Ottawa

WEST TATHLINA
PERMITS - 3506-3509, 3511-3518
GROUP 203
FINAL REPORT ON SEISMIC SURVEY
CONDUCTED BY CHEVRON STANDARD LIMITED

FEBRUARY TO MARCH 1967

CONFIDENTIAL

WEST TATHLINA NTS 85-SW

Government Project (45) 95-6-4-67-1

Final Report on Seismic Survey Conducted

by

Chevron Standard Limited

during

February to March 1967

Author: E. W. Jones

Wm J. McCormack

W. J. McCORMACK
District Geophysicist
January 1970

Company:	Chevron Standard Limited
Contractor:	Century Geophysical Corp. of Canada
Area:	West Tathlina NTS 85-SW
Permits:	3506 to 3518 Incl.
Date:	February to March 1967
Project Number:	(45) 95-6-4-67-1

Contents

GEOPHYSICAL DATA FOR SEISMIC SURVEY

LOCATION

Area and Province	West Tathlina, N.W.T.
Longitude and Latitude	60°20' to 60°50'; 118°30' to 119°30'
Permit Numbers ~~and~~	3506 to 3518 inclusive
Government Project Number	95-6-4-67-1
Date of Program	February and March 1967

TYPE OF SURVEY

Analog or Digital	Analog
Type of Source	Powder and Caps

FIELD RECORDING EQUIPMENT

Seismometer Model	Electro-Tech EVS-2
Seismometer Frequency	20
Seismometer Damping	N/A
Seismometer Base	N/A
Amplifier Model	Geospace Model 111
Camera Model	N/A
Type of Magnetic Tape	SIE-FM, Mandrel Transport MFR 11
Digital System Model and Number	N/A
Land Survey Instrument and Method	Transit, Chain and Traverse tie
Cables	6-1800' 24 Conductor Cables

FIELD PROCEDURE AND OPERATIONS

<u>Refraction</u>

Inline or Broadside	Inline End-on

<u>Reflection</u>

% of Subsurface Coverage	400%

Spread Configuration	SP-1501'-1650'-SP-1800'-1
Number Groups Recorded	23
Group Interval	150'
Number Seismometers/Group	9
Seismometer Interval	1'
Array Pattern	Grouped
Source Configuration	
Number of Holes and Depth	1-3 @ 40'
Spacing	50'
Pattern	Linear
Inline or Offset to Spread	Inline
Charge Size and Type	Refraction 5# Reflection 1.2#
Transportation	
Type of Vehicles	Nodwell mounted drills and recorder
Fixed Wing Aircraft	Beaver
Helicopter Support	

Terrain Conditions

General Terrain Description Rolling muskeg with heavy to light timber. Permit was virtually bisected by the Kakisa River, maximum and minimum elevations were 1281 feet and 1002 feet.

RECORDING FACTORS

Monitor Record	
Filter	1/20-1/76 and 2/31-2/76
AVC	Medium
Gain	10.2-1.3
Magnetic Tape	
Filter	1/20-1/76 and 2/31-2/76
AVC	Medium
Gain	10.2-1.3

Field Playbacks

Filter	1/20-1/76 and 2/31-2/76
AVC	Medium
Gain	10.2-1.3
Mixing	

PERSONNEL

Field	27
Office	3
Titleholders	Chevron Standard Limited
Individual Responsibility	E.W. Jones, District Geophysicist Chevron Standard Limited
Contractors	
	Century Geophysical Corp. of Canada
	Flite Drilling Co. Ltd.
	Seisform Drilling
	Gyro Explorations Ltd.

OFFICE TECHNIQUES

Datum Computation	+1000' Reference Plane. VD 15,000'/s
Weathering Sections	Long refraction shots indicated drift thickness varying from 90' to 800'.

