

COMINCO LTD

EXPLORATION

GEOPHYSICS

NTS: 105 G/8

HORIZONTAL LOOP ELECTROMAGNETIC AND
MAGNETIC GEOPHYSICAL SURVEYS ON THE
WOL CLAIMS, WOLVERINE LAKE AREA,
YUKON TERRITORY.

- ASSESSMENT REPORT -



Latitude: 61°26'N

Longitude: 130°09'W

Work Performed by: Jules J. Lajoie, Ph.D., P.Eng.

Work Completed: Sept. 29 to Oct. 6, 1995.

Claim Owner and Operator: Cominco Ltd.



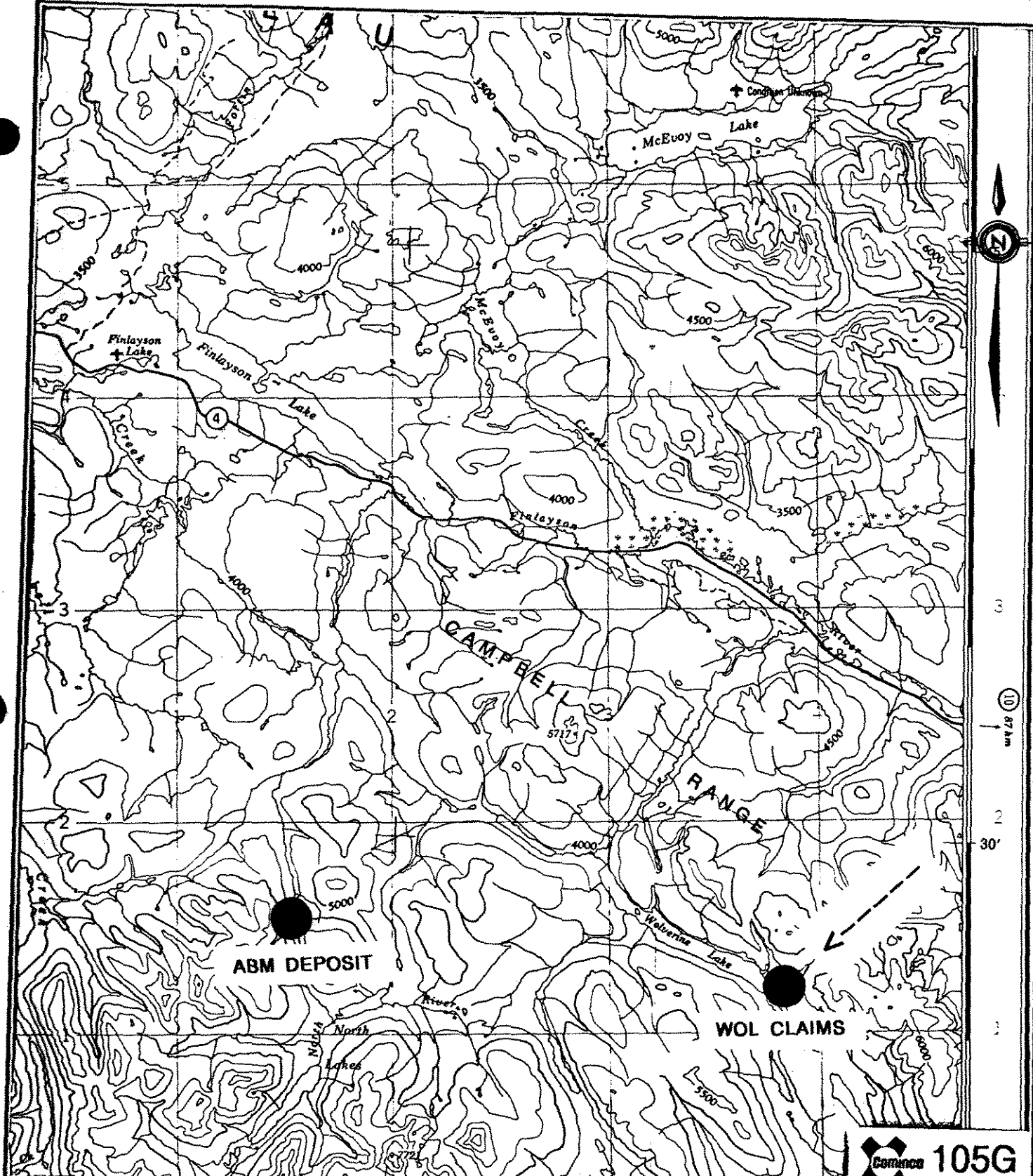
093399

JANUARY 1996

JULES J. LAJOIE

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Corona 105G

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

**PELLY MOUNTAIN PROPERTIES
WOL CLAIMS LOCATION MAP
WATSON LAKE M.D., YUKON.**

Scale: 1:250,000 Date: NOV. 1995 Plate: 429-95-1

EXPLORATION
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ASSESSMENT REPORT

INTRODUCTION

The Wol claims are situated approximately 160 km northwest of Watson Lake, Yukon. As shown in Plate 1, the claims are located at the SE end of Wolverine Lake, 23 km east of Cominco's ABM deposit.

The Wol claims are underlain by mafic volcanics and felsic volcanics. The latter are thought to host the Wolverine zone mineralization intersected by Atna Resources on the Foot claims located nearby. The objective of the work herein was to identify geophysical targets that may be indicative of economic mineralization.

This report describes horizontal loop electromagnetic surveying and magnetic surveying performed on the Wol claims in 1995.

LIST OF CLAIMS

The work described herein was performed on the following WOL claims, all held by Cominco Ltd.:

CLAIM NAME	TAG #
WOL 222	YB55419
WOL 223	YB55420
WOL 224	YB55421
WOL 225	YB55422
WOL 226	YB55423
WOL 227	YB55424
WOL 228	YB55425
WOL 229	YB55426
WOL 236	YB55433
WOL 237	YB55434
WOL 238	YB55435
WOL 239	YB55436

FIELD WORK

11.75 km of linecutting were done in late September by Coureur des Bois of Whitehorse. Nine lines were prepared at a spacing of 200M and labelled from 14300E to 15900E. Each is 1.35 km long except for Line 15300E which is shorter due to a cliff. Slope corrected chainage was used with picketing at 25M.

2.5 days were spent preparing and shipping the equipment for this survey. J. Lajoie mobilized from Vancouver to the TAG camp on September 29, 1995. The TAG camp at the ABM deposit was the base of operations and daily access to the claims was by helicopter. The HLEM and magnetic surveying were completed from Sept. 30 to Oct. 3 with the assistance of Fred Dick of Ross River on all days and Gill Graham of Cominco Ltd. on two days. Oct. 4 and half of Oct. 5 was spent processing and evaluating data, and packing equipment. J. Lajoie mobilized out of the Tag camp on the night of Oct. 5, arriving back in Vancouver on the afternoon of Oct. 6.

