

57-6-6-59

REPORT ON A SEISMIC SURVEY
OF THE
FORT GOOD HOPE AREA
NORTHWEST TERRITORIES

For
MOBIL OIL CANADA LTD.

By
GLOBE UNIVERSAL SCIENCES CANADA LTD.

From
November, 1969 to May, 1970

Submitted by
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PROJECT NO. 201

DATE SUBMITTED: JULY, 1970



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ENCLOSURES

Hume Time Structure Map

Surface Elevation Map

Dozing Map

Survey Traverse Map

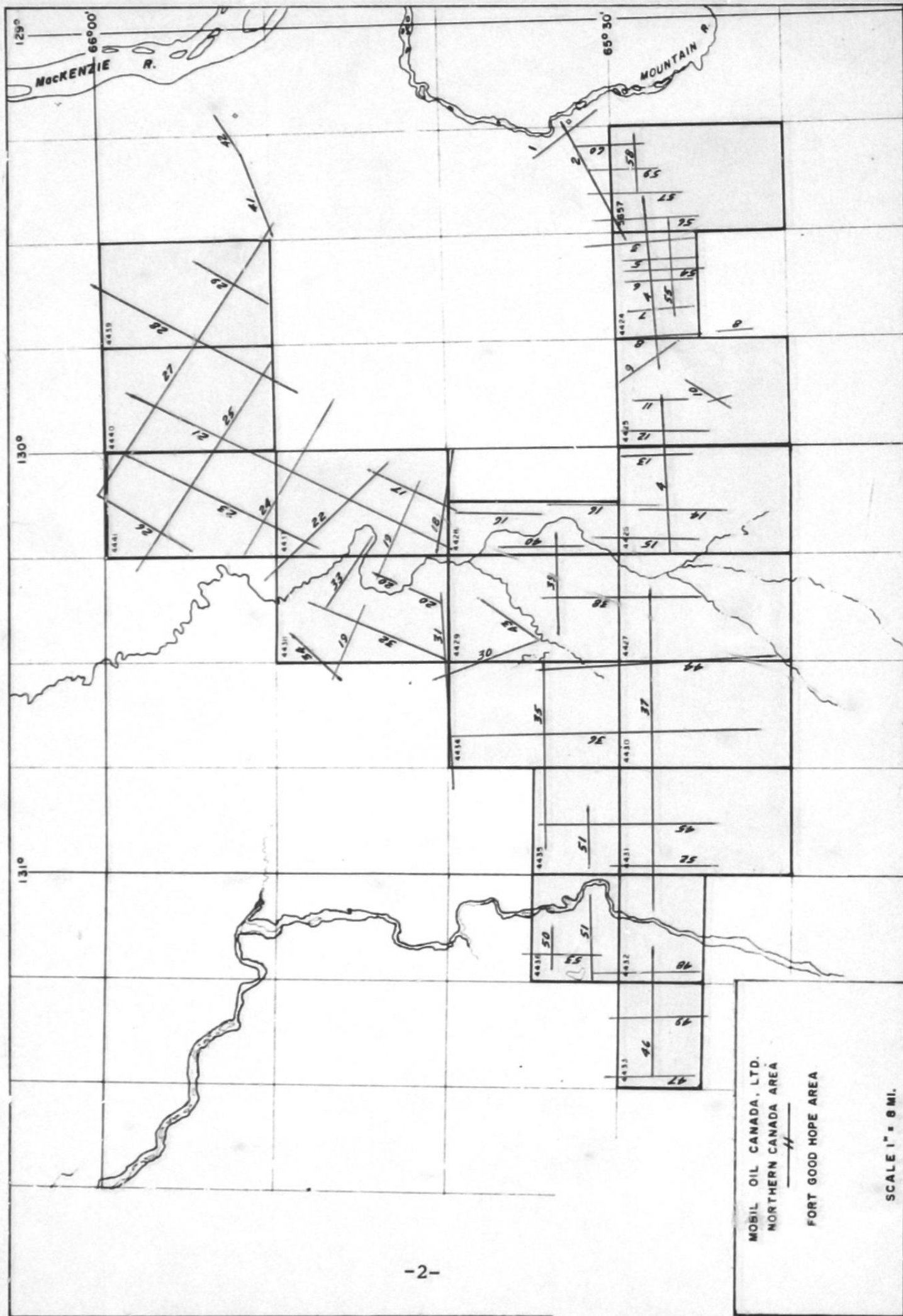
I N T R O D U C T I O N

This is the Final Report of a Reflection Seismic Survey employing four fold Common Depth Point technique in the Fort Good Hope Area Northwest Territories, for Mobil Oil Canada Ltd. of Calgary, Alberta.

The survey was conducted by Globe Universal Sciences Canada Ltd. during the period November 24, 1969 to April 25, 1970.

L O C A T I O N O F P R O J E C T

The project area is located in the Lower MacKenzie River Area and lies between latitudes $65^{\circ}15'$ north and $66^{\circ}00'$ north and longitudes $129^{\circ}00'$ west and $131^{\circ}30'$ west. The program was carried out in permit blocks 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441 and 5657.



T O P O G R A P H Y

The northern portion of the project area consists of relatively flat muskeg dotted with numerous small lakes and sloughs, ground cover being principally scrub spruce.

Surface elevations rise sharply to the south as the program area approaches the MacKenzie Mountains. The terrain is typically Foothills, with sharp rises and depressions and steep creek and river banks.

The drainage of the eastern portion of the program area is controlled by the Mountain and Hume Rivers, the central portion by the Ramparts River, and the western portion by the Arctic Red River.

R E C O R D Q U A L I T Y

Record quality on Lines 1, 2, 41, 42, 46, 47, 48, 49 and 52 is considered very poor.

Record quality on Lines 3, 3X, 4, 5, 6, 7, 8, 9, 15, 16, 29, 35, 36, 37, 44, 45, 50, 51 and 53 is considered fair with the exception of the north end of Line 3, the east end of Line 4 and the south end of Line 8.

Record quality on Lines 4X, 10, 11, 12, 13, 14, 38, 39, 40, 43, 54, 55, 56, 57, 58, 59 and 60 generally fair to good.

Record quality on Lines 17-34 inclusive generally good with some poor quality records adjacent to the small lakes.

Two and three hole patterns were used in poor record areas in an attempt to improve record quality.

D I S C U S S I O N O F R E S U L T S

Time structure maps have been prepared for the Hume event from an interpretation of field records.

A pronounced east-west low trend extends

across the southern extremity of the surveyed area, generally paralleling the trend of the MacKenzie Mountains.

Anomaly 'A' is centered in the northwest corner of Map Sheet 106 H6 and is approximately 6 miles long and 3 miles in width, with the possibility of 400 milliseconds of closure. Evidence of this anomaly is seen on the surface topography map, suggesting a structure of recent origin.

Record quality on Lines 1, 2 and 4 was very poor, and continuity is non-existent on the crest of the anticline. Additional seismic control is required to verify closure to the north on this feature.

Anomaly 'B' extends across Map Sheets 106 H6 and 106 H5 in an east-west direction. This anomaly is believed to be part of the disturbed belt associated with the MacKenzie Mountain uplift. The Hume horizon rises to the south at approximately 500 milliseconds per mile (2 way).

The typical Hume character appeared to be influenced by the steep dip associated with this anomaly but the continuity is considered to be reliable.

Anomaly 'C' extends from Line 14 on Map Sheet 106 G8, through 106 G7 and 106 G6, and in all probability is a continuation of Anomaly 'B'. This anomaly has dips of similar magnitude to those encountered on Anomaly 'B' and strong evidence of associated faulting as indicated on Lines 38, 44, 36 and 45.

Structural changes on Lines 52 and 48 are also suggestive of faulting but direct evidence is absent because of exceedingly poor record quality.

Anomaly 'D' is located on Map Sheet 106 G6 but due to very poor record quality is considered, at present, to be unreliable.

Anomaly 'E' is located on Map Sheet 106 G11 and is considered to be reliable. The extent of this feature cannot be determined without additional seismic control.

Anomaly 'F' is located in the southwest corner of Map Sheet 106 G10. This anomaly shows approximately 60 milliseconds of reversal in an east-west direction but lacks north and south seismic control.

Record quality on Lines 41 and 42, Map Sheet 106 H14, was consistently poor, however a weak reversal on the Hume horizon in association with the Triad-B.P.-Arco C.C. Hume River 0-62 abandonment was observed.

Map Sheets 106 H14, 106 G9, 106 H13 and 106 G16 show a regional Hume, dipping to the south-southwest, at a rate of approximately 30 milliseconds to the mile.

C O N C L U S I O N S

An attempt was made initially to identify and map the Key Scarp Horizon from the field records. This was abandoned as the survey progressed to the north because of multiple interference at this level.

It is felt that the Hume interpretation from the field records is reliable over most of the area and that this reflection could be mapped successfully on 100% coverage.

If it can be demonstrated that Hume structural highs are associated with Key Scarp Reef build-up, the Hume interpretation, from the records, becomes a valuable tool for defining areas of interest.

Respectfully submitted

GLOBE UNIVERSAL SCIENCES CANADA LTD.

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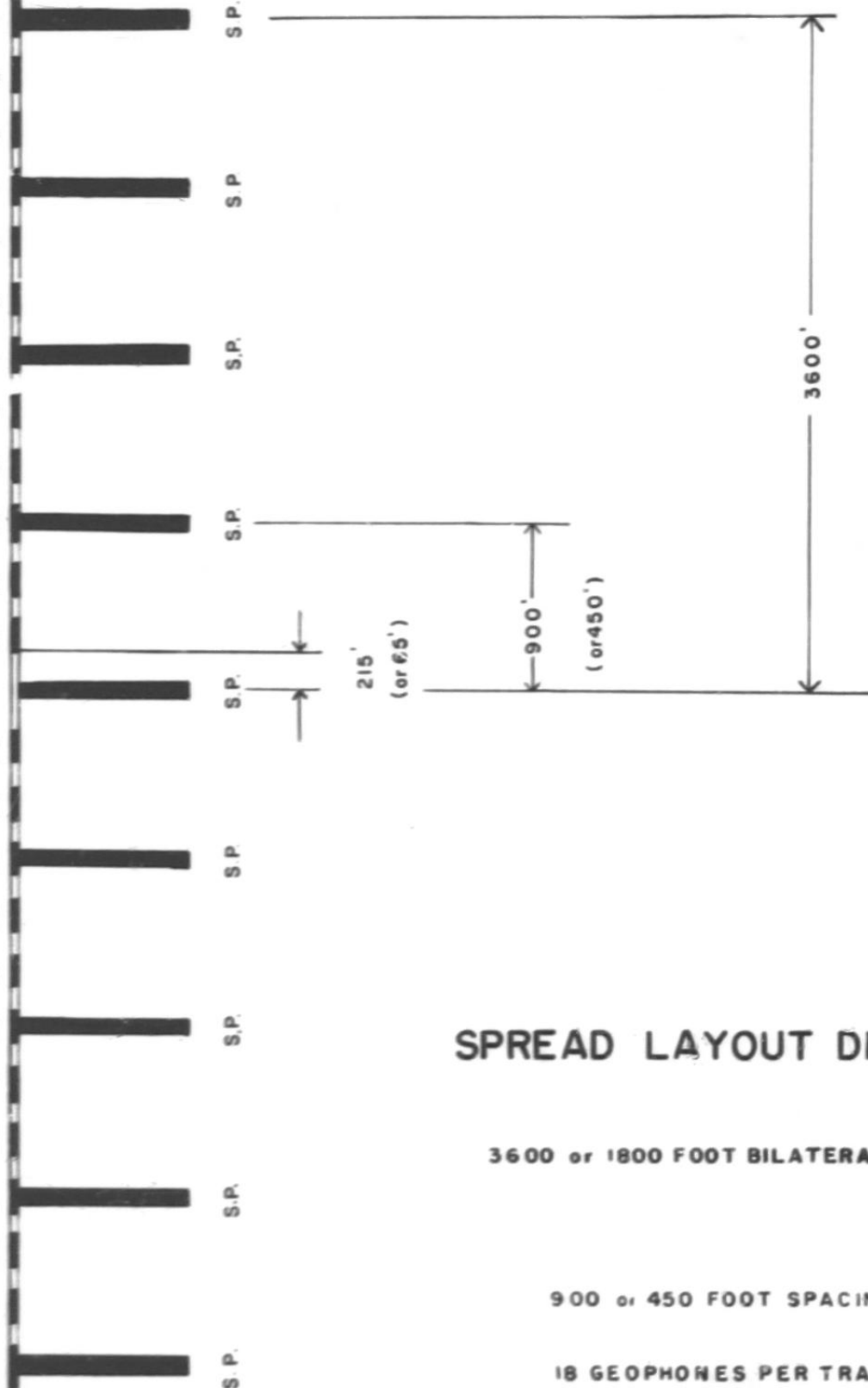
G. Lachance

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GROUP

GROUP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



SPREAD LAYOUT DIAGRAM

3600 or 1800 FOOT BILATERAL SPREAD

900 or 450 FOOT SPACING

18 GEOPHONES PER TRACE

FIELD PROCEDURES:

The recording equipment consisted of a twenty-four channel TIAC twenty-one track format DFS III Seismic Digital Field System with Binary Gain Amplifiers in conjunction with an SIE ERC 6 Electro-static camera.

Tape size - one inch, reel diameter - eight inches, with twelve hundred feet of tape per reel.

The field record length was four seconds and the sample rate two milliseconds.

A four fold Common Depth Point technique was used, together with a bilateral spread of either 1800-150-0-150-1800 feet or 3600-300-0-300-3600 feet.

The geophones were Mandrel Industries Ltd. EV-20B, with a frequency of 14 CPS.

Eighteen geophones per trace connected in series parallel, utilizing Mobil Oil's staggered geophone array, were used throughout the entire program.

Tabulation I outlines the field parameters on each line of the project with respect to spread length, station and shot hole intervals, shot hole

patterns, shot hole depth, charge size and recording filter.

Tabulation 2 gives a complete statistical summary of recording production and Tabulation 3 a statistical summary of the dynamite and caps.

DRILLING CONDITIONS:

Three Failing CFD-1 air-water drilling rigs, two Mayhew 1000 air drilling rigs, and one Top Drive drilling rig were used to drill the shot holes.

Drilling conditions were fair for the program lying between the MacKenzie and the Hume Rivers, with the exception of Lines 1 and 2 in close proximity to the Mountain River and lines extending towards the MacKenzie Mountains. Shot holes generally encountered clay, wet sand or shale, and in the difficult areas, gravel.

Drilling conditions on program between the Hume and the Ramparts Rivers was generally difficult in the southern portion, shot holes encountering gravel. Drilling in the northern portion was good, shot holes encountering muskeg, clay and wet sand.

Drilling on program between the Ramparts and Arctic Red Rivers was generally poor, shot holes encountering gravel and sandstone-limestone layers.

Drilling on program to the west of the Arctic Red River was consistently poor, shot holes mostly in gravel.

It is suggested that the addition of two more tracked drills, one air, one air-water, be considered for any future work in the area, and that the Lister Power Plant be wheel mounted so that it can be easily moved by the drills.

Tabulations 4 and 5 are a statistical summary of drilling production for Globe Universal Sciences Canada Ltd. and Bertram Drilling Ltd. respectively.

Tabulations 6 and 7 give a statistical summary of bits used during the operations.

DOZERS:

Five cats and one road grader were used in the winter's operation, together with a small road grader camp and two cat camps.

both control points being located at the Sans Sault stockpile on the MacKenzie River.

The vertical and horizontal closures are indicated as follows:-

Horizontal

Tie from PMO 6 to Yadek	543'N	618'E (not found)
Tie from Gay to Tan	32'N	27'E
Tie from Tan to Fern	37'N	61'E
Tie from Tan to Int	135'N	1'E
Tie from Tan to Part	86'N	34'E
Loop tie back to access road from MacKenzie River	248'N	48'E
Tie from Gay to intersection of Lines 8 and 9	57'N	121'E

Vertical

Tie from Gay to Line 2	0.8' Low
Tie from Gay to Line 57	1.7' Low
Tie from Yadek to Line 12	3.2' High
Tie from Tan to Line 20 (through Line 16)	15.9' Low
Tie from Fern to Part incorporating Loops via 35, 36, 37, 38 and 44	1.7' Low

Vertical

Tie from Tan to Fern at
intersection of Lines 31
and 36 12.7' Low

Tie from Int to Line 36 5.8' High

Tabulation 10 shows the changes and corrections to be applied to the original vertical field notes.

COMPUTING PROCEDURE:

First breaks were plotted for every fourth shot point, and velocities averaged for the four shot point interval.

The following intercept method was used to calculate the drift correction.

$$\Delta T = \left[\frac{T_2 - T_{UH}}{2 \cos \theta} \right] V_1 \left[\frac{1}{V_1} - \frac{1}{V_2} \right]$$

where T_2 = V_2 intercept averaged for two pertinent shot points.

T_{UH} = Uphole time averaged for two pertinent shot points.

V_1 = Average drift velocity for two pertinent shot points.

V_2 = Datum velocity of 11,000 ft./sec.

$$\sin \theta = \frac{V_1}{V_2}$$

ΔT is a one way mid-point drift correction in time and adjacent shot point corrections were obtained by pro-rating computed corrections.

The following method was used to reduce the shot and detector times to sea level.

$$(1) \quad E_s = E_{sp} - D_s$$

$$(2) \quad D_{sd} = E_s - E_d$$

$$(3) \quad T_{sd}^1 = \frac{D_{sd}}{V_d}$$

$$(4) \quad T_{sd} = T_{sd}^1 + \Delta T$$

$$(5) \quad T_{gd} = T_{sd} + T_{uh}$$

$$(6) \quad T = T_{sd} + T_{gd}$$

Where E_s = Shot Elevation

E_{sp} = Shot Point Elevation

D_s = Depth of Shot

E_d = Datum Elevation = Sea Level

D_{sd} = Distance from Shot Elevation to Datum

T_{sd}^1 = Uncorrected Time Shot to Datum

V_d = Datum Velocity = 11,000 ft./sec.