Record Sections	Yes
Type of Display	VA-WT
Maps	Yes

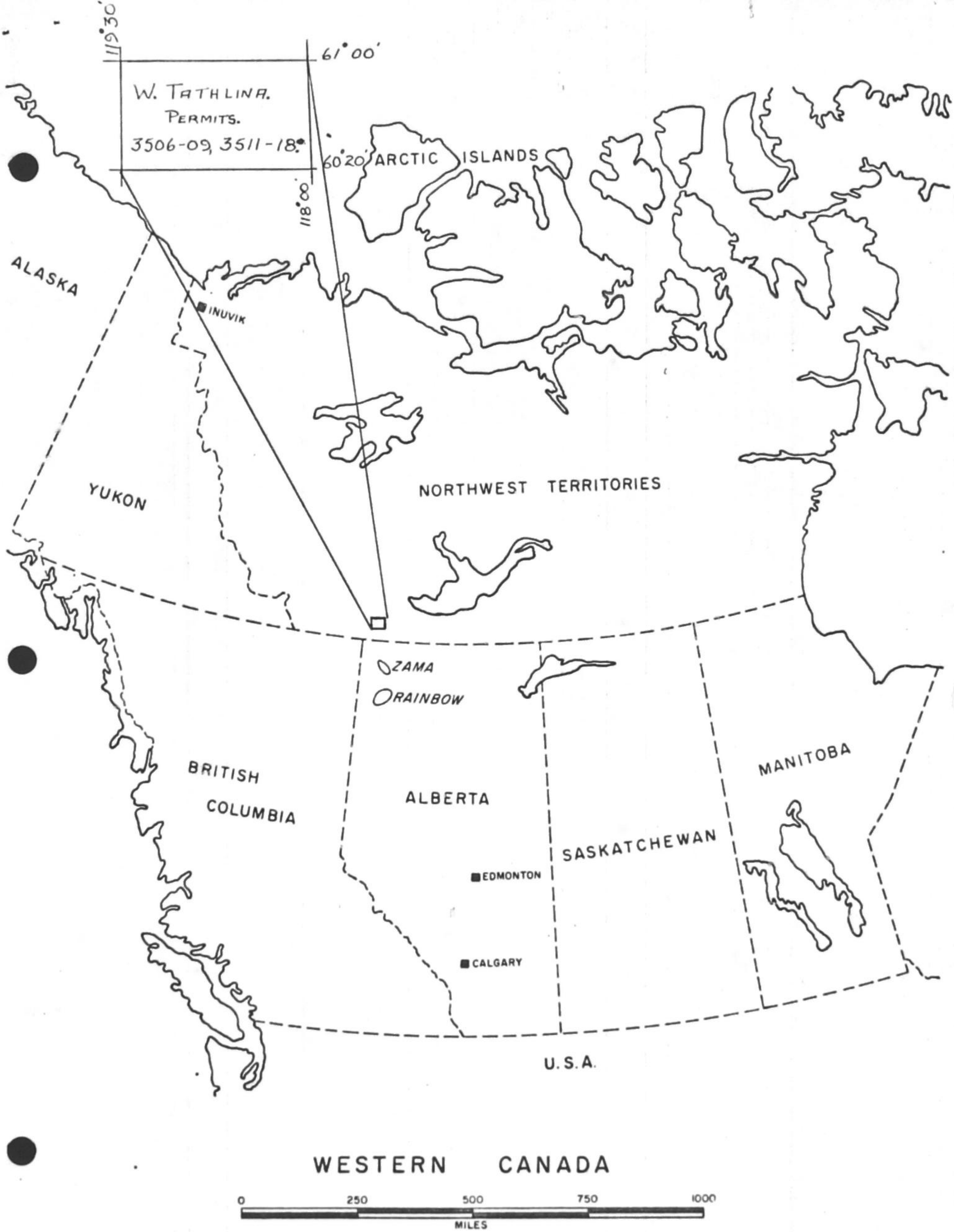
STATISTICS SUMMARY

Number of ~~Working~~ Recording Days	30
<u>Number of Profiles</u>	
Reflection	925
Refraction	181
Total Production	1106
Miles of Surface Coverage	78.5
Miles of Subsurface Coverage	78.5
Number of Shot Holes Drilled	1237
Total Footage Drilled	57,010

