COMINCO LTD.

EXPLORATION
NTS: 105 O/1,2

WESTERN DISTRICT

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MAYO, Y.T.
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Office of the Regional Mining Recorder
FEB 1 1984
Yukon Territory

ASSESSMENT REPORT

GEOCHEMISTRY, GEOPHYSICS, DIAMOND DRILLING, ROAD BUILDING

NIDD PROPERTY

MAYO MINING DISTRICT

YUKON TERRITORY

LAT. 63°11'N LONG. 130°21'W

WORK PERIOD: MAY 27 TO SEPTEMBER 27, 1983

JANUARY, 1984

T.W. HODSON

091509

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 580,240.00.

Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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* * *

ATTACHMENTS

COMINCO LTD.

EXPLORATION
NTS: 105 O/1,2

WESTERN DISTRICT

ASSESSMENT REPORT

GEOCHEMISTRY, GEOPHYSICS, DIAMOND DRILLING, ROAD BUILDING

NIDD PROPERTY

MAYO MINING DISTRICT, YUKON TERRITORY

I. SUMMARY

Cominco Ltd.'s Nidd Property is located within the Mayo Mining District of the Yukon Territory approximately 390 km northeast of Whitehorse, Yukon Territory. This property consisting of 636 claims was originally staked between 1976 and 1981. Underlying the property are units of the Ordovician-Silurian Road River Group and Devonian-Mississippian Earn Group.

This report covers the 1983 work period May 27th to September 27th. During this period 10 kilometres of HLEM and magnetometer surveys were run, 900 soil samples were collected, 1758.1 metres of diamond drilling were completed and access road construction and upgrading was undertaken.

Results of this field program are contained within this report and the accompaning geophysical report by I. Jackisch.

II. INTRODUCTION

A. Location

The Nidd Property is situated within the Mayo Mining District approximately 390 kilometres northeast of Whitehorse, Yukon Territory (Figure 1). Access to the property is either by fixed winged aircraft or truck to the MacMillan Pass airstrip and then by helicopter 24 kilometres west to a camp centrally located on the property.

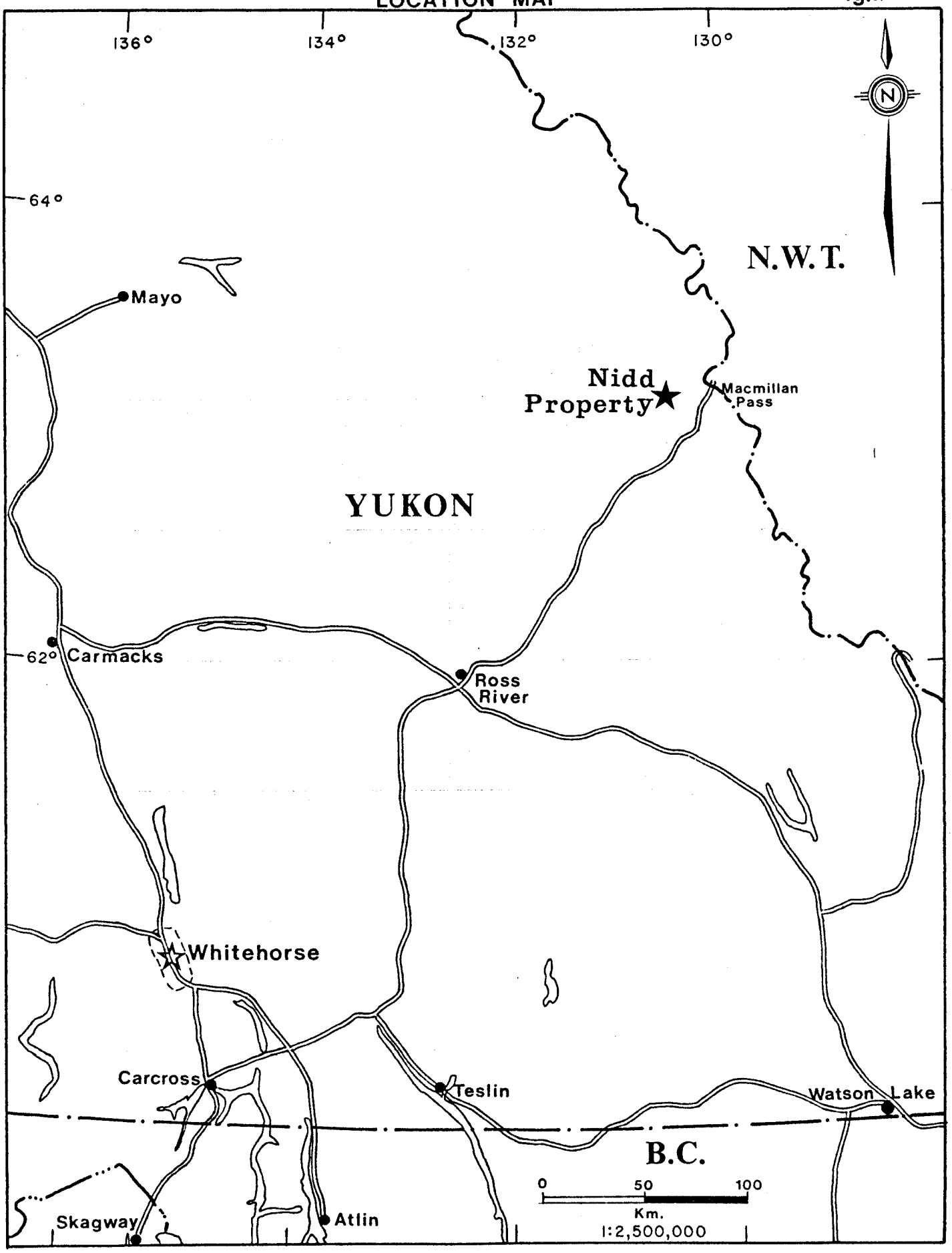
Latitude:	63°11'N
Longitude:	130°21'W
NTS:	105 O/1,2

B. History

The Nidd Property was staked between 1976 and 1981 to cover the westerly strike extension of the stratigraphy which hosts the nearby Tom and Jason lead-zinc-silver deposits. Since 1976 numerous development programs have been carried out. These programs have included some or all of the following: geology, soil and rock geochemistry, geophysics, diamond drilling, road building, trenching.

LOCATION MAP

Fig.1



C. Ownership

The Nidd Property consists of 636 claims 100% owned by Cominco Ltd. (Plate 1).

Claim	Date Recorded	Due Date
Kobuk 1-8	Sept. 3, 1976	Dec. 3, 1988
Nidd 1-11, 13, 15, 17, 19, 255, 256, 300, 302-307, 309, 311	Oct. 20, 1976	Oct. 20, 1983
Nidd 12, 21, 24, 35, 38, 47-49, 55-58, 63-66, 70-73, 76-79, 81-85, 88-93, 95, 104, 115, 116, 130, 275-278	Oct. 20, 1976	Dec. 3, 1988
Nidd 14, 16, 18, 20, 23, 25-30, 37, 39, 40, 50, 51, 257-260	Oct. 20, 1976	Dec. 3, 1989
Nidd 22, 31-34, 36, 244-253	Oct. 20, 1976	Dec. 3, 1986
Nidd 96-101, 105-110, 117-122, 131-136, 145-147, 283, 284	Oct. 20, 1976	Dec. 3, 1987
Nidd 138, 140, 142, 144, 148-158 160, 165, 167, 169, 171, 173, 175-179, 184-193, 203	Oct. 20, 1976	Dec. 3, 1991
Nidd 161, 163, 174, 182, 194, 195, 200, 202, 205, 210, 211, 217	Oct. 20, 1976	Dec. 3, 1992
Nidd 183, 198, 199, 201, 204 206-209,212, 213, 215, 219, 223, 230	Oct. 20, 1976	Dec. 3, 1993
Nidd 214, 216, 218, 220, 225, 231, 236, 237	Oct. 20, 1976	Dec. 3, 1994
Nidd 221, 222, 224, 226-229 232-235	Oct. 20, 1976	Dec. 3, 1995
Nidd 240-243, 301	Oct. 20, 1976	Dec. 3, 1983
Nidd 316-320, 324-326, 328-346	July 11, 1977	Dec. 3, 1988
Nidd 321-323, 327	July 11, 1977	Dec. 3, 1989
Nidd 347-349, 353-355	Sept. 12, 1977	Dec. 3, 1993
Nidd 356-371	Sept. 16, 1977	Dec. 3, 1993
Nidd 372(fr.), 373(fr.)	June 25, 1979	Dec. 3, 1991
Nidd 401-475	Oct. 15, 1980	Dec. 3, 1989
Nidd 476-482, 498, 500, 502 504-506	June 25, 1981	Dec. 3, 1990
Nidd 483-496, 507-520	June 25, 1981	Dec. 3, 1985
Nidd 521-558, 575-620, 622 625-630	July 22, 1981	Dec. 3, 1985
Nidd 559-574	July 22, 1981	Dec. 3, 1984
Nidd 621, 623, 624, 631-634	July 22, 1981	Dec. 3, 1990
Nidd 646, 648, 650-652, 731-738, 740, 744-788, 798-801	Aug. 7, 1981	Dec. 3, 1983
Nidd 699-730, 789-797	Aug. 7, 1981	Dec. 3, 1985
Nidd 803-818	Aug. 27, 1981	Dec. 3, 1985

III. EXPLORATION

The 1983 exploration program consisted of soil geochemistry, horizontal loop EM and magnetometer survey, diamond drilling and road building. This program was carried out during the period May 27 to September 27, 1983.

IV. GEOPHYSICS

In total, 10 kilometres of horizontal loop EM and magnetics were surveyed in what is known as the Eleven Creek area of the property. Details of this geophysical survey are contained in the Geophysical Surveys report by I. Jackisch which accompanies this assessment report.

V. GEOCHEMISTRY

A. Analytical Procedure

The 1983 Nidd Property soil sampling program consisted of the taking of 900 soil samples along contour and grid lines in the Imperial and Eleven Creek areas of the property. All samples were shipped to Cominco's Exploration Research laboratory in Vancouver, B.C. for analyses. Following digestion by a 20% nitric acid solution the lead, zinc and silver contents were determined by atomic absorption.

B. Results

Results of the soil surveys in the Imperial and Eleven Creek areas for lead, zinc and silver are shown on Plates 2, 3, 4, and Plates 5, 6, 7 respectively. Lead values returned were low with only four scattered samples on the Imperial Creek grid and one sample on the Eleven Creek grid greater than 50 ppm. Zinc values show a 350 metre by 400 metre plus 1000 ppm area outlined on the Eleven Creek grid and a smaller plus 1000 ppm area outlined in the Imperial Creek valley. Both of these areas are covered by extensive overburden.

Silver values are generally low with minor plus 1.0 ppm areas seen on both grids. One 150 metre by 200 metre plus 1.0 ppm silver area is located just east of Imperial Creek. No outcrop is seen at this location.

VI. DIAMOND DRILLING

In total 1758.1 metres of BQ, NQ, and HQ diamond drilling were completed in five holes (Plate 8) by E. Caron Diamond Drilling Ltd., 7 Roundel Road, Whitehorse, Yukon Territory. The purpose of the drill program was to test the westerly extension of favourable stratigraphy hosting low grade Pb-Zn mineralization encountered in the 1982 drill program and to provide stratigraphic information. Rock types cored included volcanics and calcareous mudstones of the Ordovician-Silurian Road River Group and volcanics, conglomerates, diamictites and mudstones of the Devonian-Mississippian Earn Group. Minor sporadic sphalerite mineralization is seen within the conglomerates and diamictites. For core details and analyses see the attached drill logs (only NB83-6 and NB83-9 are included here for assessment purposes). For location of core storage see Plate 8.

VII. ROAD BUILDING

The access road started in 1982 was upgraded during 1983 in hopes of completing it for use during the field season. Contractors used were E. Caron Diamond Drilling Ltd. and H. Coyne and Sons Ltd., 14 MacDonald Road, Whitehorse, Yukon Territory. Results of this work produced a road to 4X4 standards except for one short stretch (700 metres) where swampy conditions make it impassible during the summer months. It is presently planned to complete this road to 4X4 standards over this swampy section by mid 1984. An outline of the road is sketched on Plate 1.

Reported by: _____
T.W. Hodson, Geologist

Endorsed by: _____
D. Rhodes, Senior Geologist

Approved for
Release by: _____
G. Harden, Manager
Exploration
Western District

Distribution

Mining Recorder (2)
Western District (1)

TWH/cgs

APPENDIX A

STATEMENT OF EXPENDITURES

NIDD PROPERTY

MAY 27 TO SEPTEMBER 27

I. DIAMOND DRILLING

Diamond drilling direct (contract and supplies) - 1758.1 m			$297,997.00
Site preparation and drill support (D7 bulldozer) 296 hrs. @ $70/hr			20,720.00
Helicopter support - 190 hrs. @ $542/hr			102.908.00
Staff time: T.W. Hodson 93 days @ $166.33			15,467.76
A.P. Roberts 105 days @ 171.60			18,018.00
F.J. Ferguson 20 days @ 171.60			3,432.00
S.B. Noakes 10 days @ 108.24			1,082.40
Assays and analyses:			
Analyses (Cu, Pb, Zn, Ag, Fe) 378 @ $5.10/sample	$1,927.80		
Preparation - 378 samples	1,153.00		
Assays 30 Pb @ $5.50 + 73 Zn @ $5.00 + 36 Ag @ $8.00	818.00		
	3,898.00		3,898.80
Domicile - 228 man days @ $95/man day			21,660.00
Transportation: freight - $4,261			
fixed wing - 14,056			
truck plus fuel - 15,512			
33,829			33,829.00
Communications			10,397.00
Geological supplies			4,827.00
Mobilization - personnel			3,000.00
Expediting			9,016.00
		Total	$546,324.96

Cost distribution per claim:

Nidd 83	NB83-5	316.5m	18%	$ 98,338.49
Nidd 82	NB83-6	342.4m	20%	109,264.99
Nidd 84	NB83-7	445.6m	25%	136,581.24
Nidd 83	NB83-8	364.9m	21%	114,728.24
Nidd 76	NB83-9	288.7m	16%	87,412.00
		1,758.1m		$546,324.96

*Only charges associated with Nidd 82 and Nidd 76 are being applied for assessment credits for a total of $196,676.99.

Appendix A cont'd.

II. ROAD BUILDING

Direct contract costs (D7 bulldozer) - 252 hrs @ $70/hr		$17,640.00
Helicopter support - 10 hrs @ $542/hr		5,420.00
Staff time: T.W. Hodson - 2 days @ $166.32 = $332.64 A.P. Roberts - 2 days @ 171.60 = 343.20	$675.84	675.84
Supplies		785.00
Gravel truck rental - 66 hrs @ $65/hr		4,290.00
Front-end loader rental - 55 hrs @ $67/hr plus fuel		3,805.00
Timberjack rental - 10 days @ $130/day		1,300.00
	Total	$33,915.84

Claims on which road work was carried out:

Nidd	217	174	328	101
	204	428	330	92
	202	171	332	93
	203	169	334	316
	201	154	336	84
	184	152	337	83
	185	153	339	317
	183	140	85	318

III. GEOCHEMISTRY

Soil samples (Pb, Zn, Ag) - 900 @ $4.15/sample		$3,735.00
Helicopter support - 6 hrs @ $542/hr		3,252.00
Staff time: T.W. Hodson 3 days @ $166.32 = $ 498.96 A.P. Roberts 6 days @ 171.60 = 1,029.60 M. Jarman 6 days @ 87.12 = 522.72 R. Eyre 6 days @ 87.12 = 522.72 M. Allen 6 days @ 76.56 = 459.36 P. Armstrong 2 days @ 76.56 = 153.12 F.J. Ferguson 1 day @ 171.60 = 171.60 S.B. Noakes 1 day @ 108.24 = 108.24	$3,466.32	3,466.32
Domicile - 26 man days @ $95/man day		2,470.00
	Total	$12,923.32

Appendix A cont'd.

IV. GEOPHYSICS

HLEM and Mag surveys - 10 line km @ $296/line km			$2,960
Domicile	I. Jackisch	7 days @ $95/day = $665	
	T. Wong	8 days @ $95/day = 760	
	M. Allen	8 days @ $95/day = 760	
		$2,085	2,085
Helicopter - 2 hrs @ $542/hr			1,084
		Total	$6,229

Summation:	Diamond drilling	$546,324.96
	Road building	33,915.84
	Geochemistry	12,923.32
	Geophysics	6,229.00
		$599,393.12

Signed: T.W. Hodson

T.W. Hodson
Geologist

APPENDIX B

A F F I D A V I T

I, Terence W. Hodson, of the Municipality of Surrey, in the Province of British Columbia, make oath and say:

1. THAT I am employed as a geologist 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 Appendix A to this my affidavit is a true copy of expenditures incurred in connection with a geological program carried out on the Nidd mineral claims;

3. THAT said expenditures were incurred between the twenty-seventh day of May and the twenty-seventh day of September, 1983 for the purpose of mineral exploration on the above noted claims.

Signed: _____

T.W. Hodson

Geologist

APPENDIX C

STATEMENT OF QUALIFICATIONS

I, Terence W. Hodson, of the Municipality of Surrey, in the Province of British Columbia, hereby certify:

1. THAT I am a geologist residing at 1773 Southmere Cresent, Surrey, British Columbia, with a business address at 700-409 Granville Street, Vancouver, British Columbia.

2. THAT I graduated with a B.Sc., in geology from the University of British Columbia in 1980.

3. THAT I have practiced geology with Cominco Ltd. from May, 1980 to the present.

Signed: T.W. Hodson

T.W. Hodson
Geologist

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District	Mayo Mining District	Hole No.	NB-83-9
Commenced	Sept. 2, 1983	Location	Boundary Creek	Tests at	95.1m:-46°,203°;156.1m: -44°,206°
Completed	Sept. 12, 1983	Core Size	HQ/NQ	Corr. Dip	217.1m:-45.5°,208°;278m: -38°,205°
Co-ordinates	Lat. 101015.36 N Dep. 107161.32 E			True Brg.	210°
Objective	To test the westward strike extension of mineralization encountered in NB-83-8 .			% Recov.	81.5

Hor. Comp.	208 m.
Vert. Comp.	200 m.
Logged by	TWH
Date	Sept. 19, 1983

Claim	T Brg.	Collar Dip	Elev.	Length	Sheet	Hole No.
Nidd 76	210°	-45°	1291.57m	288.7m	1	NB-83-9

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
0.0m	31.1	OVERBURDEN			
		0 - 18.9 Till			
		- Only a few chert pebble conglomerate pebbles and cobbles to 20.0 cm. are seen down to 18.9 m, none of which contain any visible sulphides or iron carbonates.			
		18.9 - 31.1 Mudstone Mud			
		- Black carbonaceous mud composed of silt to sand size size black mudstone fragments This mud eventually passes past 31.1 m into broken up mudstone and then mudstone. This black mud covers the interval 18.9 to 31.1 m. The top 0.95 m. of this section contains abundant fragments of black mudstone as well as the mud. After this interval only the occassional mudstone pebble to 2.5 x 5.0 cm. is seen within this mudstone mud. Most likely this unit has been produced from surface waters reacting with the underlying mudstones.			
31.1	70.0	GRITTY MUDSTONE AND MUDSTONE WITH SILTSTONE LAMINAE			
		- The uphole section of this interval consists of black gritty mudstone with 10-15 volume percent pyrite grains to 0.5 mm. disseminated throughout with the downhole section consisting of a black mudstone with siltstone and pyrite laminae to 0.5 cm. thick. This lower unit appears more carbonaceous than the uphole mudstone as graphite is commonly seen along foliation surfaces where as it is absent in the uphole mudstone. Both units scratch easily with a knife.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 2

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		- The contact between these two units is gradational.			
		- Bedding to core axis angle as seen in the lower unit varies from 0° to 60° with an average of 30° to 40°. Foliation to core axis angle is constant at 50°.			
		31.1 - 46.6 Gritty mudstone			
		- Black gritty mudstone with no visible bedding. Gritty appearance is caused by 5-12 volume percent chert (quartz) grains to 0.5 mm and 2-5 vol. percent pyrite crystals to 0.5 mm. disseminated throughout the mudstone. Foliation of this unit has caused the mudstone to wrap around these crystals giving this unit a weak crenulated appearance. Foliation has also elongated some of the quartz grains in the direction of the foliation.			
		- Minor quartz-pyrite veins to 0.5 cm. thick cut this unit and are mainly seen near the downhole contact.			
		- Overall the core is badly broken with the largest piece being 20 cm. long.			
		43.3 - 43.9 fault gouge			
		46.6 - 70.0 Mudstone with siltstone laminae			
		- Black, weakly carbonaceous mudstone with siltstone and pyrite laminae. The contact with the above gritty mudstone is gradational with the laminated nature of this section becoming more and more pronounced towards the downhole contact. The siltstone and pyrite laminae range from 0.5 mm. to 5.0 mm. thick with the mudstone			