For the HLEM work, the slope corrected chainage data from the linecutters were used to compute distance corrections and slopes at every station. This is to ensure as much as possible that the transmitter and receiver were at the nominal coil separation and coplanar.

9 km of 100M coil separation HLEM were completed on seven lines using frequencies 440Hz, 1760Hz, 3520Hz, and 14080Hz. This includes 1.7km where the 110 Hz frequency was additionally acquired. Station separation was 25M. Lines 15700E and 15900E were not surveyed with HLEM.

2 km of 50M coil separation HLEM were completed to detail certain areas using frequencies of 110Hz, 440Hz, 1760Hz, and 7040Hz. Station separation was 12.5M

7.7 km of total field magnetic data were acquired on 6 lines at a station separation of 12.5M. All data were drift corrected using a base station magnetometer located at the Tag camp. Lines 15500E, 15700E, and 15900E were not surveyed with magnetics.

A Max-Min I-9 (S/N 3389) system was used to acquire the horizontal loop EM data. Two EDA OMNI PLUS magnetometers were used to acquire the magnetic data, one acting as a base station recorder.

All data were processed and maps were drafted with Geopak data processing software and Geopak's RTI-CAD display software.

INTERPRETATION

Plate 2 shows the geophysics grid and WOL claims on a topographic base. Appendix 1 contains a complete set of profile plots for the mag and HLEM surveying.

Plate 3 is a geophysical compilation showing HLEM data (CS=100M, F=440Hz), magnetics, and interpretation. The solid

red profiles are the in-phase while the dashed red profiles are the out of phase HLEM data. The blue profiles are base station corrected magnetic data with the thick solid blue line denoting the subcrop trace of the most prominent magnetic feature. The black solid and dashed lines are the interpreted conductors located on the grid, using data from all frequencies, with the solid lines representing the better conductors having a higher in-phase/out-of-phase ratio. The northernmost good conductor appears to bifurcate on Lines 14500E and 14700E. Profile shapes of both HLEM and magnetic data indicate dips to the northeast or grid north. The conductors are mostly shallow, at depths of no more than 10-15M.

CONCLUSIONS

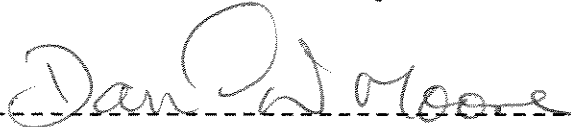
9 km of 100M coil separation HLEM, 2 km of 50M coil separation HLEM, and 7.7 km of magnetics were completed on the WOL claims in 1995. Good conductors with high IP/OP ratios have been identified as well as one prominent magnetic unit.

Report by:



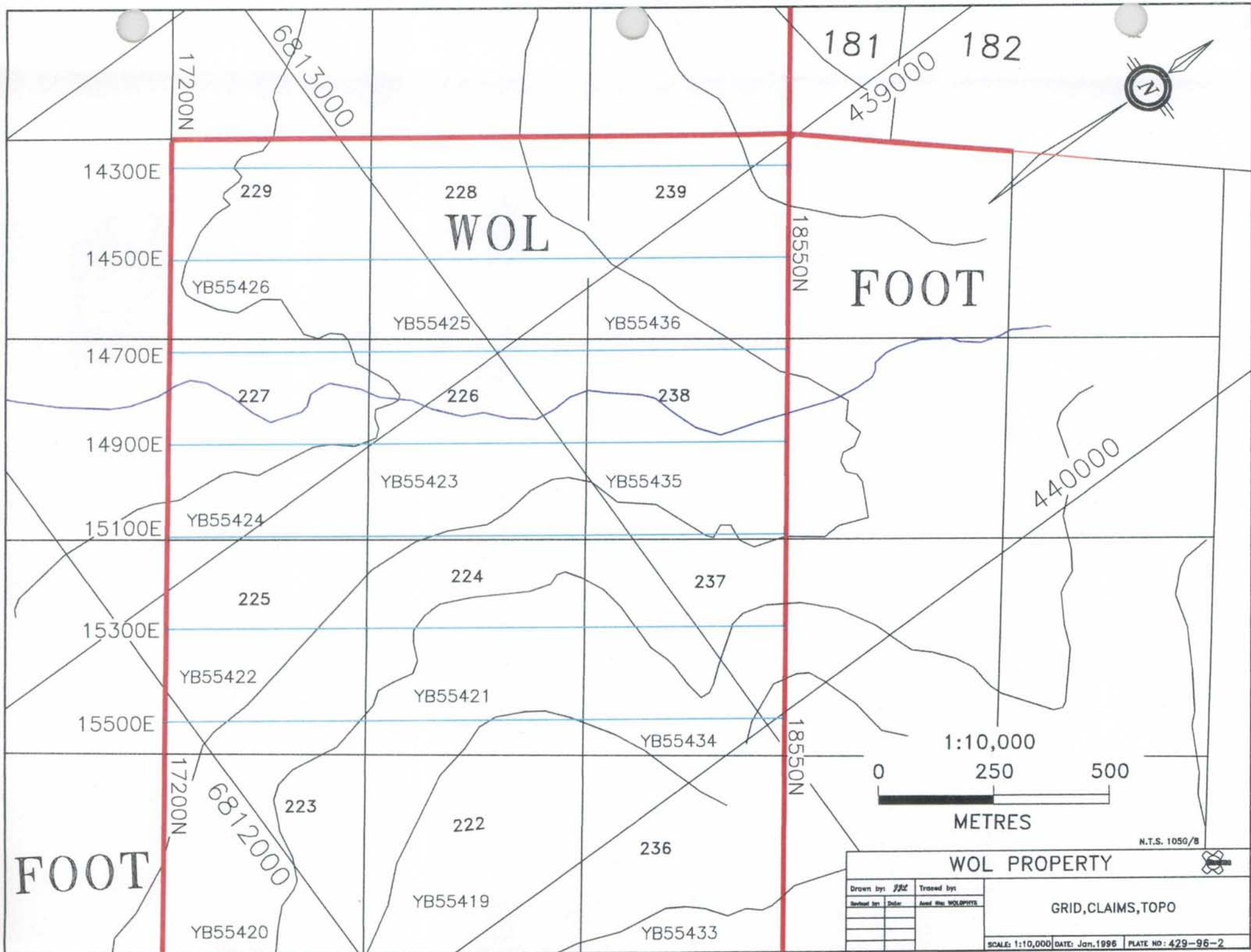
 Jules J. Lajoie, Ph.D., P.Eng.
 Geophysicist, Cominco Ltd.

