DRILL REPORT

KUTCHO DDH 51, 53, 54

GROUP II, JEFF CLAIMS

NTS 104 I 1W/2E LIARD MINING DIVISION

by

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Imperial Oil Limited
Minerals Section
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Vancouver, B.C.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

April 1977

NO. ____

TABLE OF CONTENTS

AFFIDAVIT ON APPLICATION TO RECORD WORK

DIAMOND DRILL CORE LOGS

COST STATEMENT

STATEMENT OF QUALIFICATIONS

COPY OF DRILL CONTRACT

MAPS:

Location Map of Jeff Claims 1:25,000

Claim Map 1 mile = 1.2 inches

Location Map of Drill Holes 1 inch = 400 feet

DIAMOND DRILL CORE LOG

PROPERTY:	Kutcho Creek	LOCATION:	34W, 12N
DRILL HOLE NO:	51	CLAIM:	Jeff 5 (70306)
AZIMUTH:	180°	CORE SIZE:	BQ
INCLINATION:	-60°	CONTRACTOR:	Arctic Diamond Drilling
LENGTH:	625'	CORE STORAGE:	Imperial Oil Camp
ELEVATION:	5160'		T

DESCRIPTION

FROM	TO	
0	10	Overburden
10	304.5	Metagabbro; dark gray, medium-grained metagabbro with minor epidote and local feldspathic zones.
304.5	309.5	Rhyolite tuff; white, hard, very siliceous rhyolite tuff with minor visible fragments.
309.5	315.0	Qz. feld. porphyry; finer-grained equivalent of unit from 321.5 to 442.0.
315.	321.5	Qz. feld. porphyry; with small siliceous fragments.
321.5	442.	Qz. feld. porphyry; 30 to 50%, 1 cm qz. phenocrysts and 10%, 4 mm feld. phenocrysts in a qz-sericite schist matrix, rare pyrite.
442.	451.5	Rhyolite tuff and tuff breccia; mixed unit with some sericite and sericite-chlorite schist.
451.5	474.8	Sericite schist; with 1-3 mm qz. phenocrysts.
474.8	476.5	Rhyolite tuff.
476.5	488.5	Sericite schist; with 1-3 mm qz. phenocrysts, minor fragments and carbonate alteration.
488.5	505.5	Sericite schist; fine-grained, fissile, qz-sericite-carbonate schist with relict fragments.
505.5	509.2	Massive pyrite.
509.2	526.	Sericite schist; with minor to heavy disseminated pyrite, minor chalcopyrite.
526.	528.5	Massive pyrite.
528.5	543.	Sericite schist.
543.	568.	Sericite-chlorite schist; with Mg chlorite.
568.	625.	Sericite schist.

D. Bridg

DIAMOND DRILL CORE LOG

PROPERTY: Kutcho Creek LOCATION: 32W, 12N

DRILL HOLE NO: 53 CLAIM; Jeff 6 (70306)

AZIMUTH: 180° CORE SIZE: BQ

INCLINATION: -60° CONTRACTOR: Arctic Diamond Drilling

LENGTH: 677.5' CORE STORAGE: Imperial Oil Camp ELEVATION: 5160'

DESCRIPTION

TO	
13	Overburden
336	Metagabbro; dark gray, medium-grained with local feldspathic zones.
345.4	Sericite schist; with abundant 3 mm qz. phenocrysts.
379.	Qz. feld. porphyry; with 30%, 1-6 mm qz. phenocrysts.
405.5	Feldspathic metagabbro.
415	Rhyolite tuff breccia; siliceous rhyolite fragments in a schistose matrix.
447.	Porphyritic basalt.
474.	Sericite schist; with fragmental texture and dolomite alteration, minor disseminated pyrite.
519.6	Sericite schist; highly fragmental, with zones of disseminated pyrite, chalcopyrite and bornite.
522.1	Porphyritic basalt.
527.2	Sericite schist.
558.	Porphyritic basalt.
677.5	Sericite schist; minor sections with chlorite schist.
	13 336 345.4 379. 405.5 415 447. 474. 519.6 522.1 527.2 558.

