

2802550006 63.1786 PINOGAMI

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KEEVIL MINING GROUP LTD.

Cls. S122281-83, S122407-15, S13156-59 PINOGAMI TWP., SUDBURY MINING DIVISION

REPORT ON THE GEOLOGY, GEOPHYSICS & DIAMOND DRILLING

November 5, 1965

IN. M. Megd O. Eng.

H. D. McLeod, P. Eng.

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Claims 5122281 to 5122283, 5122407 to 5122415 and 5131357 to 5131359 Pinogami Township, staked to protect A.E.M. conductors were explored by ground geophysical surveys, geological mapping and diamond drilling.

Strong magnetic anomalies and three conductors were located.

One conductor has magnetic and gravity correlation, a second magnetic correlation.

Diamond drilling proved the conductors to be caused by barren pyrrhotite and pyrite with graphite present in one.

The geological mapping and diamond drilling proved the claims area to be underlain by biotite-hornblende gneisses intruded by a wide zone of peridotite dikes. Granite gneisses are present in the extreme south and west parts of the area.

The geophysical anomalies have been adequately explained so no further work on the claims is warrented.

ACCOMPANYING MAPS

- (1) Dwg. 2880 "Geology Map"
- (2) Dwg. 2881 "Magnetometer Survey"
- (3) Dwg. 2882 "Vertical Loop E.M. Survey"
- (4) Dwg. 3009 "Magnetometer Survey"
- (5) Dwg. 3010 "Vertical Loop E.M. Survey"

INTRODUCTION

Keevil Mining Group, Pinogami claims consists of sixteen contiguous claims, numbered Sl22281 to Sl22283 inclusive, Sl22407 to Sl22415 inclusive and Sl31357 to Sl31359 inclusive, in Pinogami Township. Twelve of the claims were staked and recorded in May 1964 and the remaining four in July 1965. The claims are presently registered in the name of R. Michael Butler, Suite 1000, 11 Adelaide Street W., Toronto, Ontario.

Exploration work, consisting of line cutting, geophysical surveys, geological mapping and diamond drilling was carried out on the 1964 claims during the period October 6, 1964 to March 19, 1965 and on the 1965 claims during the period July 2 to September 5, 1965. The magnetometer and electromagnetic surveys were done by A. McClemens, 83 Algonquin Blvd. E., Timmins, Ontario, the gravity survey by H. Davison, 2189 Algonquin Avenue, North Bay, Ontario, and the geological mapping by A. Matulich, 216 Way Avenue, Timmins, Ontario. All work was done under the direct supervision of the writer.

The claims are located in the northeast part of Pinogami Township, Sudbury Mining division, a distance of approximately 14 miles to the south-west of Foleyet, Ontario. Approximate co-ordinates are 48° 04' north 82° 39' west.

Access is by trails from highway 101 between Foleyet and Chapleau, the claims lying a short distance to the east of the highway.

DESCRIPTION OF SURVEYS

A grid totalling approximately 12 miles of line was cut in October 1964 from a base-line oriented N80°E. Picket lines were cut north and south at 400-foot intervals in two areas of A.E.M. conductors. A second grid totalling 3½ miles of line was cut in July 1965 from a base-line oriented east-west. Lines were cut north and south at 400-foot intervals for distance up to 1000 feet.

A magnetometer survey was done with a Sharpe Fluxgate Model M.F.l magnetometer having a constant of 20 gammas per scale division. Readings were taken at 100-foot intervals along all the picket lines with fill-in readings at 50-foot intervals in areas of high magnetic relief. Diurnal readings at 1 to 1½ hour intervals were taken on permanent base stations. The readings were corrected, plotted and contoured as shown on the accompanying map.

Approximately 870 readings were taken.

A vertical loop electromagnetic survey was done with a Sharpe S.E. 200 unit fitted with an amplifier and special batteries to increase the range to 600 feet. Readings were taken at 100-foot intervals along all the picket lines using the parallel-line method. In this method each reading is taken with the transmitter and receiver set up at the same station on adjacent lines. The transmitter-receiver interval thus is the line spacing, in this case 400 feet. All conductors located were then checked by the detail or fixed transmitter method. In this method the transmitter is set up on a known or suspected cross-over and readings taken at 50-foot intervals on the adjacent line or lines. In this way the conductor is traced from line to line and accurately located within 25 feet on every line.

Approximately 775 readings were taken.

Six gravity profiles were run across the south conductor and across the north conductor on Group 23 in an attempt to locate concentrations of sulphides within the conductors. This work was done with a Warden gravity meter, readings being taken at 100-foot intervals with fill-in readings at 50-foot intervals over the conductor axes. Accurate elevations for elevation corrections were taken on every profile and all profiles tied in to a common base. The results have been plotted as profiles.

DIAMOND DRILLING

Three holes were drilled as follows:

<u>NO</u> .	LOCATION	BEARING DI	CORE-SIZE LENGTH				
65-8	14/40N , 28/00E #1 Grid	S 10°E 48°	AXT-1 1/8" 459.0 ft.				
65-9	6/50S , 24/00E #1 Grid	S10°E 45°	AXT-1 1/8" 442.0 ft.				
65-21	3/50S , 8/00E #2 Grid	North 470	AXT-1 1/8" 490.0 ft.				
To the state of th							

RESULTS OF SURVEYS

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The magnetometer survey outlined a number of high anomalies. The main ones form a wide zone striking east-west to N75°E through the south part of the claims. Outcrops or peridotite indicate this anomaly zone to be a peridotite sill or series of sills or dikes. In claim \$122283 the zone is offset a distance of 1200 feet to 1500 feet to the north.