T_{sd} = Corrected Time Shot to Datum

Tuh = Uphole Time
Tgd = Corrected Time Datum to Ground
T = Total Correction

PLAYBACK PROCEDURE:

All pertinent field data was passed on to Mobil Oil in Calgary for transmission to the Playback Center in Dallas, Texas.

Tabulation 11 shows the revisions applied to the tape data sheets for all lines in the project.

The revised tape data sheets have been submitted to Mr. John A. MacDonald of Mobil Oil.

GENERAL INFORMATION:

All vehicles and camp equipment were moved from Calgary to Hay River, N.W.T. about the end of July, 1969.

Three separate barge off-loadings took place at the Sans Sault stockpile between the end of August and the middle of September, 1969. The first brought in the camp, wheeled vehicles, and bladder fuel tanks.

The second brought in the drills, magazines, dynamite, caps and bits. The third from Norman Wells, N.W.T., brought in the supply of diesel fuel and gasoline.

The field operation was supported by Mobil Oil's DC-3, with a once a week flight from Calgary to Norman Wells, bringing in mainly food provisions and spare parts. A Wardair Twin Otter, on charter to Mobil Oil, was based in Norman Wells from November 15, 1969, to April 28th, 1970, and made trips to the field camp as required.

Three inspections were made by the Forestry Officials. Mr. W. Taylor, on January 8th and March 10th, 1970 and Mr. F. Adlum on April 16, 1970.

Communication was maintained to Calgary by radio through the Edmonton Answering Service and to Norman Wells by radio. A ground to air communication was also maintained with the Wardair Twin Otter. Two way communication was also maintained between all key field units, the dozer camps and the main camp.

The field crew received one visit from Mr. B. Bruce and Mr. L. Cantalon of Mobil Oil, and several visits by Mr. John A. MacDonald, also of Mobil Oil,

during the winter's operation.

Mr. George Lachance of Globe made one field trip, while Mr. F. Deakin, also of Globe, visited the crew several times.

Regular supervisory trips were made by Mr. A. Straub and Mr. M. Chernichiwan of Globe, Mr. R. Hays of Bertram Drilling, and Mr. K. Borek of Borek Construction.

Tabulation 9 shows the approximate gasoline and diesel fuel consumption for the entire operation.

Tabulation 17 shows the location of camp sites and airstrips for the entire operation.

EQUIPMENT:

See Tabulations 12, 13 and 14 for equipment used by Globe Universal Sciences Canada Ltd., Bertram Drilling Ltd. and Borek Construction Ltd.

It is suggested that the following changes be made to Globe's equipment for further work in the area.

Unit #7 be converted to a survey unit and

Unit #30 be deleted. Unit #33 be used as a Party Manager's vehicle and a crew cab be brought in for a personnel carrier. Unit #543 be converted to a flat deck supply unit and be replaced by a new line truck.

CAMP:

The large field operation presented difficulties at times, to provide adequate sleeping accommodation. With this in mind, it is tentatively suggested that the present office trailer and a combination spare parts and kitchen supply trailer be added. Both these units to be sloop mounted.

A new trailer is also required to house the camp power plants, the original trailer being destroyed by fire before the commencement of operations.

See Tabulation 16 for camp equipment outline.

PERSONNEL:

Tabulation 16 outlines the personnel roster for Globe Universal Sciences Canada Ltd., Bertram Drilling Ltd. and Borek Construction Ltd.

TABULATION I

FIELD PARAMETERS
FORT GOOD HOPE AREA
MOBIL OIL PARTY NO. 36

Line 36-1

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 2 Hole spaced 100' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 18-62

Field Record - Direct Playback

Line 36-2

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 2 Hole spaced 100' apart
(S.P. 56 - S.P. 134)

3 Hole spaced 60' apart
(S.P. 135 - S.P. 159)

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole
(S.P. 56 - S.P. 134)

2 1/2 lbs. per hole
(S.P. 135 - S.P. 159)

Recording Filter: 18 - 62

Field Record - Direct Playback

Line 36-3

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 3 Hole spaced 60' apart

Shot Hole Depth: 60'

Charge Size: 2 1/2 lbs. per hole

Recording Filter: 18 - 62

Field Record - Direct Playback

Line 36-3X

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 2 Hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 18 - 62

Field Record - Direct Playback

Line 36-4

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800
(S.P. 230 - S.P. 336)
3600-300-0-300-3600
(S.P. 768 - S.P. 823)

Station Interval: 150' (S.P.230 - S.P.336)
300' (S.P.768 - S.P. 823)

Shot Point Interval: 450' (S.P.230 - S.P.336)
900' (S.P.768 - S.P.823)

Shot Hole Pattern 2 Hole spaced 60' apart
(S.P. 230 - S.P. 248)
2 Hole spaced 100' apart
(S.P. 249 - S.P. 336)
2 Hole spaced 70' apart
(S.P. 768 - S.P. 787)
Single Hole
(S.P. 789 - S.P. 823)

Shot Hole Depth: 60'

Charge Size: 2 1/2 lbs. per hole
(S.P. 230 - S.P. 248)
5 lbs. per hole
(S.P. 249 - S.P. 336)
2 1/2 lbs. per hole
(S.P. 768 - S.P. 787)
5 lbs. per hole
(S.P. 789 - S.P. 797)
10 lbs. per hole
(S.P. 798 - S.P. 823)

Recording Filter: 18 - 62 (S.P.230 - S.P.336)
27 - 62 (S.P.768 - S.P.823)

Field Record: Direct Playback

Line 36-4X

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800
Station Interval: 150'
Shot Point Interval: 450'
Shot Hole Pattern: 2 Hole spaced 70' apart
Shot Hole Depth: 60'
Charge Size: 5 lbs. per hole
Recording Filter: 18 - 62
Field Record - Direct Playback

Line 36-5

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800
Station Interval: 150'
Shot Point Interval: 450'
Shot Hole Pattern: 2 hole spaced 100' apart
Shot Hole Depth: 60'
Charge Size: 5 lbs. per hole
Recording Filter: 18 - 62
Field Record: Direct Playback

Line 36-4X

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800
Station Interval: 150'
Shot Point Interval: 450'
Shot Hole Pattern: 2 Hole spaced 70' apart
Shot Hole Depth: 60'
Charge Size: 5 lbs. per hole
Recording Filter: 18 - 62
Field Record - Direct Playback

Line 36-5

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800
Station Interval: 150'
Shot Point Interval: 450'
Shot Hole Pattern: 2 hole spaced 100' apart
Shot Hole Depth: 60'
Charge Size: 5 lbs. per hole
Recording Filter: 18 - 62
Field Record: Direct Playback

Line 36-6

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 401 - S.P. 441)

2 hole spaced 70' apart
(S.P. 442 - S.P. 451)

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole
(S.P. 401 - S.P. 441)

2 1/2 lbs. per hole
(S.P. 442 - S.P. 451)

Recording Filter 27 - 62

Field Record - Direct Playback

Lines 36-7, 36-8, 36-9, 36-10, 36-11

4 Fold CDP - Bilateral

Spread Length: 1800-150-0-150-1800

Station Interval: 150'

Shot Point Interval: 450'

Shot Hole Pattern: 2 hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: Line 7 2 1/2 lbs. per hole
(S.P. 462 - S.P. 469)

5 lbs. per hole
(S.P. 470 - S.P. 480)

2 1/2 lbs. per hole
(S.P. 481 - S.P. 517)

Lines 8, 9, 10 and 11
2 1/2 per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-12

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-13

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: Single hole
(S.P. 871 - S.P. 874)
2 hole spaced 70' apart
(S.P. 875 - S.P. 892)

Single Hole
(S.P. 893 - S.P. 902)

Shot Hole Depth: 60'

Charge Size: 10 lbs. per hole
(S.P. 871 - S.P. 874)

5 lbs. per hole
(S.P. 875 - S.P. 892)

10 lbs. per hole
(S.P. 893 - S.P. 902)

Recording Filter: 27 - 62

Field Record - Direct Playback

Lines 36-14, 36-15, 36-16

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: Single Hole

Shot Hole Depth: 60'

Charge Size: 10 lbs. per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Lines 36-17, 36-18, 36-19, 36-20

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-21

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

**Shot Hole Pattern: 2 hole spaced 70' apart
(S.P. 1211 - S.P. 1300)
2 hole spaced 120' apart
(S.P. 1301 - S.P. 1304)
(S.P. 1513 - S.P. 1514)
3 hole spaced 60' apart
(S.P. 1515 - S.P. 1526)
2 hole spaced 70' apart
(S.P. 1527 - S.P. 1578)**

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-22

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole.

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-23

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 70' apart
(S.P. 1418 - S.P. 1455)

3 hole spaced 60' apart
(S.P. 1456 - S.P. 1482)

2 Hole spaced 70' apart
(S.P. 1483 - S.P. 1512)

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole

Recording Filter: 27 - 62

Field Record: Direct Playback

Lines 36-24, 36-25, 36-26, 36-27, 36-28, 36-29
36-30, 36-31, 36-32, 36-33, 36-34

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 Hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 5 lbs. per hole except
Line 30 S.P. 2336 - 2341
at 7 1/2 lbs. per hole

Recording Filter: 27 - 62

Field Record: Direct Playback

Line 36-35

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 2493 - S.P. 2562)

Single Hole
(S.P. 2563 - S.P. 2569)

Shot Hole Depth: 60'

Charge Size: 5 lbs per hole
(S.P. 2493 - S.P. 2562)

15 lbs per hole
(S.P. 2563 - S.P. 2569)

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36 - 36

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 2371 - S.P. 2420)
(S.P. 2433 - S.P. 2436)
(S.P. 2474 - S.P. 2492)

Single hole
(S.P. 2421 - S.P. 2432)
(S.P. 2437 - S.P. 2473)

Shot Hole Depth: 60'

Charge Size: 2 hole - 7 1/2 lbs. per hole
Single - 10 lbs.

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-37

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 2805 - S.P. 2834)

Single hole
(S.P. 2835 - S.P. 2934)

Shot Hole Depth: 60'

Charge Size: 2 hole - 7 1/2 lbs. per hole
Single - 15 lbs.

Recording Filter: 27 - 62

Field Record - Direct Playback

Lines 36-38, 36-39, 36-40, 36-41, 36-42, 36-43

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600

Station Interval: 300'

Shot Point Interval: 900'

Shot Hole Pattern: 2 hole spaced 70' apart

Shot Hole Depth: 60'

Charge Size: 7 1/2 lbs. per hole

Recording Filter: 27 - 62

Field Record - Direct Playback

Line 36-44

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 2570 - S.P. 2611)
Single Hole
(S.P. 2612 - S.P. 2659)
Shot Hole Depth: 60'
Charge Size: 2 hole 7 1/2 lbs. per hole
Single 15 lbs.
Recording Filter: 27 - 62
Field Record: Direct Playback

Line 36-45

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: Single Hole
Shot Hole Depth: 60'
Charge Size: 15 lbs.
Recording Filter: 27 - 62
Field Record - Direct Playback

Line 36-46

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 2935 - S.P. 2988)
Single hole
(S.P. 2989 - S.P. 2992)
Shot Hole Depth: 60'
Charge Size: 2 hole 7 1/2 lbs. per hole
Single hole 10 lbs.
Recording Filter: 27 - 62
Field Record - Direct Playback

Line 36 - 47

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: Single Hole
Shot Hole Depth: 60'
Charge Size: 10 lbs.
Recording Filter: 27 - 62
Field Record: Direct Playback

Line 36-48

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: 2 hole spaced 100' apart
(S.P. 3164 - S.P. 3184)
Single hole
(S.P. 3185 - S.P. 3207)
Shot Hole Depth: 60'
Charge Size: 2 hole - 5 lbs. per hole
Single hole - 15 lbs.
Recording Filter: 27 - 62
Field Record - Direct Playback

Lines 36-49, 36-50, 36-51, 36-52, 36-53

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: Single Hole
Shot Hole Depth: 60'
Charge Size: Line 49 - 15 lbs.
Line 50 - 15 lbs.
Line 51 - 15 lbs.
(S.P. 2993-3019)
(S.P. 3208-3219)
(S.P. 3229-3243)
10 lbs.
(S.P. 3220-3228)
Line 52 - 15 lbs.
Line 53 - 15 lbs.
Recording Filter: 27 - 62
Field Record - Direct Playback

Lines 36-54, 36-55, 36-56, 36-57, 36-58, 36-59
36-60.

4 Fold CDP - Bilateral

Spread Length: 3600-300-0-300-3600
Station Interval: 300'
Shot Point Interval: 900'
Shot Hole Pattern: 2 hole spaced 70' apart
Shot Hole Depth: 60'
Charge Size: 5 lbs. per hole
Recording Filter: 18 - 62
Field Record - Direct Playback

TABULATION 2

STATISTICAL SUMMARY OF RECORDING PRODUCTION
MOBIL OIL PARTY NO. 36
GLOBE UNIVERSAL SCIENCES CANADA LTD.
CALGARY, ALBERTA
NOVEMBER 24, 1969 - APRIL 25, 1970
FORT GOOD HOPE AREA

Commencement Date:	Crew and camp moved November 24 and 25, 1969 from Sans Sault to Project start. Actual field operations commenced November 28, 1969.
Shut Down at Christmas:	Recording crew off December 21, 1969 to January 6, 1970 inclusive.
Completion of Operation:	Completed April 25, 1970 with recording crew moving to Sans Sault the same day.
Total Days Worked:	135.0
Total Standby Days: (After Field Operation Started)	2.0
Total Down Days with Instrument Problems:	2.0
Total Holiday Hours:	20.0
Total Move Hours:	28.0
Total Field Hours:	1,278.25
Total Field Drive Hours:	269.75
Total Recording Hours:	1,623.50
Total Number of Shots:	3,668
Total Number of Profiles	3,440
Total Number of Miles of Line Shot	510.9
Profiles Per Recording Shift: (Based on Field and Drive Hours)	21.8
Record Quality:	Generally Fair to Good

TABULATION 3

STATISTICAL SUMMARY OF DYNAMITE & CAPS USED
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

DYNAMITE:

On hand at project start 56,875.0 lbs.
Total Dynamite used 40,660.5 lbs.
Total Dynamite on hand at completion 16,214.5 lbs.

* Total Dynamite used for Trans Ocean
Oil Inc. Project 3,564.5 lbs.

Total Dynamite presently in Magazine
at Sans Sault
 New Powder 10,850.0 lbs.
 Old Powder 1,800.0 lbs.

Dynamite charge size per shot 11.1 lbs.
Dynamite charge size per profile 11.8 lbs.

CAPS:

On hand at project start 8,248
Total caps used 7,834
Caps on hand at completion 414

* Total Caps used on Trans Ocean
Oil Inc. Project 369

Total Caps presently in Magazine
at Sans Sault -
 45 - (60' leads)

* Permission granted by Mobil Oil Canada Ltd. to
Trans Ocean Oil Inc.

TABULATION 4

STATISTICAL SUMMARY OF DRILLING PRODUCTION MOBIL OIL PARTY NO. 36 GLOBE UNIVERSAL SCIENCES CANADA LTD. FORT GOOD HOPE AREA

UNIT	GLOBE 101		GLOBE 102		GLOBE 113		TOTALS
	Day	Night	Day	Night	Day	Night	
Breakdown (Days)	2		2		5		9
Standby (Hrs.)	16.0		20.0		16.0		52.0
Holidays (Hrs.)	20.0		20.0		20.0		60.0
Move (Hrs.)	63.0		54.0		54.0		171.0
Field (Hrs.)	1,179.0	237.0	1,214.5	14.5	1,177.0	49.5	3,921.5
Drive (Hrs.)	331.5	54.0	336.0	13.0	335.0	36.0	1,105.5
Holes	1,228	91	1,031	4	1,005	60	3,419
Footage (Feet)	71,889	5,504	60,188	240	54,960	3,900	196,681
Footage per Hour	47.59	18.91	38.82	8.73	32.28	28.78	39.12
Footage per Shift (Based on 10 Hrs.)	475.9	189.1	388.2	87.3	322.8	287.8	391.2

Average Hole Depth 57.5 feet

Drill Rigs 101 and 113 started November 26, 1969

Drill Rig 102 started November 27, 1969

Holiday shut down period December 20, 1969 to January 2, 1970 inclusive.

Drilling Fort Good Hope area completed April 23, 1970.

All Drills moved to Sans Sault April 24, 1970.

TABULATION 5

STATISTICAL SUMMARY OF DRILLING PRODUCTION MOBIL OIL PARTY NO. 36 BERTRAM DRILLING LTD. FORT GOOD HOPE AREA

UNIT	BERTRAM #1		BERTRAM #1		BERTRAM #1		TOTAL
	Day	Night	Day	Night	Day	Night	
Breakdown (Days)	18				12		30
Standby (Hours)	6.0		10.0		20.0		36.0
Holiday (Hours)	20.0		20.0		20.0		60.0
Move (Hours)	65.0		63.0		63.0		191.0
Field (Hours)	982.5	142.5	1,153.5	113.5	1,428.5	214.5	3,635.0
Drive (Hours)	307.5	21.5	469.0	43.5	383.0	69.5	1,234.0
Holes	907	105	1,180	50	1,106	102	3,450
Footage (Feet)	54,580	6,740	69,215	3,080	64,870	6,275	204,760
Footage Per Hour	42.31	41.1	44.29	19.62	45.96	22.10	42.05
Footage Per Shift (based on 10 hrs.)	423.1	411.0	442.9	196.2	459.6	221.0	420.5

Average Hole Depth: 59.3 feet

Drill Rigs #1, #2 and #3 started November 27, 1969.

