

SULLIVAN MINE

COMINCO LTD.

KIMBERLEY, B.C.

GOLF 2, FAL 10, FAL 12 GROUP ASSESSMENT REPORT

The following report describes the results of drilling diamond drill holes 6444, a 117-metre hole, 6445, a 127-metre hole and 6446, a 167-metre hole, in the Kimberley area on the Golf 2, Fal 10 and Fal 12 mineral claims in the Fort Steele Mining Division.

FORT STEELE M.D.

The N.T.S. Location is 82 G/12

D.D.H. 6444	Latitude	49°38'10"N
	Longitude	115°54'30"W
D.D.H. 6445	Latitude	49°38'45"N
	Longitude	115°54'00"W
D.D.H. 6446	Latitude	49°37'23"N
	Longitude	115°57'15"W

Cominco Ltd., owner of the claims, was the operator of the exploration program.

A.S. Hagen is author of this report

Date of submission: November, 1981

Endorsed For
Release By:

J.M. Hamilton
J.M. Hamilton, P. Eng.
Chief Geologist, Kimberley

9711

COMINCO LTD.

GOLF 2, FAL 10, FAL 12 GROUP

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INTRODUCTION

(i) Specific Locations

D.D.H. 6444 is located 1830 m SSW of Lone Pine Hill, 7.5 km from downtown Kimberley. Access to the site is by way of Stirton Road, off the main Kimberley-Cranbrook highway 95, one km east of Marysville (South Kimberley). The hole is collared on land owned by Cominco Ltd.

D.D.H. 6445 is located on the west flank of Lone Pine Hill, seven km south-east of downtown Kimberley. Access to the site is by way of Pighin Road, off the main Kimberley-Cranbrook highway 95 at Wycliffe. The hole is collared on private land owned by Mr. Ray Van Steinburg, Wycliffe.

D.D.H. 6446 is located seven km south of downtown Kimberley, on the south side of St. Mary River. Access to the site is by way of gravel logging road, off the main Kimberley-Cranbrook highway 95 at Wycliffe. The hole is collared on land owned by Cominco Ltd.

(ii) Property Definition

The property being investigated forms part of the Sullivan Mine claim group, owned by Cominco Ltd. Cominco has operated the Sullivan Mine for about 75 years. The Sullivan orebody is one of the largest base metal deposits in British Columbia and has contributed a major portion of the mineral wealth generated in the province.

(iii) Three holes are being reported on in this report. D.D.H.'s 6444 and 6445 were drilled using N wireline tools, 7.6 cm in diameter yielding core 4.8 cm in diameter. D.D.H. 6446 was abandoned in overburden.

(iv) D.D.H. 6444 was collared on the Fal 10 mineral claim.

D.D.H. 6445 was collared on the Fal 12 mineral claim.

D.D.H. 6446 was collared on the Golf 2 mineral claim.

DETAILED TECHNICAL DATA AND INTERPRETATION

D.D.H. 6444

(i) Purpose

The purpose of D.D.H. 6444 was to test a horizontal loop electromagnetic geophysical anomaly.

(ii) Results

The target zone was tested. No cause for the geophysical response, other than a fault zone, was apparent.

(iii) Interpretation

<u>0-3 m</u>	Overburden
<u>3-56 m</u>	Middle Aldridge sediments ranging from thinly-laminated to thick beds of quartzarenites, quartzwackes, quartzitic wackes, wackes and sub-wackes and argillites. Minor pyrrhotite-pyrite mineralization.
<u>56-87 m</u>	Lithology similar to previous footage with numerous lamprophyre dikes. Fault 85.5 to 87.
<u>87-117 m</u>	Lower Aldridge sediments ranging from thinly-laminated to thin beds of wackes, sub-wackes and argillites.

(iv) Conclusion

The cause of the geophysical response appears to be a fault zone intersected at the target depth.

No mineralization of economic value was intersected.

D.D.H. 6445

(i) Purpose

The purpose of D.D.H. 6445 was to test a horizontal loop electromagnetic geophysical anomaly.

(ii) Results

The target zone was tested. No cause for the geophysical response, other than a fault zone, was apparent.

(iii) Interpretation

<u>0-7 m</u>	Overburden
<u>7 65 m</u>	Middle Aldridge sediments ranging from thinly-laminated to thick beds of quartzarenites, quartzwackes, quartzitic wackes, wackes, sub-wackes and argillites. The ground from 36 to 65 m is well-fractured and bleached in part.
<u>65-75 m</u>	Fault zone, gouge and broken core.
<u>75-127 m</u>	Lower Aldridge sediments ranging from thinly-laminated to thin beds of wackes, sub-wackes and argillites. Rare medium bed of quartzitic wacke.

(iv) Conclusion

The cause of the geophysical response appears to be a fault zone intersected at the target depth.

No mineralization of economic value was intersected.

D.D.H. 6446

(i) Purpose

The purpose of D.D.H. 6446 was to test the Sullivan horizon south of the Sullivan orebody.