A linear series of strong oval-shaped high anomalies in the north part of claims S122407 and S122281 were proved to be concentrations of pyrrhotite and magnetite.

A number of east-west trending oval-shaped anomalies in claims S131356 to S131359 cross the trend of the main magnetic zone and were proved to be pyrrhotite mineralization.

The electromagnetic survey outlined three conductors. One strikes east-west across the north part of claims \$122408, \$122407 and into \$122281 coinciding exactly with the series of lensy magnetic highs. The anomaly has sections of excellent conductivity and also has good gravity correlation.

The second conductor strikes N70°E to N80°E across the south part of claim S122410 and into the central part of claim S122411. This anomaly has one section of excellent conductivity but no direct magnetic or gravity correlation.

The third conductor commences 300 feet to the south of the west end of the third conductor and was traced west a distance of 2400 feet. This anomaly has a 600-foot section of good conductivity and fair magnetic correlation throughout its entire length.

The gravity survey, as mentioned above, located anomalies over one conductor.

The reconnaissance electromagnetic survey over the aeromagnetic anomaly located one conductor only (No. 4 above). The partial reconnaissance magnetometer survey covered enough of the aeromagnetic anomaly to proved that the peridotite is present in the form of a swarm of dikes rather than one large intrusive, or that, if it be one intrusive it is a layered or differentiated type with alternate ground and peridotite phases.

GEOLOGY

A few outcrops were located within the claims area and three holes drilled.

The main part of the area apparently is underlain by recrystallized sediments now metamorphosed to biotite-hornblende gneisses. These strike east-west and dip at 65° to 75° to the north.

Outcrop in claims S122412, S122414, and S122415 is all peridotite and basic phases of gabbro - part of a large intrusive or zone of multiple intrusions striking N75°E through the south part of the area. Drill hole 65-9 intersected the serpentinized peridotite near the large magnetic anomaly.

Hole 65-21 passed through coarse-grained granite gneisses into a wide section of an amphibolitic rock. This may be a recrystallized basic lavas, however, it contains narrow sections (inclusions?) of quartzite or biotite-quartz gneiss. This suggests that the rock is a highly recrystallized basic intrusive.

The north conductor was proved to be caused by pyrrhotite, pyrite and magnetite concentrated in a horizon in the gneisses. The south conductor is a narrow zone of semi-massive pyrrhotite and pyrite on the contact of the peridotite intrusive. The west conductor apparently is a narrow zone of massive graphite with associated pyrite and pyrrhotite.

The magnetic anomalies are all interpreted to be peridotite dikes. Assays of the mineralization returned low values only.

