



9229 B059-5E

1997 Seismic Program Report

9229 – B059 005E DA

EL 365 and EL 382
Near Fort Liard, N.W.T.

January – March, 1997

Contractor: Geco-Prakla

Supervising Consultants: Petrolane

Operator: Ocelot Energy Inc.

Interest Owners:
50% Ocelot, 50% Unocal

Report Author: Rita Polt

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Sent separately to NEB - Attention: Rudy Klaubert

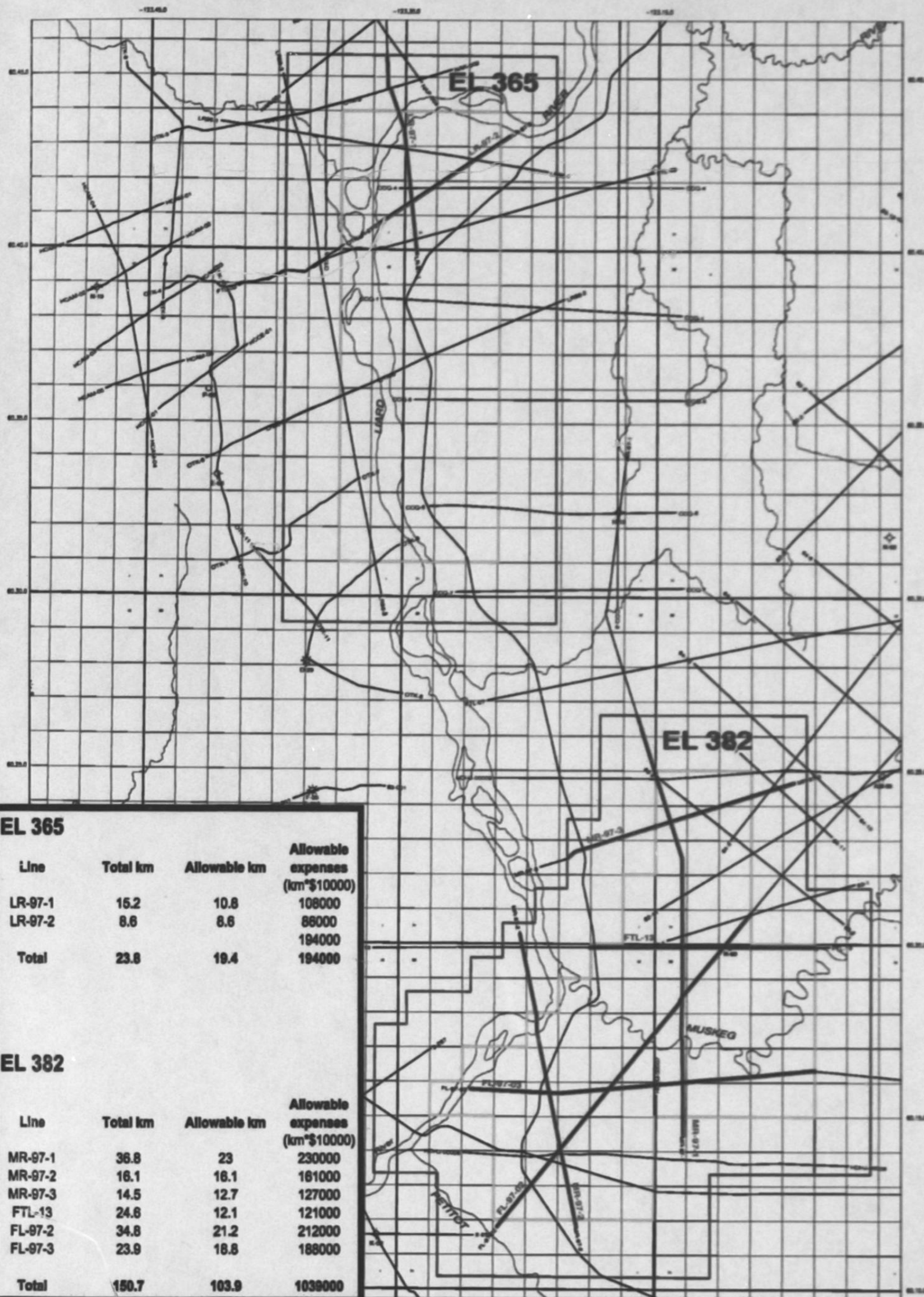
For each of lines LR 97-1, LR 97-2, MR 97-1, MR 97-2 and MR 97-3:

- 1 mylar copy normal and reverse polarity
- 2 blackline copies normal and reverse polarity
- digital shot point survey data
- 1 paper copy of shot point map

every

Introduction

A 91 km vibroseis seismic program was shot over EL 365, EL 382 and adjacent Crown lands. In addition, Ocelot participated in three group-shoot seismic lines over EL 382 (BFR line FTL-13 and GSI lines FL-97-2 and FL-97-3). The data was generally good but varied with surface conditions, especially near rivers. This entire data set was interpreted together with older vintage seismic and new maps were drawn up for both blocks. The new seismic has downgraded the prospects on EL 365 but a Mattson drilling location was chosen on EL 382.



ENCLOSURE 1

Geco-Prakla
A Division of Schlumberger Canada Limited

FINAL REPORT

for

OCELOT ENERGY INC.

2D VIBRATOR SEISMIC SURVEY

N.W.T. 1997

January - March, 1997

2D VIBRATOR SEISMIC SURVEY

N.W.T. 1997

for

**BFR Geophysical /
c/o Geco-Prakla Exploration Services
2500, 801-6th Avenue S.W.
Calgary, Alberta**

Land Use Permit #N94B340

BY

**Geco-Prakla
2435 - 22nd Street N.E.
Calgary, Alberta**

Party 1264/1267

**Supervisor: Milt Tetzlaff
Party Manager: Bob Dreaver / Scott Anderson / Doug MacDonald**

January - March, 1997

FINAL REPORT
for
BFR GEOPHYSICAL
N.W.T. 1997

SEISMIC PROGRAM
Winter 1997

Program

Conduct a 2D Vibroseis data acquisition program in the Fort Liard area of the Northwest Territories.

Location

3 lines consisting of 67.8 km's were located north and east of the town of Fort Liard. The last 2 lines consisting of 23.5 km's were located 50 km's north of Fort Liard in the Flett area. The program crosses the Liard River.

Type

2D Survey consisting of approximately 91.24 kms.

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INTRODUCTION

A 2D seismic reflection survey was conducted for BFR Geophysical Consultants in the Fort Liard area of the Northwest Territories. The Advance work for the Survey began in January and recording ended in early April of 1997. The survey was conducted by Geco-Prakla, Party 1264 and 1267.

The program consisted of five lines totaling approximately 91.24 kilometers.

The topography was at the base of the eastern slopes of the Liard range, mostly muskeg and some heavy underbrush. Two lines crossed the Liard River.

The main staging area for the program was at km 46 at a gravel pit just off Highway 7 north of Fort Liard.

Food, fuel and supplies came generally from Fort Liard and Fort Nelson and were transported to the camp location by truck.