Approved for Release by:



 David W. Moore
 Manager, Exploration, Western Canada
 Cominco Ltd.

cc: Min. Rec. (2)⁻¹
 Geoph.
 W.D.
 Admin.



17200N

6813000

181

182

439000

14300E

229

228

239

WOL

14500E

YB55426

YB55425

YB55436

FOOT

14700E

227

226

238

14900E

YB55423

YB55435

440000

15100E

YB55424

224

237

15300E

225

YB55422

YB55421

YB55434

1:10,000

0 250 500

METRES

17200N

6812000

223

222

236

FOOT

YB55420

YB55419

YB55433

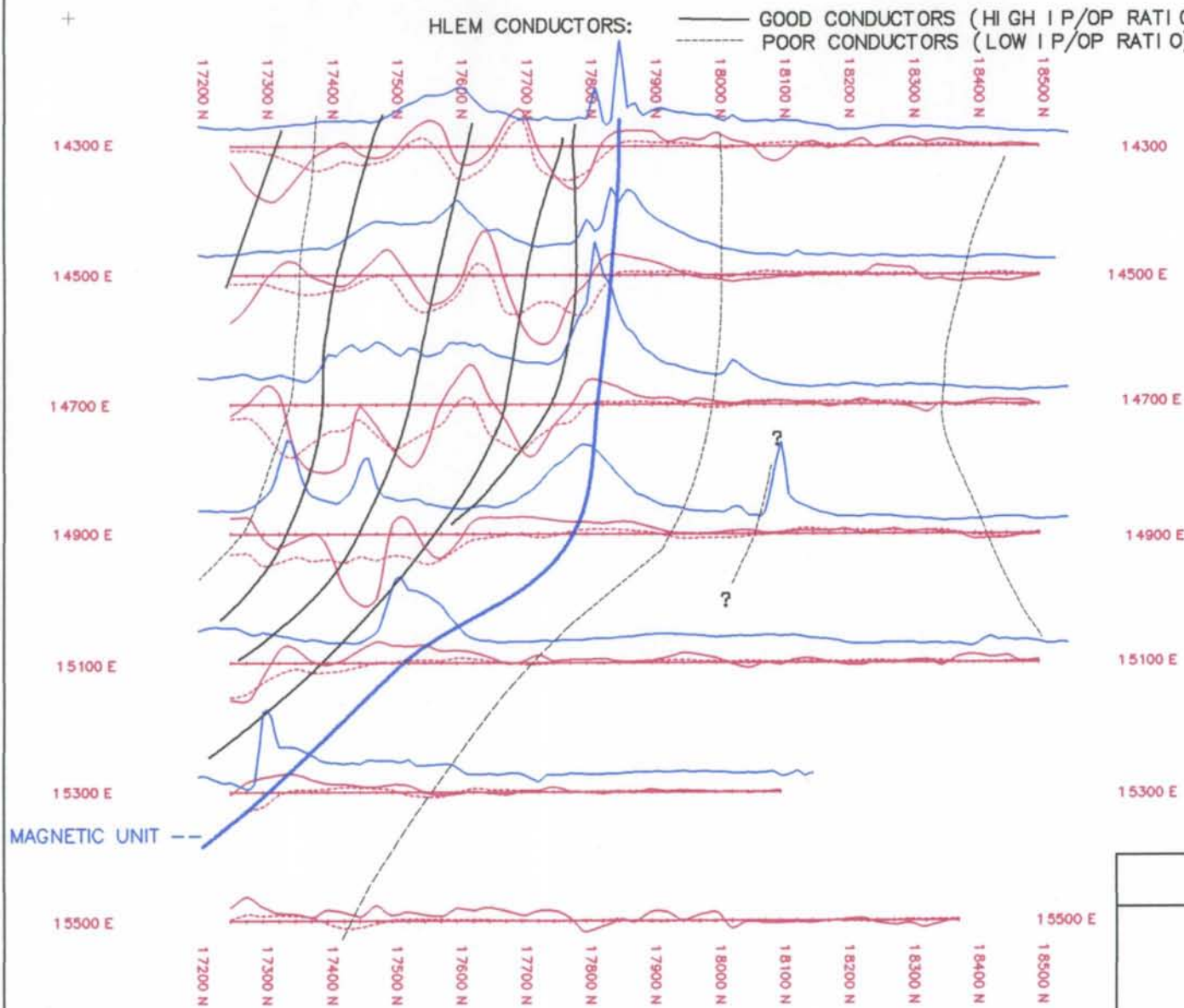
N.T.S. 1050/8

WOL PROPERTY

Drawn by: JJC	Traced by:
Checked by: DLR	Asst. Dir. WOL/DP/PL

GRID, CLAIMS, TOPO

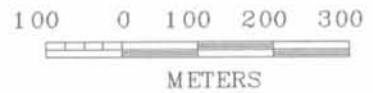
SCALE: 1:10,000 DATE: Jan, 1996 PLATE NO: 429-96-2



