SUMMER 1995 FORT LIARD PROGRAM

FINAL PLAN REPORT

on the

NON-PROPRIETARY HELIPORTABLE DYNAMITE SEISMIC SURVEY
in
FORT LIARD AREA
N.W.T. AND YUKON

PROGRAM #9229-B069-002P
LUP N95B399 & YA5B912

by

B.F.R. GEOPHYSICAL CONSULTANTS LTD.

Duration:	July through September 1995
Contractor:	Geco Prakla
Author:	Philip D. Gregory, P. Geoph. Vice President
Date:	Sept, 1996

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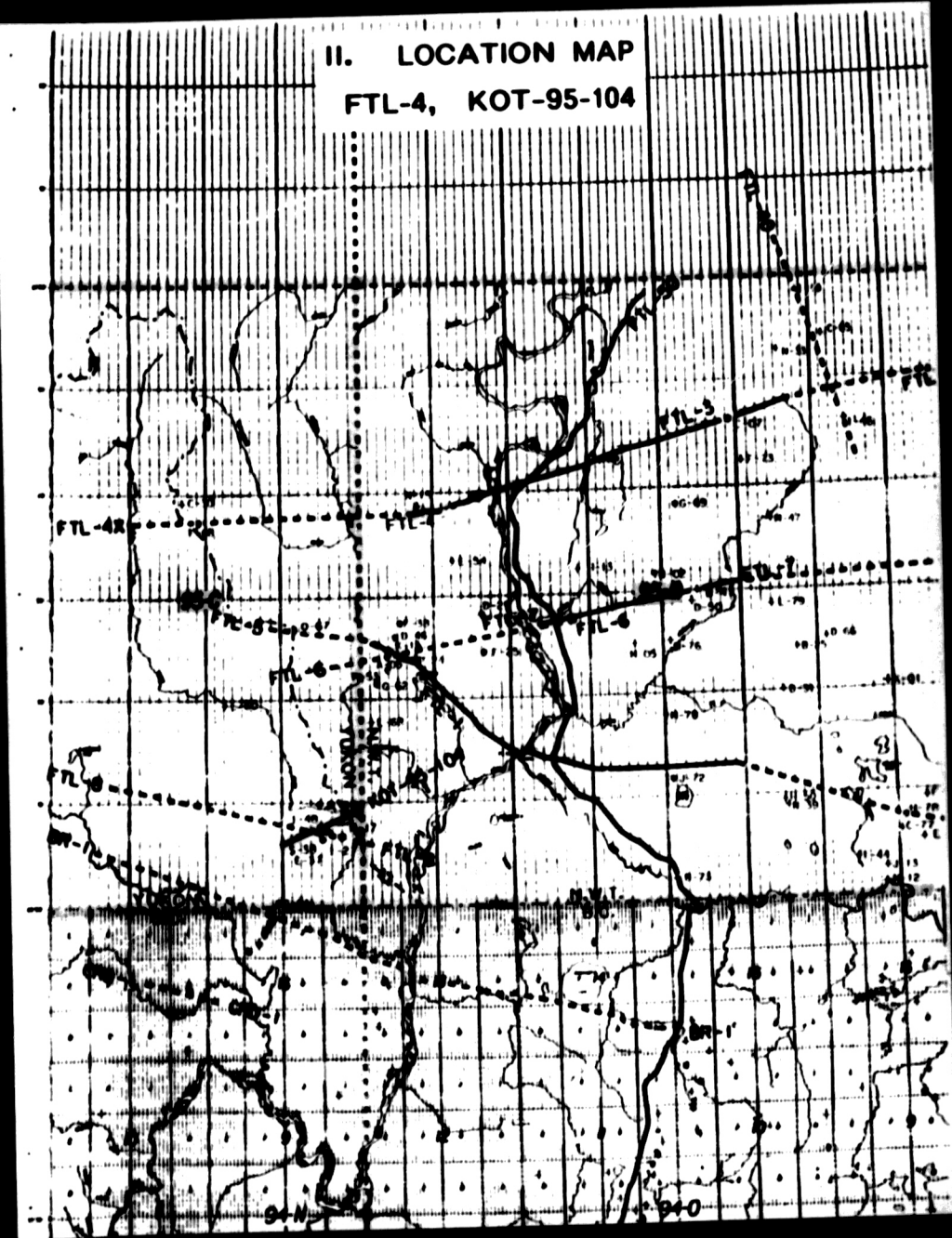
INTRODUCTION

B.F.R. Geophysical Consultants Ltd. specializes in speculative seismic programs in foothills and frontier areas of Canada. With the lifting of the exploration moratorium in the Ft. Liard area we perceived an opportunity to establish the beginnings of a modern high quality regional grid of seismic .

Using a combination of existing data, access well and geology, we proposed a program that we felt would provide a grid of seismic that would help establish a new geological framework for the area.