STATISTICAL DATA

A. Job History

January - March , 1997

January 19	Cat Push travels by truck from Edson to Fort St. John.
January 20	Cat Push arrives in Fort Liard.
January 23 & 24	Cat Push meets with Jay Dee Sorrell of Beaver Construction.
January 26	Started cutting on program with 2 cats.
January 27	Started construction on the ice bridge.
January 28	Medic traveled from Dawson Creek to Fort Liard
February 1	Party Manager travels from Calgary to Grande Prairie. Chainers leave Calgary for Fort Liard. Shut down ice bridge crew - too warm.
February 2	Party Manager travels from Grande Prairie to Fort Liard.
February 3	Chainers begin chaining. Shut down ice bridge crew - too warm.
February 5	Surveyors travel to Fort Liard Shut down ice bridge crew - too warm.
February 6	Party Manager goes to Fort Simpson for a meeting with Land Use.
February 8	Begin surveying. Shut down ice bridge crew - too warm.
February 9	Slashing starts - Daniel Lomen Contracting. Lined up tow cat for pulling vibes in soft areas.
February 11	Started dragging lines. 2 more cats cutting. Started second crew of slashers. Started cutting river bank to ice bridge.
February 12	Line crew started laying out on Line MR-97-3
February 13	Completed cutting on line MR-97-1
February 14	Completed cutting on line MR-97-3
February 19	Hired new cat foreman. Cost per km running high due to snowplowing access
February 21	Cutting progressing well. Second cat push arrives.
February 22	Completed cutting on line LR-97-1
February 23	Extremely warm weather again - losing ice on ice bridge.
February 24	Complete cat cut on line LR-97-2
February 25	Cats crossed ice bridge and started cutting on line MR-97-2
February 26	Slow cutting west of river due to large timber.
February 27	Cold and snowing
February 28	Completed cat cut on Ocelot.
March 1	Chainers, surveyors and slashers only.
March 2	Completed chaining and surveying.
March 3	Slashers only
March 4	Cat dragging on LR-97-2
March 9	Removing snow fills on LR-97-1
March 17	Completed Slashing.
March 23	Moved to job from Bucking Horse River, started production on MR-97-2.
March 24	Shook up to the edge of the river on MR-97-2, trucked vibes to other side.
March 25	Laid cable across river with helicopter and completed MR-97-2.
March 30	Used chopper to lay cable across river. Started production on LR-97-1.
March 31	Finished shaking line LR-97-1.
April 1	Crew 1267 shook entire line LR-97-2.

B. Production Statistics

Profiles Shot	850
Days Worked	6
Kms Recorded	39.94 km
Weather Days	0
Total Days	6
Total Hours	88
Total No. Shifts	6
Total Shifts Lost (weather)	0

CAMP

Beaver Enterprises

One (1) 48 man camp not fully enclosed with 3 sleepers, a kitchen, wash car, office trailer and recreation room. The camp was located at the Hire North yard, north and east of the town of Fort Liard. Cat crews and survey crews stayed here throughout the program. The recording crew stayed March 23 to 25, and March 30 to April 1.

A support vehicle for camp was used for transportation and water hauling.

LINE CLEARANCE

The Line Clearance was done by Beaver Enterprises Ltd. and Cooper.

Beaver Enterprises

Isodore Lomen
Michael Sassie
Donny Bertrand
Jochim Klondike
Arthur Nande
Elvis Duntra
Dennis Nelson
Harold Isaiah
Dale Timbre
Roger Bertrand
Fred Bertrand
Antoine Bertrand
Norman Sassie
Mike Vital
Daniel Lomen
Julien Klondike
Patrick Berreault
Jimmy Kotchea
Angus Bertrand
Gordon Kotchea
Robert Badine
Richard Duntra
Kenny Timbre
Guy Berreault
Duford Kotchea
Walter Bertrand
Joey Duntra
Archie Bertrand
Dennis James
Victor Bertrand
Allen Hardisty
Kent Aindow
Robert Bertrand
Harry Capot-Blanc
Donald Lomen
Floyd Wilmsmeier
Tony Berreault
Glen Berreault
Raymond Bertrand

Cooper

Richard Niezgoda
Leo Witowski
Dean Hood
Don Ballard

Beaver was used for handcutting, Cooper was used for cats.

The cutting crews had a total of 33 shifts with no shifts lost due to weather.

SURVEY

Survey was done by GNG Surveys.

GNG Surveys

Trevor Debler
Archie Powers
George Rankin
John Hannas

The survey was done using conventional methods, using theodolites and EDM. Trucks and quads were used as support vehicles.

The survey and chaining crew a total of 17 shifts with no shifts lost due to weather.

RECORDING

The recording crew used the Beaver Enterprises cats for snowplowing line and towing.

