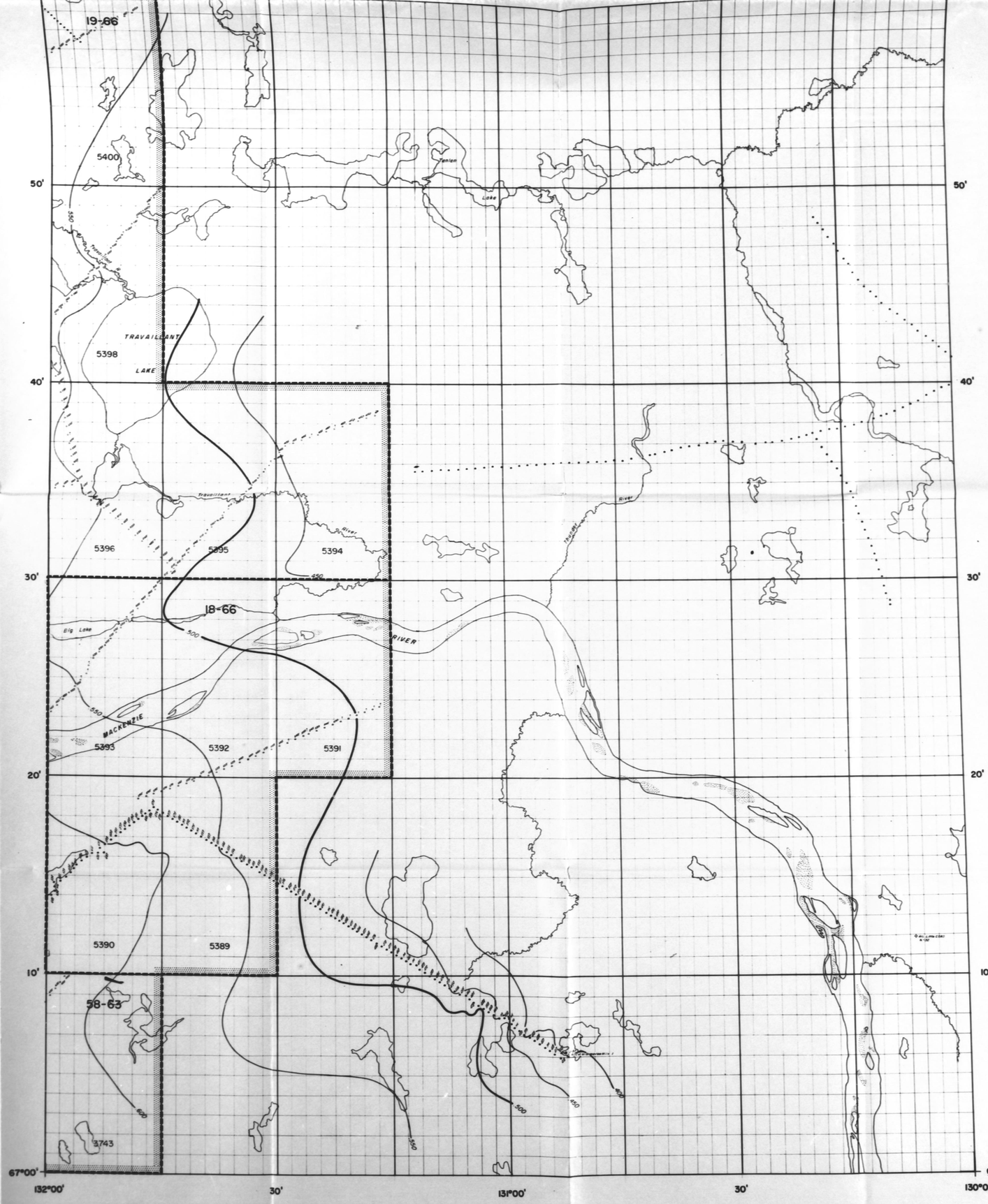


107

SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

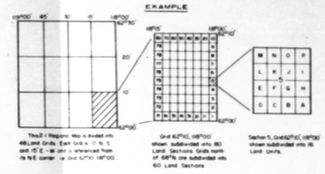
Contour Interval .010 SEC.
Datums: Plane 1000' Velocity 10000'/s

REVISED OCT. 9, 1967

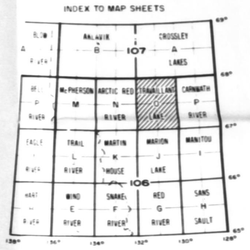


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS



SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval 100 SEC.
Datums: Plane 1000 Velocity 10000'/s

REVISED JULY 9, 1967

1 of 2

106 O TRAVAILLANT LAKE

2 MILES TO 1 INCH

CONFIDENTIAL

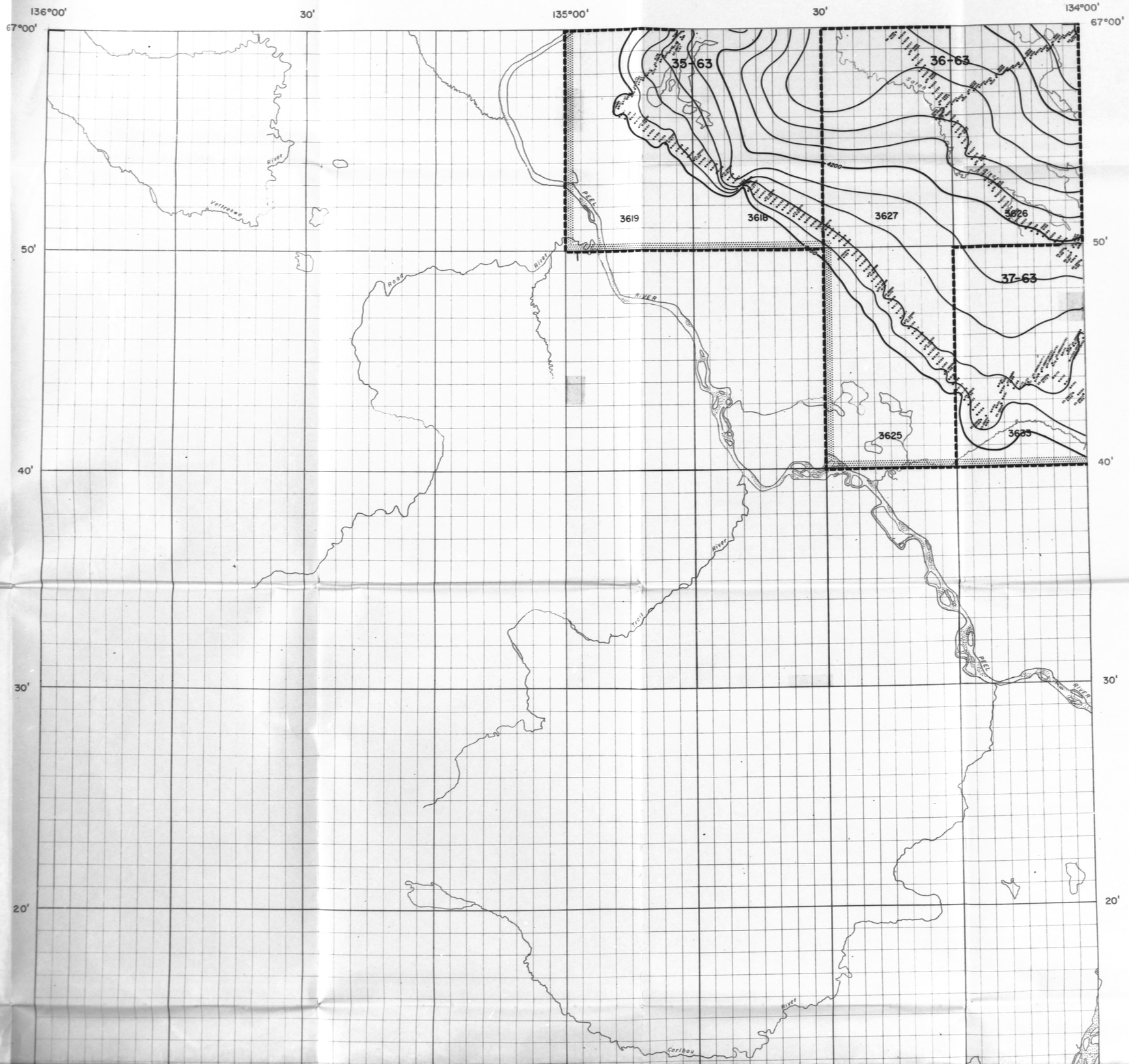
		5503	5242

RUSH SEPT 15, 1966

G 106 L

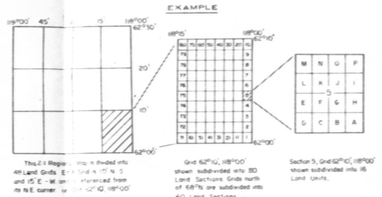
L

IMPERIAL OIL ENTERPRISES LTD.
EXPLORATION DEPARTMENT PEACE RIVER DIVISION



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This E.T. Region map is divided into 4th Land Grids E - W and 15° E - W on its N.E. corner at 62°10' 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

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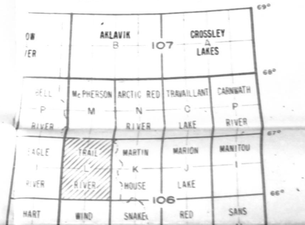
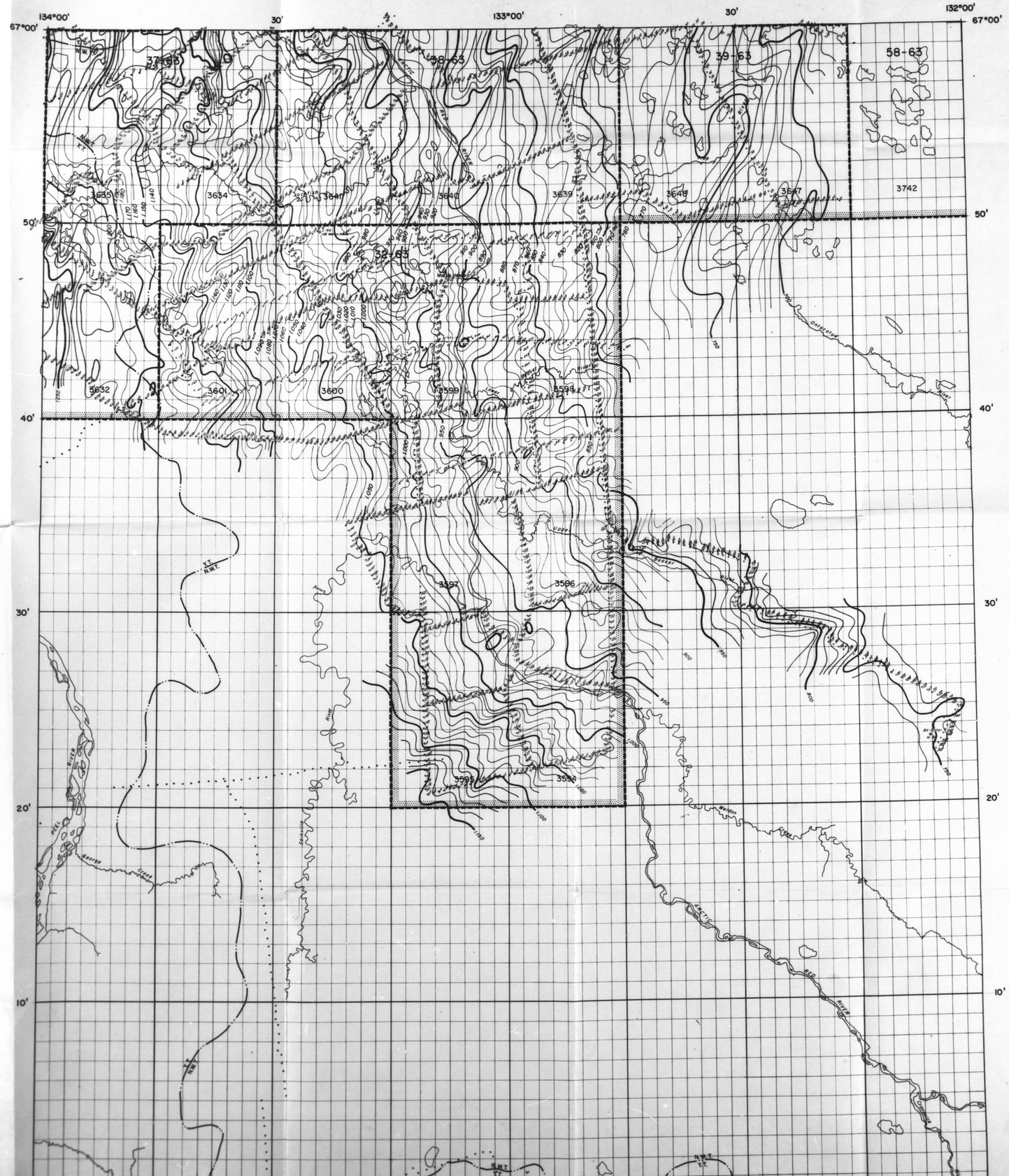


STRUCTURE BEAR ROCK

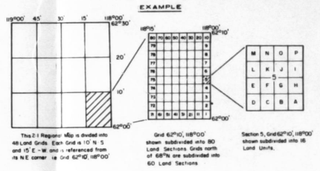
G	106 K	3A	V	C	L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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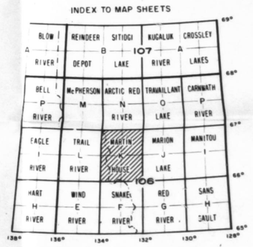
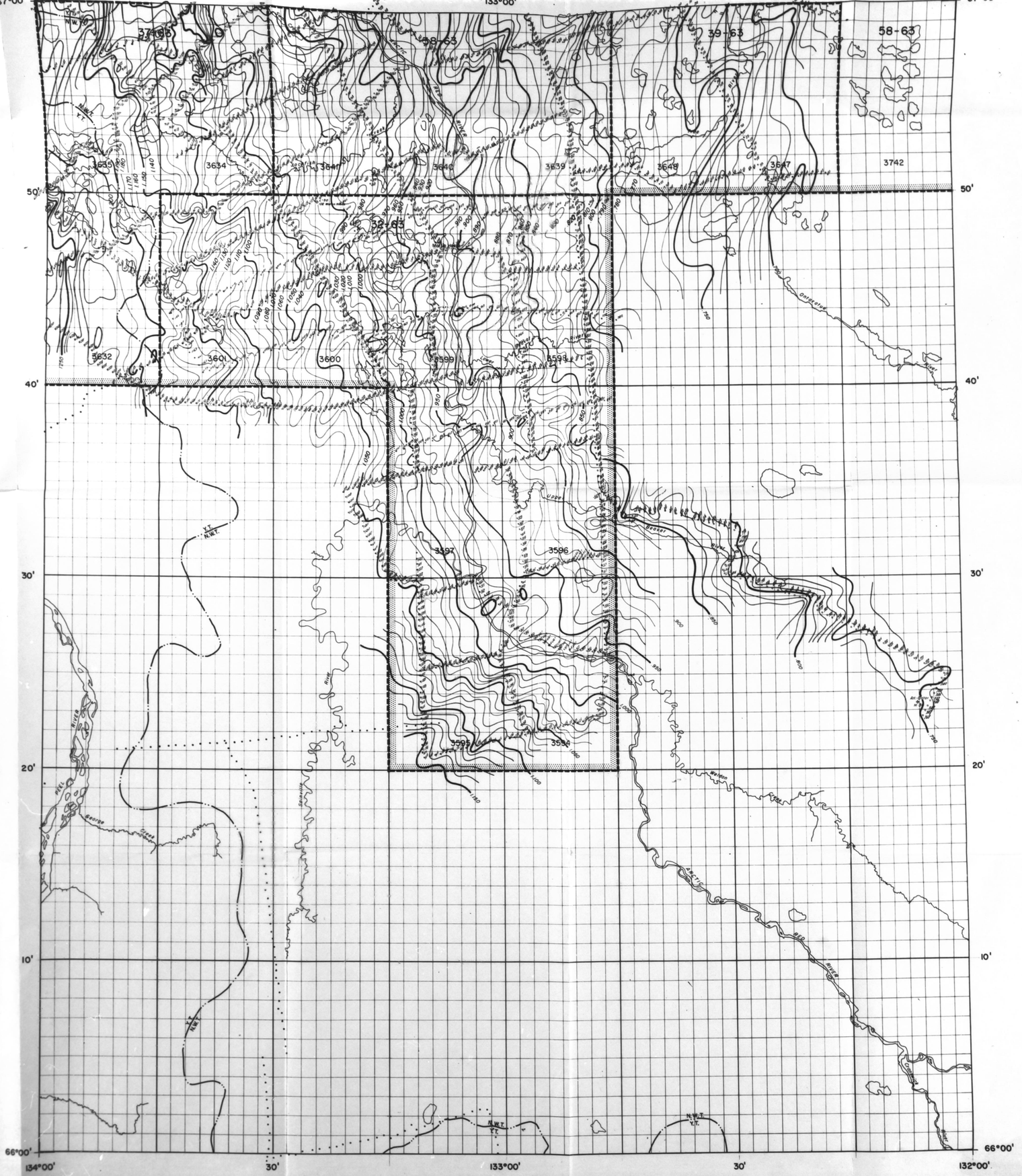


107

SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

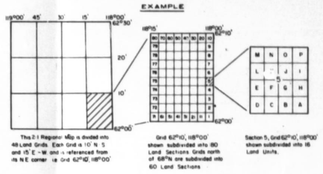
Contour Interval _____
Datums: Plane 1000' ____ Velocity 10000' ____

REVISED _____
June, 1967

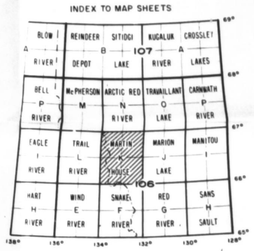


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS



2 of 2

SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval .....
Datums: Plane 1000' Velocity 10000'
REVISED June, 1969