Holiday shut down period December 20, 1969 to January 2, 1970 inclusive.

Drilling Fort Good Hope area completed April 23, 1970.

All Drills moved to Sans Sault April 24, 1970

TABULATION 6

**STATISTICAL SUMMARY OF BIT INVENTORY
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA**

CANADIAN OIL TOOL LTD. (CONSIGNMENT)

<u>Bit</u>	<u>On Hand</u>	<u>Received</u>	<u>Used</u> <u>Ft. Good</u> <u>Hope</u>	<u>Used</u> <u>Trans</u> <u>Ocean</u>	<u>Balance</u>
5 1/8" Starter Bits	500	204	698	6	Nil
4 1/2" Shurholes	508	Nil	494	9	5
4 3/4" H.D. Inserts	144	48	48	72	72
3 1/2" 3W Auger Bits	50	48	98	-	Nil
4 3/4" 3W Reg. Inserts	25	Nil	25	-	Nil
4 1/4" 3 Cone Rock Bits	100	Nil	91	6	3
4 1/2" 3 Cone Rock Bits	100	144	232	12	Nil
4 3/4" 3 Cone Rock Bits	100	Nil	100	-	Nil
4 1/4" Reg. Inserts	Nil	72	60	7	5
4 1/2" Reg. Inserts	Nil	192	169	2	21
4 1/2" 3 Cone Rock Bit RTPD		6	6	-	Nil
4 1/2" HD Inserts RTPD		12	12	-	Nil
4 3/4" Kenclaw Bodies		24	11	-	13
4 3/4" Kenclaw Pilots		72	25	11	36
4 3/4" Kenclaw Cutter Bits		288	96	36	156

WESTERN ROCK BIT CO. LTD. (CONSIGNMENT)

<u>Bit</u>	<u>On Hand</u>	<u>Received</u>	<u>Used</u> <u>Ft. Good</u> <u>Hope</u>	<u>Used</u> <u>Trans</u> <u>Ocean</u>	<u>Balance</u>
4 1/2" HD Inserts	240	-	240	-	Nil
4 1/2" Reg. Inserts	216	-	216	-	Nil
4 3/4" Reg. Inserts	72	-	72	-	Nil
3 1/2" 3W Auger Bits	72	-	72	-	Nil
3 1/2" 2W Auger Bits	204	-	204	-	Nil

NELSON BIT SERVICE LTD.

<u>Bit</u>	<u>On Hand</u>	<u>Received</u>	<u>Used</u> <u>Ft. Good</u> <u>Hope</u>	<u>Used</u> <u>Trans</u> <u>Ocean</u>	<u>Balance</u>
4 1/2" 3 Cone Rock Bits RTPD	6	-	6	-	Nil
4 1/2" HD Inserts RTPD	12	-	12	-	Nil

TABULATION 7

STATISTICAL SUMMARY BIT INVENTORY MOBIL OIL PARTY NO. 36 FORT GOOD HOPE AREA

WALKER MAC DONALD BIT LTD.
(Norman Wells Stock)
(Not consigned)

<u>Bit</u>	<u>On Hand</u>	<u>Received</u>	<u>Used</u> <u>Ft. Good</u> <u>Hope</u>	<u>Balance</u>
5 1/4" Walmac Starters	-	144	135	9
4 1/2" Reg. Inserts	-	228	221	7
4 1/2" Walmacs	-	36	36	Nil
3 1/2" 2W Auger Bits	-	48	48	Nil
3 1/2" 3 Way Auger Bits	-	180	156	24
4 1/2" 3 Cone Rock Bits	-	408	385	23
4 3/4" 3 Cone Rock Bits	-	96	56	40
4 3/4" Gruner Rock Bits	-	18	2	16

Balance returned to Walker Mac Donald - Norman Wells.

TABULATION 9

STATISTICAL SUMMARY OF GASOLINE AND DIESEL FUEL USED
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

GASOLINE

Offloaded from barge, Sans Sault	47,872 Gallons
Consumed Fort Good Hope Project	45,372 Gallons
* Consumed Trans Ocean Oil Inc. Project	2,000 Gallons
Estimated reserve Sans Sault	500 Gallons

DIESEL FUEL:

Offloaded from barge, Sans Sault	105,482 Gallons
Consumed Fort Good Hope Project	100,682 Gallons
* Consumed Trans Ocean Oil Inc. Project ...	3,300 Gallons
Estimated reserves Sans Sault	1,500 Gallons

Note:

Permission granted by Mobil Oil Canada Ltd. to Trans
Ocean Oil Inc.

TABULATION 10

VERTICAL SURVEY
"CHANGES AND CORRECTIONS TO ORIGINAL FIELD NOTES"

Lines 1 to 15 inclusive are in order, only four Shot Point elevations were in error.

The following is a summary of necessary changes and corrections made on the original copy of the vertical notes.

Line 16:

Shot Point 1017 to Shot Point 1055 Correct, except for Shot Point 1023 which increases by 10 feet.

Shot Point 978 to Shot Point 1016 27.8 feet have been added.

Line 17:

Shot Point 1059 to Shot Point 1074 Add 9.0 feet.

Shot Point 1075 to Shot Point 1102 27.8 feet added.

Line 18:

Shot Point 1103 to Shot Point 1144 27.8 feet have been added.

Line 19:

Shot Point 2118 to Shot Point 2160 Correct, except for:
Shot Point 2131 - 2.5 feet
added and Shot Points 2132 to
2134 inclusive - 40.4 feet added.
Shot Point 1145 to Shot Point
1195 - 28.1 feet have been added.

Line 20:

Shot Point 1196 to Shot Point 1207 28.1 feet added.

Shot Point 1208 to Shot Point 1210 27.7 feet added.

Line 20:

Ties to Trig. Station "Tan" 15.9 feet low elevation carried from B.M. at MacKenzie River through Lines 2, 4, 16, 17, 19 and 20. Published elevation of 2,110.0 feet at "Tan" then was used for the S.W. portion of Line 20.

Shot Point 2213 to Shot Point 2224 are correct

Line 21:

Shot Points 1211 to 1241 31.6 feet added.

Shot Points 1242 to 1251 31.6 feet added.

Shot Points 1252 to 1260 32.0 feet added.

Shot Points 1261 to 1292 32.3 feet added.

Shot Points 1293 to 1304 42.9 feet added.

Shot Points 1513 to 1578 42.6 feet added.

Previous erroneous and now corrected are Shot Point 1218, Shot Point 1265, Shot Point 1537 and Shot Point 1560.

Ties to Line 19 2.2 feet low.

Line 22:

Shot Points 1309 to 1366 27.8 feet added.

Shot Points 1305 to 1308 22.4 feet added.

Ties to Line 21 4.0 feet high

Line 23:

Shot Points 1418 to 1435 36.8 feet added.

Ties 3.9 feet at Shot Point 1435 from V.T.O. on Line 24.

Shot Points 1436 to 1512 32.9 feet added.

Line 24:

Shot Points 1368 to 1417 32.2 feet added.

Line 25:

Shot Points 1579 to 1660 42.4 feet added.

Shot Points 1661 to 1680 52.4 feet added.

Ties 7.1 feet high at line 23.

Line 26:

Shot Points 1681 to 1726 52.1 feet added.

except

Shot Point 1717 48.1 feet added.

and

Shot Point 1718 24.1 feet added.

Line 27:

Shot Points 1727 to 1745 52.1 feet added.

except

Shot Point 1739 44.1 feet added.

Tie to line 23 5.2 feet high.

Shot Points 1746 to 1773 52.1 feet added.

Tie to Line 21 7.2 feet high.

Shot Points 1774 to 1783 50.9 feet added.

Shot Points 1784 to 1831 9.1 feet added.

Shot Points 1832 to 1857 15.9 feet added.

Line 28:

Shot Points 1962 to 2048 9.1 feet added.

Ties 5.3 feet high at line 25.

Line 29:

Shot Points 1916 to 1935 9.5 feet added.

Shot Points 1936 to 1961 9.1 feet added.

Line 30:

Shot Points 2304 to 2341 Correct.

Line 31:

Shot Points 2226 to 2303 Correct.

Ties 12.7 feet low to Line 36, which in turn was surveyed
from Trig. Stations "Fern" and "Part".

Line 32:

Shot Points 2087 to 2126 Correct.

Shot Points 2189 to 2212 Correct.

Line 33:

Shot Points 2049 to 2086 Correct.
except

Shot Point 2051 is 795.6 NOT 895.6

Line 34:

Shot Points 2161 to 2188 Correct.

Line 35:

Shot Points 2493 to 2566 Correct.

Shot Points 2567 to 2569 30.5 feet added.

Ties 4.5 feet low to Line 45.

Line 36:

Shot Points 2442 to 2492 Correct.
except

Shot Point 2477 8 feet added.

Shot Points 2371 to 2441 13.0 feet must be added in the

Shot Points 2371 to 2441 (cont')

notes, as indicated in order to place the mistie between "Tan" and "Fern" at the junction of Lines 31 and 36. Loop ties on Lines 35, 36, 37 and 44 are good.

Ties to Line 35

1.9 feet low.

Line 37:

Shot Points 2805 to 2808

25.6 feet added.

Shot Point 2809 to 2916

Correct.

Except

Shot Point 2890

Should be 2,616.1 feet.

Shot Point 2902

Should be 2,539.7 feet.

Shot Point 2903

Should be 2,470.2 feet.

Shot Point 2913

Should be 2,008.3 feet.

Shot Point 2932

Should be 1,732.8 feet.

Ties to Line 36

1.7 feet low.

Line 38:

Shot Points 2662 to 2804

Correct.

Ties to Trig Station "Part"

1.7 feet.

Line 39:

Shot Points 2720 to 2759

Correct.

Line 40:

Shot Points 2683 to 2719

Correct.

Line 41:

Shot Points 1858 to 1895

16 feet added.

Line 42:

Shot Points 1896 to 1915 16 feet added.

Line 43:

Shot Points 2342 to 2370 Correct

Except

Shot Point 2362 Should be 1,647 feet.

Line 44:

Shot Points 2570 to 2613 Correct

Except

Shot Point 2613 Should be 2,135 feet.

Shot Point 2589 Should be 1,619 feet.

Shot Point 2605 Should be 2,146 feet.

Shot Points 2614 to 2660 4.3 feet added.

Except

Shot Point 2626 Should be 2,081 feet.

Shot Point 2627 Should be 2,106 feet.

Shot Point 2640 Should be 2,346 feet.

Ties to Line 37 3.1 feet low.

Line 45:

Shot Points 3020 to 3091 Subtract 1.4 feet.

Except

Shot Point 3063 Should be 2,499 feet.

Shot Point 3050 Should be 2,737 feet.

Shot Point 3050 Should be 2,581 feet.

Ties to Line 35 4.5 feet low.

Line 46:

Shot Points 2935 to 2992	Subtract 1.4 feet.
Shot Point 2956	Should be 2,017 feet.

Line 47:

Shot Points 3134 to 3163	13.3 feet added.
--------------------------	------------------

Line 48:

Shot Points 3164 to 3207	Subtract 1.4 feet.
--------------------------	--------------------

Line 49:

Shot Points 3095 to 3133	Subtract 2.7 feet.
Except	
Shot Point 3103	Should be 2,151 feet.
Shot Point 3133	Should be 2,356 feet.

Line 50:

Shot Points 3272 to 3291	Subtract 0.9 feet.
--------------------------	--------------------

Line 51: (West of Arctic Red River)

Shot Points 3208 to 3223	Subtract 1.5 feet.
Shot Points 3208 to 3222	Subtract 1.4 feet.

Line 52:

Shot Points 3294 to 3332	Subtract 1.4 feet.
--------------------------	--------------------

Ties 7.6 feet at coulee between Shot Point 3306 and Shot Point 3307.

Line 53:

Shot Points 3244 to 3271	Subtract 1.5 feet.
--------------------------	--------------------

Line 54:

Shot Points 3496 to 3529	Correct.
--------------------------	----------

Line 55:

Shot Points 3553 to 3592 Correct.

Line 56:

Shot Points 3386 to 3426 Add 0.7 feet.

Tie to Line 2 0.8 feet low.

Line 57:

Shot Points 3427 to 3469 Add 0.7 feet.

Line 58:

Shot Points 3470 to 3495 Add 0.7 feet.

Line 59:

Shot Points 3593 to 3615 Add 0.7 feet.

Line 60:

Shot Points 3530 to 3552 Correct.

Ties to Line 58 2.4 feet low.

TABULATION 11

REVISION
TAPE DATA SHEETS FOR ALL LINES
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-1	3	.013	.010				Revised Tape Data Sheets previously submitted for Shot Points listed.
	7	.004	.009				
	16	.020	.006				
	18	.010	.008				
	28	.010	.008				
	36	.002	.005				
36-2	56	.003	.006				Revised Tape Data Sheets previously submitted for Shot Points listed.
	58	.003	.005				
	60	.007	.008				
	74	.002	.006			+.005	
	78	.002	.005			+.005	
	79	.002	.006			+.005	
	143	.002	.005				Pro-rating S.P.s 158 to 159.
	155	-					
36-3	162	.011	.008				Revised Tape Data Sheets previously submitted for Shot Points listed.
	165	.009	.008				
	166	.009	.008				
	167	.009	.008				
	170	.020	.006				
	171	.004	.005				
	181	.005	.007				
	183	.004	.009				
	186	.012	.009				
	193	.009	.008				

Line	S.P.	Up-Hole Times		Elevations		Time Break		Remarks
		Old	New	Old	New	Shift		
36-3	199	.012	.008					
	200	.010	.008					
	201	.010	.008					
	202	.005	.007					
	204	.009	.008					
	205	.004	.005					
	209	.013	.007					
	211	.013	.009					
	212	.014	.009					
	217	.011	.010					
	218	.006	.007					
	221	.014	.008					
36-3X								No changes to Tape Data Sheets as submitted.
36-4E	265	.019	.011					Revised Tape Data Sheets previously submitted for Shot Points listed.
	285	.012	.007					
	295	.015	.008					
	318	.004	.006					
	332	.005	.006					
36-4W	769	.009	.008					Revised Tape Data Sheets previously submitted for Shot Points listed.
	770	.009	.008					
	771	.010	.008					
	779							Pro rating S.P.s 780 to 782.
	780	.009	.008					
	731	.003	.005	1793	1792			Pro rating S.P.s 792 to 793. Unchanged 793 + 300. 793 + 600.
	789							
	790							
	793			1686	1695			Pro rating S.P.s 819 to 819.
	815							

Line	S.P.	Up-Hole Times		Elevations		Time Break Shift	Remarks
		Old	New	Old	New		
36-4W	816						Pro-rating S.P.s 819 to 820.
	819			1782	1789		
36-4X							No changes to Tape Data Sheets as sub- mitted.
36-5	390	.003	.006				Revised Tape Data Sheet previously submitted for S.P. listed.
36-6	427	.009	.006				Revised Tape Data Sheet previously submitted for S.P. listed.
36-7	475						Pro-rating S.P.s 473 to 479.
	476						Pro-rating S.P.s 479 to 480.
	479			1347	1336		
	497						Pro-rating S.P.s 500 to 501.
	498						Pro-rating S.P.s 501 to 502.
	501			1427	1477		
	502						Pro-rating S.P.s 505 to 506.
	503						Pro-rating S.P.s 506 to 507.
	508	.015	.007				
	509	.015	.007				Revised Tape Data Sheets previously submitted for Shot Points listed.
	512	.004	.005				
	513	.004	.005				
36-8	538	.009	.007				Revised Tape Data Sheets previously submitted for Shot Points listed.
(1)	547	.012	.007				
	548	.006	.008			+010	
	551	.010	.009				
	558	.004	.007				

TABULATION 8

STATISTICAL SUMMARY OF DOZER HOURS
 MOBIL OIL PARTY NO. 36
 BOREK CONSTRUCTION LTD.
 FORT GOOD HOPE AREA

<u>Unit</u>	<u>Description</u>	<u>Total Hours</u>	<u>Total Miles</u> <u>Line Cut</u>	<u>Total Miles</u> <u>Detours</u>	<u>Total Miles</u> <u>Snow</u> <u>Ploughing</u>
#100	D6C	3,005.0	528.0	94.0	259.0
#120	D7E	3,030.0			
#130	D7E	2,923.5			
#140	D7E	3,313.5			
#180	D7E	3,388.0			
#219	Road Grader	1,840.0			

TABULATION 9

STATISTICAL SUMMARY OF GASOLINE AND DIESEL FUEL USED
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

GASOLINE

Offloaded from barge, Sans Sault	47,872 Gallons
Consumed Fort Good Hope Project	45,372 Gallons
* Consumed Trans Ocean Oil Inc. Project	2,000 Gallons
Estimated reserve Sans Sault	500 Gallons

DIESEL FUEL:

Offloaded from barge, Sans Sault	105,482 Gallons
Consumed Fort Good Hope Project	100,682 Gallons
* Consumed Trans Ocean Oil Inc. Project ...	3,300 Gallons
Estimated reserves Sans Sault	1,500 Gallons

Note:

Permission granted by Mobil Oil Canada Ltd. to Trans
Ocean Oil Inc.

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VERTICAL SURVEY "CHANGES AND CORRECTIONS TO ORIGINAL FIELD NOTES"

Lines 1 to 15 inclusive are in order, only four Shot Point elevations were in error.

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Shot Point 978 to Shot Point 1016 27.8 feet have been added.