211-9437

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Scale

Colour Plot & Dips

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Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 3

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		laminae ranging from 1.0 mm. to 2.0 cm. in thickness. Overall there is about			
		65 - 75 volume percent mudstone, 25-35 volume percent siltstone and 1-2 volume			
		percent pyrite. The pyrite mainly occurs as laminae but also as blebs to 1.0 cm.			
		within the mudstone or with quartz within crackle fractures. These quartz-pyrite			
		crackle fractures mainly occur between 51.8 m. and 58.2 m.			
		- Some of the pyrite laminae are replaced siltstone laminae. This is best seen near			
		the downhole contact where a few minor grit beds are also seen, one of which has			
		been replaced by pyrite.			
		- The core is badly broken with numerous faults cutting this section. All faults			
		seem to have a limited offset. Faults occur at:			
		49.1 m 58.5 - 68.8 m 60.7 - 61.0 m 64.0			
		57.5 m 59.5 m 62.2 m			
		57.8 m 60.1 - 60.4 m 63.0 m			
		- Bedding to core axis angle:			
		47.9 m - 25° 59.5 m - 33°			
		50.3 m - 0°- 5° 63.7 m - 45°			
		53.7 m - 50° 70.0 m - 50°			
70.0	79.6	MUDSTONE WITH SILTSTONE LAMINAE AND INTERBEDDED GRIT TO MEDIUM CHERT PEBBLE CONGLOMERATE			
		- Black, laminated, carbonaceous mudstone with siltstone laminae to 0.5 cm.			
		Interbedded with this unit are grit and chert pebble conglomerate beds.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 4

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		The laminated mudstone with siltstone laminae becomes increasingly silt rich			
		towards the downhole contact where it is more of a fine siltstone than a mudstone.			
		70.0 - 70.3 Chert pebble conglomerate			
		-Grey, medium chert pebble conglomerate with chert and mudstone clasts cemented by			
		a silica matrix (10 - 20 volume percent). Clasts are subrounded to subangular and			
		are clast supported. Clast make up 80-90 volume percent of this unit with 60 volume			
		percent being grey chert clasts ranging from 0.1 to 8.0 cm.			
		-30 volume percent of this unit has been replaced by pyrite.			
		-Bedding to core axis angle is 55°.			
		70.3 - 71.0 Mudstone with siltstone laminae			
		-Dark grey to black mudstone with 20-30% siltstone laminae to 3.0 mm. Mudstone laminae			
		are to 1.0 cm. thick. One 1.2 cm. thick medium chert pebble conglomerate bed also			
		cuts this mudstone. The rare 1-2 mm. thick pyrite laminae or bleb is also present.			
		Graphite is found along most foliation surfaces.			
		-Bedding to core axis angle is 55°.			
		71.0 - 72.1 Grit and chert pebble conglomerate with minor laminated mudstone - siltstone.			
		-Mainly grey grit beds (3) ranging from 1.5 to 30 cm. thck. The grit beds are			
		composed of 60-70 vol. percent chert grains from <0.1 to 1.0 cm. in size, 30 vol.			
		percent mudstone clasts to 1.0 cm. in size and 5-10 vol. percent silica matrix.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Sheet 5 | Hole No. NB-83-9

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		-2 clast supported, grey chert pebble conglomerate beds are also present. These beds are predominantly composed of mudstone clasts, with lesser chert clasts and 5-10 vol. percent silica matrix. Of the clasts 60-70 vol. % are mudstone ranging from a few mm's to greater than 10 cm and 30-40 vol. % mudstone with siltstone laminae beds to 10 cm thick.							
		-From 10 to 30 vol. percent of the coarse beds have been replaced by pyrite.							
		72.1 - 79.6 Mudstone with siltstone laminae grading downhole to a silty mudstone to siltstone.	99111	78.4-79.6	60	255	17	4.3	11.8
		-Black carbonaceous mudstone with 10-30 vol. % siltstone laminae which becomes increasingly siltier towards the downhole contact where it grades into a grey to dark grey silty mudstone to siltstone. The siltier beds appear to have slumped and and been disrupted by foliation.							
		-Minor grit and chert pebble conglomerate beds to 20 cm thick are within this unit.							
		-Pyrite has replaced 30-40 vol. % of the coarse beds.							
		-Bedding to core axis angle is 54°.							
79.6	85.4	CHERT PEBBLE CONGLOMERATE	12	79.6-80.5	125	195	3650	1.7	2.3
		-Grey, poorly sorted, clast supported, strongly fractured and quartz veined chert pebble conglomerate consisting of 60-70 vol. % grey chert clasts from 0.1 to 6.0 cm in size, 20-30 vol. % to grey and black mudstone clasts ranging in size from 0.1 to 8.0 cm and 10 vol. % silica matrix.	13	80.5-81.4	144	171	7720	1.8	1.3
			14	81.4-82.5	103	113	5760	2.6	3.3
		-This unit is strongly fractured with white quartz filled extension fractures seen							

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 6

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		within both clast types and abundant white quartz veins to 0.5 cm thick cutting it.	99115	82.5-	117	261	1690	2.2	5.1
		Most fracture surfaces are coated by a thin pyritic film. Pyrite (4-5 vol. %) also		84.5					
		replaces both clasts and matrix and occurs in veins to 1.5 cm. thick.	99116	84.5-	126	231	1780	2.1	4.4
		-Sphalerite (minor) mainly accompanies pyrite within the veins but also occurs as		85.5					
		crystal aggregates within the matrix or as distinct clasts within the conglomerate							
		(not possible to tell if these represent replaced clasts or original sphalerite							
		clasts).							
85.4	103.3	MUDSTONE WITH SILTSTONE AND SANDSTONE LAMINAE AND MINOR PEBBLY MUDSTONE DIAMICTITE, GRIT AND							
		CHERT PEBBLE CONGLOMERATE							
		-Dark grey to black mudstone with 20-30 vol. % siltstone and sandstone laminae to							
		0.5 cm thick. Interbedded with this are the occassional grit, pebbly mudstone							
		diamictite and chert pebble conglomerate bed.							
		85.4 - 86.6 Pebbly mudstone diamictite and mudstone with siltstone laminae							
		-Section consists of two pebbly mudstone diamictite intervals separated by 0.40 m of							
		dark grey mudstone to silty mudstone.							
		-Pebbly mudstone diamictite consists of a grey to dark grey silty mudstone with up to							
		15 vol. % chert and mudstone pebbles to 1.0 cm floating in it. The clasts are sub-							
		rounded to subangular and consist of 80 vol. % chert. One 0.8 cm reddish-brown							
		sphalerite clast is seen within this interval.							
		-The dark grey mudstone to silty mudstone contains no bedding, can be easily							

211-9437

Drill Hole Record

Scale

Colour Plot & Dips

0

Property	NIDD	District	Hole No.	NB83-9	
Commenced		Location	Tests at		Hor. Comp.
Completed		Core Size	Corr. Dip		Vert. Comp.
Co-ordinates			True Brg.		Logged by
Objective			% Recov.		Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 7

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		scratched with a knife and is cut by a few pyrite veins up to 0.8 cm thick.			
		This unit is badly broken up (poor recovery). Two minor faults are seen near the			
		downhole contact.			
		86.6 - 89.5 Mudstone to silty mudstone with siltstone laminae			
		-Dark grey mudstone to silty mudstone with 5 vol. % faint siltstone laminae to 3.0 mm			
		thick. This unit also contains 5 vol. % quartz or pyrite-quartz veins to 1.0 cm thick,			
		some carry traces of reddish-brown sphalerite.			
		-The downhole contact is marked by 5.0 cm of fault gouge			
		-Bedding to core axis angle is 55° and the core is badly broken.			
		89.7 - 91.5 Pebbly mudstone diamictite			
		-Dark grey mudstone with 5 vol% chert and grit clasts. This unit is strongly			
		foliated and the core is badly broken up. A few quartz-pyrite veins to 1.0 cm			
		thick cut this unit.			
		-Fault gouge is seen at 89.9 m and at 91.5 m, the downhole contact.			
		91.5 - 92.0 Chert pebble conglomerate			
		-Grey, strongly foliated, fracture, quartz veined conglomerate. Conglomerate is			
		coarse, poorly sorted with mudstone clasts apparently more abundant than chert			
		clasts but due to the above mentioned foliation, fracturing and quartz veining			

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Scale

Colour Plot & Dips

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Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 8

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		this may not be the case as these features have obscurred the identity of some of			
		the clasts. Clasts are elongated at 10° to core axis and range up to 5.0 cm in size.			
		-Pyrite (2 vol.%) is found along fracture and foliation planes. Traces of brownish			
		sphalerite are found with the pyrite and also within the quartz veins.			
		92.0 - 99.4 Mudstone with siltstone laminae and minor grit beds			
		-Dark grey mudstone with 5-10 vol.% siltstone laminae and 10-15 vol.% grit beds.			
		Siltstone laminae are to 0.5 cm thick and grit beds are mainly less than 2.0 cm			
		thick but one 20 cm thick and another 60 cm thick are also included within this			
		section.			
		-Core is strongly foliated at 55° to core axis with bedding at 60-70° to the core			
		axis and almost at right angles to the foliaton. The foliation has given the core			
		a dark grey and black wispy colour banded appearance parallel to the foliation			
		direction. This colour banding is discontinuous and not always present.			
		-Pyrite (4-5 vol.%) occurs in white quartz veins and quartz healed fractures and as			
		replacement of the grit beds. No sphalerite is seen.			
		-The grit beds consist of chert and mudstone grains from less than 1.0 mm to 3.0 mm			
		supporting 15-25% subangular to elongated mudstone clasts to 10 cm in size. Chert			
		grains are more abundant than mudstone grains. Most of the smaller grit beds occur			
		from 96.4 to 96.8 m. with the 2 larger beds occuring from 95.1 to 95.3 m. and 98.0			
		to 98.6m.			
		-Minor faults are seen at 92.8 m and 94.8 m.			

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Scale

Colour Plot & Dips

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Drill Hole Record

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Property	NIDD	District	Hole No.	NB-83-9	
Commenced		Location	Tests at		Hor. Comp.
Completed		Core Size	Corr. Dip		Vert. Comp.
Co-ordinates			True Brg.		Logged by
Objective			% Recov.		Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 9

Meterage From	To	Description	Sample No.	Length	Analysis
		99.4 - 101.2 Chert pebble conglomerate			
		-Grey, medium, imbricated, moderately sorted, clast supported conglomerate. Consists of 10-20 vol. % silica matrix, 50-60 vol. % chert clasts to 2.0 cm. and 20-30 vol. % mudstone clasts to 3.0 cm. Most clasts are aligned at 55° to the core axis which is the same as the foliation angle. This imbrication angle seen is not the same as bedding angles as bedding to core axis angles seen in adjacent uphole and downhole mudstones are at 70° to the core axis. Ten vol. % pyrite replaces clasts and matrix.			
		101.2 - 103.3 Mudstone with siltstone laminae and minor grit beds			
		-Dark grey to black mudstone with 5-10 % siltstone laminae to 0.5 cm. and a few pyritic grit beds to 2.0 cm. thick. The mudstone occurs as laminae to thin beds to about 2.0 cm. thick.			
		-Pyrite (8-10 vol.%) occurs as laminae within the mudstone, as replacement of the grit beds and as veins to 0.4 cm. thick.			
		-At the downhole contact a minor pebbly mudstone diamictite bed is seen. Also seen near this contact is a 1.5 cm. thick white quartz vein with traces of brownish sphalerite crystals.			
		-At 102.0 m a fault is seen.			
		-Bedding to core axis angle is 65°-70°.			

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Scale

Colour Plot & Dips

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Drill Hole Record

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Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 10

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
103.3	110.7	CHERT PEBBLE CONGLOMERATE							
		-Grey, fine to coarse chert pebble conglomerate. The fine conglomerates are well	99117	103.3-	50	183	36	2.8	21.1
		sorted with sorting getting progressively poorer as the conglomerate coarsens until		103.8					
		the poorly sorted coarse conglomerate end member is reached. Clasts are subrounded	18	103.8-	58	87	10860	2.0	5.7
		to subangular, clast supported and include large mudstone clasts to 60 cm. in size.		105.3					
		Clasts are 45 vol. % chert and 45 vol. % mudstone cemented by 10 vol. % silica.	19	105.3-	51	86	165	1.4	3.6
		The approximate equal vol. % of chert and mudstone clasts is due to the presence of		107.2					
		the large mudstone clasts if they are excluded then just considering the clasts 70	20	107.2	294	170	6760	4.9	9.5
		to 80 vol. % are chert and 20-30 vol. % are mudstone. Some of the mudstone boulders		108.5					
		may be beds but due to the broken nature of the core this is not possible to tell.	99121	108.5	67	95	102	1.8	4.7
		-The fine chert pebble conglomerate beds seen here are equivalent to the grit beds		110.0					
		above.							
		-One 10 cm. thick pebbly mudstone diamictite bed is included within the above unit and							
		consists of 40 vol. % chert and mudstone clasts floating in a mudstone matrix.							
		-Pyrite (10-15 vol.%) occurs as veins to 1.0 cm. thick and as replacement of both							
		clasts and matrix. In places up to 15 cm. of the conglomerate has been 80-95%							
		replaced by pyrite. This massive replacement of the conglomerate clearly follows							
		the direction of imbrication (63° to core axis angle).							
		-Sphalerite also replaces both clasts and matrix and occurs as reddish brown crystals							
		up to 1-2 mm. in size. Locally the sphalerite and pyrite occur together but not							
		always.							

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Scale

Colour Plot & Dips

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Drill Hole Record

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 11

Meterage From	Meterage To	Description	Sample No.	Length	Analysis Cu	Pb	Zn	Ag	Fe%
		-White quartz veins up to 10 cm. thick cut this unit but overall this unit is weakly							
		quartz veined.							
		-The downhole contact of this unit is marked by a 10 cm. white quartz vein followed							
		by 5 cm. of fault gouge.							
110.7	127.6	MUDSTONE WITH SILTSTONE LAMINAE AND MINOR GRIT BEDS	99122	110.0-	59	67	156	1.2	3.7
		-Dark grey to black mudstone with grey siltstone laminae to 0.5 mm. thick. Minor		111.3					
		grit to medium chert pebble conglomerate beds to 75 cm. thick are also seen in this	99123	111.3	69	57	113	1.4	3.5
		section. Siltstone laminae make up 10-50 vol. % of this unit with mudstone laminae		112.8					
		and thin bed to 2 cm making up the rest. Locally this unit is badly broken up, this	99124	112.8	161	115	14300	4.0	8.5
		is mainly apparent in the vicinity of the numerous faults which cut it.		114.4					
		-Pyrite laminae, veins and blebs are also seen within this unit with a total content	99125	114.4-	117	88	1640	2.1	3.5
		of 5 vol. %.		115.9					
		-The last 3.3 m of this unit (124.3-127.6 m) are marked by a pebbly mudstone							
		diamictite, intense fracturing accompanied by quartz pyrite veining, pyrite replaced							
		siltstone beds that appear slumped and fault gouge.							
		-The mudstone units scratch easily with a knife.							
		110.7 - 113.8 Mudstone with siltstone laminae							
		-Dark grey to black mudstone with 10-15 vol. % siltstone laminae. Pyrite							
		(5-7 vol. %) has replaced some of the siltstone laminae and occurs as veins to							
		1.0 cm. thick with or without quartz.							

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Drill Hole Record

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 12

Hole No. NB-83-9

Claim | T Brg. | Collar Dip | Elev. | Length

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		-This unit contains two 2.0 cm. thick and one 20 cm. thick fine to medium chert			
		pebble conglomerate beds. These beds consist of moderately to poorly sorted			
		chert (55-65 %) and mudstone (10-20 %) clasts cemented by 10-15 vol. % silica			
		matrix.			
		-Within the thinner beds 30-50 vol. % of the clast and matrix are replaced by			
		pyrite. This drops to 10-15% pyrite within the thicker bed.			
		-The subrounded to subangular clasts are clast supported and imbricated at 55°			
		to the core axis which is conformable to bedding angles seen within the			
		mudstone units.			
		113.8 - 114.4 Chert pebble conglomerate			
		-Grey, graded conglomerate which passes from a fine chert pebble conglomerate			
		at its uphole contact to a fine grit at its downhole contact. This unit also			
		has an unconformable (scoured?) uphole contact and a conformable downhole			
		contact which with the above indicates tops downhole.			
		-This unit consists of chert and mudstone clasts ranging from 3-4 mm. at the			
		uphole contact to <1.0 mm. at the downhole contact. Ratio of chert to mudstone			
		clasts is about 4:1. One large 9.0 x 2.0 cm. clast is also found at the			
		uphole contact. Clasts are poorly imbricated at about 55° to the core axis.			
		-This unit contains 15-20 vol. % pyrite as replacement of matrix and clasts			
		and as veins to 1.0 cm. thick. A few white quartz veins to 0.7 cm. also cut			
		this unit. Sphalerite (1-2 vol. %) is seen as reddish-brown crystals or			

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Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Scale

Colour Plot & Dips

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Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 13

Meterage From	To	Description	Sample No.	Length	Analysis
		-crystal aggregates to 0.6 cm. with most being less than 0.2 cm. in size.			
		These crystals replace both matrix and clasts and also are found within quartz			
		veins.			
		114.4 - 124.3 Mudstone with siltstone laminae			
		-Dark grey to black mudstone with 10-15 vol. % siltstone laminae to 0.4 cm.			
		thick. Mudstone laminae to thin beds range from less than 0.1 cm. to 3 cm.			
		thick. A few minor grit beds are seen in the uphole contact area along with			
		some quartz pyrite veining. The rare sphalerite replaced chert clast is seen			
		within the grit beds. Pyrite (1 vol. %) mainly occurs in the uphole contact			
		area as laminae and veins.			
		-Faults occur at: 117.1 m - 117.4 m 121.5 m - 121.7 m			
		117.7 m - 118.0 m 122.1 m - 122.2 m			
		120.0 m - 120.2 m			
		-Bedding to core axis angle is about 20° near the downhole contact of this unit.			
		124.3 - 125.3 Pebbly mudstone diamictite			
		-Black weakly carbonaceous mudstone with 5 vol. % subrounded grey chert clasts			
		to 0.6 cm. floating within it. The last 20 cm. of this unit is fault gouge.			
		125.3 - 127.6 Mudstone with siltstone laminae			
		-Black mudstone with pyrite replaced siltstone laminae. Abundant fracturing,			

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 14

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		-quartz-pyrite veining and fault gouge are seen. Overall this whole interval			
		is more representative of a fault zone than anything else. The pyrite			
		content mainly within the laminae and veins is 5-6 vol. %.			
		-The downhole contact is marked by a fault.			
127.6	135.9	CHERT PEBBLE CONGLOMERATE WITH MINOR CHERT PEBBLE DIAMICTITE			
		-Grey, conglomerate with minor dark grey diamictite. This section contains abundant			
		large mudstone clasts to 1.3 m. in size. Both conglomerate and diamictite consist of			
		grey subrounded to subangular chert clasts ranging from less than 1.0 mm. to greater			
		than 12.0 cm. and dark grey to black mudstone clasts which are slightly more angular			
		than the chert clasts and normally range from a few mm's to 10 cm but many greater			
		than 10 cm. in size are present including one 1.3 m. in size. The clasts are clast			
		supported within the conglomerate and both clast and matrix supported within the			
		diamictite. Mostly silica cement but locally intervals are also mudstone cemented.			
		The chert pebble conglomerate sections are silica cemented and clast supported while			
		the chert pebble diamictite sections are mudstone cemented and are both matrix and			
		clast supported.			
		-Pyrite (5%) replaces both clast and matrix. Sphalerite trace also replaces both			
		clast and matrix but is only seen in the top 20 cm. of this unit.			
		127.6 - 133.7 Chert pebble conglomerate			
		-Grey, coarse chert pebble conglomerate contain abundant large (>10.0 cm)			

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 15

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		mudstone clasts and two chert pebble diamictite sections seen from 129.2 m							
		to 129.5 m and 133.3 m to 133.5 m.							
		133.7 - 134.5 Chert pebble conglomerate	99126	133.0-	378	173	8480	2.4	9.2
		-Grey, very fine chert pebble conglomerate (grit) composed of chert and		134.5					
		mudstone grains to 3.0 mm. with 40% pyrite replacing these grains and matrix.	99127	134.5-	128	270	767	3.5	11.6
		Also cut by a few white quartz veins from 0.2 to 1.0 cm. thick.		135.9					
		134.5 - 135.9 Chert pebble conglomerate							
		-Grey, coarse chert pebble conglomerate with abundant large mudstone clasts							
		(>10.0 cm). The uppermost 15 cm. of this section has been 95% replaced by							
		pyrite. The last 10 cm. of this section contain a sideritic volcaniclastic							
		clasts (tuff) to 8.0 cm.							
135.9	138.5	SIDERITIC VOLCANICLASTIC DIAMICTITE							
		-Grey to dark grey or light yellowish-brown volcaniclastic diamictite. Poorly sorted	99128	135.9-	47	69	517	1.8	23.1
		with a mudstone matrix. Clasts are both matrix and clast supported and consist of		137.5					
		60-70 vol. % sideritic volcaniclastic clasts, 10-15 vol. % chert clasts and 5 vol. %	99129	137.5	31	66	132	1.4	19.8
		mudstone clasts. Chert clasts are grey, subrounded to subangular and range from less		138.5					
		than 0.1 cm. to 8.0 cm. in size. Mudstone clasts are dark grey and black, subangular							
		to subrounded and range in size from 0.2 cm. to 5.0 cm., and volcaniclastic tuff							
		clasts are all sideritic, light yellowish-brown and vary from being very fine-grained							

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Scale

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Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 16

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		with only a few 1-2 mm. clasts (mudstone?) to having a fine-grained grey matrix			
		containing abundant sideritic subrounded to subangular clasts to 2-3 cm. Another form			
		of volcaniclastic clast seen is one with a light grey matrix (not sideritic) supporting			
		50-60 vol. % sideritic clasts (?) to 0.5 cm. These small clasts could easily be			
		sideritized crystals. This latter type of clast is up to 15 cm. in size.			
		-Quartz veins to veinlets are common within this unit but most are confined to the			
		volcaniclastic clasts which may indicate an earlier episode of quartz veining or a			
		change in competency between the clasts and matrix.			
		-Pyrite (1-2%) replaces both clasts and matrix and minor amounts of a blue-green micaceous			
		clay mineral are seen near the uphole contact.			
		-Fault zone is seen at 136.1 m. to 136.5 m.			
138.5	140.1	PEBBLY MUDSTONE DIAMICTITE			
		-Dark grey to black mudstone with 10-15 vol. % chert and mudstone pebbles floating within			
		it. Locally this mudstone is slumped. Where no pebbles or slumping of beds occur			
		20-30 vol. % fine siltstone laminae are seen. The sections of this mudstone containing			
		pebbles and slumped beds are mainly confined to the upper and lower contact areas with			
		the central section containing the mudstone with siltstone laminae.			
		-Chert clasts are grey, subrounded to subangular and range from less than 0.1 cm. to 3 cm.			
		Mudstone clasts are far less abundant than the chert clasts, are more angular and			
		range from 0.1 cm. to 7.0 cm.			