(ii) Results

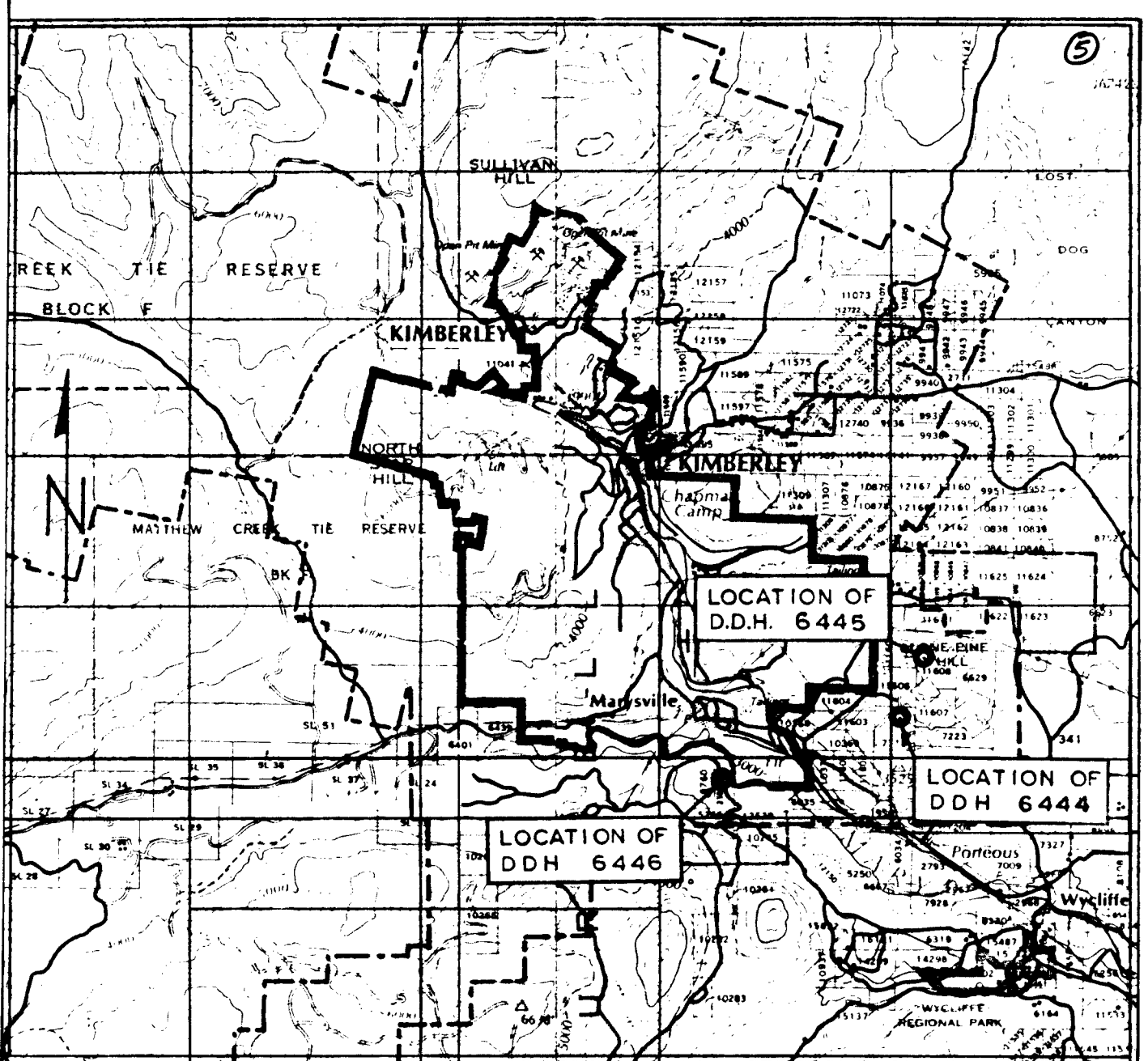
Due to extreme drilling difficulties in thick overburden, the hole was abandoned before reaching bedrock.

(iii) Interpretation

0-167 m Overburden

(iv) Conclusion

N.A.



0 5 km

SULLIVAN MINE KIMBERLEY, B.C.