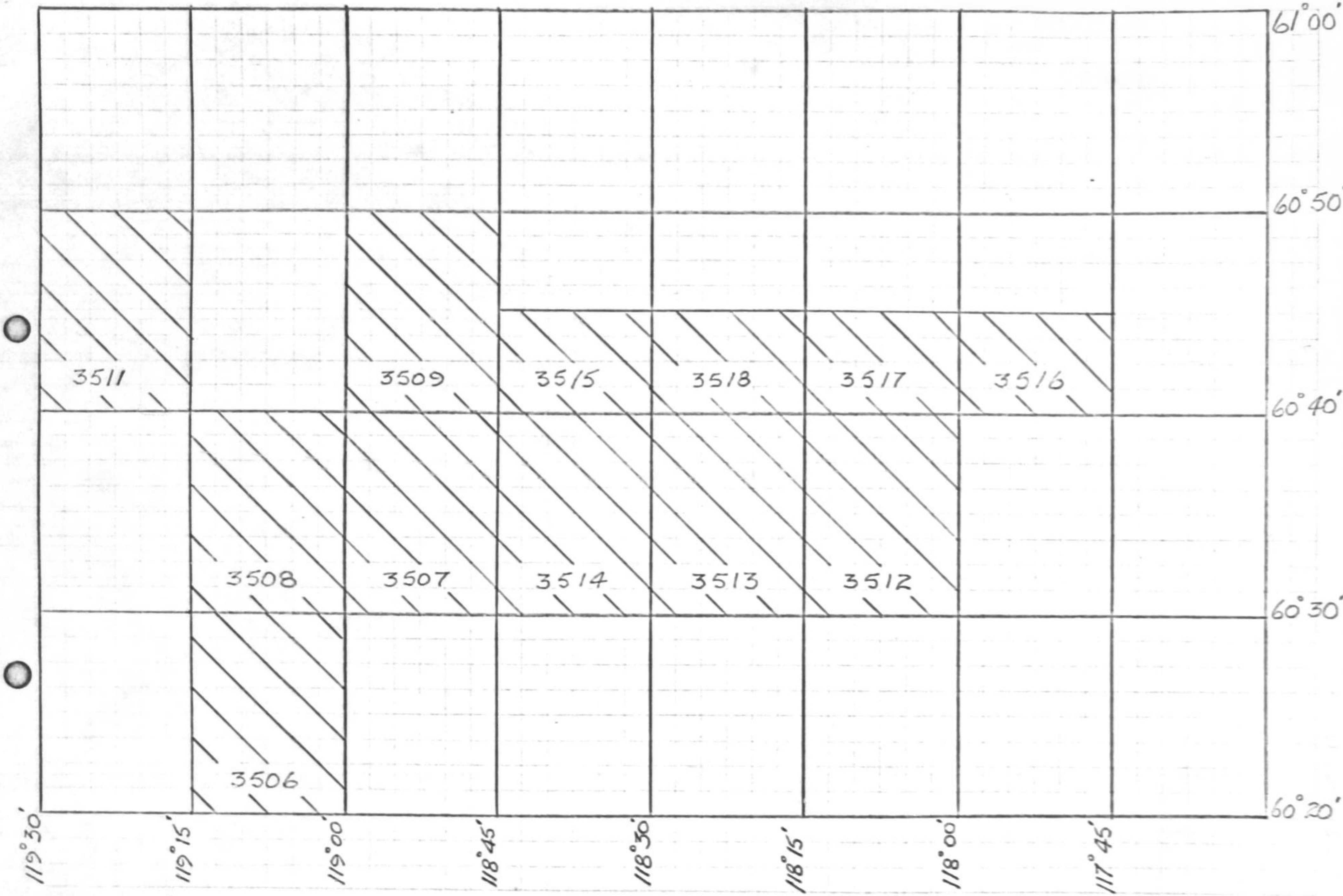
TRANSMITTAL OF RECORDED DATA

1. Shot Point Location Map

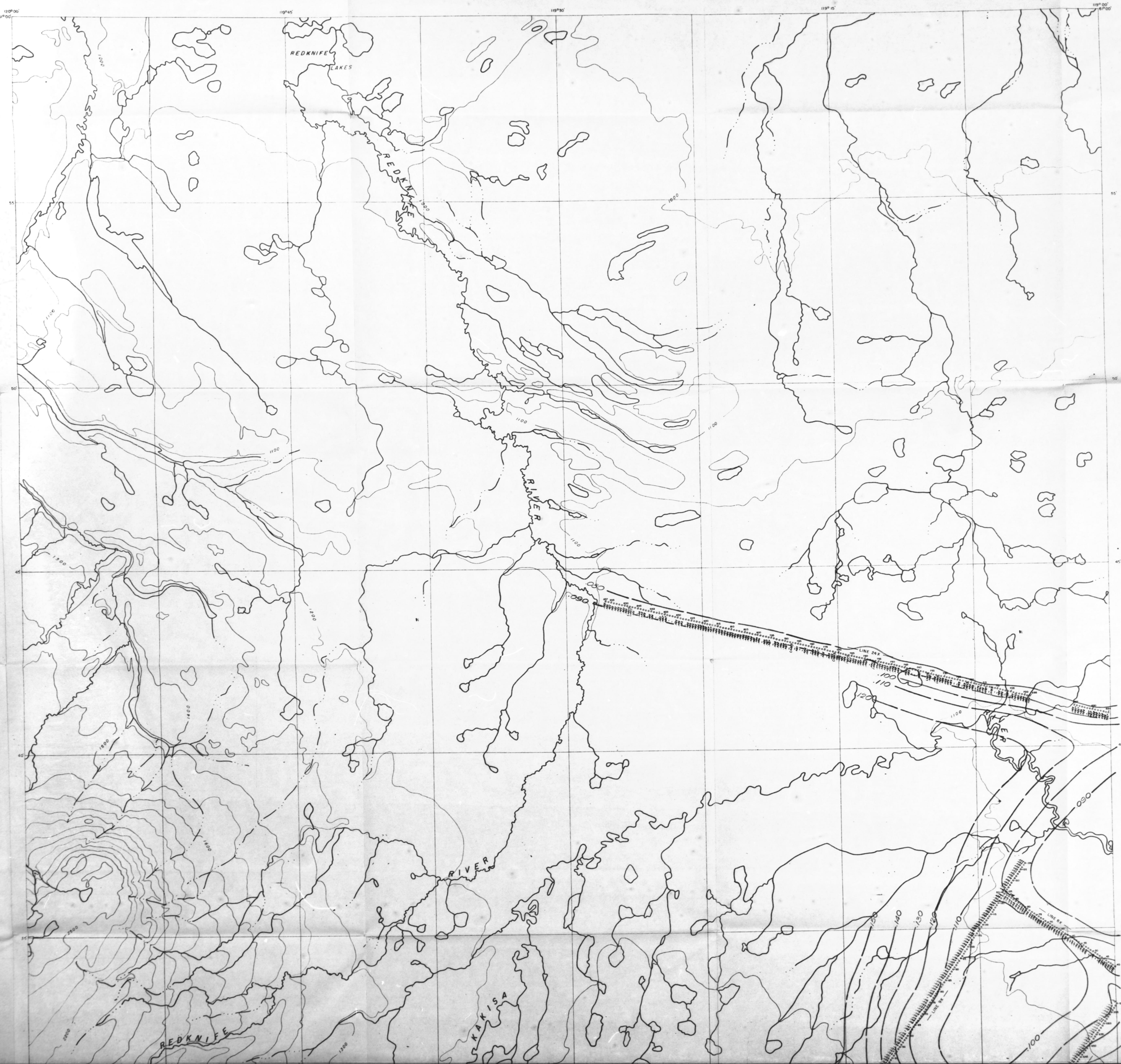
2. Time Structure Top of Wabamun



WESTERN CANADA



WEST TATHLINA PERMITS



NOTE FOR INDEX MAP SEE F-6797E-1

REVISIONS	THE CALIFORNIA STANDARD COMPANY

REVISIONS	CHEVRON STANDARD LIMITED			

DOGFACE LAKE AREA

85 - D - S.W.

TIME SEISMIC CONTOURS ON

WABAMUN

(A.R.D. "DUw" HORIZON)

Er = 1000' Vr = 10,000 '/sec. V: Computed

Contoured by K.R. Vance

Interpreted by K.R. Vance

C.I. = .010 sec.