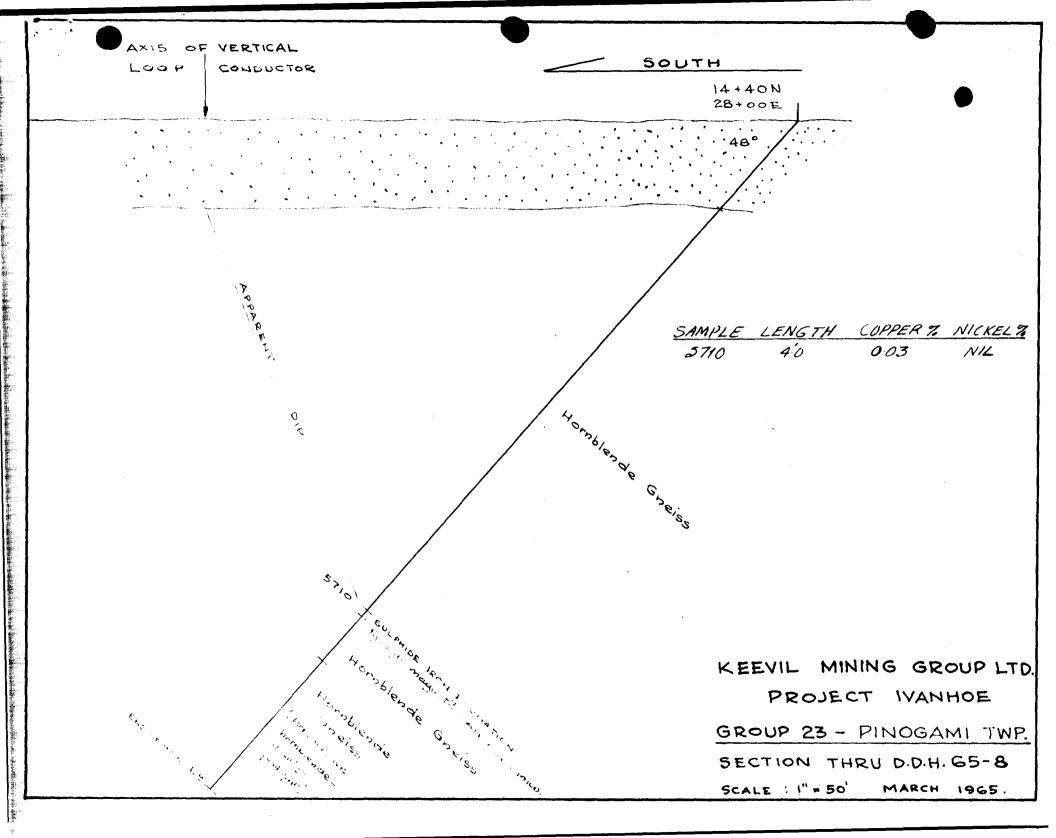
DIAMOND DRILL RECORD KEEVIL MINING GROUP LTD. PROJECT IVANHOE GROUP 23 HOL

__ HOLE NO. 65-8

SHEET NUMBER	1	SECTION FRO	омто_		STA	RTED Ma	rch 6, 1	965
LATITUDE	14 / 40N	DATUM			_ CO	MPLETED]	March 12	, 1965
DEPARTURE	28 / OOE	BEARING	BEARING S10°E ULTIMATE DEPTH 459				.0 ft.	
ELEVATION	and a sign of a sign of the si	DIP	480 PROPOSED DEPTH					
DEPTH FEET	n van seer van van van de de geween de g	FORMATION -		SAMPLE No WIDTH GOLD \$ SLUDGE GOLD \$				
0.0 = 60.0	ÖVERBURDEN		,			Cu	Ni	
	HORNBLENDE CNET	38 - 60.0 -118.0 dspar and some b						
	Originally	greywacke.						
	118.0-160.0	- Lighter, more	siliceous sec	tions of	riginal]	y a qua	rtzite.	
	Biotite ric	h sections.	1	ļ				
	160.0-332.0	- Hornblende gr	eiss with biot	te ric	section	ns. Gr	anite	
	or granite	pegmatite string	ers and dikes	in place	8.			
Management of the second of th	292.0-312.0	- Garnetiferous	3					
	332.0-333.5	- Garnetiferous	3					
	333.5-337.0	- Amphibole ris	h sections wit	20% 1	rge rec	garnet	grains.	
337.0 - 341.0	SULPHIDE IRON F	ORMATION - Blue	to blue-grey q	eartz,	0% gree	n silic	ates, 2	56
	pyrrhotite	in seams, string	ers and patche	8. 5%	o 10% i	agnetit	e with	
	the pyrrhot	ite. Some chalo	copyrite.	5710	4.0	0.03	NIL	
341.0 - 372.0	HORNBLENDE GNEI	SS - As above.						
372.0 - 459.0	HORNBLENDE GNEI	SS - A more mass	ive hornblende	quartz	feldspa	r rock	with	
May - mayaliga - 1 min min makasanahin ya usu saku sak	lineation b	ut little beddir	ng. Some secti	ons qui	e coars	e-grain	d. Lir	pated
·	at 80° to 8	50 to the core a	itis.					
459. 0	END OF HOLE.							
				1,				