INDEX MAP

LOCATION OF D.D. HOLES 6444, 6445 and 6446

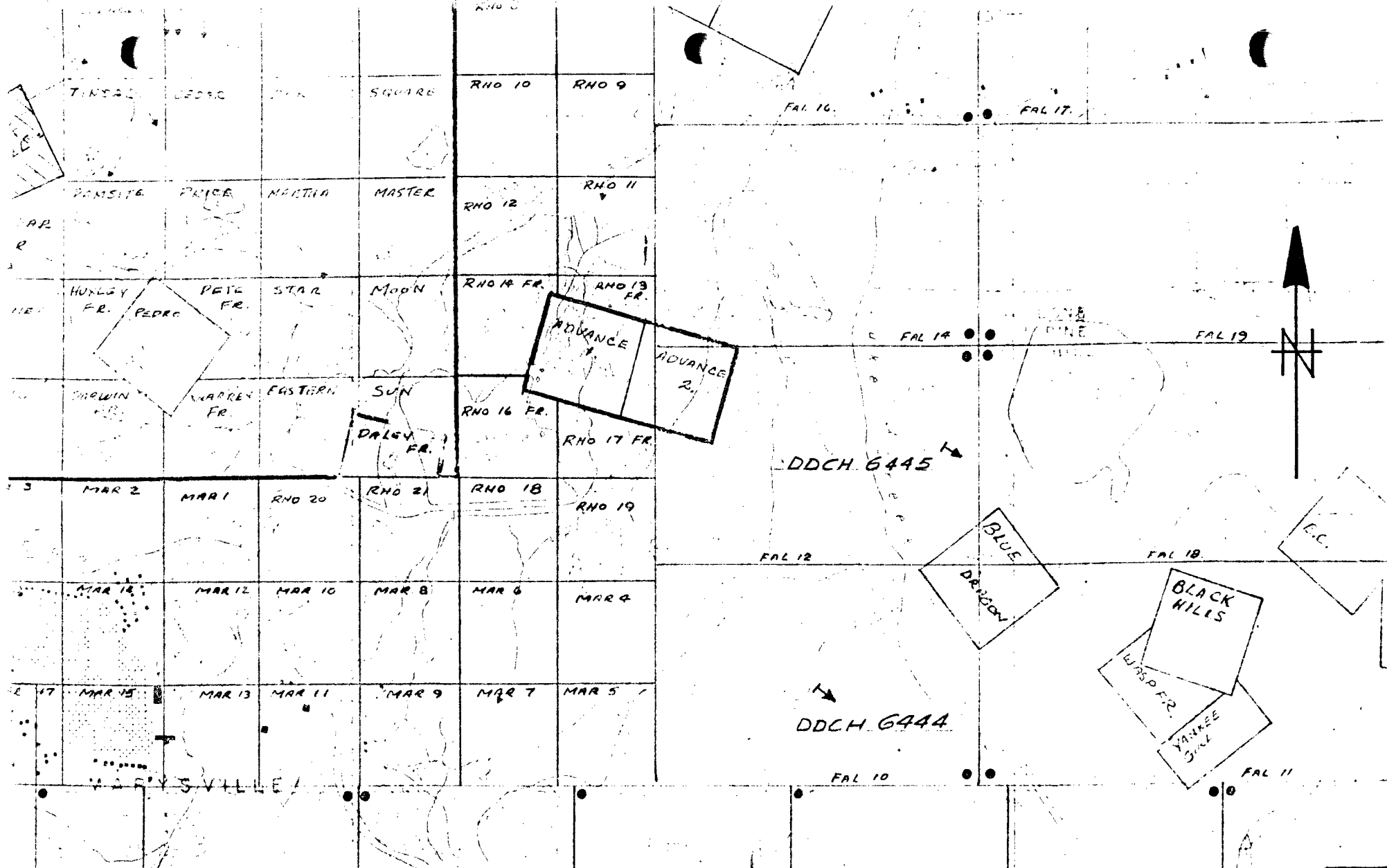
NTS 82 F/NE

Iss'd To:	Date:

Drawn by: L.H.C. Scale: 1:125,000

Date: October 1981

Plate: FIG. 1



COMINCO LTD.

LOCATION of D.D.CH 6444, 45, 46

SCALE 1:24000

AUB 81/11/2

DD 6446

GOLF 2

GOLF 3

FAL 5

FAL 6

6

AUTHOR'S QUALIFICATIONS

As author of this report, I, Arthur S. Hagen certify that:

I am employed by Cominco Ltd. as a Senior Geological Technician active in minerals exploration.

I have been continuously engaged in mining and exploration geology for the past 24 years.



A.S. Hagen
Sr. Geological Technician

SULLIVAN MINE

COMINCO LTD.

KIMBERLEY, B.C.

GROUP RECAPITULATION

DDCH 6444	\$17,847
6445	18,007
6446	39,776
	<hr/>
TOTAL COST	\$75,630

SULLIVAN MINE

COMINCO LTD.

KIMBERLEY, B.C.

COST SUMMARY

DD 6444 - 384

Start: July 16, 1981

Contractor: Longyear Canada Inc.

Finish: July 20, 1981

Location : Lone Pine Area, Kimberley

FOOTAGE

0-6	OB @ \$28.75	\$ 172.50	
6-384	NQ @ \$26.45	<u>9998.10</u>	\$ 10,170.60

HOURLY CHARGES

Travel Time		616.00	
Water Line		<u>448.00</u>	1,064.00

MATERIALS

3 NW 2' casing @ \$38.96		116.88	
1 NW Shoe		<u>148.40</u>	265.28

MUD

24 bags (Cominco @ \$6.00)		<u>144.00</u>	144.00
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MOVING CHARGES

Hourly		3864.00	
MOB/DEMOB @ \$1.81/ft.		<u>695.04</u>	4559.04

COMINCO CHARGES (Site Preparation)

Shops		80.00	
Tractors		315.00	
Operators		979.00	
Low Bed		<u>150.00</u>	1524.00

MISCELLANEOUS

Core boxes 20 @ \$6.01		120.20	<u>120.20</u>
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TOTAL COST			\$ 17847.12
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de.F.

COMINCO LTD.KIMBERLEY, B.C.SULLIVAN MINECOST SUMMARYDD 6445 - 422

Start: July 21, 1981

Finish: July 24, 1981

Contractor: Longyear Canada Inc.