TOTAL FIELD MAG
 1000 nT
 BASE STN AT KZK

MAX-MIN I-9
S/N 3389

IP (solid): 1CM=50%
OP (dashed): 1CM=50%



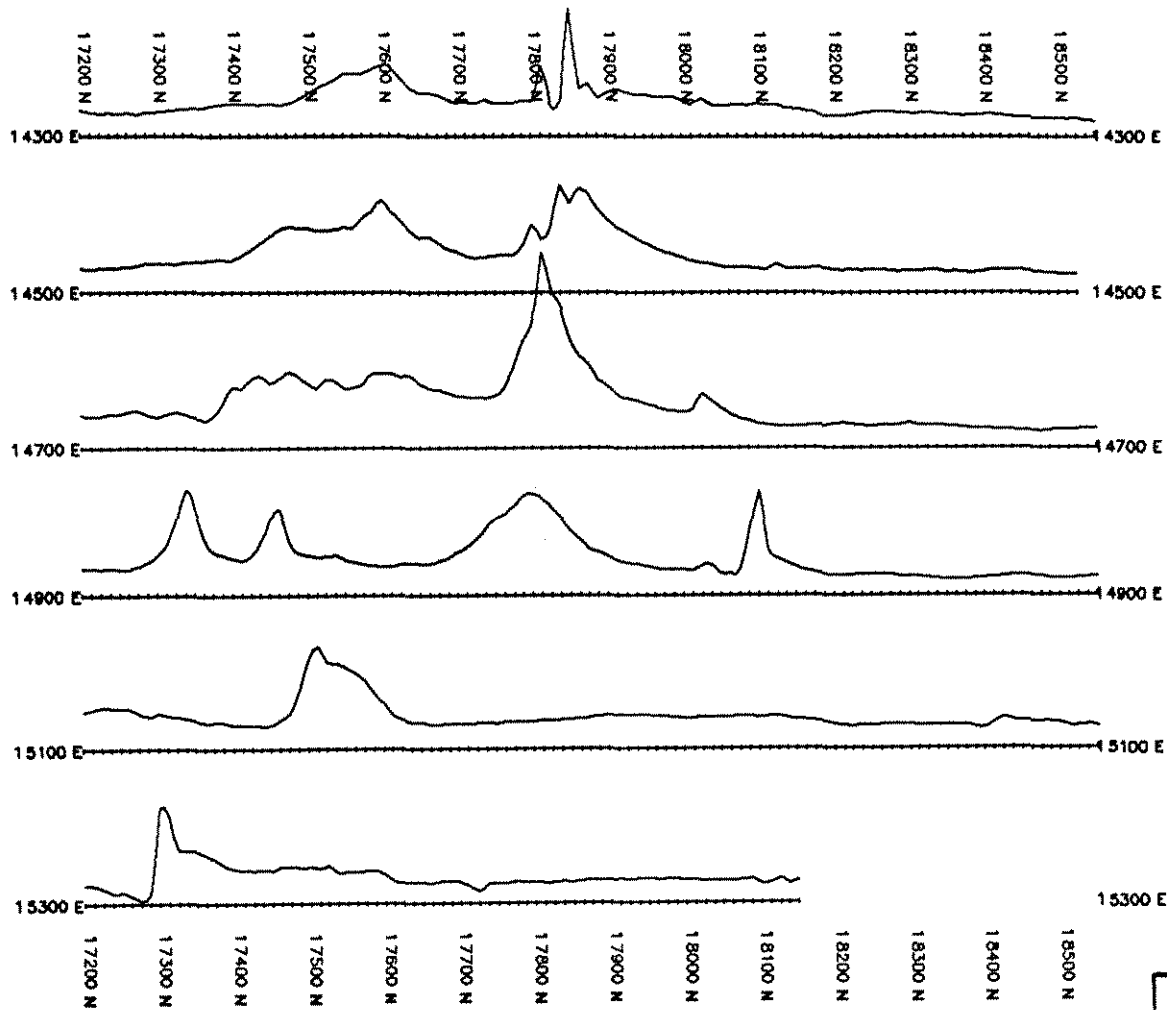
COMINCO EXPLORATION
WOL PROPERTY HLEM & MAG CS = 100M F = 440 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: 429-95-3

APPENDIX 1

COMPLETE SET OF MAG AND HLEM PROFILE PLOTS

A-1	TOTAL FIELD MAGNETICS
A-2	HLEM CS = 100M F = 110 Hz
A-3	HLEM CS = 100M F = 440 Hz
A-4	HLEM CS = 100M F = 1760 Hz
A-5	HLEM CS = 100M F = 3520 Hz
A-6	HLEM CS = 100M F = 14080 Hz
A-7	HLEM CS = 50M F = 110 Hz
A-8	HLEM CS = 50M F = 440 Hz
A-9	HLEM CS = 50M F = 1760 Hz
A-10	HLEM CS = 50M F = 7040 Hz

+



**EDA OMI PLUS
MAGNETIMETERS**

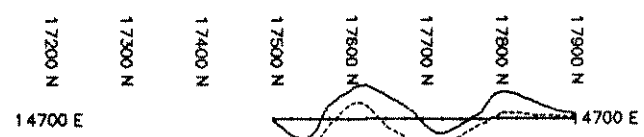
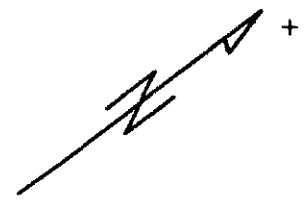
1 CM = 500 nT



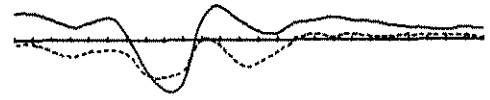
COMINCO EXPLORATION
WOL PROPERTY TOTAL FIELD MAGNETICS BASE STN AT KIK CAMP
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-1

+

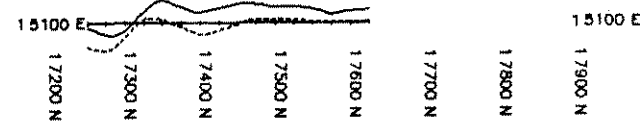
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14900 E