Aug. 1967

SCALE	DATE	DRAWN	
1 INCH = 1 MILE	NOVEMBER 18 1965	P.G.	F-9975-8

SEISMIC

006277 16M

20-4-3

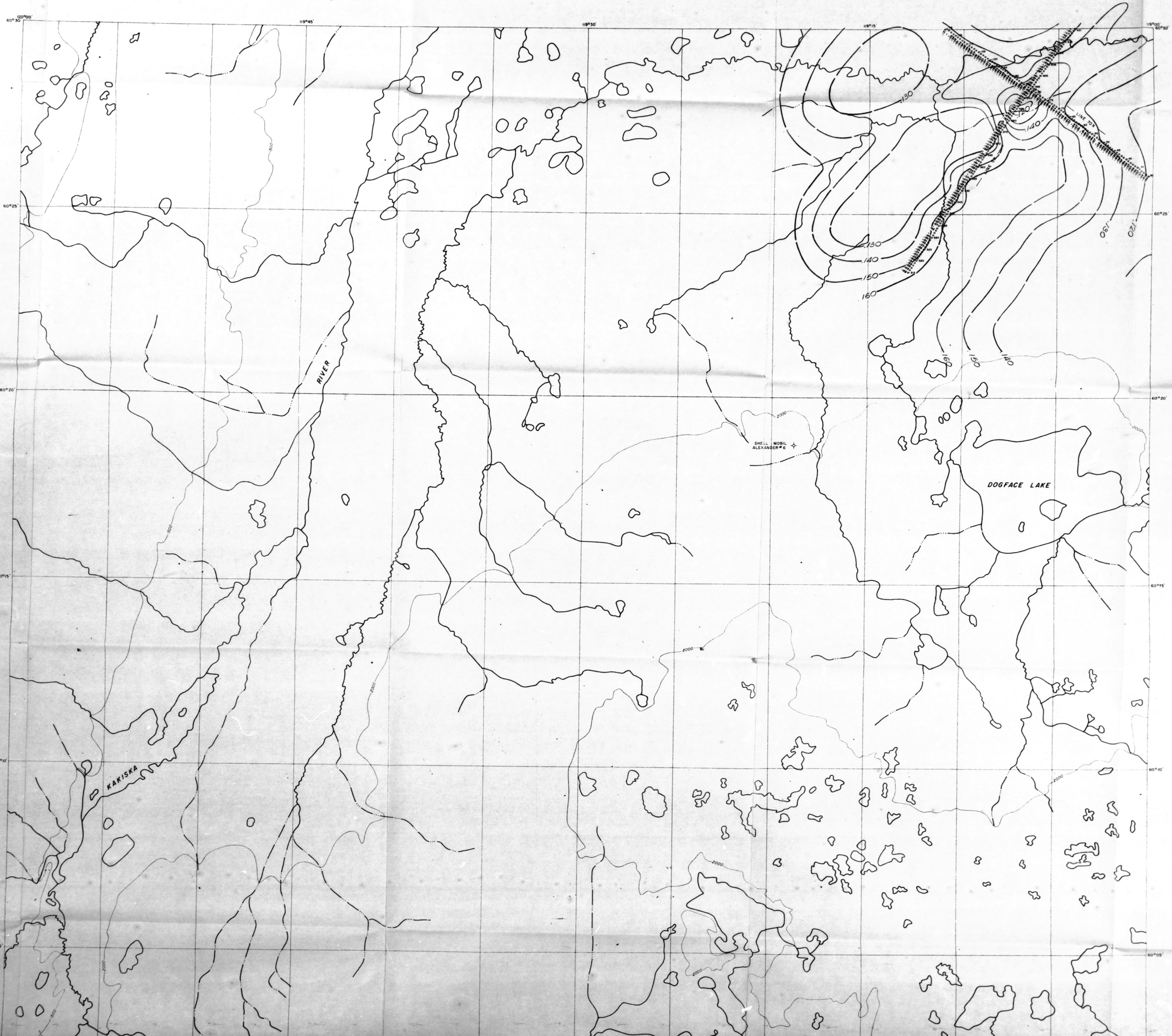
2 of 2

NOTE: FOR INDEX MAP SEE F-6717E-1

REVISIONS	THE CALIFORNIA STANDARD COMPANY			
	REDKNIFE RIVER AREA 85 - D - N.W. TIME SEISMIC CONTOURS ON WABAMUN (A.R.D. "DUw" HORIZON) Er = 1000' Vr = 10,000'/sec. V: Computed Contoured by K.R. Vance Interpreted by K.R. Vance C.I. = .010 sec. Aug. 1967			
	SCALE	DATE	DRAWN	F-9862-8
	1 INCH = 1 MILE	MAY 28, 1965	DEW	

SEISMIC

006276 IEM
20-11-2



120°00'
60°30'
119°45'
119°30'
119°15'
119°00'
60°30'
60°25'
60°20'
60°15'
60°10'
60°05'
LINE 70X
LINE 5X
.130
.120
.140
.150
.160
2000
SHELL MOBIL
ALEXANDER # 6
DOGFACE LAKE
RIVER
KAKISKA