Location : Lone Pine Area, Kimberley

FOOTAGE

0-26 OB @ \$28.75

\$ 747.50

26-422 NQ @ \$26.45

10,474.20

\$11,221.70

HOURLY CHARGES

Travel Time

392.00

Reaming 2½ @ \$98.00

245.00

Water Line

406.00

1,043.00

MATERIALS

2 NW 10' casing @ \$134.36

268.72

1 NW Shoe

148.40

1 HQ Box to NW Pin Sub

71.60

1 NQ Bit

548.55

1,037.27

MUD

22 bags Gel @ \$6.00

132.00

13 bags Tro1 @ 8.23

106.99

238.99

MOVING CHARGES

Hourly

1,778.00

MOB/DEMOB @ \$1.81/ft.

763.82

2,541.82

COMINCO CHARGES (Site Preparation)

Shops

9.00

Tractors

435.00

Operators

979.00

Low Bed

369.00

1,792.00

MISCELLANEOUS

Core boxes 22 @ \$6.01

132.22

132.22

TOTAL COST

\$18,007.00

COMINCO LTD.

SULLIVAN MINE

KIMBERLEY, B. C.

COST SUMMARY

DD 6446 - 549' OB

Start: August 15, 1981

Contractor: Kootenay Well Drilling
& Longyear Canada Inc.

Finish: Sept. 4, 1981.

Location: St. Mary River - Kimberley

FOOTAGE

0-260	OB @ \$18.00 (KWD)	\$4,680.00	
260-549	OB Longyear - Hourly Rate		\$ 4,680.00

HOURLY CHARGES

Rig Time (Koot. Well Drill)	2,750.00	
Travel Time	1,456.00	
Reaming	1,960.00	
Casing	2,107.00	
Drilling	12,614.00	
Waterline	<u>231.00</u>	\$21,118.00

MATERIALS

1 advancer sleeve	280.84	
6 3-7/8 Tricone bits	1,389.30	
1 4-3/4 Tricone bit	267.44	
1 HQ Bit	1,054.44	
2 NQ bits	1,095.10	
1 NW Shoe	170.66	
1 HW Shoe	529.51	
Drive Shoe & Casing Reinforce (KWD)	<u>200.00</u>	1,304.23

MOVING CHARGES

Hourly	5,271.00	
Mob/Demob @ \$1.81/ft.	<u>993.69</u>	6,264.69

COMINCO CHARGES (Site Preparation)

Shops	13.00	
Tractors	180.00	
Operator	786.00	
Low Bed	<u>443.00</u>	1,422.00

MISCELLANEOUS

Core boxes	Nil	<hr/>
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TOTAL COST		\$ 39,776.21
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Longyear Canada Inc.

CONTRACT DRILLING DIVISION

721 Aldford Avenue
Annacis Island, New Westminster, B.C. V3M 5P5
Telephone: 604-524-2511
Telex: 43-51280

Invoice No. 1598
Cust. No. 6348
Job No. 6306
Dest. 062

Cominco Ltd.,
P.O. Box 2000,
Kimberley, British Columbia
V1A 2G3

Cominco Kimberley Shallow
Invoice date: September 11/81
for August 1981

Attention: Mr. John Hamilton

To: Invoice for diamond drilling performed on mining properties located near Kimberley, British Columbia during period July 15-August 16, 1981 per agreement dated July 15, 1981. P.O. S01012R.

Hole No.	Size	From	To	Total	Rate	Amount
6444	Overburden	0	6	6	28.75	172.50
	NQ Wireline	6	384	378	26.45	9,998.10
6445	Overburden	0	26	26	28.75	747.50
	NQ Wireline	26	422	396	26.45	10,474.20
C 81-1	Overburden	0	100	100	28.75	2,875.00
	Overburden	100	154	54	31.65	1,709.10
	NQ Wireline	154	500	346	26.45	9,151.70
		500	1000	500	29.00	14,500.00
		1000	1292	292	32.00	9,344.00
6447	Overburden	0	80	80	28.75	2,300.00
	NQ Wireline	80	500	420	26.45	11,109.00
		500	1000	500	29.00	14,500.00
		1000	1193	193	32.00	6,176.00
6446	Overburden	0	279	279	Hourly Rate	-
				<u>3570</u>		<u>93,057.10</u>

Mobilization
Lump sum 75% of 6,900.00 5,175.00

Moves
Move in to Hole 6444
21 hours @ 98.00 2,058.00
28 hours @ 28.00 784.00
2,842.00

Hole 6444 to Hole 6445
22 hours @ 98.00 2,156.00
36 hours @ 28.00 1,008.00
3,164.00

Hole 6445 to Hole C81-1
18 hours @ 98.00 1,764.00
22 hours @ 28.00 616.00
~~2,380.00~~

Longyear

Cominco Ltd.
 Invoice No. 1598
 2...

Longyear Canada Inc.