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 17

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		-Pyrite (1%) replaces chert clasts and also is found in the rare pyrite-quartz vein.							
		-From 139.0 m. to 139.1 m. a 10cm white quartz vein is seen.							
140.1	149.8	MUDSTONE WITH SILTSTONE LAMINAE	99130	148.3-149.8	68	65	36	1.5	3.1
		-Fine laminated series of mudstone and siltstone consisting of 50-60 vol. % black mudstone laminae to 0.8 cm. thick interlaminated with 40-50 vol. % dark grey siltstone laminae to 1.0 cm. thick. Also seen are two tuffaceous mudstone beds, 1.0 cm. and 8.0 cm. thick.							
		-This mudstone-siltstone unit locally contains numerous white quartz filled extension fractures. These are most abundant from 144.8 m. to 149.8 m. and locally within this section these fractures and quartz healing have brecciated the host mudstone-siltstone. Minor amounts of siderite are also associated with the quartz healing.							
		-Sideritic clasts and lenses to 2.0 cm. also are seen within this unit and possibly represent volcanic debris, these are rare. Siderite also has replaced grit laminae to thin beds up to 2.0 cm. thick. This thicker sideritic grit bed starts at 146.0 m.							
		-Pyrite (<1%) occurs as laminae and more rarely as healing for crackle fractures; this is not usually associated with or accompanied by quartz.							
		-Traces of rusty brown sphalerite are seen from 148.6 m. to 149.3 m. within sideritic laminae of this unit. These sideritic laminae (to 0.3 cm. thick) are believed to be caused by siderite replacement of siltstone beds. Overall sphalerite content is less than 1%.							

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 18

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		-The section 145.0 to 145.2 m. contains the two tuffaceous mudstone beds. These beds							
		are finely laminated, grey-green in colour, pyritic and weakly sideritic.							
		-One 10 cm. thick white quartz vein is seen from 149.3 - 149.4 m.							
		-Bedding to core axis angle varies from 70° to 80° and averages 75°. The downhole							
		contact to core axis angle is 75° and the contact is conformable.							
149.8	229.7	CHERT PEBBLE CONGLOMERATE							
		-Grey, predominately coarse chert pebble conglomerate but does contain sections of fine	99131	149.8-	63	211	39	1.1	1.5
		to medium chert pebble conglomerate. Mainly silica cemented with only minor local		151.3					
		siderite cemented conglomerate. Locally this unit is strongly pitted; the most probable	32	151.3-	53	130	37	1.4	8.6
		cause is groundwater leaching.		153.0					
		-The conglomerate consists of 10-15 vol. % matrix cementing subrounded to subangular	33	153.0-	65	134	41	2.1	9.9
		chert, mudstone and mudstone with siltstone laminae clasts. Chert clasts are usually		154.5					
		grey, form 60-70 vol. % of this unit and range from less than 0.1 cm. to 10 cm.	34	154.5-	164	283	22	3.4	19.6
		Mudstone clasts (including mudstone-siltstone clasts) form 20-30 vol. % of this unit		156.0					
		and range from 0.1 cm. to 90 cm. This 90 cm. mudstone clast may represent a bed.	35	156.0-	148	184	27	1.2	5.6
		The next largest boulder seen is 30 cm. in size.		157.5					
		-All clasts within the conglomerates are silicified with the exception of the greater	36	157.5-	44	125	72	1.1	6.2
		than 10 cm. mudstone and mudstone with siltstone laminae clasts. The finer conglomerates		159.0					
		are of similar composition to the coarse conglomerates. Traces of the blue-green	37	159.0-	114	432	35	0.8	2.0
		micaceous clay mineral are seen along fractures and within the intensely siderite		160.5					
		replaced sections of this unit.							

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Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Sheet 19 | Hole No. NB-83-9

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		-Pyrite locally has replaced clasts and matrix or is found within the pyrite-sphalerite	99138	160.5-	57	53	89	1.6	4.8
		-siderite veins cutting this unit.		162.0					
		-Only a few white quartz veins cut this unit and are mainly found in the upper portion	39	162.0-	54	117	291	1.3	8.9
		of this unit. Mudstone clasts greater than 10 cm. are rare. One 90 cm mudstone clast		163.5					
		is seen but as mentioned this may be a bed and not a clast. This large clast has a	40	163.5-	34	126	35	0.7	3.9
		subconformable downhole contact while the uphole contact is obscured by pyrite		165.0					
		veining and replacement.	41	165.0-	328	222	52	1.7	9.0
				166.5					
		149.8 - 164.5 Chert pebble conglomerate	42	166.5-	38	139	61	1.4	9.4
		-This section of coarse conglomerate contains most of the quartz veins that		168.0					
		cut this unit and is locally weakly to strongly weather pitted (about 1/3	43	168.0-	40	158	67	1.4	10.8
		of this section is affected).		169.5					
		-Siderite (1-2%) replaces clasts and matrix within this section. Pyrite	44	169.5-	20	56	81	0.7	6.3
		(10-15%) replaces clasts and matrix plus is seen in veins to 5 cm. thick		171.0					
		which cut this unit.	45	171.0-	86	113	10050	1.9	8.7
		-Sphalerite (<1%) is seen disseminated with matrix and within pyrite veins.		172.5					
			46	172.5-	45	65	75	0.8	6.8
		164.5 - 168.6 Chert pebble conglomerate		174.0					
		-Predominantly a medium chert pebble conglomerate with lesser coarse chert	47	174.0-	33	38	81	1.1	4.6
		pebble conglomerate. The clasts are mainly silica cemented but also		175.5					
		present as matrix are minor amounts of mudstone, siderite and pyrite.	48	188.7-	143	125	67	4.6	32.7
		Total siderite content is 3% as matrix, within veins and as clast		190.2					

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim	T Brg.	Collar Dip	Elev.	Length	Hole No. NB-83-9	Sheet 20

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		replacement. Pyrite (5-6%) occurs as veins, matrix and clast replacement.	99149	190.2-	17	33	25	0.6	8.7
		Minor sphalerite (<1%) is seen associated with the pyrite veins and pyrite-		191.7					
		siderite replacement of clasts. The sphalerite is reddish-brown in colour.	50	191.7-	352	91	930	1.7	13.5
		-A fault is seen at 165.6 m.		193.2					
			99160	193.2-	73	256	4690	4.2	31.5
		168.6 - 169.3 Chert pebble conglomerate		194.7					
		-Fine chert pebble conglomerate with 8-10% siderite as disseminated crystals	61	194.7-	85	331	8120	3.6	21.0
		or crystal aggregates to 2-3 mm. that have replaced clasts and matrix. Most		196.2					
		clasts within this conglomerate are less than 4 mm. in size. One 0.8 cm.	62	205.2-	43	118	35	1.9	10.5
		thick pyrite-siderite-quartz vein cuts this unit.		206.7					
			63	209.5-	19	44	2150	1.0	4.1
		169.3 -178.0 Chert pebble conglomerate		211.0					
		-Coarse conglomerate with 7-8% siderite as matrix and clast replacement and	64	211.0-	262	323	29600	7.8	13.7
		as veins to 0.3 cm. thick. One of these siderite veins carries a trace of		212.5					
		sphalerite. Minor pyrite (1-2%) occurs as veins which cut this unit and	65	212.5-	517	212	12420	20.6	16.3
		also as clast and matrix replacement.		214.0					
		-Included within this unit is the 90 cm. mudstone clast (?) mentioned	66	214.0-	74	271	3900	3.1	11.8
		previously. This black mudstone clast contains three disrupted sandstone		215.5					
		beds from 1.0 to 10.0 cm. thick which have been partially replaced by	67	219.0	7	24	65	0.6	12.6
		siderite.		220.5					
		171.1 - 172.0 Mudstone clast - also contains 10% pyrite as veins which also	68	220.5	19	148	1740	1.9	6.3
		contain 0.5 - 1.0 % sphalerite.		222.0					

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 21

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		178.0 - 182.0 Chert pebble conglomerate	99169	222.0-	32	122	9220	2.8	13.7
		-Fine to medium conglomerate contains 10% siderite as matrix and clast		223.0					
		replacement. Pyrite (1%) occurs as clast and matrix replacement and as	70	223.0-	274	971	11000	36.4	22.5
		veins to 0.5 cm. thick.		224.5					
			71	224.5-	27	85	13500	4.0	3.3
		182.0 - 214.7 Chert pebble conglomerate		226.0					
		-Predominantly coarse conglomerate with a few sections of fine to medium	99172	228.2-	48	18	20700	2.6	7.6
		conglomerate to 20 cm. thick. Contains two sections of pitted chert pebble		229.7					
		conglomerate located at 188.5 - 188.7 m. and 196.3 - 197.1 m.							
		-Overall siderite composition is 20-30% with three intervals; 188.9 - 190.0 m.,							
		194.3 m and 195.0 - 195.7 m carrying 50-70% siderite. Siderite replaces							
		both matrix and clasts as does pyrite. Both also occur as veins along with							
		sphalerite up to 3.0 cm. thick. One 3 cm. siderite vein marks the downhole							
		contact of this unit. The pyrite-sphalerite-siderite veins seen are most							
		abundant near the downhole contact. One sphalerite vein cuts the core at							
		206.4 m. The sphalerite seen is reddish-brown or yellowish-brown.							
		-Faults cut this unit from 187.5 to 188.1 m. and 193.1 to 193.3 m.							
		-Overall pyrite content is 5% and overall sphalerite content is less than 1%.							
		214.7 - 218.8 Chert pebble conglomerate							
		-This fine conglomerate is different from the normal conglomerate in that it							
		has chert and mudstone clasts floating in a grit to fine chert pebble							

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Scale

Colour Plot & Dips

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Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 22

Meterage From	Meterage To	Description	Sample No.	Length	Analysis ppm Cu	Pb	Zn	Ag	Fe%
		conglomerate matrix. Siderite (5-10%) replaces clasts and matrix, pyrite							
		(5-7%) replaces clasts and matrix plus occurs in veins to 1.0 cm. thick.							
		Only traces of sphalerite are seen.							
		218.8 - 229.7 Chert pebble conglomerate							
		-Coarse conglomerate but does contain a few minor grit beds which contain							
		chert clasts. Siderite (5%) occurs as clast and matrix replacement and							
		pyrite (4-5%) occurs in veins to 3 cm. thick and as clast and matrix							
		replacement. Reddish-brown sphalerite is seen with pyrite in most of the							
		veins but also occurs along as small veinlets.							
229.7	245.1	MUDSTONE WITH SILTSTONE AND SANDSTONE LAMINAE TO THIN BEDS	99173	229.7-231.2	71	98	369	2.6	11.9
		-Black mudstone with 30-50 vol. % siltstone and sandstone laminae to thin beds.							
		Mudstone laminae are from 0.1 to 3.0 cm. thick. Siltstone and sandstone laminae							
		to thin beds range from 0.1 to 7.0 cm. thick. The thicker siltstone and sandstone							
		beds typically contain wispy mudstone laminae. The coarser siltstone and sandstone							
		beds show plane parallel bedding or cross bedding. Overall this unit appears to be							
		a turbidite package.							
		-Locally this unit contains minor chert and mudstone clasts to 3.0 cm. with most							
		averaging 0.3 - 0.5 cm. These pebbly mudstone sections range from 1.0 to 15 cm. in							
		length and usually accompany slumped bedding sections of the host mudstone. Also							
		present are the light grey to light tan bands to 12 cm. thick. These are either							

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Drill Hole Record

Scale

Colour Plot & Dips

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Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 23

Meterage From	To	Description	Sample No.	Length	Analysis
		siderite impregnated or bleached sections of mudstone. If the latter is true they would probably be quite micaceous.			
		-Siderite also has replaced or partially replaced some of the coarse beds of this unit. Veinlets of siderite to 0.8 cm. thick are also seen, mainly near the uphole contact and as partial replacement of the coarser beds near the downhole contact of this unit.			
		-Traces of reddish-brown sphalerite (much less than 1%) occur within pyrite veins and blebs near the uphole contact and also within a felted volcanic clast within one of the pebbly mudstone sections.			
		-Over the last metre of this section the siltstone and most notibly the sandstone content is up to about 60-70 vol. %. This section also shows signs of having slumped.			
		-The blue green micaceous clay mineral is locally seen along fracture surfaces.			
		-Bedding to core axis angle: 231.5 m - 45° 238.8 m - 66° 236.3 m - 68° 243.6 m - 66°			
245.1	245.9	CHERT PEBBLE DIAMICTITE			
		-Dark grey mudstone to siltstone with grit, mudstone and chert clasts floating in it. Clast content varies from 5 to 60 vol. %. The clasts are subrounded to subangular and range from 0.1 to 7 cm. in size. Grit clasts are the most abundant type with only minor mudstone or chert clasts seen.			
		-Locally this unit is strongly pyritic with massive pyrite to 10 cm. seen. Overall pyrite content is 12-14%.			

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Scale

Colour Plot & Dips

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Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 24

Meterage From	Meterage To	Description	Sample No.	Length	Analysis					
		-This section appears to represent a transition from the overlying mudstone-siltstone-								
		sandstone turbidites to the grit to chert pebble conglomerate unit downhole.								
245.9	251.8	CHERT PEBBLE CONGLOMERATE								
		-Grey chert pebble conglomerate with interbedded grit beds. Both rock types have a								
		similar composition with subrounded to subangular chert and mustone clasts cemented								
		by a silica or locally a siliceous mudstone matrix (10-20 vol. %). Clasts are clast								
		supported and are mainly chert (50-60 vol. %) with lesser siliceous mudstone clasts								
		(20-30 vol. %). Within grit beds clast size ranges from less than 0.1 cm. to 0.3 cm.								
		In the conglomerate beds clasts range from less than 0.1 cm. to 10 cm. in size with								
		one siderite buckshot impregnated mudstone clast 35 cm. long.								
		-Siderite (2%) is only found within one 70 cm. section of conglomerate where it replaces								
		clasts and matrix, occurs within quartz veins and is seen as buckshot impregnations								
		(70-80 vol. %) within a mudstone clast.								
		-Pyrite (15-20%) replaces both clasts and matrix of both rock types with one 45 cm.								
		conglomerate section running 60-70% pyrite.								
		-Only a few quartz veins to 1.0 cm. thick cut this unit one of which carries a trace								
		of a blue-green micaceous clay mineral.								
		245.9 - 246.9 Grit - badly broken up grit unit.								

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Scale

Colour Plot & Dips

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Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 25

Hole No. NB-83-9

Meterage From	Meterage To	Description	Sample No.	Length	Claim	T Brg.	Collar Dip	Elev.	Length	Analysis
		246.9 - 250.6 Chert pebble conglomerate								
		-Contains the massive (60-70%) pyrite section and the 70-80% siderite within								
		a mudstone clast as buckshot feature.								
		250.6 - 251.8 Mixed grit and chert pebble conglomerate								
		-Longest bed seen is a 30 cm. grit bed which is cut by 2 quartz veins one								
		of which carries a trace of the blue-green micaceous clay mineral.								
		-Downhole contact is faulted.								
251.8	254.0	FAULT ZONE								
		-Consists of 5 zones of fault gouge separated by broken and fractured mudstones and								
		chert pebble conglomerates. Identifiable core consists of mudstone with lesser								
		amounts of conglomerate.								
		-Pyrite (2-3%) replaces mudstone locally. Minor white quartz veins and quartz fracture								
		filling are also present and locally carry traces of pyrite.								
254.0	261.3	MUDSTONE WITH SILTSTONE LAMINAE TO THIN BEDS								
		-Black carbonaceous siliceous mudstone with 20-30 vol. % faint wispy siltstone								
		laminae to 1.0 cm thick. The upper portion of this unit is a gritty mudstone.								
		Pyrite (1-2%) occurs as laminae to 2.0 mm. thick or within siltstone laminae where								
		it appears to have replaced up to 80% of the laminae. A few chert pebbles found								
		locally within this unit carry pyrite as partial replacement of the clast.								