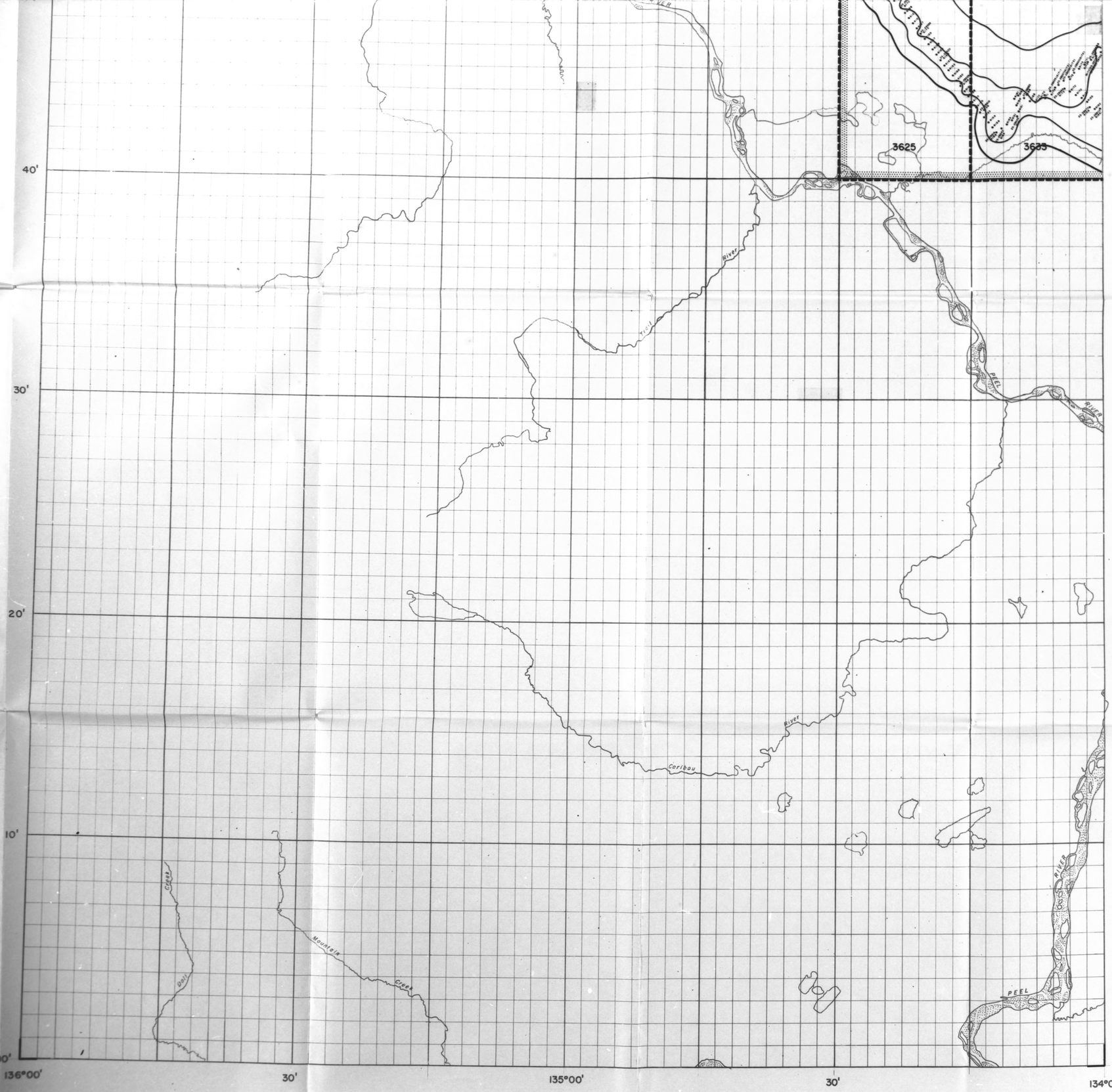
106 K MARTIN HOUSE

2 MILES TO 1 INCH

CONFIDENTIAL

		5501	5234

WELLS APRIL 18, 1966

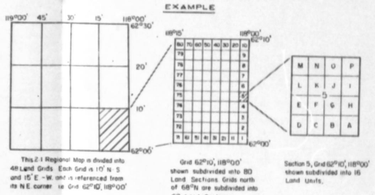


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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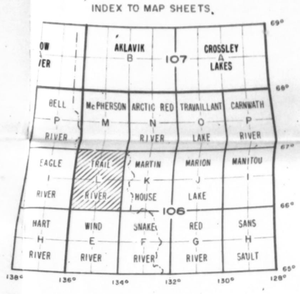
Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS.



2 of 2

106L TRAIL RIVER

2 MILES TO 1 INCH

GRAVITY VALUES

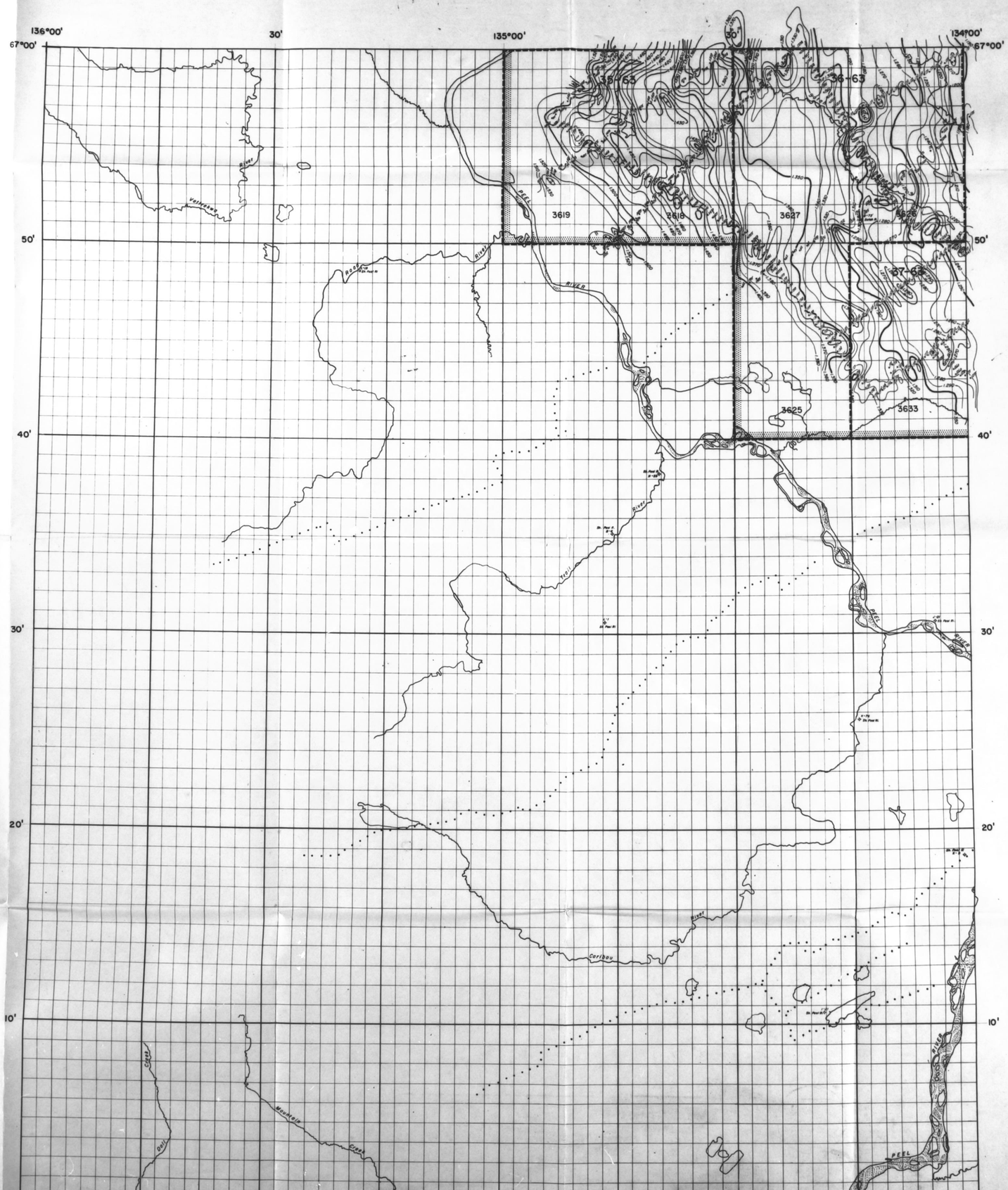
CONFIDENTIAL

14962

106L TRAIL RIVER 2+ STRUCTURE: BEAR ROCK

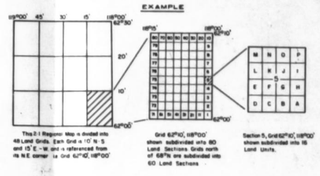
6	106L	3	V	C	L

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

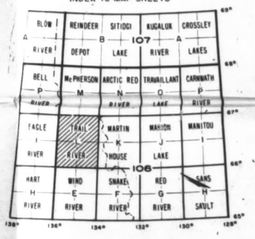


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS



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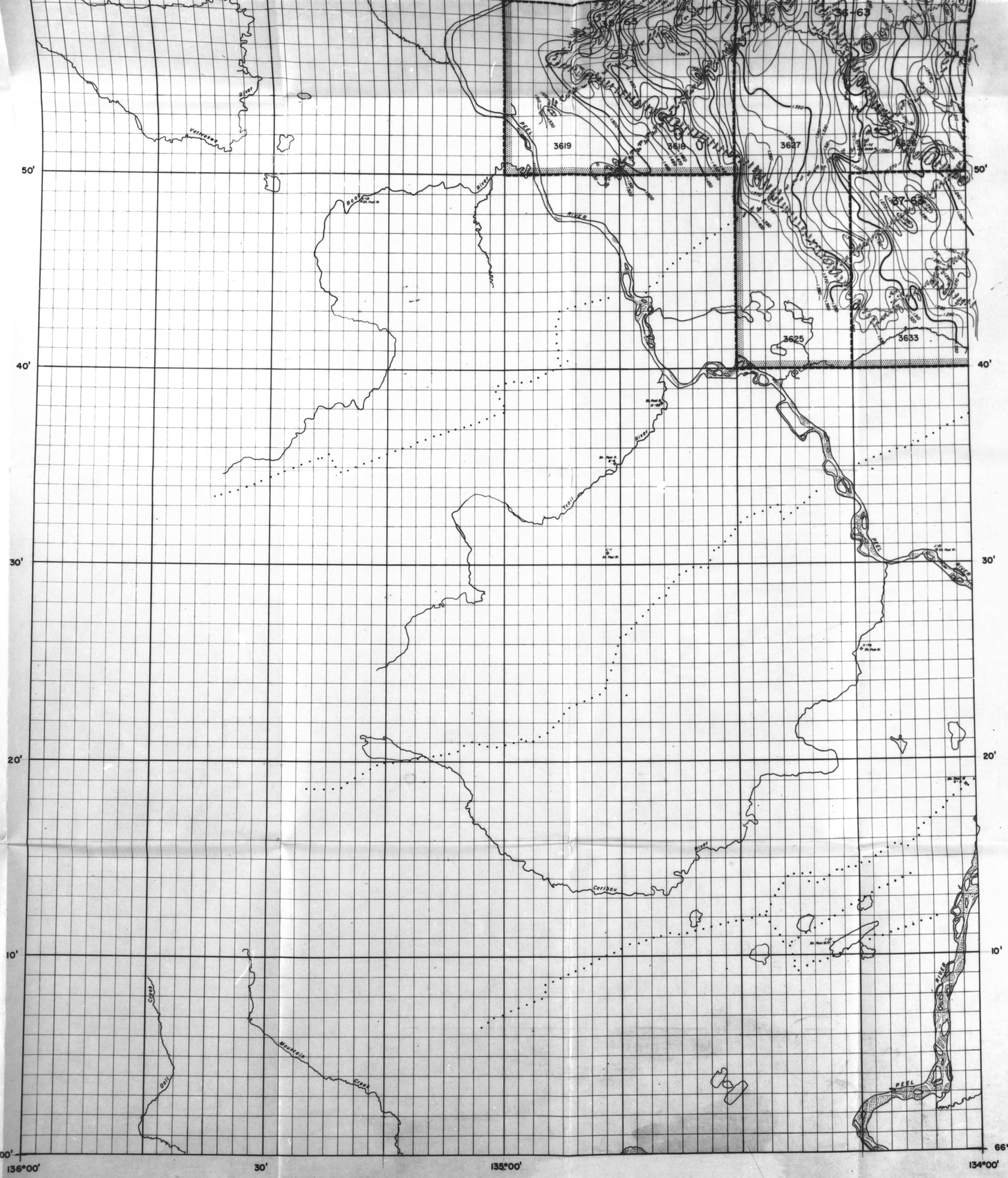
SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

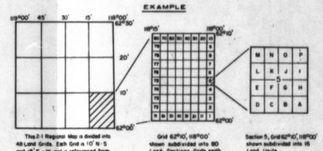
Contour Interval ...010 Secs.
Datums: Plane 1000 ... Velocity 10,000'/s.

REVISED SEPTEMBER 27, 1965.



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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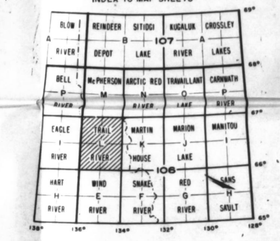
INDEX TO MAP SHEETS



SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval 100 feet
Datum: Plane 3000 Velocity 10,000'/s

REVISED SEPTEMBER 27, 1968

2 of 2

106L TRAIL RIVER

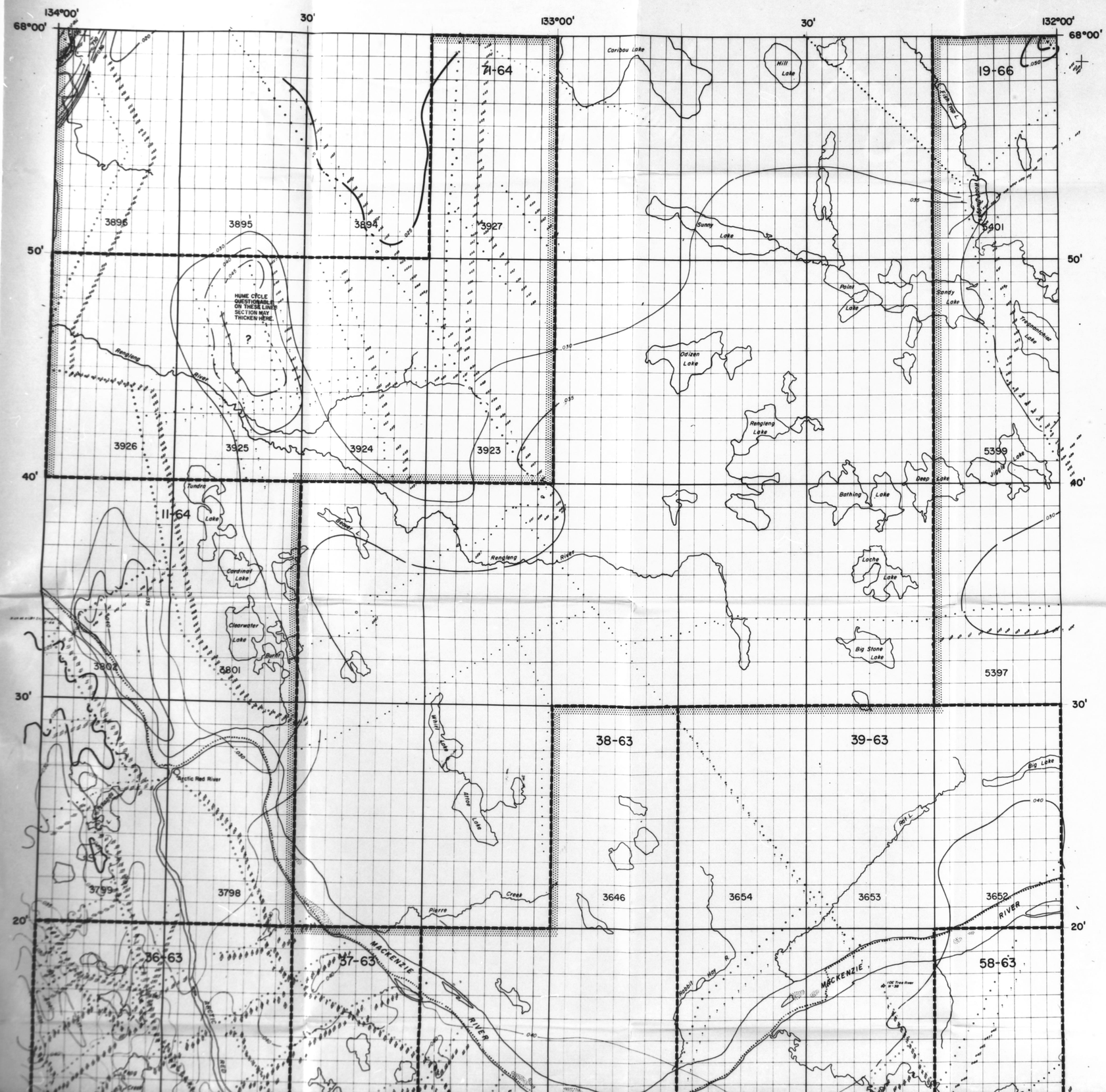
2 MILES TO 1 INCH

CONFIDENTIAL

5502	5602	5236

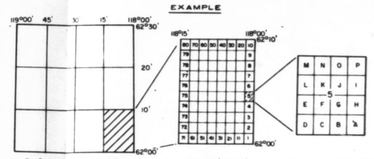
G	106 N	7		C	L

IMPERIAL OIL ENTERPRISES LIMITED
N.W.T. EXPLORATION DISTRICT 7 V



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2-1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner, i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

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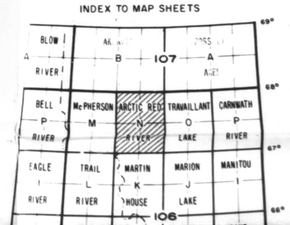
INDEX TO MAP SHEETS

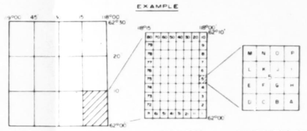


G	106 M	4	V	C	L

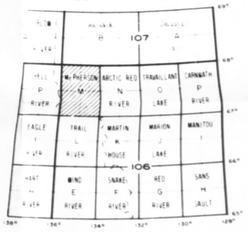
IMPERIAL OIL ENTERPRISES LIMITED
N.W.T. EXPLORATION DISTRICT

N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



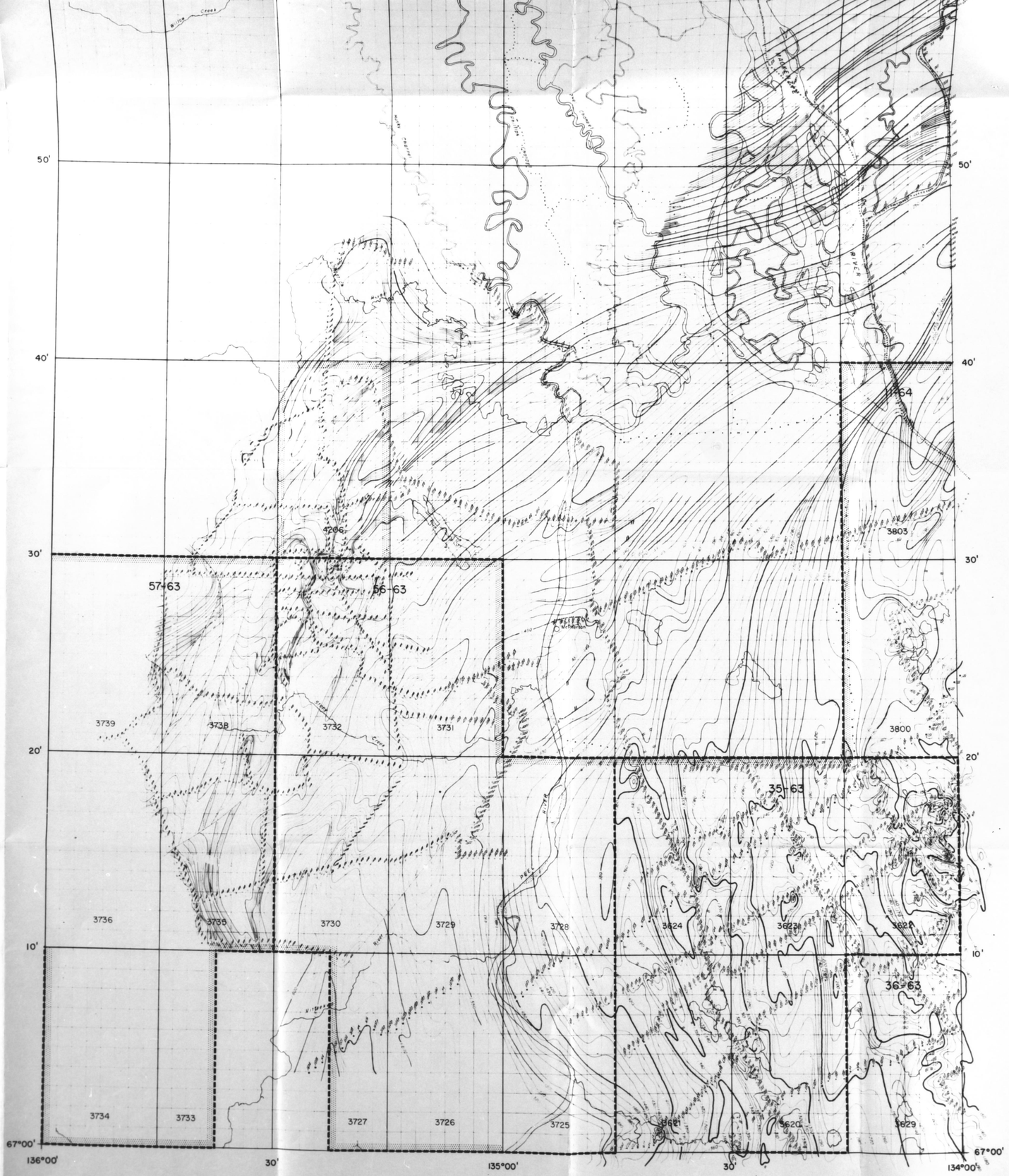
INDEX TO MAP SHEETS



107

SEISMOGRAPH MAP
STRUCTURE
BEAR ROCK

Contour Interval ... 100 FEET
Datums: Plane ... 1000' ... Velocity 10,000'

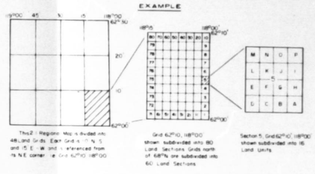


N.W.T. LAND REFERENCING SYSTEM

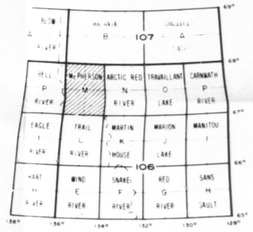
AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



INDEX TO MAP SHEETS



SEISMOGRAPH MAP

STRUCTURE

BEAR ROCK

Contour interval 100 SECS.