Line 17:

Shot Point 1059 to Shot Point 1074 Add 9.0 feet.
Shot Point 1075 to Shot Point 1102 27.8 feet added.

Line 18:

Shot Point 1103 to Shot Point 1144 27.8 feet have been added.

Line 19:

Shot Point 2118 to Shot Point 2160 Correct, except for:
Shot Point 2131 - 2.5 feet added and Shot Points 2132 to 2134 inclusive - 40.4 feet added.
Shot Point 1145 to Shot Point 1195 - 28.1 feet have been added.

Line 20:

Shot Point 1196 to Shot Point 1207 28.1 feet added.
Shot Point 1208 to Shot Point 1210 27.7 feet added.

Line 20:

Ties to Trig. Station "Tan" 15.9 feet low elevation carried from B.M. at MacKenzie River through Lines 2, 4, 16, 17, 19 and 20. Published elevation of 2,110.0 feet at "Tan" then was used for the S.W. portion of Line 20.

Shot Point 2213 to Shot Point 2224 are correct

Line 21:

Shot Points 1211 to 1241 31.6 feet added.

Shot Points 1242 to 1251 31.6 feet added.

Shot Points 1252 to 1260 32.0 feet added.

Shot Points 1261 to 1292 32.3 feet added.

Shot Points 1293 to 1304 42.9 feet added.

Shot Points 1513 to 1578 42.6 feet added.

Previous erroneous and now corrected are Shot Point 1218, Shot Point 1265, Shot Point 1537 and Shot Point 1560.

Ties to Line 19 2.2 feet low.

Line 22:

Shot Points 1309 to 1366 27.8 feet added.

Shot Points 1305 to 1308 22.4 feet added.

Ties to Line 21 4.0 feet high

Line 23:

Shot Points 1418 to 1435 36.8 feet added.

Ties 3.9 feet at Shot Point 1435 from V.T.O. on Line 24.

Shot Points 1436 to 1512 32.9 feet added.

Line 24:

Shot Points 1368 to 1417 32.2 feet added.

Line 25:

Shot Points 1579 to 1660 42.4 feet added.

Shot Points 1661 to 1680 52.4 feet added.

Ties 7.1 feet high at line 23.

Line 26:

Shot Points 1681 to 1726 52.1 feet added.
except

Shot Point 1717 48.1 feet added.

and

Shot Point 1718 24.1 feet added.

Line 27:

Shot Points 1727 to 1745 52.1 feet added.
except

Shot Point 1739 44.1 feet added.

Tie to line 23 5.2 feet high.

Shot Points 1746 to 1773 52.1 feet added.

Tie to Line 21 7.2 feet high.

Shot Points 1774 to 1783 50.9 feet added.

Shot Points 1784 to 1831 9.1 feet added.

Shot Points 1832 to 1857 15.9 feet added.

Line 28:

Shot Points 1962 to 2048 9.1 feet added.

Ties 5.3 feet high at line 25.

Line 29:

Shot Points 1916 to 1935 9.5 feet added.

Shot Points 1936 to 1961 9.1 feet added.

Line 30:

Shot Points 2304 to 2341 Correct.

Line 31:

Shot Points 2226 to 2303 Correct.

Ties 12.7 feet low to Line 36, which in turn was surveyed from Trig. Stations "Fern" and "Part".

Line 32:

Shot Points 2087 to 2126 Correct.

Shot Points 2189 to 2212 Correct.

Line 33:

Shot Points 2049 to 2086 Correct.
except

Shot Point 2051 is 795.6 NOT 895.6

Line 34:

Shot Points 2161 to 2188 Correct.

Line 35:

Shot Points 2493 to 2566 Correct.

Shot Points 2567 to 2569 30.5 feet added.

Ties 4.5 feet low to Line 45.

Line 36:

Shot Points 2442 to 2492 Correct.
except

Shot Point 2477 8 feet added.

Shot Points 2371 to 2441 13.0 feet must be added in the

Shot Points 2371 to 2441 (cont')

notes, as indicated in order to place the mistie between "Tan" and "Fern" at the junction of Lines 31 and 36. Loop ties on Lines 35, 36, 37 and 44 are good.

Ties to Line 35	1.9 feet low.
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Line 37:

Shot Points 2805 to 2808	25.6 feet added.
Shot Point 2809 to 2916	Correct.
Except	
Shot Point 2890	Should be 2,616.1 feet.
Shot Point 2902	Should be 2,539.7 feet.
Shot Point 2903	Should be 2,470.2 feet.
Shot Point 2913	Should be 2,008.3 feet.
Shot Point 2932	Should be 1,732.8 feet.
Ties to Line 36	1.7 feet low.

Line 38:

Shot Points 2662 to 2804	Correct.
Ties to Trig Station "Part"	1.7 feet.

Line 39:

Shot Points 2720 to 2759	Correct.
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Line 40:

Shot Points 2683 to 2719	Correct.
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Line 41:

Shot Points 1858 to 1895	16 feet added.
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Line 42:

Shot Points 1896 to 1915 16 feet added.

Line 43:

Shot Points 2342 to 2370 Correct

Except

Shot Point 2362 Should be 1,647 feet.

Line 44:

Shot Points 2570 to 2613 Correct

Except

Shot Point 2613 Should be 2,135 feet.

Shot Point 2589 Should be 1,619 feet.

Shot Point 2605 Should be 2,146 feet.

Shot Points 2614 to 2660 4.3 feet added.

Except

Shot Point 2626 Should be 2,081 feet.

Shot Point 2627 Should be 2,106 feet.

Shot Point 2640 Should be 2,346 feet.

Ties to Line 37 3.1 feet low.

Line 45:

Shot Points 3020 to 3091 Subtract 1.4 feet.

Except

Shot Point 3063 Should be 2,499 feet.

Shot Point 3050 Should be 2,737 feet.

Shot Point 3050 Should be 2,581 feet.

Ties to Line 35 4.5 feet low.

Line 46:

Shot Points 2935 to 2992	Subtract 1.4 feet.
Shot Point 2956	Should be 2,017 feet.

Line 47:

Shot Points 3134 to 3163	13.3 feet added.
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Line 48:

Shot Points 3164 to 3207	Subtract 1.4 feet.
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Line 49:

Shot Points 3095 to 3133	Subtract 2.7 feet.
Except	
Shot Point 3103	Should be 2,151 feet.
Shot Point 3133	Should be 2,356 feet.

Line 50:

Shot Points 3272 to 3291	Subtract 0.9 feet.
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Line 51: (West of Arctic Red River)

Shot Points 3208 to 3223	Subtract 1.5 feet.
Shot Points 3208 to 3222	Subtract 1.4 feet.

Line 52:

Shot Points 3294 to 3332	Subtract 1.4 feet.
Ties 7.6 feet at coulee between Shot Point 3306 and Shot Point 3307.	

Line 53:

Shot Points 3244 to 3271	Subtract 1.5 feet.
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Line 54:

Shot Points 3496 to 3529	Correct.
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Line 55:

Shot Points 3553 to 3592 Correct.

Line 56:

Shot Points 3386 to 3426 Add 0.7 feet.

Tie to Line 2 0.8 feet low.

Line 57:

Shot Points 3427 to 3469 Add 0.7 feet.

Line 58:

Shot Points 3470 to 3495 Add 0.7 feet.

Line 59:

Shot Points 3593 to 3615 Add 0.7 feet.

Line 60:

Shot Points 3530 to 3552 Correct.

Ties to Line 58 2.4 feet low.

TABULATION 11

REVISION
TAPE DATA SHEETS FOR ALL LINES
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-1	3	.013	.010				Revised Tape Data Sheets previously submitted for Shot Points listed.
	7	.004	.009				
	16	.020	.006				
	18	.010	.008				
	28	.010	.008				
	36	.002	.005				
36-2	56	.003	.006				Revised Tape Data Sheets previously submitted for Shot Points listed.
	58	.003	.005				
	60	.007	.008				
	74	.002	.006			+.005	
	78	.002	.005			+.005	
	79	.002	.006			+.005	
	143	.002	.005				Pro-rating S.P.s 158 to 159.
	155	-					
36-3	162	.011	.008				Revised Tape Data Sheets previously submitted for Shot Points listed.
	165	.009	.008				
	166	.009	.008				
	167	.009	.008				
	170	.020	.006				
	171	.004	.005				
	181	.005	.007				
	183	.004	.009				
	186	.012	.009				
	193	.009	.008				

Line	S.P.	Up-Hole Times		Elevations		Time Break Shift	Remarks
		Old	New	Old	New		
36-3	199	.012	.008				
	200	.010	.008				
	201	.010	.008				
	202	.005	.007				
	204	.009	.008				
	205	.004	.005				
	209	.013	.007				
	211	.013	.009				
	212	.014	.009				
	217	.011	.010				
	218	.006	.007				
	221	.014	.008				
36-3X							No changes to Tape Data Sheets as submitted.
36-4B	265	.019	.011				Revised Tape Data Sheets previously submitted for Shot Points listed.
	285	.012	.007				
	295	.015	.008				
	319	.004	.006				
	332	.005	.006				
36-4W	769	.009	.008				Revised Tape Data Sheets previously submitted for Shot Points listed.
	770	.009	.008				
	771	.010	.008				
	779						Pro rating S.P.s 790 to 782.
	780	.009	.008				
	731	.003	.005	1793	1792		Pro rating S.P.s 792 to 793. Unchanged 793 + 300. 793 + 600.
	789						
	790						
	793			1686	1695		Pro rating S.P.s 819 to 819.
	815						

Line	S.P.	Up-Hole Times		Elevations		Time Break Shift	Remarks
		Old	New	Old	New		
36-4W	816						Pro rating S.P.s 819 to 820.
	819			1782	1789		
36-4X							No changes to Tape Data Sheets as submitted.
36-5	390	.003	.006				Revised Tape Data Sheet previously submitted for S.P. listed.
36-6	427	.009	.006				Revised Tape Data Sheet previously submitted for S.P. listed.
36-7	475						Pro rating S.P.s 473 to 479.
	476						Pro rating S.P.s 479 to 480.
	479			1347	1336		
	497						Pro-rating S.P.s 500 to 501.
	498						Pro rating S.P.s 501 to 502.
	501			1427	1477		
	502						Pro rating S.P.s 505 to 506.
	503						Pro rating S.P.s 506 to 507.
	508	.015	.007				
	509	.015	.007				Revised Tape Data Sheets previously submitted for Shot Points listed.
	512	.004	.005				
	513	.004	.005				
36-8	538	.009	.007				Revised Tape Data Sheets previously submitted for Shot Points listed.
(1)	547	.012	.007				
	548	.006	.008			+010	
	551	.010	.009				
	558	.004	.007				

Line	S.P.	On-Hole Time Fluctuations Time Signal				Remarks
		Old	New	Old	New	
36 8 (2)	572	.003	.007			Revised Tano Data Shots previously submitted for Shot Points listed.
	577	.010	.008			
	578	.005	.007			
	583					
	583	.003	.007			Pro rating S.P.s 583 to 586.
	587	.010	.007			
	590	.001	.008		+001	
	591	.009	.007			
36 9	600	.017	.007			Pro rating S.P.s 610 to 611.
	606	.013	.006			
	607					
	616	.005	.008			
	621	.009	.008			Revised Tano Data Shots previously submitted for Shot Points listed.
	625	.005	.006			
	637	.009	.008			
	642	.011	.006			
	656	.010	.008			+010
	659	.003	.008			
	662	.010	.008			
36 10	722	.003	.007		+005	Pro rating S.P.s 722 to 723.
	723	.009	.008		+008	
	727					Pro rating S.P.s 727 to 729.
	729	.001	.006			
	730	.001	.006		+003	
	736					Pro rating S.P.s 736 to 740.
	743	.009	.007			
	746	None	.008			Revised Tano Data Shots previously submitted for Shot Points listed.
	757	.002	.005		+003	
	758	.008	.007			

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-15	949					-.020	
	952						Shot Depth 56-60 to 45-49.
	953						Shot Depth 56-60 to 50-54.
	954						Shot Depth 56-60 to 50-54.
	965						Pro-rating S.P.s 967 968.
	966						Pro-rating S.P.s 969 to 970. Revised Tape Data Sheets now submitted for Shot Points listed.
36-16	979	.002	.006				
	982			1369	1385		Pro-rating S.P.s 978 to 979.
	985			1468	1474		Pro-rating S.P.s 981 to 982.
	986			1419	1424		Pro-rating S.P.s 982 to 983. Revised Tape Data Sheets now submitted for Shot Points listed. A bulk elevation of Plus (+) 6 feet is required for Tape Data Sheets 978-981 incl. and 983-984 incl.
	990			1523	1532		Pro-rating S.P.s 986 to 987.
	991	.014	.008	1519	1525		Pro-rating S.P.s 987 to 988.
	992						Pro-rating S.P.s 988 to 989.
	993						Pro-rating S.P. 989 to 990.
	994						Pro-rating S.P.s 990 to 991.

Line	S.P.	On-Hole Times		Elevations		Time Break	Shift	Remarks
		Old	New	Old	New			
36-16	995							Pro rating S.P. 991 to 994.
	1009	.004	.006					Revised Tape Data Sheets now submitted For Shot Points listed. A bulk Elevation Correction of plus (+) 2 feet required for all Tape Data Sheets Shot Points 998 1009 incl. Previously revised.
	1011			1273	1301			
	1012			1370	1398			Shot Depth 56 60 to 51 54.
	1013			1353	1381			Shot Depth 56 60 to 38=42.
	1015			1406	1434			Shot Depth 56 60 to 50 54.
	1016			1414	1442			Previously revised.
	1017							Pro rating S.P.s 1013 1014.
	1018							Pro rating S.P.s 1014-1015.
	1019							Pro rating S.P.s 1015 1016.
	1020							Pro rating S.P.s 1016-1017.
	1023			1507	1517			
	1026							Pro rating S.P.s 1022-1023.
	1027							Pro rating S.P.s 1023-1024.
	1028							Shot Depth 56 60 to 50 54.
	1033							
	+							
	600			1783	1934			
	1054							Shot Depth 56 60 to 47-52.
	1055	.003	.004					Revised Tape Data Sheets now submitted for Shot Points listed between 1011 and 1055.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
							Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation Corr- ection of Minus (-) 14 feet is required for all Tape Data Sheets S.P.s 1145-1154 incl., 1158- 1161 incl., 1163-1174 incl., 1176-1187 incl. and 1188-1195 incl.
36-20							A Bulk Elevation Corr- ection of Minus (-) 14 feet is required for all Tape Data Sheets S.P.s 1196-1210 incl. Tape Data Sheets correct as previously submitted, for S.P.s 2213-2225.
36-21	1214			1367	1356		Pro-rating S.P.s 1217 to 1218.
	1215			1387	1376		Pro-rating S.P.s 1218 to 1219.
	1216	.003	.005	1377	1367		Pro-rating S.P.s 1219 to 1220.
	1218			1287	1262		Pro-rating S.P.s 1221 to 1222.
	1241			893	882		Pro-rating S.P.s 1244 to 1245.
	1242			882	872		Pro-rating S.P.s 1245 to 1246.
	1243	.003	.005	866	855		Pro-rating S.P. 1246 to 1247.
	1246	.003	.005	817	807		Pro-rating S.P.s 1249 to 1250.
	1261			699	689		Pro-rating S.P.s 1264 to 1265.
	1262			694	685		Pro-rating S.P.s 1265 to 1266.
	1265			676	682		Pro-rating S.P.s 1268 to 1269.
	1274	.014	.011	588	579		Pro-rating S.P.s 1277 to 1278.
	1282	.005	.007	591	582		Pro-rating S.P.s 1285 to 1286.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u> <u>Shift</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>		
36-21	1534	.010	.010				Pro-rating S.P.s 1537 to 1538.
	1537			462	454		
	1542	.016	.008				
	1544	.013	.011	342	353		
	1548	.014	.010				
	1552	.016	.008				
	1556						Pro-rating S.P.s 1559 to 1560.
	1557						Pro-rating S.P.s 1560 to 1561.
	1560			312	302		
	1564	.012	.008				
	1571	.012	.010				
36-22	1309			618	612		Pro-rating S.P.s 1305 to 1313.
	1332			637	629		Pro-rating S.P.s 1335 to 1336.
	1347	.005	.007	602	597	+025	Pro-rating S.P.s 1350 to 1351.
	1348	.005	.007	610	605		Pro-rating S.P.s 1351 to 1352.
	1360	.005	.008	643	637	+004	Pro-rating S.P.s 1363 to 1364.
							Revised Tape Data Sheets now submitted for Shot Points listed A Bulk Elevation Corr- ection of Minus (-) 11 feet required all tape data sheets Shot Points 1305-1308 incl. A Bulk Elevation Corr- ection of Minus (-) 11 feet required for all Tape Data Sheets S.P.s 1310-1331 incl., S.P.s 1333 to 1346 incl. S.P.s 1349-1359 incl. and S.P.s 1361-1366 incl.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-25	1662	.014	.011				Pro-rating 1665-1666
	1665	.014	.012				Pro-rating 1668-1669
	1668	.007	.010	465	475		Pro-rating 1671-1672
	1669	.007	.009	473	483		Pro-rating 1672-1673
	1671	.014	.012	472	483		Pro-rating 1674-1675
	1679	.007	.010	469	479		Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation correction of Plus (+) 10 feet required for all Tape Data Sheets S.P.s 1663-1664 incl., 1666-1667 incl., 1670, 1672-1678 incl., 1680
36-26	1681			323	333		Pro-rating S.P.s 1681-1685.
	1682			329	339		Pro-rating S.P. 1685-1686.
	1684	.010	.008	345	355		Pro-rating S.P.s 1687-1688.
	1701	.010	.008	442	452		Pro-rating S.P.s 1704-1705.
	1710	.006	.008	487	497		Pro-rating S.P.s 1713-1714.
	1711	.018	.008	490	500	+015	Pro-rating S.P.s 1714-1715.
	1713			498	508		Pro-rating S.P.s 1716-1717.
	1714	.005	.008	503	513		Pro-rating S.P.s 1717-1718.
	1715	.009	.008	505	515		Pro-rating S.P.s 1718-1719.
	1717			498	499		Pro-rating S.P.s 1720-1721.
	1718	.010	.008	499	481		Pro-rating S.P.s 1721-1722.
	1721	.012	.009	482	492		Pro-rating S.P.s 1724-1725.
	1722	.010	.009	489	499		Pro-rating S.P.s 1725-1726.
	1724	.014	.008	498	508		Revised Tape Data Sheets now submitted for Shot Points listed.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times Elevations</u>				<u>Time Break</u>	<u>Received</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-26							A Bulk Elevation Correction of Plus (+) 10 feet All Tape Data Sheets S.P.s 1683, 1685-1700 incl., 1702-1709 incl., 1712, 1716, 1719-1721 incl., 1725-1726 incl.
36-27	1735			314	324		Pro-rating 1738-1739
	1736			310	320		Pro-rating 1739-1740
	1739	.006	.010	315	317		Pro-rating 1724-1743
	1742			358	368		Pro-rating 1745-1746
	1743	.014	.013	370	380		Pro-rating 1746-1747
	1745	.016	.015	347	357		Pro-rating 1748-1749
	1752	.016	.013	342	352		Pro-rating 1755-1756
	1758	.006	.007	341	351		Pro-rating 1761-1762
	1759	.006	.008	340	350		Pro-rating 1762-1763
	1760	.006	.008	340	350		Pro-rating 1763-1764
	1769	.013	.011	333	343		Pro-rating 1772-1773
	1770	-	-	336	346		Pro-rating 1773-1774
	1771	-	-	336	346		Pro-rating 1774-1775
	1772	-	-	334	344		Pro-rating 1775-1776
	1773	.013	.010	342	345		Pro-rating 1776-1777
	1774	-	-	341	351		Pro-rating 1777-1778
	1777	-	-	354	373		Pro-rating 1780-1781
	1792	.012	.010	359	368		Pro-rating 1795-1796
	1796	-	-	354	363		Pro-rating 1799-1800
	1797	-	-	354	363		Pro-rating 1800-1801
	1800	-	-	348	355		Pro-rating 1803-1804
	1818	.013	.009	308	317		Pro-rating 1821-1822
	1820	.013	.011	303	312		Pro-rating 1823-1824
	1822	.010	.007	301	310		Pro-rating 1825-1826
	1828	-	-	281	290		Pro-rating 1831-1832
	1829	-	-	272	281		Pro-rating 1832-1833