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DIAMOND DRILL CORE LOG

PROPERTY:	Kutcho Creek	LOCATION	32W, 6N
DRILL HOLE NO:		CLAIM	Jeff 6 (70306)
AZIMUTH:	180°	CORE SIZE	BQ
INCLINATION:	–60°	CONTRACTOR	Arctic Diamond Drilling
LENGTH:	768'	CORE STORAG	E Imperial Oil Camp
ELEVATION:	5310'		

DESCRIPTION

FROM	TO	
0	13	Overburden.
13	206.5	Qz. feld. porphyry; abundant qz. phenocrysts up to 12 mm.
206.5	214.1	Sericite schist; with fine-grained qz. phenocrysts and abundant dolomite.
214.1	217.8	Massive pyrite; with minor sphalerite and chalcopyrite.
217.8	240.7	Sericite schist; with fine-grained qz. phenocrysts.
240.7	266.1	Massive pyrite; with disseminated chalcopyrite, bornite and sphalerite.
266.1	330.5	Sericite schist.
330.5	615.0	Sericite-chlorite schist; and minor interbedded sericite schist.
615.0	655.0	Sericite schist.
655.0	701.0	Chlorite schist; with rhombic dolomite phenocrysts.
701.0	768.0	Sericite-chlorite schist.

D. Bridge

COST STATEMENT

DATE DRILLED	
DDH 51 August 28 - August 31, 1976 DDH 53 Sept. 1 - Sept. 4, 1976 DDH 54 Sept. 5 - Sept. 8, 1976	
DIRECT DRILLING COSTS	
1500.0 feet at \$10.75/ft. 570.5 feet at \$11.25/ft.	\$ 16,125.00 6,418.13
MATERIALS LEFT IN HOLE	
36 feet BW casing 3 BW casing shoes	233.48 453.92
LABOUR AND TESTING	
225 hours at \$13.30/hr.	2,992.50
<u>FUEL</u>	
240 gal. at \$1.80/gal.*	432.00
CORE BOXES	
83 boxes at \$6.00/ea.	498.00
HELICOPTER SUPPORT	
18.9 hours at \$300/hr.	5,670.00
HELICOPTER FUEL	
18.9 hrs. x 23 gal./hr. @ \$1.80/gal.*	782.46
DRILL SUPERVISOR	
Dane Bridge, Geologist-12 days at \$70/day	840.00
CAMP COSTS	
60 man-days at \$30.00/day	1,800.00
OFFICE AND SECRETARIAL COSTS	130.00
*Fuel cost delivered to Kutcho Camp	<u> </u>
Total Costs	\$ 36,375.49
Cost per foot	\$ 17.57

SCHEDULE A

BID SHEET AND JOB SPECIFICATIONS

1. DESCRIPTION (OF	WORK:
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The work is to consist of a series of drill holes, drilled at locations
specified by Imperial. A total minimum footage of 4,000 feet shall be
drilled, but total footage may be extended by mutual consent. Maximum depth
of any hole shall not exceed 1,000 feet and minimum depth shall be
200 feet. The Contractor will not be called upon to drill any hole
at a flatter angle than degrees. Measurement of all holes shall
be taken from the top of the casing pipe. If holes of a greater depth than
1,000 feet are desired, such drilling shall be performed only upon
such conditions and at such rates as may be agreed upon before commencement
of such drilling.

2. SCHEDULE OF RATES:

Imperial agrees to pay the Contractor for footage drilled and other services performed as follows:

(a) Coring at Bedrock

Depth Intervals	BQ	Size	Size
0 - 500 Ft.	\$ 10.75	/Ft. \$	/Ft.
500 - 1000 Ft.	\$ 11.25	/Ft. \$	/Ft.
1000 - 1500 Ft.	\$ 11.75	/Ft. \$	/Ft.
Ft.	\$	/Ft. \$	/Ft.

(b) Casing of Overburden

Depth Interval

0 -	50	Ft.	\$ 10.75	/Ft.
50 -	100	Ft.	\$ 	/Ft.
-		Ft.	\$	/Ft.

- (c) The following services will be provided on an operating Field Cost basis:
 - 1. Casing of overburden over 50 ft.
 - 2. Reaming and setting casing for borehold reduction, borehole stabilization, and control of return water.
 - 3. Drilling caved or broken ground.
 - 4. All cementing operations, excluding setting time but including drilling of set cement.
 - 5. Supplying water to the drill when water supply over 2,500 ft. lateral and/or 250 ft. vertical lift

from borehole collar under non-freezing conditions and all costs

under freezing conditions.

- 6. Recovering pipe and/or casing at Imperial's request.
- 7. Hole orientation tests.
- 8. Setting of wedges, at Imperial's request, for the purpose of directional drilling.