Datums: Plane 1000'... *Velocity* 10,000'/...

REVISED ... 28 APR ...

2 of 2

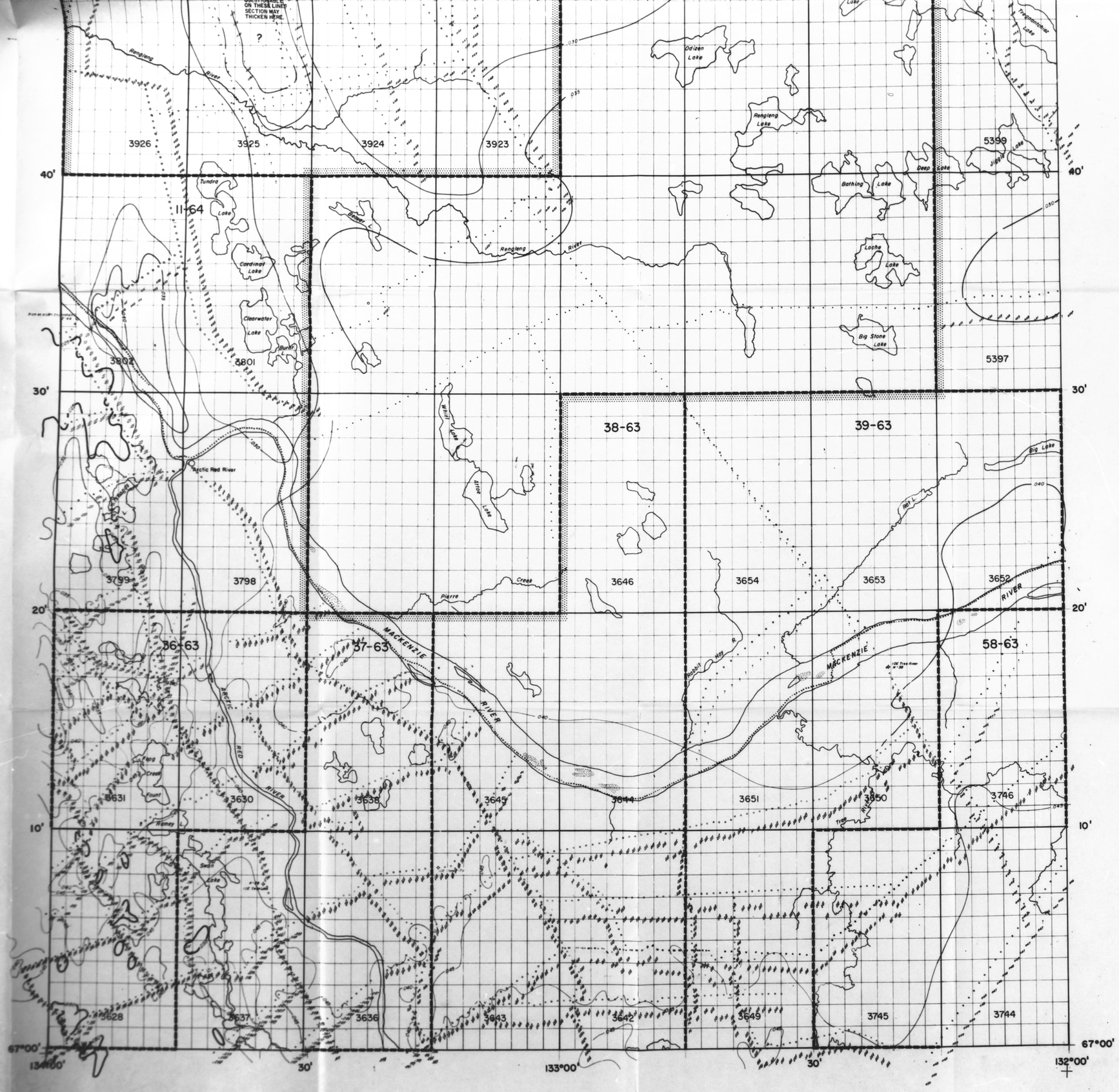
CONFIDENTIAL

106 M FORT McPHERSON

2 MILES TO 1 INCH

CONFIDENTIAL

	5457	5457	5238

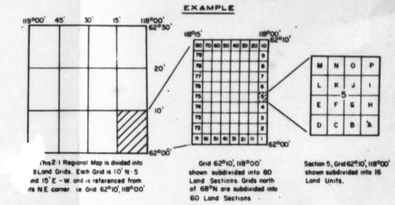


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

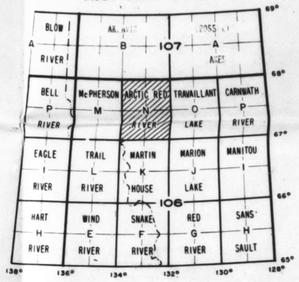


This 2 : 1 Regional Map is divided into 5 Land Grids. Each Grid is 10' N - S and 15' E - W and is referenced from its N.E. corner i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

Contour Interval 200, 250 ISOCHRON

Datum: Plane Velocity

HUNE — BEAR ROCK

REVISED

AUG. 3, 1967

2 of 2

106 N ARCTIC RED RIVER

2 MILES TO 1 INCH

CONFIDENTIAL

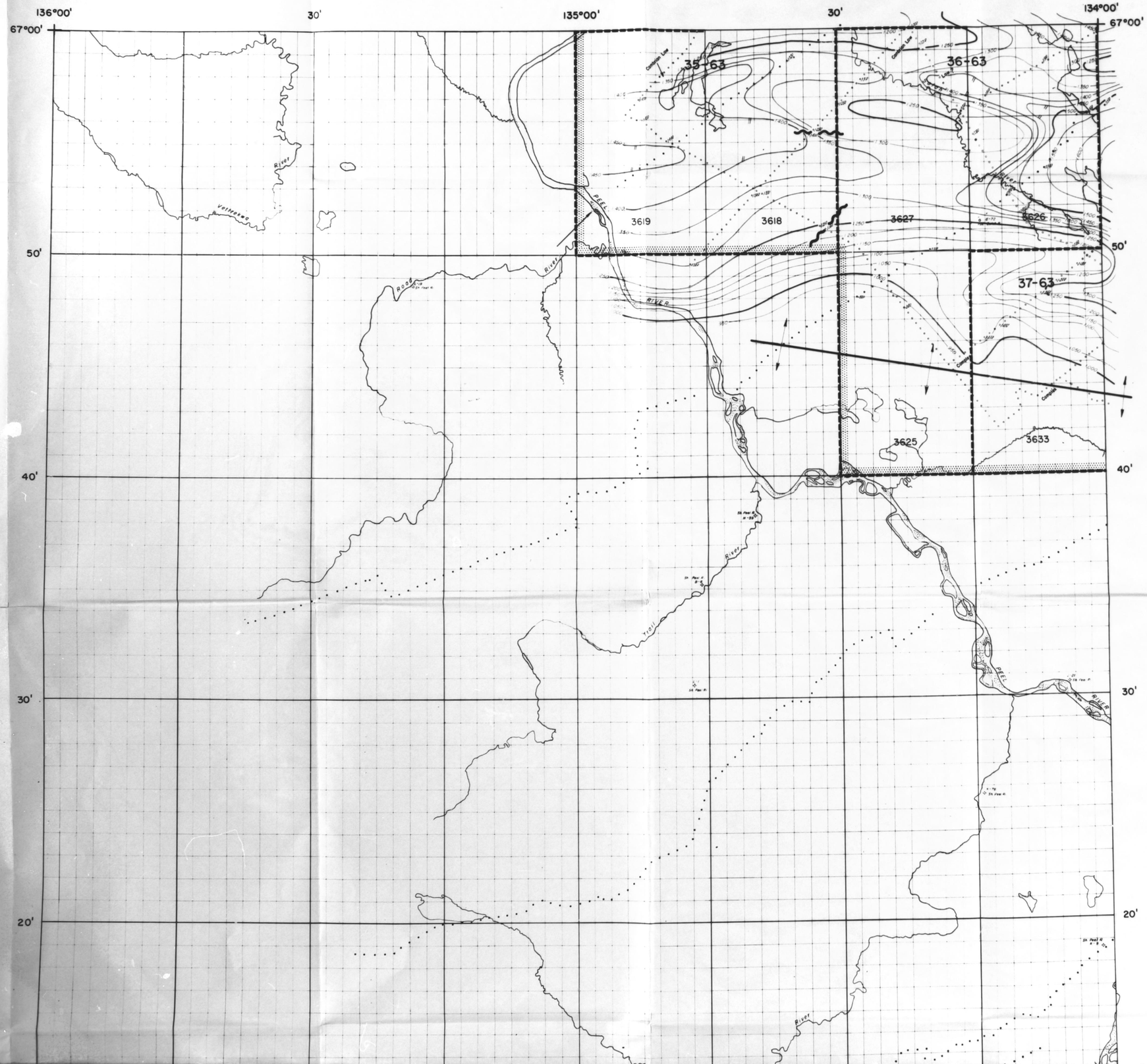
	5439	5240

MAULS JUNE 1, 1967

IDEL TRAIL RIVER 2:1 ISOCHRON BEAR ROCK — & PRECAMBRIAN REFLECTION

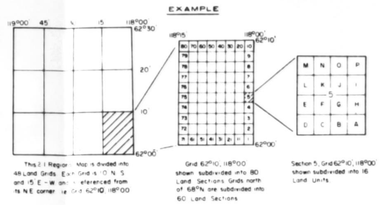
6	106L	9	V	C	L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



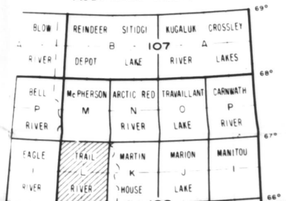
The 2:1 Regular Map is divided into 48 Land Grids, E-W Grids 1 to 7 N, 5 and 15 E-W on 15 N.E. corner. Grid 62°10', 118°00' referenced from

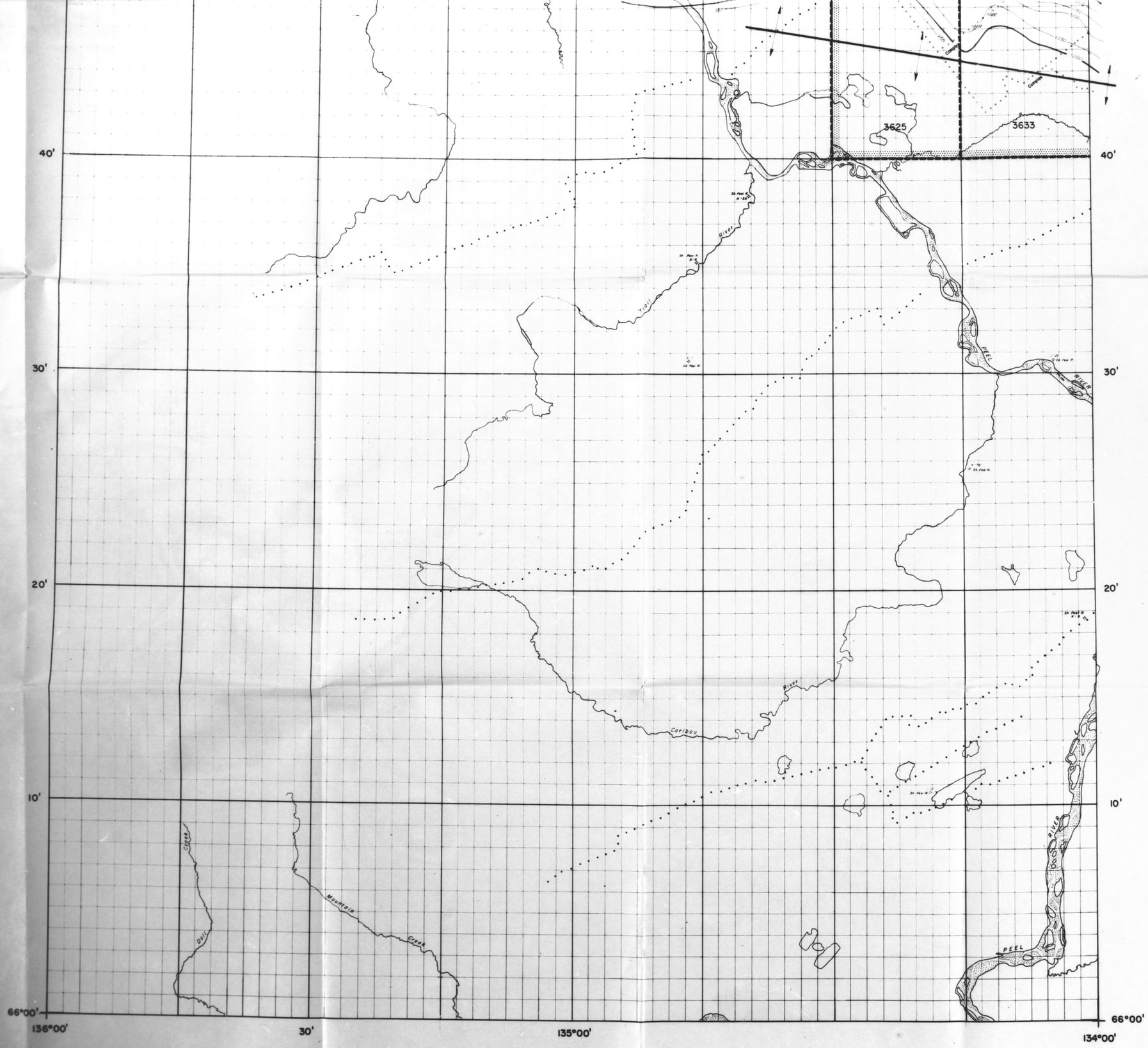
Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

107

INDEX TO MAP SHEETS



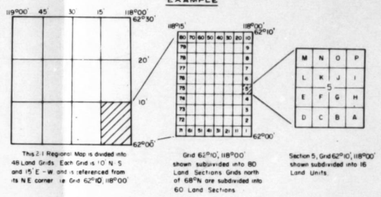


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

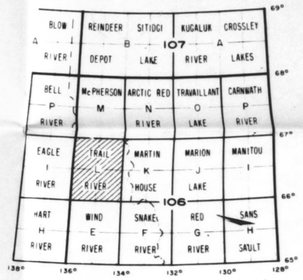


This 2:1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N. S. and 15' E.-W. and is referenced from its N.E. corner, ie Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

ISOCHRON

BEAR ROCK—A PRECAMBRIAN REFLECTION

Contour Interval 0.50 SECS

Datums: Plane _____ *Velocity* _____

REVISED OCTOBER 5, 1965.

2 of 2

106L TRAIL RIVER

2 MILES TO 1 INCH

CONFIDENTIAL

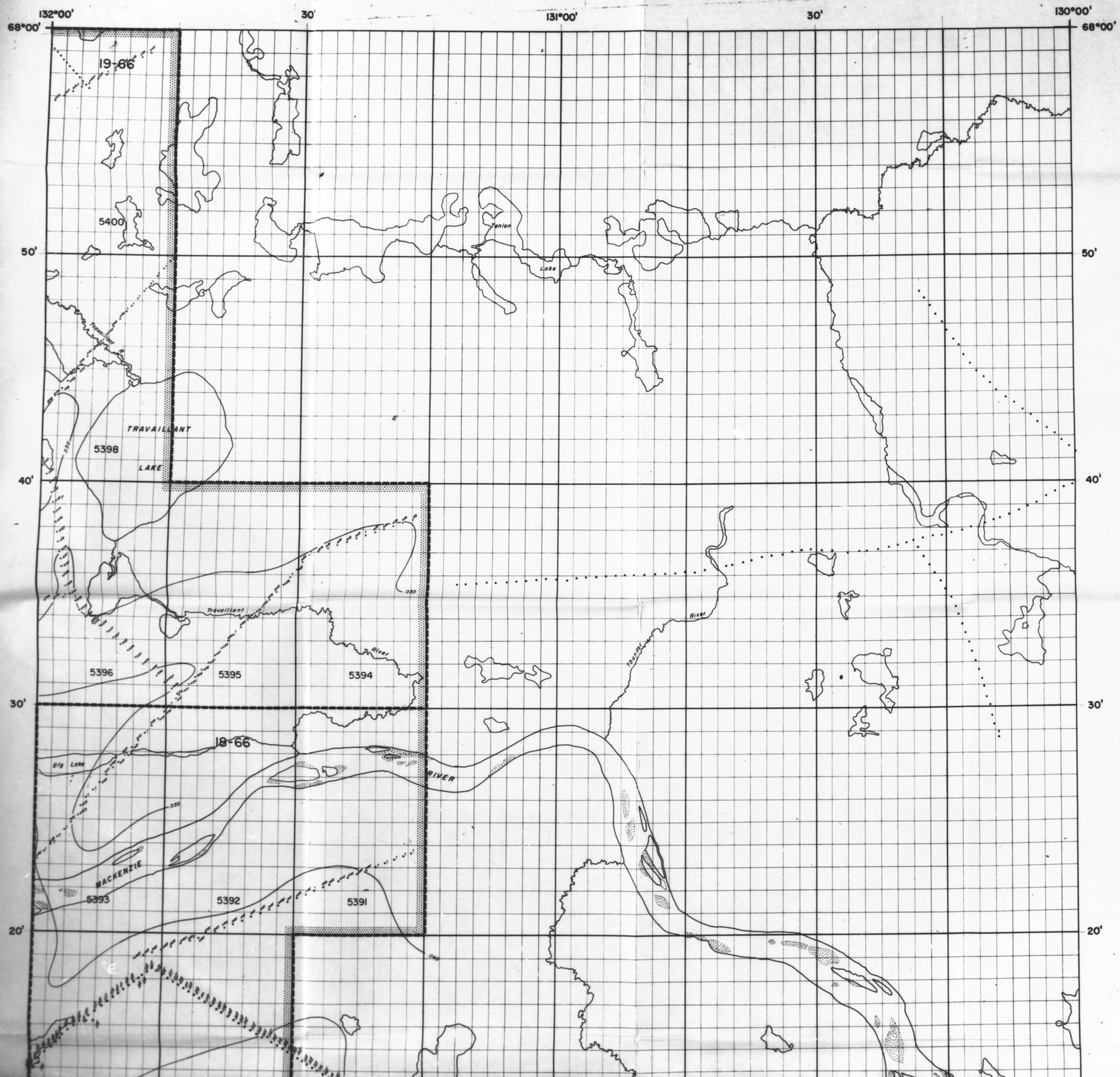
	5988	5988	5236

MILS MAY 1, 1967

2:1 TRAVAILLANT LAKE SEIS. HUME TO BEAR ROCK 150.

