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TELEDYNE CANADA, LIMITED
BUCKE TOWNSHIP COBALT PROJECT
REPORT ON DRILLING RESULTS
August-October, 1979

Toronto, Ontario
October 15, 1979

G.R. Cunningham-Dunlop, P. Eng.
Pioneer Consultants Limited

SUMMARY

Teledyne Canada, Limited has completed six surface drill holes on a 200 acre property in Bucke and Lorrain Townships in the Cobalt district of Ontario. The drilling has clearly indicated an important zone of cobalt mineralization extending from ore zones mined in previous years on the Agaunico property, the most important former cobalt producer in the district.

The recent drilling suggests that a zone of 60,000 tons of cobalt mineralization, at a grade of 0.5% cobalt, may reasonably be developed over a known length of 640 feet on the Teledyne property. Potential for extensions of this zone, for parallel zones, and for important silver occurrences, may be considered to be very good.

A program of underground exploration and development is recommended, as pre-production costs are minimal, due to the location of the property and accessibility of the shallow mineralization.

INTRODUCTION

Teledyne Canada, Limited holds a lease, executed July 4, 1979, on five patented mining claims, comprising 200 acres, located in Bucke and Lorrain Townships in the vicinity of Cobalt, Ontario. The lease provides Teledyne the right to explore, develop and mine all metals and minerals from the property for a five-year period (renewable), subject to a royalty of 10% of net smelter returns payable to the lessor, Consolidated Professor Mines Limited.

The leased property adjoins the south and west boundaries of claims owned by Agnico-Eagle Mines Limited, on which the Agaunico Mine was successfully operated for production of cobalt and silver ore during the period 1905-1961. Notable as the most important producer of cobalt in the district, the Agaunico Mine produced a total of 4,350,000 lbs. of cobalt and 980,000 ounces of silver, as reported in publications of the Ontario Department of Mines. An important part of the cobalt production was derived from mineralized structures extending to the north boundary of claim 372, the most northerly claim of the property leased by Teledyne Canada, Limited.

The cobalt ores of the Agaunico Mine consist of massive cobalt sulpharsenides and diarsenides (cobaltite and smaltite) in steeply dipping veins, together with extensive disseminations of similar mineralization in the Huronian sedimentary host rocks alongside the veins. The average cobalt content of the ores mined in the period 1951 to 1957 was approximately 0.5%.

Maximum production was achieved in 1955 when 526,000 lbs. of cobalt, 146,000 ounces of silver, 117,000 lbs. of nickel and 81,000 lbs. of copper were extracted from 62,000 tons of ore and concentrate shipped by Agaunico. Much of the silver production at that time was derived from high grade veins on other parts of the Agaunico property.

In 1953, Big Agaunico Mines Limited (now Consolidated Professor) carried out a drilling program to locate the extension of the south-striking Agaunico cobalt veins. Two intersections, in drill holes No. 8 and No. 12, grading 0.58% Co/5', and 0.46% Co./3', located 350 feet and 600 feet south of the Agaunico boundary, indicated the continuation of the Agaunico cobalt zone on the Consolidated Professor property. Serious consideration was given to sinking a shaft on claim 372 in 1957, but the producer price of cobalt of \$1.60 per pound at that time precluded further development.

During the period August 1st to October 3rd, 1979, Teledyne Canada has completed six drill holes on claim 372 which have more clearly defined a zone of cobalt mineralization extending 640 feet southward on claim 372 from the Agaunico boundary. The zone is similar in grade and nature of occurrence to the Agaunico No. 15 vein and undoubtedly represents a continuation of this important structure. The most southerly Teledyne drill hole, No. T-6, indicates that the zone continues farther to the south.

PROPERTY, LOCATION AND ACCESS

The five patented mining claims, as shown on plans accompanying this report, are located within two miles of the village of North Cobalt and five miles by road from the towns of Cobalt and Haileybury, Ontario. An all-weather gravel road crosses the north part of claim 372. Power is readily available within a half-mile of the property and a light-duty power line traverses claim 372. Surface rights of eight acres are held on the western boundary of claim 372. The remaining part of the 200 acres are uncultivated land, covered with scrub timber, whose surface rights are owned by a local farmer.

Detailed location of the mining claims are as follows:

Mining claim 229; Part of SW part lot 15, Con. I, Bucke Twp.

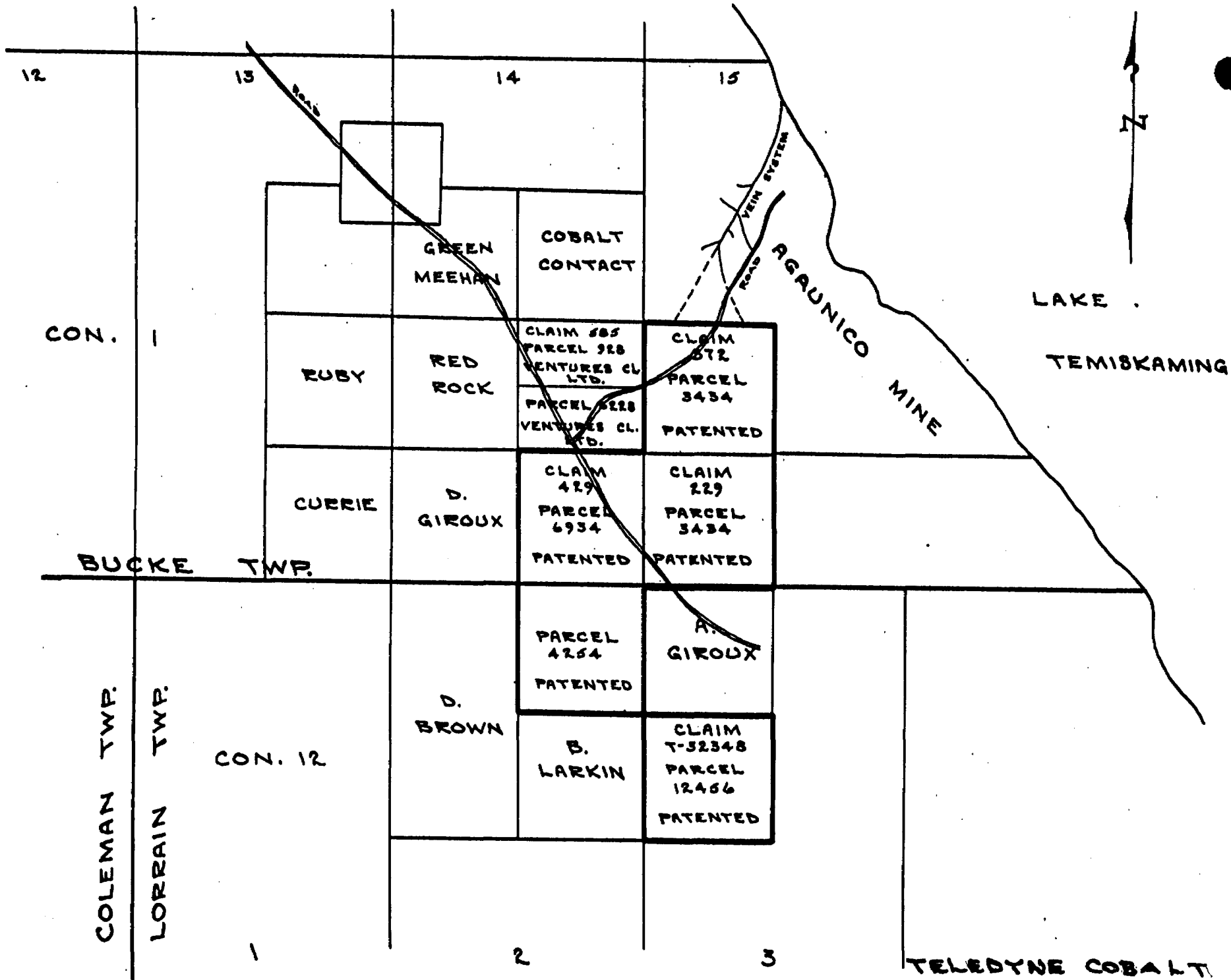
Mining claim 372; Part of SW part lot 15, Con. I, Bucke Twp.

Mining claim 429; SE $\frac{1}{4}$, S $\frac{1}{2}$, lot 14, Con. I, Bucke Twp.

Mining claim Parcel 4254; NE $\frac{1}{4}$, N $\frac{1}{2}$, lot 2, Con. XII, Lorrain Twp.

Mining claim T-32348; SW $\frac{1}{4}$, N $\frac{1}{2}$, lot 3, Con. XII, Lorrain Twp.

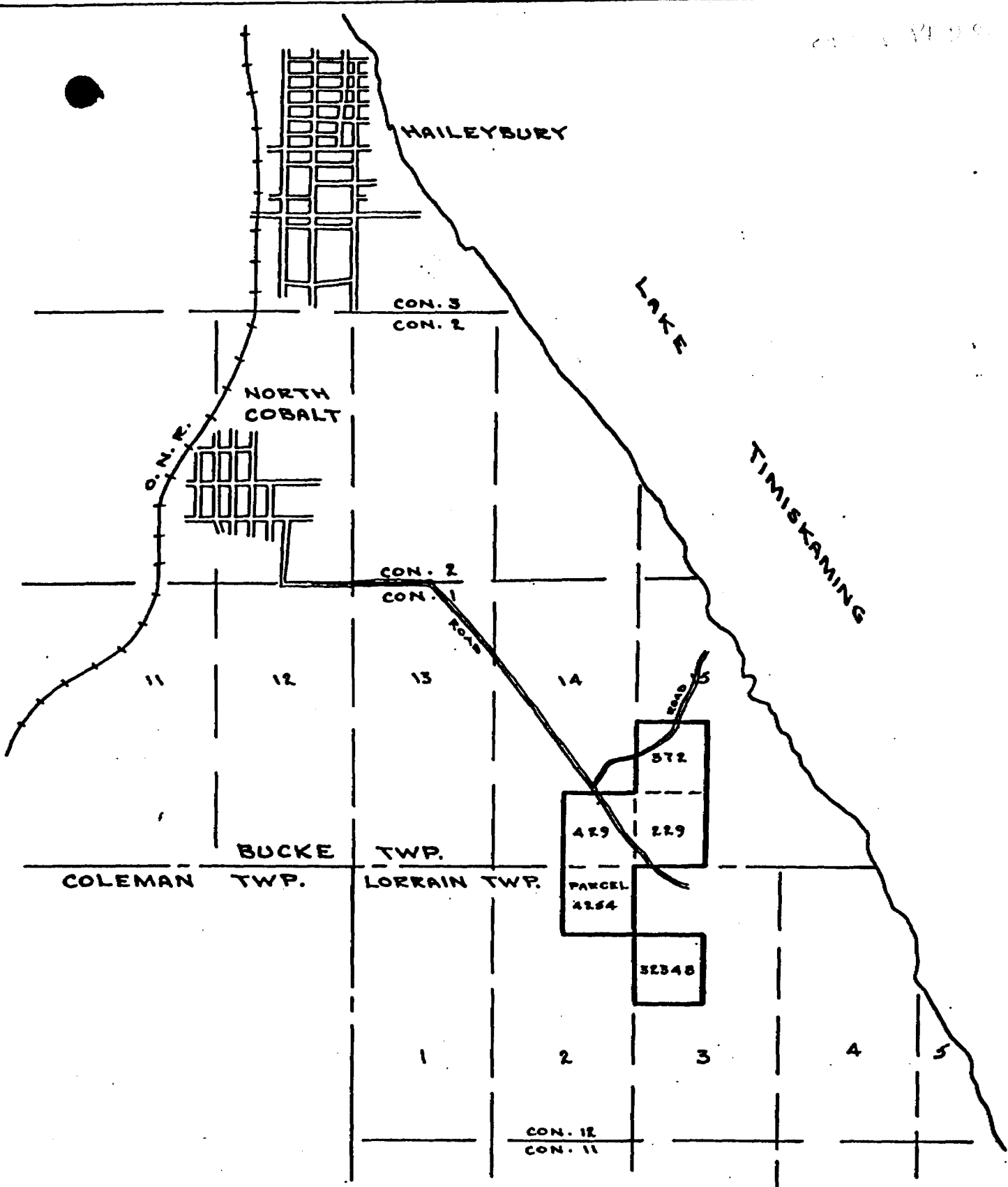
The claims and surface rights are registered in the Land Registry office in Haileybury, Ontario. The writer has confirmed by search in August, 1979, that the titles, registered in the name of Consolidated Professor Mines Limited, are free of any liens or encumbrances, and that current taxes have been paid.



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TELEDYNE COBALT
 PROPERTIES HELD
 COBALT AREA - ONTARIO

2011 1100



LOCATION MAP
TELEDYNE COBALT

SCALE : 1" = 40 CH.

MAY 1964

GEOLOGY

The surface of the property is immediately underlain by Nipissing diabase, which in turn is underlain by conglomerate, greywacke, quartzite and slate of the Huronian (Cobalt Series). The Huronian overlies Keewatin volcanics, generally composed of andesite.

The Cobalt Series of sediments occurs in a broad trough which trends south from the adjoining Agaunico property where it contained the large cobalt deposits mined to the boundary in 1957. Similar structures of Huronian rocks, sandwiched between overlying Nipissing diabase and underlying Keewatin, have produced a large portion of the silver mined in the Cobalt district.

The cobalt ores of the Agaunico mine, including vein 15 mined to the north boundary of claim 372, displayed distinct characteristics in extent and distribution of mineralization. Extending usually for a maximum height of 125 feet into the Huronian sediments in steeply-dipping veins above the Keewatin basement, the cobalt minerals may occur in narrow massive veins of several inches in width, usually in the lower conglomerate and may spread in fine disseminations and fracture-filling seams in the slate and quartzite horizons. Stopping widths of up to 50 feet were not unusual in these horizons on the Agaunico property. The mineralization may be erratic along strike, with higher grade concentrations crossing the general strike in transverse fractures and zones influenced by flow directions of the underlying Keewatin volcanics. Thus, in cross-section, stopping widths

may vary from a minimum mining width of 5 feet to a maximum of 50 feet. The average width of the Agaunico stope, mined to the boundary, was 15 feet.

Diamond drilling from surface on this zone must be accurately directed to intersect the mineralized structure within 100 feet of the Keewatin basement. Above this elevation, only weakly mineralized fracturing may be encountered and, in the Keewatin below the zone, cobalt content is rapidly diminished and the zone may be indicated only by concentrations of pyrite and pyrrhotite. Underground drilling can detail ore shoots in a much more definitive manner and exploration of the flat-lying sediments can be conducted by flat drill holes which can be drilled entirely within the limited productive horizon.

The Huronian series, approximately 250 feet thick in the area of the present drilling, can be expected to diminish in thickness to the south where the Huronian is eventually completely cut off by the south-dipping Nipissing diabase intrusive. It is reasonable to anticipate, subject to investigative drilling, that the Huronian sediments will extend for at least 1000 feet to the south of hole T-6, and will provide a favourable host for continuation of the known zone in mineable dimensions, i.e. a thickness of Huronian of at least 100 feet, for a minimum distance of 500 feet to the south.

DIAMOND DRILLING RESULTS

Sections and logs of drill holes T-1 to T-6 are included with this report with results of sampling for cobalt and silver. The sections also display pertinent drill holes from previous work and holes M-7 to M-10 drilled in 1978. It is clearly evident that some of the holes, such as M-8, M-9, D.D.H. 10, 9, and 7, crossed the structure at an elevation too high or too low to encounter the important horizon within 100 feet above the Keewatin. Other holes, such as M-7, M-10, T-3 and T-4, were in the favourable horizon but intersected fault zones, which apparently disrupted or displaced the cobalt mineralization. These negative holes are typical in the Cobalt district due to the erratic distribution of mineralization.

Results of holes T-1 to T-6 are summarized as follows:

<u>Hole No.</u>	<u>Sample Width</u>	<u>Co. %</u>	<u>Ag. oz/ton</u>	<u>Remarks</u>
T-1	0.5 ft.	10.8	2.36	Massive 4" vein. Includes walls.
<u>or</u>	5.5 ft.	1.02	0.27	
T-2	5.5 ft.	0.16	0.20	Narrow stringers.
T-3	Negligible values.			Fault zone.
T-4	Negligible values.			Fault zones.
T-5	9.5 ft.	0.76	0.13	Narrow stringers.
<u>or</u>	17.0 ft.	0.50		
T-6	5.5 ft.	0.53	0.59	Narrow stringers.

In addition, hole T-1 cut a narrow one inch cobalt vein in the underlying Keewatin basement, with a sampled grade of 0.59% Co., and 18.8 oz. Ag/ton over a width of six inches.

CONCLUSIONS

The recent drill holes, T-1 to T-6, have more clearly defined the extension of the Agaunico zone over a length of 640 feet on claim 372. The mineralization is similar to that of the Agaunico ore zone and can be expected to vary in distribution to greater widths. The horizontal continuity can only be completely investigated during underground development by drifting on the zone. Six drill holes have now cut mineralization grading from 0.16% Co. over 5.5 feet, to 0.53% Co. over 17 feet. The latter intersection is probably less than the true width of mineralization which, in this case, is distributed laterally in a relatively thin slaty horizon. Silver values in this zone are expected to average between 1 and 2 oz. per ton, as experienced in the Agaunico Mine.

While it is not possible to measure the dimensions or grade of ore shoots indicated by the drilling to date, it is reasonable to expect that an average mining grade of 0.4% to 0.5% cobalt could be maintained with strict geological and sampling control. Assuming a minimum ore grade width of 5 feet, and a maximum of 25 feet, and allowing for barren or low grade sections, it can reasonably be anticipated that the zone indicated to date would contain a minimum of 20,000 tons of material grading 0.5% Co., if a mineable length of 300 feet and height of 50 feet were assumed. From the results and comparison to the Agaunico zone, this tonnage appears much too conservative. Without the strong possibility of additional parallel or transverse zones as indicated east of the main zone, a mineable tonnage of 60,000 tons grading 0.5% Co. may be considered as a very good possibility.

RECOMMENDATIONS

It is recommended that an underground exploration and development program be carried out to develop sufficient ore for a continuous mining operation at a minimum rate of 100 tons per day. If the program indicates 50,000 tons or more, a mining rate of 200 tons per day would be a reasonable objective.

Consideration should be given to development by a trackless decline to gain access to the zone from a surface location roughly 325 feet above the lowest elevation of the zone. A trackless drift could then be extended along the strike of the structure for a length of 650 feet or more. At an inclination of 15%, the decline would have a total length of 2160 feet and would provide for truck haulage at an efficient inclination. At a 20% grade, the development cost for 1625 feet of ramp would be lower, but truck haulage more costly. A study of probable sinking and operating costs would determine the optimum slope for the proposed ramp. Diamond drilling, raising and sampling, would take place concurrently with development drifting, and a raise to surface for ventilation would be essential.