Beaver Enterprises

Victor Bertrand
James Dennis

RECORDING

Geco-Prakla

Supervisor	Milt Tetzlaff
Party Manager	Bob Dreaver/Scott Anderson/Doug MacDonald
Field Administrator	Kimi Lawrence/Dawn Tofsrud/Tracy Chase
Instrument Technician	
Observers	Mardon Day/Garner Keeling/Len Taylor
Vib Tech	Parker McWilliams
Cable Repair	Andre Simoneau
Supplyman	Tyler Cochrane

Recording System

Input/Output System Two™

The I/O SYSTEM TWO™ is an advanced delta sigma technology telemetry data acquisition system offering numerous advanced recording and signal processing features determined to be found on *no other recording system*. Amongst those features are the following:

- Full 24-bit analog to digital recording
- Spectral Shaping Filter (SSF)
- Enhanced Hi-Line Pickup Eliminator (HPE) - step resolution of 0.01 Hz over frequency band of DC to 420 Hz
- Total Self Calibration/Testing
- Increased Spatial Sampling

The I/O SYSTEM TWO™ offers maximum flexibility during field deployment, thereby resulting in increased production. The benefits of digital transmission and the systems inherent protection against Hi-line induced interference make it an ideal choice for 2D operations. Sufficient quantities of line equipment (cables, geophones) will be supplied to maintain roll-along

INPUT/OUTPUT SYSTEM TWO™

- 1 INPUT/OUTPUT SYSTEM TWO digital telemetry system, comprising:
 - 110 MRX's with solar batteries
 - 165 Spare battery modules
 - 2 Battery Charging Systems
 - 3 ALX's (Advance Line Taps)
 - 1 LIM's (Line Input Module)
 - 1 SCM (System Control Module)
 - 1 CSM (Correlator/Stacker Module)
 - 1 SIM (System Interface Module)
 - 2 SCSI (3480 Cartridge Drives)
 - 1 OCM (Operator Control Module)
 - 2 HHT's (Hand Held Terminal)
 - 1 Printer
- 1 TOR GEOscience SRM-48P Digital Field Monitor w/VibraSig monitoring
- 700 Strings of 10 Hz geophones (**9 phones/string**)
- 115 Tescorp RSC interconnect cables (6 takeouts @ 42m or 84m)
- 1 Pelton Advance II ESG

Vehicles - Recording Crew

- 1 Air conditioned Recording Cabin mounted on a F700 4x4. Separate diesel driven 17 kVA generator supplying power for air conditioning and instrumentation
- 1 Party Manager Unit - F250 4x4
- 4 Line Units - F350 4x4
- 1 Transport Units - F700 4x4 (or equivalent)
- 1 Support Unit - F250 4x4
- 1 Mechanic Unit - F250 4x4
- 2 Personnel Carrier
- 1 Battery Charging Unit
- 1 Cable/Geophone Repair Trailer
- 2 Snowmobiles/ATV
- 1 Vibrator Technician Unit
- 1 Fuel Unit and Spare Parts Trailer
- 4 Mertz M18HD Buggy Vibrators

Communication/Office Equipment

- 16 VHF mobile radio transceivers fitted to vehicles
- 8 VHF hand held radio transceivers
- 1 Facsimile machine
- 1 Photocopier
- 1 Portable computer
- 2 IBM Compatible P.C.'s for administration and cost control

Vibrators and Control Electronics (Version 5.1 Hardware)

- 4 Mertz M18HD Vibrators with Advance II Electronics (Version 5E)
- 1 Vibrator Technician's Unit
- 1 Vibrator Fuel/Support Unit

4 Mertz M 18 HD P-Wave Vibrator units mounted on 4x4 buggy each fitted with the following:

- Pelton Advance II Vibrator Control Electronics (Version 5E)
- Geco-Prakla's Zero Leak Fueling System
- Mandatory Escape Hatches and Catwalks for Safety
- Automatic Low Press Hydraulic Shut Down Systems
- Automatic Air-bag Filling System
- 20,000 lb Hydraulic Winch
- Air Conditioning
- VHF Mobile Radios
- HD modifications increasing peak force to > 50,000 lbs.