CONTRACT DRILLING DIVISION

721 Aldford Avenue

Annacis Island, New Westminster, B.C. V3M 5P5

Telephone: 604-524-2511

Telex: 43-51280

Hole C81-1 to Hole 6447

28 1/2 hours @ 98.00 2,793.00
 27 hours @ 28.00 756.00

3,549.00

Hole 6447 to Hole 6446

19 1/2 hours @ 98.00 1,911.00
 33 hours @ 28.00 924.00

2,835.00

14,770.00

Penetration of Overburden

Hole 6446

20 1/2 hours @ 98.00 2,009.00

6 hours @ 28.00 168.00

1 Advancer Sleeve 244.21

1 3 7/8" tricone 201.35

445.56

Plus 15%

66.83

512.39

2,689.39

Reaming Casing, Cave and Lost Circulation

Hole 6445

2 1/2 hours @ 98.00 245.00

1 NQ Bit GR59989 477.00

Plus 15% 71.55

548.55

793.55

Hole 6447

4 1/2 hours @ 98.00 441.00

1 NQ Bit GR44930 477.00

1 NQ Bit GR59994 477.00

1 NQ Shell E2491 196.10

1,150.10

Plus 15%

172.52

1,322.62

1,763.62

2,557.17

Longyear Canada Inc.

CONTRACT DRILLING DIVISION

721 Aldford Avenue

Annacis Island, New Westminster, B.C. V3M 5P5

Telephone: 604-524-2511

Telex: 43-51280



Cominco Ltd.
Invoice No. 1598
3...

Sperry Sun Tests

Hole C81-1
3 hours @ 98.00 294.00

Hole 6447
2 1/2 hours @ 98.00 245.00

539.00

Left in Hole

Hole 6444
3 NW 2' casing @ 38.96 ✓ 116.88
1 NW Shoe E3279 ✓ 148.40
265.28

Hole 6445
2 NW 10' casing @ 134.36 ✓ 268.72
1 NW Shoe E3251 ✓ 148.40
1 HQ box to NW pin sub ✓ 71.60
488.72

Hole C81-1
~~2 NW 2' casing @ 38.96 77.02~~
~~15 NW 10' casing @ 134.36 2,015.40~~
~~1 NW Shoe E3239 148.40~~
~~1 HQ box to NW pin sub 71.60~~
~~2,313.22~~

Hole 6447
8 NW 10' casing @ 134.36 ✓ 1,074.88
1 NW Shoe Econo ✓ 148.40
1 HQ box NW pin sub ✓ 71.60
1,294.88

4,362.20

Travel Time

Hole 6444
26 hours @ 28.00 ✓ *# of charges about 6445* 728.00

Hole 6445
10 hours @ 28.00 ✓ 280.00

Hole C81-1
~~51 hours @ 28.00 ✓ 1,428.00~~



Longyear Canada Inc.

CONTRACT DRILLING DIVISION
 721 Aldford Avenue
 Annacis Island, New Westminster, B.C. V3M 5P5
 Telephone: 604-524-2511
 Telex: 43-51280

Invoice No. 1599
 Cust. No. 6348
 Job No. 6306
 Dest. 062

Cominco Ltd.,
 P.O. Box 2000,
 Kimberley, British Columbia
 V1A 2G3

Cominco Kimberley Shallow
 Invoice date: September 14/81
 for August 1981

Attention: Mr. John Hamilton

To: Invoice for diamond drilling performed on mining properties located near Kimberley, British Columbia during period August 17-31, 1981 per agreement dated July 15, 1981, P.O. S01012R.

Hole No.	Size	From	To	Total	Rate	Amount
6446	Overburden	279	549	270	Hourly Rate	-
<u>Penetration of Overburden</u>						
<u>Hole 6446</u>						
	148 hours @ 98.00					14,504.00
	1 4 3/4" tricone		232.56	-		
	5 3 7/8" tricones @ 201.35	1,006.75		-		
	1 HQ Bit C065813		916.90			
	1 NQ Bit GR59991		477.00	✓		
	1 NQ Bit GR44929		477.00	✓		
	1 NW Shoe E3291		148.40	✓		
	1 HW Shoe HS97789 (Aug. 15 revised)		460.44	✓		
			<u>3,718.65</u>			
	Plus 15%		<u>557.80</u>			
					<u>4,276.45</u>	18,780.45
<u>Moves</u>						
<u>Hole 6446</u>						
	3 1/2 hours @ 98.00				343.00	
	6 hours @ 28.00				<u>168.00</u>	511.00
<u>Travel Time</u>						
<u>Hole 6446</u>						
	32 hours @ 28.00					896.00
						<u>20,187.45</u>

Charged 6,112.46

*approved &
 to Warehouse Sept 26/81*



Longyear Canada Inc.
 CONTRACT DRILLING DIVISION
 721 A. J. R. Avenue
 Annacis Island, New Westminster, B.C. V3M 5P5
 Telephone: 604-524-2511
 Telex: 43-51280

Cominco Ltd.
 Invoice No. 1598
 4...