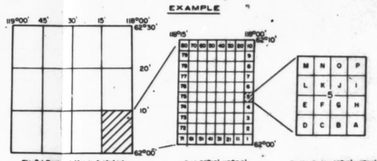
G	106 O	5	V	C	L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2:1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N - S and 15' E - W, and is referenced from its N.E. corner, i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

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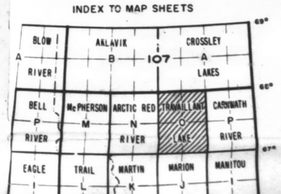
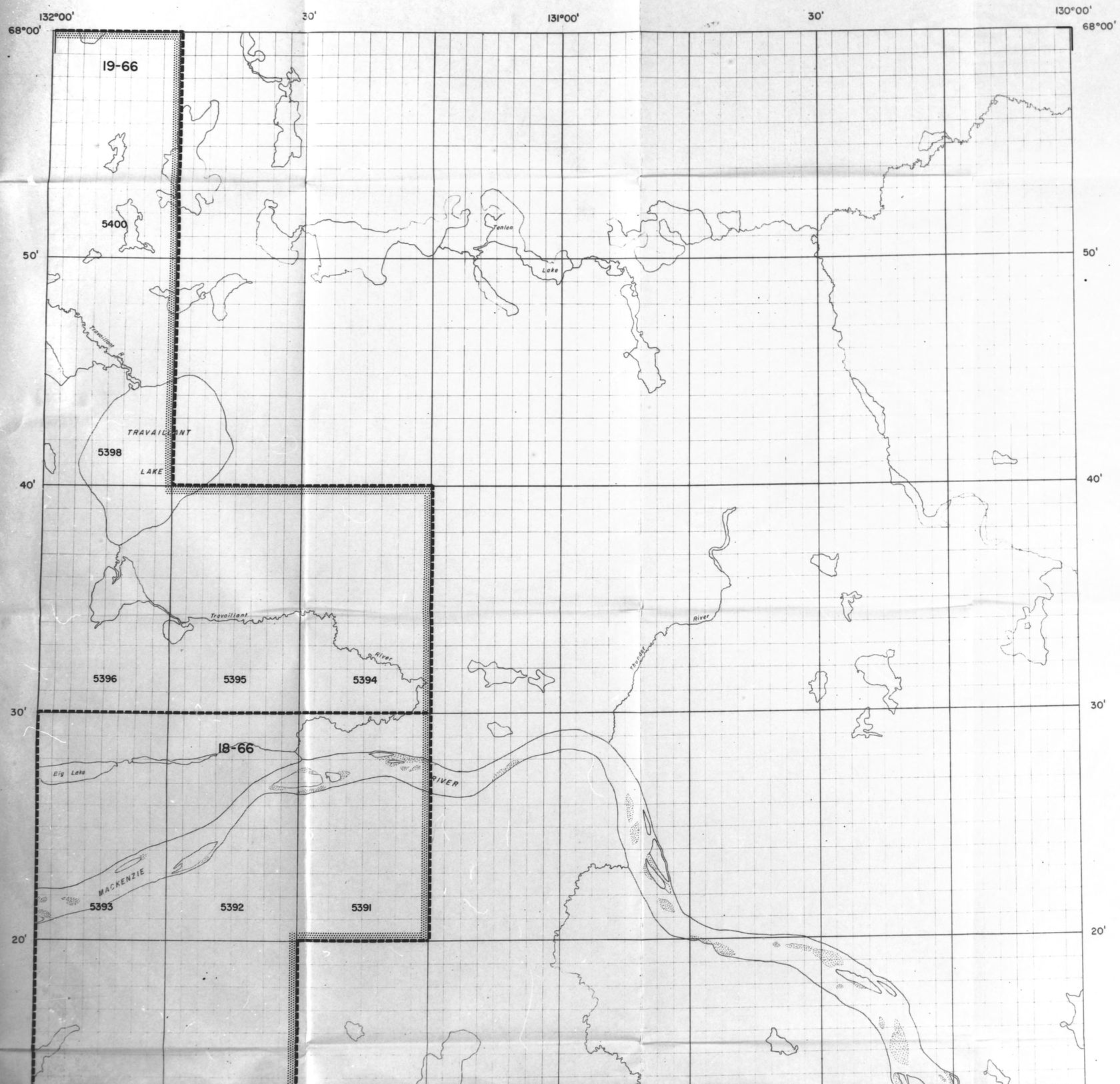
INDEX TO MAP SHEETS



G 106 O

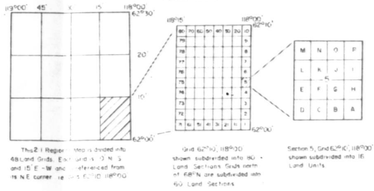
L

IMPERIAL OIL ENTERPRISES LTD.
EXPLORATION DEPARTMENT PEACE RIVER DIVISION

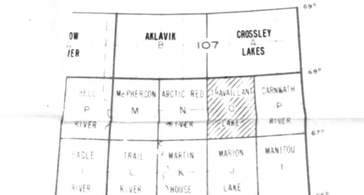


N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

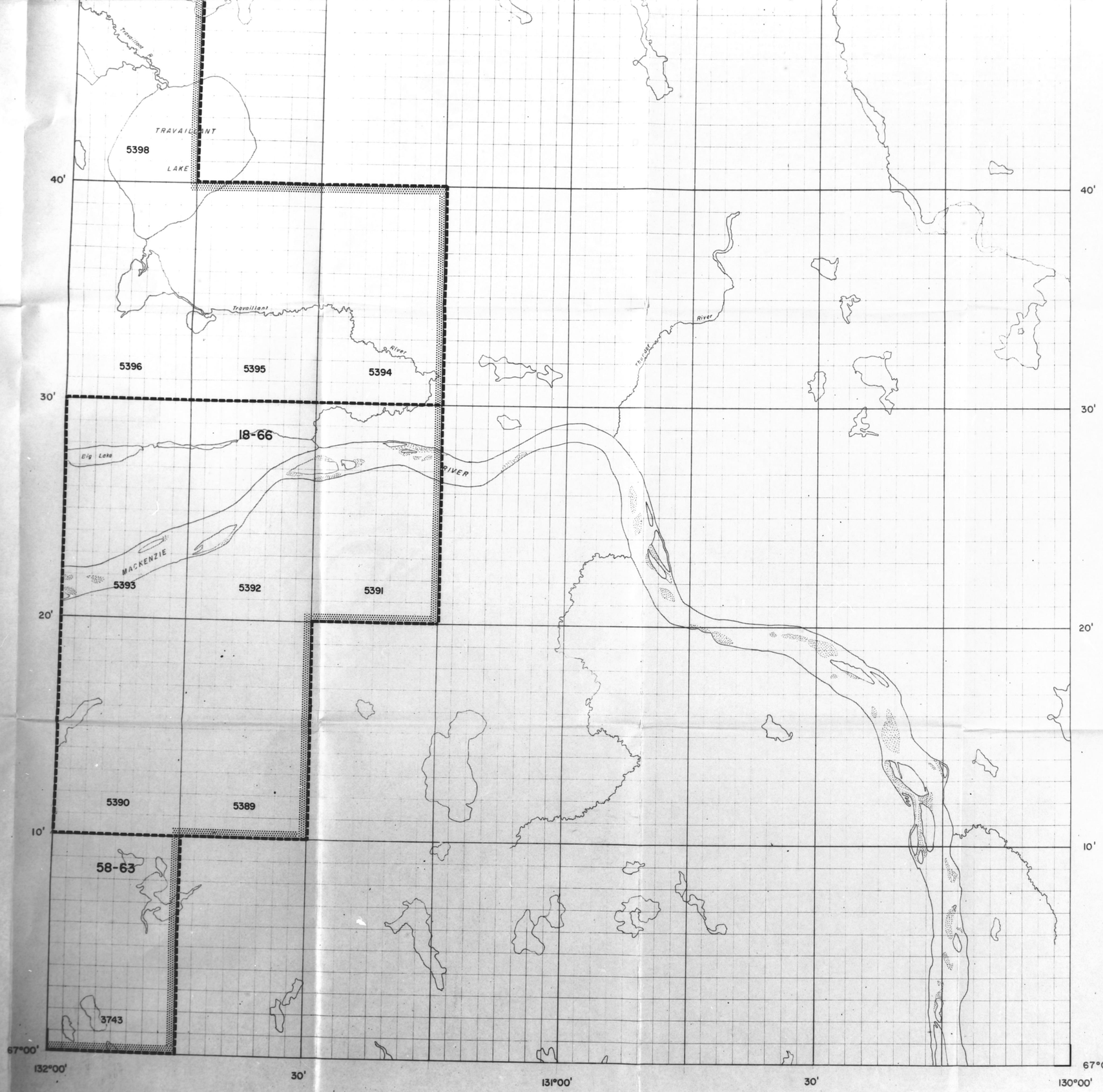
EXAMPLE



INDEX TO MAP SHEETS



107

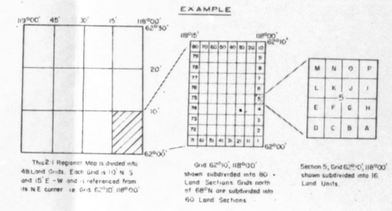


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

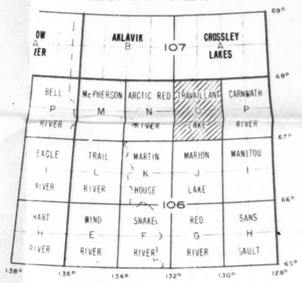


The 2 I Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from the N.E. corner i.e. G=5 E.=10' 118°00'

Grid 62°10', 118°30' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



2 of 2

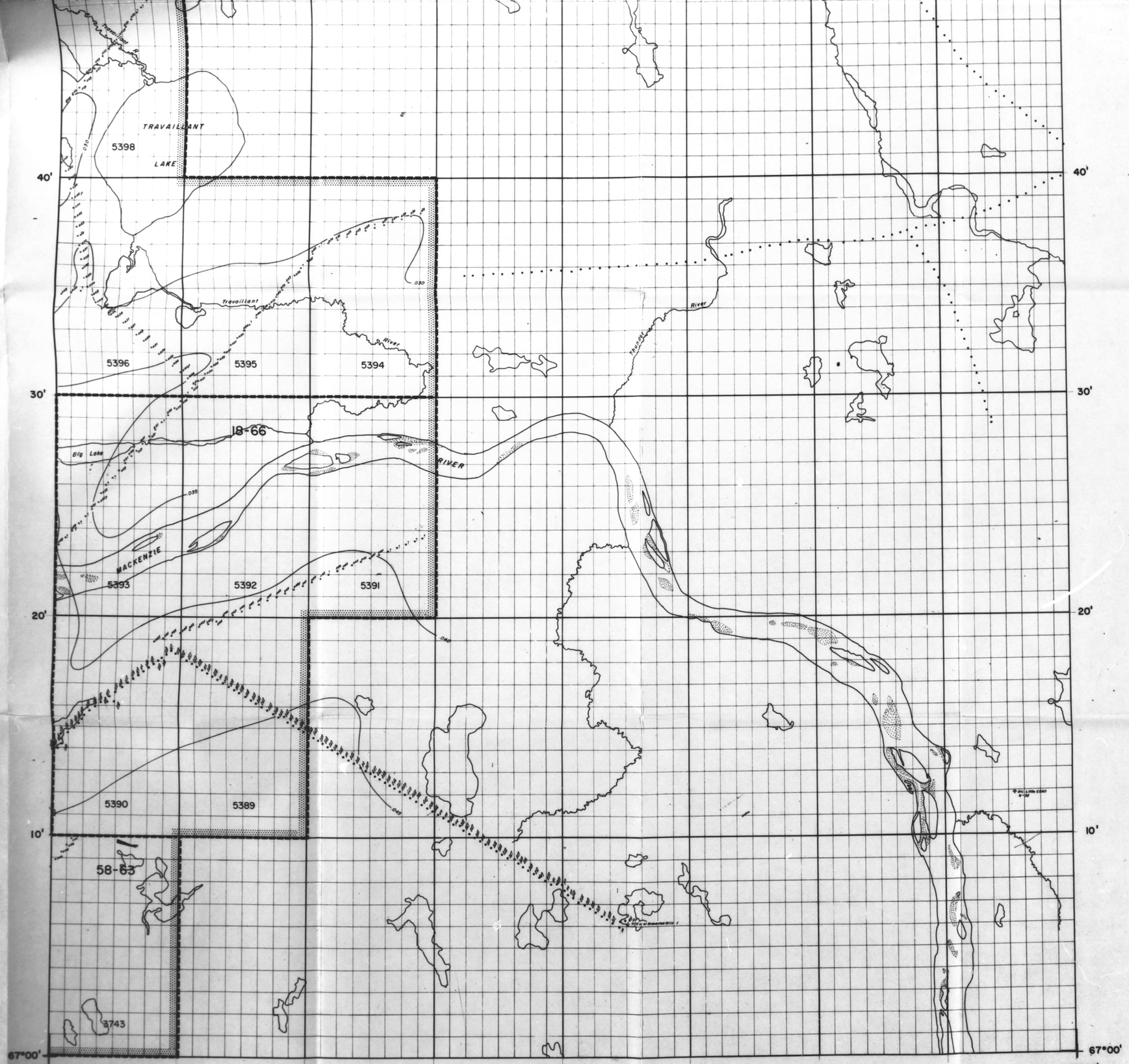
106 O TRAVAILLANT LAKE

2 MILES TO 1 INCH

NO STATIONS

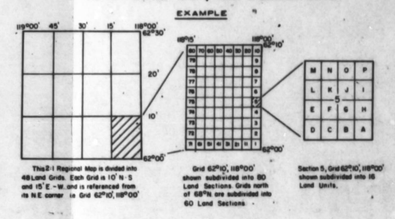
CONFIDENTIAL

14965



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

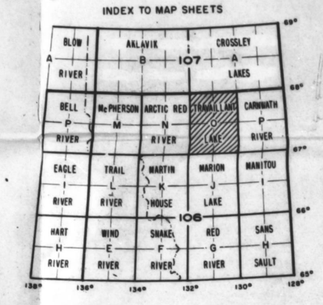


The 2-1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W, and is referenced from its N.E. corner, in Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 60 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP
ISOCHRON
HUME TO BEAR ROCK