Advance II Control Electronics - Features (version 5.1)

- Pelton Version 5E Firmware
- Automatic Performance Reporting - Continuous Checksum and Error Reports
- Vibra*Sig QC Monitoring
- Geco-Prakla VEiW-QC Statistical Analysis Program
- Mandatory Similarity Quality Control Monitoring Daily
- Mandatory Force Meter Analyzing Every Contract
- VEiW-QC Data and Time Motion Summaries Daily
- Enhanced Ground Force Control and Phase Locking

On sight computers for tailored sweep design dB/oct, dB/Hz and segmented non-linear sweeps.

Four high output vibrators are to be provided. The units proposed are Mertz M-18HD vibrators mounted on 612 buggies. These units have a peak force in excess of 50,000 lbs over a frequency range of 5-250 Hz.

The vibrators are equipped with Pelton Advance II control electronics which feature enhanced ground force control and phase locking, non-linear sweep (dB/oct and segmented dB/Hz) capability and vibrator QC options.

Pelton DR Servo Valve Enhancement equipped on all Geco-Prakla M-18 Vibrators.

RECORDING PARAMETERS

Program Size	39.94
No. of Traces	320
Shot Point Interval	80m
C.D.P. Size	4000%
Group Interval	20m
Geophones/Group	9
Groups in Gap	3
Geophone Spacing	9/20m
Start Frequency	10
End Frequency	100
Taper	0.5
Non Linear/Linear	Linear
Sweep Length	12 sec
No. of Sweeps/V.P.	4
No. of Vib/V.P.	4
Drag	30m over 20m
Filters High Cut	207hz
Record Length	5sec

SAFETY PROGRAM

For the advance crew safety meetings were held at least once per week. Start up safety meetings and orientations were held with the arrival of the Cutting and Slashing crews, the Survey crew and any visitors to the program. Audits were done on cats and slashers before start up and an evacuation plan was made for the camp.

Safety Advisor Doug Solonenko arrived in Fort Liard on February 4.

Safety briefings included were held regularly with the slashers and cats about not working alone, not crossing the Liard River and radio checks.

The arrival of the Recording Crew 1264

Recording crew has Safety Briefings every morning, lead by the Party Manager, Scott Anderson.

No incidents on this program.

NORTHERN MANPOWER REPORT

The following is a list of northern residents employed by Beaver Enterprises for the Ocelot Prospect.

*Advance list attached with employees names, hrs worked, and money made.

In addition to these field positions, Beaver Enterprises employed locals for their camp operation.

*Advance list attached with employees names, hrs worked, and money made.

NORTHERN EXPENDITURES REPORT

Geco-Prakla

Northern Business	Nature of Business	Amount
Beaver Enterprises	Line Clearance	\$346,559.50
Beaver Enterprises	Camp	\$ 18,910.00
Liard Fuel Centre	Fuel/Hotshot	\$ 5,527.36
Riverside Inn	Hotel	\$ 12,195.00
E & D Café	Hotshot	\$ 916.00
RECORDING CREW 1264		
Beaver Enterprises	Camp	\$ 45,120.00
Beaver Enterprises	Tow Cat/Line Clearance	\$ 2,228.00
Deh Cho Helicopters	Air Support	\$ 8,060.00
Liard Fuel Centre	Fuel	\$ 17,698.92
RECORDING CREW 1267		
Riverside Hotel	Hotel	\$ 5,692.00
Liard Valley General Store	Hotel	\$ 3,540.00
Liard Fuel Center	Fuel	\$ 5,191.20
Total Northern Expenditures		\$ 471,637.98

CONCLUSION

Recording operations went smoothly. Sufficient frost was in the lines and there were no problems with soft ground.