Since the old Agaunico shaft is in poor condition, and track haulage would be increasingly costly with added distance, access and mining from the Agaunico Mine is considered a less attractive, although initially cheaper, alternative. If a joint cost-sharing arrangement can be made with

Agnico-Eagle Mines Limited, rehabilitation of the Agaunico shaft should be studied.

Further studies of development and mining costs, custom milling, and smelter treatment costs, should be undertaken prior to a final decision on underground development. Preliminary estimates are now being compiled for this purpose.

Respectfully submitted,

PIONEER CONSULTANTS LIMITED



G.R. Cunningham-Dunlop, P. Eng.

Toronto, Ontario

October 15, 1979

COMPANY Teledyne CanadaDIAMOND FULL RECORDHOLE NO. T-1PROPERTY Big AgaunicoSHEET NO. 1 of 2DATE August 12, 1979

DIP ANGLES Collar - 40° 750' - 41°	BEARING	Due East	LATITUDE	STARTED	August 1, 1979
	LENGTH	778 ft.	DEPARTURE	STOPPED	August 10, 1979
	LOCATION	650' West, 420' South of #1 post, Claim 372		ELEVATION	738.70
ROCK				LOGGED BY G.R.C.D. & M.L.	

FOOTAGE	NAME OF ROCK	DESCRIPTION	CORE SAMPLES						
			SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY	
0' - 30'	Casing								
30' - 310'	Diabase	(Coarse to medium grained) 121.0' - 1/2" calcite @ 45° to core 204.0' - 1/4" aplite @ 80° to core 246.2' - 248.0' series of quartz stringers 271' - 274' - 3/8" aplite parallel to core							
310' - 318'	Contact zone	(mixture of diabase and quartzite)							
318' - 338'	Quartzite	(altered, with scattered chalcopyrite)							
338' - 508'	Conglomerate	(small pebbles) 367.5' - 368.5' (fracture zone re-cemented with calcite and quartz) 388.0' - 389.5' (fracture zone re-cemented with calcite and containing scattered chalcopyrite) 390' - 508' (large pebbles and boulders) 445.4' (2" cobaltite vein @ 60° to core)							
508' - 535'	Quartzite	(chlorite spotting begins at 489' and throughout the quartzite) 527' - 530' (lost core)							
535' - 576'	Slate	(mud colored with narrow black bands and chloritic spotting) 536' - 538' (lost core) 538.5' - 540.3' (lost core) 540.5' - 543.5' (lost core)							

COMPANY _____

DIAMOND DRILL RECORD

HOLE NO. T-1

PROPERTY _____

SHEET NO. 2 of 2

DATE _____

DIP ANGLES	BEARING	LATITUDE	STARTED
	LENGTH	DEPARTURE	STOPPED
	LOCATION	ELEVATION	LOGGED BY <u>M.L.</u>

ROCK	CORE SAMPLES
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FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						CO%	Ag.	Ag. OZ
576' - 601'	Conglomerate	(coarse pebbles and boulders)						
601' - 778'	Keewatin volcanics	(andesite) with frequent narrow calcite stringers and scattered sulphides (galena, sphalerite, pyrite, chalcopyrite)						
		723.2' - 1/2" cobaltite vein @ 45°						
		736.0'-768' - porphyritic andesite						
		765.5' - 1" quartz vein						
778'	End of Hole		1114	0.5'	455-455.5	10.8	2.36	
			1115	2.5'	452.5-455	0.015	0.03	
			1116	2.5'	455.5-458	0.066	0.10	
			1117	0.5	723-723.5	0.59	18.80	
			1118	2.5'	720.5-723	0.009	0.06	
			1119	2.5'	723.5-726	0.008	0.04	
					Sludge Samples			
					440-450	0.11	0.04	
					450-460	0.24	0.02	
					460-470	0.11	0.02	
					530-540	0.021	0.02	
					540-550	0.035	0.03	
					720-730	0.061	1.30	
					730-740	0.023	0.41	

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COMPANY Iedynne CanadaDIAMOND E LL RECORDHOLE NO. I-2PROPERTY Big AgaunicoSHEET NO. 1DATE August 28, 1979

DIP ANGLES		BEARING	LATITUDE	STARTED				
Collar - 45°		Due East		August 14, 1979				
300' - 46°		LENGTH	DEPARTURE	STOPPED				
650' - 46°		654'		August 22, 1979				
		LOCATION	ELEVATION	LOGGED BY				
		729.85'W, 86.56'S of	757.50'	G.R.C-D & M.L.				
ROCK			CORE SAMPLES					
#1 post, cl. 372								
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
							Co.	Ag.
0' - 46'	Casing						%	oz/ton
46' - 222'	Diabase	91.4' - 1/2" calcite + chalcopryite @ 60° to core						
222' - 262'	Greywacke	with slaty sections						
262' - 481'	Conglomerate							
		309' - lost circulation, cemented						
		404' - 10" breccia zone						
		409' - 410' breccia zone						
		474' - 481' breccia zone						
		475' - lost circulation, cemented						
481' - 520'	Greywacke	(slate-like with spotted alteration)						
		492 - 494' breccia zone						
520' - 548'	Conglomerate							
		525.2' - 2 - 1/8" cobaltite stringers						
548' - 559'	Greywacke	(impure quartzite)						
559' - 585'	Conglomerate	(with narrow greywacke bands)						
585' - 654'	Keewatin andesite							
		590' - 594' fracture zone with breccia bands						
		635.5' - 1/2" calcite in shear zone						
654'	End of hole		1120	0.6'	506.1'-506.7'	0.18	0.03	
			1121	0.6'	511'-511.6'	0.045	0.02	
		Casing left in hole.	1122	0.6'	525'-525.6'	1.02	0.59	
			1123	1.5'	523.5'-525'	0.16	0.35	
			1124	3.4'	525.6'-529	0.013	0.07	

S. R. K. Co.

COMPANY Teledyne Canada
 PROPERTY Big Agaunico

DIAMOND DRILL RECORD

HOLE NO. T-3
 SHEET NO. 1 DATE August 29, 1979

DIP ANGLES Collar - 40° 350' - 40° 670 - 40.5°	BEARING Due East	LATITUDE	STARTED August 23, 1979
	LENGTH 683'	DEPARTURE	STOPPED August 29, 1979
	LOCATION 578.86'W, 488.99S of	ELEVATION 727.69'	LOGGED BY G.R.C-D & M.L.

ROCK **#1 post, cl. 372** CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
0' - 60'	Casing							
60' - 327'	Diabase	85.7' - ½" calcite @ 30° to core 91'-92' series of narrow calcite stringers with scattered chalcopryrite 269' - 5" breccia zone with calcite matrix						
327' - 346'	Greywacke	(impure quartzite)						
346' - 515'	Conglomerate	366' - 4" aplite & calcite vein with chalcopryrite 449'-462' fault zone (broken ground with breccia zones and hematite staining)						
515' - 538'	Greywacke							
538' - 554'	Greywacke	(slate-like in colour & banding)						
554' - 562'	Conglomerate							
562' - 683'	Keewatin andesite	(with scattered pyrite) 567' - 3" calcite, quartz & pyrite 662'-683' Porphyritic andesite	1125	3"	567	0.08	0.014	
		sludge			440-450 460-470	Tr. 0.02	0.011 0.007	
683'	End of hole	Casing left in hole.						

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COMPAN Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. T-4PROPERTY Big Agaunico

SHEET NO. 1

DATE Sept. 15, 1979

DIP ANGLES Collar - 42°	BEARING	Due East	LATITUDE	STARTED	August 30, 1979
	LENGTH	708'	DEPARTURE	STOPPED	September 11, 1979
	LOCATION	700'W X 280'5 of	ELEVATION	740'00	LOGGED BY M. Lavigne

ROCK No. 1 Post, claim 372

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag. oz/ton	Co. %	ASSA
0' - 40'	Casing							
40' - 284'	Diabase	54' - 1/4" calcite stringer @ 45° 245' - 1/4" calcite stringer @ 45°						
284' - 314'	Greywacke	(with narrow slaty sections)						
314' - 484'	Conglomerate	345'5 - 1/4" calcite stringer @ 45° 428' - 432' recemented breccia zone 429' - lost circulation in sand seams cemented twice (24 bags of cement)						
484' - 496'	Greywacke	(with heavy chlorite spotting)						
496' - 505'	Conglomerate	499' - lost circulation						
505' - 537'	Quartzite	(with chlorite spotting) 537' - 2' lost core						
537' - 593'	Slate	(chlorite spotting and banding)						
593' - 621'	Conglomerate	(with narrow bands of slate)	1127	12"	617-618	0.07	0.008	
621' - 708'	Keewatin	(andesite) - with scattered bands of pyrite and chalcopyrite 629' - 1/2" calcite stringer @ 30° 640' - 1/2" calcite stringer @ 30° 647' - 1" calcite stringer @ 30° 666'5 - 1/2" calcite stringer @ 30° 676'5 - 1/2" calcite stringer @ 30°	1126	2'	647	0.13	0.018	

COMPAN Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. T-4

PROPERTY Big Aqaunico

SHEET NO. 2

DATE Sept. 15, 1979

DIP ANGLES	BEARING	LATITUDE	STARTED
	LENGTH	DEPARTURE	STOPPED
	LOCATION	ELEVATION	LOGGED BY

ROCK			CORE SAMPLES			
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FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						ASSAY	ASSAY	ASSA
708'	Keewatin	687' - 1/4" calcite stringer @ 30° 694' - 1/2" calcite stringer @ 30° 695' - 1/4" calcite stringer @ 30°						
	End of Hole	Casing left in hole						

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COMPAN Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. T-5

PROPERTY Big Agaunico

SHEET NO. 1

DATE Sept. 21, 1979

DIP ANGLES Collar - 40°	BEARING <u>Due East</u>	LATITUDE	STARTED <u>September 11, 1979</u>
	LENGTH <u>668'</u>	DEPARTURE	STOPPED <u>September 19, 1979</u>
	LOCATION <u>775'W X 220'S of</u>	ELEVATION <u>750:00</u>	LOGGED BY <u>M. Lavigne</u>

ROCK No. 1 Post, claim 372

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag. oz/ton	Co. %	ASSA
0' - 40'	Casing							
40' - 280'	Diabase							
280' - 305'	Greywacke	(with narrow slaty bands)						
305' - 516'	Conglomerate	413.5 - 416.5 breccia zone cemented with calcite 417' lost circulation (cemented)	1132	60"	540-545	0.02	0.012	
516' - 544'	Greywacke	(some narrow slate bands)	1133	24"	545-547	0.02	0.010	
			1128	24"	547-549	0.04	0.16	
			1129	24"	549-551	0.14	2.12	
			1130	36"	551-554	0.21	0.72	
			1131	30"	554-556.5	0.08	0.20	
544' - 592'	Slate	(with heavy chloritic spotting)	1134	42"	556.5-560	0.03	0.15	
			1135	48"	560-564	0.04	0.17	
			Averages					
592' - 635'	Conglomerate	617' - 620' slate band						
635' - 668'	Keewatin Volcanics	(andesite with scattered sulphides)						
668'	End of Hole	Casing left in hole						
			or		547-556.5 = 0.76% Co./9.5'			
					547-564 = 0.496% Co./17'			

M. Lavigne

COMPANY TELEDYNE CANADADIAMOND DRILL RECORDHOLE NO. T-6PROPERTY BIG AGAUNICO

SHEET NO.

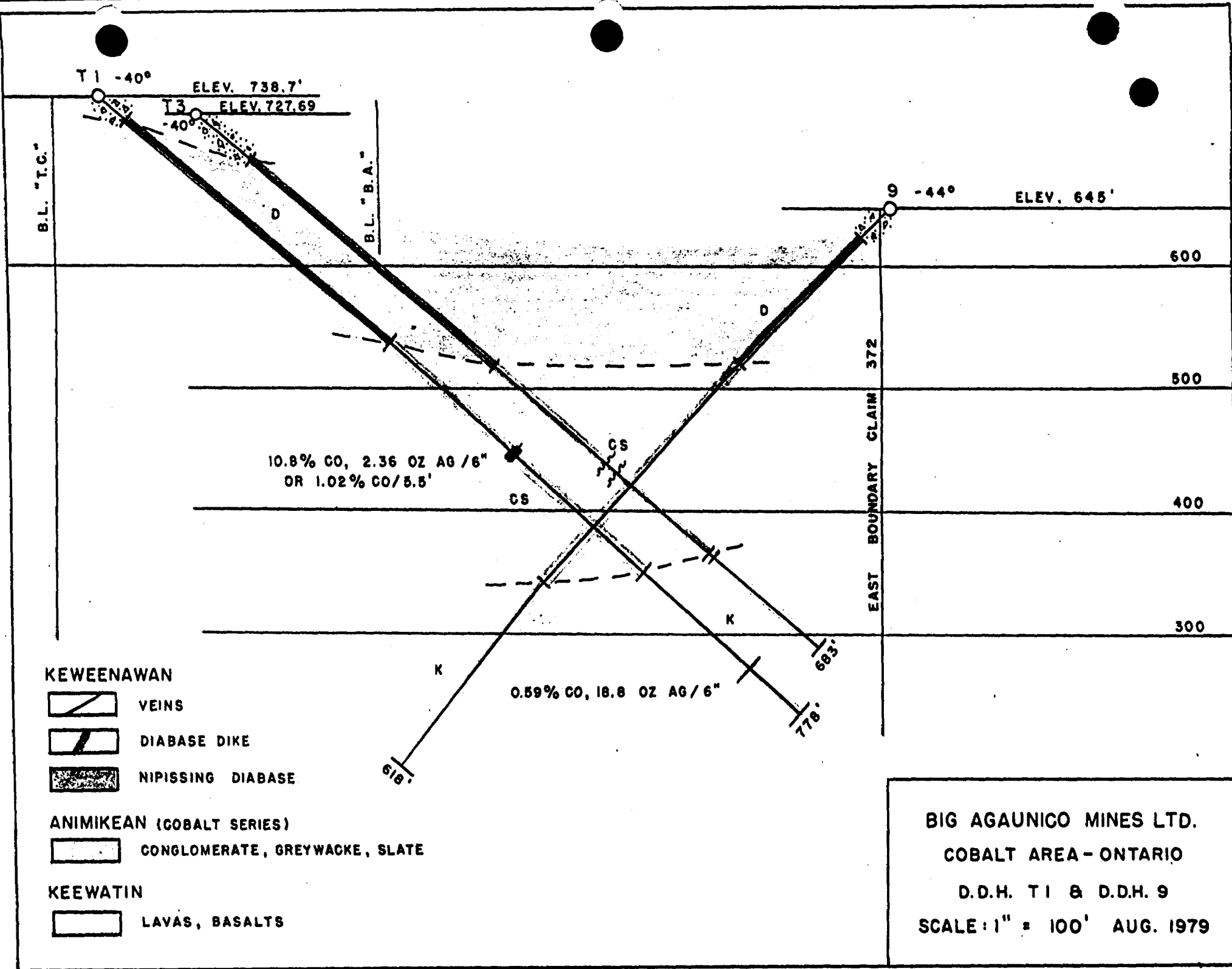
DATE Oct. 5/79

DIP ANGLES Collar -40° 350' -41° 700' -40°	BEARING	Due East	LATITUDE	STARTED	Sept. 24/79
	LENGTH	712'	DEPARTURE	STOPPED	Oct. 3/79
	LOCATION	600' W. x 626' S. of	ELEVATION	LOGGED BY	M.L.




ROCK No. 1 Post Cl. 372

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag	ASSAY	ASSAY Co
0' - 52'	Casing	102'-103' Quartz-calcite stringer with sulphides	1136	12"	102'-103	.04	.023	
		106.5'-107' Breccia zone	1137	24"	104'-106	.02	.008	
		290'-291' Narrow calcite stringers with pyrite & chalcopryrite	1138	24"	106'-108	.02	.007	
		315'-6" Breccia zone						
		320'-1" Quartz vein @ 45° to core	1139	12"	290'-291	.03	.006	
52' - 368'	Diabase							
318' - 377'	Greywacke (with conglomerate bands)							
377' - 557'	Conglomerate	486'-495' Several narrow breccia zones 489'-4" Mud seam						
557' - 581'	Quartzite		1140	30"	634.5'-637'	0.03	.006	
581' - 617'	Slate - with heavy chloritic spotting		1141	24"	637'-639'	0.02	.004	
			1142	36"	639'-642'	Tr.	.006	
617' - 657'	Conglomerate - with several narrow slate beds		1143	36"	642'-645'	Tr.	.010	
			1144	24"	645'-647'	Tr.	.006	
657' - 670'	Conglomerate - with fine threads and disseminated cobalt and pyrite from 653-660		1145	36"	647'-650'	0.10	0.14	
			1146	36"	650'-653'	0.08	0.010	
670' - 712'	Keewatin volcanics - with scattered pyrite		1147	30"	653'-655.5'	0.18	0.020	
712'	End of hole		1148	30"	655.5'-658.8'	0.34	0.85	
			1149	30"	658'-660.5'	0.85	0.20	
			1150	30"	660.5'-663'	0.08	0.00	



