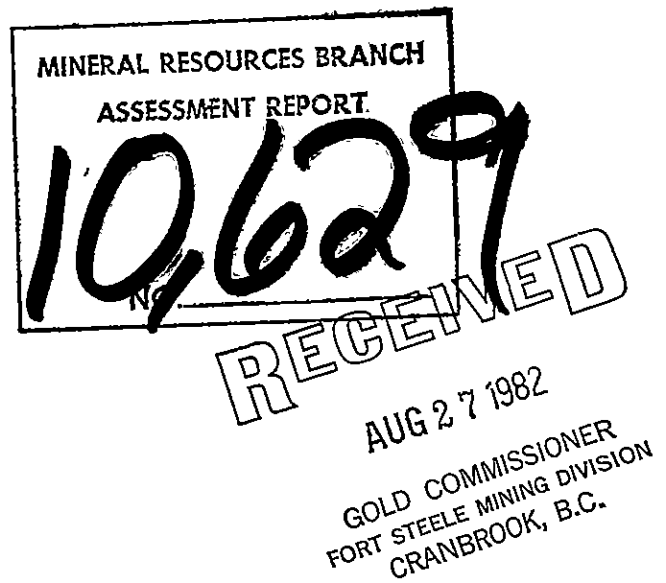


COMINCO LTD.

GOLF 3

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SULLIVAN MINE

COMINCO LTD.

KIMBERLEY, B.C.

GOLF 3 ASSESMENT REPORT

The following report describes the results of drilling diamond drill hole 6449, a 284.4 metre hole in the Kimberley area on the Golf 3 mineral claim in the Fort Steele mining division.

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

The UTM Grid Reference is 757977

49° 37.5'  
115° 55'

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

P.W. Ransom is author of this report.

Date of Submission: August 1982

Endorsed For  
Release By:

*John Hamilton*

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

DETAILED TECHNICAL DATA AND INTERPRETATION

(i) Purpose

The purpose of drilling DDH 6449 was to explore Aldridge stratigraphy south of Marysville for sulphide occurrences.

(ii) Results

Several isolated occurrences of hairline fractures containing sphalerite and associated disseminated sphalerite were observed in metamorphosed, predominantly medium bedded, clastic sedimentary rocks.

(iii) Interpretation

0 - 158.5m	Overburden, silt, sand, gravel and boulders
158.5 - 284.4m	Lower Aldridge sedimentary rocks, generally wacke with lesser subwacke, argillite and quartzitic wacke. These rocks are typically medium and thin-bedded and have been metamorphosed, presumably by a sill a close distance below the bottom of the hole. A descriptive log accompanies this report.

(iv) Conclusion

Several very weakly mineralized sulphide occurrences were intersected in the hole, however none were of economic value.

INTRODUCTION

(i) Specific Location

DDH 6449 is located 880m on azimuth 199° from the railroad crossing across Highway 93, just east of Marysville. Access is by a short road that leaves the highway opposite the B.C. Hydro building. 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 Ltd. has operated the Sullivan Mine for about 75 years. The Sullivan orebody is one of the largest base metal deposits in B.C. and has contributed a major portion of the mineral wealth generated in the province.

(iii) One hole is being reported on in this report. DDH 6449 was drilled using N wireline tools, 7.6 cm in diameter, yielding core 4.8 cm in diameter.

(iv) DDH 6449 was collared on the Golf 3 mineral claim.