Cable crossing of the Liard river was done with the assistance of a local Helicopter company (Deh Cho Helicopters).

Generally the project went well. Due to warm weather conditions the ice crossings on line could not be crossed. Creek crossings were pulled upon completion of the job. Land use has cleared all the lines.

Data quality was good throughout the program and completion was on target with respect to BFR's time requirements for processing and interpretation.

[illegible]

[illegible]

[illegible]

11 13 14 15
PD TO CHNEA C40 CONTRACTING

[illegible]

[illegible]

[illegible]

Job	Name	Occup.	23	24	25	26	27	28	1	Hrs	Wages	Gross	Vac Pay	Total
Ocelot	Bertrand, Angus	Operator						8		8	136.00			
Ocelot	Bertrand, Angus O/T							2		2	51.00	187.00	7.48	194.48
Ocelot	Kotchua, Gordon	Ice Crew			8	8	8	0		24	336.00			
Ocelot	Kotchua, Gordon O/T				4	4	4	12		24	504.00	840.00	33.60	873.60
Ocelot	Lomen, Isidore	Ice Crew			8	8	8		0	24	336.00			
Ocelot	Lomen, Isidore O/T								5	5	105.00	441.00	17.64	458.64
Ocelot	Badine, Robert	Slasher			8	8	8	0		24	336.00			
Ocelot	Badine, Robert O/T				4	4	4	12		24	504.00	840.00	33.60	873.60
Ocelot	Sassie, Micheal	Slasher			8	8	8		0	24	336.00			
Ocelot	Sassie, Micheal O/T								5	5	105.00	441.00	17.64	458.64
Ocelot	Bertrand, Donny	Slasher		8	8	8	8	0	0	32	448.00			
Ocelot	Bertrand, Donny O/T			4	4	4	4	12	10	38	798.00	1246.00	49.84	1295.84
Ocelot	Klondike, Jochim	Slasher		8	8	8	8	0	0	32	448.00			
Ocelot	Klondike, Jochim O/T			4	4	4	4	12	10	38	798.00	1246.00	49.84	1295.84
Ocelot	Nande, Arthur	Slasher			8	8	8		0	24	336.00			
Ocelot	Nande, Arthur O/T								5	5	105.00	441.00	17.64	458.64
Ocelot	Duntra, Elvis	Slasher		8	8	8	8	0	0	32	448.00			
Ocelot	Duntra, Elvis O/T			4	4	4	4	12	10	38	798.00	1246.00	49.84	1295.84
Ocelot	Nelson, Dennis	Slasher		8	8	8	8	0	0	32	448.00			
Ocelot	Nelson, Dennis O/T			4	4	4	4	12	10	38	798.00	1246.00	49.84	1295.84
														8500.96
Job	Name	Occup.	23	24	25	26	27	28	1	Hrs	Wages	Gross	Vac Pay	Total
Ocelot	Bertrand, Antoine	ECC Slasher				1	1	1	1	4	Days			
Ocelot	Sassie, Norman				1	1	1	1	1	5	Days			
Ocelot	Vital, Mike				1	1	1	1	1	5	Days			
	Lomen, Daniel								1	1	Days			
Ocelot	Niezgoda, R	Cooper Cat								0	Days			
Ocelot	Witowski, Leo	Cooper Cat								0	Days			
Ocelot	Hood, Dean	Cooper Cat			1	1	1	1	1	4	Days			
Ocelot	Ballard, D	Cooper Cat			1	1	1	1	1	4	Days			