KEWEENAWAN

-  VEINS
-  DIABASE DIKE
-  NIPISSING DIABASE

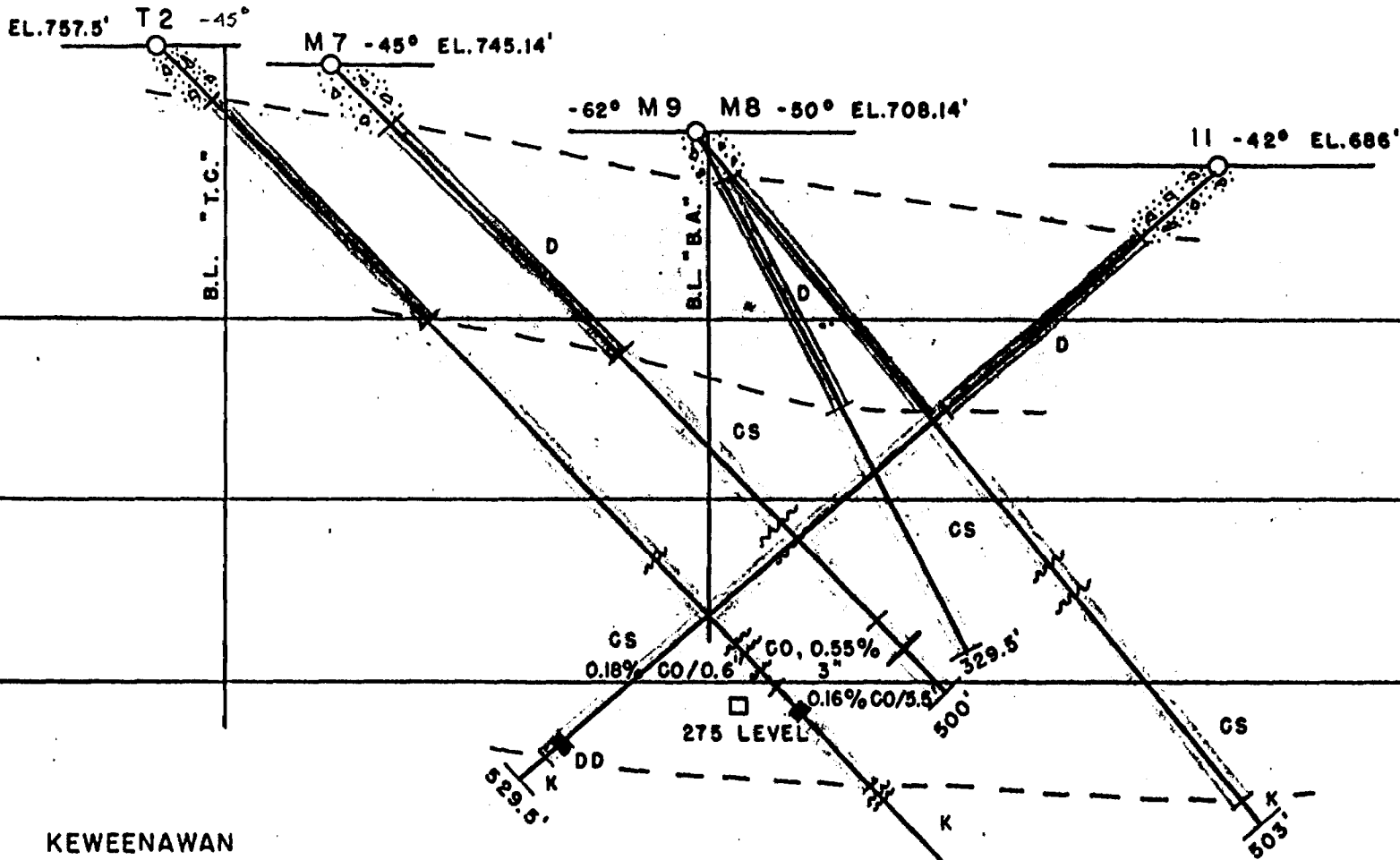
ANIMIKEAN (COBALT SERIES)

-  CONGLOMERATE, GREYWACKE, SLATE




KEEWATIN

-  LAVAS, BASALTS

BIG AGAUNICO MINES LTD.
COBALT AREA - ONTARIO
D.D.H. T1 & D.D.H. 9
SCALE: 1" = 100' AUG. 1979



KEWEENAWAN

-  VEINS
-  DIABASE DIKE
-  NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)

-  CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN

-  LAVAS, BASALTS

BIG AGAUNICO MINES LTD.
 COBALT AREA - ONTARIO
 D.D.H. 11, M7, M8, M9 & T2
 SCALE: 1" = 100' AUG. 1979

T4 2° ELEV. 740'

10 -30° ELEV. 636'

" I.C."
B.L.

600

500

400

300

372
EAST BOUNDARY
GLAIM

CS

CS

3.5 OZ AG } 1.0'
0.09% CO

K

K

684'

708'

D

D

KEWEENAWAN



VEINS



DIABASE DIKE



NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)



CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN



LAVAS, BASALTS

BIG AGAUNICO MINES LTD.

COBALT AREA - ONTARIO

D.D.H. T4 & D.D.H. 10

SCALE: 1" = 100' SEPT. 1979

ELEV. 750'

T5 - 40°

M 10 - 45° EL. 738.65

B.L. "T.C."

B.L. "B.A."

700

600

500

400

CLAIM 372
EAST BOUNDARY

D

D

CS

CS

CO ?

454'

0.76 % CO / 9.5'
OR 0.5 % CO / 17.0'

K

668'

KEWEENAWAN



VEINS

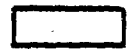


DIABASE DIKE



NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)



CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN



LAVAS, BASALTS

BIG AGAUNICO MINES LTD.

COBALT AREA - ONTARIO

D.D.H. T5 & M 10

SCALE: 1" = 100' SEPT. 1979

ELEVATION 734.94

T6 -40°

12 -50°

ELEVATION 719'

600

500

400

EAST BOUNDARY CLAIM 372

KEWEENAWAN



VEINS



DIABASE DIKE



NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)



CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN



LAVAS, BASALTS

SECTION 'B-B'

CS

CS

0.48% CO / 3'

0.34% CO / 3'

CS

0.525% CO / 5.0'

112'

BIG AGAUNICO MINES LTD.

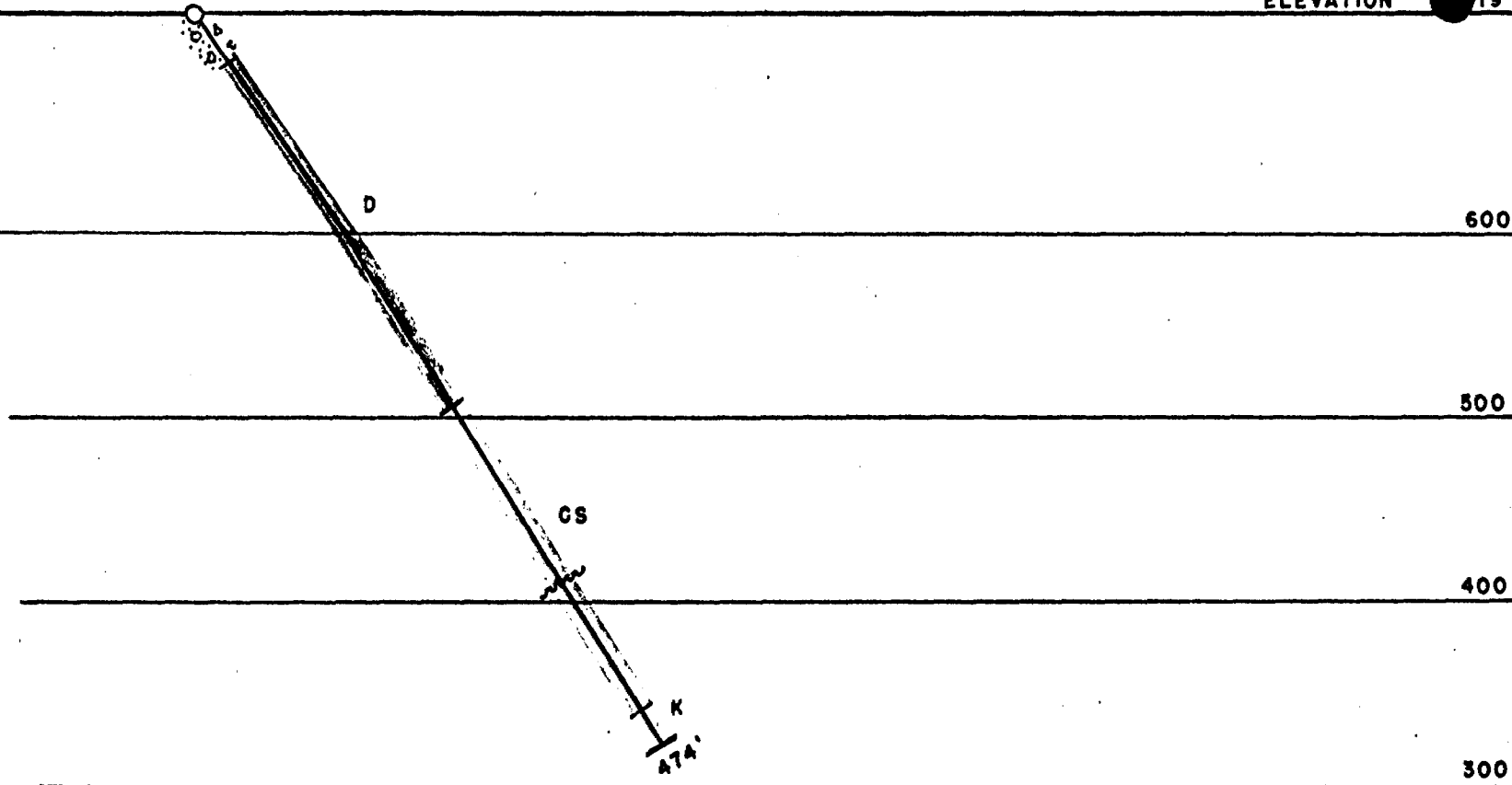
COBALT AREA - ONTARIO

D.D.H. T6 & D.D.H.12

SCALE: 1" = 100' AUG. 1979

13 - 55°

ELEVATION 19'



KEWEENAWAN



VEINS

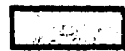


DIABASE DIKE



NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)



CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN



LAVAS, BASALTS

BIG AGAUNICO MINES LTD.

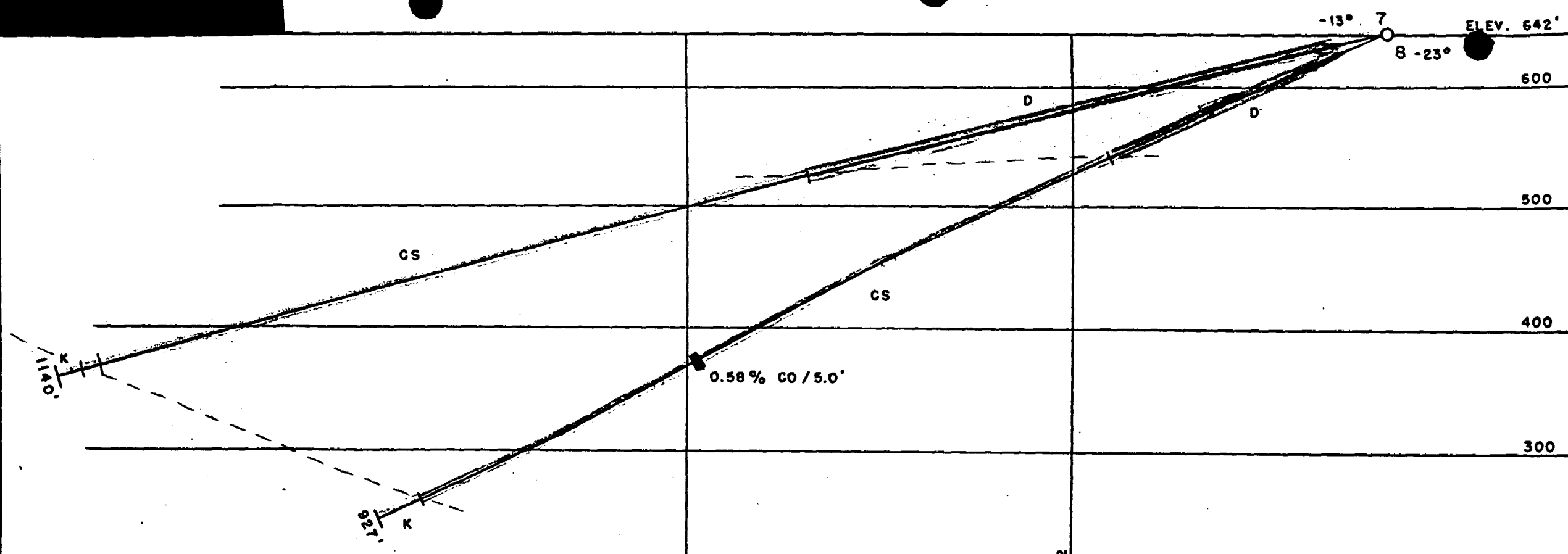
COBALT AREA - ONTARIO

D.D.H. 13




SCALE: 1" = 100' AUG. 1979

-13° 7
8 -23° ELEV. 642'

600
500
400
300



KEWEENAWAN

-  VEINS
-  DIABASE DIKE
-  NIPISSING DIABASE

ANIMIKEAN (COBALT SERIES)

-  CONGLOMERATE, GREYWACKE, SLATE

KEEWATIN

-  LAVAS, BASALTS

SECTION 'B-B'

EAST BOUNDARY CLAIM 372

BIG AGAUNICO MINES LTD.
COBALT AREA - ONTARIO
D.D.H, 7 & 8
SCALE: 1" = 100' AUG. 1979

~~0148~~
014-PA2C80



31M05NE0410 63.3927 LORRAIN

020

TELEDYNE CANADA, LIMITED
BUCKE TOWNSHIP COBALT PROJECT
REPORT ON DRILLING RESULTS
September-December, 1980

Cobalt, Ontario
April 27, 1981

R. E. Bresee
Project Engineer
Teledyne Cobalt

SUMMARY

Teledyne Canada, Limited completed 22 underground diamond drill holes on it's cobalt property in Bucke Township, District of Timiskaming on December 19, 1980.

This drilling confirmed the original estimate of 40-60,000 tons of cobalt mineralization at an average grade of 0.40-0.50% cobalt outlined by the 6 surface holes drilled in the late summer and early fall of 1979. The drilling better defined a strike length of at least 950 feet in what appears to be two separate zones. The first is some 500 feet in length, and quite possibly, is an extension of the old Agaunico Ore Zone. The second zone is approximately 450 feet in length and is trending towards the south east boundary of claim #372; adjoining Agnico-Eagle Mines, Limited property.

The diamond drilling was accomplished from 4 drill stations located in pre-determined Re-Muck excavations on the 2300 foot Access Decline driven to intersect the ore zone.

INTRODUCTION

Teledyne Canada holds a lease on 5 patented mining claims, comprising 200 acres, from Consolidated Professor Mines, Limited of Toronto. The lease was executed on July 4, 1979 on these claims located in Bucke and Lorraine Townships, Timiskaming Mining District.

Surface drilling results of the August - October, 1979 programme indicated further development of the ore zone should be initiated. As a result, Teledyne Canada opted to drive an Access Decline to reach the delineated ore zone. The ramp was driven between April and November of 1980 to a length of approximately 2300 feet.

Towards the end of the ramp development stage, a decision was made to pursue more diamond drilling from the ramp to better delineate the ore zone and define structures. This would facilitate preparation of a mining plan in the event that a production decision was reached.

In lieu of this, 22 underground drill holes were drilled by Barron Diamond Drilling of Haileybury between September 2 and December 19, 1980. The drilling more clearly defined structure and also confirmed the original strike length of the mineralized zone with an added surprise. The drilling indicated the possibility of another 450 feet of mineralized area in what seems to be a separate

zone to the one outlined by surface diamond drilling. Essentially, therefore, it can be concluded that there could be two separate mineralized zones with the most southerly end trending towards the east boundary of claim #372, which borders on Agnico-Eagle Mines property.

PROPERTY, LOCATION, AND ACCESS

The 5 patented mining claim parcels - #229, #372, #429, #4254, #t-32348 - are located within 2 miles of the village of North Cobalt and 5 miles by paved highway from the towns of Cobalt and Haileybury Ontario. An all weather gravel road traverses the north part of claim #372 where the Access Decline is located. The mining rights for the 5 parcels plus 8 acres of surface rights on claim #372 are leased from Consolidated Professor Mines, Limited of Toronto as already mentioned. The remainder of the surface rights are leased from a local farmer.

DIAMOND DRILLING RESULTS

Please refer to the drill logs and cross sections and assay results accompanying this report for a summary of underground diamond drill holes UT-#1 to UT-#22 inclusive. 18 of the 22 holes drilled or 82% encountered cobalt mineralization which could potentially make ore grade. This is an excellent success ratio for diamond drilling in the Cobalt camp. The negative results of the remaining 4 holes or 18% can easily be explained as follows. Hole UT-#1 missed the ore zone; this is typical in the Cobalt camp due to the erratic distribution of mineralization. Hole UT-#7 entered the Keewatin basement rocks before it had reached the ore zone horizon. Hole UT-#10 encountered a fault zone and heavy water flow and was abandoned as it was not a hole critical to the drill programme. Hole UT-#17 encountered a fault zone and heavy water flow also and was abandoned due to the time remaining for the drill programme.

Results of holes UT-#1 to UT-#22 are summarized on the following pages.