PRODUCE  
LABEL

JASS RIZ  
FR

BAGEL

WEBSITE POINT MENTION MASTER

HUNLEY FR HELL STAR MOON

WESTERN EASTERN SUN

DALLEY FR

RHO 10 RHO 9

RHO 12 RHO 11

RHO 14 FR RHO 13 FR

RHO 16 FR RHO 17 FR

RHO 18 RHO 19

MAR 3 MAR 2 MAR 1 RHO 20 RHO 21

MAR 16 MAR 15 MAR 14 MAR 10 MAR 8 MAR 6

MAR 17 MAR 15 MAR 13 MAR 11 MAR 9 MAR 7 MAR 5

ADVANCE 1  
ADVANCE 2

FAL 16 FAL 17

FAL 14 FAL 19

DDCH 6445

FAL 12 FAL 18

PAJE  
DANGER

BLACK  
HILLS

JUMPER  
YANNA  
3-11

DDCH 6444

FAL 10 FAL 11

⊙ D.D.C.H 6449

DD 6446

GOLF 3

COMINCO LTD.

LOCATION of D.D.C.H # 6449

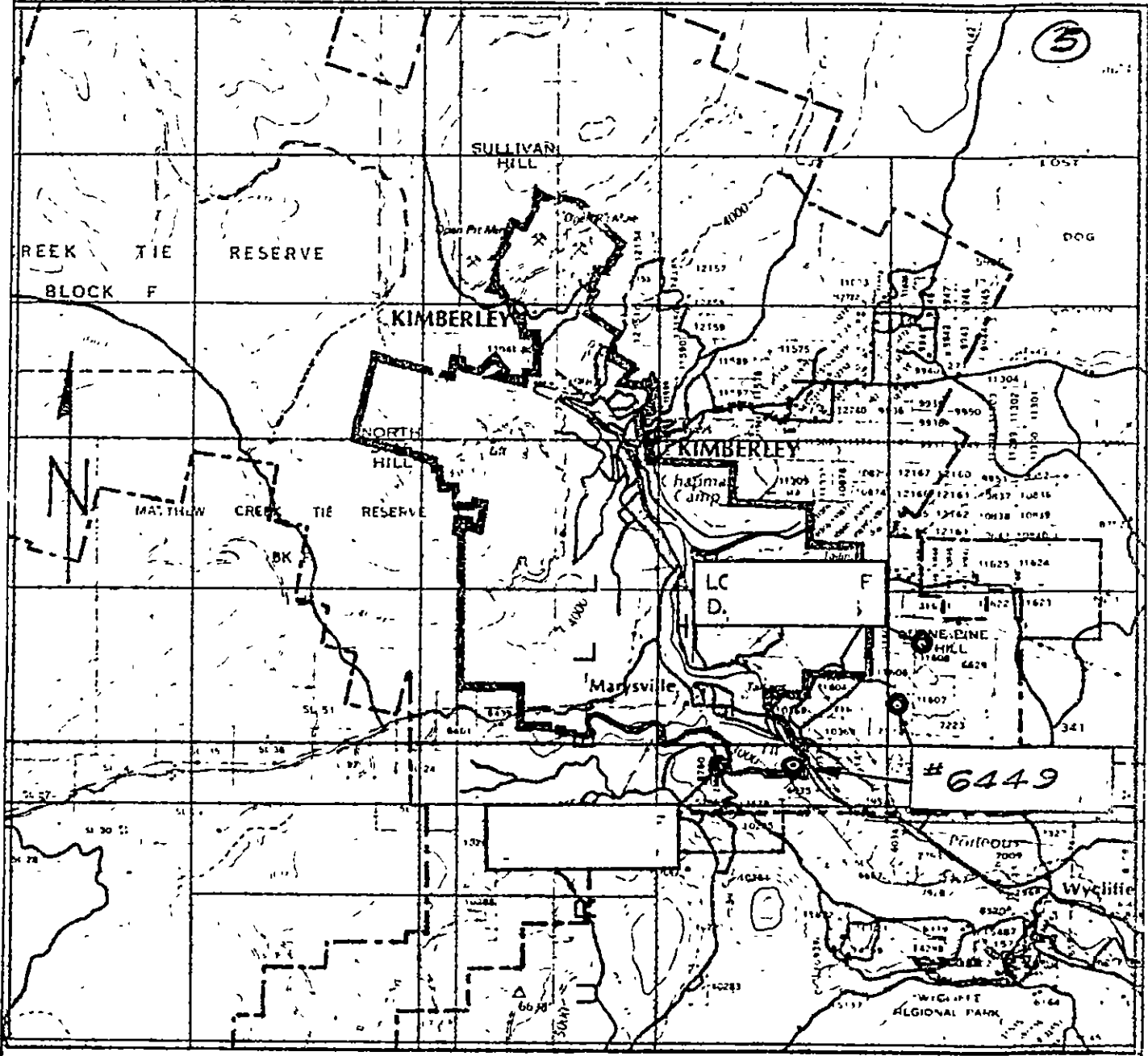
SCALE 1:24000 ALB 82/8/17



(5)

(4)

5



SULLIVAN MINE KIMBERLEY, B.C.



Iss'd To:	Date:

INDEX MAP

LOCATION OF D.D. HOLES **6449**

NTS 82 F/NE, 82 & NW

Drawn by: L.H.C. Scale: 1:125,000 Date: October 1981 Plate: FIG. 1

6

AUTHOR'S QUALIFICATIONS

As author of this report, I, Paul Ransom certify that:

I am a geologist active in minerals exploration.

I am a graduate of McGill University with a degree of Bachelor of Science.

I have been continuously engaged in mining and exploration geology for sixteen (16) years.

I am a member of the Geological Association of Canada.

I have been supervising Cominco Ltd.'s Sullivan Mine area exploration drilling program in 1982.

---

Paul Ransom G.A.C.