Contour Interval .019 SEC.
Datums: Plane _____ *Velocity* _____

REVISED AUG. 3, 1967

2 of 2

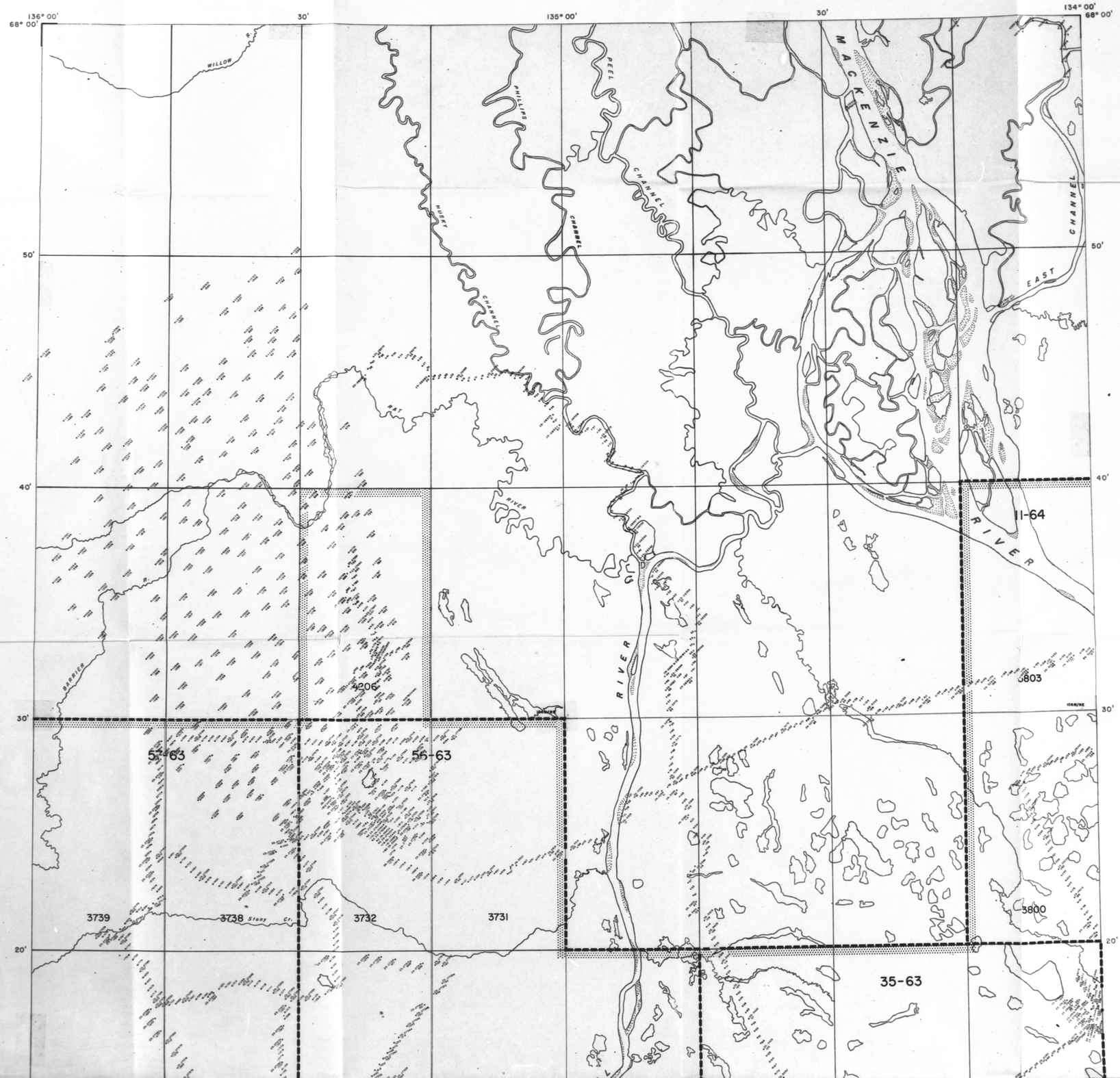
1060 TRAVAILLANT LAKE

2 MILES TO 1 INCH

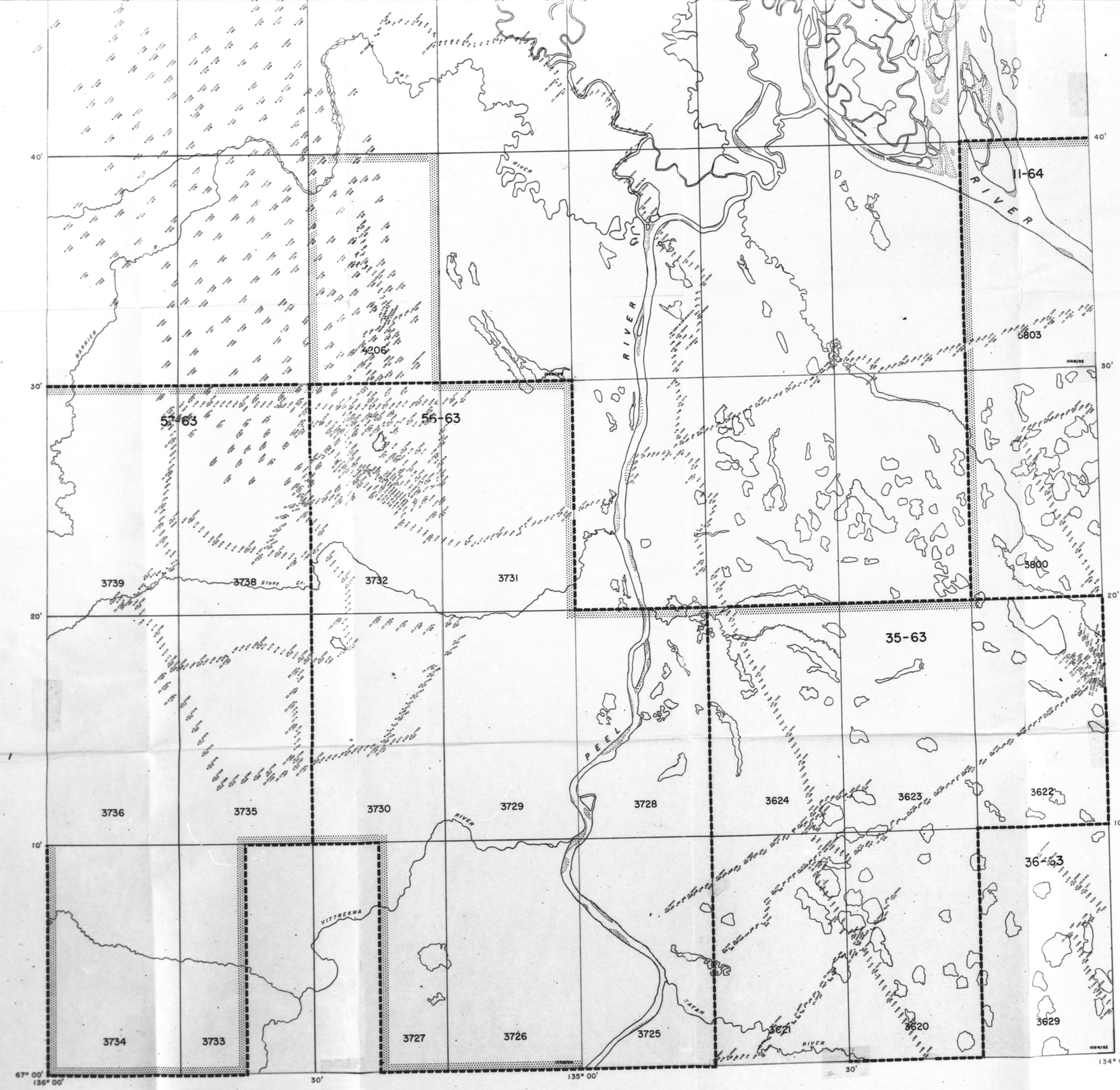
CONFIDENTIAL

	5441	5441	5242

WELLS: SEPT. 15, 1966


136° 00'
68° 00'
30'
135° 00'
30'
134° 00'
68° 00'
50'
40'
30'
20'
WILLOW
PHILLIPS
PEEL
CHANNEL
HUSKY
CHANNEL
CHANNEL
MACKENZIE
EAST
CHANNEL
RIVER
RIVER
RIVER
BARRICK
11-64
4206
3803
57-63
56-63
3739
3738
Stony Cr.
3732
3731
3800
35-63

107



FORT McPHERSON

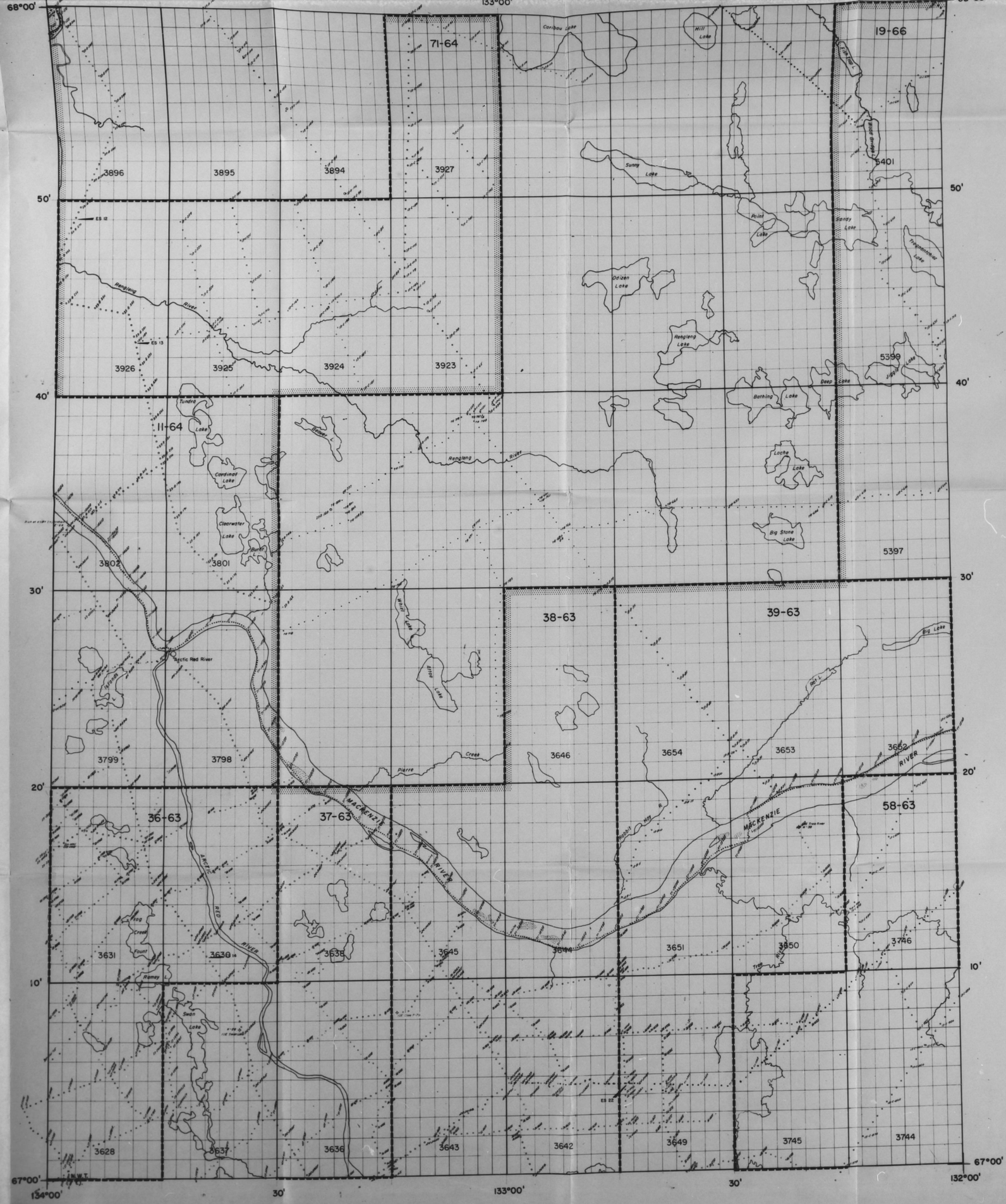
SCALE : 1 Inch = 2 Miles

ELEVATIONS

2 of 2

CONFIDENTIAL

IMPERIAL OIL ENTERPRISES

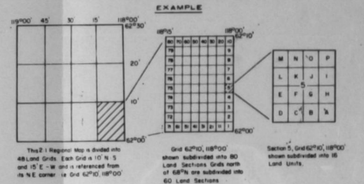


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

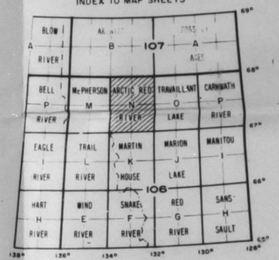


This 2 ½ Degree Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner, i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

ES 14 – EXPANDED SPREAU

2 of 2

106 N ARCTIC RED RIVER

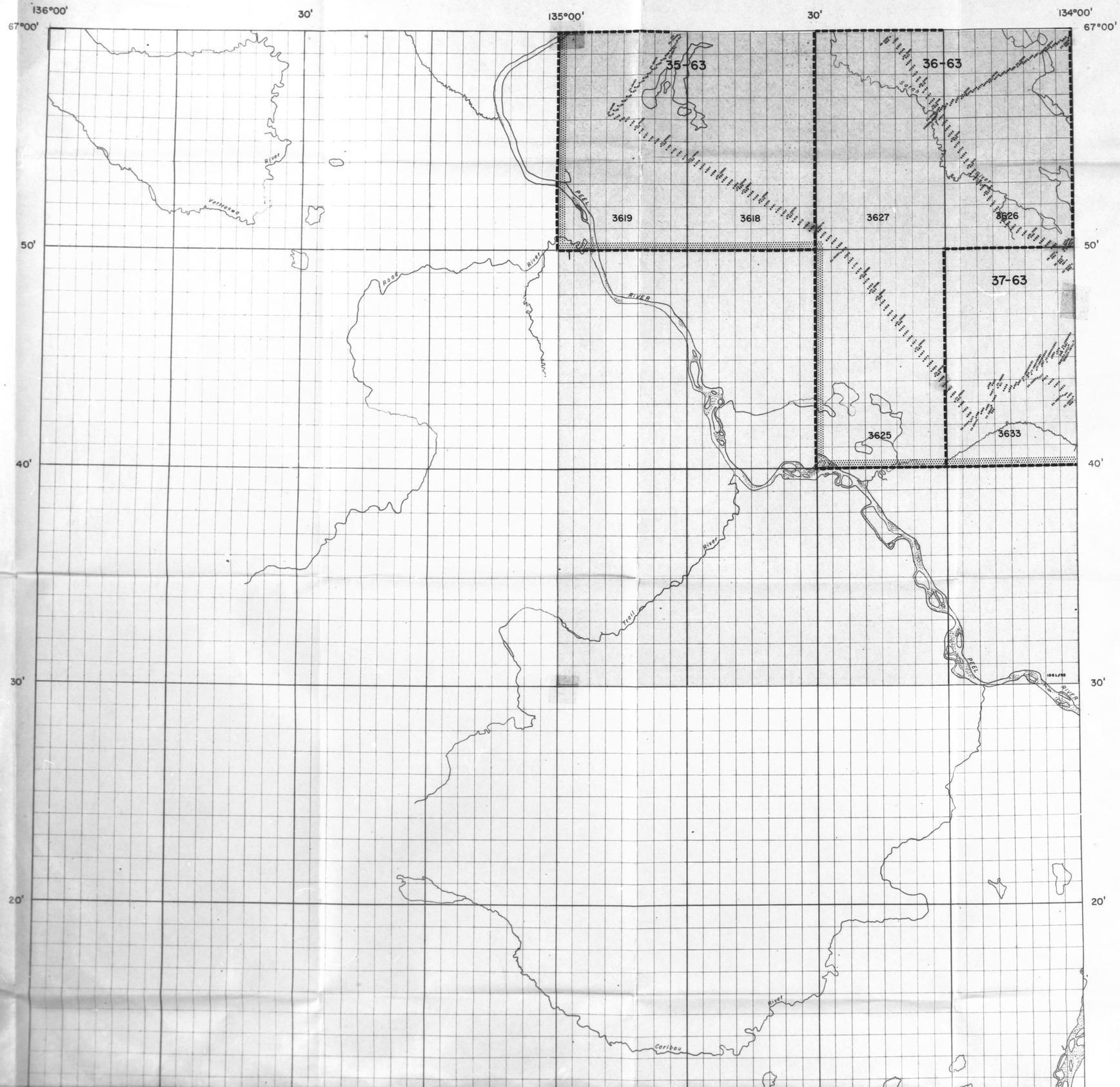
2 MILES TO 1 INCH

CONFIDENTIAL

5241			5240

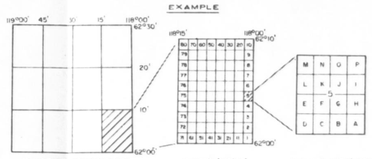
G 106 L L

IMPERIAL OIL ENTERPRISES LTD.
EXPLORATION DEPARTMENT PEACE RIVER DIVISION



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2-1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 40 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

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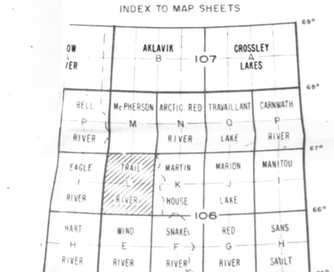
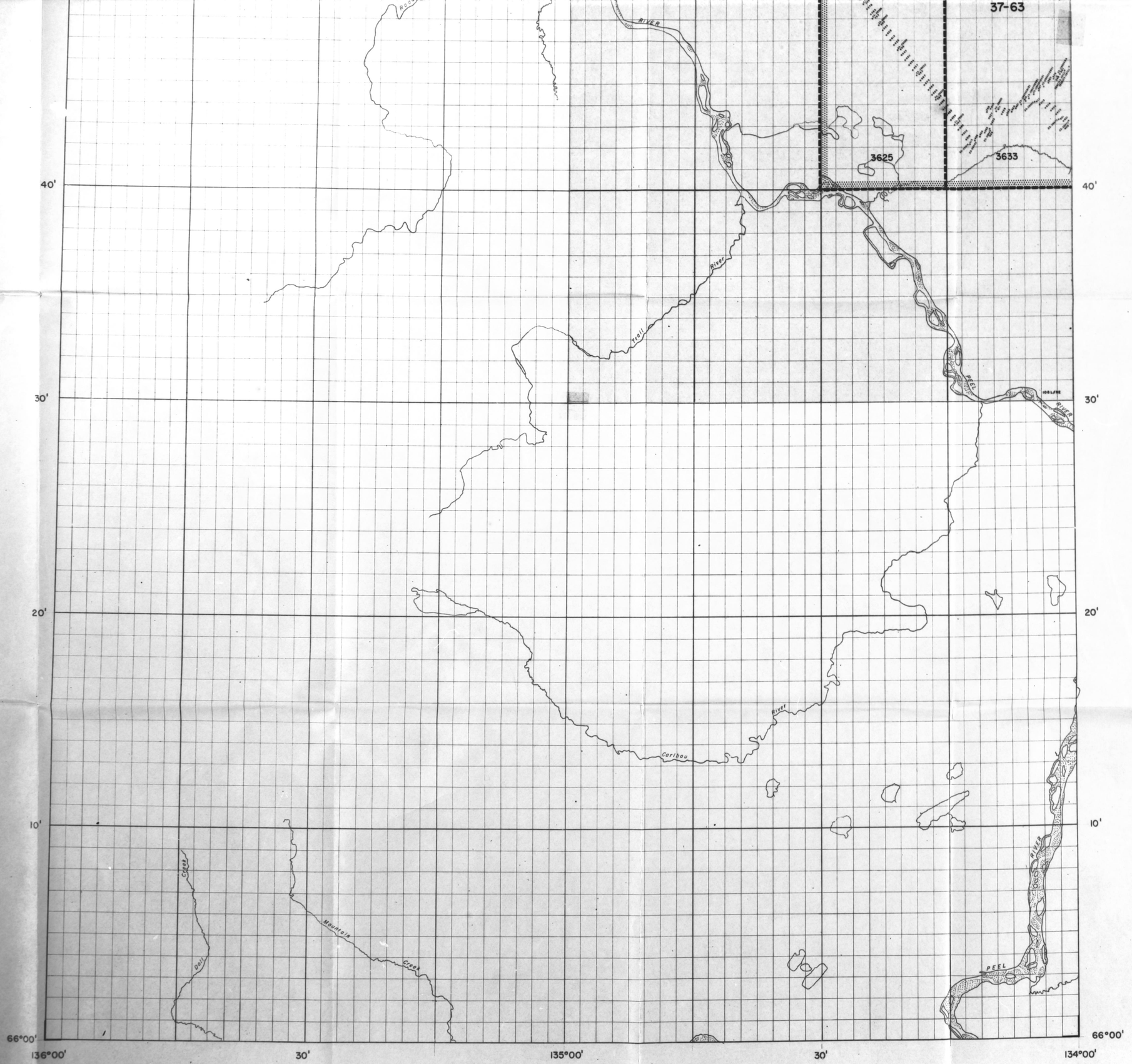
INDEX TO MAP SHEETS



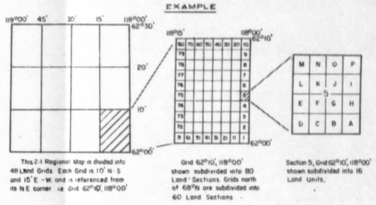


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

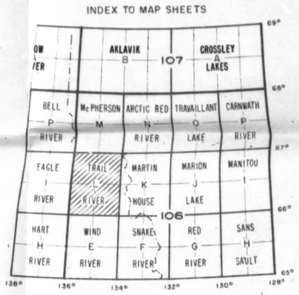


This 2-1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N & S and 15' E & W, and is referenced from its N.E. corner, i.e. Grid 62°10', 118°00'.