<u>Hole No.</u>	<u>Sample width</u>	<u>Co. %</u>	<u>Ag. oz/ton</u>	<u>Remarks</u>
UT-1	Negligible values.			Missed ore zone
UT-2	2.0 ft.	2.44	.06	½" vein 5. - ½" veins & crystal Av. zone
	3.0 ft.	6.90	.22	
	<u>or</u> 55.3 ft.	0.644	-	
UT-#3	1.0 ft.	10.20	.69	8" massive vein & diss. Diss. co. Narrow seams Co. Av. zone
	1.0 ft.	1.48	.05	
	1.5 ft.	1.18	.03	
	<u>or</u> 28.6 ft.	0.74	-	
	5.0 ft. 1.0 ft.	0.18 0.049	- 1.02	
UT-4	4.8 ft.	0.238	-	Co. threads
UT-5	4.0 ft.	0.16	.03	Fine diss. Co.
UT-6	11.0 ft.	0.10	-	Av. zone, Fine sulph. threads
UT-7	Negligible values.			Entered Keewatin before reach zone
UT-8	1.0 ft.	1.46	.41	¼" vein Av. zone
	<u>or</u> 7.0 ft.	0.41	.09	
	1.5 ft. <u>or</u> 4.0 ft.	0.097 0.045	4.21 1.77	
UT-9	1.0 ft.	0.68	.06	Eighth inch string. Co.
UT-10	Negligible values.			Fault zone & heavy water flow.
UT-11	5.0 ft.	0.166	-	Av. zone
	13.0 ft.	0.369	-	Av. zone
	1.5 ft.	1.80	3.06	½" Co. vein & Galena Av. zone
	<u>or</u> 6.5 ft.	0.446	.88	
	1.5 ft. <u>or</u> 3.5 ft.	0.68 0.44	1.30 .22	½" vein & stringers Av. zone

<u>Hole No.</u>	<u>Sample Width</u>	<u>Co. %</u>	<u>Ag. oz/ton</u>	<u>Remarks</u>
UT-12	1.0 ft. 1.0 ft.	0.44 1.04	.35 -	$\frac{1}{4}$ " vein Narrow stringers
UT-13	2.0 ft. 1.0 ft. <u>or</u> 8.0 ft. <u>or</u> 17.0 ft.	1.90 1.05 0.49 0.30	.03 .02 - -	$\frac{1}{2}$ " vein $\frac{1}{4}$ " vein Av. zone Av. zone
UT-14	1.5 ft. <u>or</u> 6.0 ft.	4.02 1.14	.74 -	$\frac{1}{2}$ " & $\frac{1}{4}$ " vein & diss. Av. zone
UT-15	4.0 ft. 1.5 ft. <u>or</u> 5.5 ft. 1.4 ft. <u>or</u> 5.2 ft. 1.0 ft. <u>or</u> 6.2 ft.	0.398 0.90 0.228 1.16 0.587 1.14 0.357	- .05 - 1.22 - .37 -	Av. zone Diss. Co. Av. zone Many fine threads & Diss. Av. zone 2-eighth inch seams Av. zone
UT-16	1.5 ft. <u>or</u> 5.5 ft.	1.82 0.504	.10 -	2-three quarter inch veins Av. zone
UT-17		Negligible values.		Did not reach zone
UT-18	2.5 ft. 2.5 ft. 3.0 ft. <u>or</u> 8.0 ft.	3.90 3.30 0.90 2.59	.16 .12 .06 -	2- $\frac{1}{4}$ " veins & diss. $\frac{1}{2}$ " vein & diss. Fine threads Co. Av. zone
UT-19	6.0 ft.	0.12	.02	Fine diss. Co.
UT-20	10.0 ft. <u>or</u> 17.0 ft.	0.59 0.35	- -	Av. zone Av. zone
UT-21	10.0 ft. <u>or</u> 7.0 ft.	0.585 0.43	- -	Av. zone Av. zone
UT-22	4.0 ft.	0.24	.07	Av. zone

CONCLUSIONS

The underground diamond drilling confirmed the extension of the Agaunico Ore Zone onto claim #372 for a strike length of approximately 500 feet. The programme also unearthed what appears to be a separate zone with a strike length of approximately 450 feet trending towards the property boundary with Agnico-Eagle Mines, Limited to the south - east. Results are encouraging with intersections like 0.644% Co. over 55.3 feet, and 0.74% Co. over 28.6 feet, and 2.59% Co. over 8 feet with many smaller low and high grade sections as outlined in the preceeding pages. Note that these intersections are not true widths.

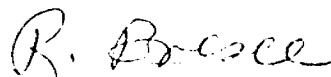
Diamond Drill Indicated reserves show at least 40-50,000 tons of 0.4%-0.5% Cobalt with minor Silver values. If and when a production decision is reached, this grade could be maintained quite easily with strict geological and sampling control.

In the writers' opinion, it would not be unreasonable to assume that with further underground development these reserves could be increased considerably - possibly in excess of 100,000 tons of ore grade material. Reserves are very difficult to calculate from drill holes in the Cobalt camp as has been proven time and again

over the years. The most effective exploration method is drifting or raising on the ore zones indicated by diamond drilling.

Respectfully submitted,

TELEDYNE CANADA LIMITED



R. E. Bresee
Project Engineer

Cobalt, Ontario

April 27, 1981.

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

ON 4 PA 2 C 80

HOLE NO. UT-1

PROPERTY Bucke Township

SHEET NO. 1

DATE Sept. 10, 1980

DIP ANGLES Collar -42°	BEARING S 57° 00' E	LATITUDE 10,224.01	STARTED Sept. 3, 1980
	LENGTH 302'	DEPARTURE 9,880.87	STOPPED Sept. 10, 1980
	LOCATION R-26 Station ∠ Rt. from Ramp ↓ = 138° 00'	ELEVATION 499.56'	LOGGED BY G.R.C. Dunlop

ROCK			CORE SAMPLES						
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY	
						Ag. oz.	Co. %		
0 - 129	Conglomerate	Cobalt Series. Boulders of red and grey granitic rock up to 6" diam., and scattered pebbles. Minor scattered blebs of chalcOPYrite from 35'-37'. Sub-angular fragments and occasional breccia, 1" Qtz. stringer at 40'. Dark green chloritic spotted alteration and fine grained slaty sections at 40'-70'. 6" breccia zone at 75', possible fine cobaltite. Disseminated and scattered chalcOPYrite seams 80'-90' with increasing pebbles.	4675	4.0'	65-69	Tr.	.003		
			4676	4.0'	69-73	Tr.	.004		
			4677	3.0'	73-76	.03	.008		
			4678	5.0'	76-81	Tr.	.009		
129 - 161	Quartzite	Medium grey, impure, barren, with faint dark spots. ½" seams (2) of chalcOPYrite, fine sparsely disseminated pyrite from 122'-144'.	1162	8.0	122-130	Tr.	.006		
			1163	5.0	130-135	Tr.	.067		
			1164	5.0	135-140	.03	.048		
			1165	5.0	140-145	.05	.012		
			4684	5.0'	145-150		.007		
161 - 221	Slate	Greenish grey, distinctly banded with pronounced chloritic spotted alteration. Phases of conglomerate with a few scattered pebbles.	4685	5.0'	150-155		.018		
			4686	5.0'	155-160		.022		
			4687	5.0'	160-165		.007		
			4688	5.0'	165-170		.011		
221 - 240	Conglomerate	Narrow sections of quartzite.	4689	5.0'	170-175		.003		
			4690	5.0'	175-180		.004		
240 - 302	Keewatin	Massive, medium green-grey, fine scattered threads of calcite, with minor pyrite, pyrrhotite.	4691	5.0'	180-185		.002		
			4692	5.0'	185-190		.002		
			4693	5.0'	190-195		.002		
			4694	5.0'	195-200		.002		
302		End of hole.	4695	5.0'	200-205		.002		
Additional samples assayed after Dec. 31/80 not included.		Note: Hole UT-1 was designed to traverse the zone of cobalt mineralization as indicated by surface drilling, and to locate the Keewatin contact elevation near the final entry point of the ramp from surface. An extraordinary thickness of the slate member was encountered and the lower conglomerate unit is less than the expected thickness. It was concluded that the Keewatin contact was intersected on the west side of the cobalt-bearing zone.	4696	5.0'	205-210		.002		
			4697	5.0'	210-215		.002		
			4698	5.0'	215-220		.002		
			1152	1.7'	256-257.7	.07	.007		
			1153	1.0'	265.8-266.8	.07	.004		
			1154	1.7'	272-273.7	.09	.008		

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-2

PROPERTY Bucke Township

SHEET NO. 1

DATE Sept. 23, 1980

DIP ANGLES Collar: -28° Bottom: -31°	BEARING S 57° 00' E	LATITUDE 10,223.44	STARTED Sept. 10, 1980
	LENGTH 338'	DEPARTURE 9,881.52	STOPPED Sept. 22, 1980
	LOCATION Station R-26 4 Rt. from ramp to 138° 00'	ELEVATION 500.54'	LOGGED BY G.R.C. Dunlop

ROCK			CORE SAMPLES						
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag.oz.	ASSAY Co%	ASSAY	
0 - 4	Casing	Conglomerate							
4 - 210	Conglomerate	Typical granite pebbles and boulders, to 6" diam., occasional 1/4" pink calcite stringers. Some irregular chloritic alteration. Green, slaty fragments and pebbles to 90'. Fault breccia 2" at 70'. Increasing pyrite and minor chalcopyrite at 91'. 112' - 118' - Conglomerate, specks of sulphides. 118' - 120' - Conglomerate, sulphides + 1/2" cobalt. 120' - 125' - Specks of sulphides. 125' - 130' - Specks of sulphides. 130' - 137' - Specks of sulphides. 137' - 140' - Seams of cobaltite (5 @ 1/2") + scattered bright metallic cobaltite crystals. Fine calcite stringers and patches around 156'. Sections of greywacke. Grades into more massive greywacke and quartzite from 195' to 204', conglomerate 208' to 210'.	1166	5.0	90-95	.03	.004		
			1167	7.0	95-102	.02	.004		
			1168	5.0	102-107	Tr.	.005		
			1169	5.0	107-112	Tr.	.003		
			1155	6.0	112-118	.03	0.26		
			1156	2.0	118-120	.06	2.44		
			1157	5.0	120-125	.07	0.028		
			1158	5.0	125-130	.02	0.070		
			1159	7.0	130-137	Tr.	0.11		
			1160	3.0	137-140	.22	6.90		
			1161	5.0	140-145	Tr.	0.025		
			1170	4.5	146.1-150.6	.14	0.009		
			1171	1.4	150.6-152	.03	0.35		
			1172	1.3	152-153.3	.07	0.24		
			1173	3.7	153.3-157	.05	0.78		
			1174	5.0	157-162	.02	0.16		
			1175	3.8	162-165.8	.02	0.38		
			1176	1.5	165.8-167.3	Tr.	0.76		
			1177	1.7	167.3-169	.19	0.12		
			1178	2.0	169-171	.03	0.018		
			1179	3.4	171-174.4	Tr.	0.007		
			1180	3.6	174.4-178	Tr.	0.005		
			1181	3.8	178-181.8	Tr.	0.006		
			1182	3.7	181.8-185.5	Tr.	0.006		
			1183	3.3	185.5-188.8	Tr.	0.036		
			1184	4.8	188.8-193.6	Tr.	0.006		
			Weighted Average Assays:						
			112'-120' - 0.805% Co/8.0'						
			112'-140' - 1.014% Co/28'						
			150.6 - 167.3 - 0.411% Co/16.7'						
			Total Section 112 - 167.3 0.644% Co/55.8'						

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-2

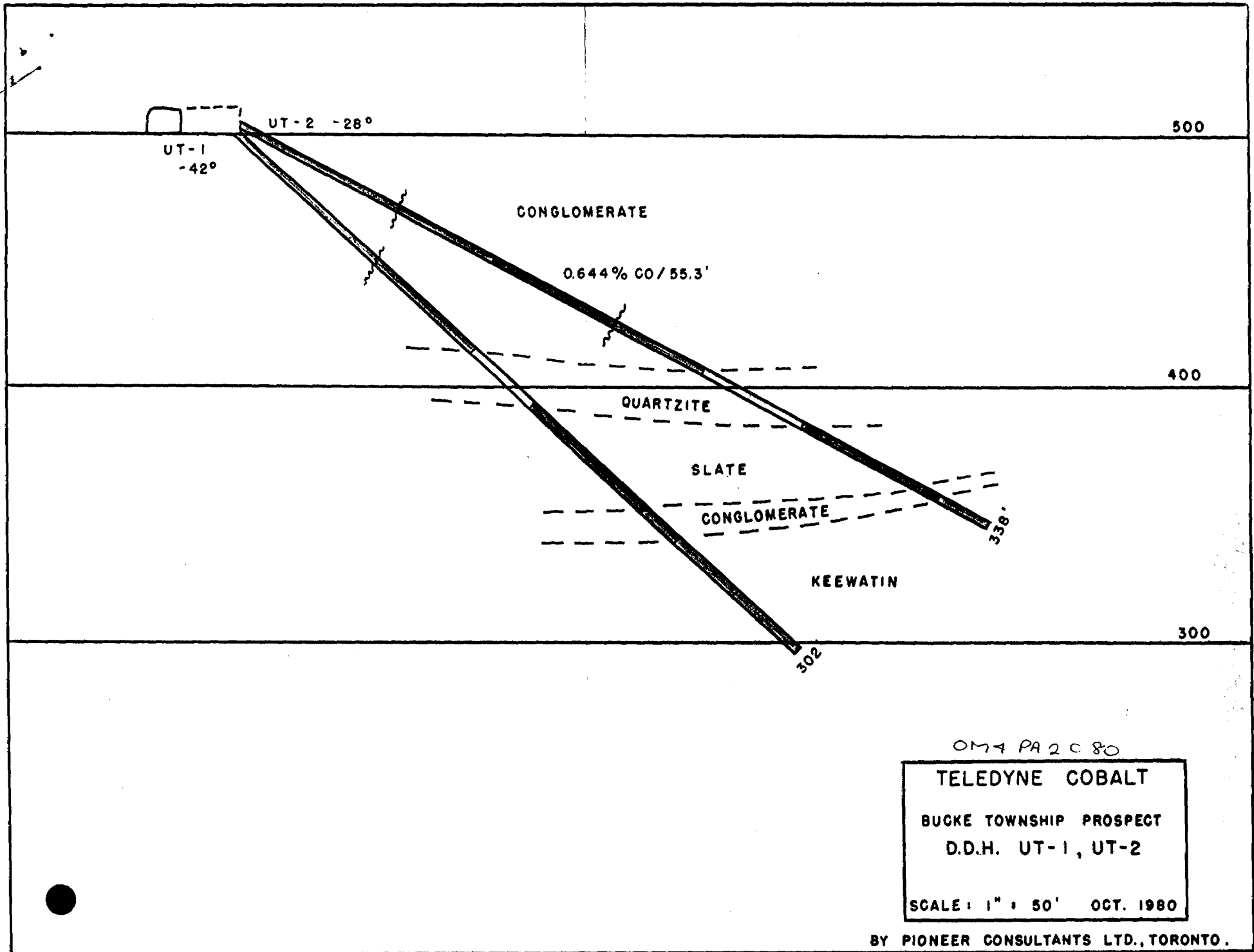
PROPERTY Bucke Township

SHEET NO. 2

DATE Sept. 23, 1980

DIP ANGLES Collar: -28°	BEARING	S 57° 00' E	LATITUDE	STARTED	Sept. 10, 1980
	LENGTH	338'	DEPARTURE	STOPPED	Sept. 22, 1980
	LOCATION	Station R-26 Rt. from ramp C 138° 00'	ELEVATION	LOGGED BY	G.R.C. Cunlop

ROCK			CORE SAMPLES							
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag. Oz.	ASSAY Co. %	ASSAY		
210 - 256	Quartzite	Impure, grey, massive, with narrow slaty bands, slightly porphyritic, and scattered chloritic spotting.								
256 - 308	Slate	Green, fine grained, pale green banding at 45° to core axis. Varying pronounced chlorite spotting.	1185	2.5	257.5-260	Tr.	.006			
308 - 315	Conglomerate	Slaty sections, chloritic spotting and pebbles. Minor fine scattered sulphides.	4679	4.5	320-324.5	.02	.003			
			4680	2.5	324.5-327	.05	.003			
			4681	4.5	327-331.5	.02	.009			
			4682	3.5	331.5-335	.10	.032			
315 - 338	Keewatin	Massive, dark green, scattered fine seams of pyrite. Fine sulphides in some sections. Possibly very fine sparse cobaltite 324'-326' and 333'-336'. Note: Hole made water at 169'. Grouted under high pressure with 240 bags cement. 169'-171' - Fault zone, grouted, 2' core lost. Note: Drilled from the same location as UT-1. This hole was designed to cut the cobalt zone 50' above the UT-1 intersection, and 80' above the ramp point of entry. The cobalt mineralization from 112' to 140', in conglomerate, was intersected about 40' west of the expected target, on the same elevation as a narrow intersection in surface hole T-1. It is tentatively concluded that a wide zone of cobalt may extend laterally in this conglomerate horizon, and the main zone is indicated by mineralization at 165'. The relationship and attitude of the fault structure at 169' has not yet been determined. Additional samples assayed after Dec. 31/80 not included.	4683	3.0	335-338	.05	.005			
			Sludge Samples							
					170-180		.09	.065		
		180-190		.13	.073					



COMPANY Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. UT-3

PROPERTY Bucke Township

SHEET NO. 1

DATE October 8, 1980

DIP ANGLES Collar -34° Bottom -35°	BEARING A2 105° 00'	LATITUDE 10,230.12	STARTED September 22, 1980
	LENGTH 322'	DEPARTURE 9,884.33	STOPPED October 3, 1980
	LOCATION Sta. R-26 ∠ Rt. from Ramp $\phi=127^{\circ}00'$	ELEVATION 500.46'	LOGGED BY B. Bresee

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		ASSAY
						Ag	Co%	
0 - 166	Conglomerate	Typical. Many pebbles. Occasional 5" diam. boulder. 45'-74' - altered ground (fault?). 137' - 8" vein massive and disseminated cobaltite. 142' - 1" sulphide vein.	680	5.0'	100-105	.02	0.009	
			681	5.0'	105-110	.04	0.005	
			682	4.5	110-114.5	.04	0.47	
			683	3.5	114.5-118	.02	0.51	
			684	1.5	118-119.5	.03	1.18	
			664	4.5	119.5-124	Tr.	0.43	
			665	1.8	124-125.8	Tr.	0.10	
			666	4.2	125.8-130	Tr.	0.056	
			667	5.0	130-135	Tr.	0.14	
			1186	1.6	135-136.6	.08	0.46	
			1187	1.0	136.6-137.6	.69	10.2	
			1188	1.0	137.6-138.6	.05	1.48	
			1189	1.3	138.6-139.9	Tr.	0.042	
			1197	2.0	139.9-141.9	Tr.	0.008	
144		Encountered water - grouted with 164 bags cement.	1198	1.0	141.9-142.9	1.02	.049	
			1199	3.1	142.9-146	Tr.	0.034	
166 - 209	Quartzite	With scattered spotted alteration. 187'-209' - occasional slaty bands in quartzite.	663	4.5	146-150.5	.02	0.005	
			668	5.0	232-237	Tr.	0.016	
			669	2.0	237-239	Tr.	0.088	
209 - 257	Slate	Light and dark banding. Heavy chloritic spotting with occasional pebbles and some quartzite. 239' - 2 1/16" seams cobaltite.	670	1.0	239-240	Tr.	0.61	
			671	2.0	240-242	Tr.	0.058	
			672	2.5	242-244.5	Tr.	0.004	
			685	4.5	244.5-249	Tr.	0.016	
			686	4.5	249-253.5	Tr.	0.020	
257 - 274	Conglomerate	Typical.	Weighted average assays:					
			110'-138.6' .74% Co/28'6 237'-242' .18% Co/5'					

COMPANY Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. UT-3

PROPERTY Bucke Township

SHEET NO. 2

DATE October 8, 1980

DIP ANGLES Collar -34°	BEARING A2 105° 00'	LATITUDE	STARTED September 22, 1980
	LENGTH 322'	DEPARTURE	STOPPED October 3, 1980
	LOCATION Sta. R-26 2 Rt. from Ramp $\phi=127^{\circ} 00'$	ELEVATION 500.50'	LOGGED BY B. Bresee

ROCK _____ CORE SAMPLES _____

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag.	Co%	
274 - 322	Keewatin	Dark green with calcite stringers and occasional sulphide blebs and stringers						
322		End of Hole.						
<u>Additional samples assayed after Dec. 31/80 not included.</u>								