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-28	2040	-	.014				Pro-rating S.P.s 2043-2044. Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation Correction of Plus (+) 9 feet required for Tape Data Sheets 1962-1970 incl., 1972-2008, 2011-2012 incl., 2014-2029 incl., 2031-2039 incl., 2041-2048 incl.
36-29	1945	.014	.013	326	335		Pro-rating S.P.s 1948-1949.
	1950	.013	.012	297	306		Pro-rating S.P.s 1953-1954.
	1958	.015	.014	384	393		Revised Tape Data Sheets now submitted for Shot Points listed.
	1959	-	.016	386	395		A Bulk Elevation Correction of Plus (+) 9 feet required for Tape Sheets S.P.s 1916-1944 incl., 1946-1949 incl., 1951-1957 incl., 1960-1961 incl.
36-30							Revised Tape Data Sheets previously submitted for 2316, 2317 and 2320. All remaining Tape Data Sheets as initially submitted.
36-31							Revised Tape Data Sheets previously submitted for 2264, 2265, 2266 and 2269. All remaining Tape Data Sheets as initially submitted.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-35							Tape Data Sheets for Shot Points 2493-2499, 2503, 2505-2506, 2508-2510, 2513, 2514, 2516-2562, correct as initially submitted.
36-36							A Bulk Elevation Correction of Plus (+) 2 feet required all Tape Data Sheets Shot Points 2371-2441 incl. Tape Data Sheets Shot Points 2442-2482 correct as initially submitted.
36-37	2813 2903			2262 2479	2242 2470		Revised Tape Data Sheets now submitted for Shot Points listed Tape Data Sheets Shot Points 2805-2812 incl., 2814-2934 correct as initially submitted.
36-38	2675	.015	.008				Revised Tape Data Sheet 2675 now submitted. Tape Data Sheets Shot Points 2662-2674 incl., 2675-2682 incl., and 2760-2814 correct as initially submitted.
36-39	2737 2741 2750 2751 2754				1815 1822		Pro-rating S.P.s 2740-2741. Pro-rating S.P.s 2744-2745. Pro-rating S.P.s 2753-2754. Pro-rating S.P.s 2754-2755. Revised Tape Data Sheets previously submitted for Shot Points listed. Tape data sheets for Shot Points 2720-2736 incl.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-39							2738-2740 incl., 2742-2749 incl., 2752-2753 incl. and 2755-2759 correct as initially submitted.
36-40	2697 2698	.014	.008				Pro-rating S.P.s 2701-2702. Revised Tape Data Sheets previously submitted for Shot Points Listed. Tape Data Sheets for Shot Points 2683-2696 incl., and 2699-2719 incl. correct as initially submitted.
36-41	1875 1884 1892 1893	.019 .012 .015 .012	.004 .010 .010 .010	179 273 261	195 289 277		Pro-rating S.P.s 1871-1872 Pro-rating S.P.s 1880-1881. Pro-rating S.P.s 1894-1895. Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation Correction of Plus (+) 16 feet required all Tape Data Sheets Shot Points 1858-1874 incl., 1876-1883 incl., 1885-1891 incl., 1894-1895 incl.
36-42							A Bulk Elevation Correction of Plus (+) 16 feet required all Tape data Sheets Shot Points 1896-1915.
36-43							Tape Data Sheets for Shot Points 2342-2370 correct as originally submitted.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevations</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-44	2581						
	2585						Pro-rating S.P.s 2588-2589.
	2589			1532	1619		
	2600						Pro-rating S.P.s 2604-2605.
	2601						
	2605			2136	2146		Revised Tape Data Sheets.
	2622			2042	2046		Previously submitted for
	2623			2027	2031		Shot Points Listed.
	2624			2018	2022		Tape Data Sheets Shot
	2625			2038	2043		Points 2570-2580 incl.,
	2626			2087	2082		2582-2584 incl., 2586-
	2627			2052	2106		2588 incl., 2590-2599
							incl., 2602-2604 incl.,
							2606-2613 incl. correct
							as originally submitted.
							A Bulk Elevation Correct-
							ion of Plus (+) 4 feet
							required all Tape Data
							Sheets Shot Points 2616-
							2621 incl., 2628-2660
							incl.
36-45							A Bulk Elevation Correct-
							ion of Minus (-) 1 foot
							required all Tape Data
							Sheets Shot Points 3020-
							3091.
36-46	2978			2602	2601		Pro-rating S.P.s 2981-
	2981			2622	2602		2982.
	2984			2621	2619		Pro-rating S.P.s 2987-
	2985			2677	2675		2988.
	2988			2736	2744		Pro-rating S.P.s 2988-
							2989.
							Revised Tape Data Sheets
							previously submitted
							Shot Points 2978 and 2981.
							Revised Tape Data Sheets
							now submitted for Shot
							Points 2984, 2985 and
							2988.

<u>Line</u>	<u>S.P.</u>	<u>Up-Hole Times</u>		<u>Elevation</u>		<u>Time Break</u>	<u>Remarks</u>
		<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Shift</u>	
36-51	3015						Pro-rating S.P.s 3018-3019. Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation Correction of Minus (-) one foot required for all Tape Data Sheets. Shot Points 2903-3005. A Bulk Elevation Correction of Plus (+) one foot required for All Tape Data Sheets Shot Points 3006-3014 incl., 3016-3018 incl. A Bulk Elevation Correction of Minus (-) one foot required for all Tape Data Sheets Shot Points 3208-3223 incl. A Bulk Elevation Correction of Minus (-) 2 feet required for all Tape Data Sheets Shot Points 3224-3243.
	3019			1742	1706		
36-52	3302						Pro-rating S.P.s 3305-3306. Revised Tape Data Sheets now submitted for Shot Points listed. A Bulk Elevation Correction of Minus (-) one foot required for all Tape Data Sheets Shot Points 3294-3301 incl., 3303-3305 incl. and 3307-3332 incl.
	3306			1635	1627		
36-53							A Bulk Elevation Correction of Minus (-) 2 feet required for all Tape Data Sheets Shot Points 3244-3271 incl.
36-54							Tape Data Sheets correct as originally submitted.

TABULATION 12

EQUIPMENT ROSTER
MOBIL OIL PARTY NO. 36
GLOBE UNIVERSAL SCIENCES CANADA LTD.
FORT GOOD HOPE AREA

<u>Classification</u>	<u>Unit No.</u>	<u>Model</u>	<u>Year</u>	<u>Description</u>
Party Manager Vehicle	7	Fargo	1965	W300, 4x4, with Heated Van.
Recording Vehicle	301	Fargo	1969	W300, 4x4.
Shooting Vehicle	411	Fargo	1968	W500, 4x4.
Line Vehicle	523	Fargo	1969	W300, 4x4.
Line Vehicle	543	Fargo	1966	W300, 4x4.
Survey Unit	30	Fargo	1966	W300, 4x4.
Survey Unit	21	Dodge	1964	W300, 4x4.
Personnel Carrier	33	IHC	1969	Crew Cab, 4x4.
Supply Truck	46	GMC	1967	Flat Deck, 3 Ton.
Fuel Tanker	54	Chev.	1968	1,670 Gallon Capacity, 5 Ton.
Water Tank Vehicle	250	GMC	1967	850 Gallon Capacity, 3 Ton.
Drill	101	Flextrack 160	1969	Failing CFD-1 with Air Compressor.
Drill	102	Flextrack 160	1969	Failing CFD-1 with Air Compressor.
Drill	113	Flextrack 160	1969	Failing CFD-1 with Air Compressor.
Water Tender	201	Flextrack 160	1969	550 Gallon Tank.
Dynamite Magazine	633			
Dynamite Magazine	634			

TABULATION 15

CAMP EQUIPMENT MOBIL OIL PARTY NO. 36 GLOBE UNIVERSAL SCIENCES CANADA LTD. FORT GOOD HOPE AREA

<u>Classification</u>	<u>Unit No.</u>	<u>Model</u>	<u>Year</u>	<u>Description</u>
Kitchen Trailer	640	ATCO	1969	
Diner Trailer	642	ATCO	1969	
Utility Trailer	641	ATCO	1969	
Sleeper Trailer	643	ATCO	1969	Sloop mounted - sleeps 6.
Sleeper Trailer	644	ATCO	1969	Sloop mounted - sleeps 6.
Sleeper Trailer	645	ATCO	1969	Sloop mounted - sleeps 6.
Sleeper Trailer	646	ATCO	1969	Sloop mounted - sleeps 6.
Sleeper Trailer	605	ATCO	1968	Sloop mounted - sleeps 6.
Sleeper Trailer	606	ATCO	1968	Sloop mounted - sleeps 6.
Sleeper Trailer and Storage Trailer	604	ATCO	1968	Sloop mounted - Supplies and Sleeping Quarters. Cook, Cook's Helper, Camp Attendant.
Office Trailer	603	ATCO	1968	Sloop mounted - sleeps 4.
Power Trailer	647	ATCO	1968	Sloop mounted - Houses Deutz and Perkins Power Plants.
Power Plant		Deutz	1969	25 KW - Main Unit
Power Plant		Perkins		18 KW - Standby Unit.
Power Plant		Lister		12 KW - Plug In Unit for Drill Units.

TABULATION 16

PERSONNEL ROSTER
MOBIL OIL PARTY NO. 36
FORT GOOD HOPE AREA

<u>Name</u>	<u>Company</u>	<u>Position</u>	<u>Location</u>
Frank Deakin	Globe	Party Chief	Calgary
George Lachance	Globe	Senior Geophysicist	Calgary
Robert Wilson	Globe	Computer	Calgary
Albert Straub	Globe	Field Supervisor	Calgary & Camp
Keith Barber	Globe	Party Manager	Camp
John Rollins	Globe	Office Clerk	Camp
Gordon Jackson	Globe	Chief Surveyor	Camp
Terry Melling	Globe	Surveyor	Camp (Replaced)
Victor Curzon	Globe	Surveyor	Camp
Alan Dionne	Globe	Rodman	Camp
Darcy Livingston	Globe	Rodman	Camp
John Pachal	Globe	Rodman	Camp
Fred Rose	Globe	Observer	Camp
David Szaroz	Globe	Jr. Observer	Camp
William Benson	Globe	Shooter	Camp
James Grant	Globe	Shooter's Helper	Camp
Brian Thomlinson	Globe	Line Truck Driver	Camp
Del Saunders	Globe	Line Truck Driver	Camp
Charles Webster	Globe	Recorder Helper	Camp
Bruce Anglestad	Globe	Recorder Helper	Camp
Keith Ladtke	Globe	Recorder Helper	Camp
Lloyd Jackson	Globe	Recorder Helper	Camp
Mike Morris	Globe	Recorder Helper	Camp
Herman Ipema	Globe	Recorder Helper	Camp
George Gerbrandt	Globe	Mechanic	Camp
Rick Chambers	Globe	Cook	Camp
Titus Wellner	Globe	Cook's Helper	Camp
John Wolney	Globe	Camp Attendant	Camp