14900 E



MAX-MIN I-9
S/N 3389

IP(solid): 1CM=50%
 OP (dashed): 1CM=50%

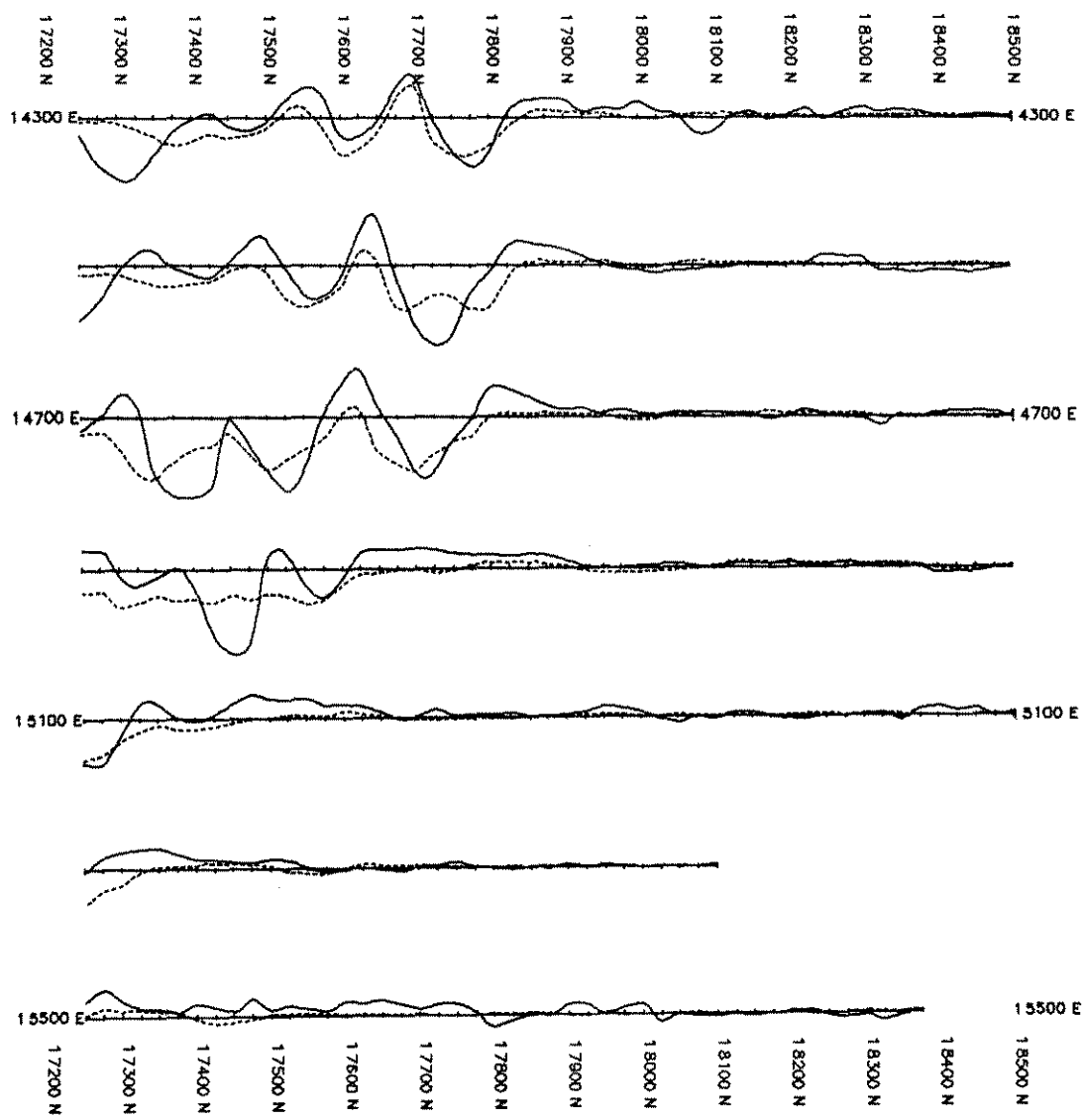


COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 100M F = 110 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-2

WOL HLEM 1: 10,000 CS=100M 1CM=50% F= 110 Hz.

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+



MAX-MIN I-9
S/N 3389

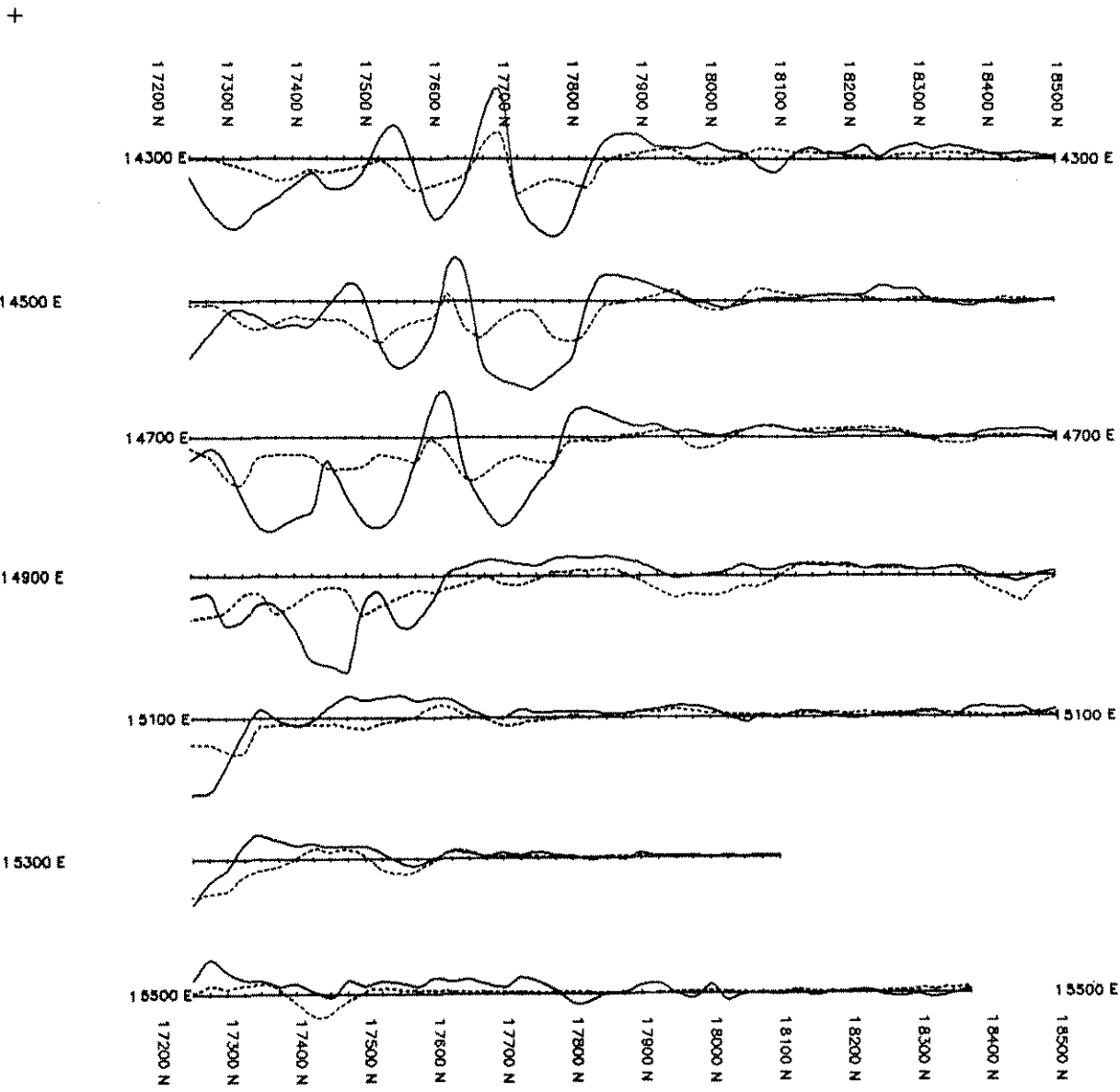
IP (solid): 1CM=50%
 OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS=100M 1CM=50% F=440Hz.