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 26

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		-Locally fractures are coated with a whitish-blue mineral, possibly a carbonate			
		(no fizz detected) or gypsum.			
		-Bedding to core axis angle varies as locally this unit appears slumped with no bedding			
		seen or contradictory bedding angles seen. Overall the bedding to core axis angle			
		averages 40° to 50°.			
		254.0 - 255.7 Gritty mudstone			
		-Black mudstone with 15-20 vol. % quartz and 1-2 vol. % pyrite grains to			
		0.5 mm. disseminated throughout. The mudstone seems to wrap around these			
		grains giving this unit a wispy foliated appearance. The downhole contact			
		is marked by a 10 cm. thick quartz-mudstone vein.			
		255.7 - 261.3 Mudstone with siltstone laminae			
		-Black mudstone with 20-30 vol. % siltstone laminae to 1.0 cm. thick.			
		Majority of the core is badly broken up or shows slumped features. Quartz			
		lined crackle fractures are abundant near the downhole contact. Pyrite			
		within siltstone laminae and as laminae makes up 1-2% of this section.			
		-Bedding to core axis angle is 40°-50°.			
261.2	263.6	CHERT PEBBLE DIAMICTITE			
		-Dark grey chert pebble diamictite to conglomerate with 80 vol. % mudstone and chert			
		clasts cemented by 20 vol. % mudstone matrix. Both matrix and clasts are siliceous			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-9 | Sheet 27

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		or silicified. Clasts are subrounded to subangular with black mudstone clasts			
		(50-60 vol. %) ranging from 0.1 to 10 cm. and grey chert clasts (20-30 vol.%) ranging			
		from 0.1 to 10 cm. and grey chert clasts (20-30 vol. %) ranging from less than 0.1 cm.			
		to 8.0 cm. This ratio of mudstone to chert clasts is exactly opposite to what is seen			
		in most chert pebble conglomerates.			
		-Some mudstone clasts contain pyrite laminae or lensoid pyrite laminae to 1.0 mm thick.			
		Clasts are aligned at 40° to 45° to core axis. Grading over the last 20-30 cm. of this			
		unit indicates tops are downhole.			
		-Pyrite (3-4%) replaces both clasts and matrix.			
263.6	288.7	MUDSTONE WITH SILTSTONE LAMINAE AND MINOR GRITTY MUDSTONE			
		-Black siliceous mudstone with siltstone and pyrite laminae from 0.1 to 1.0 cm. thick.			
		Mudstone to siltstone content ratio is 65:35. Pyrite laminae are normally less than			
		3.0 mm. thick but one 3.0 cm. thick laminated pyrite section is seen but is believed			
		to be a vein. Other pyrite veins to 8.0 cm. are not uncommon within this unit.			
		These pyrite veins carry angular mudstone clasts to 0.8 x 2.0 cm. aligned parallel			
		to the direction of the vein. Pyrite also occurs as blebs or concretions to			
		3.0 x 5.0 cm. or within two grits beds to 5.0 cm. thick located near the uphole			
		contact. Pyrite within the gritty mudstone unit near the downhole end of this section			
		occurs as wispy laminae up to 1.5 cm. thick. This gritty mudstone unit also contains			
		finely disseminated pyrite grains.			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 28

Hole No. NB-83-9

Claim | T Brg. | Collar Dip | Elev. | Length

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		-Overall pyrite content of this section is 2-3%.			
		-Locally this unit appears slumped with chaotic bedding accompanied by white quartz crackle fracture filling. Quartz veins or quartz filled extension fractures are rare.			
		-This unit contains one 50 cm grit bed with abundant pyrite alteration (10-15%). On both sides of this grit bed are blue-green micaceous clay veins to 0.6 cm thick.			
		-A trace of yellowish-brown sphalerite is seen near the uphole contact associated with a quartz bleb.			
		263.6 - 278.5 Mudstone with siltstone laminae			
		- Black siliceous mudstone with 30-40 vol. % siltstone laminae to 1.0 cm thick. Contains pyrite laminae, blebs or concretions, pyritic grit beds and disseminated pyrite crystal aggregates. The pyrite crystal aggregates vary from 1-2 mm thick to 2-3 mm long.			
		278.5 - 279.0 Grit			
		- Grey to dark grey, siliceous, pyritic grit bed with 15% pyrite as faint wispy laminae and replacement of clasts.			
		279.0 - 286.1 Mudstone with siltstone laminae			
		- Identical to the previous same unit (203.6-278.5 m). Still contains pyrite laminae, blebs or concretions and disseminated crystal aggregates.			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-9	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 29

Hole No. NB-83-9

Meterage From	Meterage To	Description	Sample No.	Length	Claim	T Brg.	Collar Dip	Elev.	Length	Analysis
		286.1 - 287.7 Gritty mudstone								
		- Black siliceous gritty mudstone with disseminated quartz (7-8%) and pyrite (7-8%) grains to 0.7 mm. The grains are elongated in what appears to be the direction of bedding, 63° to core axis angle. Pyrite laminae and wispy disseminated pyrite laminae to 1.5 cm also occur within this section. Uphole and downhole contacts are gradational. Pyrite content of this section is 10-11%.								
		287.7 - 288.7 Mudstone with siltstone laminae								
		- Black mudstone with siltstone laminae as seen at 263.6-278.5 m. Pyrite laminae and blebs are present. Near the end of this section (end of hole) some slumping of bedding is seen. Within this slumped section chert grit and mudstone clasts are present, some of which have been pyritized.								
		-Bedding to core axis angles:								
		263.4 m - 45° 272.7 m - 60° 288.4 m - 57°								
		269.5 m - 63° 286.1 m - 63°								
		E.O.H. @ 288.7 m								

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Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 30

Metres

Runs and Recoveries

From	To	Recovery (m)	From	To	Recovery (m)	From	To	Recovery (m)
18.9	19.5	0.46	48.5	49.4	0.46	66.5	68.0	0.46
19.5	21.0	1.22	49.4	50.9	1.22	68.0	69.5	0.30
21.0	25.0	1.07	50.9	51.8	0.76	69.5	70.4	0.76
25.0	28.0	0.91	51.8	52.1	0.30	70.4	71.0	0.61
28.0	31.1	0.61	52.1	52.7	0.46	71.0	73.2	1.52
31.1	32.6	0.76	52.7	53.7	0.30	73.2	75.0	0.61
32.6	34.1	0.61	53.7	55.5	0.76	75.0	75.6	0.46
34.1	36.0	1.68	55.5	57.6	0.91	75.6	76.2	0.61
36.0	37.2	1.22	57.6	58.8	0.76	76.2	78.4	0.30
37.2	38.1	0.46	58.8	59.5	0.30	78.4	80.5	2.13
38.1	40.2	2.13	59.5	60.4	0.91	80.5	80.8	0.30
40.2	41.5	1.22	60.4	61.3	0.76	80.8	81.4	0.15
41.5	43.0	1.52	61.3	62.2	1.07	81.4	82.3	1.07
43.0	43.9	0.30	62.2	63.7	1.37	82.3	84.5	1.52
43.9	45.7	1.68	63.7	64.9	1.22	84.5	85.4	0.46
45.7	46.3	0.61	64.9	65.5	0.15	85.4	86.6	1.22
46.3	47.3	0.61	65.5	65.9	0.15	86.6	87.5	0.76
47.3	48.5	0.76	65.9	66.5	0.30	87.5	89.0	0.61

Description | Sample No. | Length | Analysis

211-0457

Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 31

Analysis

Metres

Runs and Recoveries

From	To	Recovery (m)	From	To	Recovery (m)	From	To	Recovery (m)
89.0	89.6	0.30	117.4	118.3	0.76	135.7	136.6	0.76
89.6	91.5	1.07	118.3	119.5	1.22	136.6	137.2	0.61
91.5	92.8	0.61	119.5	120.4	0.30	137.2	139.0	1.83
92.8	93.9	1.07	120.4	120.7	0.30	139.0	140.9	1.68
93.9	94.8	0.76	120.7	121.0	0.30	140.9	142.4	1.22
94.8	97.0	2.13	121.0	122.0	0.61	142.4	143.9	1.52
97.0	99.4	1.68	122.0	123.2	0.76	143.9	147.0	3.05
99.4	101.2	0.61	123.2	123.8	0.61	147.0	149.7	2.74
101.2	102.1	0.30	123.8	125.0	1.07	149.7	152.7	3.05
102.1	104.6	1.98	125.0	125.3	0.15	152.7	155.8	3.05
104.6	106.7	0.76	125.3	126.8	0.91	155.8	156.7	0.91
106.7	108.2	1.52	126.8	127.4	0.30	156.7	158.5	1.52
108.2	110.1	1.83	127.4	127.7	0.30	158.5	160.1	1.22
110.1	111.3	0.91	127.7	130.2	2.13	160.1	161.3	0.61
111.3	111.9	0.30	130.2	131.7	1.22	161.3	162.0	0.76
111.9	114.6	2.74	131.7	132.6	0.91	162.0	164.3	2.13
114.6	115.9	1.22	132.6	134.5	1.37	164.3	165.5	1.22
115.9	117.4	1.22	134.5	135.7	0.91	165.5	168.6	3.05

Sample No. | Length

211-0457

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 32

Analysis

Description

Sample No. | Length

Runs and Recoveries

From (Metres)	To	Recovery (m)	From	To	Recovery (m)	%	From	To	Recovery (m)
168.6	171.6	2.90	215.5	217.4	1.68		248.2	251.5	3.05
171.6	174.7	3.05	217.4	217.7	0.15		251.5	252.4	0.61
174.7	176.2	1.52	217.7	220.7	3.05		252.4	253.0	0.46
176.2	179.0	2.74	220.7	223.8	3.05		253.0	254.0	0.61
179.0	182.0	3.05	223.8	224.7	1.22		254.0	255.2	0.91
182.0	185.1	3.05	224.7	227.7	3.05		255.2	256.4	1.22
185.1	188.1	1.68	227.7	229.9	2.13		256.4	258.2	1.83
188.1	189.3	1.22	229.9	232.9	3.05		258.2	258.5	0.15
189.3	190.5	1.22	232.9	236.0	3.05		258.5	259.1	0.30
190.5	193.3	2.74	236.0	237.2	1.22		259.1	260.4	0.76
193.3	196.3	3.05	237.2	239.0	1.83		260.4	261.3	0.91
196.3	197.6	1.22	239.0	241.8	2.59		261.3	262.5	1.07
197.6	200.6	2.90	241.8	243.3	1.52		262.5	264.9	2.44
200.6	203.7	3.05	243.3	244.8	1.37		264.9	268.0	3.05
203.7	206.7	3.05	244.8	246.0	0.61		268.0	269.2	0.91
206.7	209.5	3.05	246.0	246.6	0.31		269.2	272.3	3.05
209.5	212.5	3.05	246.6	247.0	0.15		272.3	274.4	1.98
212.5	215.5	3.05	247.0	248.2	0.61		274.4	275.9	1.37

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-9
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 33

Description

Sample No. | Length | Analysis

Metres

Runs and Recoveries

From	To	Recovery (m)	From	To	Recovery (m)	From	To	Recovery (m)
275.9	278.4	2.13						
278.4	279.3	0.91						
279.3	281.4	1.98						
281.4	282.6	0.91						
282.6	283.4	1.22						
283.4	285.7	1.52						
285.7	288.7	3.05						
Total	269.8m	219.8m						

$\frac{219.8}{269.8}$ = 81.5 % Recovery

211-9437

NIDD PROPERTY

NB83-9 - DDH

Sample No.	From	To	Length(m)	Cu ppm	Fe%	Ag ppm	Pb ppm	Zn ppm	Zn%
99111	78.4	79.6		60	11.76	4.3	225	17	
99112	79.6	80.5		125	2.30	1.7	195	3650	
99113	80.5	81.4		144	1.29	1.8	171	7720	
99114	81.4	82.5		103	3.27	2.6	113	5760	
99115	82.5	84.5		117	5.12	2.2	261	1690	
99116	84.5	85.5		126	4.42	2.1	231	1780	
99117	103.3	103.8		50	21.10	2.8	183	36	
99118	103.8	105.3		58	5.67	2.0	87	E10860	1.06
99119	105.3	107.2		51	3.59	1.4	86	165	
99120	107.2	108.5		294	9.54	4.9	170	6760	
99121	108.5	110.0		67	4.67	1.8	95	102	
99122	110.0	111.3		59	3.70	1.2	67	156	
99123	111.3	112.8		69	3.47	1.4	57	113	
99124	112.8	114.4		161	8.54	4.0	115	E14300	1.40
99125	114.4	115.9		117	3.48	2.1	88	1640	
99126	133.0	134.5		378	9.17	2.4	173	8480	
99127	134.5	135.9		128	11.64	3.5	270	767	
99128	135.9	137.5		47	23.10	1.8	69	517	
99129	137.5	138.5		31	19.80	1.4	66	132	
99130	148.3	149.8		68	3.10	1.5	65	36	
99131	149.8	151.3		63	1.54	1.1	211	39	
99132	151.3	153.0		53	8.58	1.4	130	37	
99133	153.0	154.5		65	9.90	2.1	134	41	
99134	154.5	156.0		164	19.60	3.5	283	22	
99135	156.0	157.5		148	5.63	1.2	184	27	
99136	157.5	159.0		44	6.15	1.1	125	72	
99137	159.0	160.5		114	2.03	.8	432	35	
99138	160.5	162.0		57	4.80	1.6	53	89	
99139	162.0	163.5		54	8.94	1.3	117	291	
99140	163.5	165.0		34	3.92	.7	126	35	
99141	165.0	166.5		328	8.99	1.7	222	52	
99142	166.5	168.0		38	9.44	1.4	139	61	
99143	168.0	169.5		40	10.84	1.4	158	67	
99144	169.5	171.0		20	6.27	.7	56	81	
99145	171.0	172.5		86	8.71	1.9	113	E10050	0.92
99146	172.5	174.0		45	6.84	.8	65	75	
99147	174.0	175.5		33	4.57	1.1	38	81	
99148	188.7	190.2		143	32.70	4.6	125	67	
99149	190.2	191.7		17	8.68	.6	33	25	
99150	191.7	193.2		352	13.50	1.7	91	930	
99160	193.2	194.7		73	31.50	4.2	256	4690	
99161	194.7	196.2		85	21.00	3.6	331	8120	
99162	205.2	206.7		43	10.50	1.9	118	35	
99163	209.5	211.0		19	4.13	1.0	44	2150	
99164	211.0	212.5		262	13.74	7.8	323	E29600	3.15
99165	212.5	214.0		517	16.30	20.6	212	E12420	1.25
99166	214.0	215.5		74	11.75	3.1	271	3990	
99167	219.0	220.5		7	12.57	.6	24	65	
99168	220.5	222.0		19	6.31	1.9	148	1740	
99169	222.0	223.0		32	13.74	2.8	122	9220	
99170	223.0	224.5		274	22.50	36.4	971	E111000	9.94
99171	224.5	226.0		27	3.31	4.0	85	E13500	1.32
99172	228.2	229.7		48	7.58	2.6	18	E20700	2.04
99173	229.7	231.2		71	11.89	2.6	98	369	

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District	Mayo Mining District	Hole No. NB-83-6	
Commenced	July 8, 1983	Location	Boundary Creek	Tests at 65.2m:-47°,—;126.2m:-47.5°,	Hor. Comp. 228 m
Completed	July 20, 1983	Core Size	HQ, NQ	Corr. Dip 203°;187.1m:-47°,201°;-49°,205°;	Vert. Comp. 183 m
Co-ordinates	Lat. 101 104.34 Dep. 108 129.82			True Brg. 339.5m:-49°,211°	Logged by TWH
Objective	As part of a 3 hole stratigraphic drill fence and to test for the westward extension of the Bog Showing.			% Recov. 74.3	Date July 28, 1983

Claim NIDD 82 | T Brg. 210° | Collar Dip -45° | Elev. 1292.25 | Length 342.5 m | Hole No. NB-83-6 | Sheet 1

Meterage From	To	Description	Sample No.	Length	Analysis
0.00	17.1	OVERBURDEN			
		- Only a few mudstone with siltstone laminae and chert pebble conglomerate pebbles recovered.			
17.70	76.2	CALCARESOUS MUDSTONE WITH SILTSTONE LAMINAE			
		- Black, calcareous, carbonaceous, locally siliceous mudstone with faint siltstone laminae. Unit contains less than 10% siltstone as faint laminae. Also contains rare pyrite laminae. Core is badly broken and recovery is low. Contains numerous zones of fault gouge and locally is cut by calcite or calcite-quartz veins from 1 mm to 30 cm thick. Fracture surfaces are typically smeared with graphite.			
		- Contains two tuffaceous mudstone beds near its downhole contact.			
		- Bedding to core axis varies from 0° to 60°.			
		17.7 - 35.1m- 0° 56.7 - 48° 71.6 - 45°			
		37.8 - 25° 59.5 - 39° 75.0 - 45°			
		49.4 - 60° 63.4 - 35°			
		54.0 - 62° 66.2 - 20°			
		40.5 - 46.3 m Fault gouge (40%), calcite and calcite-quartz veins (15%) and fragmented mudstone (50%).			
		48.2 - 48.5 Fault gouge			
		52.4 - 52.9 Two 15 cm thick calcite-quartz veins separated by above mudstone unit.			

211-9437

Drill Hole Record

Scale

Colour Plot & Dips

0

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 2

Meterage From	To	Description	Sample No.	Length	Analysis
		54.7 - 57.3 5% calcite veining and crackle fracturing			
		64.6 - 64.7 Calcite-quartz vein			
		66.3 - 66.8 15cm true thickness calcite-quartz vein			
		73.5 - 73.8 Tuffaceous mudstone			
		-Grey, with faint bedding shown by the 10-15 volume percent pyrite laminae			
		and the 8-10% disseminated elongated calcite blebs to 1.5 mm			
		74.80 - 74.83 Tuffaceous Mudstone			
		-Dark grey, fragmented, contains 50:50 mudstone and angular tuff fragments.			
		Also contains 2-3% pyrite laminae.			
76.2	83.1	VOLCANIC LAPILLI TUFFS TO TUFFACEOUS MUDSTONE WITH MINOR SILTSTONE LAMINAE			
		- Mainly grey, fine-grained, pyritic tuff beds with a minor mudstone clast component.			
		These beds are separated by black calcareous, carbonaceous, siliceous mudstone beds with			
		siltstone laminae and dark grey tuffaceous mudstone beds			
		76.2 -76.4 VOLCANIC LAPILLI TUFF			
		Grey pyritic tuff with 1-2 volume percent siderite (ankerite) crystals to 1.0mm disseminated			
		throughout and 5-7 volume percent pyrite as wispy laminae and fracture filling. Siderite			
		(ankerite) crystals are commonly elongated at 60° to the core axis (possibly bedding). This			
		tuff appears to have a minor mudstone component at its downhole contact. Uphole contact is			
		faulted, downhole is sharp with a mudstone unit. The tuff has just a hint of green to its			
		grey colour indicating a mafic (possibly chlorite) component to it.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 3

Hole No. NB-83-6

Claim | T Brg. | Collar Dip | Elev. | Length

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		76.4 - 76.8 Calcareous Mudstone			
		-Black, calcareous mudstone. Well fractured with 5 volume percent pyrite			
		and 5 volume percent calcite filling the fractures. Graphite is also			
		seen along the fracture surfaces.			
		76.8 - 77.6 Lapilli tuff			
		-Grey, fine-grained, locally pyritic tuff containing 4 volume percent			
		elongated mudstone clasts to 2.0 cm. Contains 10 - 15 volume percent			
		mafic crystal component with the crystals elongated 60°- 80° to core			
		axis. Cut by a few calcite-quartz veins to 2.0 cm. thick. Pyrite,			
		6 - 8 volume percent, occurs as disseminated crystals to 0.5 mm., as			
		laminae and as clasts to 1.0 cm. and is confined to the top and bottom			
		of this interval. The grey matrix of this tuff also has a slight			
		greenish tinge to it.			
		-Sphalerite is seen within the pyritic section at the downhole end of			
		this tuff, overall grade is estimated at 0.1% Zn.			
		77.6 - 77.8 Calcareous Mudstone with siltstone laminae			
		-Black, calcareous, siliceous, well fractured mudstone with siltstone			
		laminae with 1 volume percent calcite along fractures. Bedding to			
		core axis is 78°.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 4

Meterage From	To	Description	Sample No.	Length	Analysis					
		77.8 - 80.6 Lapilli tuff to tuffaceous mudstone								
		-Grey, fine-grained, locally pyritic tuff as above with dark grey								
		tuffaceous mudstone sections. Contains 40-50 volume percent pyrite								
		over the first 0.5 m. Lapilli tuff is of similar composition as before								
		with a grey (possibly chloritic) matrix, 15-25 volume percent mafic								
		crystals, minor mudstone clasts and variable but low content of siderite								
		(ankerite) crystals. Contains a minor amount of a soft blue-green								
		micaceous clay mineral locally along fractures.								
		-Tuffaceous mudstone contains 10 volume percent siderite (ankerite)								
		crystals, some of which have been replaced by pyrite. Tuffaceous								
		content is uncertain but does give this unit a dark grey colour.								
		-Bedding to core axis is 62°.								
		80.6 - 80.8 Calcareous Mudstone								
		-Black, calcareous, siliceous mudstone								
		80.8 - 81.0 Tuffaceous Mudstone								
		-Dark grey mudstone with 15 volume percent disseminated siderite (ankerite)								
		crystals from 0.1 mm to 5.0 mm in size which locally have been partially								
		replaced by pyrite.								