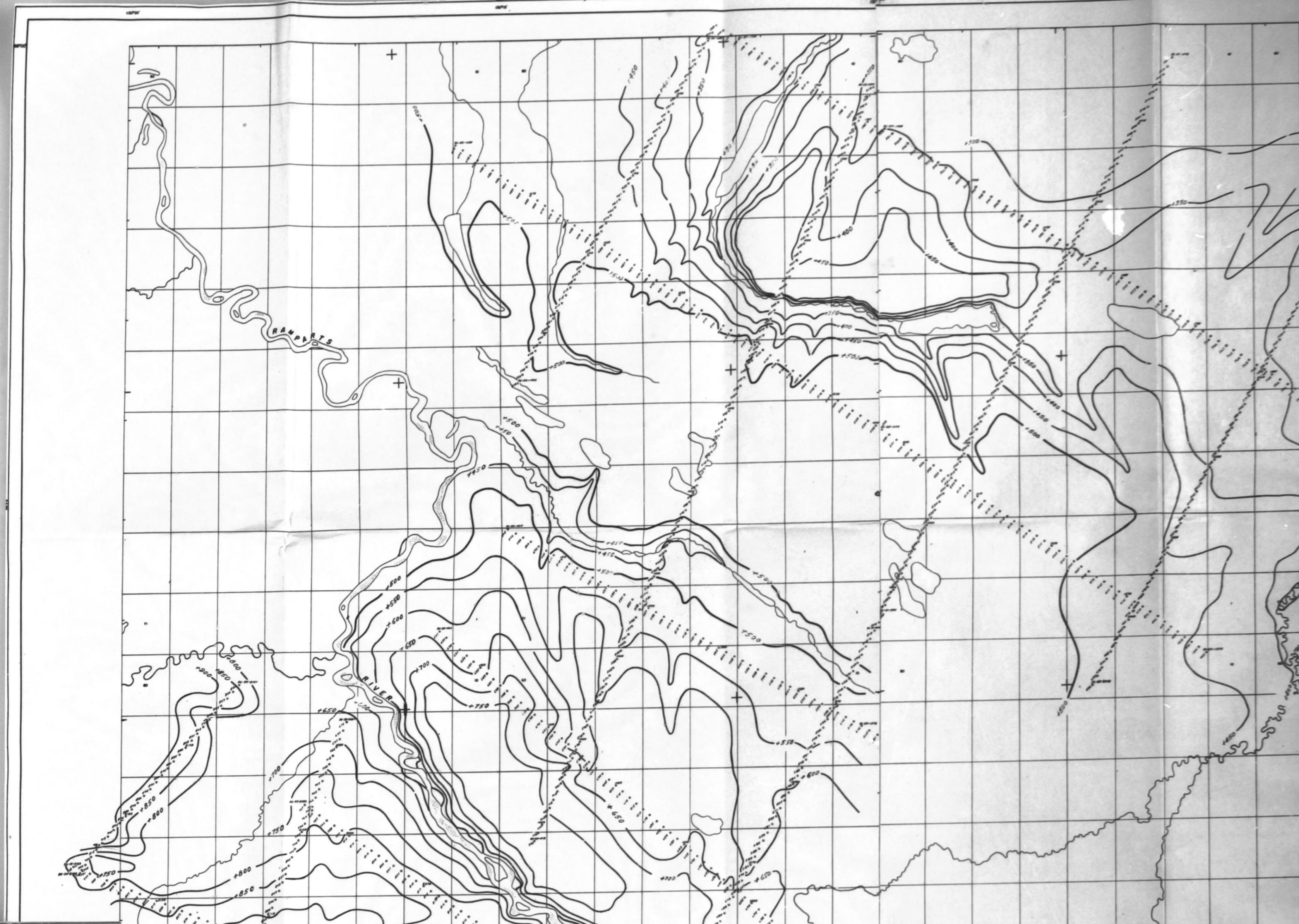
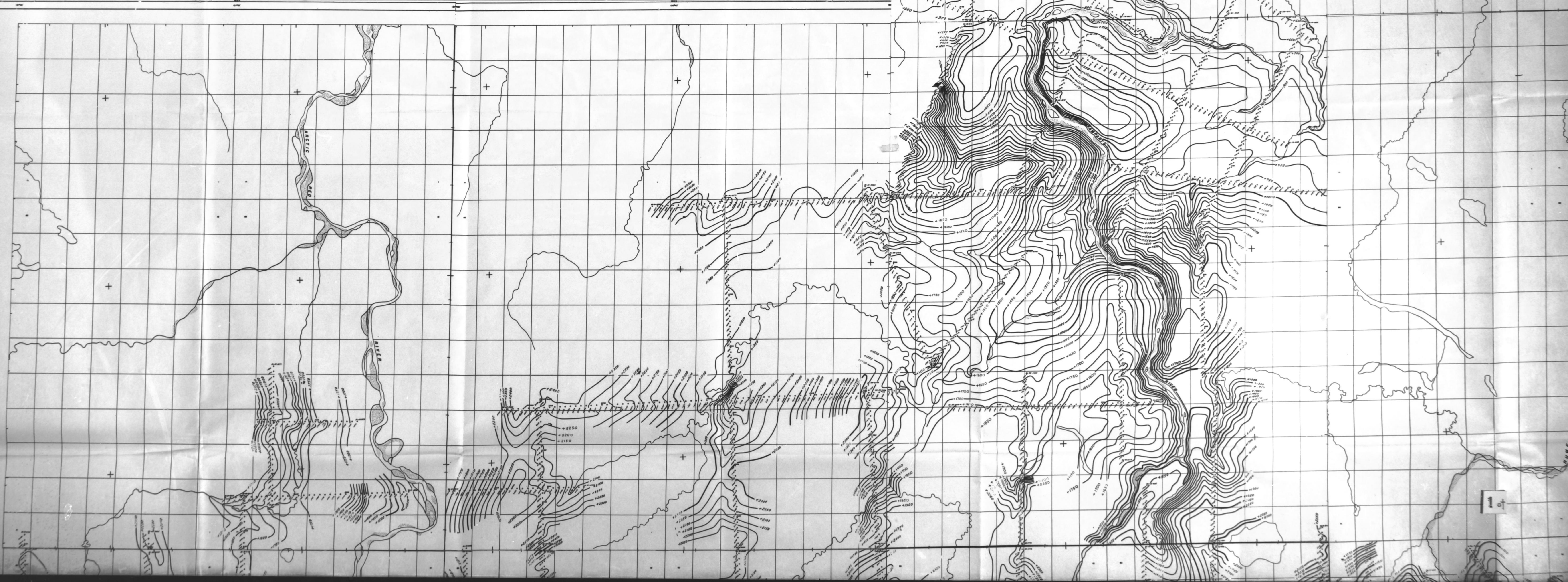
<u>Name</u>	<u>Company</u>	<u>Position</u>	<u>Location</u>
George Kirkham	Globe	Fuel Driver	Camp
Don Neill	Globe	Supply Driver	Camp
Metro Chernichiwan	Globe	Drill Supervisor	Camp
Don Weaver	Globe	Driller	Camp
Dale Reed	Globe	Driller	Camp
Dale Burrows	Globe	Driller	Camp
Alan Stewart	Globe	Driller	Camp
Andy Molner	Globe	Drill Helper	Camp
Alan Kneeland	Globe	Drill Helper	Camp
Douglas Short	Globe	Drill Helper	Camp
Daryl Fleece	Globe	Drill Helper	Camp
Roy Hays	Bertram	Drill Supervisor	Camp
Ross Stuart	Bertram	Driller	Camp
William Hronik	Bertram	Driller	Camp
Lee Fuller	Bertram	Driller	Camp
William Sorensen	Bertram	Driller	Camp
Wes McMann	Bertram	Drill Helper	Camp
Harry McLean	Bertram	Drill Helper	Camp
Oaris Land	Bertram	Drill Helper	Camp
Sam Godwin	Bertram	Drill Helper	Camp
Frank Waygar	Borek	Foreman	Camp
Barney Archer	Borek	Foreman	Camp
Harold Lee	Borek	Cook	Camp
Ileen Nelson	Borek	Cook	Camp
Howard Nelson	Borek	Cat Skinner	Camp
Oscar La Course	Borek	Cat Skinner	Camp
Joe La Course	Borek	Cat Skinner	Camp
Andy Gauche	Borek	Cat Skinner	Camp
Ray Nemeth	Borek	Cat Skinner	Camp
Marvin Hainy	Borek	Cat Skinner	Camp
Steve Markrisky	Borek	Cat Skinner	Camp
Jerry Gullette	Borek	Cat Skinner	Camp
Hans Withrold	Borek	Cat Skinner	Camp
Jack Haight	Borek	Cat Skinner	Camp
Pete Kazudazk	Borek	Grader Operator	Camp

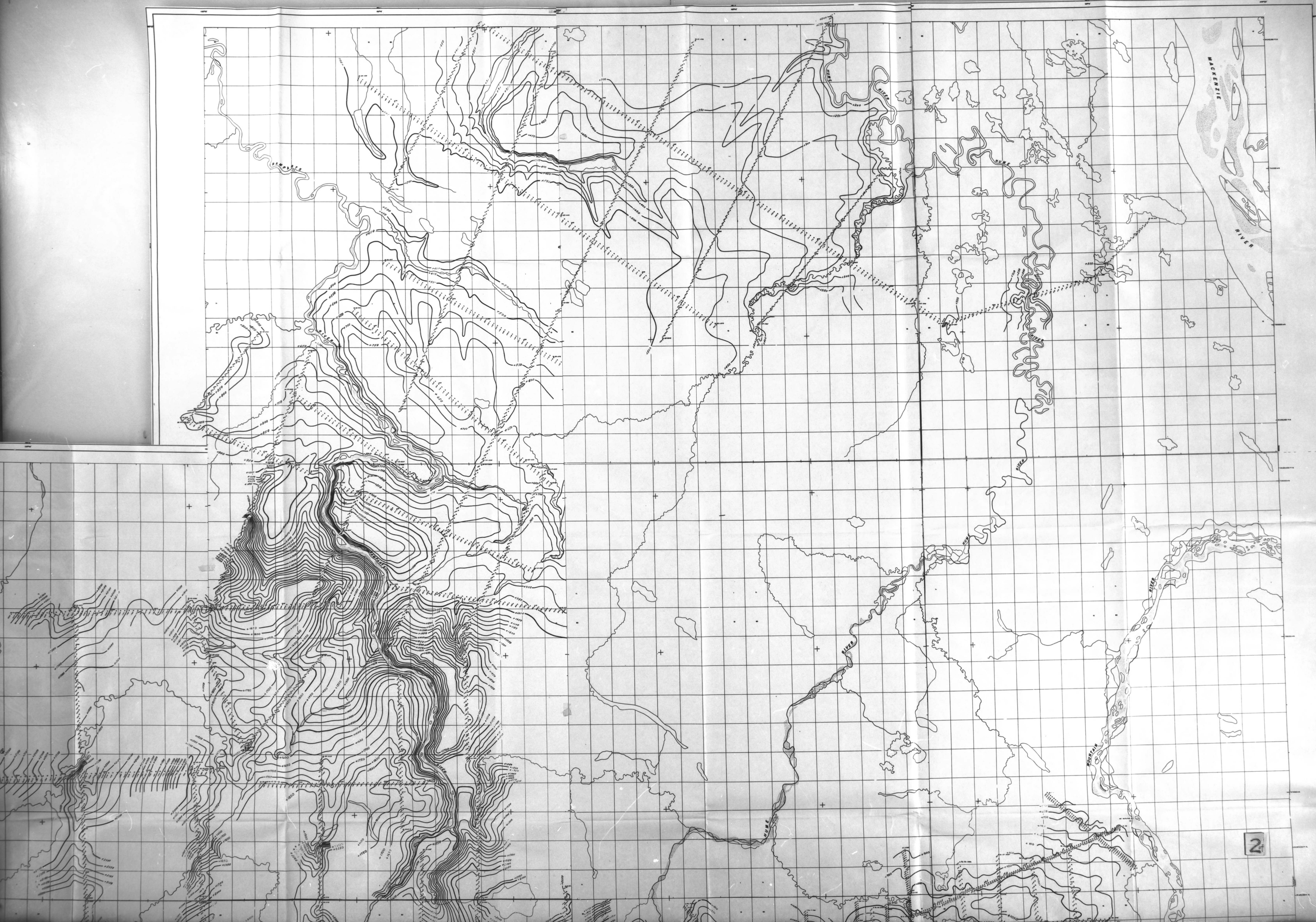
TABULATION 17

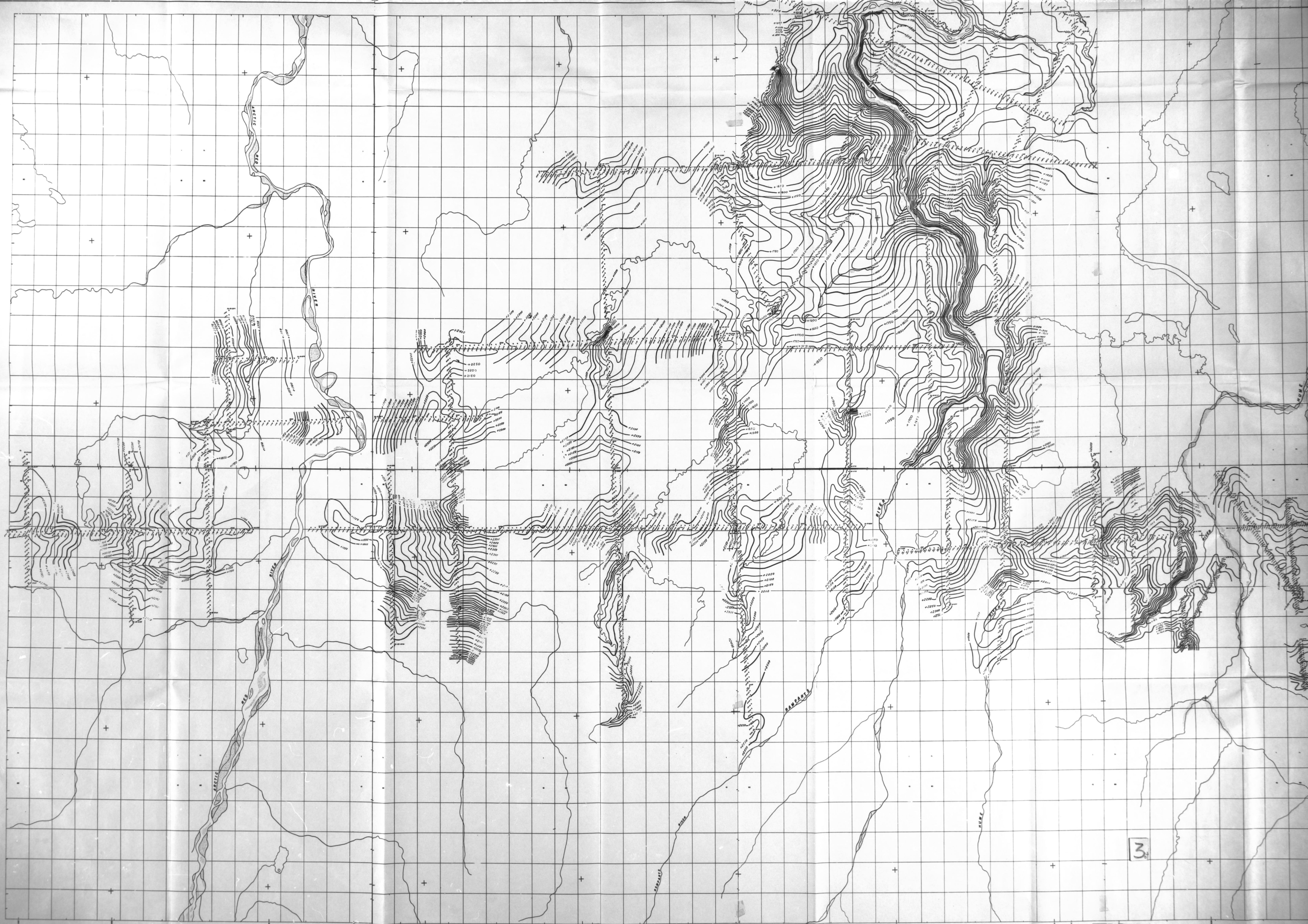
LOCATION OF CAMPSITES AND AIRSTRIPS MOBIL OIL PARTY NO. 36 FORT GOOD HOPE AREA

<u>Camp</u>	<u>Map No.</u>	<u>Location</u>	<u>Air Strip</u>	<u>Remarks</u>
1	106H 11	Intersection of Lines 2 and 60.	Land	Air Strip adjacent to campsite.
2	106H 5	Intersection of Lines 4 and 6.	Land	Air Strip adjacent to campsite.
3	106G 8	Intersection of Lines 4 and 13.	Land	Air Strip adjacent to intersection of Lines 4 and 15.
4	106G 16	Approximately 1 1/2 Miles south intersection of Line 22 and old access road.	Lake	Adjacent to campsite.
5	106H 13	Approximately 1 1/2 Miles south and 1 Mile west of intersection of Lines 21 and 27.	Lake	Air Strip adjacent to campsite.
6	106G 10	1 Mile south intersection of Line 35 and old access road.	Land	Air Strip adjacent to campsite.
7	106G 9	1 Mile south intersection of Lines 38 and 39	Lake	Air Strip adjacent to campsite.
8	106G 7	Intersection of Lines 37 and 44.	Land	Air Strip adjacent to campsite.
9	106G 6	Intersection of Lines 46 and 48.	Lake	Air Strip 1 1/2 miles north and 1/2 mile east of campsite.
10	106 G7	Intersection of Lines 37 and 45.	Land	Air Strip adjacent to campsite.
11	106 H6	Intersection of Lines 57 and 58.	Land	Air Strip as located Camp 1.

In addition to the above campsite the following additional camp moves are noted. From Camp 5 back to Camp 4, one overnight stop between Camps 8 and 9, two overnight stops between Camps 10 and 11, and one move from Camp 11, to the Sans Sault Stockpile. Camp moved approximately every 8 days, approximately 200 hours of move time, covering a distance of approximately 385 miles.