✓	Hole 6447		
	32 hours @ 28.00		896.00
✓	Hole 6446		
	8 hours @ 28.00		224.00
			<u>3,556.00</u>
			<u>\$126,705.86</u>

Charge :
 6112 \$ 76,212.87

Cranbrook (Vanc) 113-130-W068
 \$ 50,492.99

Approved &
 To Warehouse Sept 28/81



Kootenay Well Drilling

Phil - Ron Enterprises Ltd.
2709 Woodland, N.W.
Calgary, B.C. T1C 4R3
Phone: 428-8484

No. 1063

Date 8-5-81

Sold To: Camarco Well
#6446

Quantity	Description	Price	Amount
1	drive shoe + casing reinforcement	30/15	200.00
160'	6" drilling	12/15	4680.00
250'	6" drilling rig time costs (2 shifts)	(11/15)	2750.00
Process at \$10.86 per foot as casing costs are \$7.16 per foot.			
OK to pay			
Paul Ranson			
To Acc Aug 81			
Paid Aug 81			
Total			7630.00

TERMS: 3% charged on overdue accounts over 30 days.

Diamond Drill Geological Log For D.D.H.

6444



LAT -18602.39 DEP. 27,327.13 ELEV. 3269.24'
 DIP: -45° AZIM: 310° LENGTH: 384'
 HORIZ. COMP. 271.5' VERT. COMP. 271.5'
 DATE COLLARED: 17/7/81 DATE COMPLETED: 19/7/81
 CORE STORAGE: Open Pit Storage Area
 DRILLED ON CLAIM(S): Fa1 10
 OBJECTIVE: Test Geophysical Anomaly

GENERAL COMMENTS: No apparent cause for geophysical response other than fault zone intersected from 281' to 285'. Lithology above fault is typical of Middle Aldridge, lithology below the fault is typical of Lower Aldridge. From 184' and below, numerous lamprophyre dikes were intersected.

PLANNED LENGTH: 300'
 TERMINATION COMMENTS: Hole stopped after Target Zone tested.

DRILLED BY: Longyear
 TYPE DRILL: A44
 CORE SIZE: NQ
 PERFORMANCE COMMENTS: Drill performed well in good to fair ground.

CASING REMAINING IN HOLE (LENGTH & SIZE): 2-3' NW
 TYPE CAP & SEALING METHOD: Screw on cap - requires pipe wrenches for removal.
 OTHER MATERIAL REMAINING IN HOLE: Nil
 SURVEY INSTRUMENT USED: Not surveyed.
 ADDITIONAL DOWN HOLE TESTS: Nil

LOG LEGEND

BED THICKNESS CLASSIFICATION

BEDS	Very Thick Bedded — 100 cm —
	Thick Bedded — 30 cm —
	Medium Bedded — 10 cm —
	Thin Bedded — 3 cm —
	Very Thin Bedded — 1 cm —
	LAMINAE
Thinly Laminated	

LITHOLOGY ABBREVIATIONS

OQ - Orthoquartzite
 QA - Quartz Arenite
 QW - Quartz Wacke
 QCW - Quartzitic Wacke
 W - Wacke
 SW - Sub Wacke
 AG - Argillite

D.D.H. 6444

Diamond Drill Geological Log



Objective: Test Geophysical Anomaly		Sampled: Nil		40 Scale	
Logged By: A.S. Hagen		Date: July 1981		Color Plot & Dips	
Block:		Composites: Nil		Ore Classes & Aver	
Sect.: 18000 S		Place: Fal 10 GRP. M.C.		0	
App. Bear: N50°W		App. Dip: -45°		Length: 384'	
Reason:					
From	To				
0	9'	Overburden.			
9'	19'	Thinly laminated to thin-bedded sediment, W-SW-A. Some narrow, calcareous, thinly laminated sections, display crossbedding in part. Bedding 72° to core.			
19'	184'	Medium-thick bedded sediment, QA-QW-QcW. Thinly laminated to thin-bedded interbeds of W-SW-A, similar to those from 9' to 19'. Beds commonly change abruptly from quartzite to narrow SW-A tops. Occasional lensey, light grey calcareous material with pyrrhotite flecks (1/4"-3/4"). Moderately disrupted beds in part, some offsets along healed fracturing. Minor pyrrhotite and pyrite fracture mineralization, chloritized and biotitized in part. Bedding to core: 20'-70°, 77'-77°, 102'-75°, 131'-55°, 172'-68°.			
184'	281'	Similar lithology as above (19'-184') with irregular, lamprophyre dikes as follows: 184'-187' (top and base 15° to core), 195'-197' (top 10° to core, base broken), 197-1/2'-203' (top 20°, base 20° to parallel to 10° to core, downwards), 210' (3" dike 20° to 25° to core), 215'-218' (top broken, base 25° to core), 219'-227' (top 25°, base 45°-50° to core, includes fragmented sediments in part, unusual alteration effect at top), 232-1/2-234' (irregular top, base 10° to core), 251'-252-1/2' (25° to core), 253'-254' (top 35°, base 25° to core), 256'-257' (25° to core), 259' (irregular, erratic intrusion, varying in thickness, 3" to 1' in core intersection). Sediments in intrusive zone are disrupted, brecciated in part (e.g. 247'-249', breccia), some chloritization, biotitization. Siliceous segments below 162' are generally finer grained than those above. Bedding to core: 231'-80°, 247'-50°, 268'-70°.			
		Core Size			
		NQ			
		Hole No.		Page	
		6444		1	