Where operating Field Costs are defined as:

Operating Field Costs

Labour (inc)	luding Supervision) \$13.30	per man hour.
Tractor	N/A per hour.	
	(excluding driver) N/A	per hour.
Equipment		
Drills	Type	Operating ' Hourly Rate
1	C/L Model 38	\$8.00
1	B.B. BBS-1 /12 BH	8.00
Pumps	Type	Operating Hourly Rate
<u> </u>	N/A	·
Other	Type	Operating Hourly Rate
	N/A	·
	,	

While operating on a Field Cost basis, supplies consumed or damaged beyond use, including diamond articles, mud ingredients, cement, rods, core barrels, etc. shall be for Imperial's account at site replacement value plus 10 %. However, if due to Contractor negligence, or through poor drilling practices, equipment is damaged or lost and hole is not completed, then these costs shall be for Contractor's account.

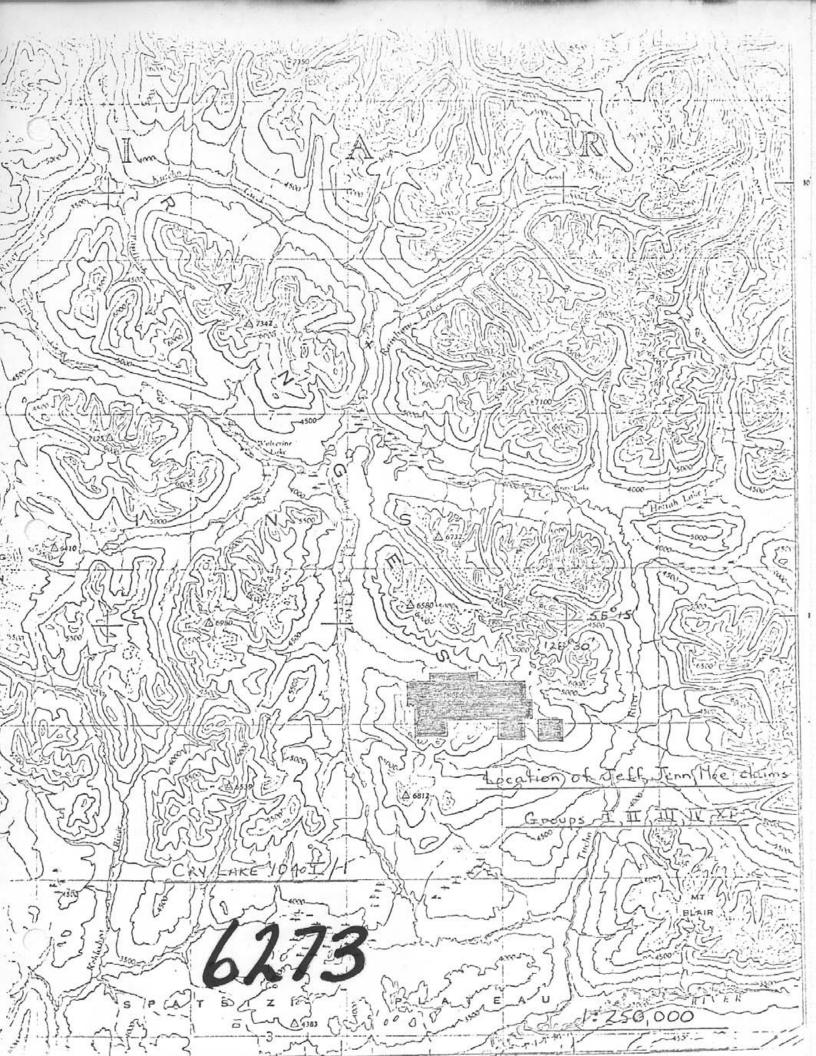
- (d) The following services would be provided on a non-operating Field Cost basis:
 - 1. Setting time for cement.
 - 2. Delays caused by Imperial.