1 of 2

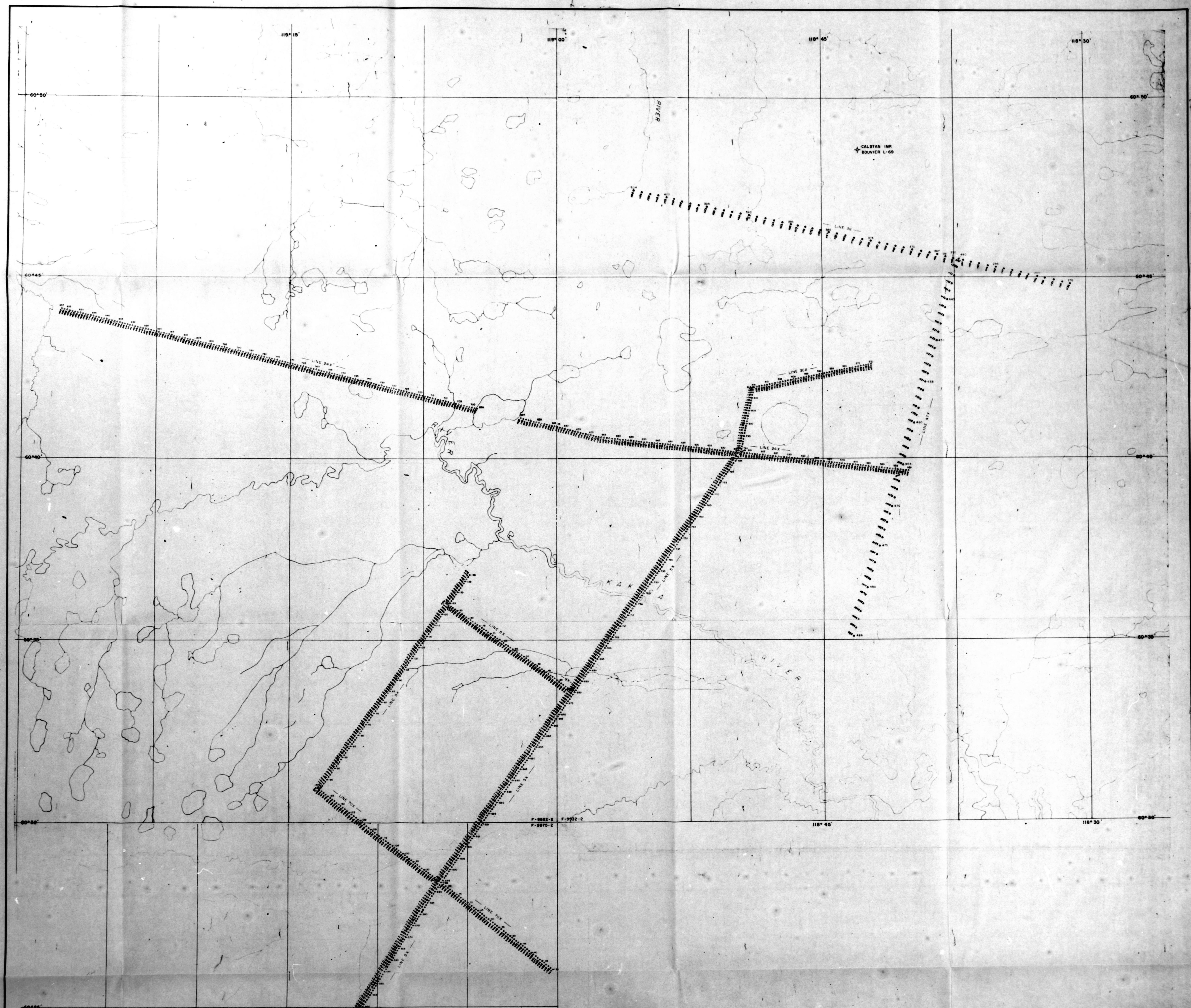

FOETUS
LAKE
KAKISA
LAKE
PAN AM SHELL
KAKISA L-19
TWO ISLAND
LAKE
BRIGGS
RABBIT LK #1
BRIGGS
FOETUS LK #1
BOUVIER
RIVER
CALSTAN IMP
BOUVIER L-69
Gull
Creek
RIVER

1 of 2

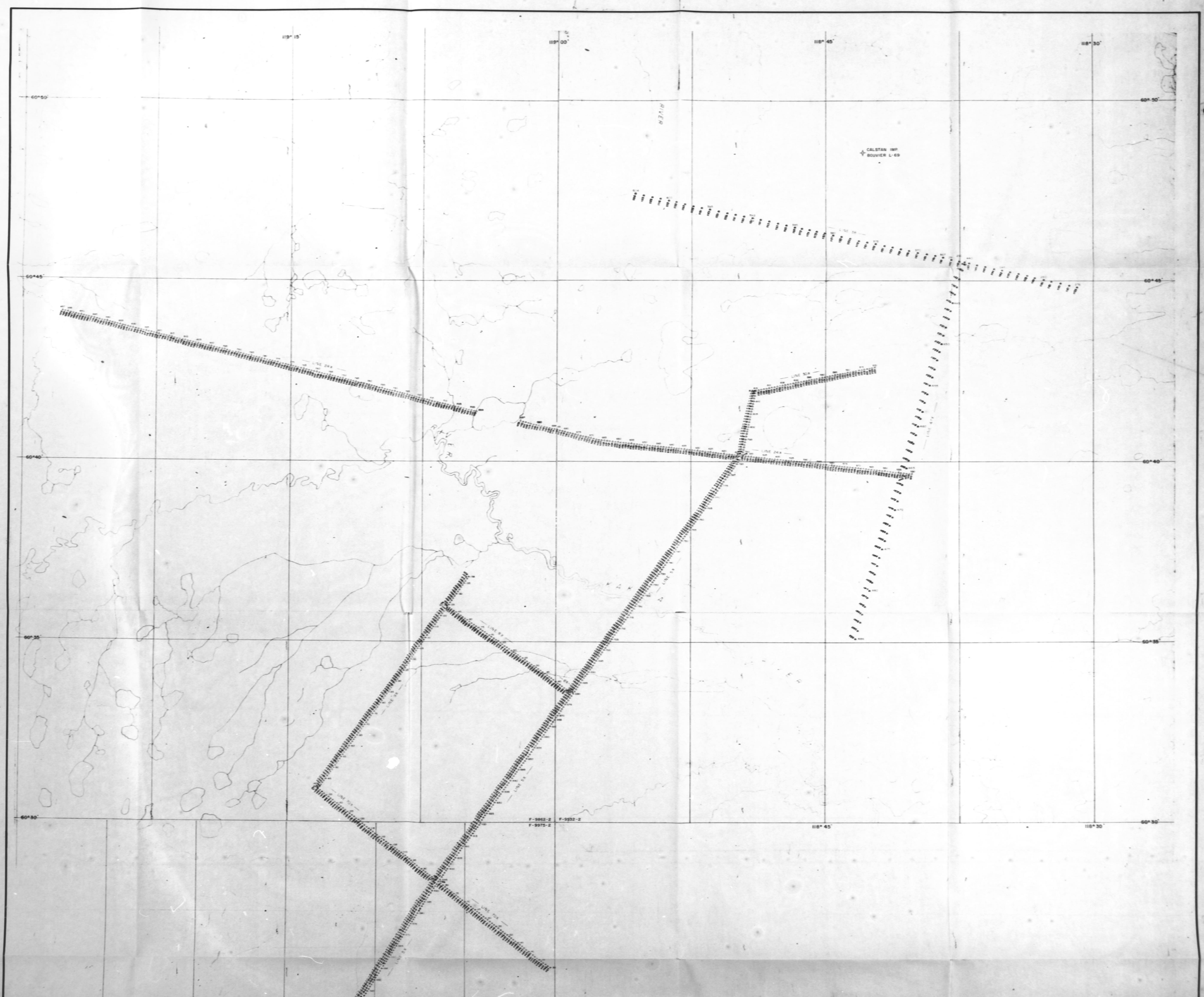
60°30'
F-9862-2
F-9975-2
F-9532-2
118° 45'
118° 30'
60° 30'
60°25'
60°20'
SHELL MOBIL
ALEXANDER #6
119° 15'
119° 00'
REVISIONS
CHEVRON STANDARD LIMITED
WEST TATHLINA AREA
SHOT POINT
AND
ELEVATION MAP
SCALE
1 INCH = 1 MILE
DATE
MAY 1968
F-11,863
21-C-7