N.M.P. TORONTO-STOCK FORM NO SOI REV. 12/81

PROPERTY

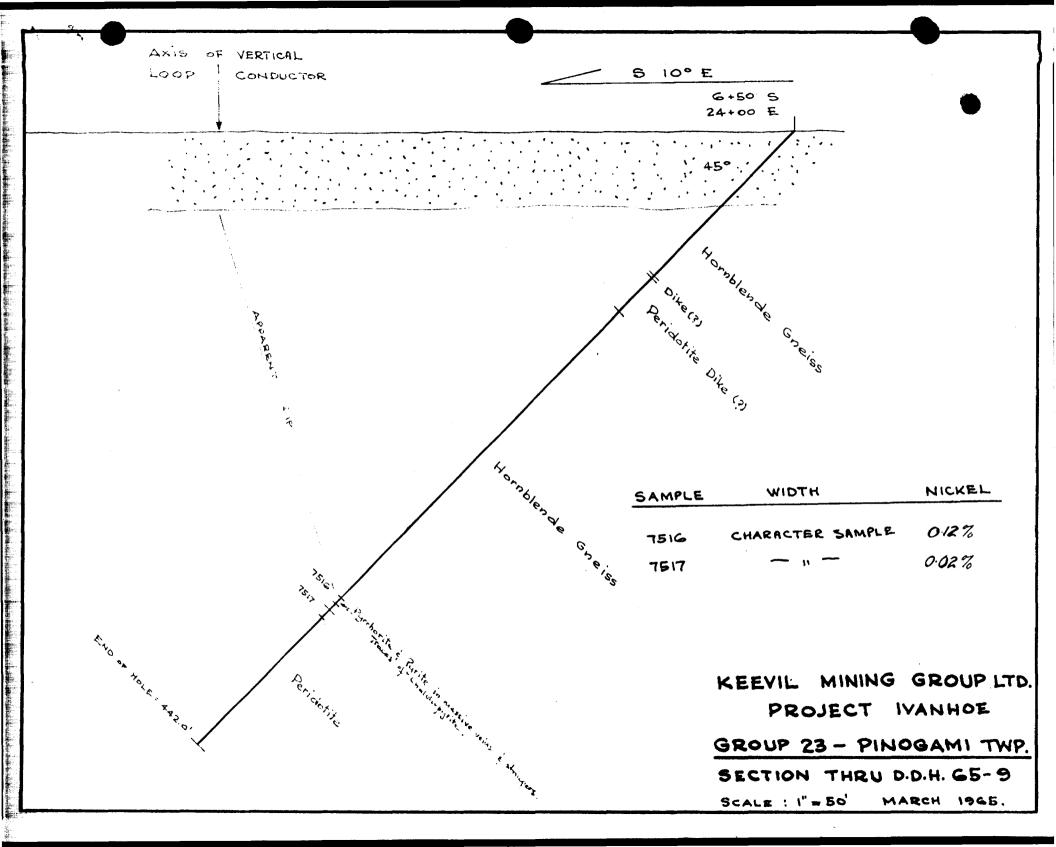


DIAMOND DRILL RECORD KEEVIL MINING GROUP LTD. PROJECT IVANHOE - GROUP 23 HOLE NO. 165-9 **PROPERTY**

LATITUDE DEPARTURE ELEVATION	24 \$ 00E FOR	DATUM BEARING DIP	S 10°E		ULT	ΓΙΜΑΤΕ DI	March 19, EPTH 442	0 ft		
	FOR	DIP	3 10°E						•	
ELEVATION	FOR		45		_ PRO	POSED DE	PTH			
		MATION								
DEPTH FEET	וופחסווכ			SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SCHDGE			
0.0 - 54.0 OVER	TROUDER									_
	BLENDE GHEISS - originally silice			s. Pro	bably					- -
	S (?) A peculia Celdspar or quart									
i	yrrhotite and ma									
1 <u>05.0 - 129.0 FERI</u>	DOTITE DIKE 4?)	- Massive, dar	k grey, fir	e-grain	ed, rea	sonably				ļ
	oft. Serpentin	ized and talcy.	Lower cor	tact in	definit	0				
129.0 - 344.0 HORN	BLENDE GNEISS -	BIOTITE QUARTZ	GNEISS - (rigina)	quartz	ites.				
, G	Garnetiferous sec	ctions. Bedded	at 80° to	the cor	e axis.					ļ
	135.0 - 339.0 - 6	0% syrrhotite	and pyrite	in mass	ive vei	ns and			-	
8	stringers and dis	sseminated grai	ns.							
		Character gr	ab	7516			Nickel	0.	12	
A	t 336.0' 12" of	massive pyrrho	tite with t	races c	f chalc	opyrite				<u> </u>
344.0 - 442.0 PEhI	DOTITE - Serpent	inized. Fine-	grained bed	oming c	oarser,	Dark	rey.			·
		Character gr	ab	7517			Nickel	0.	02	ļ
I	hin disseminated	l pyrrhotite in	places and	in fir	st 30 f	eet.				
	rom 390.0 - 402.	0 - Strongly s	erpentinize	d. Coa	rse gra	ined.				
442.0 END	OF HOLE.									<u> </u>
										ļ.,.

N.M.P. TORONTO-STOCK FORM No. 501 REV 12/51

SIGNED 240. M. Level D. Eng.



CROUP 23 - PINOGAMI TWP. HOLE NO. 65-21

SHEET NUMBER		SECTION FROM	то_		STA	RTED AUE	sust 29,	1905				
LATITUDE	3 /4 50s	DATUM			COMPLETED September 2, 1965							
DEPARTURE	8 ≠ 00E	BEARING	North		ULTIMATE DEPTH 490.0 ft.							
ELEVATION		DIP	47°		PROPOSED DEPTH							
DEPTH PEET		FORMATION	·	SAMPLE No.	WIDTH OF SAMPLE	GOLD \$	SCHOOL					
0.0 - 5220	OVERBURDEN											
52.0 - 66.0	biotite-hor	- Coarse, pegmatiti nblende beds, beddir	g regular									
	at 45° to	00 to the core axis.										
66.0 - 83.0		KE - Fine to medium acts sharp but irres										
83.0 -139.0	GRANITE GNEIS	- Same as above.										
139.0 -165.0		- Some hornblende s	•		v							
		% biotite and muscov							,			
165.0 -176.0		<u>ST - Light green am</u>					·					
	biotite, qu to 45° to t	he core axis.	Sheared at	40°								
76.0 -197.0		' - Biotite, amphibol	e quartz									
	feldspar, s	ome green silicate o	or serpentin	е.								
	Patches of	pegmatite feldspar.	Conterted.									
	Peculiar po	wder blue mineral th	roughout.	 								
197-0 - 241-0		Altered basic intrus										
		en-black rock. Blue		spar								
	patches thr	oughout. Thin disse	minated	ļ				ļ:l				
	pyrrhotite	in places. Some mas	netite.	<u> </u>	·		1					