<u>Job</u>	<u>Name</u>	<u>Occup.</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>Hrs</u>	<u>Wages</u>	<u>Gross</u>	<u>Vac Pa'</u>	<u>Total</u>
Ocelot	Lomen, Isidore	Ice Crew		8	8					16	224.00			
Ocelot	Lomen, Isidore O/T									0	0.00	224.00	8.96	232.96
Ocelot	Sassie, Micheal	Slasher		8	8					16	224.00			
Ocelot	Sassie, Micheal O/T									0	0.00	224.00	8.96	232.96
Ocelot	Bertrand, Donny	Slasher	8	8		8	8			40	560.00			
Ocelot	Bertrand, Donny O/T		4	4		4	4	4		20	420.00	980.00	39.20	1019.20
Ocelot	Klondike, Jochim	Slasher	8	8		8		8		32	448.00			
Ocelot	Klondike, Jochim O/T		4	4		4		4		16	336.00	784.00	31.36	815.36
Ocelot	Nande, Arthur	Slasher		6	8					14	196.00			
Ocelot	Nande, Arthur O/T									0	0.00	196.00	7.84	203.84
Ocelot	Duntra, Elvis	Slasher	8	8		8	8			32	448.00			
Ocelot	Duntra, Elvis O/T		4	4		4	4			16	336.00	784.00	31.36	815.36
Ocelot	Nelson, Dennis	Slasher	8	8		8	8	8		40	560.00			
Ocelot	Nelson, Dennis O/T		4	4		4	4	4		20	420.00	980.00	39.20	1019.20
Ocelot	Isaiah, Harold	Operator			8					8	136.00			
Ocelot	Isaiah, Harold O/T				1					1	25.50	161.50	6.46	167.96
Ocelot	Timbire, Dale	Slasher						8		8	112.00			
Ocelot	Timbire, Dale O/T							4		4	84.00	196.00	7.84	203.84
Ocelot	Bertrand, Roger	Slasher						0		0	0.00			
Ocelot	Bertrand, Roger O/T							12		12	252.00	252.00	10.08	262.08
Ocelot	Bertrand, Fred	Slasher						8		8	112.00			
Ocelot	Bertrand, Fred O/T							4		4	84.00	196.00	7.84	203.84
														5176.6
<u>Job</u>	<u>Name</u>	<u>Occup.</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>Hrs</u>	<u>Wages</u>	<u>Gross</u>	<u>Vac Pa'</u>	<u>Total</u>
Ocelot	Bertrand, Antoine	ECC Slashe	1	1	1					3	Days			
Ocelot	Sassie, Noiman		1							1	Days			
Ocelot	Vital, Mike		1	1	1	1	1			5	Days			
Ocelot	Lomen, Daniel		1	1		1				3	Days			
Ocelot	Klondike, Julien			1	1		1			3	Days			
Ocelot	Berreault, Patrick				1		1			2	Days			
Ocelot	Kotchea, Jimmy					1				1	Days			

Ocelot Seismic Processing Report

This data set was processed by Geo•X Systems Ltd. in Calgary. A standard Western Canada processing sequence including migration was used. Special attention was given to true amplitude preservation by minimizing mixing or scaling. A representative Geo•X label is given below, describing the exact procedure used.

Special problems were encountered at the river crossings on lines LR 97-1 and MR 97-2. In both cases the areas of poor signal transmission due to surface gravel coincided with areas of significant structural complexity (see Interpretation section). These problems had been anticipated based on older data and an attempt was made to optimize data quality by doubling the acquisition fold from 40 to 80 for the river crossings. Despite this, the results in these two locations are very poor indeed. The low signal to noise ratio at the river crossings made migration locally undesirable. Therefore the two lines were migrated in the good portions of the lines and manually merged with unmigrated stacks in the poor data areas.