2 of 2


2 of 2
REVISIONS
THE CALIFORNIA STANDARD COMPANY
GULL CREEK AREA
85 - D - N.E.
TIME SEISMIC CONTOURS ON
WABAMUN
(A.R.D. "DUw" HORIZON)
Er = 1000'
Vr = 10,000'/sec.
Computed
Contoured by K.R. Vance
C.I. = .010 sec.
Interpreted by K.R. Vance
Aug. 1967
SCALE
1 INCH = 1 MILE
DATE
JUNE 13, 1962
DRAWN
D.E.W.
F-9532-8
SEISMIC
LINE 24X
LINE 30X
LINE 47X
KAKISA
RIVER
60°40'
60°35'
60°30'
119°00'
118°45'
118°30'
118°15'
118°00'
1100'
.100
.090
.080
.070
.060
.110
.120

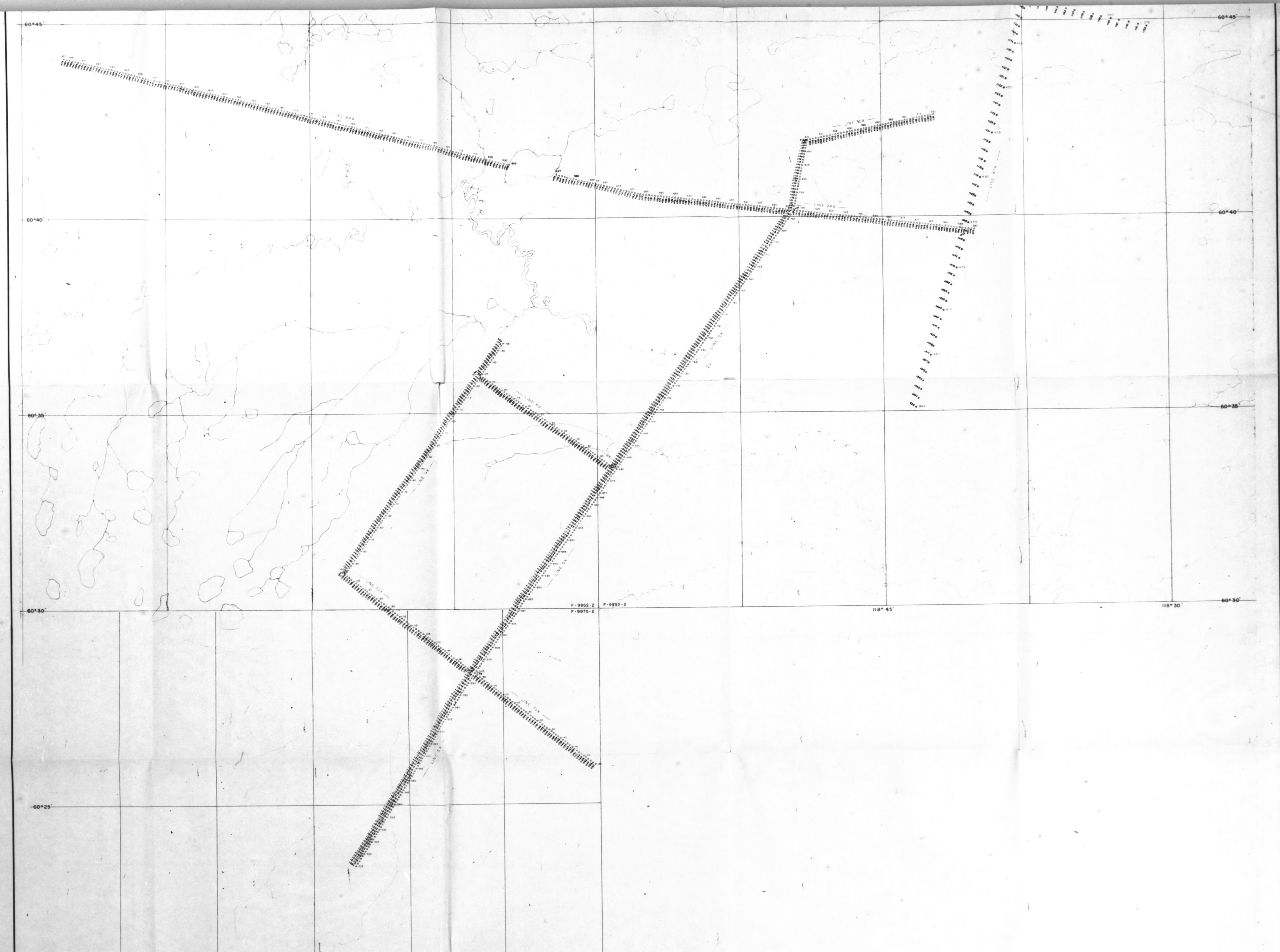

119° 15'
119° 00'
118° 45'
118° 30'
60° 50'
60° 45'
60° 40'
60° 35'
60° 30'
RIVER
CALSTAN IMP.
BOUVIER L-69
LINE 39
LINE 24X
LINE 30X
KAKISA
RIVER

1 of 2



119° 15'
119° 00'
118° 45'
118° 30'
60° 50'
60° 45'
60° 40'
60° 35'
60° 30'
RIVER
CALSTAN IMP.
BOUVIER L-69
LINE 5X
F-9862-2
F-9532-2
F-9975-2