Diamond Drill Geological Log



Objective:		Sampled:	
Logged By:		Date:	
Block:		Composites:	
Sect.:	Place:	App. Bea.:	App. Dip.:
From:	To:	Reason:	
281'	285'	Moderate to badly broken core. Slickensided, talc-like material at 281' indicates possible fault. Lithology of broken core similar to above.	
285'	384'	Thinly laminated to thin-bedded sediment, W-SW-A. Some broken core (fracturing) occasionally. Narrow pyrrhotite-pyrite spotted beds becoming abundant (more typical of Lower Aldridge lithology) occurring in coarser grained, more siliceous type sediment. Occasional, irregular contact. Lamprophyre dikes as follows: 297'-299' (25°-35° to core, some sediment fragments), 311'-313' (top broken, base 25° to core), 314' (6" dike 35° to core), 316'-318' (top 60° to core, base broken), 344' (3"-35° to core), 376' to 383.5' (4' core loss - porous, finer grained material, partially disintegrating, top 20° to core). Hole ended in approximately 0.5' of sediment, wacke (broken). Bedding to core: 294-75°, 302'-65°, 332'-75°, 360'-70°.	
End D.D.H. 6444			
<i>W. J. Lager</i>			
		Core Size	
		NQ	
		Hole No.	Page
		6444	2

40 Scale
Color Plot & Dips
Ore Classes & Aver
0

Diamond Drill Geological Log For D.D.H.

6445



LAT -15,030.00 DEP 29,180.00 ELEV. 3386.17'
 DIP: -50° AZIM.: 300° LENGTH: 422'
 HORIZ. COMP. 271.3' VERT. COMP. 323.3'
 DATE COLLARED: 20/7/81 DATE COMPLETED: 24/7/81
 CORE STORAGE: Open Pit Storage Area
 DRILLED ON CLAIM(S): Fa1 12
 OBJECTIVE: Test Geophysical Anomaly

PLANNED LENGTH: 300'
 TERMINATION COMMENTS: Hole Stopped After Target Zone Tested.

DRILLED BY: Longyear
 TYPE DRILL: A44
 CORE SIZE: NQ
 PERFORMANCE COMMENTS: Drill performed well in good to fair ground.
 Broken ground caused short runs in part.

CASING REMAINING IN HOLE (LENGTH & SIZE): 2 - 10' HQ
 TYPE CAP & SEALING METHOD:
 OTHER MATERIAL REMAINING IN HOLE: Nil
 SURVEY INSTRUMENT USED: Not surveyed
 ADDITIONAL DOWN HOLE TESTS: Nil

GENERAL COMMENTS:
 No apparent cause for geophysical response, other than broken, faulted zones between 120' and 247'. Lithology above 247' is typical of Middle Aldridge, lithology below 247' is typical of Lower Aldridge.

LOG LEGEND

BED THICKNESS CLASSIFICATION

BEDS	Very Thick Bedded
	100 cm
	Thick Bedded
	30 cm
	Medium Bedded
	10 cm
LAMINAE	Thin Bedded
	3 cm
	Very Thin Bedded
	1 cm
LAMINAE	Laminated
	0.3 cm
	Thinly Laminated

LITHOLOGY ABBREVIATIONS

QQ - Orthoquartzite
 QA - Quartz Arenite
 QW - Quartz Wacke
 QCW - Quartzitic Wacke
 W - Wacke
 SW - Sub Wacke
 AG - Argillite

D.D.H. 6445

Diamond Drill Geological Log



Objective: Test Geophysical Anomaly		Sampled: Nil		40 Scale	
Logged By: A.S. Hagen		Date: July 1981		Color Plot & Dips	
Block:		Composites: Nil		Ore Classes & Aver	
Sect: 14000S		Place: Fal 12 GRP. M.C.		App. Dip: -50°	
App. Bear: N60° W		Length: 422'		0	
From	To	Reason:			
0	24'	Overburden.			
24'	42'	Medium-thick bedded sediment, QA-QW-QcW. Abrupt changes from quartzitic sedimentsto SW-A tops. Bedding 80° to core.			
42'	68'	Thinly laminated to thin-bedded sediment, QcW-W-SW-A. Irregularities caused by offsets along tight, healed fracturing. Spotty pyrrhotite-pyrite in light grey, siliceous segments common. Bedding 75° to core at 50'.			
68'	104'	Medium-thick bedded sediment, QA-QW-QcW. Interturbidite lithologies of SW-A from thinly laminated to thin bedded. Rare thin light grey, pyrrhotite-pyrite spotted beds. Some irregular bedding features similar to 42'-68'. Shattered brecciated zone (2") at 78', 40° to core. Bedding 70°-75° to core.			
104'	106'	Erratic quartz veining, vuggy segments.			
106'	120'	Medium-thick bedded sediments QW-QcW, some amalgamated beds. Interturbidite lithologies of W-SW-A, thinly laminated in part.			
120'	121'	Badly broken, bleached sediment ranging from QW to A.			
121'	123'	Well fractured, bleached QW to A, rusty fracture planes noteable.			
123'	124'	Badly broken core, some gouge.			
124'	126'	Well fractured, bleached sediment, W-SW-A. Rusty fracture planes.			
		Core Size		NQ	
		Hole No.		6445	
		Page		1	