B. Bresee

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-4

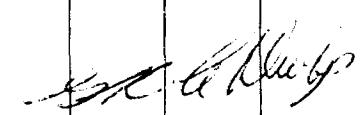
PROPERTY Bucke Township

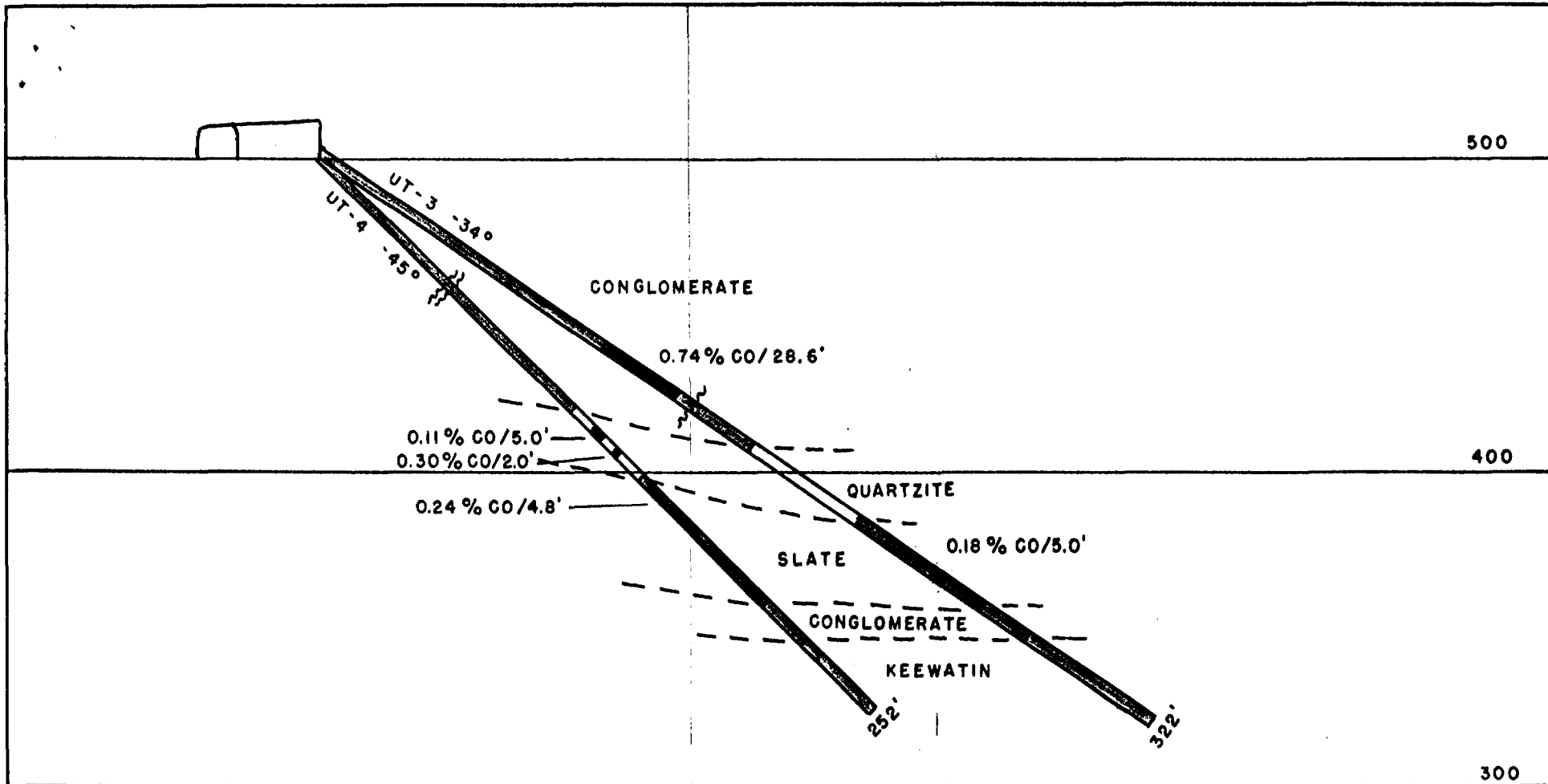
SHEET NO. 1

DATE October 5, 1980

DIP ANGLES Collar: -45° Bottom: -46°	BEARING	S 75° 00' E	LATITUDE	10,230.25	STARTED	September 25, 1980
	LENGTH	252'	DEPARTURE	9,883.59	STOPPED	September 30, 1980
	LOCATION	R-26 Station	ELEVATION	499.67'	LOGGED BY	G.R.C. Dunlop

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag. OZ.	ASSAY Co%	ASSAY
0 - 115.5	Conglomerate	Typical pebbles, somewhat sheared with quartz fragments, chlorite spotting, basic rock fragments and pebbles. Scattered specks of sulphides 47'-58', 58'-61'. Lost core, fractured ground.	1190	1.0'	47-48	Tr.	.005	
			1191	2.0'	48-50	.02	.004	
			1192	2.0'	50-52	Tr.	.003	
			1193	6.0'	52-58	Tr.	.004	
115.5 - 146.0	Quartzite	Massive, grey, occasional slate bands (shearing of bands ¼" displacement at 135').	1194	5.0'	124-129	.03	.11	
			1195	3.0'	129-132	.02	.07	
			1196	3.0'	132-135	.03	.096	
146.0 - 202.0	Slate	Light green to olive coloured bands alternating with grey black banding, possible fine threads of cobaltite in fractures, 153'-156'. Chlorite spotting in lighter grey slate from 156'-210'.	4712	2.0'	135-137	Tr.	.30	
			4713	3.0'	137-140		.042	
			4714	5.0'	140-145		.007	
			4715	5.0'	145-150		.006	
			4716	3.2'	150-153.2		.016	
202.0 - 219.0	Conglomerate	Fine grained, scattered pebbles, more siliceous. Slate section 216'-219'.	673	2.8	153.2-156	.02	.079	
			674	1.0'	156-157	.07	.89	
			675	1.0'	157-158	Tr.	.032	
219.0 - 252.0	Keewatin	Dark green, massive, quartz and calcite stringers, minor sulphides. Water seam 250'.						
			Average weighted assays: 153.2'-158' .238% Co/4'8					
			<u>Additional samples assayed after Dec. 31/80 not included.</u>					





TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-3, UT-4

SCALE: 1" = 50' OCT. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-5

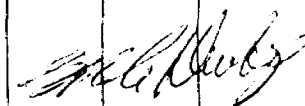
PROPERTY Bucke Township

SHEET NO. 1

DATE October 9, 1980

DIP ANGLES Collar -37 $\frac{1}{2}$ ⁰ Bottom -37 $\frac{1}{2}$	BEARING A2 = 79 ⁰	LATITUDE 10,232.07	STARTED October 3, 1980
	LENGTH 292'	DEPARTURE 9,883.77	STOPPED October 8, 1980
	LOCATION Sta. R26 Rt. from ramp $\phi = 124^{\circ}00'$	ELEVATION 500.28'	LOGGED BY B. Bresee

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag.	ASSAY Co%	ASSAY
0 - 142	Conglomerate	Typical. Pebbles and some boulders up to 6" diam. Occasional calcite stringers. 52'-63' - Altered rock (fault?).	4717 4718 4719 4720 4721	6.0' 5.0' 5.0' 5.0' 5.0'	119-125 125-130 130-135 135-140 140-145		.13 .038 .023 .040 .020	
142 - 177	Quartzite	Occasional spotted alteration and some small pebble inclusions and also occasional thin slate bands.						
177 - 238	Slate	Heavy chloritic spotting. Light and dark banding. 205.5' - Massive $\frac{1}{2}$ " sulphide vein. 213'-215' - Fault zone (ore splitting lengthwise) Scatter splotches of sulphides on the split surfaces. 216' - 1' of disseminated sulphides.						
238 - 263	Conglomerate	Minor calcite stringers and pebbles. 259'-262' - Inclusion of slate with minor spotted alteration in the conglomerate horizon.						
263 - 292	Keewatin	Dark green with quartz and calcite stringers. Splotches and stringers of sulphides. Two inter-sections of disseminated galena.	695 696 697	3.0' 5.0' 5.0'	263-266 280-285 285-290	.12 .03 .03	.005 .008 .007	
292		End of hole.						
Additional samples assayed after Dec. 31/80 not included								



COMPANY Teledyne Cobalt

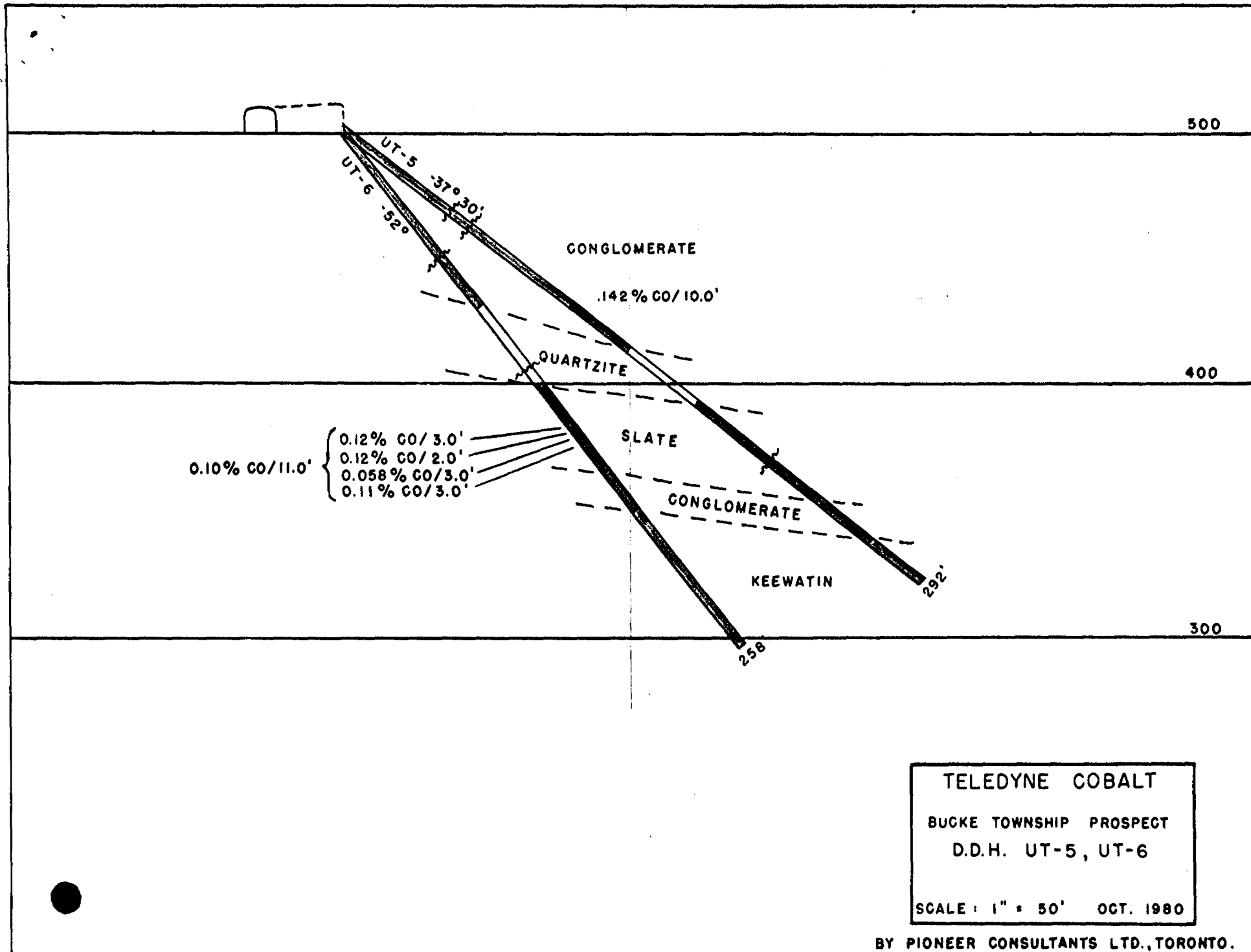
DIAMOND DRILL RECORD

HOLE NO. UT-6PROPERTY Bucke TownshipSHEET NO. 1DATE October 17, 1980

DIP ANGLES Collar -52° Bottom -53°	BEARING	N 79° 00 E	LATITUDE	10,231.76	STARTED	October 8, 1980
	LENGTH	258'	DEPARTURE	9,882.39	STOPPED	October 14, 1980
	LOCATION	Stn. R26 4 Rt. from ramp @ 124° 00'	ELEVATION	499.76'	LOGGED BY	G.R.C. Dunlop

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag.	Co%	
0 - 89	Conglomerate	Dark green, varied pebble size, granite and siliceous boulders. Fine scattered pyrite. Fault breccia 64'-66'.						
89 - 128.5	Quartzite	Grey homogenous, medium grained, some pink quartz stringers. Core ground at 114', 117'-118'. Lost core 119'-120'.	4722	3.0'	133-136			
			4723	4.0'	136-140			
			4724	3.0'	140-143			
			4725	3.6'	143-146.6			
128.5- 171	Slate	Banded, generally grey with dark bands, spotted chlorite alteration. Fine threads of sulphides 146.5'-147.5', 150'-151' and 156'-157'.	676	3.0	146.6-149.6	.6	.02	.12
			677	2.0	149.6-151.6	.6	Tr.	.12
			678	3.0	151.6-154.6	.6	Tr.	.058
			679	3.0	154.6-157.6	.6	.02	.11
171 - 190	Conglomerate	Very few pebbles, sections of slate (spotted).						
190 - 258	Keewatin	Andesite - mottled green, with streaks of epidote, numerous calcite stringers, hematite at 208', scattered patches of pyrite. 252' - 3/4" pyrite seam.						
			Sludge Samples:					
					110-120	Tr.	.004	
					120-130	Tr.	.007	
					130-140	.02	.006	
Additional samples assayed after Dec. 31/80 not included.								





COMPANY, Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-7

PROPERTY Bucke Township

SHEET NO. 1

DATE October 17, 1980

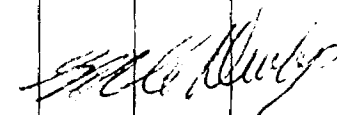
DIP ANGLES Collar -44° Bottom -45°	BEARING N 55° E	LATITUDE 10033.34 N	STARTED October 14, 1980
	LENGTH 210'	DEPARTURE 9945.39 E	STOPPED October 17, 1980
	LOCATION Alimak Station R29	ELEVATION 464.40'	LOGGED BY G.R.C-Dunlop

ROCK ← Rt. from R24=104° 00'

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag.OZ.	CO%	ASSAY
0 - 91'	Conglomerate	Grey, scattered boulders and pebbles. Occasional pink calcite stringers. 3/4" seam of chalcopyrite at 21'. Very minor fine pyrite.	698	3.0'	8-11	Tr.	.003	
			699	5.0'	11-16	Tr.	.004	
			4501	4.5'	16-20.5	.02	.004	
91 - 120	Quartzite	Grey massive, occasional slate bands, increasing toward lower contact.	4502	1.7'	119.8-121.5	.02	.006	
120 - 158.5	Slate	Green to mud colour, banded, chlorite spotting. Broken core 120-130. Fault gouge 121'. Lost core 121'-122'.						
158.5-181	Conglomerate	Scattered pebbles. Minor fine pyrite disseminations. Slaty bands with pyrite at 180'.	4507	3.0'	176-179	Tr.	.005	
			4508	2.0'	179-181	.04	.005	
181 - 210	Keewatin	Dark green, mottled andesite, streaks of pyrite and scattered crystals. Narrow seams of pink calcite.	4509	4.5'	185.5-190	.14	.006	
			4510	4.0'	190-194	.09	.005	
			4511	4.5'	199-203.5	.04	.009	

Additional samples assayed after Dec. 31/80 not included.