211-9437

Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 5

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		81.0 - 81.6 Mudstone			
		-Black, siliceous, non-calcareous mudstone. Core is broken up. Mudstone is graphitic.			
		81.6 - 83.1 Tuffaceous mudstone with minor mudstone and tuff			
		-Dark grey, locally pyritic tuffaceous mudstone with lesser amounts of siliceous, graphitic mudstone and pyritic lapilli tuff. Overall pyrite content is 3-5 volume percent. Bedding to core axis is 55°.			
83.1	97.0	CALCAREOUS MUDSTONE WITH SILTSTONE LAMINAE			
		- Black, calcareous, siliceous mudstone with faint siltstone laminae. Carbonate content decreases with increased siliceous content of this unit. Unit is laminated to thin bedded and graphitic. Weekly calcite veined overall but strongly calcite veined over the last 2.0 m. with 10 volume percent veins and 2-3 volume percent associated pyrite.			
		- Bedding to core axis at 89.3 m - 63°, 93.9 m. - 80°.			
97.0	100.5	TUFFACEOUS MUDSTONE WITH MINOR TUFF			
		- Grey to dark grey tuffaceous mudstone cut by numerous calcite-quartz veins which in places have fragmented this unit. Contains minor fault gauge at 98.0 m.			
		- Tuffs are grey, locally laminated and also cut by numerous calcite-quartz veins. Compositionally they are similar to previous tuffs with 10-15 volume percent mafic crystal content disseminated within a chloritic matrix.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 6

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		- Both units scratch easily with a knife.			
		- Overall there is 20 volume percent calcite-quartz veining and 2-3 volume percent pyrite			
		occuring as disseminated crystals, with the calcite-quartz veins and as wispy laminae.			
		- Bedding to core axis : 35°			
100.5	116.5	CALCAREOUS MUDSTONE WITH SILTSTONE LAMINAE			
		- Black, siliceous, graphitic mudstone with 5-10 volume percent grey calcareous siltstone			
		laminae to beds. Mudstone is non to very weakly calcareous, laminated and graphitic			
		along fracture sufaces. Siltstone is grey, calcareous and occurs in beds from 1 mm to			
		30 cm. thick. This unit is cut by 6 volume percent calcite-quartz veins.			
		- Bedding to core axis: 107.9 m - 30°; 110.2 - 45°; 113.7 - 35°			
116.5	130.5	CALCAREOUS COLOUR BANDED MUDSTONE WITH SILTSTONE LAMINAE TO THIN BEDS			
		- Laminated to thin bedded, black and grey colour banded siliceous mudstone and calcareous			
		siltstone. Black mudstone beds vary from < 1.0 mm to 3.0 cm thick, are slightly			
		calcareous and are siliceous. Grey siltstone beds vary from <1.0 to 2.0 cm. thick,			
		are calcareous and are soft.			
		- This unit is cut by 1-2 volume percent calcite-quartz veins which usually are seen to			
		parallel bedding. Graphite is seen along fracture surfaces but is not as common as seen			
		in the previous mudstone units. Traces of pyrite occur as laminae and lenses to 2.0 mm.			
		thick.			

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 7

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		- Tops determinations (grade bedding) indicate tops downhole (50% confidence level)			
		- Bedding to core axis: 118.3 m - 51° 126.2 - 62°			
		122.0 m - 55° 129.3 - 77°			
		- Overall from top of this hole to this type of unit (bedding overturned) there has been a gradual increase in siltstone content within the mudstones.			
130.5	130.9	TUFF			
		- Grey, fine-grained, locally pyritic tuff with 1-2 volume percent mudstone or sideritic volcanic clasts. Clasts are typically elongated along bedding and <1.0 cm. in size. Tuff has a chloritic matrix containing 10-25 volume percent mafic crystals disseminated throughout. These mafic crystals are normally <1.0 mm. in size but are seen up to 3.0 mm. This unit contains a siliceous mudstone section from 139.0 - 139.3 m. Pyrite (1-2 volume percent) is normally seen along fractures or within the occassional calcite or calcite quartz vein which cut this unit, but near the downhole contact it is seen as the matrix to this tuff in place of the chloritic matrix.			
		- 138.6 - 138.8 m fault gouge			
		- 139.4 - 139.5 m fault gouge			
		- Bedding to core axis: 75° - 80°			

211-0437

Drill Hole Record

Scale

Colour Plot & Dips

0

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 8

Meterage From To	Description	Sample No.	Length	Analysis
139.6 - 145.4	CALCAREOUS, COLOUR BANDED MUDSTONE WITH SILTSTONE LAMINAE TO THIN BEDS			
	- Black, siliceous, calcareous mudstone beds and laminae from < 1.0 mm. to 10.0 cm. thick interbedded with grey, calcareous siltstone laminae and beds from 1.0 mm. to 2.0 cm. thick. Siltstone beds are more calcareous than mudstone beds. Core is strongly colour banded except for top 80 cm. which is believed to be slightly tuffaceous giving the mudstone a dull grey colour. One 2.0 cm. thick wispy tuff bed is seen within this section of core and associated with this and within the calcite filled fractures next to it is minor sphalerite (est. 0.5% Zn/20 cm.). The sphalerite occurs as blebs and crystal aggregates up to 1.0 x 0.3 cm in size with most being <0.2 cm. Pyrite is also found within this section of core.			
	- Last 3.4 m of this unit has no recovery due to a gravel seam encountered (possible fault).			
145.4 - 238.5	CALCAREOUS MUDSTONE WITH SILTSTONE LAMINAE			
	- Black, siliceous, calcareous, laminated to bedded mudstone with minor grey calcareous siltstone laminae. This unit is calcareous, carbonaceous and locally pyritic. Three volume percent calcite-quartz veins to 20 cm. thick cut this unit and 4 zones of fault gouge are also seen.			
	- Tops as indicated by load casts and graded bedding are downhole (25% confidence level)			
	- 134.0 - 134.2 m; 169.2 - 170.1; 198.8 - 200.2; 222.8 - 222.9 - fault gouge.			
	- Bedding to core axis: 146.0 m - 34° 173.2 - 60° 193.3 - 18° 211.9 - 80°			
	150.6 - 38° 177.4 - 63° 196.6 - 48° 217.4 - 0°			
	154.3 - 45° 185.4 - 05° 204.3 - 28° 222.6 - 37°			
	161.7 - 38° 189.6 - 65° 207.9 - 26° 232.3 - 41°			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 9

Meterage From	To	Description	Sample No.	Length	Analysis
238.5	240.3	CALCAREOUS MUDSTONE TO TUFFACEOUS MUDSTONE			
		- Dark grey to black, calcareous, wispy laminated mudstone with an increasing tuffaceous component downhole. Pyrite blebs and laminae are found within the more tuffaceous portions of the core. Pyrite is also found within the calcite-quartz or ankerite-quartz veins to 3.0 cm. thick which cut this unit. Estimate a 10-15% tuffaceous content to this mudstone unit. Pyrite content is 4-5 volume percent.			
		- 239.0 - 239.1 fault gouge			
		- Bedding to core axis: 80 - 85°			
240.3	245.4	LAPILLI TUFF AND MINOR TUFFACEOUS MUDSTONE			
		- Grey to very light yellow-brown, sideritic lapilli tuff with lesser amounts of interbedded dark grey tuffaceous mudstone. Tuffs contain 2-3 volume percent mudstone clasts to 15 cm. with most clasts < 1.0 cm. in size. Pyrite (1-2 volume percent) is seen as a replacement of siderite, along fractures, within quartz-ankerite veins and as a replacement of mudstone clasts. The tuffs also have a very faint wispy bedding to them.			
		- The tuffaceous mudstone is dark grey, wispy laminated and contains a variable proportion of tuffaceous matter. Locally it is weakly calcareous. Siderite-pyrite veins and laminae are common within this unit.			
		240.3 - 241.2 Lapilli tuff			
		241.2 - 242.1 Tuffaceous mudstone			
		242.1 - 243.0 Lapilli tuff			
		243.0 - 244.2 Tuffaceous mudstone			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 10

Meterage From	To	Description	Sample No.	Length	Analysis
		244.2 - 245.4 Lapilli tuff			
		- Bedding to core axis: 70° - 80°			
245.4 - 247.9		CALCAREOUS MUDSTONE WITH SILTSTONE LAMINAE			
		- Black non-siliceous mudstone with faint siltstone laminae. Laminations near uphole and downhole contact are best seen while the majority of the rest of the bedding within this unit is slumped. Cut by a few quartz-ankerite veins near both contacts with pyrite or pyrite-ankerite (siderite) fractures or beds seen throughout (3-4 volume percent pyrite). Minor pyrite is also seen disseminated within the black mudstone unit.			
		- Beds within the central portion of this unit show slump textures. Uphole and downhole contacts are conformable.			
		- Contact to core axis: uphole 78°			
		dowhole 65°			
247.9 - 282.6		LAPILLI TUFFS AND MINOR SIDERITIC MUDSTONE			
		- Grey to light brown, locally bedded sideritic lapilli tuffs with minor interbedded sideritic mudstone			
		247.9 - 254.1 Lapilli tuff			
		- Grey to light rusty brown sideritic lapilli tuff. Locally well bedded but also contains a significant mudstone and tuffaceous clast component.			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 11

Hole No. NB-83-6

Meterage From	Meterage To	Description	Sample No.	Length	Claim	T Brg.	Collar Dip	Elev.	Length	Analysis
		The tuff matrix is fine-grained, strongly sideritic and weakly pyritic (<1%).								
		Mudstone clasts are only seen near the uphole contact, are subrounded,								
		elongated with bedding and range from 1.0 mm. to 5.0 cm. in size. Tuff clasts								
		are up to 25 cm. in size and are mainly of similar appearance and composition								
		as the matrix but coarse-grained tuff pebbles are seen also. The light rusty								
		brown colour to the tuffs is from weathered siderite. Fresh siderite is								
		present and is identified by its light grey colour. The matrix locally has								
		a very light grey-green tinge to it and may be slightly chloritic as previous								
		tuffs appear to be. Some of the tuff beds appear slumped.								
		- The tuffs are moderately quartz-ankerite veined with veins from 2 mm. to								
		2-3 cm. thick making up 3-4 volume percent of this unit. Minor amounts of								
		the blue-green micaceous clay mineral seen previously are present.								
		- Bedding to core axis: 253.7 m - 68°								
		254.1 - 255.3 Sideritic Mudstone								
		- Dark grey to very light brown mudstone. Unit shows very little bedding but								
		this may have been obscured by the intense sideritic alteration of the								
		mudstone. This alteration may also account for the non-calcareous nature								
		of the mudstone. Strongly crackle fractured with quartz-siderite healing.								
		- Pyrite (1%) is seen within fractures.								
		- Bedding to core axis: 255.0 m. - 68°								

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 12

Hole No. NB-83-6

Claim	T Brg.	Collar Dip	Elev.	Length

Meterage From	Meterage To	Description	Sample No.	Length	Analysis					
		255.3 - 273.5 Lapilli tuff								
		- Grey to light rusty brown sideritic lapilli tuff. Possibly chloritic								
		matrix supports clasts up to 10's of cm. in size. Core is strongly sideritic								
		which when weathered results in the rusty brown colour. Locally this unit is								
		strongly laminated with a high mudstone component. Both mudstone and								
		volcaniclastic clasts are seen within this unit. Minor pyrite (<1 volume								
		percent) is present as laminae or alternation of siderite. Blue-green								
		micaceous clay mineral is seen within volcaniclastic clasts, in the sideritic								
		matrix and as selvage along quartz-siderite (ankerite) veins. Overall unit								
		is weakly quartz-siderite veined with 8 volume percent veins ranging from 1 mm.								
		to 3 cm. thick.								
		- Most of the well laminated sections contain a high mudstone component (up to								
		25 volume percent) with other laminated sections containing tuffaceous								
		sideritic volcaniclastics only. This unit is not considered a tuffaceous								
		boulder diamictite because of the presence of bedded tuffs.								
		256.4 m. - small fold seen with bedding to core axis of 50° on both sides of								
		it, this fold is not traceable for more than 12 cm. on either side of								
		the fold axis.								
		260.2 - Bedding to core axis: 60°								
		265.9 - Bedding to core axis: 60°								

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Sheet 13 | Hole No. NB-83-6

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		266.4 - 266.9 - Coarse strongly sideritic bed containing identifiable chert			
		beds to 1.5 cm. thick. Possible this whole section is a			
		replaced bed rather than a tuff bed with minor chert pebbles			
		in it.			
		269.2 - Bedding to core axis: 60°			
		273.5 - 273.8 Mudstone			
		- Black, siliceous mudstone. No laminae seen buy core is badly			
		broken. Mudstone is strongly siliceous.			
		273.8 - 282.6 Lapilli tuff			
		- Light grey to light rusty brown lapilli tuff. Contains variable			
		content of subrounded to subangular mudstone and sideritic			
		volcanic clasts to > 10 cm. This unit is locally laminated			
		and pyritic. Matrix is fine-grained, sideritic and possibly			
		weakly chloritic. Pyrite content is 2-3% with most found			
		over the last 20 cm. of this unit. Pyrite occurs within the			
		matrix, along fractures and as replacement of tuff clasts.			
		Minor quartz-siderite (ankerite) veins cut this section. The			
		last 0.5 m. of this unit is strongly fragmental. The			
		downhole contact is sharp.			
		- Bedding to core axis: 274.8 m. - 63°			
		279.4 m. - 63°			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB-83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Sheet 14 | Hole No. NB-83-6

Meterage From	To	Description	Sample No.	Length	Cu	Pb	Zn	Fe%	Ag	Zn%
					Analysis ppm except for Fe					
282.6 - 316.9		CHERT PEBBLE CONGLOMERATE WITH MINOR MUDSTONE - SILTSTONE								
		- Grey, medium to coarse chert pebble conglomerate with minor matrix or clast replacement								
		sphalerite. Minor mudstone with siltstone laminae interbeds are seen after 302.0 m.	104640	286.0 287.5	23	41	1610	4.8	1.0	
			41	287.5 289.0	11	24	1880	1.89	0.6	
		282.6 - 302.0 Chert pebble conglomerate	42	289.0 290.5	10	14	420	1.04	<.4	
		- Grey, medium to coarse, poorly sorted conglomerate. Clasts are clast	43	290.5 292.0	37	19	16040	2.13	1.3	1.47
		supported, subrounded to subangular and are either chert or mudstone in	44	292.0 293.5	10	42	463	1.12	<.4	
		composition. Chemical reaction of the clasts with the matrix has taken	45	293.5 295.0	9	20	1430	2.13	0.7	
		place as indicated by concentric rims or etched rims on some of the clasts.	46	295.0 296.5	4	20	60	1.28	0.6	
		Chert clasts make up 70 volume percent of all clasts and range from 1mm.	47	296.5 298.0	2	14	266	1.03	<.4	
		to 5 cm. in size. Mudstone or mudstone-siltstone clasts range from 1mm.	48	298.0 299.5	6	21	356	1.10	0.6	
		to > 15 cm. in size and make up the remaining 30 volume percent of total	49	299.5 301.0	9	22	1909	1.05	0.5	
		clasts. Matrix 15-20 (volume percent) is silica. Mudstone or mudstone-	50	301.0 302.5	25	24	16300	3.02	1.9	2.96
		siltstone clasts are commonly silicified.	51	302.5 304.0	10	16	2770	1.97	0.6	
		- Sphalerite replaces clasts and matrix. Siderite (1 volume percent) and	52	304.0 305.5	12	22	1380	2.49	0.8	
		pyrite (2 volume percent) also replace both clasts and matrix.	53	305.5 307.0	19	18	7230	4.80	0.5	
			54	307.0 308.5	15	23	2910	5.26	0.6	
		302.0 - 316.9 Chert pebble conglomerate with minor interbedded mudstone with siltstone laminae	55	308.5 310.0	25	18	3190	11.12	<.4	
		- Grey, medium to coarse, poorly sorted, heterolithic chert pebble conglomerate	56	310.0 311.5	38	28	2770	14.41	0.8	
		with minor interbedded dark grey to black, laminated to thin bedded mudstone	57	311.5 313.0	23	19	1380	12.02	0.5	
		with siltstone. Conglomerate here is of the same composition as above except	58	313.0 314.5	15	21	6060	9.95	0.4	
		for a much higher siderite matrix content. Siderite also replaces clasts	104659	314.5 316.0	11	19	1510	10.07	0.7	

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Drill Hole Record

Scale

Colour Plot & Dips

0

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Sheet 15

Hole No. NB-83-6

Claim | T Brg. | Collar Dip | Elev. | Length

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		with total content 7 volume percent. Pyrite content is 1 volume percent.			
		- Mudstone with siltstone laminae beds contain some chert pebbles and sand			
		size coarse beds. Some of these mudstone beds are also slumped. The			
		mudstone units are not considered to be boulders as bedding to core axis			
		angles and faint bedding seen locally in the conglomerate are all conformable.			
		- Bedding to core axis: 302.0 - 62°			
		305.0 - 60°			
		- Downhole contact to core axis: 60°			
		- This section is cut by 3 quartz veins to 4 cm. thick, one of which carries a			
		few disseminated crystals of sphalerite.			
		- 313.2 - 313.4 fault zone within a mudstone bed.			
316.9	334.8	MUDSTONE AND MINOR MUDSTONE WITH LAMINATED TO INTERBEDDED SILTSTONE AND SANDSTONE			
		- Black, carbonaceous, faintly to not laminated mudstone flanked both on the uphole and			
		downhole sides by laminated to thin bedded mudstone with siltstone and sandstone.			
		316.9 - 319.5 Mudstone with siltstone and sandstone			
		- Dark grey to black mudstone with laminated to thin bedded siltstone and			
		minor sandstone. Mudstone makes up 65 volume percent of this unit, siltstone			
		30% and sandstone 5%. These laminated to thin bedded units show a moderate			
		colour banding. Sandstone beds are predominantly composed of chert grains			
		to 2.0 mm. These units appear to be turbidites with some grading indicating			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 16

Meterage From	Meterage To	Description	Sample No.	Length	Analysis
		tops is downhole (30% confidence level). Pyrite (0.5%) occurs as laminae to			
		2.0 mm or within the siltstone laminae possibly as replacement of silt grains			
		and matrix.			
		- Downhole contact is faulted			
		- Bedding to core axis angle is fairly constant ranging from 63° at the top of			
		this unit to 69° at the downhole contact.			
	319.5 - 333.4	Mudstone with siltstone and sandstone			
		- Black, laminated to thin bedded mudstone with siltstone and sandstone.			
		Sandstone component is up (25 volume percent) and is mainly located in the			
		downhole portion of this unit. Mudstone content is still about 60° with			
		only 15% siltstone.			
		- This unit contains a boulder of siderite matrix chert grain sandstone with			
		minor mudstone grains. It is not believed to be a bed as the downhole			
		contact is not conformable to the uphole contact. Boulder is cored for 22 cm.			
		334.4 fault gouge			
		334.7 - 334.8 fault gouge marks downhole contact			
		- Bedding to core axis: 60°			
334.8	342.4	CHERT PEBBLE CONGLOMERATE WITH MINOR CHERT PEBBLE DIAMICTITE AND MUDSTONE WITH LAMINATED			
		SILTSTONE INTERBEDS			
		- Grey, fine to coarse, poorly sorted chert pebble conglomerate with one 50 cm thick mudstone			
		with laminated siltstone bed and 20 cm of chert pebble diamictite.			

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Drill Hole Record

Scale

Colour Plot & Dips

0

Property NIDD	District	Hole No. NB-83-6	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 17

Meterage From	To	Description	Sample No.	Length	Analysis
		334.8 - 338.6 Chert pebble conglomerate			
		- Fine, grey, moderately sorted conglomerate. Clast supported with a silica matrix. Mainly chert clasts with 10-15 volume percent matrix. Clasts are subrounded and range from <1 mm. to 10 mm. and average 2-3 mm. Pyrite (1%) replaces clasts and matrix.			
		- Core is broken up			
		- 336.1 - 336.9 fault zone with only 25 cm. of fault gouge recovered.			
		- Bedding to core axis: 53°			
		338.6 - 338.8 Chert pebble diamictite			
		- Grey to dark grey chert pebble diamictite with 70 volume percent chert and mudstone clasts cemented by a mudstone matrix. Diamictite is both clast and matrix supported. Clasts are subrounded to subangular and mainly chert as seen above. Pyrite (3 volume percent) replaces or partially replaces chert clasts.			
		338.8 - 339.7 Chert pebble conglomerate			
		- Grey, coarse chert pebble conglomerate. Contains 20 volume percent silica matrix with 80 volume percent chert and mudstone clasts. Clasts are clast supported, poorly sorted and show no bedding. Chert clasts make up 65-70 volume percent of the clasts with the rest being mudstone. Pyrite (1 volume percent) replaces both clast types (but preferentially chert clasts) and			

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Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District	Hole No.	NB-83-6	
Commenced		Location	Tests at		Hor. Comp.
Completed		Core Size	Corr. Dip		Vert. Comp.
Co-ordinates			True Brg.		Logged by
Objective			% Recov.		Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. NB-83-6 | Sheet 18

Meterage From	Meterage To	Description	Sample No.	Length	Analysis					
		the matrix. The matrix has partially etched or started to react with some								
		of the clasts.								
		339.7 - 340.3 Mudstone with laminated siltstone								
		- Dark grey mudstone with faint siltstone laminae. Beds are slumped. Pyrite								
		(4-5 volume percent) is seen to replace some of the siltstone beds. Core								
		is strongly fractured.								
		- Both uphole and downhole contacts are at 45° to core axis.								
		340.3 - 342.4 Chert pebble conglomerate								
		- Grey, coarse, poorly sorted, silica cemented, clast supported conglomerate.								
		70 to 80 volume percent of the subrounded to subangular clasts are chert								
		with the remainder being mudstone. Silica matrix content is 20 volume								
		percent. Clasts have reacted with the matrix as witnessed by the circular								
		bleached reaction rims or etched edges of some clasts. Pyrite (1 volume								
		percent) replaces both clasts and matrix, main and chert clasts. Mudstone								
		clasts are silicified as in previous conglomerates.								
		E.O.H. @ 342.4 m.								