DIAMOND DRILL RECORD

	PROPERTY			Ж	LE NO	T65-21				
SHEET NUMBER	2	SECTION FROM	то_	· · · · · · · · · · · · · · · · · · ·	STA	RTED				
LATITUDE		DATUM			CON	APLETED.	· · · · · · · · · · · · · · · · · · ·			
DEPARTURE		BEARING			ULT	IMATE D	EPTH			
ELEVATION		DIP			PROPOSED DEPTH					
DEPTH FEET	FORM	ATION		SAMPLE NO	WIDTH OF SAMPLE	40LD 8	SCHOOL		T	
	Grab of pyrrhotite	•		5956			Copper	Nickel		
241.0 - 248.0	QUARTZITE - Blue white biotite mica. 20%			5957 n	7.6	IIIL		0.13 TR		
	seams, stringers a	nd disseminated gr	ains.							
	Minor chalcopyrite		<u> </u>							
24 8.0 - 394.5	294.0-325.0 - light	ter in color, more	massi	ve,					1	
	finer grained, Linaxis.	neated at 40° to t	he cor	9			-		+	
	363.0-394.5 - light grained.	ter in color and f	iner						1	
394.5-402.5	MUSCOVITE-AMPHIHOLE-BIO grained, soft.	OTITE ZONE - Coars	8-							
402.5-409.5	QUARTZITE - 15% pyrite and pat≇hes. Bedd:	and pyrrhotite in ing at 50° to the	seams core a	5958 xis.	7.0	NIL	0 .01	0.06		
409.5 - 414.0	MUSCOVITE-AMPHIBOLE-BIO	TITE ZONE - As ab	ove.	·		··.			\perp	
414.0 430.0	CUARTZITE - Bluish mass	sive quartz with s	eems,			 -	·			
	patches and dissemi brown biotite. Bed								$\frac{1}{1}$	
	core axis. Seams,						·			
	grains of pyrrhotit									

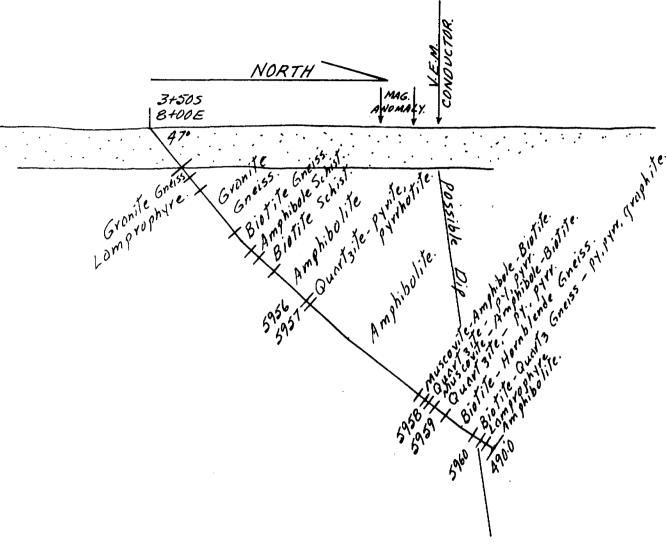
IMP., TORONTO-STOCK FORM NO SOI REV 12/51

DIAMOND DRILL RECORD

	PROPERTY		HOLE NO. T65-21								
SHEET NUMBER	3	SECTION FRO	мто_		STA	RTED					
LATITUDE		DATUM			_ CON	APLETED .					
DEPARTURE		BEARING	IGULTIMATE DEPTH								
ELEVATION	DIPPROPOSED DEPT										
DEPTH FEET		FORMATION		SAMPLE No.	WIDTH OF SAMPLE	GOLD \$	SOLD \$	T			
	up to 15%	of the volume.					silver	cu%	ni\$zn\$		
			5 - 424.0	5959	9.5	NIL		0.01	0.03		
430.0 - 467.0	BIOTITE-HORNS	ENDE GNEISS - Line	ated at 45° to				<u>.</u>				
Section 10 to 10 t	the core	exis. From 452.0 r	arrow interbed	ded							
	sections o	of biotite-rich qua	rtzite.					_			
Management of the second secon	Dissaminat	ed pyrite in some	sections.				ļ				
467.0 - 477.0	BIOTITE QUART	GNEISS - Banded a	t 650 to the	5960	10.0	NIL	0.06	0.06	_b.12		
	core exis			 					 		
page and the second sec	467.0-473	0 - seams and diss	eminated pyrit	e							
	and pyrrho	ti te.									
	473.0-474	5 - heavy to masai	ve flakey graj	hite.				-			
	Some pyrit	e. Minor chalcopy	rite and sphal	erite.				1	 		
		0 - seams and narr		£				_			
Section (Control of the Control of t		% - 10% of the vol	ume.	ļ		·-··	4		 		
	LAMPROPHYLE DI										
		Altered basic intr									
490.0	END OF HOLE.							 			
									 -		
								-	-		
								-	 -		
	L			<u> </u>	L1		1				

DRILLED BY

SIGNED



SAMPLE	LENGTH	NI.Z	CUZ	ZN. 2	AU. 033	A6.035.
5956	GRAB.	0.13				
5951	7.0	TR.			NIL	-
5958	7:0					
5959	9.5	0.03	0.01		NIL	
5960	10:0		0.05	0.12	NIZ	0.06

KEEVIL MIIVING GROUP LTD.