II. LOCATION MAP
FTL-4, KOT-95-104
FTL-3
FTL-4R
FTL-5
FTL-6
FTL-8
FTL-9
94N
94O

STATISTICAL SUMMARY

Significant Dates:

Commencement:	June 15, 1995
Start Production:	July 14, 1995
Termination:	September 11, 1995

Number of Technical Personnel: 4

Number of Non-Technical Personnel: 26

Type and Number of Equipment Used:

- 1 Air conditioned Recording Cabin mounted on an F700 4x4. Separate diesel driven 17 kVA generator supplying power for air conditioning and instrumentation.
- 1 Party Manager Unit - F250 4 x 4
- 2 Line Units - F350 4 x 4
- 2 Transport units - F700 4 x 4 (or equivalent)
- 1 Support Unit - F250 4 x 4
- 1 Mechanical Unit - F250 4 x 4
- 2 Personnel Carrier
- 1 Battery Charging Unit
- 2 Honda A.T.V. Quads

Statistical Summary con't.

Production Data:

Total Distance Surveyed: 30.15

Time Lost: Some time was lost due to weather conditions

Daily Production:

KOT-95-104

Aug. 18	1.53
Aug.19	1.62
Aug.20	5.59
Aug.21	7.09
Total Kms:	15.84

FTL-4

Sept.07	1.71
Sept.08	2.54
Sept.09	4.49
Sept.10	2.51
Sept.11	3.05
Total Kms:	14.31

Summary of Conditions Pertaining to Weather and Terrain:

Advance crews had trouble throughout program with rain and fog. Advance crews were shut down several times for rain and high wind gusts. Recording crew had trouble with rain and fog also, as well as lightening storms. Crew shut down for rain on August 18. Weather continued to be unpredictable throughout recording.

Summary of Factors Which Caused Down Time:

Unpredictable bad weather caused the down time.

DATA ACQUISITION EQUIPMENT
and
FIELD PROCEDURES

Positioning & Survey Systems:

Conventional survey methods were used on all lines. The process involved traversing along the line and surveying in the shot points and receiver stations. Heights were surveyed using trigometric leveling. Error tolerances were within 10m horizontally and 1m vertically. Survey computations were reduced using the Nad 27 datum. UTM values are for Zone 10 using a CM of -123° W longitude.

Control was established using GPS to densify existing Federal government markers.

Repeatability is + or - 10m horizontally and + or - 1m vertically using permit tags to re-establish.

Parameters of Energy Source:	Dynamite
Source Array:	Single Hole
Detector Equipment:	Cable - 600 Channels - Split Spread 12 Geophones per Group 1.3m Geophone Spacing Type OYO GS 20DX 10 Hz
Detector Array:	12 Geophones over 15m
Recording System:	I/O System II SEG-D
Recording Parameters:	
Shot Interval:	90 m
Station Interval:	15 m
Channels:	600

Data Acquisition con't

Far Offsets:	4507.5 m
Near Offsets:	22.5 m

GEOPHYSICAL DATA PROCESSING

FOR SEISMIC REFLECTION DATA:

Gain Recovery: True Amplitude Recovery

Bandpass Filter: 3\12 - 135\75 Hz\db

Mute Pattern: 22.5 m - 4507.5 m

Type of Deconvolution: Predictive
- Operator Length : 100 ms
- Lag Length : 12 ms
- Prewhitening : 1.0%
- Design Window:
  - 500-3500 ms @ offset 0 m
  - 1700 - 4000 ms @ offset4508 m

Type of Velocity Analysis: 2 Iterations After Residual Statics
1 Iteration After DMO

Distance Between Analysis: 3 km

Picking Method: Semblance

STATIC CORRECTION METHOD PARAMETERS:

Statics Refraction
Structural Datum: 1250m ASL
Replacement Velocity: 4000 m\s

Automatic Residual Statics Surface Consistent
Window 400 - 3000 ms
Correlation Lag 30 ms
2 Iterations

Trim Statics
Window 400 - 3000 ms
Correlation Lag 8 ms

Geophysical Data Processing cont'd.

MIGRATION METHOD PARAMETERS:

Steep Dip Finite Difference Migration
99 - 100% of Stacking Velocities
90 Degree Angle

TIME AMPLITUDE DISPLAY METHOD:

Trace Equalization:	Variable
Length of Scaling Operations:	500 ms to 2000 ms
Application of Scaling Operations:	Film Display 5.00 inches/sec.
Percent of CDP Stack:	50 Fold

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LIST OF LINES AND KILOMETERS SHOT PER LINE

FTL - 4	14.310 km
KOT - 95-104	15.840 km
TOTAL	30.150 KM

ENCLOSURES

LINE FTL-4

MYLARS

1	Shot Point Map
1	DMO Migration Stack Section
1	Pre-Stack Time Migration Section

PAPER

2	Shot Point Maps
2	DMO Migration Stack Sections
2	Pre-Stack Time Migration Sections

DISK

1	Survey Floppy

LINE KOT-95-104

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1	Shot Point Map
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