COMINCO LTD.  
Sullivan Mine  
Kimberley Operations

DD 6449 933'

Start: February 23, 1982 Contractor: Owen's Drilling Ltd.  
Longyear Canada Inc.  
Finish: March 21, 1982 Location: Marysville South

FOOTAGE	0 - 440' OB (Owen's)	\$9,805.00	
	440 - 520 OB (hourly rate)	9,065.00	
	520 - 532 HQ	297.60	
	532 - 933 NQ	<u>8,761.85</u>	\$27,929.45
HOURLY CHARGES	Reaming	\$ 735.00	
	Hole Reduction	1,029.00	
	Testing	<u>98.00</u>	1,862.00
MATERIALS	5 Tricone Bits	\$1,700.92	
	3 HW Shoes	1,042.40	
	1 HW Casing Advancer	N/C	
	1 NW Shoe (In Hole)	285.67	
	52 HQ Rods (In Hole)	9,045.40	
	1 HQ Box NW Pin Sub (In Hole)	<u>71.60</u>	12,145.99
MUD & ADDITIVES	191 Quik Gel @ \$7.84	\$1,497.44	
	12 Quik Tro1 @ \$9.07	108.84	
	1 CC 16 @ \$33.80	33.80	
	1 Caustic Soda	N/C	
	3 Quik Seal @ \$40.75	122.25	
	3 Soda Ash	N/C	
	33 Diesel	<u>N/C</u>	1,762.33
MOVING CHARGES	Mob/Demob	\$3,617.50	
	Hourly + Extra Crew	<u>6,343.50</u>	9,961.00
COMINCO CHARGES	Shops	\$ 45.00	
	Tractors & Trucks	953.00	
	Operators	950.00	
	Geology Supervision	<u>3,000.00</u>	4,948.00
MISCELLANEOUS	Core Boxes 22		<u>132.37</u>
TOTAL COST			\$58,741.14
Less Diamond Recovery			<u>nil</u>
TOTAL			<u>\$58,741.14</u>

*Arthur L. Burrows*  
Supervisor, Land Administration  
A.L. Burrows/ml  
August 25th 1982





Do not fish  
T.K.