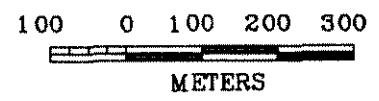
COMINCO EXPLORATION
WOL PROPERTY
HORIZONTAL LOOP EM
CS = 100M F = 440 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-3

+



MAX-MIN I-9
S/N 3389

IP(solid): 1CM=50%
OP (dashed): 1CM=50%

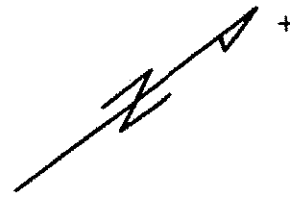
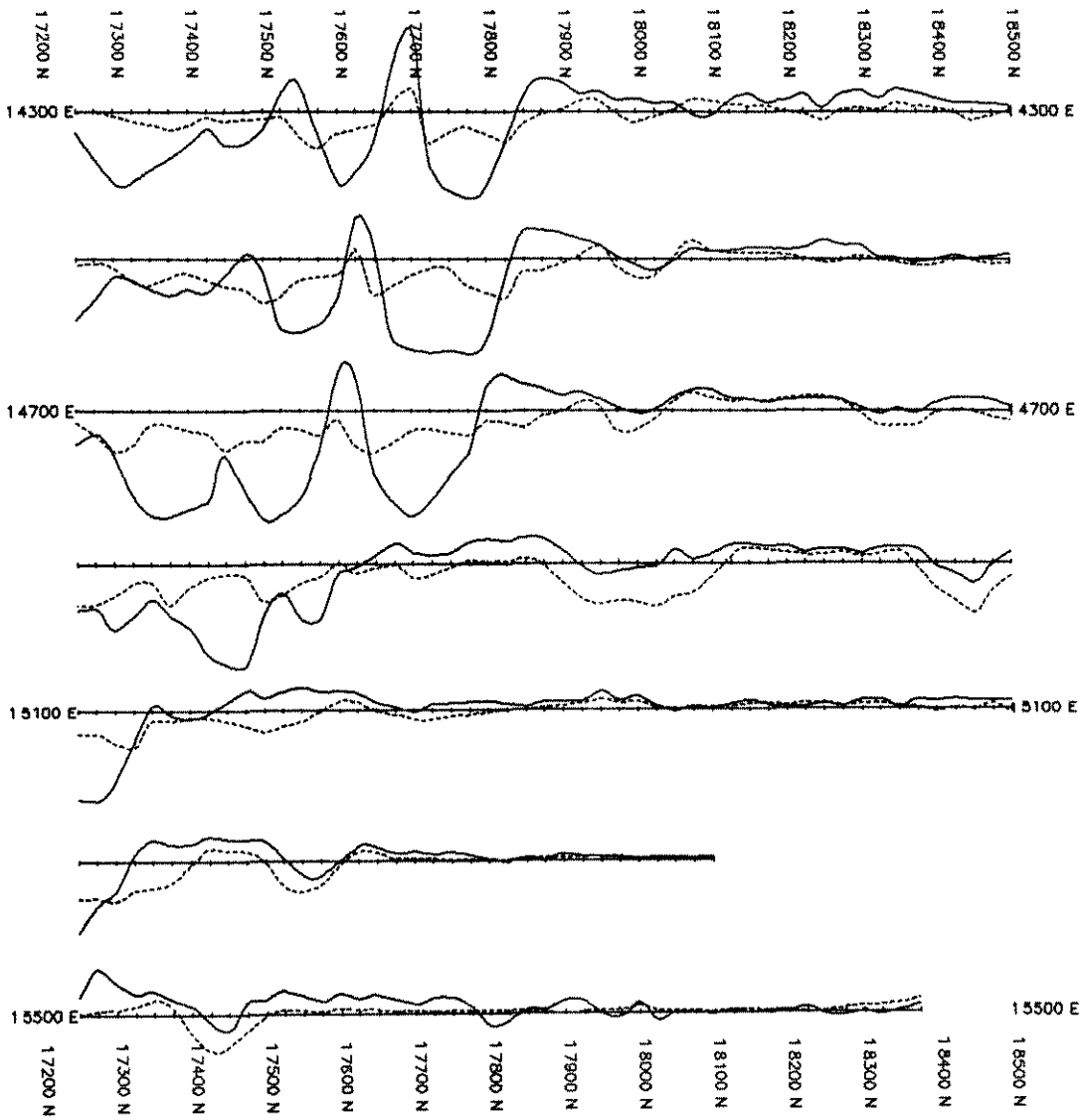


WOL HLEM 1: 10,000 CS=100M 1CM=50% F=1760 Hz

COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 100M F = 1760 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-4

+

+



**MAX-MIN 1-9
S/N 3389**

IP(solid): 1CM=50%
OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS=100M 1CM=50% F = 3520 Hz.

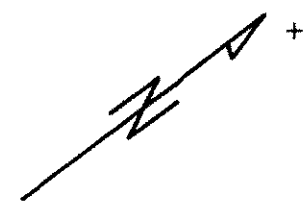
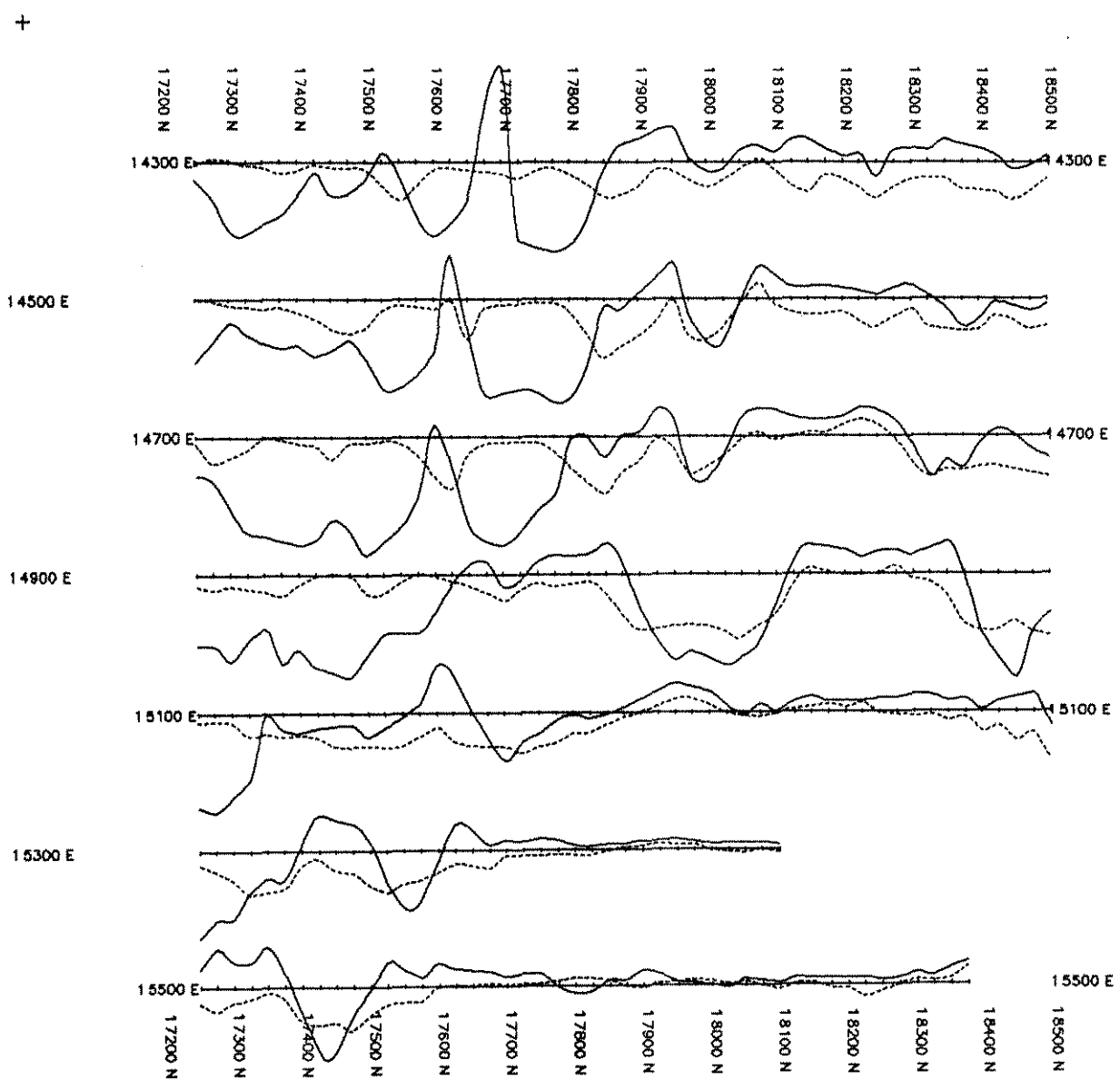
COMINCO EXPLORATION