COMPANY Teledyne Cobalt

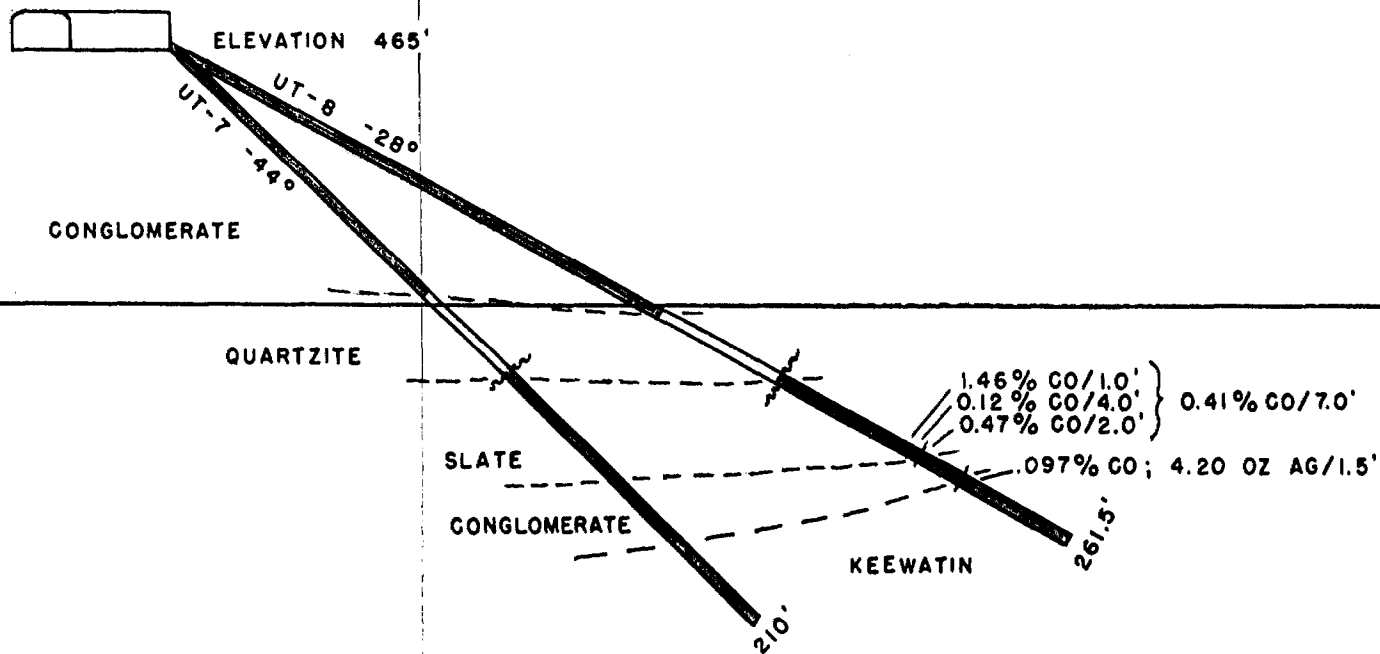
DIAMOND DRILL RECORD

HOLE NO. UT-8PROPERTY Bucke TownshipSHEET NO. 1DATE December 4, 1980

DIP ANGLES Dip -28° Bottom -30°	BEARING <u>N 55°E</u>	LATITUDE <u>10033.49 N</u>	STARTED <u>October 17, 1980</u>
	LENGTH <u>261.5'</u>	DEPARTURE <u>9946.01 E</u>	STOPPED <u>October 22, 1980</u>
	LOCATION <u>Alimak Station</u>	ELEVATION <u>465.85</u>	LOGGED BY <u>G.R.C-Dunlop</u>

ROCK			CORE SAMPLES						
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY	
						Ag.Oz	Co%		
0 - 144	Conglomerate	Scattered pebbles and boulders. Breccia fragments 70'-88'. Dark grey-green with chlorite patches to 88'. Lighter grey, more siliceous with fewer scattered pebbles grading to very fine pebbles and sections of quartzite to 144'. Minor water flow 135'-140'.							
144 - 179	Quartzite	Dark grey, impure with cherty bands.							
179 - 181	Fault zone	Lost core, cemented.							
181 - 221	Slate	Green-grey light banding, sections of chloritic spotting. ¼" cobaltite 15' to C.A. at 215.5'. Fine sulphides 216'-220'. 1/16" Co. at 220.8' and 221.4'. Very fine co. xls in halo around chlorite spots (occasional).	4517	3.0'	212-215	.02	.006		
			4518	1.0'	215-216	.41	.46		
			4519	4.0'	216-220	.02	.12		
			4520	2.0'	220-222	.06	.47		
221 - 232	Conglomerate	Slaty matrix, chlorite spots to 229' with occasional pebbles.	4521	5.0'	222-227	.02	.02		
			4522	5.0'	227-232	.02	.006		
			4523	2.5'	232-234.5	.31	.013		
232 - 261.5	Keewatin	Siliceous, porphyritic to 232'.	4524	1.5'	234.5-236	4.21	.097		
			4525	3.0'	236-239	.16	.006		
	Keewatin	More massive, scattered pyrite (2" chabo at 232'). 1/8" cobaltite (silver?) at 235'. 246' - ¼" calcite with minor galena. Several quartz stringers.	4627	1.7'	245.8-247.5	.02	.014		
261.5		End of hole.							
		<u>Additional samples assayed after Dec. 31/80 not included.</u>							
			Weighted Average Assays:						
			215'-222' .09 oz. Ag, .41% Co/7'						
			232'-236' 1.77 oz. Ag, .045% Co/4'						





TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-7, UT-8

SCALE: 1" = 50' OCT. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

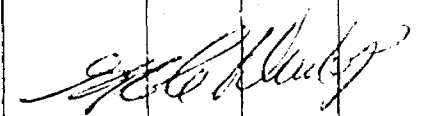
COMPANY Telédyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-9PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 4, 1980

DIP ANGLES Dip -31° Bottom -31°	BEARING <u>AZ.71°</u>	LATITUDE <u>10024.11 N</u>	STARTED <u>October 23/80</u>
	LENGTH <u>247'</u>	DEPARTURE <u>9970.65 E</u>	STOPPED <u>October 28/80</u>
	LOCATION <u>R29 BS R27 113°</u>	ELEVATION <u>466!21</u>	LOGGED BY <u>G.R.C-Dunlop</u>

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag.Oz.	ASSAY Co%	ASSAY
0 - 143	Conglomerate	Pebbles and boulders, mostly pink and grey granite up to 10" diam. 8" pink calcite 48.5'. Becomes more siliceous from 70'-78' (impure quartzite). Quartzite with pebbles to 143'. Water flow at 78'. Cave at 100'.						
143 - 172	Quartzite	Grey, massive, light siliceous seams. Slaty sections increasing to contact. 172'-173.5' - lost core - some calcite stringers.						
172 - 202	Slate	Banded, chloritic spotting. 1/8" cobaltite at 199.8'.	4526 4527 4528	3.0' 1.0' 2.0'	196-199 199-200 200-202	.02 .06 Tr.	.022 .68 .012	
202 - 247	Keewatin	Massive, green, quartz stringers and scattered pyrite to end of hole.						
247		End of hole.						
			Average Weighted Assays: 196'-200' 0.187% Co/4'					
			<u>Additional samples assayed after Dec. 31/80 not included.</u>					



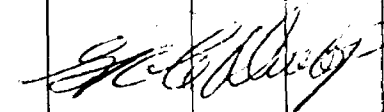
COMPANY Telédyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-10PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 4, 1980

DIP ANGLES Dip -46°	BEARING <u>Az. 71°</u>	LATITUDE <u>10023.90 N</u>	STARTED <u>October 28, 1980</u>
	LENGTH <u>133'</u>	DEPARTURE <u>9970.02 E</u>	STOPPED <u>October 30, 1980</u>
	LOCATION <u>Alimak Station</u>	ELEVATION <u>464.5'</u>	LOGGED BY <u>G.R.C-Dunlop</u>

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
0 - 55'	Conglomerate	Scattered pebbles and boulders to 6". Grades to impure quartzite at about 55'.						
55 - 124	Quartzite	Grey, mottled, occasional quartz fragments and stringers. Some pebbles in conglomerate sections 80'-93'. More massive from 93'-120'. Water flow at 71'.						
124 - 133	Slate	Grading from banded siliceous rock to spotted and banded slate.						
133	End	and cave Hole encountered heavy water flow at 133', stopped with grout plug pending possible deepening. The hole may have been too steep to encounter cobalt zone before reaching Keewatin.						
Additional samples assayed after Dec. 31/80 not included.								



ELEVATION 466'

UT-9 -31°

UT-10
-46°

CONGLOMERATE

400'

QUARTZITE

133'

SLATE

0.19% CO/4.0'

KEEWATIN

241'

300'

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-9, UT-10

SCALE: 1" = 50' NOV. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt
 PROPERTY Bucke Township

DIAMOND DRILL RECORD

HOLE NO. UT-11
 SHEET NO. 1
 DATE Dec. 4, 1980

DIP ANGLES At Dip -32° 306' -34°	BEARING <u>AZ.110°</u>	LATITUDE <u>10015.93 N</u>	STARTED <u>November 1, 1980</u>
	LENGTH <u>358'</u>	DEPARTURE <u>9971.67 E</u>	STOPPED <u>November 4, 1980</u>
	LOCATION <u>Alimak Station</u>	ELEVATION <u>465.34</u>	LOGGED BY <u>G.R.C-Dunlop</u>
ROCK <u>ZR29 BS 27 T24°</u>		CORE SAMPLES	

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY	
						Ag. Oz.	Co%		
0 - 116	Conglomerate	Mixed pebbles and boulders to 6", chloritized sections Gradual change to impure quartzite with conglomerate sections and scattered small pebbles. Water flow at 96'.							
116 - 189	Quartzite	Gradually more massive, dark grey, speckled with dark minerals. Becoming lighter grey from 140'. Increasing light cherty bands at 45° to C.A. Grades into slate at about 189'.							
189 - 246.5	Slate	Olive green, banded and spotted with chlorite. 208' - fine thread of cobaltite 210.3 - 1/16" galena and cobaltite 213.5 - 216' - 3 veins cobaltite 1/8" 231' - 1/8" cobaltite 236' - 1/8" cobaltite (silver?) 237-241' - fine threads Co, plus 1/2"	4554	5.0'	193-198	Tr.	.005		
			4555	3.0'	198-201	.02	.004		
			4556	2.0'	201-203	.02	.088		
			4557	3.0'	203-206	Tr.	.003		
			4558	4.0'	206-210	.03	.15		
			4559	1.0'	210-211	.38	.23		
			4560	2.5'	211-213.5	.02	.061		
			4561	2.5'	213.5-216	.15	.26		
			4562	5.0'	216-221	.02	.020		
			4563	4.0'	221-225	.02	.016		
			4564	3.0'	225-228	.02	.003		
			4565	4.0'	228-232	.03	.26		
			4566	3.0'	232-235	Tr.	.025		
			4567	2.0'	235-237	.11	.76		
			4568	4.0'	237-241	.17	.54		
			4569	5.0'	241-246	.02	.049		
246.5-260.5	Conglomerate	Widely scattered pebbles. Grades into slate.	Average weighted assays:						
			206'-211' 0.166% Co/5'						
			228'-241' 0.368% Co/13'						6.5'
			273.5'-280' 0.88 oz. Ag, 0.446% Co/						
			300'-303.5' 0.22 oz. Ag, 0.44% Co/3.5'						

G.R.C. Dunlop

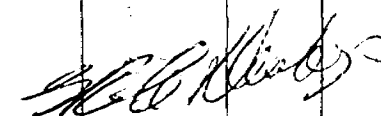
COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-11PROPERTY Bucke TownshipSHEET NO. 2

DATE

DIP ANGLES		BEARING	LATITUDE	STARTED				
		LENGTH	DEPARTURE	STOPPED				
		LOCATION	ELEVATION	LOGGED BY				
ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag. oz.	ASSAY Co. %	ASSAY
360.5 - 284	Slate	A few pebbles but typical matrix of slate with chlorite spots. 274' - 1/4" cobalt + galena, chalco @ 70° to C.A. 277.5' - 1/4" cobalt 15° to C.A. (with galena).	4570 4571 4572 4573 4574	1.0' 2.0' 1.5' 2.0' 5.0'	273.5-274 274.5-276 276.5-278 278-280 280-285	5 .23 5 Tr. 3.06 .05 .02	.098 .031 1.80 .018 .005	
284 - 311	Conglomerate	Fine pebbles and boulders. 299.5' - 1/16" Co 300' - 1/4" Co @ 45° 300.6 - 1/16" Co @ 45° 302.3' - 1/16" Co @ 45° 304-306 - Cave and lost core.	4575 4576 4577	4.0' 1.5' 2.0'	296-300 300-301.5 301.5-303	.04 1.30 5 .20	.004 .68 .086	
311 - 358	Keewatin	Contact zone includes some sections of conglomerate and quartz porphyry to 314'. Seams and patches of pyrite. 322' - 1/2" calcite @ 20° to C.A. 343' to end of hole - quartz porphyry - uniform distribution (about 10%) quartz phenocrysts. 1/16" - 1/8" in diam.			<u>Sludge</u> 290-300 300-310	.34 .12	.17 .046	
358		End of hole.						
Additional samples assayed after Dec. 31/80 not included.								



COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

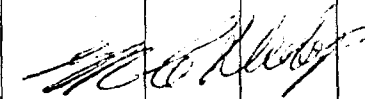
HOLE NO. UT-12PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 4, 1980

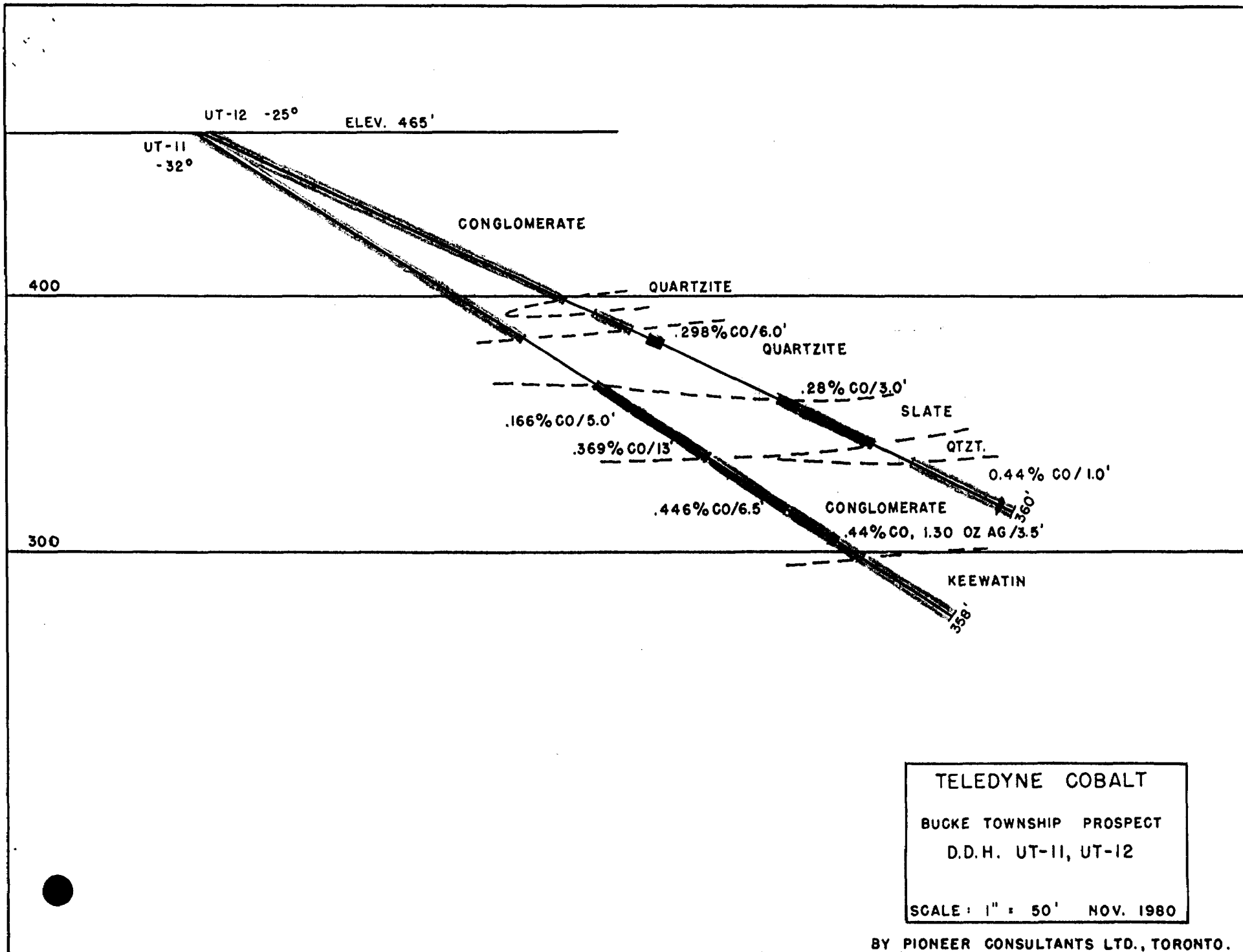
DIP ANGLES Dip -25° Bottom -26°	BEARING	AZ. 110°	LATITUDE	10015.72 N	STARTED	November 4, 1980
	LENGTH	360'	DEPARTURE	9972.10 E	STOPPED	November 7, 1980
	LOCATION	ZR29 BS R27 124°	ELEVATION	466.16'	LOGGED BY	G.R.C-Dunlop

ROCK

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag. Oz.	Co%	
0 - 163	Conglomerate	Typical, mixture of pebbles and boulders to 12". Streaks of chlorite alteration. Grades to impure quartzite. Water flow at 120'.						
163 - 259	Quartzite	Fairly massive, dark grey, sections of conglomerate from 182'-189'. Becomes lighter grey, more homogenous. Slaty bands begin about 240', some porphyritic sections. Lost core 259'-261' at slate contact.						
261 - 360	Slate	Greenish, fine grained, bands and spots of chlorite. Banding stops at 297'. Fine chlorite spots, increasing small pebbles in slate matrix. Large boulder of pink agglomerate from 331.5'-335! 350.5' - ¼"	4578	5.0'	343-348	.06	.029	
(317 - 360)	(Conglom.)	cobaltite @ 45°.	4579	2.0'	348-350	Tr.	.004	
			4580	1.0'	350-351	.35	.44	
			4581	2.0'	351-353	.02	.007	
			4582	2.0'	353-355	.18	.010	
			4583	5.0'	355-360	.02	.008	
360		End of hole - stopped near boundary.						
					Sludge			
					250-260	.03	.052	
					260-270	.05	.051	
Additional samples assayed after Dec. 31/80 not included.								





BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt
 PROPERTY Bucke Township

DIAMOND DRILL RECORD

HOLE NO. UT-13
 SHEET NO. 1
 DATE Dec. 5, 1980

DIP ANGLES Dip -33° Bottom -33 1/2°	BEARING	A2.91°	LATITUDE	10018.14 N	STARTED	November, 1980
	LENGTH	291'	DEPARTURE	9972.06	STOPPED	
	LOCATION	Alimak Station	ELEVATION	464.94'	LOGGED BY	G.R.C-Dunlop

ROCK 3' Left of 11 & 12

CORE SAMPLES

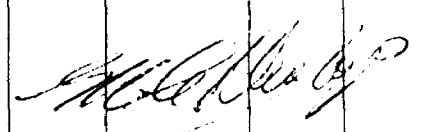
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag. Oz.	Co%	
0 - 132	Conglomerate	Typical, altered with chlorite. Variety of boulders.	4543	5.0'	119-124	Tr.	.004	
			4544	5.0'	124-129	.02	.015	
			4545	5.0'	129-134	Tr.	.005	
132 - 171	Quartzite	Medium grey, slightly porphyritic. 138.5' - 3/8" cobaltite 139' - 1/2" irregular seam Co 154.5' - 1/4" cobaltite Some very fine scattered sulphides. Grades into darker slate.	4546	4.0'	134-138	Tr.	.007	
			4547	2.0'	138-140	.03	1.90	
			4548	6.0'	140-146	Tr.	.017	
			4549	6.0'	146-152	Tr.	.003	
			4550	2.0'	152-154		.051	
			4551	1.0'	154-155	.02	1.05	
			4552	5.0'	155-160	Tr.	.082	
			4553	6.5'	160-166.5	Tr.	.015	
171 - 197.5	Slate	Green, banded and spotted with chlorite.						
197.5-291	Keewatin	Mottled, altered, abundant patches of pyrite, occasional calcite stringers. 262' - 275' - Quartz prophyry, unmineralized except for calcite stringers with fine threads cobaltite, pyrite at 274'. 259.5' - 1" calcite @ 30° with galena.	4628	3.5'	255.5-259	.23	.006	
			4629	1.0'	259-260	.02	.005	
			4630	5.0'	260-265	Tr.	.003	
			4631	5.0'	268-273	Tr.	.002	
			4632	1.0'	273-274	.02	.063	
291		End of hole.	4633	5.0'	274-279	Tr.	.004	

Average weighted assays:

138'-146' 0.49% Co/8'

or 138'-155' 0.30% Co/17'

Additional samples assayed after Dec. 31/80 not included.