1 of 2



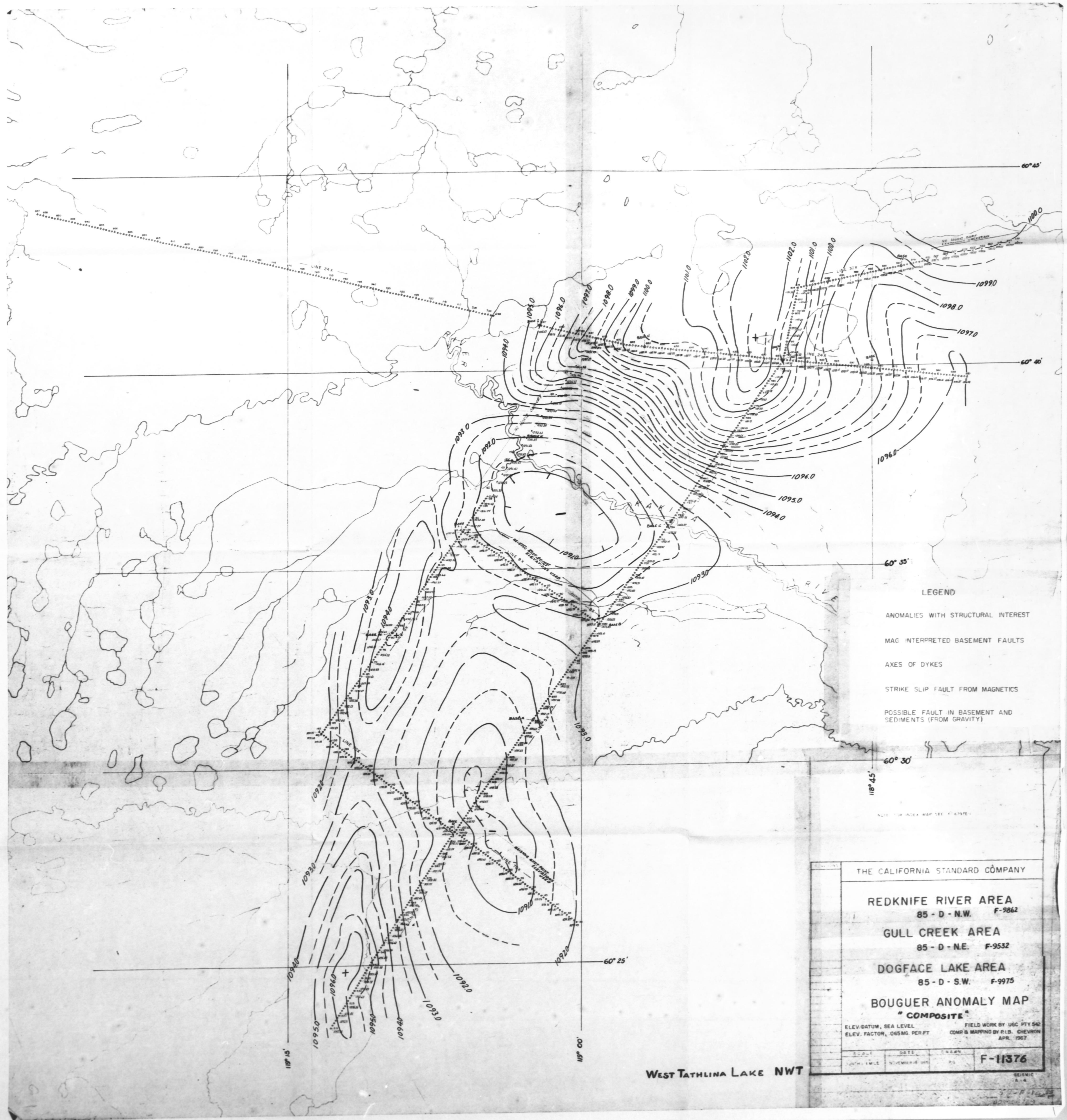
REVISIONS

CHEVRON STANDARD LIMITED

WEST TATHLINA AREA

SHOT POINT
AND
ELEVATION MAP

SCALE	DATE		
1 INCH = 1 MILE	MAY 1968		F-11,863


60° 45'
60° 40'
60° 35'
60° 30'
60° 25'
119° 15'
119° 00'
118° 45'
1100.0
1099.0
1098.0
1097.0
1096.0
1095.0
1094.0
1093.0
1092.0
1091.0
LEGEND
ANOMALIES WITH STRUCTURAL INTEREST
MAG INTERPRETED BASEMENT FAULTS
AXES OF DYKES
STRIKE SLIP FAULT FROM MAGNETICS
POSSIBLE FAULT IN BASEMENT AND SEDIMENTS (FROM GRAVITY)
THE CALIFORNIA STANDARD COMPANY
REDKNIFE RIVER AREA
85 - D - N.W. F-9862
GULL CREEK AREA
85 - D - N.E. F-9532
DOGFACE LAKE AREA
85 - D - S.W. F-9975
BOUGUER ANOMALY MAP
" COMPOSITE "
ELEV. DATUM, SEA LEVEL
ELEV. FACTOR, .065 MG. PER FT.
FIELD WORK BY UGC PTY 542
COMP. & MAPPING BY P.L.B. CHEVRON
APR. 1967
SCALE
DATE
DRAWN
F-11376
SEISMIC
WEST TATHLINA LAKE NWT

CONFIDENTIAL

WEST TATHLINA NTS 85-SW

Government Project (45) 95-~~6~~7-4-67-1

Final Report on Gravity Survey Conducted

by

Chevron Standard Limited

during

February to March 1967

Author: R. Clawson

W. J. McCORMACK
District Geophysicist
January 1970

Company:	Chevron Standard Limited
Contractor:	United Geophysical Company
Area:	West Tathlina NTS 85-SW
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Contents

APPENDIX 7A

GEOPHYSICAL DATA

DATA REQUIRED FOR A GRAVITY SURVEY

OWNER OF DATA - Name Chevron Standard Limited

Address 400 Fifth Avenue S.W., Calgary 1, Alberta

LOCATION OF SURVEY (approx. boundary) Long. 118°40' to 119°15'; Lat. 60°25' to 60°45'

TYPE OF SURVEY - Traverse lines X Direction NW-SE & NE-SW
of Systematic areal coverage ______

AVERAGE STATION SPACING 4 Station per mile

NUMBER OF OBSERVATIONS IN SURVEY 292

YEAR OF OBSERVATION 1967 OBSERVER'S NAME United Geophysical Co.