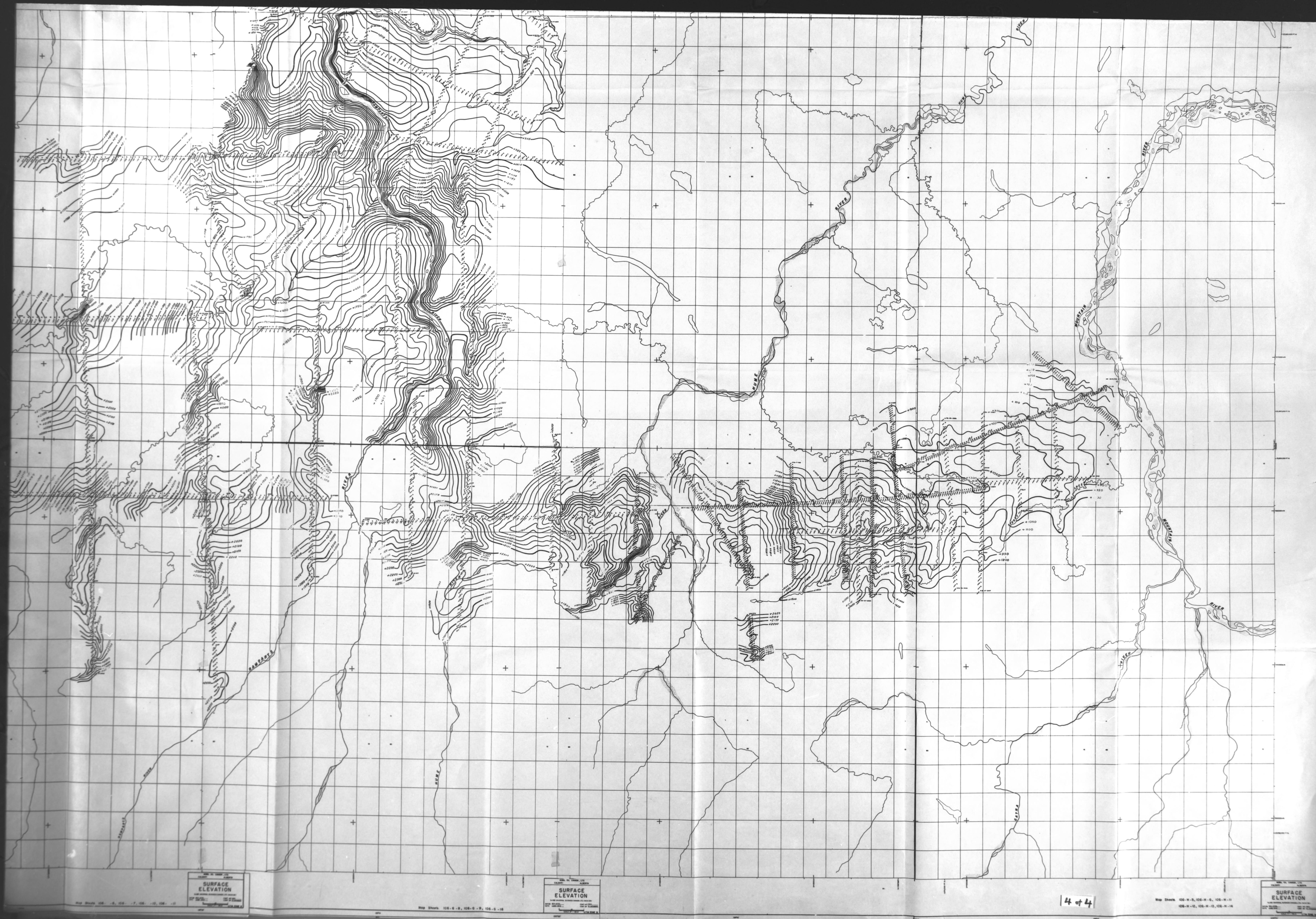


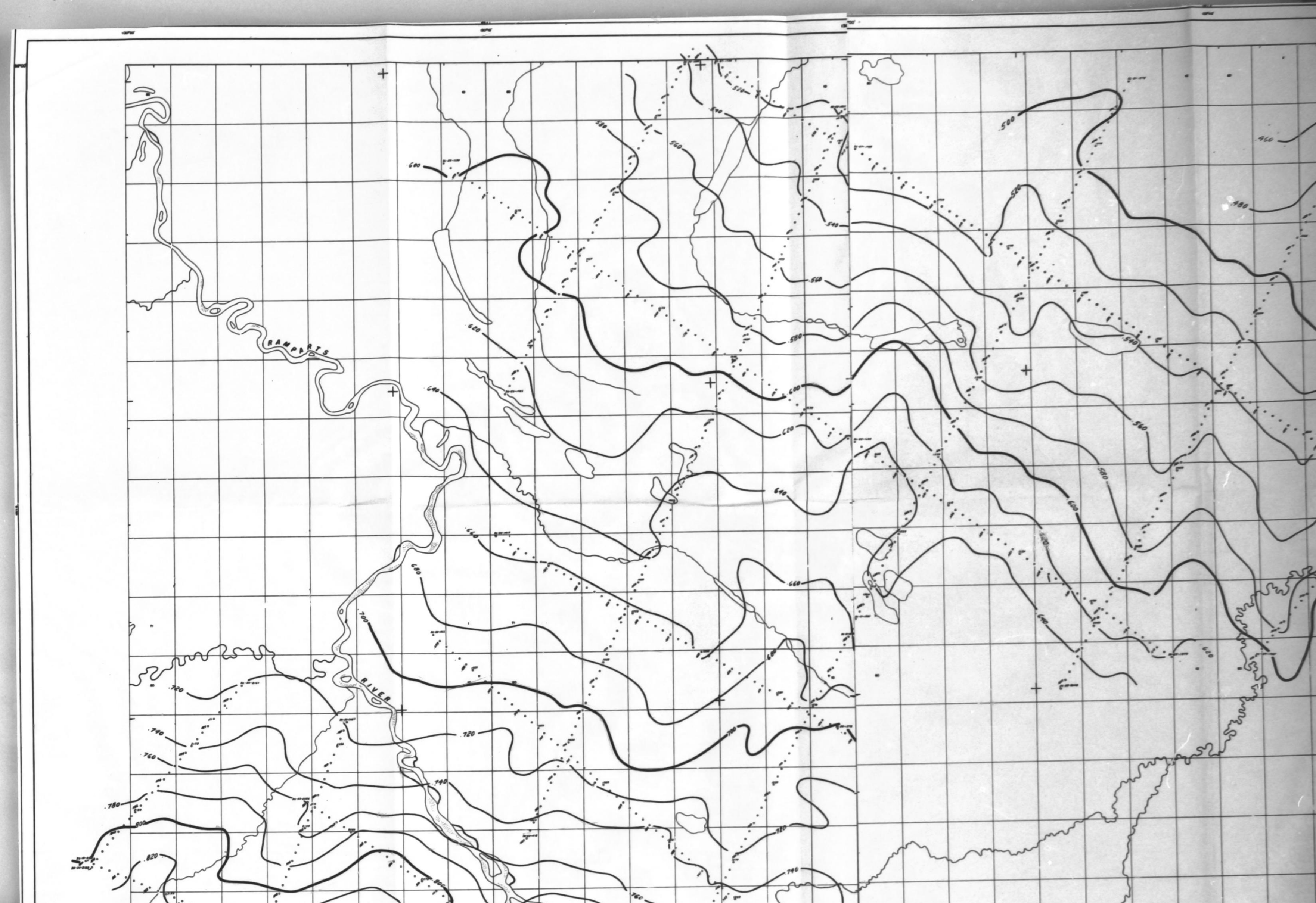
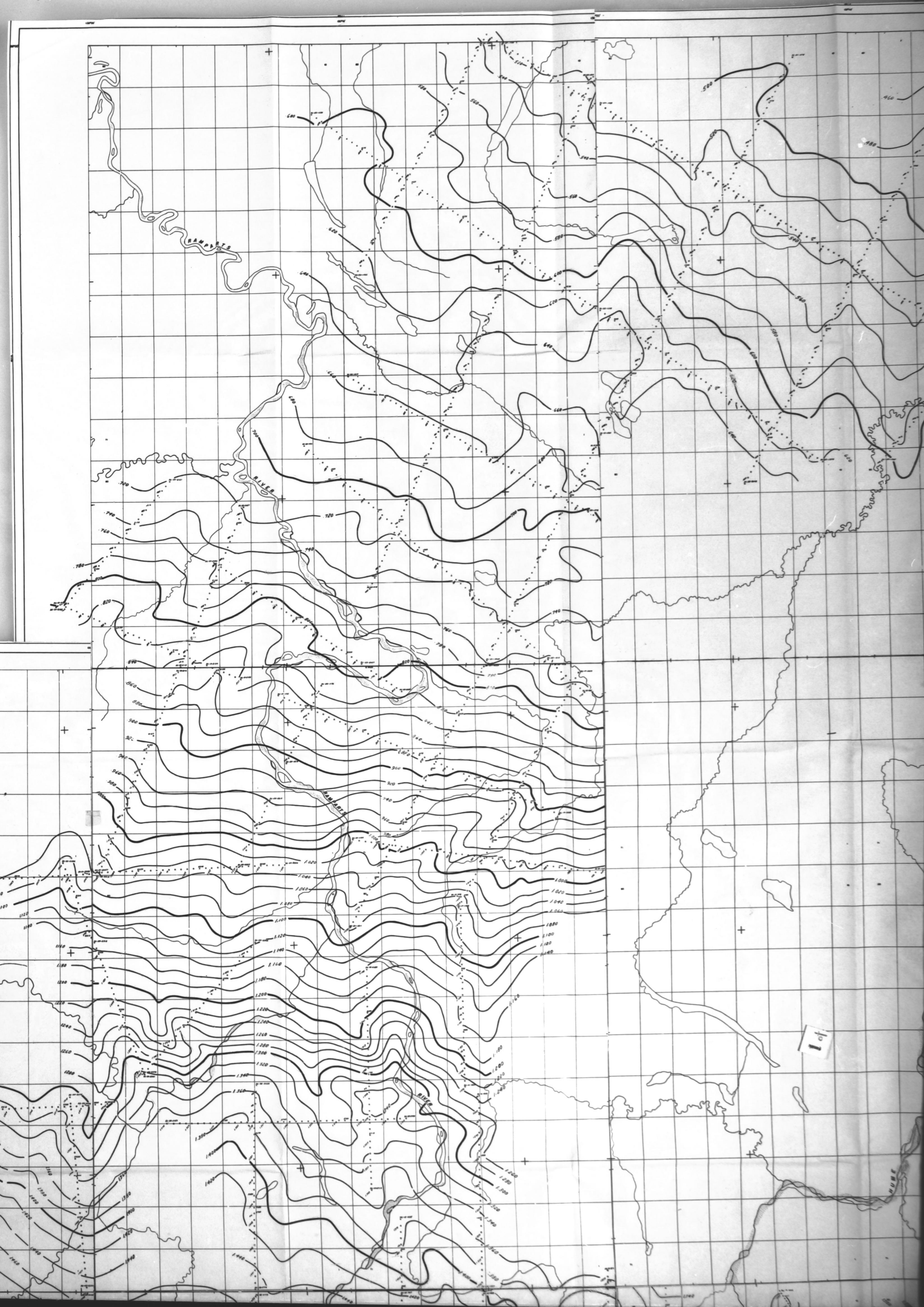
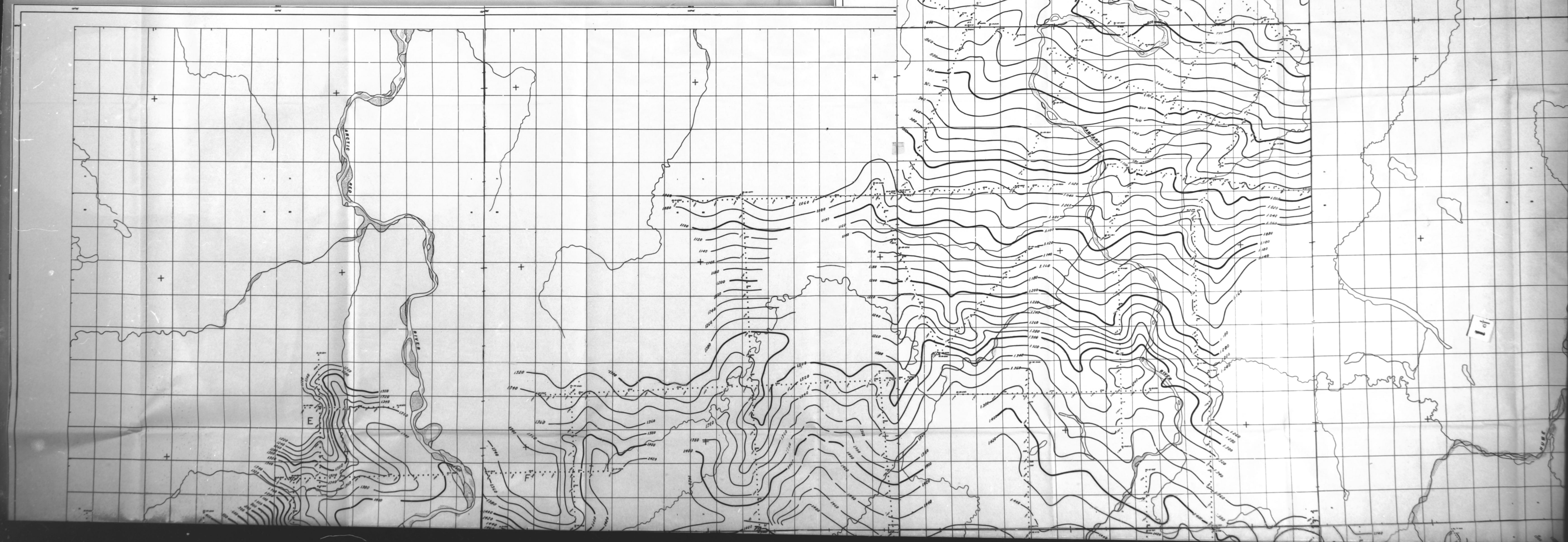


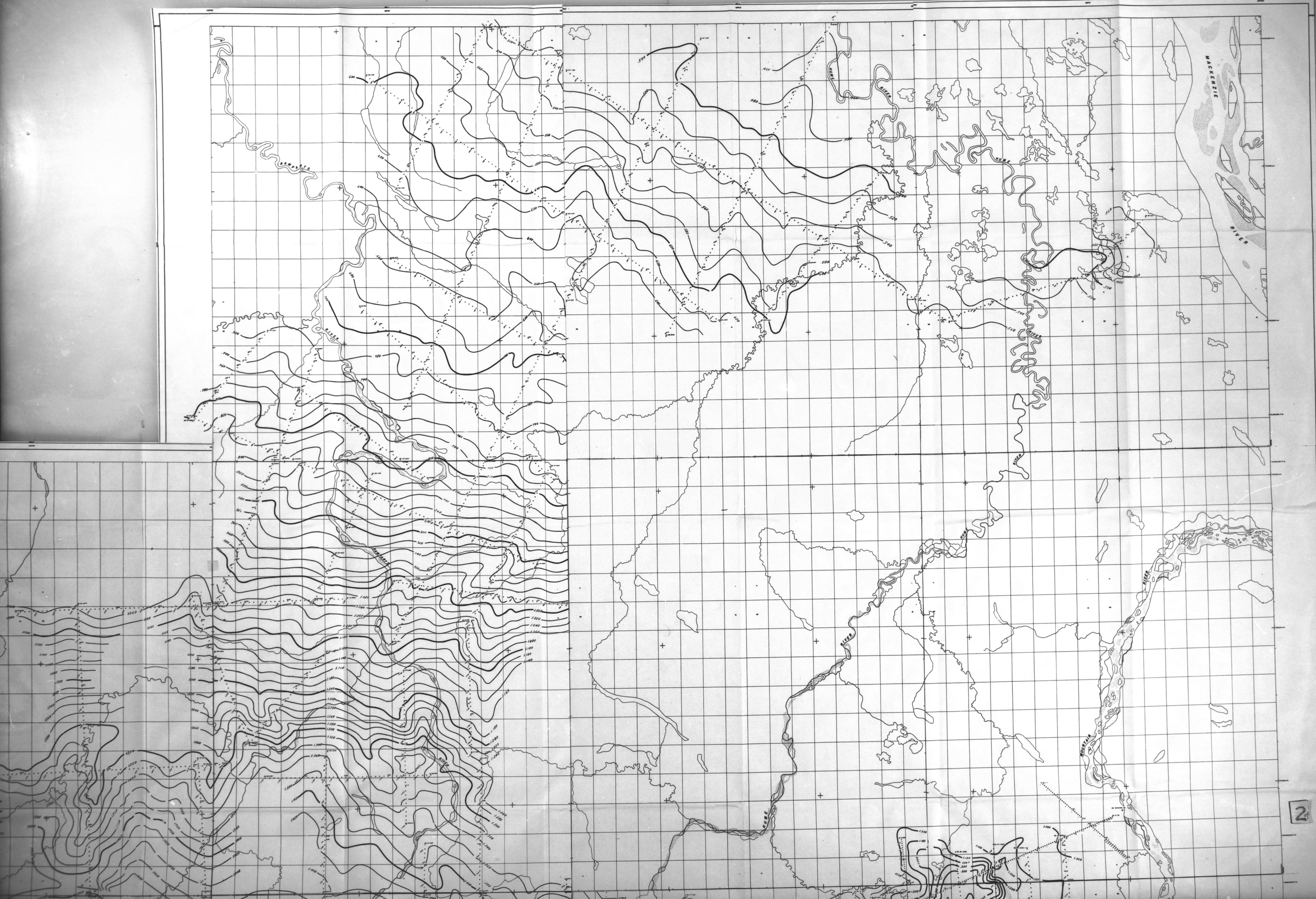
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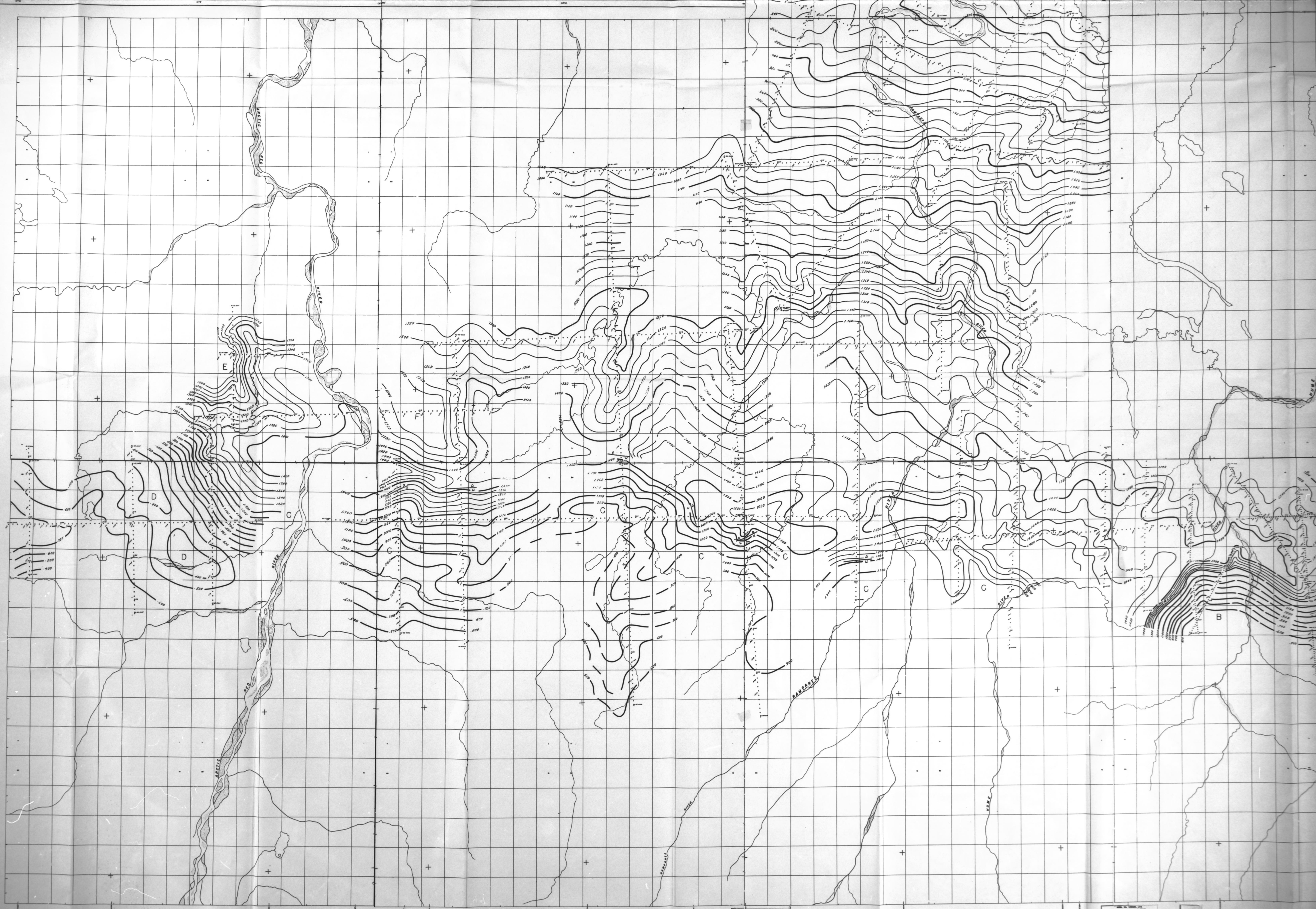
SURFACE ELEVATION
Map Sheet 106-6-8, 106-6-9, 106-6-10, 106-6-11