BON DE COMMANDE - PURCHASE ORDER

<p><b>OWEN'S DRILLING LTD.</b> RR #3 NELSON, B.C. V1L 5P8</p>	<p>006886</p> <p><small>CE NUMÉRO DOIT APPARAÎTRE SUR TOUS COLIS, FACTURES, ETC THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES, ETC.</small></p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">RECEIVED DELIVERED</p>
<p>Cominco LTD</p>	<p>Purchase # 1-01392</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SHIP TO</p>

VEUILLEZ AVISER IMMÉDIATEMENT SI IMPOSSIBLE DE LIVRER AU COMPLET À LA DATE SPÉCIFIÉE  
PLEASE NOTIFY US IMMEDIATELY IF YOU ARE UNABLE TO SHIP COMPLETE ORDER BY DATE SPECIFIED

QUANTITÉ QUANTITY	V.P. LIVRÉS LES ARTICLES SUIVANTS PLEASE SUPPLY ITEMS LISTED BELOW	PRIX PRICE
1	440 lb 6" drilling @ \$22 per lb	\$9680.00
2	1 - 6" Drive shoe	125.00
3		
4	<i>Thanks you</i>	
5	Work completed to Cominco satisfaction	\$9805.00
DATE REQUISE DATE REQUIRED		CONDITIONS - TERMS
<p>VIA <i>AW Ranson</i> <i>March 18/82</i></p>		<p><i>\$9805.00</i></p>
VEUILLEZ ENVOYER PLEASE SEND	COPIES DE VOTRE FACTURE COPIES OF YOUR INVOICE	ACHIEVER PURCHASING AGENT
		<p><i>please pay as soon as possible</i></p> <p><i>PKR</i></p>
		DATE
		<i>Mar 16/82</i>

REDIFORM - 1400

# Longyear

Longyear Canada Inc.  
 CONTRACT DRILLING DIVISION  
 721 Aldford Avenue  
 Annacis Island, New Westminster BC V3M 5P5  
 Telephone 604-524-2511  
 Telex 43-5128C

Invoice No. 2725  
 Cust. No. 6348  
 Job No. 6315  
 Dest. 062

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

Cominco Kimberley 1982  
 Invoice date: April 1/82  
 for March 1982

Attention: Mr. John Hamilton

To: Invoice for diamond drilling performed on mining properties located near Kimberley, British Columbia during period March 9-21, 1982 per agreement dated March 1, 1982, P.O. #1-01896.

Hole No.	Size	From	To	Total	Rate	Amount
6449	Overburden	440	520	80	Hourly Rate	-
	HQ Wireline	520	532	12	24.80	297.60 =
	NQ Wireline	532	933	401	21.85	8,761.85 =
				493		9,059.45 -

Mobilization  
 Lump sum 75% of 7,235.00

Moves  
Move In  
 27 1/2 hours @ 98.00  
 23 hours @ 30.50

2,695.00 ✓  
 701.50 ✓

*Split*  
 5,426.25  
 6112.49 \$2713.13 ✓  
 Koot X 2713.12

*M+3* Hole 6449 to Next Site  
 17 hours @ 98.00  
*40+13* 53 hours @ 30.50

3,396.50 ✓  
 6112.49 \$1372.00 ✓  
 Koot X 294.00  
 1,666.00  
 6112.49 \$1220.00 ✓  
 Koot X 396.50  
 1,616.50  
 3,282.50

6,679.00

Penetration of Overburden  
Hole 6449

92 1/2 hours @ 98.00 ✓  
 2 5 5/8" tricones @ 471.12 ✓  
 3 3 7/8" tricones @ 201.35 ✓  
 1 HW Shoe E4086 -  
 1 HW Shoe HS90842 -  
 1 HW Shoe E3666 -  
 1 HW casing advance - see later invoice

942.24 -  
 604.05 -  
 243.80 -  
 460.04 -  
 243.80 -

9,065.00 ✓

Plus 10%

2,493.93  
 249.39 -

2,743.32 -

11,808.32

Longyear Canada Inc.

CONTRACT DRILLING DIVISION

721 Aldford Avenue

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

Telephone 604-524-2511

Telex 43-51280

# Longyear

Cominco Ltd.  
Invoice No. 2725  
2...