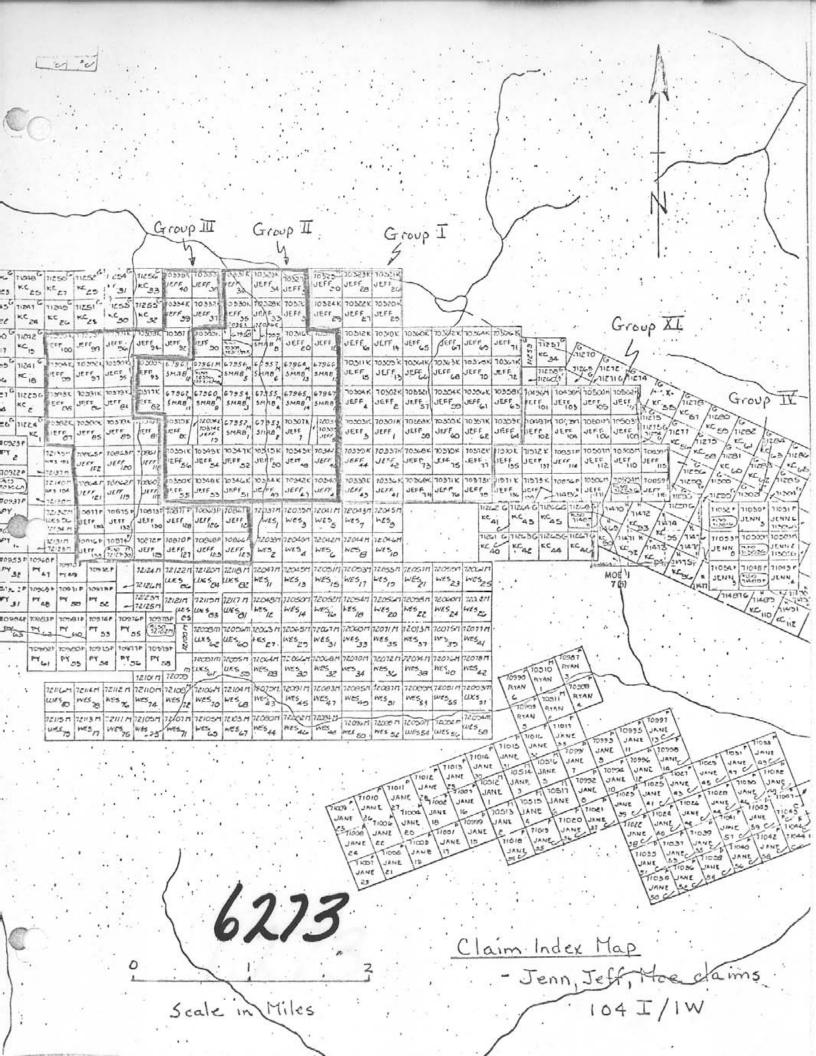
· Where non-operating Field Costs are defined as:

	Non-Operating Field Costs
	Labour (including supervision) \$13.30 per man hour. Drill, pumps and service vehicle per drill hour. Tractor - operating per hour. Tractor - non-operating per hour.
(e)	Travelling Time
	Imperial agrees to pay for travelling time from <u>camp site</u> to drill site and return per shift on the following basis:
	Vehicle per day. man-hour, after the first ½ hour per man
(f)	Mobilization and Between Hole Moves
	Labour \$13.30 per man-hour.
(g)	Room and board for Contractor's personnel will be provided by Company Contractor will provide meals and accommodation for up to N/A of Imperial's representatives at a price of N/A per day. Room and board will be provided by Imperial to Contractor at per man day.
(h)	Core boxes, including lids, will be provided by Company Contractor's rates for core boxes on site shall be \$
(i)	Core splitter to be supplied byCompany Contractor to supply core splitter at per
(3)	Standby Rental
	It is agreed that, at the completion of the present active drilling program, Imperial may retain the Contractor's drilling equipment at the drill area for a rental rate of per per drilling unit. The standby rental charge will cease to apply upon commencement of continuous drilling program, or on the giving of a written notice to the Contractor by Imperial that the drilling equipment is no longer required.
**	Should drilling not recommence by June 10, 1977, the Company will pay the Contractor \$100.00 per day from June 10, 1977 until recommencement of drilling, or demobilization of equipment.

(k) Special Agreements

- (1) The Contractor will mobilize and demobilize his drill and supplies to and from Dease Lake and will charge \$1,600.00 for same. This charge will be divided equally between the Company and Sumitomo Metal Mining Ltd.
- (2) The Contractor will mobilize and demobilize his crew to and from Rainbow Lake and will charge \$1,800.00 for same.
- (3) Delays caused by lack of transportation will be charged at Non-operating Field Cost.
- (4) Fuel, gas, oil and propane for drills, pumps, heaters and camp will be supplied by the Company at no cost to the Contractor.





	Jeff *17	Jeff # 15	N
SMRB #15	Jeff #6 .so .si .ss .ss	• 10	Jeff #4
SMRB #16	• 41, • 46 • 47 45 • 35 • 34	· 39 • 8 · 32 • 1 • 2 • 5 • 48 • 49	
	+ 43		
	Jeff #5	Jeff *3	• 42

Diamond Drill Hole Locations Jeff Claims, Groups I and II

6273