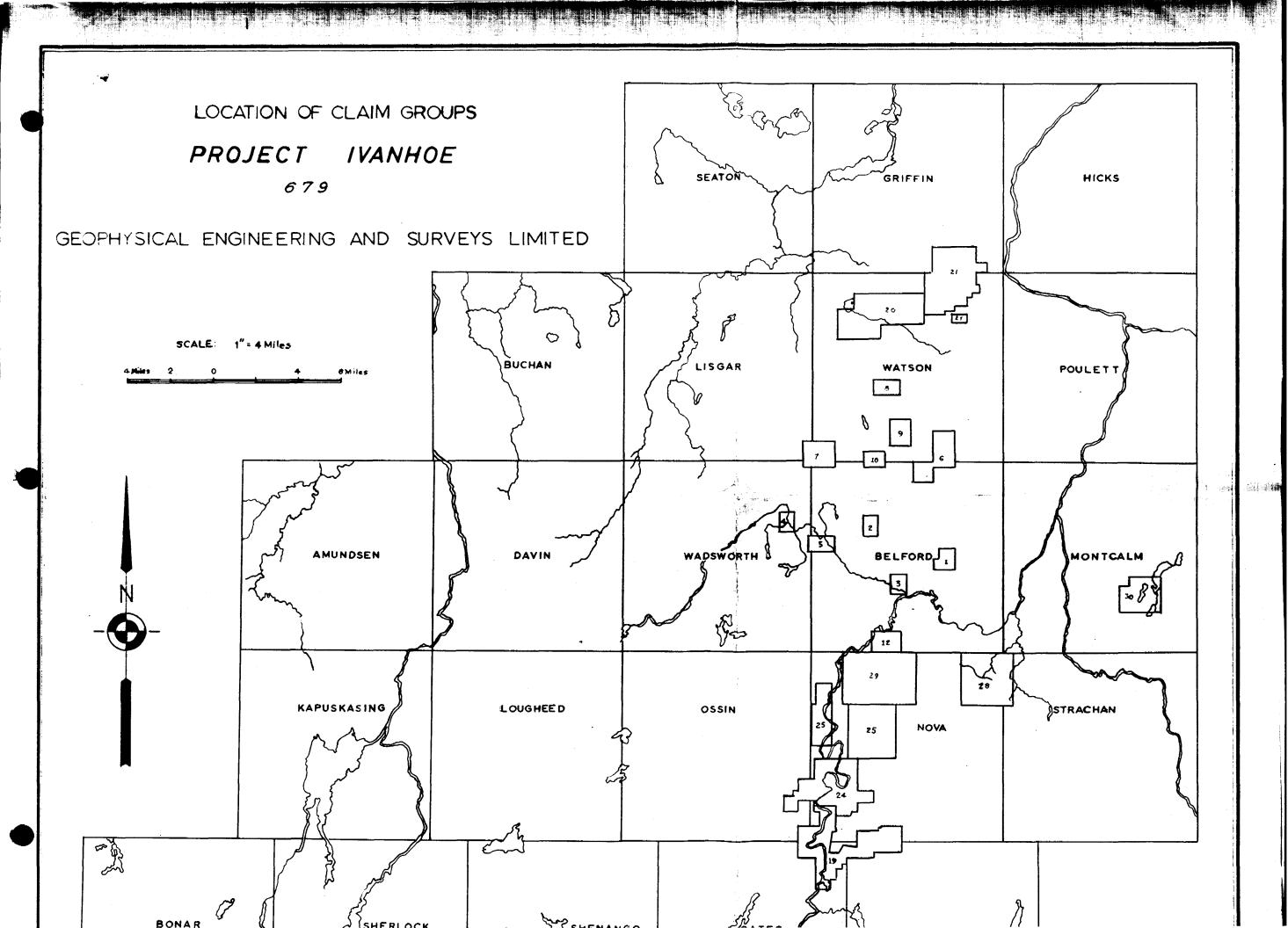
PROJECT IVANHOE

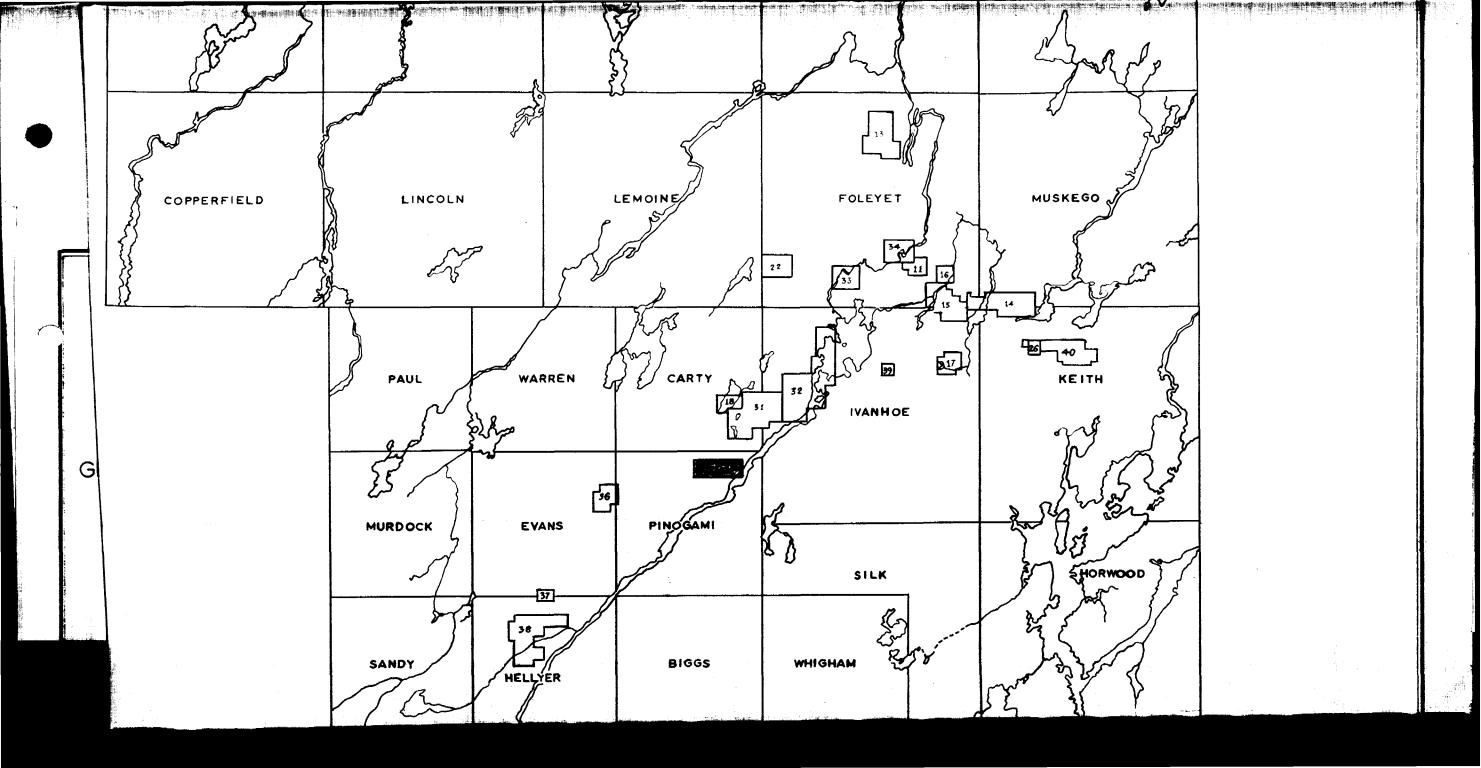
GROUP 23 - PINOGAMI TOWNSHIP.