Hole Reduction

Hole 6449

10 1/2 hours @ 98.00

1 NW Shoe HS69044

Plus 10%

259.70 -

25.97 -

1,029.00 ✓

285.67 ✓

1,314.67

Reaming

Hole 6449

7 1/2 hours @ 98.00

735.00 ✓ -

Client Testing

Hole 6449

1 hour

98.00 ✓

Left in Hole

Hole 6449

52 HQ 10' rods @ 173.95

1 NW Shoe HS 69044 (previously charged)

1 HQ Box-NW pin sub

9,045.40 ✓

71.60 ✓

9,117.00 ✓

\$ 44,237.69  
-----

Charge: Koot exploration # 3,403.62  
VEX 113-130-W046

6112.49

# 40,834.07

To Purchasing Apr. 12 82

Longyear Canada Inc.

**Longyear**

Invoice No. 2776  
Cust. No. 8348  
Job No. 8315  
Dist. 062

**ORIGINAL**

Seminco Ltd.,  
P.O. Box 2800,  
Kimberley, British Columbia  
V1A 3G3

Seminco Kimberley 1982  
Invoice date: April 7/82  
for March 1982

*Crawbrook*

Attention: Mr. John Hamilton

To: Invoice for diamond drilling performed on mining properties located near Kimberley, British Columbia during period March 22-31, 1982 per agreement dated March 1, 1982, P.O. #1-01896.

Hole No.	Size	From	To	Total	Rate	Amount
V-82-1	Overburden	550	555	5	Hourly Rate -	
	HQ Wireline	555	1000	445	24.80	11,036.00
		1000	1500	500	27.75	13,875.00
		1500	1522	22	31.10	684.20
				972		25,595.20

Moves

Hole 6449 to V81-1						
19 hours @ 98.00	—	3 hrs	294.00			
61 hours @ 30.50	—	2 hrs	61.00	355	1,862.00	
					1,860.50	3,722.50

*Kimberley phase  
charge on #2851*

Penetration of Overburden

Hole V82-1						
9 hours @ 98.00					882.00	
7 hours @ 30.50					213.50	
1 HW Shoe E3666 (previously charged)					-	1,095.50

Reaming Casing

Hole V82-1						
7 hours @ 98.00						686.00

Client Testing

Hole V82-1						
3 hours @ 98.00						294.00

Hole Reduction

Hole V82-1						
6 hours @ 98.00					588.00	
1 NW Shoe E4312				148.40		
				14.84		
					163.24	

Plus 10%

751.24

\$ 32,144.44

# Longyear Canada Inc.

10000 100th Street  
2nd Floor  
Edmonton, Alberta T6E 1E1  
Canada  
Tel: (403) 441-2511  
Fax: (403) 441-2512



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

Invoice No. 2851  
Cust. No. 6348  
Job No. 6315  
Dest. 062

Attention: Mr. John Hamilton

Cominco Kimberley 1982  
Invoice date: May 12, 1982  
for April, 1982

To: Invoice for diamond drilling performed on mining properties located near Kimberley, British Columbia, during period April 19-25, 1982, per Agreement dated March 1, 1982. P.O. #1-01896

Hole No.	Size	From	To	Total	Rate	Amount
Hole N82-2	HQ Wireline	0	36	36	24.80	892.80
		36	270	234	22.15	5,183.10
				270		6,075.90

### Demobilization

Lump Sum - 25% of \$7,235.00

~~1,808.75~~

Reaming Cave & Lost Circulation

6112.49

904.37

Hole N.82-1

Koot. x

904.38

3 hours @ \$98.00  
Prorated Recovery - See later invoice

294.00

294.00

Hole N.82-2

5 1/2 hours @ \$98.00

539.00

Hole U.82-1

Prorated Recovery - see later invoice

833.00

Client Testing

Hole N.82-2 2 hours @ \$98.00

196.00



Longyear Canada Inc.