**WOL PROPERTY
HORIZONTAL LOOP EM
CS = 100M F = 3520 Hz**

Watson Lake MD, YUKON

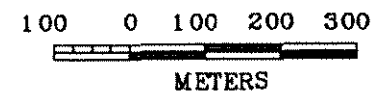
Scale 1:10,000 Oct. 95 PLATE: **A-5**

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**MAX-MIN I-9
S/N 3389**

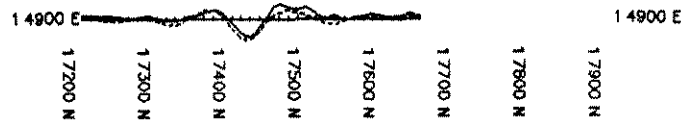
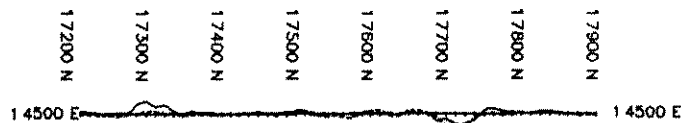
IP (solid): 1CM=50%
OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS=100M 1CM=50% F=14080 Hz.

COMINCO EXPLORATION	
WOL PROPERTY HORIZONTAL LOOP EM CS = 100M F 14,080 Hz	
Watson Lake MD, YUKON	
Scale 1:10,000	Oct. 95
PLATE: A-6	

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MAX-MIN 1-9
S/N 3389

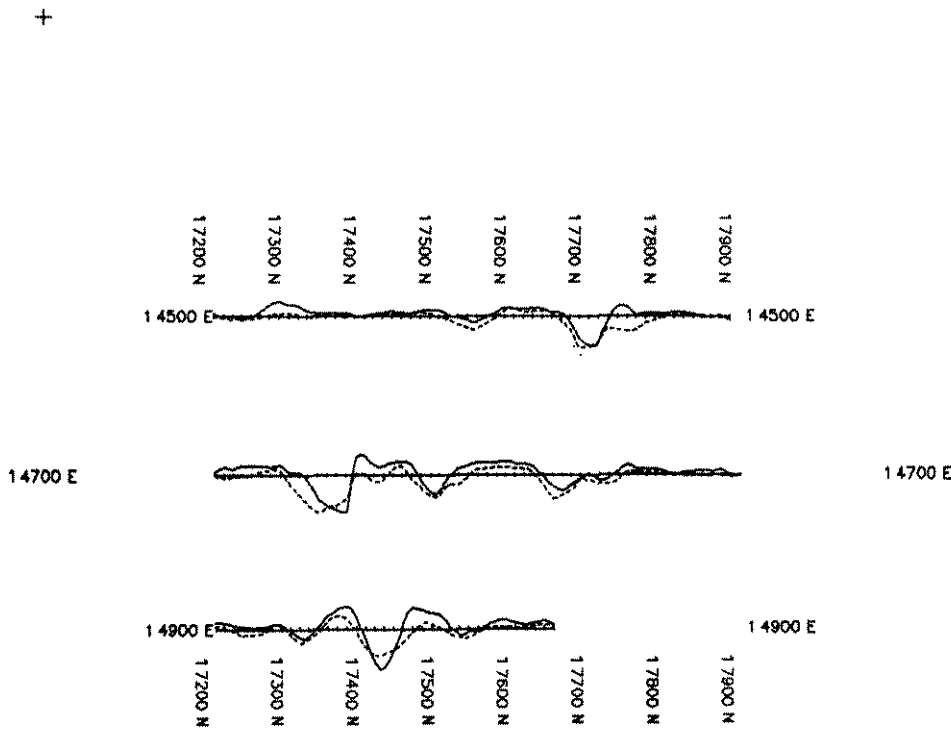
IP(solid): 1CM=50%
 OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS= 50M 1CM=50% F=110Hz.

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COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 50M F = 110 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-7



**MAX-MIN I-9
S/N 3389**

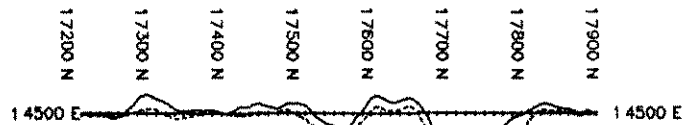
IP(solid): 1CM=50%
OP (dashed): 1CM=50%



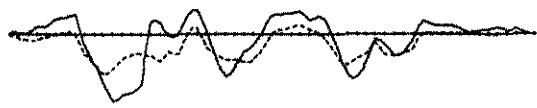
WOL HLEM 1: 10,000 CS= 50M 1CM=50% F=440Hz.

COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 50M F = 440 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-8

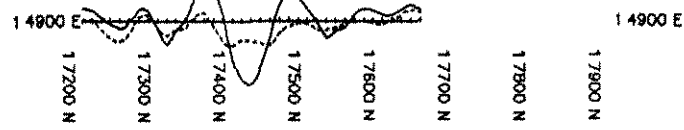
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14700 E



14700 E



14900 E

MAX-MIN I-9
S/N 3389

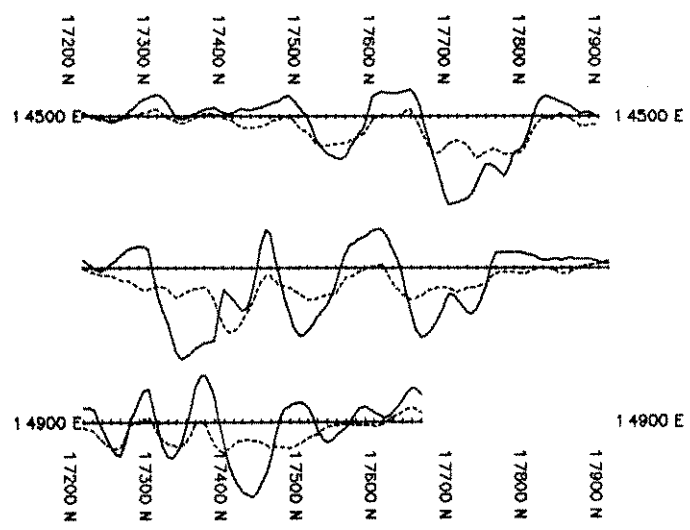
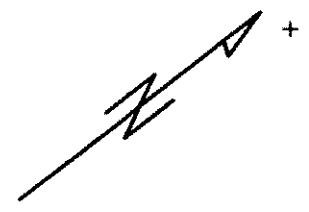
IP(solid): 1CM=50%
 OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS= 50M 1CM=50% F= 1760 Hz.

+

COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 50M F = 1760 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-9



**MAX-MIN I-9
S/N 3389**

IP(solid): 1CM=50%
OP (dashed): 1CM=50%



WOL HLEM 1: 10,000 CS= 50M 1CM=50% F= 7040 Hz.

COMINCO EXPLORATION
WOL PROPERTY HORIZONTAL LOOP EM CS = 50M F = 7040 Hz
Watson Lake MD, YUKON
Scale 1:10,000 Oct. 95 PLATE: A-10

APPENDIX 2

IN THE MATTER OF THE
YUKON QUARTZ MINING ACT
AND THE MATTER OF A GEOPHYSICAL PROGRAMME
CARRIED OUT ON THE WOL CLAIMS
LOCATED 160 KM NW OF WATSON LAKE, YUKON,
IN THE WATSON LAKE MINING DIVISION OF THE
YUKON TERRITORY, MORE PARTICULARLY
N.T.S. 105G/8


A F F I D A V I T

I, Jules J. Lajoie, of the City of Vancouver in the Province of British Columbia, make oath and say:

1. THAT I am employed as a geophysicist by Cominco Ltd. and, as such have a personal knowledge of the facts to which I hereinafter depose;

2. THAT annexed hereto and marked as "Exhibit A", to this statement is a true copy of expenditures incurred on a geophysical survey on the WOL claims;

3. THAT the said expenditures were incurred between Sept. 29 and Oct. 6, 1995, for the purpose of mineral exploration of the above-noted claims.



Jules J. Lajoie
Jules J. Lajoie, Ph.D., P.Eng.
Geophysicist, Cominco Ltd.

APPENDIX 3

EXHIBIT 'A'

STATEMENT OF GEOPHYSICAL EXPENDITURES (1995)

WOL CLAIMS

1. SALARIES

- Jules J. Lajoie:
Travel & Field Work: Sept.29-30, Oct.1-6
Total 8 days @ \$541/day = \$4328.00
- Gill Graham: Oct 1-2: 2 days @ \$310/day = \$620.00
- Fred Dick: Sept.30; Oct 1-3:
4 days @ \$125/day = \$500.00

\$5448.00

2. OPERATING DAY CHARGES

Note: This charge is applied for those days on which
useful data are acquired, to cover the costs of
data compilation, drafting, interpretation, and
report.

- HLEM: Sept. 30, Oct. 1-3
MAG: Oct 1(1/2), 2
Total 5.5 days @ \$461/day = \$2535.50

3. EQUIPMENT RENTAL

HLEM (\$100/day) & MAGS (\$70/day)
Operating 4 days @ \$170/day \$680.00
Travel(Yukon) 2 days @ \$85/day \$170.00

\$850.00

4. EXPENSE ACCOUNTS

Jules J. Lajoie
Portion of expenses incurred within Yukon,
ex-GST, incl. air travel and freight - \$518.84

5. MISCELLANEOUS

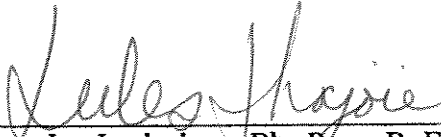
- Helicopter: 3.7 hrs @ \$585	=	\$2164.50
- Camp costs:		
J. Lajoie: 6 days @ \$25.00/day	=	\$150.00
G. Graham: 2 days @ \$25.00/day	=	\$ 50.00
F. Dick: 4 days @ \$25.00/day	=	\$100.00
- Linecutting: 11.75 km	=	\$6500.00

		\$8964.50

T O T A L

\$18,316.84

I certify this to be a true statement of expenditures for the geophysical program on the WOL claims in 1995.



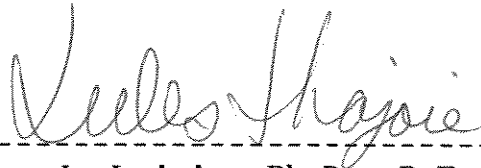
Jules J. Lajoie, Ph.D., P.Eng.
Geophysicist, Cominco Ltd.

APPENDIX 4

C E R T I F I C A T I O N

I, Jules J. Lajoie, of 1933 Creelman Ave., in the City of Vancouver, in the Province of British Columbia, do hereby certify that:

1. I graduated from the University of Ottawa in 1968 with an Honours B.Sc. in Physics, from the University of British Columbia in 1970 with an M.Sc. in Geophysics, and from the University of Toronto in 1973 with a Ph.D. in Geophysics.
2. I am a registered member (#12077) of the Association of Professional Engineers of the Province of British Columbia, the Society of Exploration Geophysicists, and the British Columbia Geophysical Society.
3. I have been practicing my profession for the past twenty three years.



Jules J. Lajoie, Ph.D., P.Eng.
Geophysicist, Cominco Ltd.