Diamond Drill Geological Log



40 Scale

Color Plot & Dips Ore Classes & Aver

0

Objective:		Sampled:	
Logged By:		Date:	
Block:		Composites:	
Sect.:		Place:	
App. Bear.:		App. Dip.:	
Length:			
From	To	Reason:	
126'	127'	Badly broken core, some gouge.	
127'	143'	Moderately broken, erratically fractured core, rusty fracture planes. QcW-W-SW-A, irregular, disrupted bedding.	
143'	167'	Medium-thick bedded _____, QW-QcW-W. Interturbidite lithologies of SW-A. Some disrupted bedding features. Erratic, rusty fracturing less intense than in previous footage.	
167'	169'	Badly broken, bleached sediment, SW-A.	
169'	213'	Lithologies similar to 143'-167'. Disrupted features common. Slumping or folding indicated from approximately 177' to 190', disrupted bedding parallels core in part. Broken, bleached and erratically fractured W-SW-A from 199'-203'.	
213'	247'	Fault zone. Disrupted, shattered, badly to moderately broken core, chloritized in part. Rock types similar to above. Some brecciation along healed fracture planes.	
247'	422'	Definite lithology change below the fault zone (213'-247'). Finer grained, less siliceous and thinner beds, typical of Lower Aldridge lithology. Rare bed in medium range approaches QcW. Beds range predominantly from thinly laminated to thin bedded. Some distrubed beds, rare healed breccia (e.g. 320') noted to approximately 350'. From 410' to end of hole core becomes moderately broken due to fracturing from perpendicular to parallel to core. Bedding 75°-85° to core.	
End D.D.H. 6445		Core Size	
		NQ	
		Hole No.	Page
		6445	2

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Diamond Drill Geological Log For D.D.H.

6446



LAT - 23800 S (approx.) DEP. 16250E (approx.) ELEV. 2855'
 DIP: -90° AZIM: LENGTH: 549' (O.B.)
 HORIZ COMP. - VERT COMP. 549'
 DATE COLLARED: July 28/81 DATE COMPLETED: August 31, 1981
 CORE STORAGE: No Core
 DRILLED ON CLAIM(S): Golf 2
 OBJECTIVE: Test Sullivan Horizon

GENERAL COMMENTS:

See performance comments.

PLANNED LENGTH: 1200'
 TERMINATION COMMENTS: Abandoned in overburden due to difficult drilling conditions.

DRILLED BY: Longyear
 TYPE DRILL: A44
 CORE SIZE: N.A.
 PERFORMANCE COMMENTS: Drillers made good effort to penetrate overburden, however, flowing sand plugging the gear and small quartz pebbles destroying tricones and bits made effort too slow and costly.

CASING REMAINING IN HOLE (LENGTH & SIZE): 260' of 6" I.D.

TYPE CAP & SEALING METHOD: Spot welded metal cap.

OTHER MATERIAL REMAINING IN HOLE: PQ casing advancer and shoe.

SURVEY INSTRUMENT USED: N.A.

ADDITIONAL DOWN HOLE TESTS: Nil

LOG LEGEND

BED THICKNESS CLASSIFICATION

BEDS	Very Thick Bedded	100 cm
	Thick Bedded	30 cm
	Medium Bedded	10 cm
	Thin Bedded	3 cm
	Very Thin Bedded	1 cm
	LAMINAE	Laminated
	Thinly Laminated	

LITHOLOGY ABBREVIATIONS

OQ - Orthoquartzite
 QA - Quartz Arenite
 QW - Quartz Wacke
 QCW - Quartzitic Wacke
 W - Wacke
 SW - Sub Wacke
 AG - Argillite

D.D.H. 6446

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Diamond Drill Geological Log



Objective: Test Sullivan Horizon		Sampled: Nil	
Logged By: A.S. Hagen	Date: Aug. 1981	Composites: Nil	
Block: N.A.	Sect.:	Place: Golf 2 M.C.	App. Dip: -90°
		App. Bear: -	Length: 549'

40 Scale	
Color Plot & Dips	Ore Classes & Aver.
0	

From	To	Reason
0	549'	Overburden.
Hole abandoned in overburden due to extremely difficult drilling conditions. Drilling progressed as follows:		
0-260' Kootenay Well Drilling. Cased with 6" I.D. casing. Flowing sand problems caused cessation by well drillers at this footage.		
0-296' Longyear advanced PQ casing (4-1/16" I.D.) with casing advancer and shoe.		
0-518' Longyear advanced HQ rods (3-1/16" I.D.) after repeated tricone advances.		
At this stage, it was decided to pull HQ rods, remove tricone and continue drilling with coring bit (no core tube). This method advanced hole to 543' where rods became stuck. It was then decided to continue drilling with "N" gear, drilling through the HQ bit and using a core tube. At 549' the "NQ" bit became badly worn and progress stopped. Because of repeated, costly problems it was decided to abandon the hole. All Longyear rods were removed from the hole. The casing advancer and shoe broke off during removal attempts and remain at 296'. The 260' of casing advanced by Kootenay Well Drilling remains in the hole.		

A.S. Hagen

Core Size	Nil
Hole No.	6446
Page	1