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Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 19

Analysis

Description

Sample No. | Length

Runs and Recoveries

From (Metres)	To		Recovery (m)		From	To		Recovery (m)		From	To		Recovery (m)
0	17.7		o/b		46.0	47.3		0.30		73.5	74.4		0.61
17.7	18.3		0.15		47.3	48.2		0.30		74.4	75.3		0.76
18.3	19.8		0.46		48.2	48.8		0.46		75.3	75.9		0.46
19.8	21.3		0.46		48.8	50.3		0.61		75.9	77.4		1.22
21.3	23.8		0.91		50.3	51.2		0.30		77.4	78.7		1.07
23.8	27.1		0.00		51.2	52.4		0.61		78.7	79.9		1.07
27.1	28.7		0.15		52.4	53.0		0.61		79.9	80.6		0.61
28.7	30.2		0.76		53.0	54.6		1.52		80.6	81.1		0.30
30.2	32.0		0.46		54.6	56.1		1.52		81.1	82.2		0.91
32.0	33.2		0.91		56.1	57.2		1.52		82.2	83.5		0.76
33.2	35.1		1.07		57.2	59.1		1.52		83.5	86.0		0.61
35.1	36.0		0.30		59.1	60.7		1.52		86.0	86.6		0.15
36.0	37.8		1.07		60.7	61.6		0.61		86.6	87.0		0.30
37.8	39.0		0.46		61.6	62.8		1.07		87.0	87.7		0.61
39.0	39.6		0.46		62.8	64.3		1.52		87.7	88.4		0.61
39.6	40.5		0.30		64.3	67.4		2.29		88.4	89.3		0.76
40.5	43.6		0.91		67.4	68.9		1.52		89.3	89.8		0.46
43.6	44.8		0.76		68.9	72.0		0.91		89.8	91.0		0.30
44.8	46.0		0.30		72.0	73.5		0.30		91.0	92.1		1.22

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Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 20

Description

Sample No. | Length | Analysis

Metres

Runs and Recoveries

From	To	Recovery (m)	From	To	Recovery (m)	From	To	Recovery (m)
92.1	93.6	1.22	120.7	122.1	1.22	150.6	151.2	0.61
93.6	95.1	0.46	122.1	123.3	1.22	151.2	152.3	0.91
95.1	97.3	1.37	123.3	126.5	3.05	152.3	154.9	2.13
97.3	98.2	0.61	126.5	128.0	1.52	154.9	146.6	1.52
98.2	99.1	0.91	128.0	129.6	1.52	156.6	157.6	0.76
99.1	100.6	0.61	129.6	130.5	0.61	157.6	159.1	1.52
100.6	102.1	0.15	130.5	131.7	0.91	159.1	162.0	2.44
102.1	103.0	0.61	131.7	132.3	0.30	162.0	163.6	1.37
103.0	106.1	0.91	132.3	133.5	0.91	163.6	164.9	1.52
106.1	107.6	0.15	133.5	135.1	1.52	164.9	166.5	1.52
107.6	109.1	1.07	135.1	136.6	1.52	166.5	167.7	1.22
109.1	110.7	1.52	136.6	138.7	1.98	167.7	169.2	1.52
110.7	112.2	1.52	138.7	139.9	0.91	169.2	170.4	0.61
112.2	113.7	1.52	139.9	141.8	1.07	170.4	172.0	0.91
113.7	115.5	1.37	141.8	142.1	0.30	172.0	172.6	0.15
115.5	116.5	0.76	142.1	145.1	0.46	172.6	174.1 HQ NQ	1.22
116.5	117.7	0.76	145.1	147.3	1.68	174.1	175.6	1.52
117.7	119.2	1.52	147.3	149.4	1.98	175.6	177.1	1.52
119.2	120.7	1.52	149.4	150.6	0.76	177.1	177.4	0.46

211-0497

Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-6
Commenced		Location		Tests at	
Completed		Core Size		Corr. Dip	
Co-ordinates				True Brg.	
Objective				% Recov.	

Hor. Comp.
Vert. Comp.
Logged by
Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 21

Analysis

Description

Sample No. | Length

Runs and Recoveries

Metres From	Metres To		Recovery (m)		From	To		Recovery (m)		From	To		Recovery (m)
177.4	178.5		0.61		201.2	202.0		0.46		224.4	225.0		0.46
178.5	180.3		0.15		202.0	203.8		0.76		225.0	225.6		0.30
180.3	181.1		0.15		203.8	205.2		1.22		225.6	228.0		1.37
181.1	181.7		0.30		205.2	206.1		0.76		228.0	229.3		0.30
181.7	182.6		0.47		206.1	207.0		0.91		229.3	231.7		0.91
182.6	183.2		0.30		207.0	208.2		0.91		231.7	233.9		1.22
183.2	184.1		0.76		208.2	210.2		1.68		233.8	236.9		0.15
184.1	186.1		1.98		210.2	211.0		0.76		236.9	238.4		0.30
186.1	187.3		0.76		211.0	213.0		1.37		238.4	239.0		0.46
187.3	188.7		1.07		213.0	124.3		0.46		239.0	241.8		2.59
188.7	190.2		1.37		214.3	214.6		0.15		241.8	242.4		0.46
190.2	191.2		0.30		214.6	216.4		1.07		242.4	244.1		1.52
191.2	193.3		1.98		216.5	217.7		1.07		244.1	245.1		1.22
193.3	194.8		1.37		217.7	219.8		2.13		245.1	247.7		2.44
194.8	196.3		1.07		219.8	220.9		0.76		247.7	250.8		3.05
196.3	198.0		0.61		220.9	222.0		0.76		250.8	254.9		2.90
198.0	200.2		0.30		222.0	223.8		1.52		254.0	257.0		3.05
200.2	201.2		1.07		223.8	224.4		0.30		257.0	260.1		3.05

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	NIDD	District		Hole No.	NB83-6
Commenced		Location		Tests at	Hor. Comp.
Completed		Core Size		Corr. Dip	Vert. Comp.
Co-ordinates				True Brg.	Logged by
Objective				% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. | Sheet 22

Analysis

From To (Metres) | Description | Sample No. | Length

Runs and Recoveries

From	To	Recovery (m)	From	To	Recovery (m)	From	To	Recovery (m)
260.1	262.8	2.74	307.0	309.5	2.44	336.9	338.0	0.76
262.8	265.9	3.05	309.5	310.1	0.30	338.0	339.8	1.68
265.9	268.9	3.05	310.1	311.7	1.52	339.8	342.4	2.90
268.9	273.0	1.22	311.7	313.4	1.68			
273.0	273.5	0.46	313.4	314.8	1.37			
273.5	274.1	0.61	314.8	317.8	3.20			
274.1	277.1	3.05	317.8	318.6	0.76	Total:	324.7m	241.5m
277.1	280.2	2.74	318.6	319.8	1.07			
280.2	282.6	2.44	319.8	321.3	0.91	Recovery: 74.3%		
282.6	284.5	1.68	321.3	323.5	0.61			
284.5	287.5	3.05	323.5	325.2	1.37	Total meterage:	342.4	(1123 ft.)
287.5	290.5	3.05	325.2	327.4	2.44			
290.5	293.6	3.05	327.4	328.8	1.37			
293.6	296.6	3.05	328.8	331.3	2.44			
296.6	298.2	1.52	331.3	332.9	1.68			
298.2	301.2	3.05	332.9	334.5	1.37			
301.2	304.0	2.74	334.5	335.1	0.61			
304.0	307.0	3.05	335.1	336.9	0.61			

211-0437

NIDD PROPERTY

NB83-6 - DDH

Sample No.	From	To	Length(m)	Cu ppm	Fe%	Ag ppm	Pb ppm	Zn ppm	Zn%
104640	286.0	287.5	1.5	23	4.8	1.0	41	1610	
104641	287.5	289.0	1.5	11	1.89	.6	24	1880	
104642	289.0	290.5	1.5	10	1.04	<.4	14	420	
104643	290.5	292.0	1.5	37	2.13	1.3	19	E16040	1.47
104644	292.0	293.5	1.5	10	1.12	<.4	42	463	
104645	293.5	295.0	1.5	9	2.13	.7	20	1430	
104646	295.0	296.5	1.5	4	1.28	.6	20	60	
104647	296.5	298.0	1.5	2	1.03	<.4	14	266	
104648	298.0	299.5	1.5	6	1.1	.6	21	356	
104649	299.5	301.0	1.5	9	1.05	.5	22	1909	
104650	301.0	302.5	1.5	25	3.02	1.9	24	E16300	2.96
104651	302.5	304.0	1.5	10	1.97	.6	16	2770	
104652	304.0	305.5	1.5	12	2.49	.8	22	1380	
104653	305.5	307.0	1.5	19	4.8	.5	18	6060	
104654	307.0	308.5	1.5	15	5.26	.6	23	1510	
104655	308.5	310.0	1.5	25	11.12	<.4	18	7230	
104656	310.0	311.5	1.5	38	14.41	.8	28	2910	
104657	311.5	313.0	1.5	23	12.02	.5	19	3190	
104658	313.0	314.5	1.5	15	9.95	<.4	21	2770	
104659	314.5	316.0	1.5	11	10.07	.7	19	1170	

TABLE OF CONTENTS

COMINCO LTD.

EXPLORATION
NTS 105 O/1

WESTERN DISTRICT
NOVEMBER 28, 1983

GEOPHYSICAL SURVEYS

ON THE

ELEVEN CREEK AREA

NIDD PROPERTY

INTRODUCTION

During August 1983, 9.5 km of horizontal loop EM and magnetics were performed in the Eleven Creek area of the Nidd Property by a 3 man Cominco geophysical crew. The purpose for the survey was to map an area of sediments with possible economic potential which are covered by a thin, but extensive overburden layer.

This report discusses the geophysical methods used and the results obtained.

LOCATION AND ACCESS

The Nidd Property is located 170 km northeast of Ross River, Yukon, in the Selwyn Mountains only a few kilometres from the N.W.T. border. Elevations range from 1,000 to 2,000 metres.

The eastern end of the property (Nidd Creek) is accessible by 4x4 vehicle from MacMillan Pass. MacMillan Pass is connnected by gravel road to Ross River, which is the nearest supplier. The road from Nidd Creek to Boundary Creek (10 km east of Eleven Creek) is only a cat road at present and will possibly be upgraded in the future.

An airstrip at MacMillan Pass is serviced from Watson Lake or Whitehorse. A permanent helicopter is based at the airstrip from late spring to early fall.

GEOPHYSICAL SURVEYS

HLEM

An Apex Max Min II unit reading frequencies 3555 Hz and 444 Hz was used for the horizontal loop survey. A 50 metre coil length between transmitter and receiver was chosen: 1) because a 50 metre separation gives better resolution than the longer cables; and 2) the subcropping rocks to be mapped are covered by a thin overburden layer and thus very close to the surface.

No correction for topography related errors was made other than pulling the interconnecting transmitter-receiver cable tight at the 50 metre mark. Topography changes were gradual enough to render this method feasible. An instrument fault in the receiver dip angle meter was noted and corrected for during the field readings simply by visual estimation.

Magnetics

A Scintrex MP-2 proton precession magnetometer was used for the magnetic survey. The diurnal correction was made by looping in to a baseline station every few hours and assuming a linear drift between tie-ins. Readings were taken at a 25 metre interval. The sensor was carried on a backpack, not on a staff. For this reason, the same direction was faced while taking each reading.

DESCRIPTION AND INTERPRETATION OF RESULTS

The magnetics survey (Plate 252-83-3) shows very little response over the grid area. A zone 20 gammas above background strikes NW-SE. At the NW corner, this increases even further to 40 gammas above background. This rise in values most likely reflects an increase in magnetic Fe-minerals.

The HLEM (Plates 252-83-4 and -5) plots show mainly a resistive ground with poor conductors at the north end of some lines. These conductors are interpreted as "poor" because they repond to the 3555 Hz frequency, but not the 444 Hz frequency. It is interesting to note that from line 6200W to 7000W the occurrence of conductors coincides roughly with a large change (or step) in the topography. To be more precise, the elevation on the grid increases from south to north but increases especially rapidly (up to 45° and 50° in slope) in the vicinity of the HLEM conductors in the northern part of the grid. However, other than the erroneous point due to topography on the in-phase at line 7000W, station 675N, the other HLEM conductors are not considered to be caused by topography for 2 reasons. The first reason is that the HLEM responses also change away from the steep topographical change, and the second reason is that the out-of-phase changes along with the in-phase. It would thus seem the responses are due to one or a series of subcropping (but very near surface) conductive bands.

The conductor(s) at the north end of line 5600W are the strongest on the grid. Line 5800W shows a weak continuation of this conductor which dies out completely at line 6000W (or possibly occurs further north of where the line was surveyed). The interpretation of the 444 Hz data on line 5600W gives a conductive zone which is 190 metres wide. It should be pointed out that this conductor is most likely not continuous over the entire 190 metre width, indicated by an irregular in-phase and out-of-phase curve shape in the trough or negative part of the conductor readings. The interpretation of the 3555 Hz data of this zone gives a width of 100 metres.

CONCLUSIONS AND RECOMMENDATIONS

The magnetic survey did not reveal anomalies of any significance. Any further magnetic surveying should be carried out with one of the newer digital magnetometers accurate to ± 1 gamma, capable of integrating the data with a compatible base magnetometer for drift corrections.

There is a large area of resistive ground in the central and southern grid area. The northern edge of the grid lines contain weak conductors which could indicate a change in rock type.

Respectfully submitted by: Ingo Jackisch
Ingo Jackisch, Geophysicist

Approved for Release by:
G. Harden, Manager
Exploration
Western District

IJ/cgs

Distribution:

Mining Recorder (2)
Western District (1)
Geophysics File (1)
Geologist D.R. (1)

APPENDIX 1

STATEMENT OF EXPENDITURES

1.	Surveying Costs		
	10 km @ $296/km		$2,960
2.	Domicile		
	I. Jackisch: 7 days @ $95/day	665	
	T. Wong: 8 days @ $95/day	760	
	M. Allen: 8 days @ $95/day	760	
		2,185	2,185
3.	Helicopter		
	2 hours @ $542/hour		1,084
		TOTAL	$6,229

APPENDIX II

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

I, INGO JACKISCH, OF 424 SOMERSET STREET, IN THE CITY OF NORTH VANCOUVER, IN THE PROVINCE OF BRITISH COLUMBIA, DO HEREBY CERTIFY:

1) THAT I graduated from the University of B.C. in 1975 with a B.Sc. in geophysics;

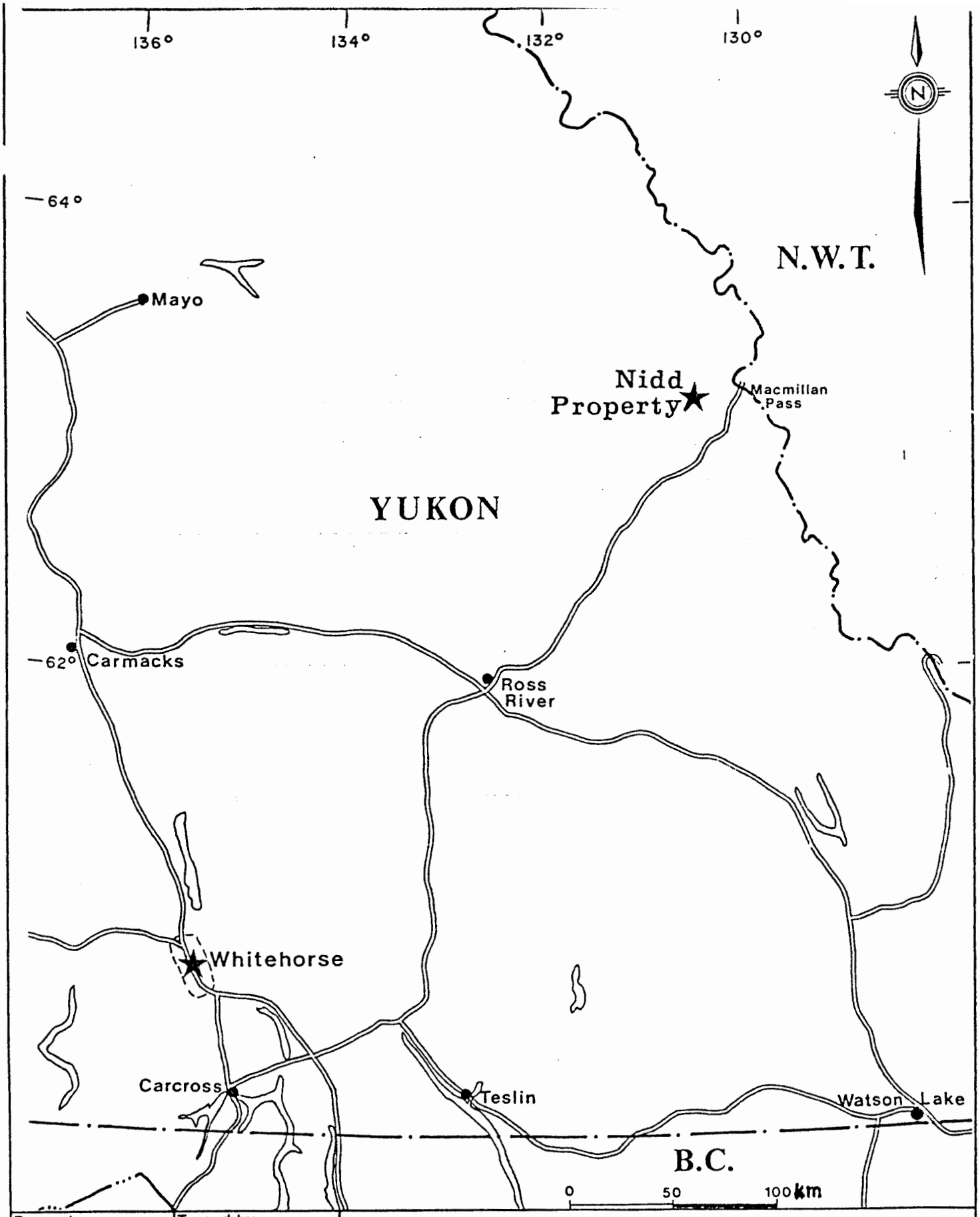
2) THAT I have been practising my profession for the past nine years.

3) THAT the attached statement of expenditures of Appendix I is true and accurate to the best of my knowledge, information, and belief.