COMPANY Telédyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-14

PROPERTY Bucke Township

SHEET NO. 1

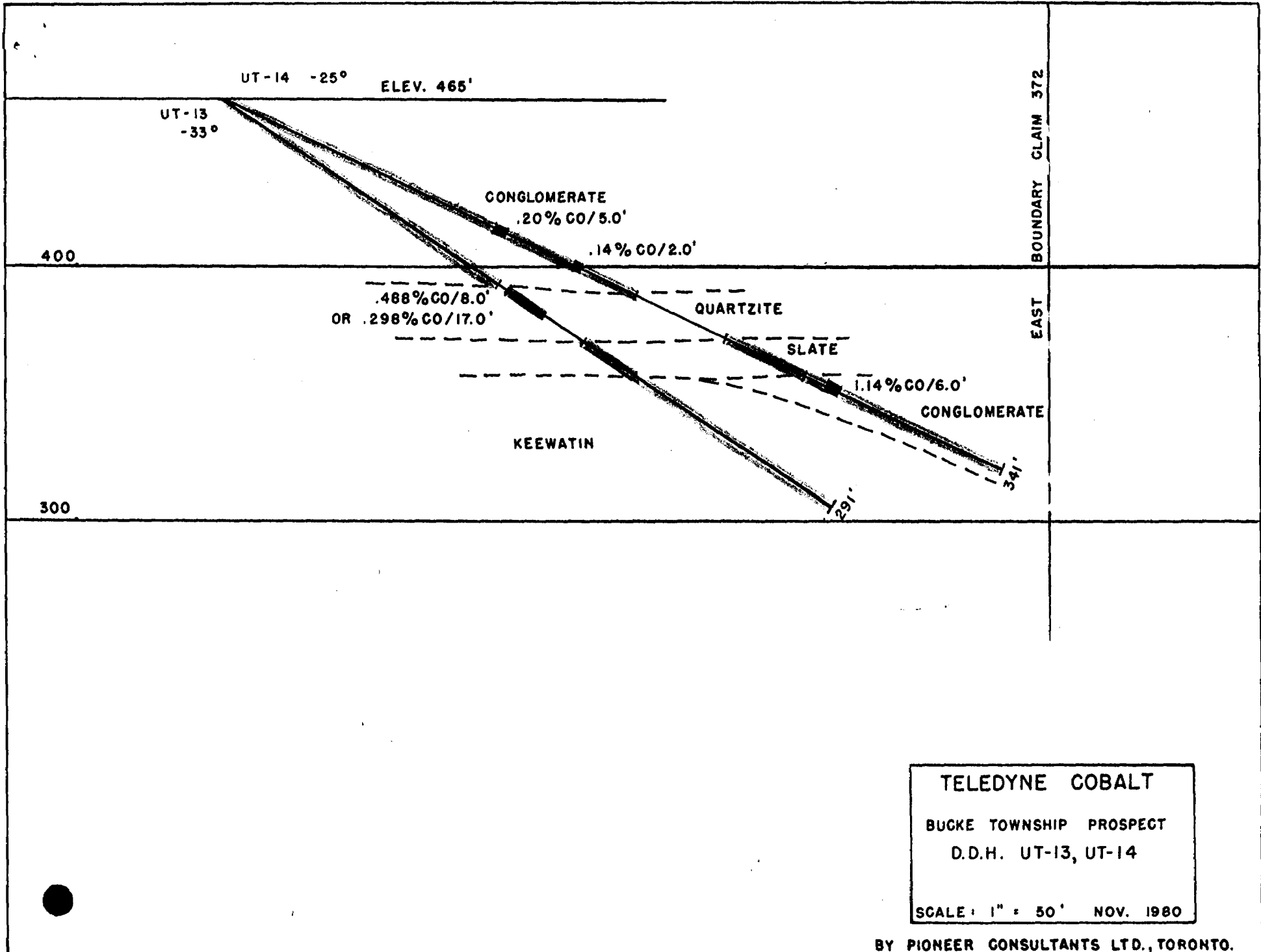
DATE Dec. 5, 1980

DIP ANGLES Dip -25° At 285' -26°	BEARING	A2.91°	LATITUDE	10018.16	STARTED	November, 1980
	LENGTH	341'	DEPARTURE	9972.67	STOPPED	
	LOCATION	3' Left of 11 & 12	ELEVATION	465.25'	LOGGED BY	G.R.C-Dunlop

ROCK	CORE SAMPLES
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FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag. Oz.	Co%	
0 - 162	Conglomerate	Typical mixture of granitic pebbles, variety of fragments of other origin. 52' - calcite stringer, patches of chalcopryrite. More mottled, darker chloritic alteration from about 60' - 118'. 2" fault gouge 60° to C.A. at 100'. 118' - 12" core lost. Grades into more massive grey rock, few pebbles to quartzite at 162'.						
162 - 172	Quartzite	Coarse grained, occasional fine pebbles.						
172 - 182	Conglomerate	Mixed with quartzite. 183' - quartz vein 15° to C.A.						
182 - 222	Quartzite	Massive, grey, fine grained. Slaty sections. Minor chlorite spotting. Grades to slate at 222'.						
222 - 260	Slate	Distinct bedding 30° to C.A. Spotted chlorite. Bedding decreases. Pebbles begin about 258'. Slate matrix grading to conglomerate at 260'.						
260 - 341	Conglomerate	266.5' - 1/4" stringer cobaltite, plus <u>very</u> fine specks Co. plus 1/16" Co. at 266.8'. 270.8' - 3/8" cobaltite + 1/8" cobaltite. Note - chloritic spotting throughout to 280' and intermittently to end of hole.						
			4584	6.0'	260-266	Tr.	.032	
			4585	1.5'	266-267.5	.19	.52	
			4586	3.0'	267.5-270.5	.02	.007	
			4587	1.5'	270.5-272	.74	4.02	
			4588	5.0'	272-277	.05	.071	
			4589	5.0'	277-282	.02	.061	
		End of hole.						
		Additional samples assayed after Dec. 31/80 not included.						
			Weighted average assays:					
			266'-272' 1.14% Co/6.0'					

G.R.C. Dunlop



COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-15PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 5, 1980

DIP ANGLES Dip -20° At 377' -21°	BEARING <u>AZ. 50°</u>	LATITUDE <u>9,750.65</u>	STARTED <u>November, 1980</u>
	LENGTH <u>389'</u>	DEPARTURE <u>10,013.84</u>	STOPPED
	LOCATION <u>LR32 B.S. R33 167°</u>	ELEVATION <u>422.39'</u>	LOGGED BY <u>G.R.C-Dunlop</u>

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag. Oz.	Co%	
0 - 161	Conglomerate	Typical, chloritized, fractured, variety of boulders. Becomes lighter grey, more massive, grading into quartzite at 161'. Water flow at 60'.						
161 - 208	Quartzite	Grey, porphyritic 161'-163', faint chlorite spotting. 170.5' - 2 stringers cobaltite 1/16". Intermittent slaty bands toward contact at 208'. 203' - cobaltite stringer 1/16" at 30° to C.A.	4596	3.5'	166.5-170	Tr.	.009	
			4597	1.0'	170-171	Tr.	.20	
			4598	4.0'	171-175	.02	.007	
			4599	3.5'	199-202.5	Tr.	.015	
			4600	1.0'	202.5-203.5	.05	.20	
			4601	2.5'	203.5-206	Tr.	.046	
			208 - 315	Slate	Banded and spotted with chlorite. 210' - pyrite in breccia, 8" zone. 244' - cobaltite threads 1/16". 247' - cobaltite seams 1/4" and 1/8". 249.5' - cobaltite seams 1/16" (2). Slate becomes conglomerate from 268' but slate matrix and chlorite spotting continues. 297.4' - cobalt seam 1/8" and disseminated cobalt. 309-310.5' - grey coarse grained boulder. 318'-320' - 5 threads cobalt 1/16".	4602	4.0'	239-243
4603	1.5'	243-244.5				.28	.49	
4604	1.5'	244.5-246				Tr.	.064	
4605	1.0'	246-247				.23	.76	
4606	2.1'	247-249.1				.02	.007	
4607	1.0'	249.1-250.1				.18	.006	
4608	4.9'	250.1-255				Tr.	.009	
4609	5.5'	291-296.5				.04	.012	
4610	1.0'	296.5-297.5				.05	.90	
4611	3.5'	297.5-301				.03	.036	
4612	1.0'	301-302				.19	.23	
4613	5.0'	302-307				.03	.009	
4614	3.5'	307-310.5				.02	.016	
4615	1.0'	310.5-311.5	.04	.18				
4616	3.3'	311.5-314.8	.02	.014				
315 - 325	Quartzite	Dark, impure slightly porphyritic.	4617	1.4'	314.8-316.2	1.22	1.16	
			4618	1.8'	316.2-318	.03	.017	
			4619	2.0'	318-320	.68	.70	
			4620	3.0'	320-323	.02	.029	

COMPANY Teledyne Cobalt
 PROPERTY Bucke Township

DIAMOND DRILL RECORD

HOLE NO. UT-15

SHEET NO. 2

DATE Dec. 5, 1980

DIP ANGLES	BEARING	LATITUDE	STARTED
	LENGTH	DEPARTURE	STOPPED
	LOCATION	ELEVATION	LOGGED BY

ROCK				CORE SAMPLES			
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FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag. Oz.	Co%	
325 - 343	Conglomerate	Dark, altered with chlorite, contact uncertain.	4621	5.0'	323-328	.09	.006	
343 - 389	Keewatin	Quartz porphyry 343' - 376' in contact with conglomerate. Uniform quartz phenocrysts 1/16" - 1/8". Some scattered pyrite. 367.5' - cobalt seams 1/8" (2) in porphyry.	4622	5.0'	362-367	.10	.048	
			4623	1.0'	367-368	.37	.14	
			4624	4.0'	368-372	.17	.13	
			4625	1.2'	372-373.2	.63	.46	
			4626	3.8'	373.2-377	.36	.033	
		Scattered pyrite, thin seams of calcite to end of hole in siliceous andesite.	4634	4.5'	377-381.5	.03	.019	
389		End of hole.	Average weighted assays:					
			243'-247' 0.398% Co/4'					
			296.5-302' 0.228% Co/5.5					
			314.8'-320' 0.587% Co/5.2					
			367'-373.5 0.357% Co/6.2					
<u>Additional samples assayed after Dec. 31/80 not included.</u>								

[Handwritten signature]

UT - 15 - 20°
ELEV. 422.25

400

CONGLOMERATE

.20% CO/1'

QUARTZITE

.20% CO/1'

.398% CO/4'

SLATE

.18% CO/1'

.228% CO/5.5'

.587% CO/6.2'
QTZT.

300

.18% CO/1'

CONGLOMERATE

.357% CO/6.2'

KEEWATIN

389'

TELEDYNE COBALT

BUGKE TOWNSHIP PROSPECT

D.D.H. UT-15

SCALE: 1" = 50' NOV. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Telédyne Cobalt

DIAMOND DRILL RECORD

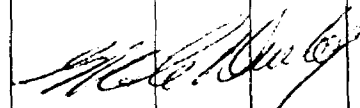
HOLE NO. UT-16PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 5, 1980

DIP ANGLES Dip -20° Bottom -22°	BEARING	AZ. 65°	LATITUDE	9,749.39	STARTED	November, 1980
	LENGTH	335'	DEPARTURE	10,014.31	STOPPED	
	LOCATION	1' from 15	ELEVATION	422.49'	LOGGED BY	G.R.C-Dunlop

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY Ag. Oz.	ASSAY Co%	ASSAY
0 - 148	Conglomerate	Typical, dark green, variety of pebbles and boulders. Streaked, somewhat sheared. Calcite stringers 1" at 50'5. Becomes lighter grey, less altered, fewer pebbles at 95'. Grades into more siliceous matrix toward uncertain contact.						
148 - 222	Quartzite	Dark grey, massive, occasional pebbles. Core ground 152'-154'. Faintly porphyritic in some areas. Some slaty sections before definite slate at 222'.						
222 - 335	Slate	Banded, plus chlorite spots. Occasional pebbles from 290'. Conglomeratic slaty matrix to end of hole. 312' - 1/16" cobalt. 313.2' - 3/4" cobalt veins.	4590 4591 4592 4593 4594 4595	4.0' 1.5' 4.0' 5.0' 5.0' 5.0'	308-312 312-313.5 313.5-317.5 317.5-322.5 322.5-327.5 327.5-332.5	.03 .10 .02 .02 .02 .04	.004 1.82 .011 .006 .008 .003	
335		End of hole.						
Additional samples assayed after Dec. 31/80 not included.								

Average weighted assays:

312'-317.5 0.504% Co/5.5



UT-16 -20°

ELEV. 422.25

400

CONGLOMERATE

QUARTZITE

SLATE

.504% CO / 5.5'

300

335'

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-16

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt
 PROPERTY Bucke Township

DIAMOND DRILL RECORD

HOLE NO. UT-17

SHEET NO. 1

DATE Dec. 5, 1980

DIP ANGLES Dip -21°	BEARING <u>AZ.79°</u>	LATITUDE <u>9,748.55</u>	STARTED <u>November, 1980</u>
	LENGTH	DEPARTURE <u>10,014.70</u>	STOPPED <u>November 25, 1980</u>
	LOCATION <u>Alimak Station</u>	ELEVATION <u>522.38'</u>	LOGGED BY <u>G.R.C-Dunlop</u>

ROCK _____ CORE SAMPLES _____

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						ASSAY	ASSAY	ASSAY
0 - 54	Conglomerate	Dark green, altered with chlorite. Several large boulders 6" to 24". Calcite in slip at 9'. Hole stopped in fault zone at 54' with heavy flow of water. Temporarily plugged with grout plug, awaiting pump. <u>Additional samples assayed after Dec. 31/80 not included.</u>						

G.R.C. Dunlop

UT - 17 - 21° ELEV. 422.25

CONGLOMERATE

400

300

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-17

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Canada

DIAMOND DRILL RECORD

HOLE NO. UT-18

PROPERTY Bucke Township

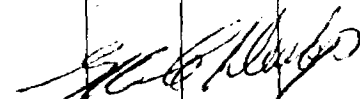
SHEET NO. 1

DATE Dec. 4, 1980

DIP ANGLES Bottom -38° Dip -39°	BEARING	AZ. 123°	LATITUDE	10,441.50	STARTED	November 26, 1980
	LENGTH	272'	DEPARTURE	9,805.15	STOPPED	December 17, 1980
	LOCATION	∠ T21, B.S.R18 132°	ELEVATION	531.32'	LOGGED BY	G.R. C-Dunlop

ROCK			CORE SAMPLES						
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY	
							Ag. OZ	Co%	
0 - 145	Conglomerate	Pebbles, boulders and angular fragments in dark green matrix. Some pebbles not well defined, edges partly assimilated. Chlorite streaks and spots, with general chloritic alteration. Occasional slips with calcite fillings. Gradational contact.							
145 - 182	Quartzite	Mottled, grey, speckled with black (biotite?) crystals. A few pebbles at 160;. Lost core 170'-171', 171.4'-172'.							
182 - 246	Slate	Typical, banded and spotted with chlorite. Breccia and reddish staining at 203'. Hole encountered water flow at 204'. Hole caved and was stopped awaiting grout pump. After grouting, broken ground 208'-213'. Lost core 209'-211'. Sections of conglomerate with a few widely dispersed pebbles (221'-224'). Chlorite spotting throughout slate. Very minor fine sulphides 230'-234'. Cobaltite in stringers 1/16"-1/4" and in very fine disseminations - extremely fine crystals - densely packed at 236.5. Fine threads and disseminated crystals to 239'. At 239', 1/2" seam of cobaltite in crystalline clusters. Several scattered threads to 242'. Possible gersdorffite and niccolite. Should be assayed for nickel.	4651 4652 4653 4654 4672 4673	4.0' 2.5' 2.5' 3.0' 2.5' 5.0'	230-234 234-236.5 236.5-239 239-242 242-244.5 244.5-249.5		.06 .16 .12 .06 Tr. Tr.	.053 3.90 3.30 .90 .008 .004	
246 - 272	Conglomerate	Greywacke matrix. Large pebbles at contact. Granular texture with fine fragments. Pebbles more numerous to end of hole. End of hole. Additional samples assayed after Dec. 31/80 not included.	Weighted Average Assays: 234'-242' 2.59% Co/8'						

272



UT-18 -39°

ELEV. 531'

500

CONGLOMERATE

QUARTZITE

SLATE

400

2.59% CO/8'

CONGLOMERATE

300

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-18

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

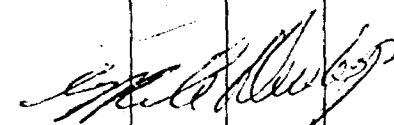
COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-19PROPERTY Bucke TownshipSHEET NO. 1DATE Dec. 4, 1980

DIP ANGLES Dip -45° Bottom -46°	BEARING <u>AZ.110°</u>	LATITUDE <u>10,443.51</u>	STARTED <u>November 28, 1980</u>
	LENGTH <u>328'</u>	DEPARTURE <u>9,804.02</u>	STOPPED <u>December 2, 1980</u>
	LOCATION <u>R21 B.S.R18 \angle130° Hole 3' left</u>	ELEVATION <u>532.02'</u>	LOGGED BY <u>G.R. C-Dunlop</u>

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
						Ag.oz.	Co%	Co%
0 - 117	Conglomerate	Few scattered pebbles and boulders of pink and grey granite with fragments of mafic rocks. Mottled and altered sections with zones of spotted slate.						
117 - 184	Quartzite at 117'	Grades into very impure quartzite conglomerate with speckled chlorite alteration. More massive quartzite from 149'. Becomes very fine grained, darker to slate contact. Healed breccia zone 155' - 157'.	4674	5.5'	166.5-172	Tr.	.007	
			4635	6.0'	172-178	.02	.12	
			4636	5.0'	178-183	.02	.026	
184 - 216	Slate	Olive green-grey, spotted chlorite fractured, muddy slips at 186' and 210'. Some silicified sections. Occasional patches of pyrite. 255.5 - 1/2" calcite with 1/8" chalc.	4637	5.0'	183-188	Tr.	.005	
			4638	3.5'	194.5-198	.13	.008	
			4639	4.0'	198-202	Tr.	.002	
			4640	5.0'	202-207	Tr.	.003	
			4641	4.0'	207-211	.03	.016	
216 - 252	Quartzite	Impure, dark grey, speckled with chlorite. Sections of quartzite conglomerate (232'-235') and slate (235'-242').						
252 - 328	Keewatin	Bleached, greenish grey, streaked. 268.4' - 2" quartzite with 1" blob of chalcopyrite in porphyritic zone 262'-271'. 271.7'-274' - vein of pink calcite mixed with quartz, plus 4" quartz vein - barren. 300'-305' - quartz porphyry. More uniform with scattered pyrite to end of hole.						
328		End of hole.						
Additional samples assayed after Dec. 31/80 not included.								