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



2 of 2

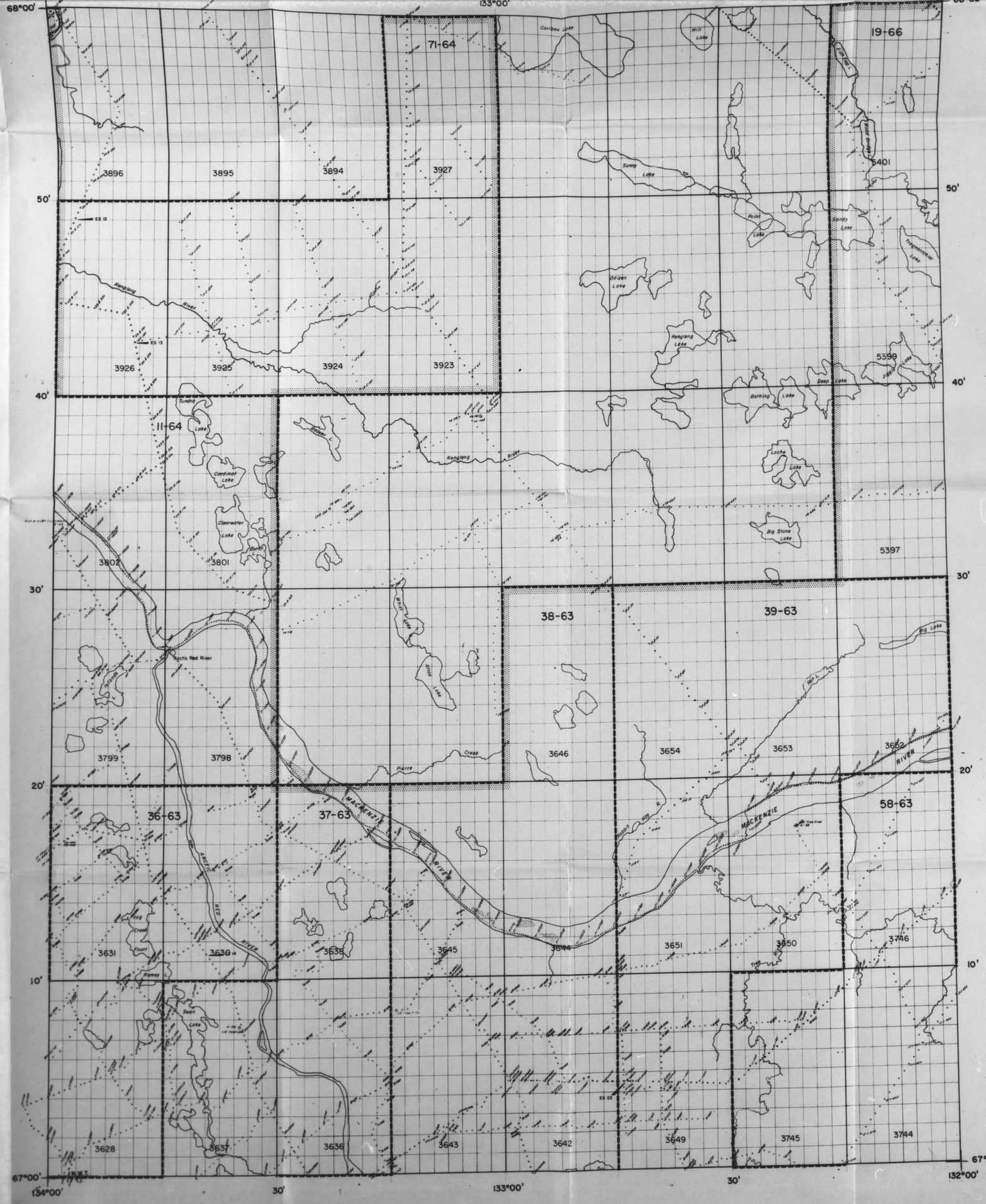
106L TRAIL RIVER

2 MILES TO 1 INCH

ELEVATIONS

CONFIDENTIAL

14962

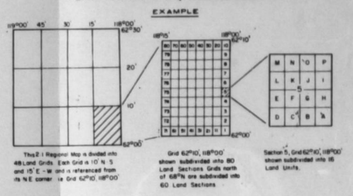


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



Thus 2 : Regional Map is divided into 48 Land Grids. Each Grid is 10' N & S and 15' E - W and is referenced from its N.E. corner i.e. Grid 62°10', 68°00'

Grid 62°10', 68°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 68°00' shown subdivided into 16 Land Units.

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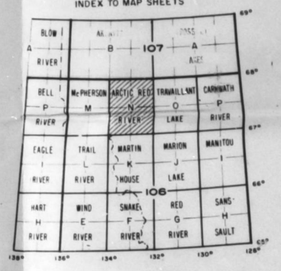


SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

ES 14 - EXPANDED SPREAD

2 of 2

106 N ARCTIC RED RIVER

2 MILES TO 1 INCH

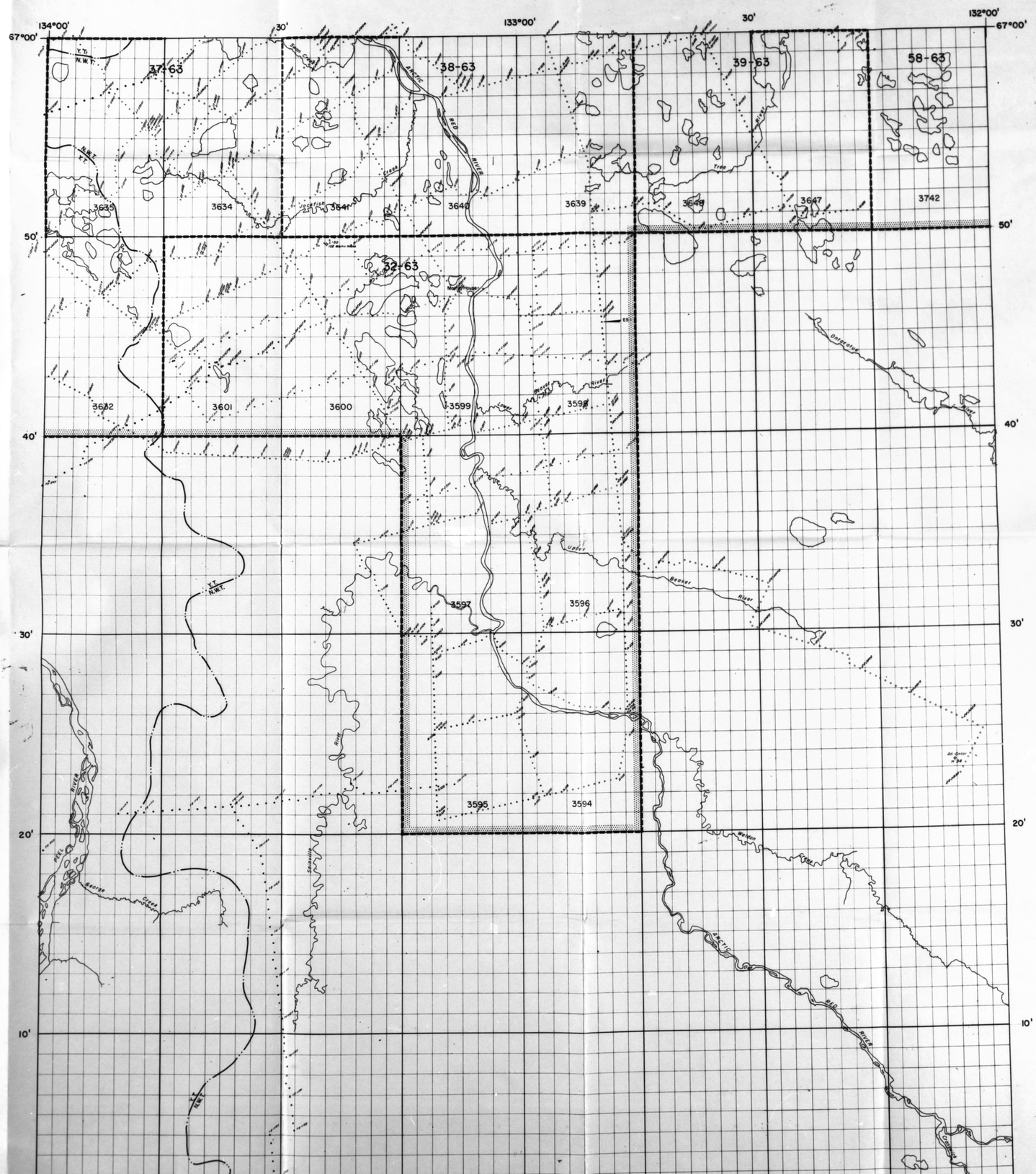
CONFIDENTIAL

5241			5240

ISSUED JUNE 1, 1967

G	106 K	I			L

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

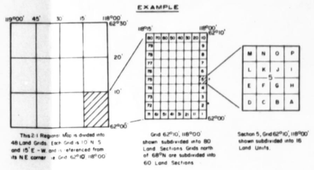


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2 I Region Map is divided into 48 Land Grids (Left Grid = 17 N, 5 and 15 E - M part - referenced from its N.E corner at Grid 62°42' 118°00'

Grid 62°42', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°42', 118°00' shown subdivided into 16 Land Units.

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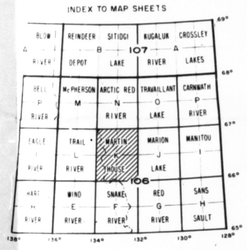


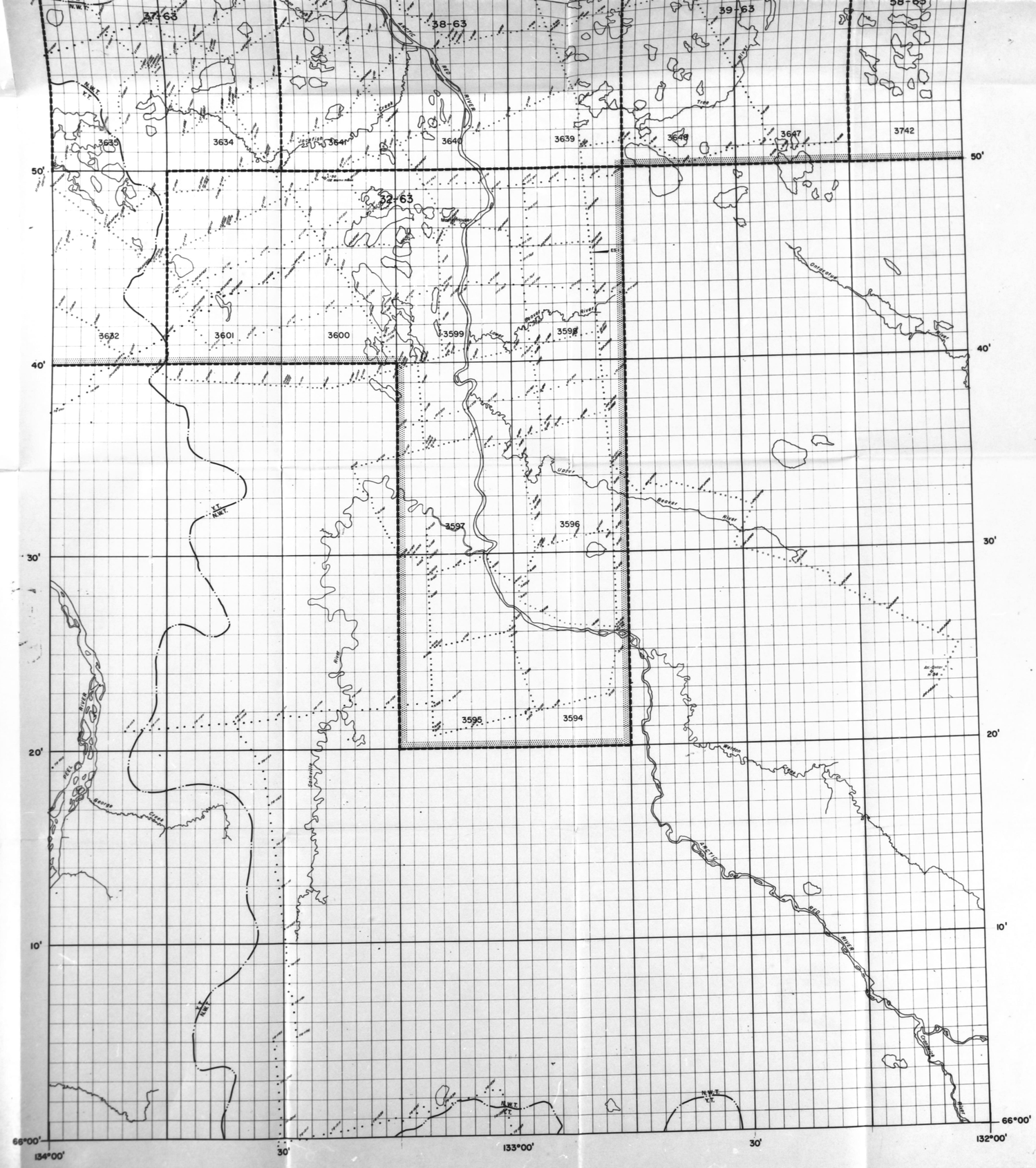
SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

ES I - EXPANDED SPREAD

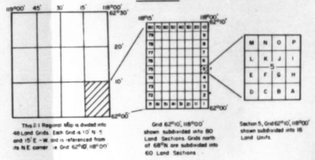


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



The 2-1 Regional Map is divided into 48 Land Grids. Each Grid is 1/2° N.-S. and 15' E.-W. and is referenced from its N.E. corner — in Grid 62°00' 68°00'

Grid 62°00', 68°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°00', 68°00' shown subdivided into 16 Land Units

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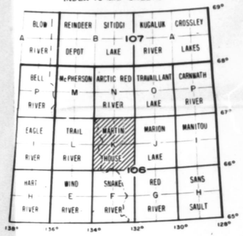


SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

ES 1 — EXPANDED SPREAD

2 of 2

106 K MARTIN HOUSE

2 MILES TO 1 INCH

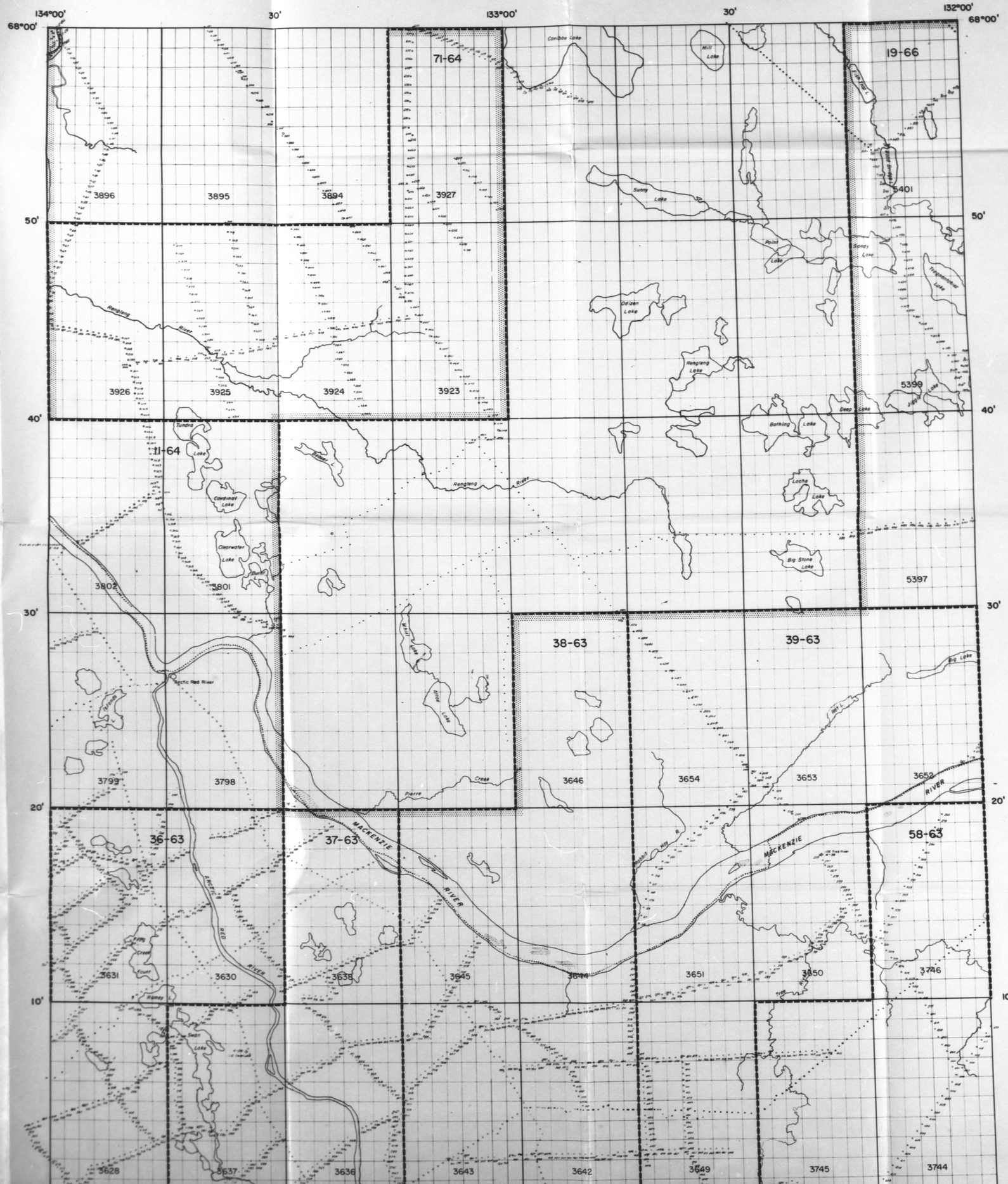
CONFIDENTIAL

5235			5234

WELLS APRIL 18 1966

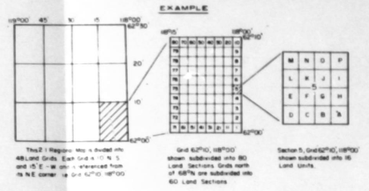
G	106 N.	13			L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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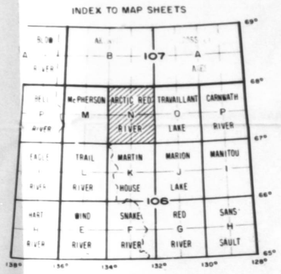

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SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