SURFACE ELEVATION
Map Sheet 106-6-8, 106-6-9, 106-6-10, 106-6-11



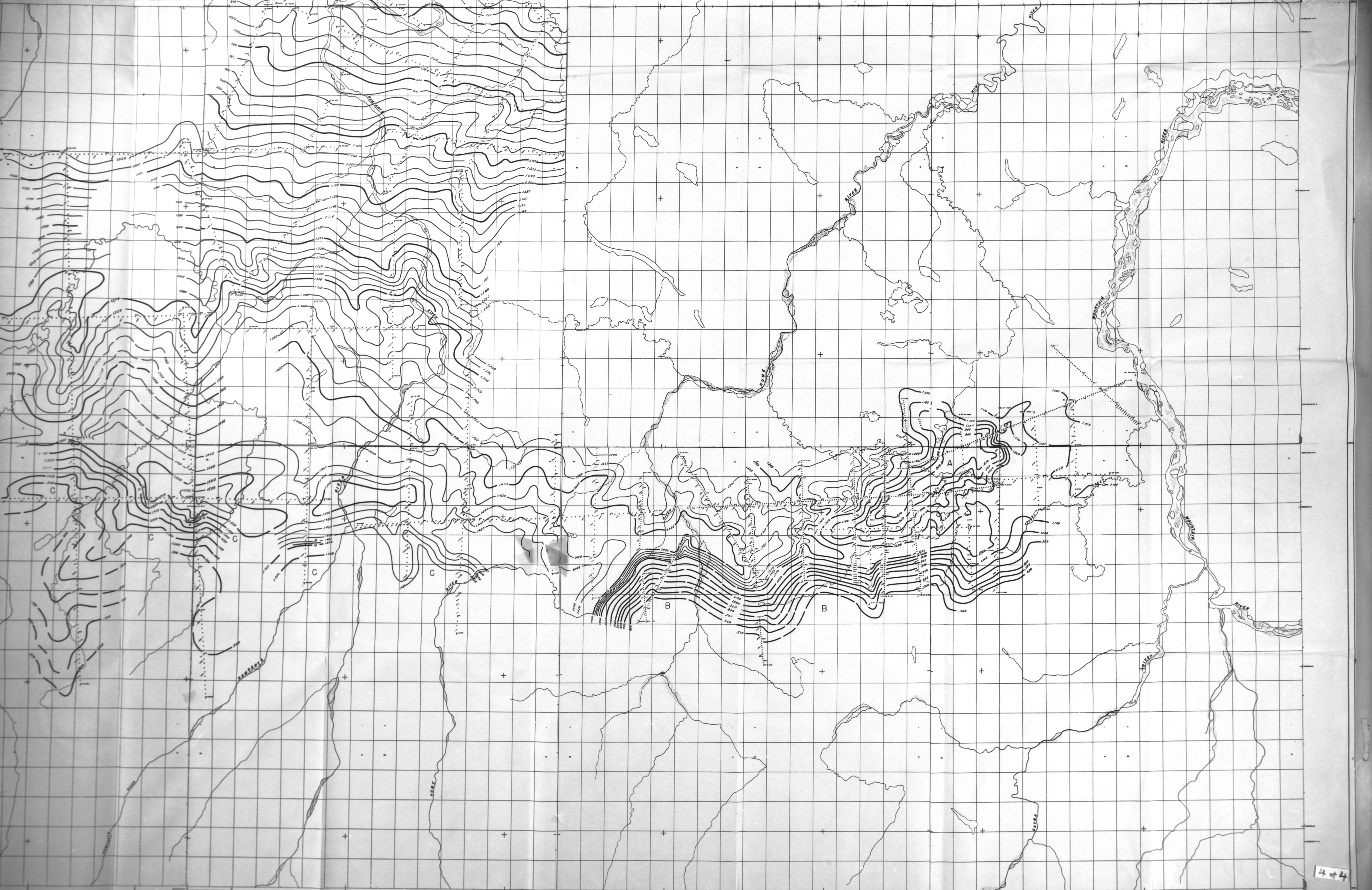






HUME
STRUCTURE MAP IN TIME
Map Sheets: 106-G-6, 106-G-7, 106-G-8, 106-G-9, 106-G-10, 106-G-11

HUME
STRUCTURE MAP IN TIME
Map Sheets: 106-G-6, 106-G-7, 106-G-8, 106-G-9, 106-G-10, 106-G-11

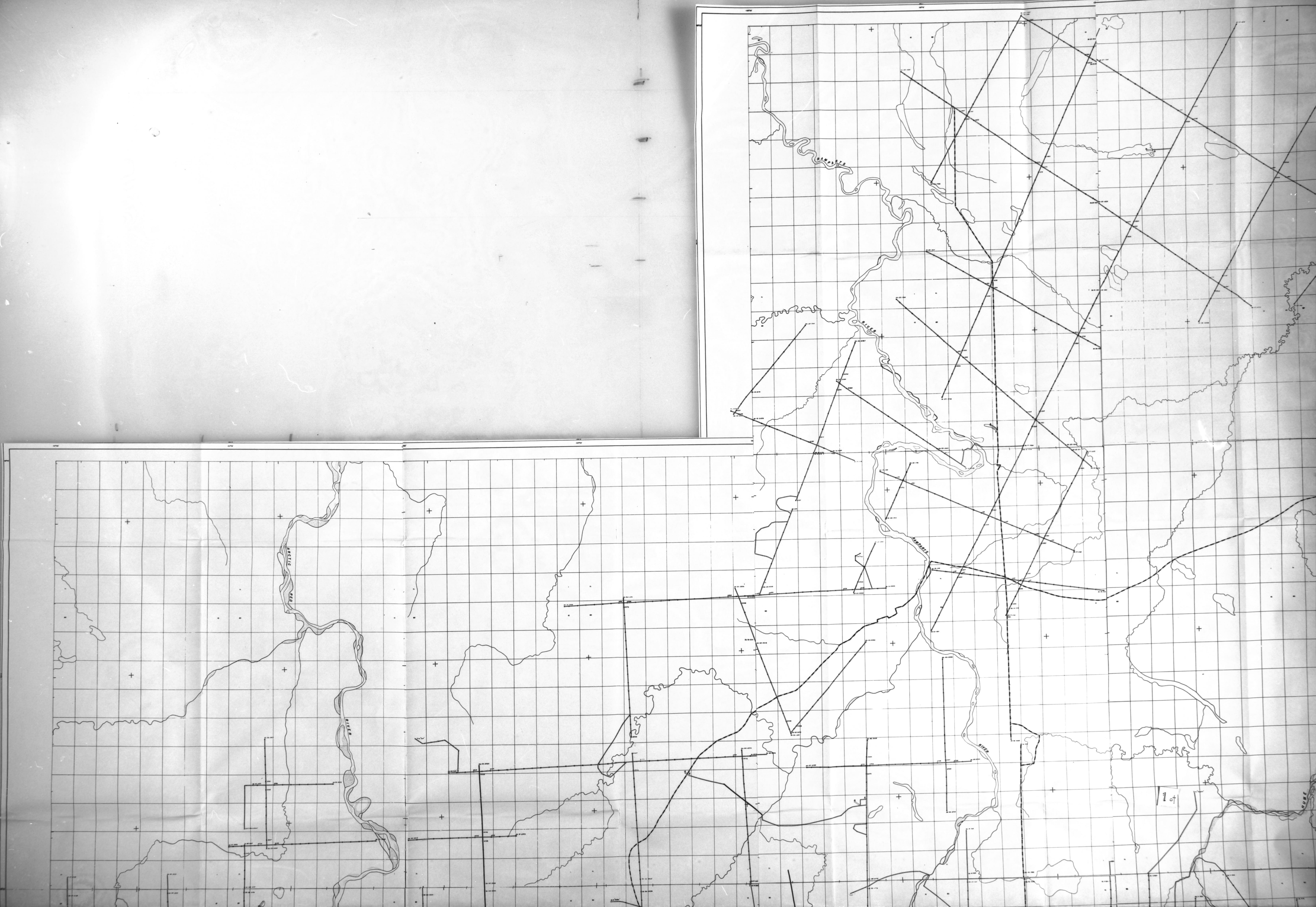


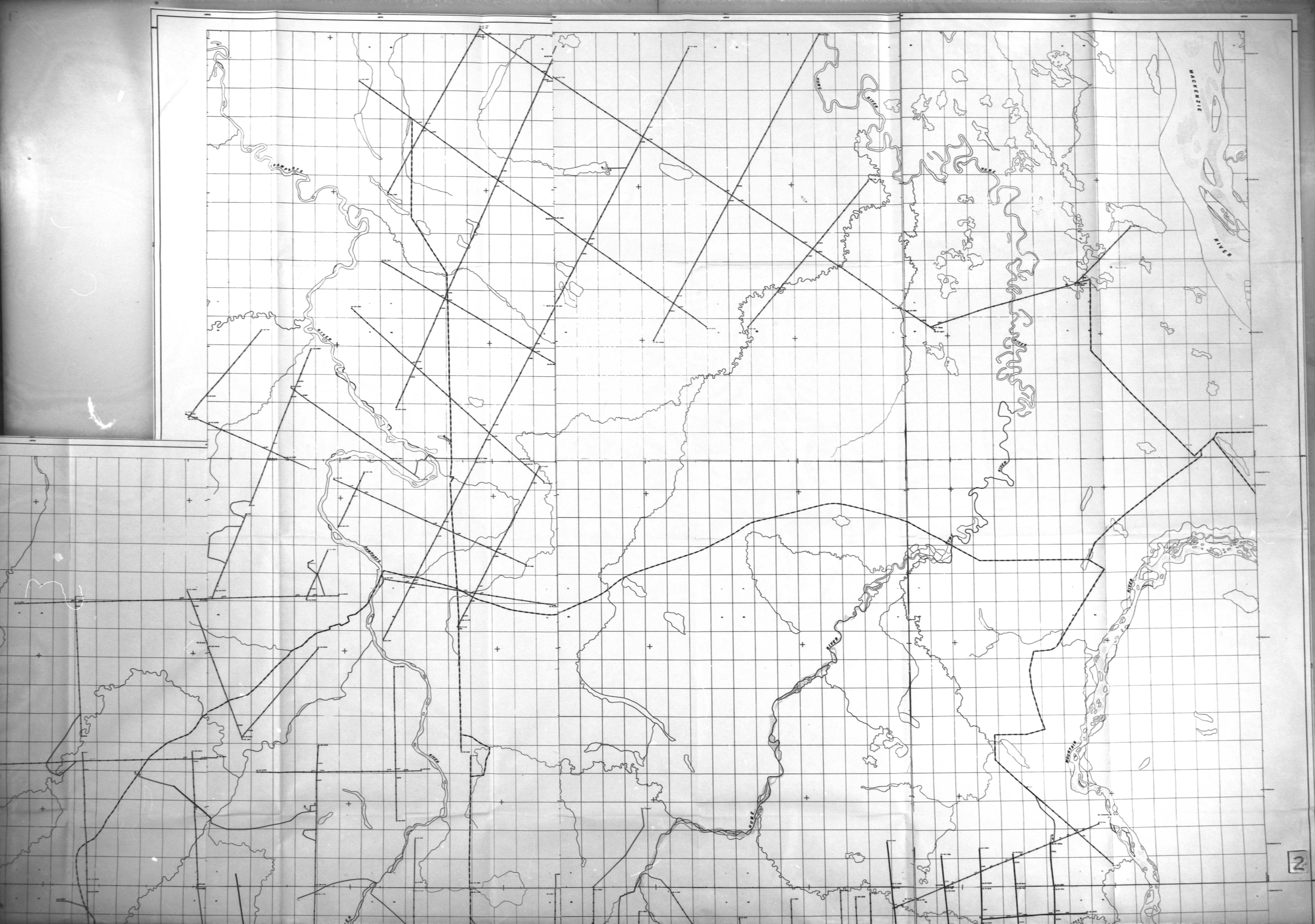
HUME
STRUCTURE MAP IN TIME
Map Sheet: 108-N-8, 108-N-9, 108-N-10, 108-N-11, 108-N-12, 108-N-13, 108-N-14

HUME
STRUCTURE MAP IN TIME
Map Sheet: 108-N-8, 108-N-9, 108-N-10, 108-N-11, 108-N-12, 108-N-13, 108-N-14

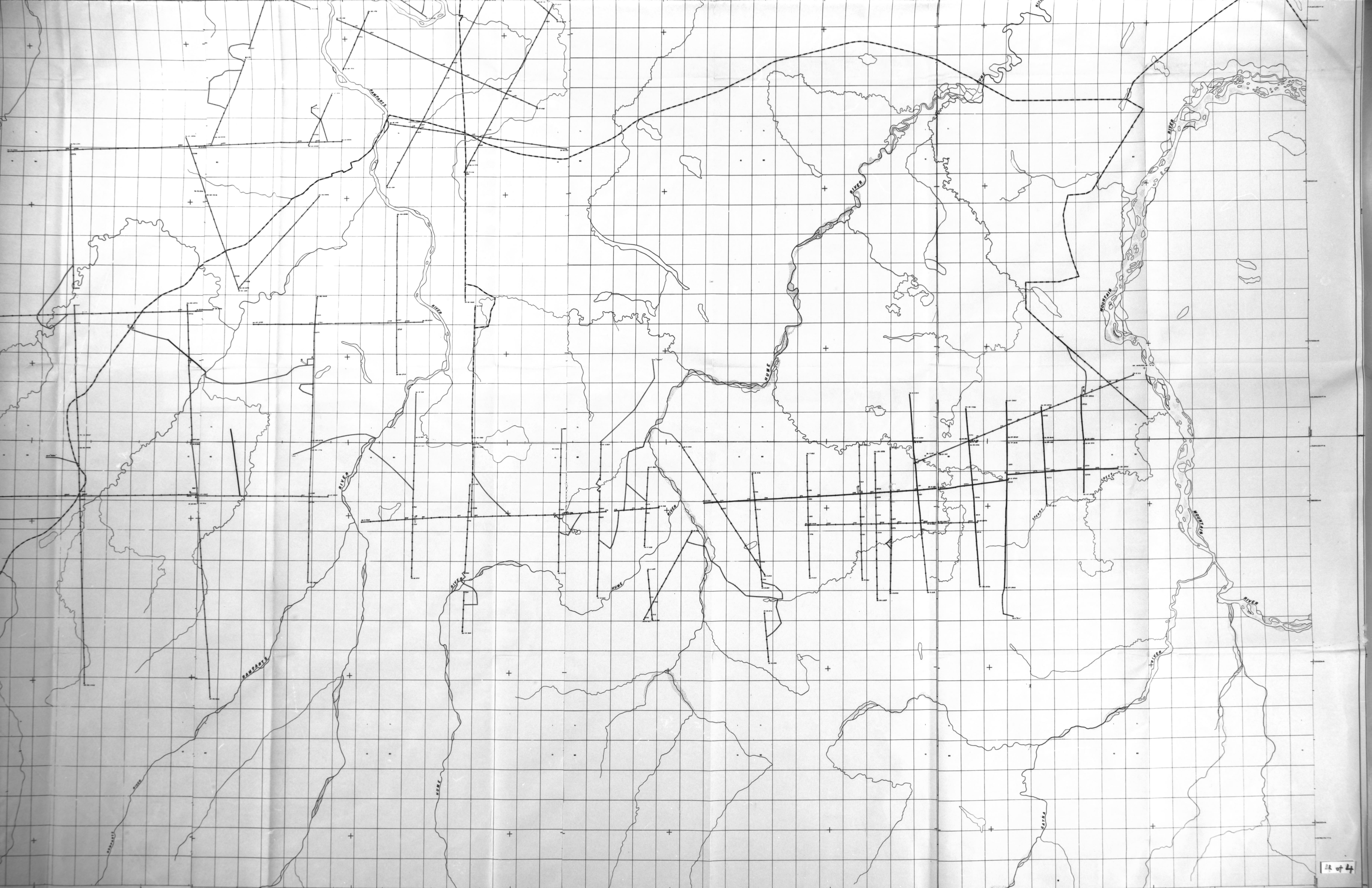
HUME
STRUCTURE MAP IN TIME
Map Sheet: 108-N-8, 108-N-9, 108-N-10, 108-N-11, 108-N-12, 108-N-13, 108-N-14

44 44









24 of 4

Map Sheet: 106-G-5, 106-G-6, 106-G-7, 106-G-8, 106-G-9, 106-G-10, 106-G-11
FORT GOOD HOPE AREA
SOUND MAP
Scale: 1:50,000
Map Date: 1964
Map No: 106-G-12

Map Sheet: 106-G-8, 106-G-9, 106-G-10, 106-G-11

Map Sheet: 106-G-8, 106-G-9, 106-G-10, 106-G-11
FORT GOOD HOPE AREA
SOUND MAP
Scale: 1:50,000
Map Date: 1964
Map No: 106-G-12

Map Sheet: 106-G-8, 106-G-9, 106-G-10, 106-G-11
106-G-12, 106-G-13, 106-G-14

Map Sheet: 106-G-8, 106-G-9, 106-G-10, 106-G-11
FORT GOOD HOPE AREA
SOUND MAP
Scale: 1:50,000
Map Date: 1964
Map No: 106-G-12