FORM OF DATA

1. ORIGINAL TRAVERSE DATA

Gravimeters used:

Type	Serial Number	Calibration constant (mgal/div)
Lacoste-Romberg	G-52	1.04515

Method of calibration not known

Estimated accuracy of reading in divisions High Accuracy

2. VALUES OF OBSERVED GRAVITY

Units in which observed gravity value is given Milligals
Average time interval drift checks 2 Hr. maximum

3. VALUES OF BOUGUER ANOMALY

Formula used for calculation of theoretical gravity (International Formula, or, if other, specify)
International Formula
Elevation datum used in calculation of Bouguer anomaly
Sea Level
Density used in making elevation corrections (gm/cc) 2.2
Terrain corrections made? Inner Estimated only

ELEVATIONS

Unit (feet or meters) Feet

Elevations determined by (Tick one):

Spirit Level	
Stadia	X
APR	
Other (specify)	

Elevations referred to benchmark (Specify whether Dominion, Provincial, or other) No Bench Marks, Take-off Value Arbitrary

Estimated accuracy of elevations relative to datum ± 20'

POSITION COORDINATES

1. SCALED FROM MAPS of scale (Tick one):

1:25,000 or less	
1:50,000	
1:125,000	
1:250,000	
1:500,000	
1:63,360	X

2. SURVEYED

   Method of Survey (e.g., plane table, triangulation, or other) Transit & Stadia Board

   Units of Distance Feet

   Position of origin of survey No B Ms

3. COMPUTED FROM DECCA COORDINATES (Yes or No.)

4. REFERENCED TO U.T.M. GRID SYSTEM (Yes or No)

5. REFERENCED TO WESTERN D.L.S. SYSTEM (Yes or No)

   Estimated accuracy of coordinates

   Polyconic Projection X

GRAVITY CONTROL

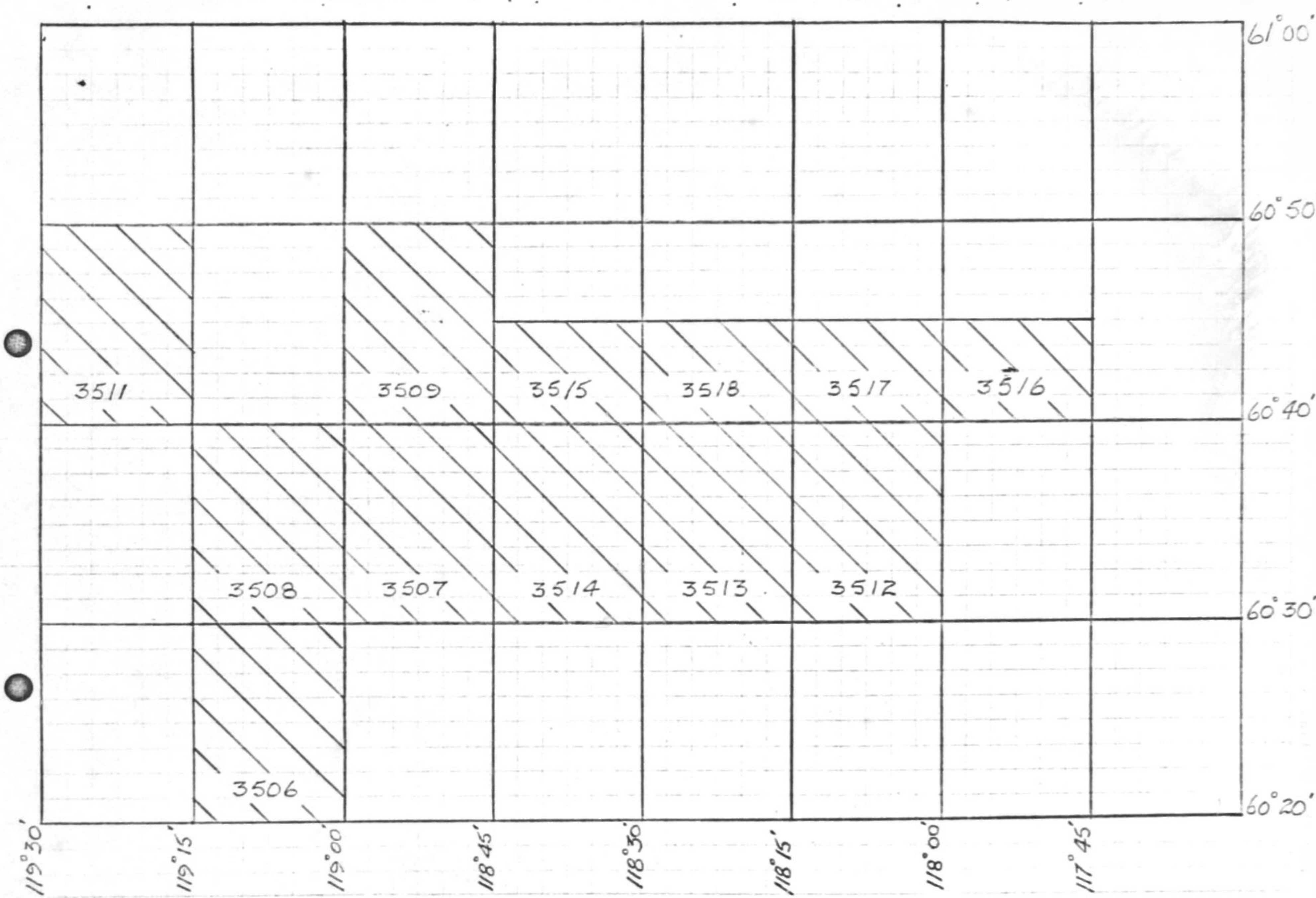
1. TIED TO DOMINION OBSERVATORY STATION(S)

Number	Location
Not Brought in from Gov. Station (S)	

2. TIED TO LOCAL SYSTEM

   Give location and gravity value of main reference station(s) Base A on 34th Baseline and $119^{0}2.47'$ "Airstrip Area" 2982.23 Mgs., assigned

WESTERN CANADA



WEST TATHLINA PERMITS