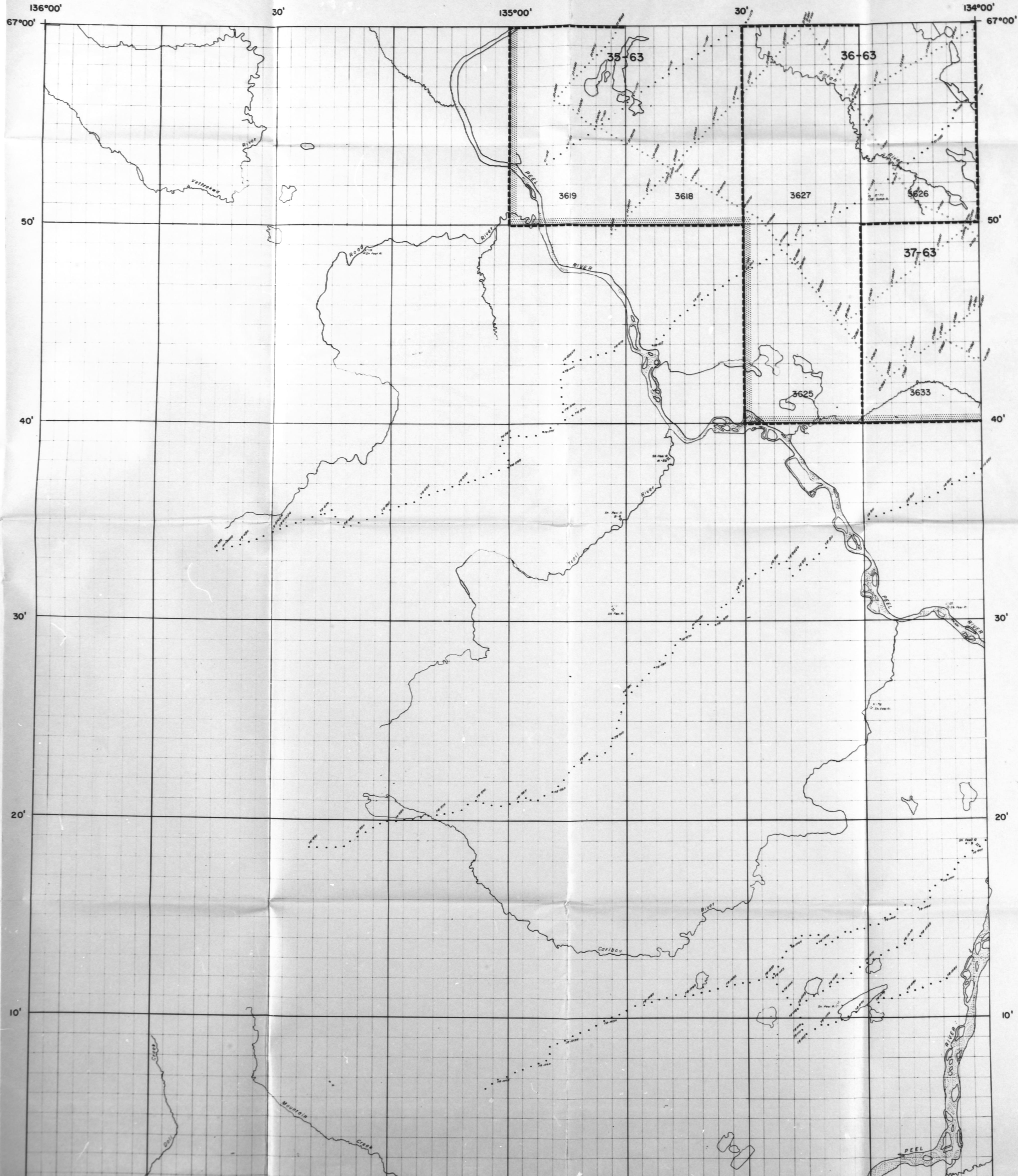
Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

G	106 L	1			L	

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

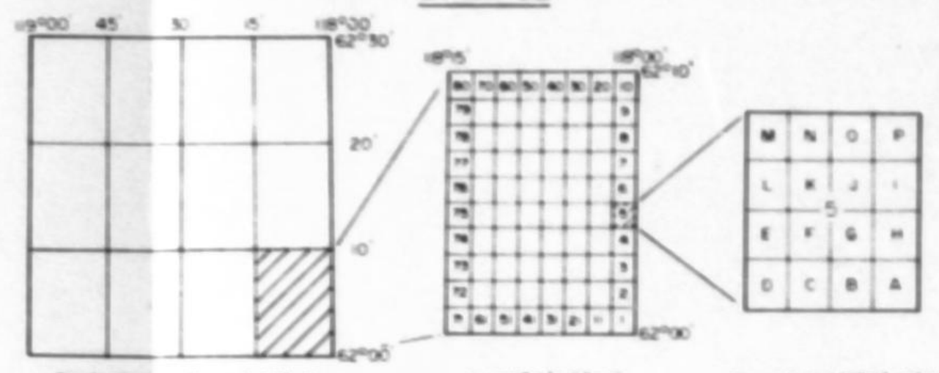


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

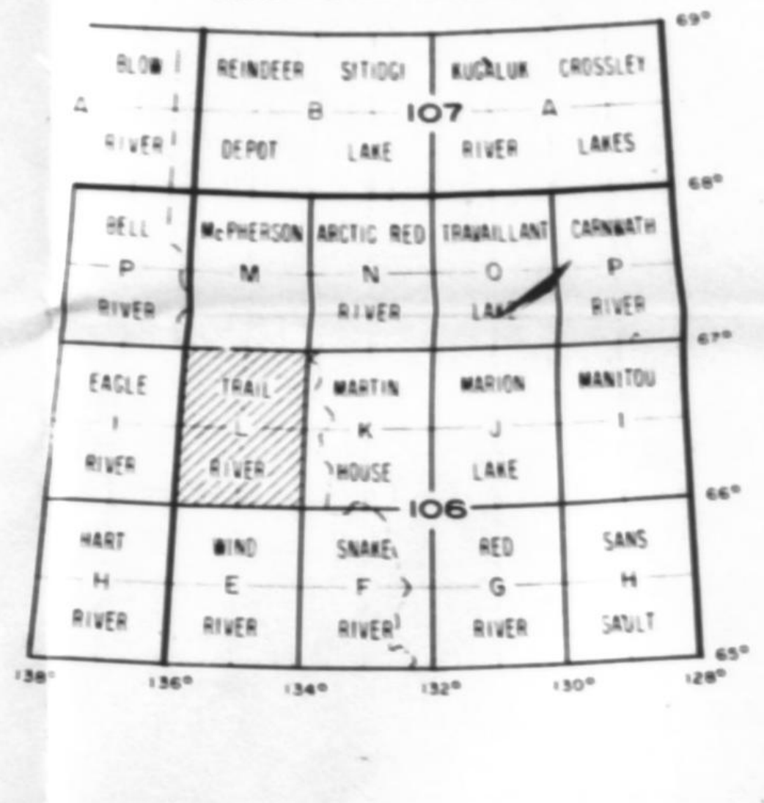


This 2.1 Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner i.e. Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections.

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



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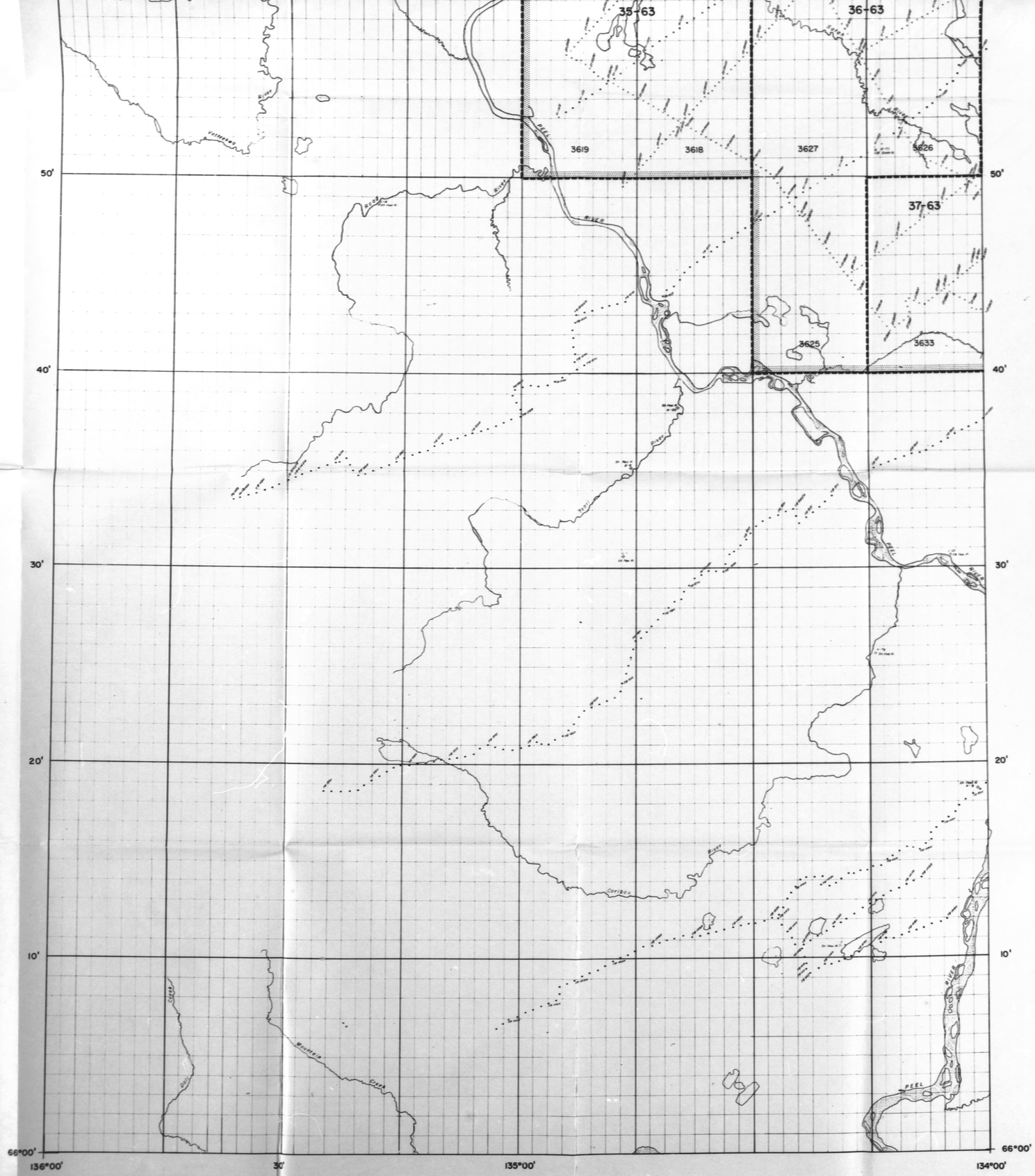
SEISMOGRAPH MAP

Contour Interval ______________________
Datums: Plane ________ *Velocity* ________

REVISED ____Sept. 1963______

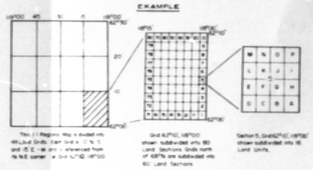


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



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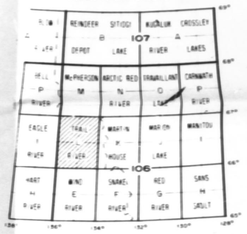


SEISMOGRAPH MAP

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

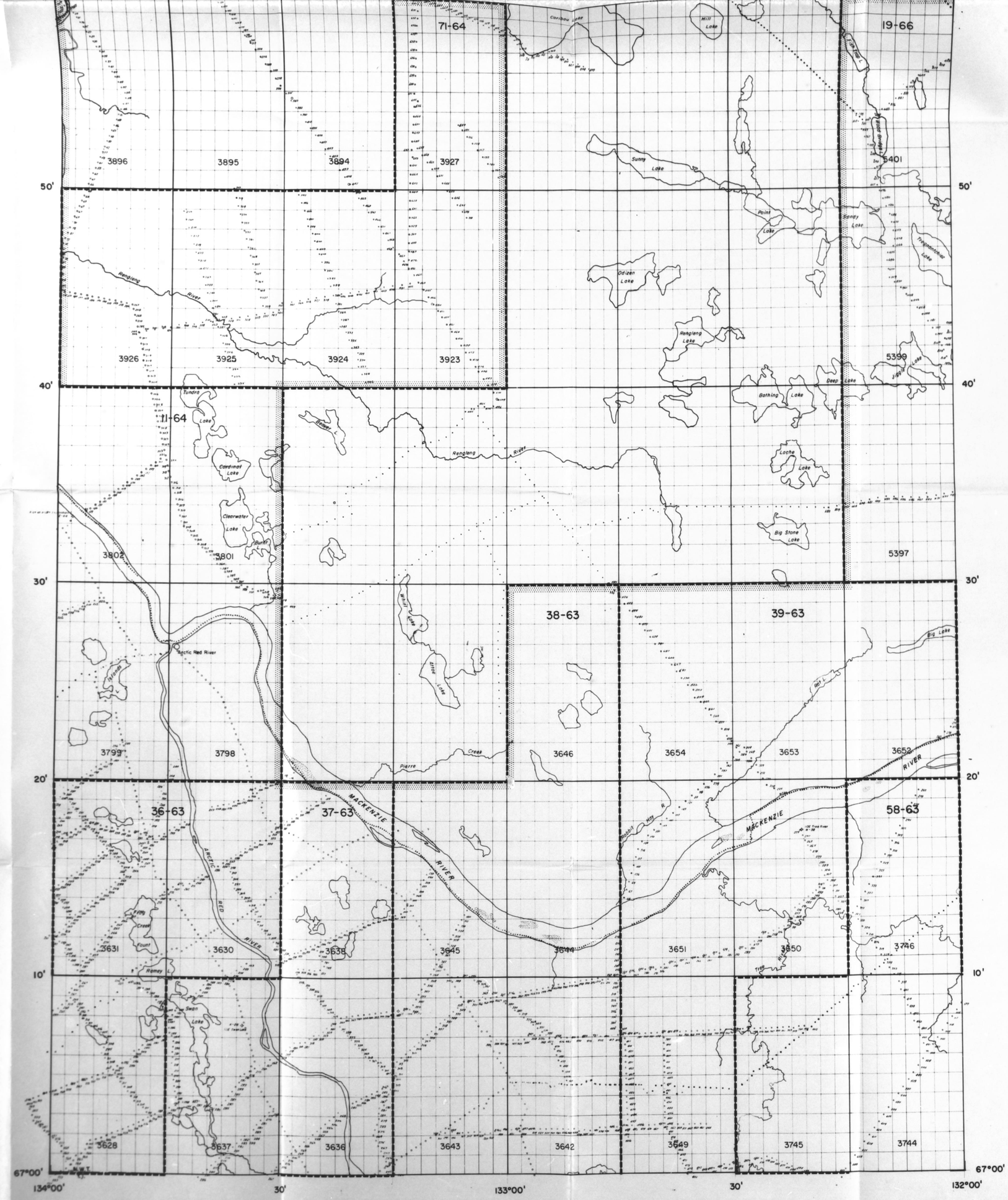
2 of 2

106L TRAIL RIVER

2 MILES TO 1 INCH

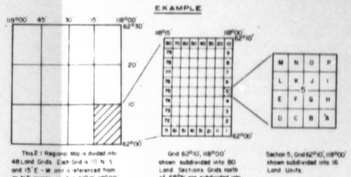
CONFIDENTIAL

5237 | 5236



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE

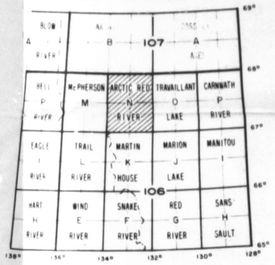


This 2 1 Regional Map is divided into 48 Land Grids. Each Grid is 15° N. S and 15° E - W and is referenced from its N.E. corner ie Grid 62°00' 118°00'

Grid 62°00', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°00', 118°00' shown subdivided into 16 Land Units.

INDEX TO MAP SHEETS



SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums Plane _____ Velocity _____

REVISED _____

2 of 2

106N ARCTIC RED RIVER

2 MILES TO 1 INCH

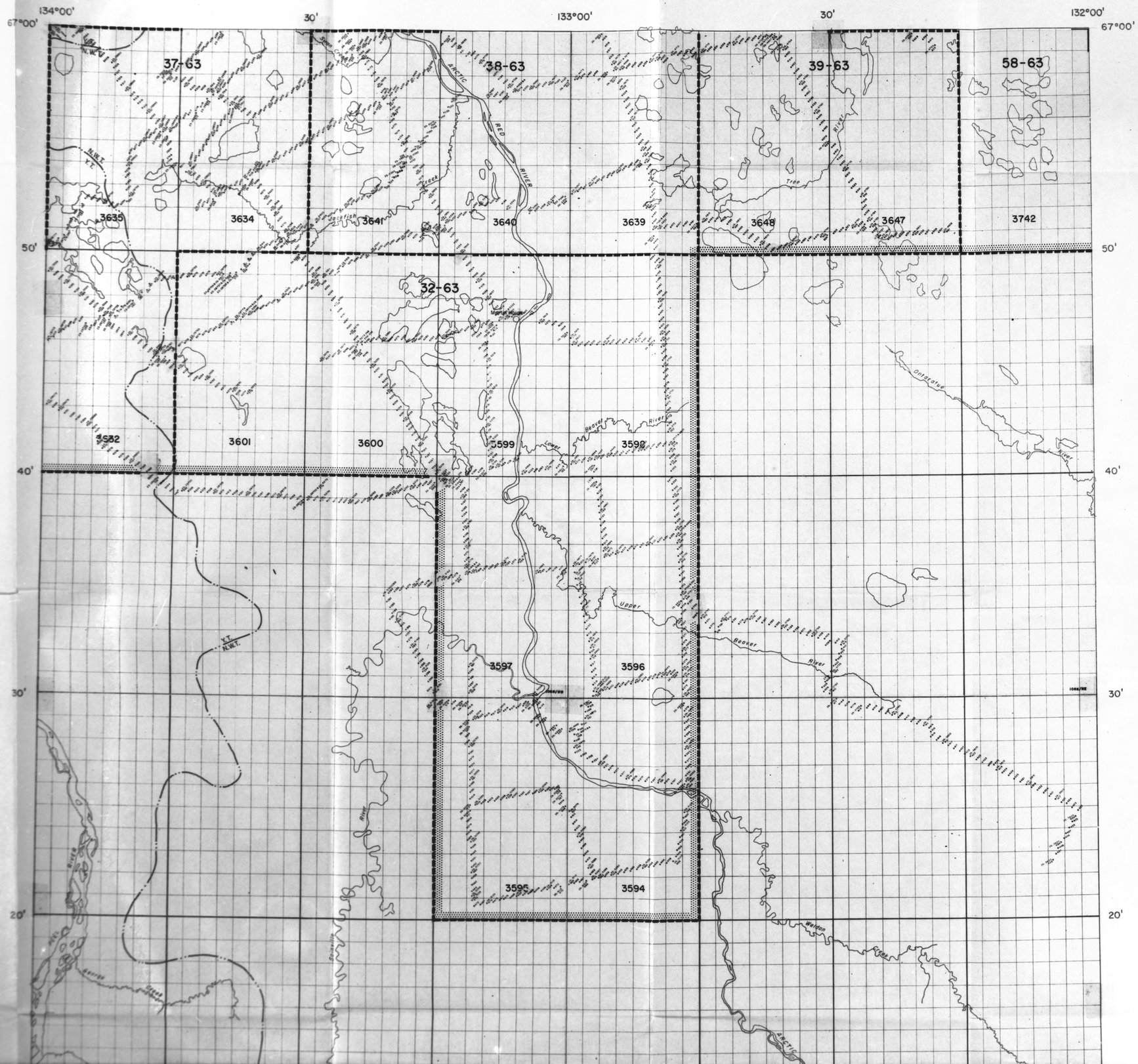
CONFIDENTIAL

5240

G 106 K

L

IMPERIAL OIL ENTERPRISES LTD.
EXPLORATION DEPARTMENT PEACE RIVER DIVISION

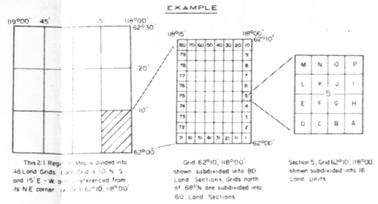


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2.1 Regi[illegible] Map is divided into 48 Land Grids [illegible] Grid is 10' N-S and 15' E-W [illegible] referenced from its N.E. corner [illegible] Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units