Ingo Jackisch

Ingo Jackisch, Geophysicist

28 November 1983

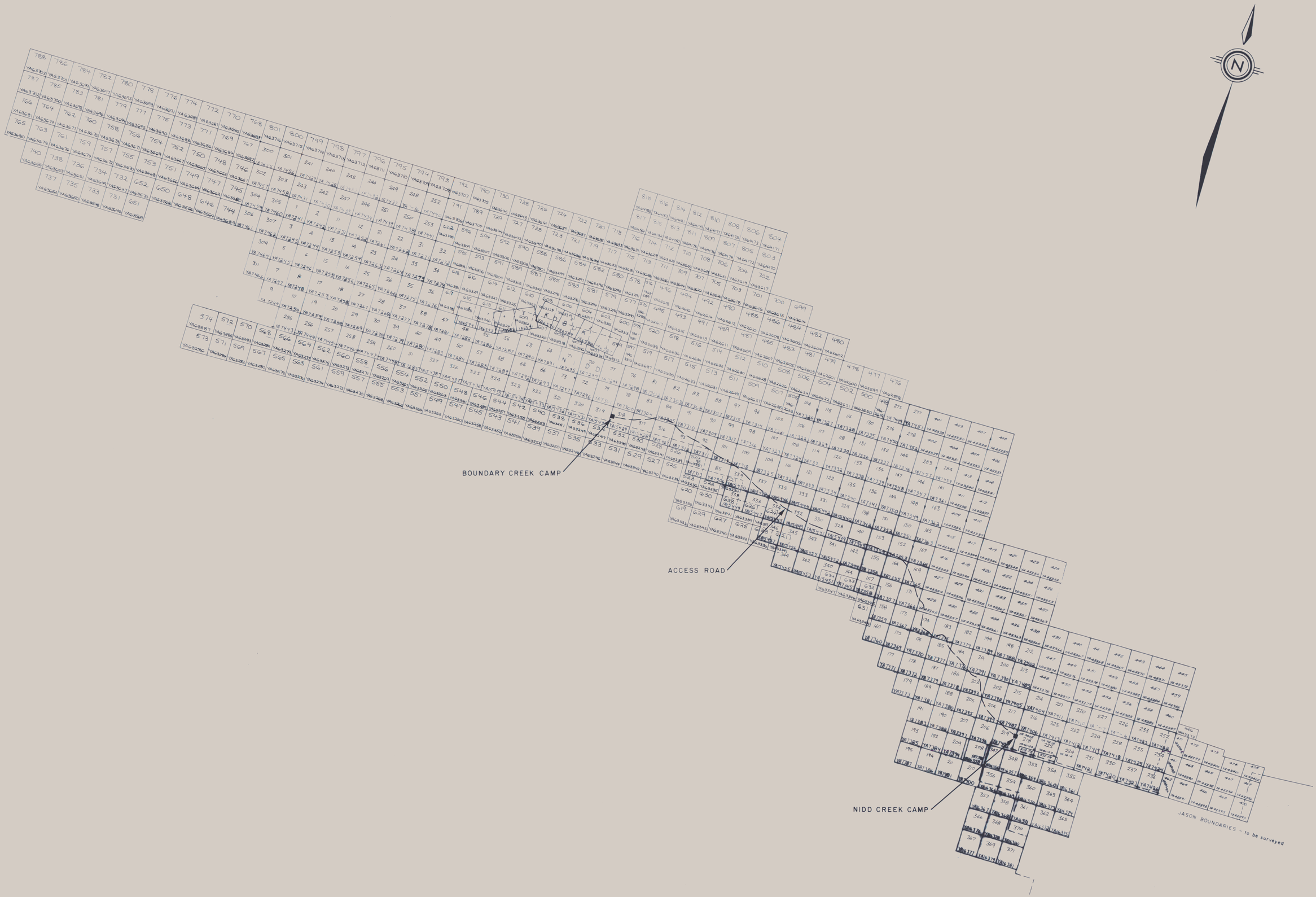


Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

ELEVEN CK — NIDD PROPERTY LOCATION MAP
MAYO M.D., YUKON

Scale: 1 : 2,500,000 | Date: DECEMBER '83 | Plate: 252-83-1

210-0610



0 1
Mile

105 O/2

NIDD

Drawn by:	Traced by: SAW
Revised by / Date	Revised by / Date

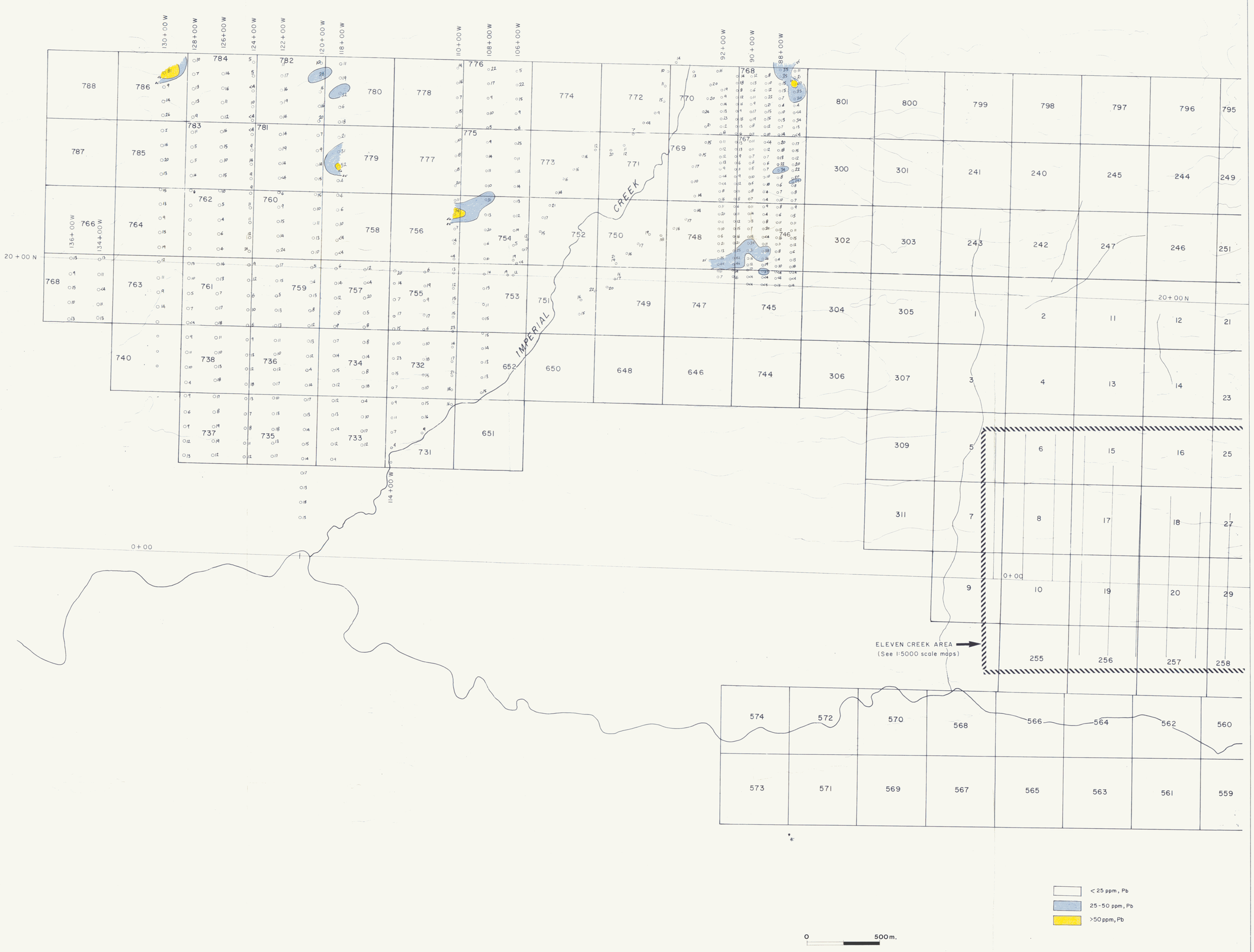
ACCESS ROAD LOCATION

Scale: 1/2 mile = 1" | Date: September 1981 | Plate: 1

NCI-119-O.L.

FORM 210 3860

091509



NIDD PROPERTY

SOIL GEOCHEMISTRY

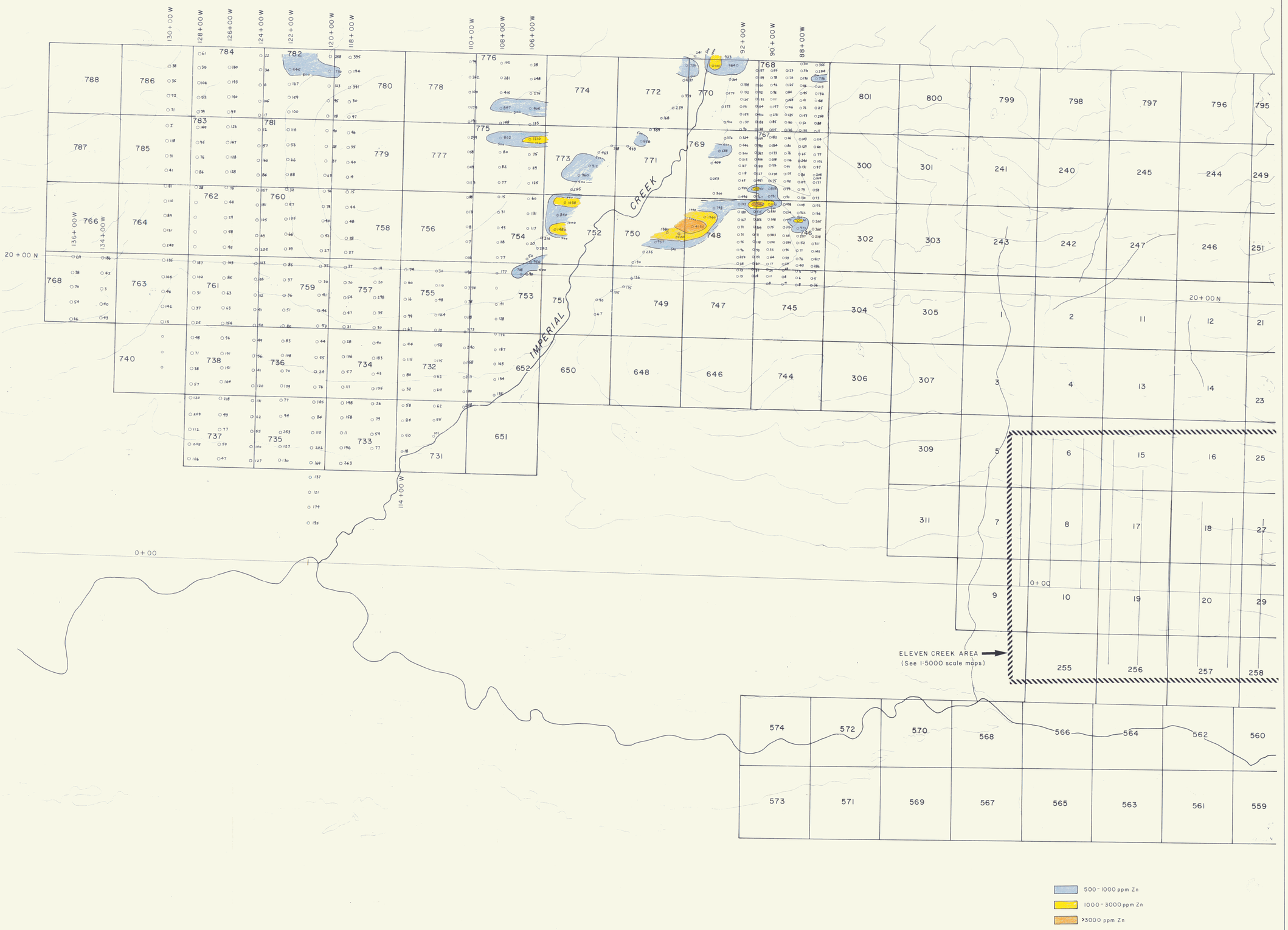
LEAD, ppm

McElhanney

1:10,000

Plate 2

091509



McElhanney

McElhanney Surveying & Engineering Ltd

1:10,000

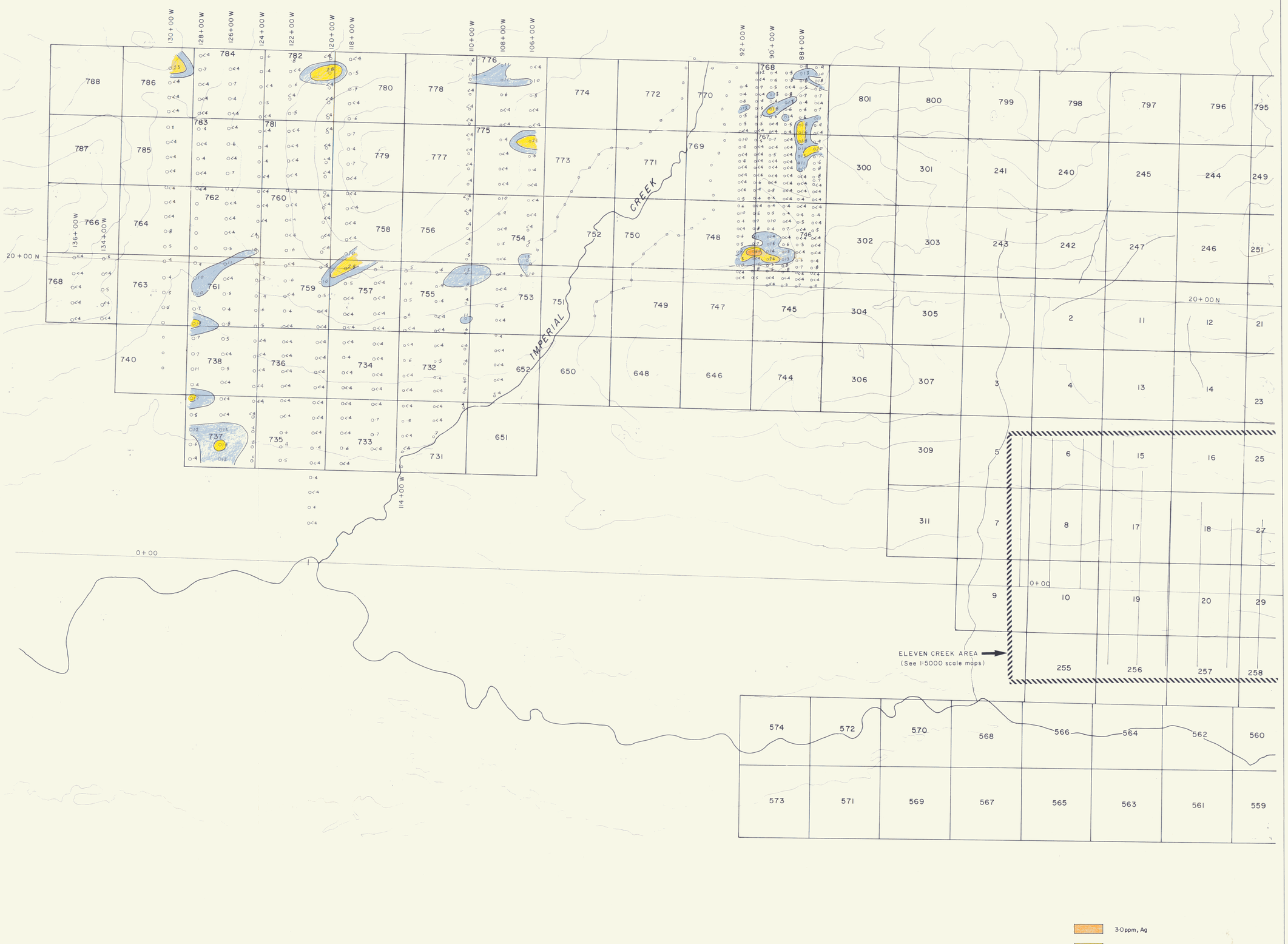
NIDD PROPERTY

SOIL GEOCHEMISTRY

ZINC, ppm

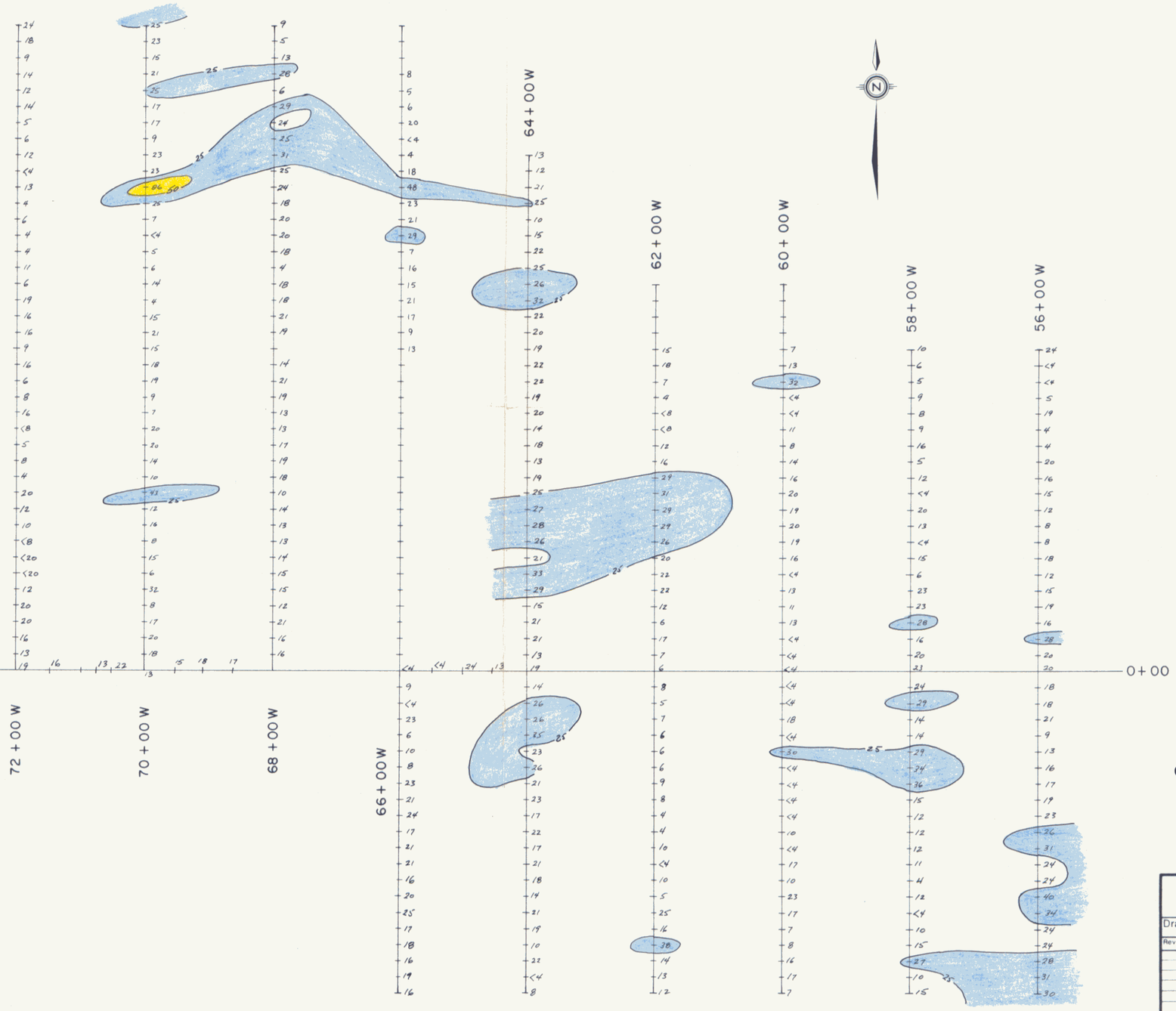
Plate 3

091509



SHEET INDEX	McElhanney	McElhanney Surveying & Engineering Ltd	NIDD PROPERTY SOIL GEOCHEMISTRY SILVER, ppm
		1:10,000	Plate 4

091509



LEGEND

- 0 - 25 ppm Pb
- 25 - 50 ppm Pb
- > 50 ppm Pb

0 200m.