PROCESSING PARAMETERS



GEO-X
SYSTEMS LTD

JHC

PROCESSED BY GEO-X
DATE: SEP 1997

DIGITAL CONVERSION	2 MS. SAMPLE RATE
AMPLITUDE RECOVERY	(T)EXP(BT) B=0.0007
DECONVOLUTION	TYPE: ADAPTIVE 5 COMPONENT SURFACE CONSISTENT SIGNATURE WITH ZERO PHASE FREQUENCY DOMAIN OFFSET COMPONENT DOMAIN: FREQUENCY GATE: 250-2500 MS. AT 0 OFFSET 1500-2550 MS. AT 3620 M. OFFSET NOTE: SYSTEM CONVERTED TO MINIMUM PHASE
STRUCTURAL CORRECTIONS	DATUM ELEVATION: 500 M. DATUM VELOCITY: 3600 M./SEC. PROCESSING DATUM: 0 MS. ELEVATION, WEATHERING, AND DRIFT
NOTE: ALL FOLLOWING TIMES REFERENCED FROM PROCESSING DATUM	
ANALYSIS	PRELIMINARY VELOCITIES AND STATICS
STATICS	SURFACE STACK RESIDUAL
TRACE KILLS	
VELOCITY ANALYSIS	INTERVAL: 48 COPS
FINAL MOVEOUT	
MEAN SCALING	WINDOW: 300-2500 MS.
TIME-VARIANT SCALING	WINDOW: 0-300 MS.
MUTE	DISTANCE(M.) 300 3620
	TIME(MS.) 300 2050
STATICS	SURFACE CONSISTENT RESIDUAL WINDOW: 300-2500 MS.
TRACE GATHER	MAXIMUM FOLD: 87
STATICS	CDP CROSS CORRELATION WINDOW: 300-2500 MS.
STACK	CROSS CORRELATION WEIGHTED
F-D MIGRATION	85 % THEORETICAL VELOCITIES
FILTER	8/12-100/120 HZ.
EQUALIZATION	MEAN WINDOW: 300-2500 MS.

SCALE : 24 TRACES / IN.
3.75 IN. / SECOND

NOTE : MIGRATION APPLIED ONLY TO
S.P. 101 - S.P. 401 AND
S.P. 766 - S.P. 861

PLOTTED EVERY 2ND CDP

Interpretation Report

EL 365: Refer to Middle Devonian Time Structure Map
(Enclosure #2)

Lines LR-97-1 and LR-97-2 were shot to detail previously mapped middle Devonian prospects at the north end of EL 365. The structure at the intersection of lines FTL-03 and FTL-50 appears to have no northern closure on line LR-97-2 and would therefore be an extremely risky drilling prospect.

The faulted structure at the intersection of lines LR-96-1 and LR-97-1 is more promising but its crest is located just to the north of EL 365 on Crown. The lateral ramp of a major middle Devonian thrust forms the northern trap of this low relief structure. Considering the high risk of deep middle Devonian drilling prospects, acquiring the northern Crown acreage and drilling the best location first would be preferable to drilling on EL 365.

EL 382: Refer to Maps (Enclosures 3&4)

A fairly large middle Devonian structure on the low side of a normal or wrench fault is mapped in the northern portion of the licence. At present this prospect is considered to be too deep and probably too tight to drill in the near future.

The Pennsylvanian Mattson formation is considered to be the most attractive reservoir to drill on this block. Since the Mattson reflection has insufficient impedance to pick regionally, the Permian Fantasque horizon was used as an approximate indicator of Mattson structure. Enclosure #4 is the relevant Permian Time structure map. It shows several thrust structures crossing the Liard River in the western portion of EL 382. These are most likely leaky structures in which the subsurface Mattson is directly connected to outcrop. The structure at the intersection of lines FL-97-02 and FTL-13 has four way closure and is considered the best Mattson drilling location on the block (see enclosure #6). The 60° 20' 123° 00' Liard N-60 location has already been surveyed and is scheduled for drilling late in 1997. The nature of the faults near this location is uncertain. Although most have some vertical offset like normal faults, these were either compressed later in Laramide time or else the structures may actually be the result of convergent wrench faulting.

The greatest risk in the N-60 location is thought to be hydrocarbon flushing to outcrop either horizontally or vertically up faults or cracks. If this well encounters hydrocarbons below the spill-point of the rather small structural closure, then the prospect probably has a stratigraphic component as well. Individual Mattson sands may subcrop below the Permian at edges roughly parallel to and down-dip from the total Mattson subcrop edge shown in yellow. If this is the case, a much larger Mattson oil or gas accumulation could be present in this area.