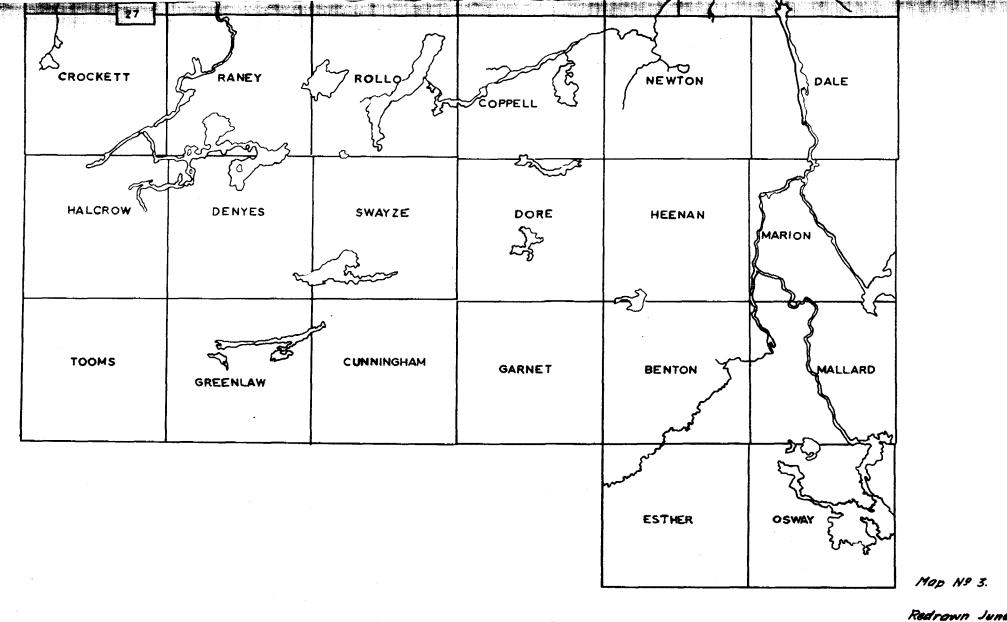
SECTION THROUGH D.D.H. 65-21.

SCALE: 1": 100' 5.

SEPT. 1965.







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LAUTORE 144+00E L48+00E GRANTY PROFILES