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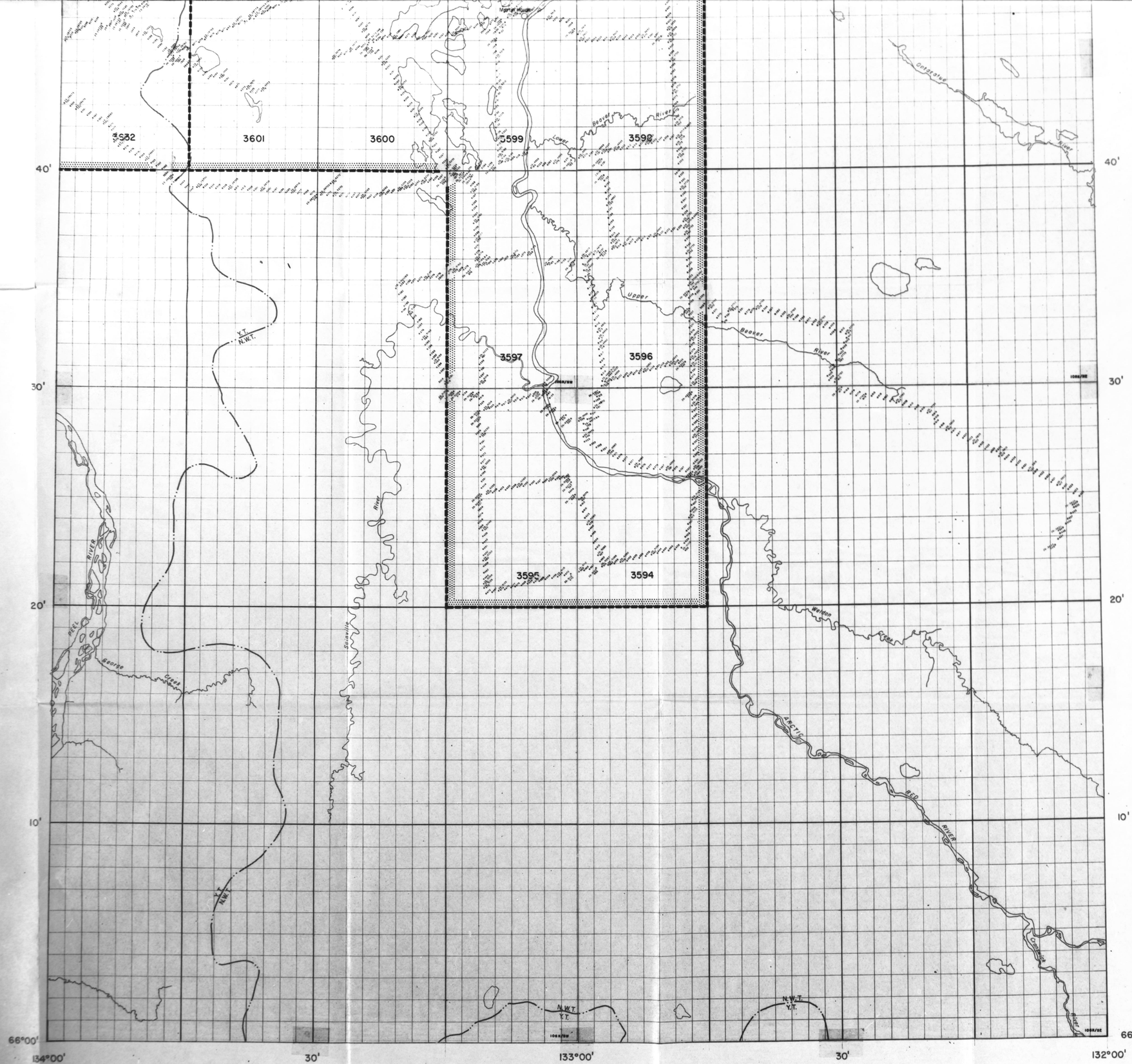
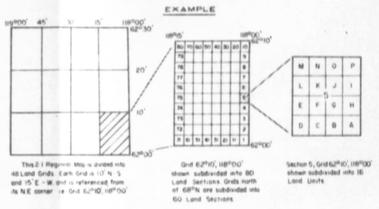


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2.1 Regional Map is divided into 48 Land Grids. Each Grid is 1.0° N-S and 1.5° E-W and is referenced from its N.E. corner i.e. Grid 62°00', 118°00'

Grid 62°00', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

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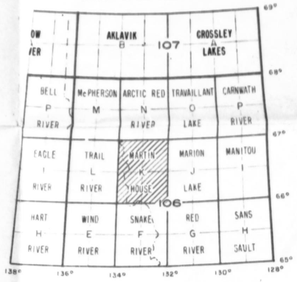


2 of 2

106 K MARTIN HOUSE

2 MILES TO 1 INCH

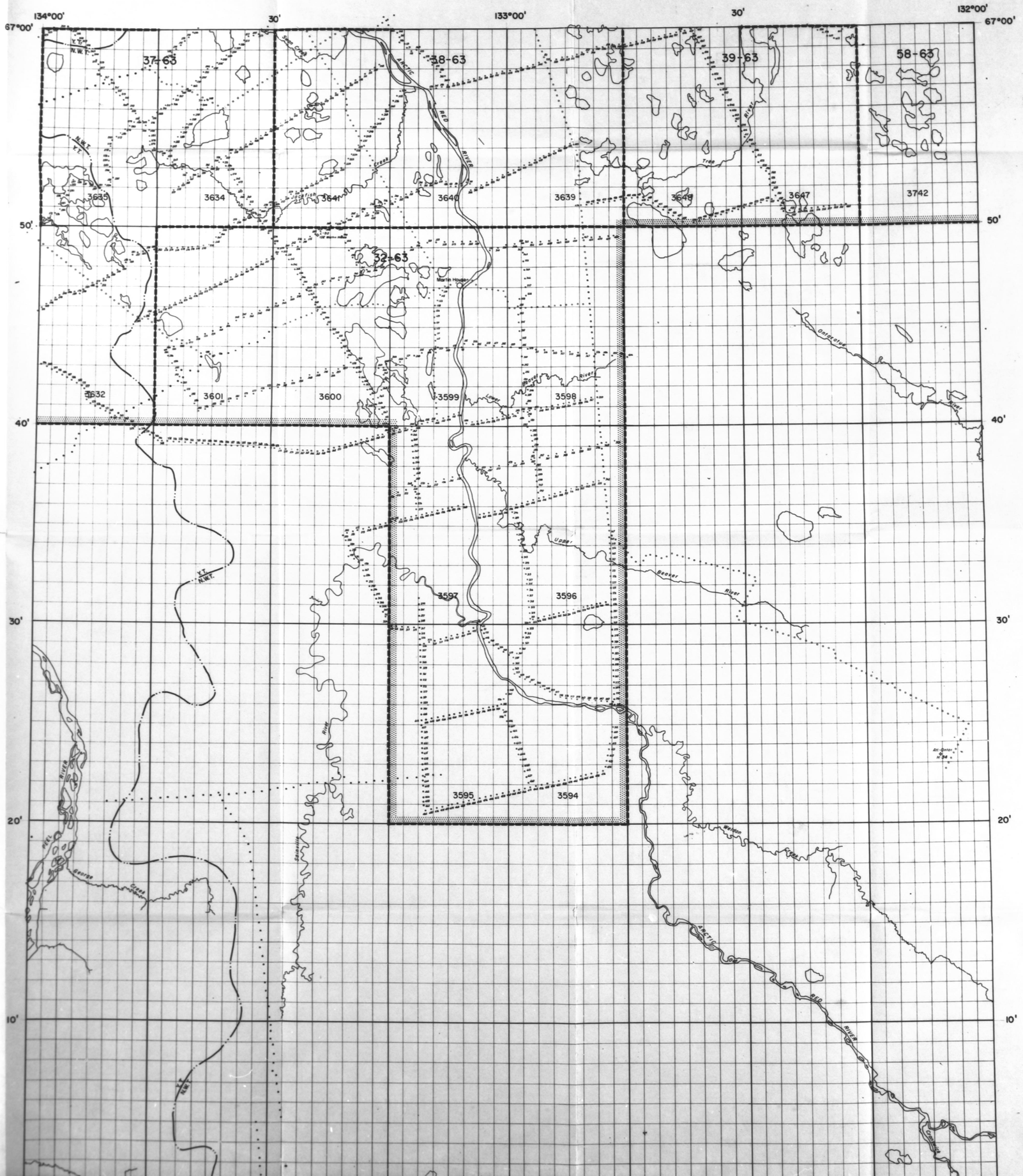
ELEVATIONS

CONFIDENTIAL

14961

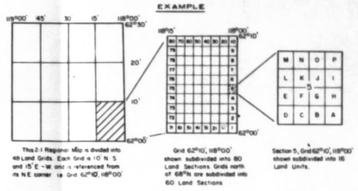
G	106 K	17			L

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



N.W.T. LAND REFERENCING SYSTEM
AS APPLIED TO
TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2-1 Region map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner. Its Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

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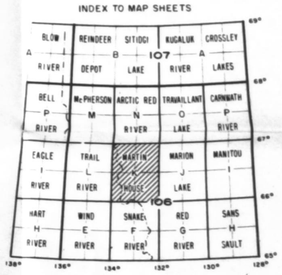

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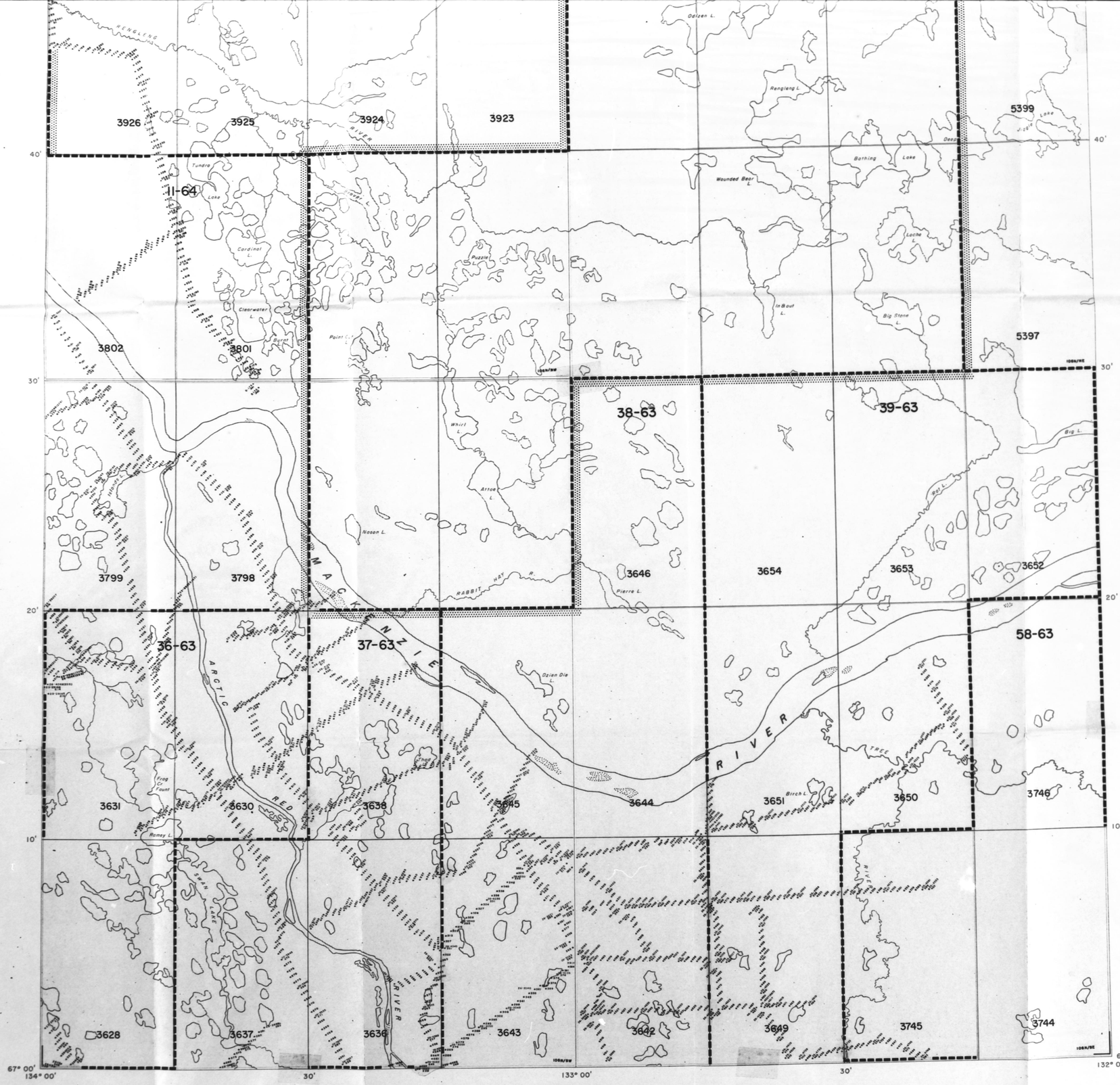
SEISMOGRAPH MAP
SHOT POINT ELEVATIONS

Contour Interval _____
Datums: Plane _____ Velocity _____
REVISED _____


134° 00'
68° 00'
30'
133° 00'
132° 00'
68° 00'
50'
40'
30'
20'
71-64
19-66
3896
3895
3894
3927
5401
3926
3925
3924
3923
5399
11-64
5397
3802
3801
38-63
39-63
3799
3798
3646
3654
3653
3652
36-63
37-63
58-63
CARIBOU LAKE
Hill L.
TRAVAILLANT
High Pt. L.
Wood Bridge
RIVER
Sunny Lake
Point L.
Odizen L.
Rengleng L.
RENGLENG
Wounded Bear L.
Bathing Lake
Deep Lake
Tundra Lake
Cardinal L.
Clearwater L.
Burnt L.
Puzzle L.
Point L.
Loche L.
Big Stone L.
Whirl L.
Artee L.
Noson L.
Big L.
Bay L.
RABBIT HAY R.
Pierre L.
Ozien Die L.
MACKENZIE
ARCTIC

107



ARCTIC RED RIVER

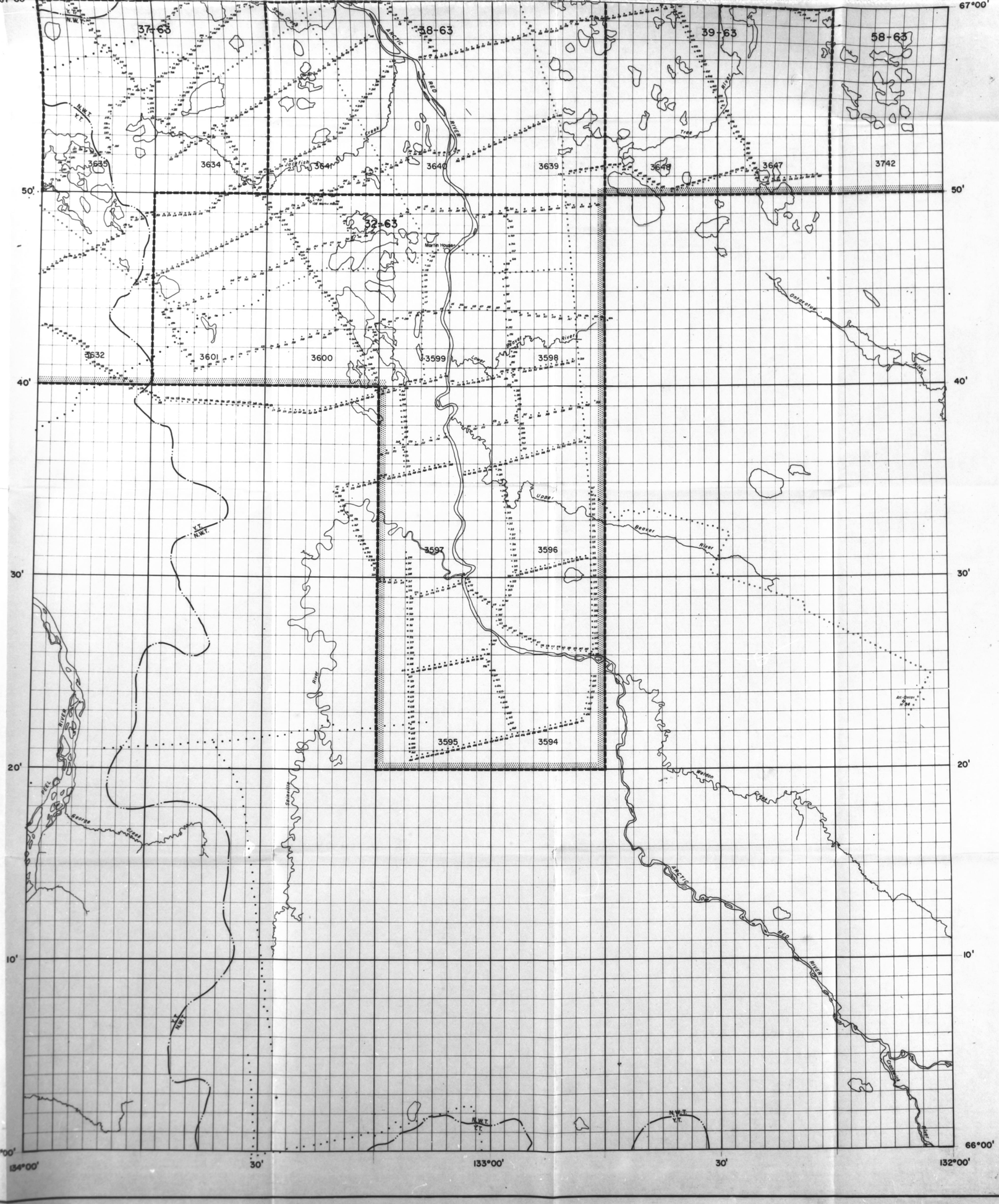
Scale : 1 Inch = 2 Miles

ELEVATIONS

2 of 2

CONFIDENTIAL

IMPERIAL OIL ENTERPRISES

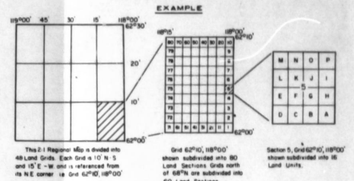


N.W.T. LAND REFERENCING SYSTEM

AS APPLIED TO

TERRITORIAL OIL & GAS REGULATIONS

EXAMPLE



This 2-I Regional Map is divided into 48 Land Grids. Each Grid is 10' N-S and 15' E-W and is referenced from its N.E. corner, ie Grid 62°10', 118°00'

Grid 62°10', 118°00' shown subdivided into 80 Land Sections. Grids north of 68°N are subdivided into 60 Land Sections

Section 5, Grid 62°10', 118°00' shown subdivided into 16 Land Units.

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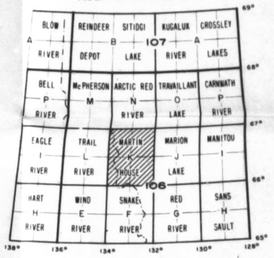

SEISMOGRAPH MAP

SHOT POINT ELEVATIONS

Contour Interval _____

Datums: Plane _____ Velocity _____

REVISED _____

2 of 2

106 K MARTIN HOUSE

2 MILES TO 1 INCH

CONFIDENTIAL

5234

WILLS APRIL 18 1966