10000 100th Avenue  
Edmonton, Alberta T6E 1G7  
Canada  
Tel: (403) 455-1800

Cominco Ltd.

- 2 - Invoice No. 2851

Moves

Hole N.82-1 to Hole N.82-2

9 hours	@ \$98.00	882.00	
1 hour		<u>90.00</u>	
			972.00

Move Out

21½ hours	@ \$98.00	2,107.00	
64 hours	@ \$30.50	<u>1,952.00</u>	
			<u>4,059.00</u>

5,031.00

Left in Hole

Hole N.82-1

1 HW Shoe E.4030			243.80
------------------	--	--	--------

Hole N.82-2

1 HW Shoe E.4042		243.80	
1 HW 2' Casing		60.58	
5 HW 5' Casing	@ \$118.99	594.95	
4 HW 10' Casing	@ \$215.87	<u>863.48</u>	

1,762.81

2,006.61

\$15,951.26

=====





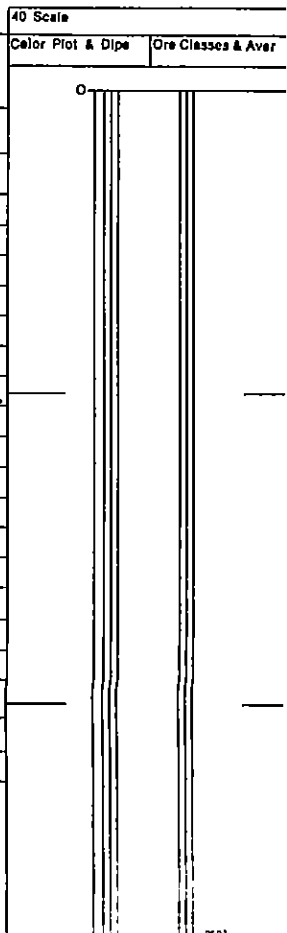
# Diamond Drill Geological Log



Objective: \_\_\_\_\_ Sampled: \_\_\_\_\_  
 Logged By PWR Date August 10, 1982 Composites: \_\_\_\_\_

Block \_\_\_\_\_ Sect \_\_\_\_\_ Place \_\_\_\_\_ App Bear \_\_\_\_\_ App Dip \_\_\_\_\_ Length \_\_\_\_\_

From feet	To feet	Discard	Reason
0	520	Overburden	
		0-70 silt	
		70-125 sand, gravel, boulders	
		125-360 silt	
		360-520 sand, gravel, boulders	
520	933	Lower Aldridge Formation.	
<p>General comment on alteration: Pervasive deep weathering (?) plumose hairline fractures to 712' obscure some detail. Alteration, presumed to be associated with a sill below the end of this hole is characterized by uniform fine brownish biotite development of complete bed which is in turn cut by fractures along which bleaching occurs. The bleaching varies from a millimeter to intense across the entire core where networks of such fractures are most dense. This latter type of alteration is sporadic and is usually associated with the thicker quartzitic wacke beds. It continues to about 700 feet. Below this depth alteration is characterized by biotite-chlorite spotted hornfels that is developed in more than 95% of the beds below 740'. Bleaching that occurs below this depth does not appear to be associated with fractures but is developed over intervals ranging from a fraction of a foot to several feet. In the remainder of this log comments on alteration will generally be omitted.</p>			
520	526	QcW, W, A. QcW 60%, m.gray, m. and tk beds. W 30%, m.gray, thin beds. A 10%, l.gray, v.thin beds. Bed contacts distinct to transitional, generally flat, some irregular.	
526	566	W, SW, A. QcW. W 70%, m.gray, m. and thin bedded, sharp flat contacts, faintly very finely laminated internally. Core angle 65°. SW, A 10%, l. and d.gray, v. thin beds, QcW 20%, d.gray, m.bedded (one Tk 537-538.5).	



Core Size  
 HQ 520-532  
 NQ 532-933  
 Hole No  
 6449