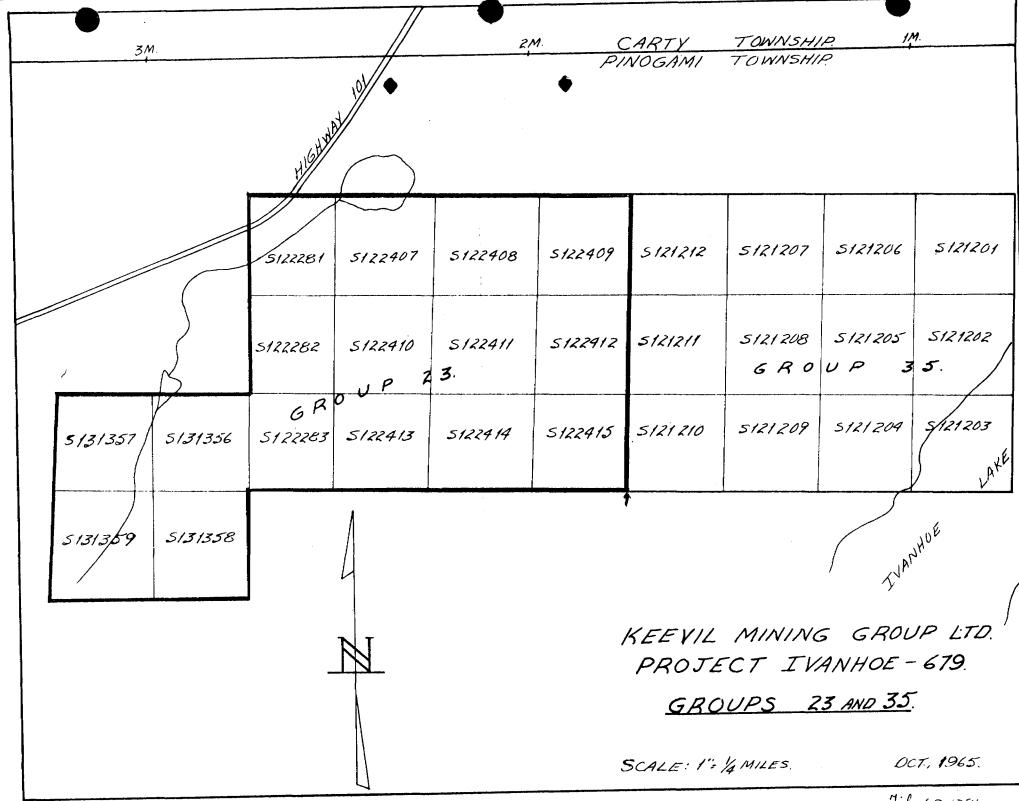
MCPO RANGE

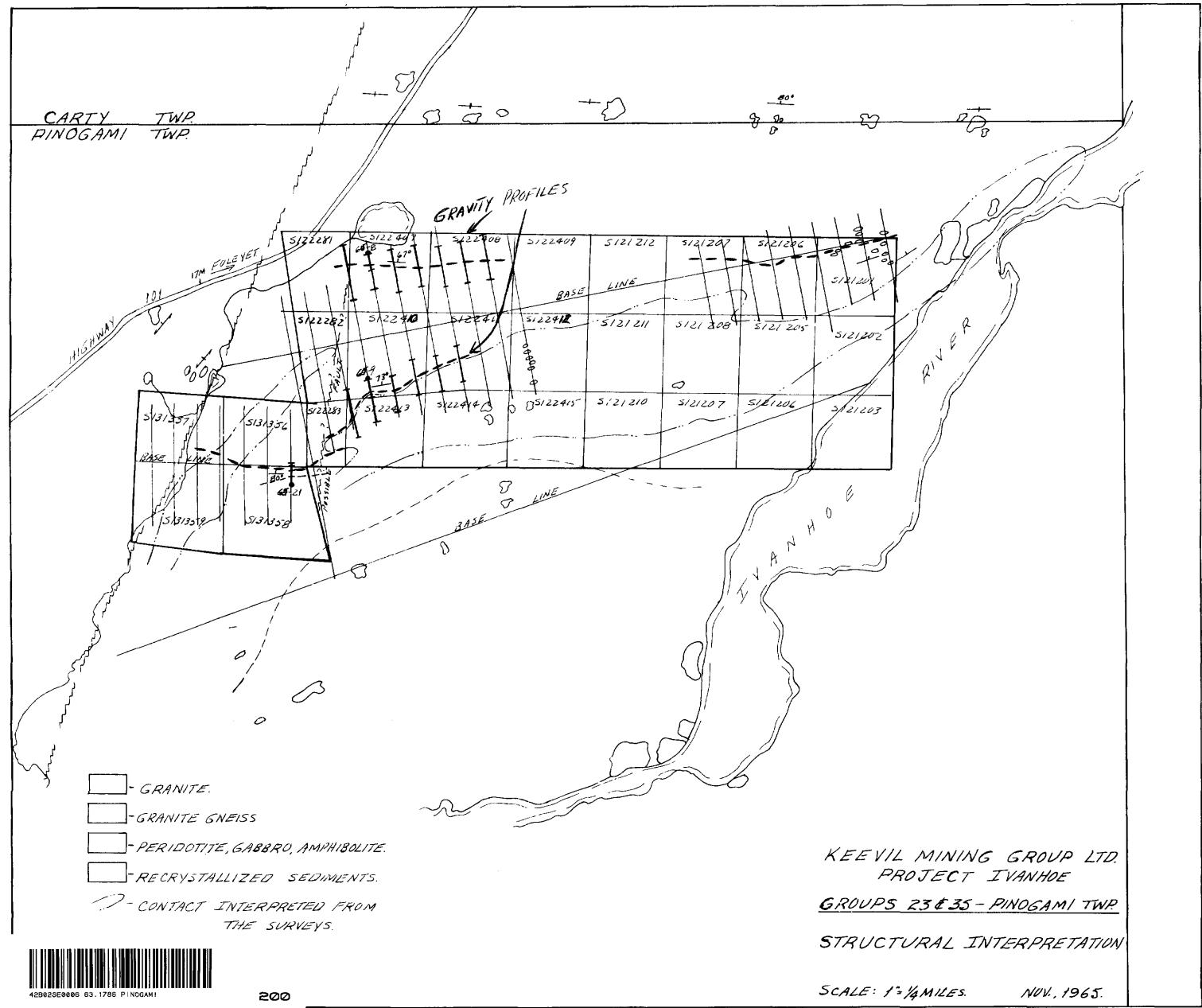
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