N.T.S. 105 O/2

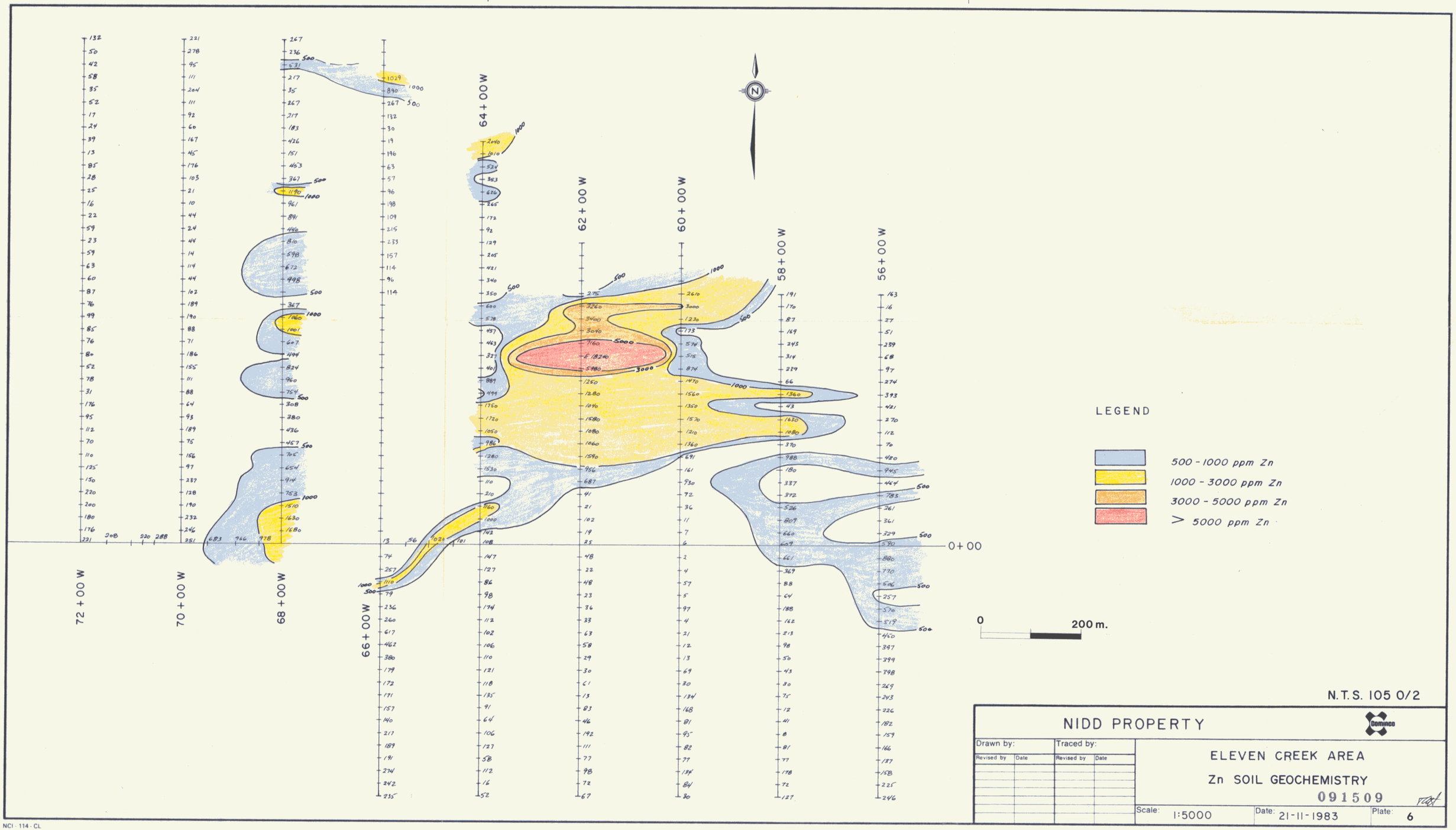
NIDD PROPERTY

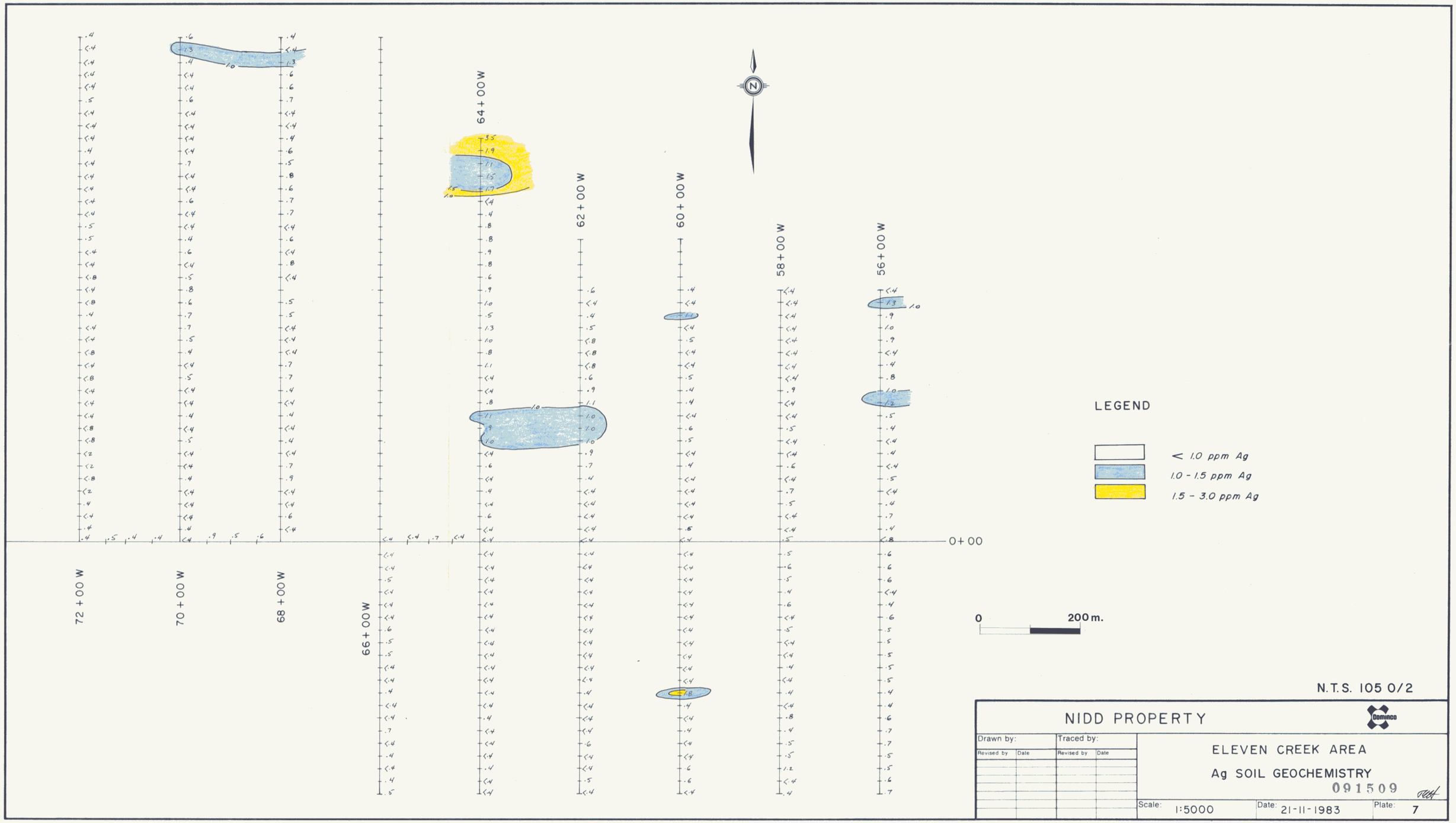
Cominco

Drawn by:		Traced by:		ELEVEN CREEK AREA
Revised by	Date	Revised by	Date	Pb SOIL GEOCHEMISTRY
				091509
				Scale: 1:5000 · Date: 21-11-1983 · Plate: 5

NCI - 114 - CL

#210-0640


72 + 00 W
70 + 00 W
68 + 00 W
66 + 00 W
64 + 00 W
62 + 00 W
60 + 00 W
58 + 00 W
56 + 00 W
0 + 00
N
LEGEND
500 - 1000 ppm Zn
1000 - 3000 ppm Zn
3000 - 5000 ppm Zn
> 5000 ppm Zn
0
200 m.
N.T.S. 105 O/2
NIDD PROPERTY
Drawn by:
Traced by:
Revised by
Date
ELEVEN CREEK AREA
Zn SOIL GEOCHEMISTRY
091509
Scale: 1:5000
Date: 21-11-1983
Plate: 6
#210-0640
NCI - 114 - CL



N.T.S. 105 O/2

NIDD PROPERTY

Dominco

Drawn by:		Traced by:		ELEVEN CREEK AREA
Revised by	Date	Revised by	Date	Ag SOIL GEOCHEMISTRY
				091509
				Scale: 1:5000 · Date: 21-11-1983 · Plate: 7

NCI - 114 - CL

#210-0640

DRILL COLLAR LOCATIONS

From	To	Length	Bearing
I.P. Nidd 316	NB82-1	700 m	19°
	NB82-2	425 m	13°
	NB82-3	225 m	0°
	NB82-4	125 m	270°
	NB83-5	535 m	300°
	NB83-6	750 m	345°
	NB83-7	580 m	325°
	NB83-8	930 m	285°
	NB83-9	1300 m	300°

LEGEND

- Trenches
- Diamond Drill Holes
- Approximate Claim Post Position

100 50 0 100 200
Meters

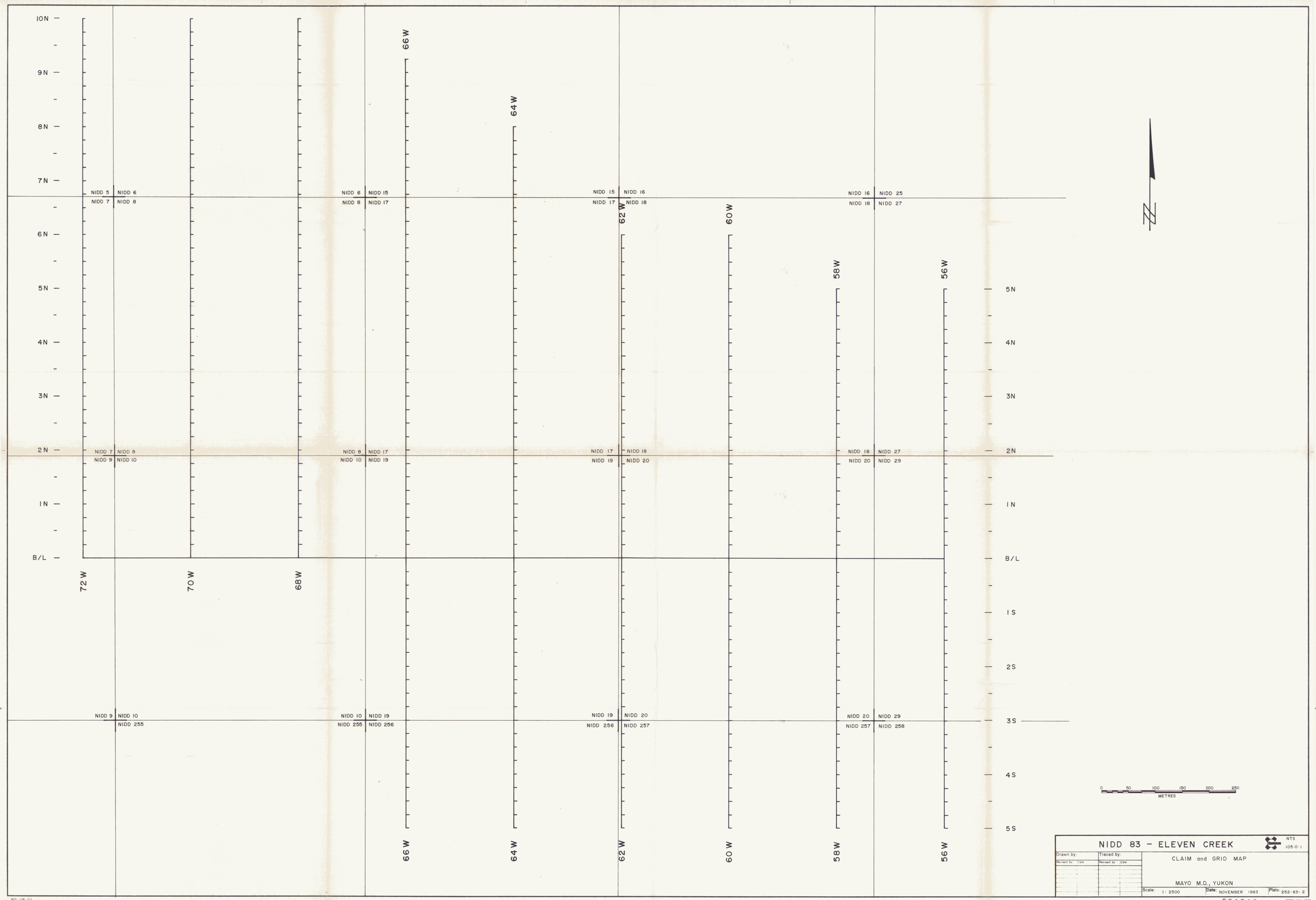
091509

NIDD PROPERTY

Drawn by: M.J.H. Traced by: J.W.

Boundary Creek Area
Drilling and Trenching - 1983

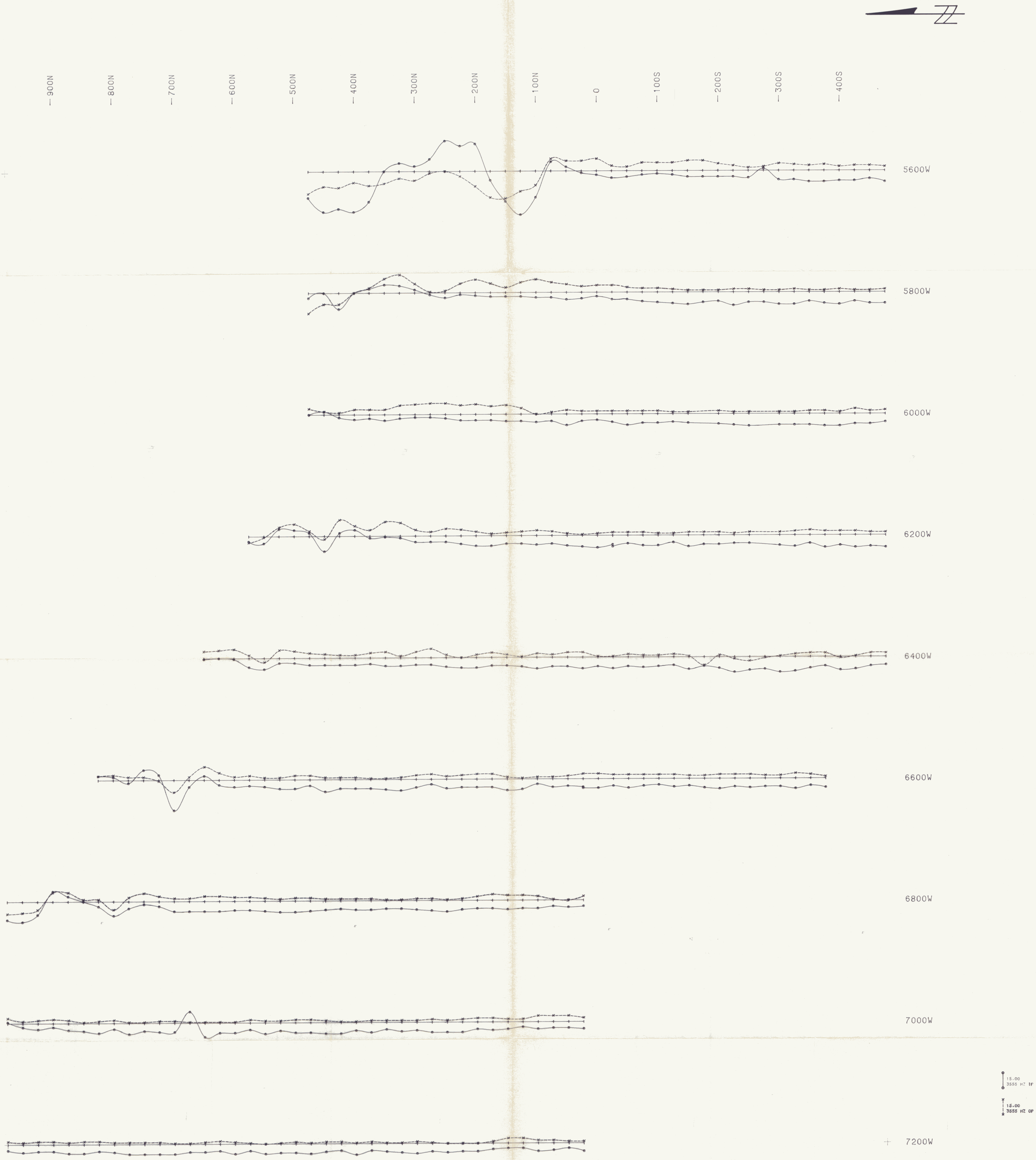
Scale: 1:5,000 Date: NOV 1982 Plate: 8



NCI-118-C.L.

FORM 210-0870

091509



NIDD 83 HLEM - ELEVEN CREEK - COIL SEP - 50M 3555 HZ IP
3555 HZ OP

0 50 100 250
METRES

NIDD PROPERTY - ELEVEN CREEK

NTS 105·0·1

Drawn by:	Traced by:	HLEM - MAX MIN II 3555 Hz IP and OP 50 metre COIL SEPARATION MAYO M.D., YUKON 091509
Revised by / Date	Revised by / Date	Scale 1: 2500 · Date DECEMBER 1983 · Plate 252-83-4

BASE LEVEL : 58,800 Gammas

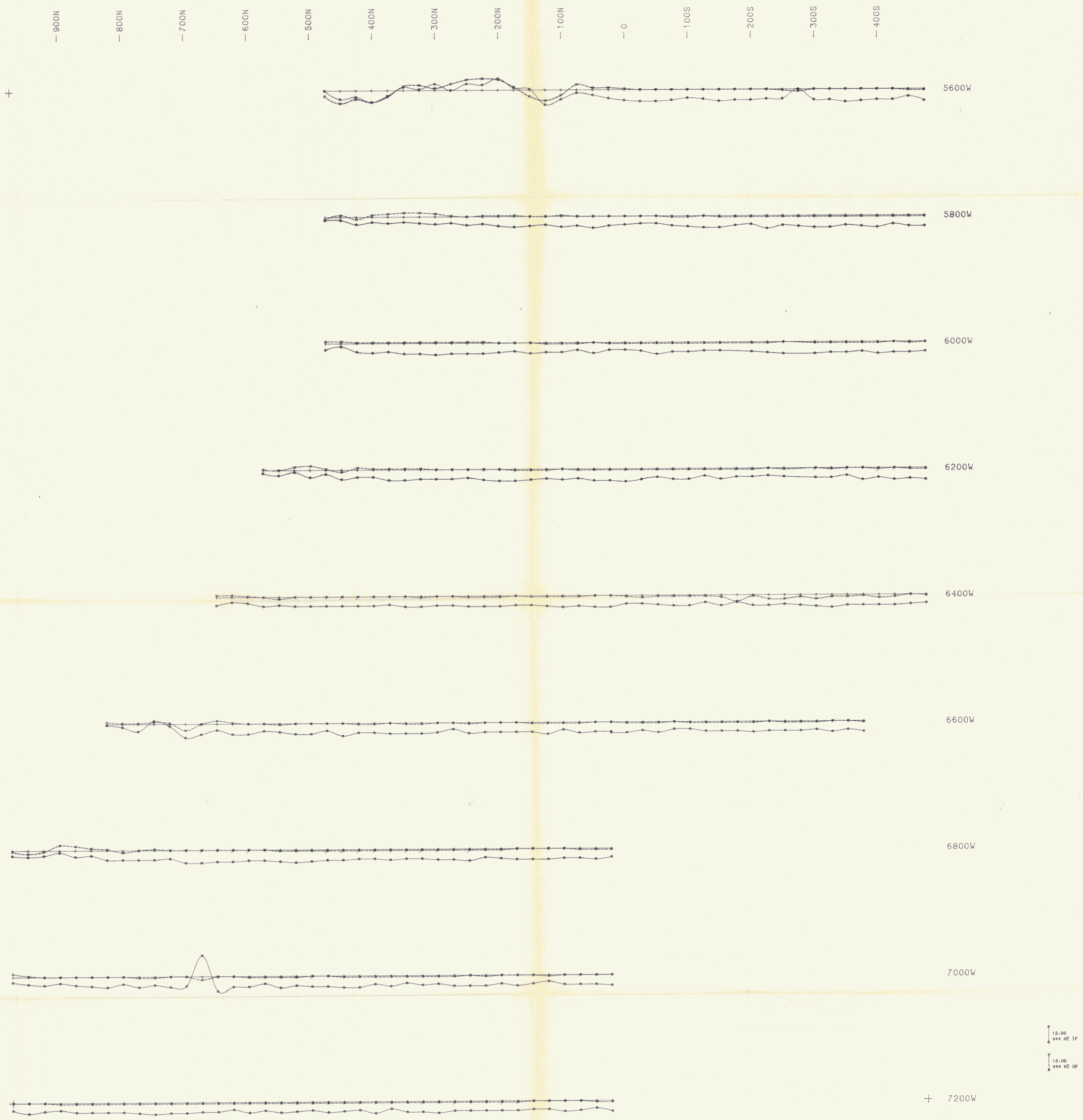
INSTRUMENT : SCINTREX MP-2 PROTON PRECESSION MAGNETOMETER

0 50 100 150 200 250
METRES

NIDD 83 - ELEVEN CREEK	NTS 105·O·1
Drawn by: / Revised by: Date	Traced by: / Revised by: Date
MAGNETOMETER SURVEY	
MAYO M.D., YUKON	091509
Scale: 1 : 2500	Date: NOVEMBER 1983 / Plate: 252-83-3

NCI - 118 - C.L.

FORM 210 - 0870



NIDD 83 HLEM - ELEVEN CREEK - COIL SEP = 50M 444 HZ IP
444 HZ OP

0 50 100 250
METRES

NIDD PROPERTY - ELEVEN CREEK

NTS 105-O-1

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

HLEM - MAX MIN II
444 Hz IP and OP
50 metre COIL SEPARATION

MAYO M.D., YUKON

091509

Scale	Date	Plate
1: 2500	DECEMBER 1983	252-83-5