UT-19 -45°

ELEV. 530'

500

CONGLOMERATE

400

QUARTZITE

.12% CO/6'

SLATE

QUARTZITE

KEEWATIN

300

328

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-19

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-20

PROPERTY Bucke Township

SHEET NO. 1

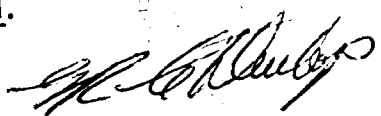
DATE Dec. 30, 1980

DIP ANGLES Collar -42°	BEARING Az. 93°	LATITUDE 10,444.28	STARTED December 2, 1980
	LENGTH 304'	DEPARTURE 9,804.62	STOPPED December 5, 1980
	LOCATION 3' rt. of \angle Rt fr. R21 \angle RT 116°	ELEVATION 531.85'	LOGGED BY G.R. C-Dunlop

ROCK

CORE SAMPLES

FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag.oz.	Co%	ASSAY
0 - 147	Conglomerate	Dark green, altered with streaks and spots of chlorite variety of pebbles. Somewhat fractured. Cemented breccia and calcite stringers at 67', 74'. Numerous slips at various angles. Breccia and cave at 142', lost core to 144'. Breccia zones at 145' and 146'.						
147 - 162	Quartzite	Dark grey, massive, becoming speckled with fine white calcite?						
162 - 230	Slate	Olive green, banded and spotted, fractured at various angles. 189' - thin seam of pyrite and cobalt. Fine threads of cobaltite with scattered sulphides 196'-200'.	4668	4.0'	184-189	.02	.007	
			4642	2.0'	189-191	Tr.	.12	
			4643	5.0'	191-196	.03	.009	
			4644	5.0'	196-201	.03	.76	
			4645	5.0'	201-206	Tr.	.41	
230 - 280	Conglomerate	Granular matrix, fine grit particles increasing to pebbles at 235'. Quartz in 2" stringer with broken core at 249'. Slate section 250'-256'. More massive, unmineralized conglomerate. Possible fine cobaltite 254'-256'. Narrow section of slate 272'-274'. Lower contact indistinct.	4646	3.5'	206-209.5	Tr.	.078	
			4647	4.0'	248-252	Tr.	.008	
			4648	2.0'	252-254	.02	.07	
			4649	0.4'	254-254.4	.24	.028	
			4650	2.1'	254.4-256.5	.25	.34	
			4669	2.5'	256.5-259	Tr.	.010	
280 - 304	Keewatin	Mottled, siliceous, scattered pyrite, minor chalcopyrite, in isolated patches and in several sheared zones.	4670	5.0'	259-264	Tr.	.003	
			4671	4.0'	280-284	.02	.003	
304		End of hole.						
		Additional samples assayed after Dec. 31/80 not included.						
			Average weighted assay:					
			196'-206' .59%Co/10'					
			or 189'-206' .35%Co/17'					
			252'-256.5' .19%Co/4.5'					
			Sludge Samples		130-140	.02	.006	
					140-150	.03	.046	
					150-160	.05	.047	



UT-20 -42°

ELEV. 530.5'

500

CONGLOMERATE

QUARTZITE

SLATE

400

.59% CO/10', OR .35% CO/17'

CONGLOMERATE

.19% CO/4.5'

KEEWATIN

304'

300

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-20

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-21

PROPERTY Bucke Township

SHEET NO. 1

DATE Dec. 31, 1980

DIP ANGLES Collar -21° Bottom -23°	BEARING	S 48°E (Az. 132)	LATITUDE	10,440.65	STARTED	
	LENGTH	348'	DEPARTURE	9,804.95	STOPPED	December
	LOCATION	∠ rt 134° sta R21 BS18	ELEVATION	532.35'	LOGGED BY	G.R. C-Dunlop

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY	ASSAY	ASSAY
							Ag. oz.	Co%
0 - 210	Conglomerate	Typical, mottled, scattered pebbles and chlorite alteration (streaks and spots of chlorite). Occasional larger boulders to 12" of grey and red granite. Pink calcite 3" at 132'. Increasing small pebbles and fragments, gritty texture to 210'.	4702	5.0'	244-249		Tr.	.003
			4703	3.0'	249-252		Tr.	.001
			4704	3.0'	252-255		.29	.082
			4705	5.0'	270-275		.05	.16
			4706	5.0'	275-280		.03	.081
			4707	2.0'	280-282		.02	.074
			4708	2.0'	282-284		Tr.	.085
210 - 220.5	Quartzite	More siliceous, grey quartzite with small pebbles, some chlorite spotting.	4709	2.0'	293-295		Tr.	.009
			4710	3.0'	295-298		Tr.	.008
220.5-231	Conglomerate	Mixed with quartzite but mainly pebble conglomerate.	4711	5.0'	298-303		Tr.	.006
231 - 287	Quartzite	Grey, fine gritty sections, minor chlorite spotting. Quartz vein 3" with chalcopyrite at 204'. Finer grained, massive siliceous to lower contact at 287'.	4661	4.0'	255-259		.02	.76
			4662	2.0'	259-261		.02	.70
			4655	1.0'	261-262		.13	.51
			4663	3.0'	262-265		.03	.30
287 - 348	Slate	Banded, siliceous sheared to 291'. Core lost 291'-293'. Slate then more typical olive grey-green, abundant chloritic spotting and banding to end of hole at 348'.	4664	5.0'	265-270		Tr.	.027
			4667	3.0'	284-287		.03	.26
			4665	2.0'	287-289		.03	.92
			4666	2.0'	289-291		Tr.	.20
			4656	1.0'	302.5-303.5		.03	.016
348		End of hole.						
			Weighted Average Assays: 255-265 .585% Co/10' 284-291 .43% Co/7' Sludge 280-290 .07 .09 290-300 .04 .012					
<u>Additional samples assayed after Dec. 31/80 not included.</u>								



UT-21 -21°

ELEV. 532'

500

CONGLOMERATE

QTZT.

GONGW.

QUARTZITE

.34% CO / 20.0'

.43% CO / 7.0'

SLATE

400

348'

300

TELEDYNE COBALT

BUGKE TOWNSHIP PROSPECT

D.D.H. UT-21

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

COMPANY Teledyne Cobalt

DIAMOND DRILL RECORD

HOLE NO. UT-22PROPERTY Bucke Township

SHEET NO.

DATE Dec. 31, 1980

DIP ANGLES Collar -41°	BEARING <u>Az. 52°</u>	LATITUDE <u>10,451.96</u>	STARTED <u>December 18, 1980</u>
	LENGTH	DEPARTURE <u>9,800.98</u>	STOPPED <u>December 20, 1980</u>
	LOCATION <u>Art 104° Sta 21 BS18</u>	ELEVATION <u>531.18'</u>	LOGGED BY

ROCK			CORE SAMPLES					
FOOTAGE	NAME OF ROCK	DESCRIPTION	SAMPLE NO.	WIDTH	FOOTAGE	ASSAY		
						Ag. Oz.	ASSAY	ASSAY
						Ag. Oz.	Co%	ASSAY
0 - 157.5	Conglomerate	Mottled, dark green, altered with chlorite. Scattered pebbles and boulders of various composition. Fracturing from 75'-95'. Breccia zone at 91'. Smaller pebbles increasing in frequency from 120'. Scattered chalcopyrite 147'-155'. Water zones at 16' and 24'.	4699	3.0'	142-145		.05	.003
			4657	5.0'	145-150		.12	.008
			4658	5.0'	150-155		.03	.056
			4659	5.0'	155-160		.02	.014
157.5-169	Quartzite	Dark grey, impure, containing some pebble zones.	4700	4.0'	160-164		.07	.051
			4660	4.0'	164-168		.07	.24
			4701	4.0'	168-172		.02	.084
169 - 172	Slate	Breccia at contact. 171'-172' - typical spotting.						
172		Hole encountered water flow at 172'. Time and budget did not permit completion of the hole. Drilling program terminated.						
		End of hole.						
		<u>Additional samples assayed after Dec. 31/80 not included.</u>						

UT-22 -41°

ELEV. 531'

500

CONGLOMERATE

0.24% CO/4.0'
SLATE

QUARTZITE

1/2'

400

300

TELEDYNE COBALT

BUCKE TOWNSHIP PROSPECT

D.D.H. UT-22

SCALE: 1" = 50' DEC. 1980

BY PIONEER CONSULTANTS LTD., TORONTO.

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Ministry of Natural Resources
RECEIVED

MAY 27 1981

The Mine Assessor
Mineral Resources



31M05NE0410 63.3927 LORRAIN

030

TELEDYNE CANADA, LIMITED
BUCKE TOWNSHIP COBALT PROJECT

LOG OF RAMP PROGRESS

February-November, 1980

Cobalt, Ontario
May 25, 1981

R. E. Bresee
Project Engineer
Teledyne Cobalt

SUMMARY

The portal was collared at an azimuth of 251 degrees, 19 minutes, 30 seconds and the decline was completed after four turns at an azimuth of 71 degrees, 19 minutes, just prior to cross-cutting the ore zone. The general strike of the ramp configuration was north 18 degrees west, as shown on the map accompanying this report. The strike length was approximately 880 feet. The decline was driven parallel to the proposed ore zone for a total length of 2225.09 feet. Contract footage totalled 2305.09 feet which included a 45 foot raise access cross-cut and the 35 foot south ramp extension. The present face is 337 feet below the portal entrance in elevation.

The contractor excavated 2 sumps, 3 muck transfer bays, 8 safety stations, and several other slashes for a total of 29,857 cubic feet of ramp widening. Approximately 32,000 tons of rock were removed from the decline during the development stage and deposited within 1000 feet of the portal entrance.

Total ground support consisted of 5820-6 foot rockbolts, 519 8 foot bolts, 210-8 foot resin rebars, 11-10 foot rebars, 1773 5foot by 4inch by 1/2inch steel straps, and 4217 square feet of wire mesh screen. This made for a safe haulageway. A total of 815 bags of portland cement were used in grouting the flow of water encountered on the ramp during the months of June and July, 1980.

INTRODUCTION

On February 22, 1980 a contract was let to MacIsaac Mining and Tunneling of Sudbury, Ontario to drive a 10 foot by 13 foot access decline at a grade of minus 15% for a length of approximately 2500 feet to reach the delineated mineralized zone. The contractors commenced mobilizing for the job on February 1, 1980 and started driving the ramp full scale by early April. The decline was completed on October 31, 1980 followed by final demobilization on January 28, 1981.

Equipment used on the ramp and for support consisted of 3-5 cubic yard L. H. D.'s, 1-3boom Pneumatic Jumbo Drill, 1-Scissor Lift Truck, 1-Service Tractor, 1- D-7 Bulldozer, 3-Electric Flygt Pumps, numerous Sandpiper Pumps, and related grouting equipment.

As a precaution, the contractors drilled test holes at 20 foot intervals for about 200 feet along the azimuth of the proposed decline to define overburden depth and therefore, to facilitate choosing of a portal location. The decline was then driven with an assured safe back overhead.

Underground Diamond Drilling commenced on September 2, 1980 and was completed on December 22, 1980. A total of 6167 feet was drilled in 22 holes from 4 different stations, as shown on the accompanying maps.

RAMP GEOLOGY

Refer to the map accompanying this report for a picture of the geology of the decline.

The decline was collared in the Keweenaw Nipissing Diabase Sill formation. The group is composed mainly of coarse and medium grained quartz material. The main structural feature is the vertical and horizontal jointing which made for overbreak conditions and required more ground support, as a result. After driving the ramp in Diabase for 790 feet, we encountered the Huronian Cobalt Series Sediments contact.

Locally referred to as the Coleman formation, it consists of a conglomerate rock of pebbles and boulders in a matrix of sand like material and is intermixed with slate and quartzite beds. Structurally, the Conglomerate was the best ground encountered on the ramp. Rounds broke well and stayed to size in this area. The ramp advanced 1222 feet in Conglomerate and then encountered a Slate horizon.

The Slate material is still classified as Cobalt Series Sediments. The formation consists of gently dipping slate bands, which in themselves make quite stable ground. But, for the remaining 213 feet, the ramp traversed the slate bands at a conflicting angle and as a result, ground conditions became very poor in this area -

bolts had to be installed parallel to the beds or they just would not hold. Most of our trouble that we did have driving the ramp was encountered in this area. The Slates contained spotted chloritic alterations as did some of the Quartzite bands encountered in the Conglomerate and Slate horizons.

The Quartzites came in and out at various times in both formations and are also classified as Cobalt Series Sediments. This type of rock was fine grained and hard and itself caused no problems. But, occasionally it was associated with small fault zones which encouraged a tricky back.

The basement rocks in the area consist of Archean age Keewatin Volcanics - the oldest rocks in Canada. The decline did not traverse this formation, but from diamond drill information and related interpolations, it can be assumed that the Keewatin rocks are just below the present location of the ramp bottom.

RAMP LOG

Please note here that figures related in the following resumes may not coincide with figures in the introduction as the latter are exact survey results, whereas the former are compiled from estimates contained in the Companies internal weekly reports.

The following is a summary of monthly progress of the ramp excavation as performed by MacIsaac Mining and Tunneling of Sudbury, Ontario.

February 1980

Many delays were encountered this month during portal excavation due to the inherent weak jointing in the Diabase Sill rocks, and surface weathering. As a result, double the volume of rock - as compared to original estimates - had to be excavated to make the portal entrance safe. Cold weather further hampered the start of the ramp.

The ramp was driven 24.5 feet and 80-8 foot resin rebar were installed from surface vertically and horizontally into the portal face to consolidate the loose ground. The rounds were partially blasted then squared up later. As mentioned, very slow progress was made this month due to mobilization delays, cold temperatures, and

bad ground conditions. Concurrently, grouted rebar was installed in the first 24.5 feet of back on the ramp to make it safe.

March 1980

A cement collar (90 yards of concrete) was constructed at the portal during the month - allowing full efforts to be applied to driving the decline by April 1, 1980. As a result of this construction, very little work was done on the decline itself this month. Collar construction had to be completed along with other surface facilities before water, compressed air, and ventilation air could be made available for continued decline excavation.

The ramp was driven 37.5 feet during the month and threaded rockbolts replaced grouted rebar as a means of ground support as conditions improved somewhat. 82-6 foot rockbolts were installed as ground support along with 360 square feet of wire mesh screen. The walls were being systematically bolted in the Diabase rock formations; or the first 800 feet of the ramp.

April 1980

Full efforts concentrated on driving the ramp this month. Overbreak conditions in the Diabase started to make ground support a much more costly operation than originally budgeted for.

The overbreak condition also initiated installation of steel straps and some resin rebar occasionally to compliment the systematic bolting pattern.

The ramp was advanced 210 feet during the month and progressed around the first 90 degree turn. Ground support consisted of 601-6 bolts, 163-8 foot bolts, 173- straps, and 72 square feet of screen. The crews excavated a safety bay and a sump for a total of 3245 cubic feet of slash.

May 1980

Progress was slow during the month due to blocky and fractured ground inherent in the Diabase Sill which resulted in time consuming extra mucking and extra ground support. Conditions improved towards month end with the approach of the lower contact of the Diabase Sill. The rounds had been cut down to 8 or 10 feet deep as the 12 foot round just would not break properly.

The decline was advanced 310 feet this month. Ground support consisted of 1191-6 foot bolts, 88-8 foot bolts, 418 straps, 74-8 foot rebar, and 168 square feet of screen. 2 safety stations and part of a muck transfer bay were excavated for a total of 1150 cubic feet of slash.

June 1980

The ramp passed the lower Diabase contact into the Cobalt Series Sediments and although tricky at first, much better ground conditions finally prevailed. Towards month's end another problem developed which again slowed advance. Water was encountered during the last week of the month and had to be grouted with cement, resulting in a week's delay importing the proper equipment from Sudbury. The ramp progressed around the first 180 degree curve slowly due to the water flow encountered and subsequent grouting procedures.

The ramp advanced 287.5 feet during the month. Ground support consisted of 969-6 foot bolts, 26-8 foot bolts, 281 straps, and 366 square feet of screen. A muck transfer station was completed and 2 safety bays were excavated for a total of 4405 cubic feet of slash. 151 bags of cement were consumed in grouting procedures.

July 1980

Generally, ground conditions were very good during this month except for encounters with horizontal and vertical calcite stringers which made for blocky ground conditions. Water flow and subsequent grouting slowed advance significantly again this month. The ramp passed the 1000 foot mark in length and was approximately 172 feet down in elevation; still in Cobalt Series Sediments. A second sump

was excavated and would also serve as the first underground diamond drill station.

The decline advanced 271 feet this month. Ground support consisted of 678-6 foot bolts, 173 straps, and 120 square feet of screen. A sump excavation was started for a total of 3755 cubic feet of slash. 664 bags of cement were used for grouting. By month's end, encounters of significant water flow at the face had just about ceased.

August 1980

The water problem seemed to have halted abruptly. This fact, coupled with cutting down to a 10 foot round, allowed advance to improve impressively for the month. Ground conditions were fairly competent, but systematic bolting was continued with strapping used in the faulted areas. A 45 foot deep cross-cut was driven to serve as a muck transfer bay initially. Eventually, it would serve as access to the future ventilation-escapeway raise to surface.

The ramp advanced 405 feet this month, including the 45 foot raise access cross-cut. Ground support consisted of 939-6 foot bolts, 265 straps, and 60 square feet of screen. Slashing for the month totalled 9538 cubic feet which included 1 safety bay, 1 muck transfer bay, completion of a sump, and slashing required for the raise access

cross-cut. Both the raise access cross-cut and the muck transfer bay were also used for diamond drilling stations.

September 1980

Progressing well, the ramp was still in Conglomerate with some slaty inclusions requiring extra ground support. The final large diameter turn (204 degrees) was made this month and the final muck transfer station was excavated. A major fault was traversed towards the end of the month and slowed advance somewhat. Due to the results of early underground diamond drilling (started on Sept. 2, 1980), the length of the last large diameter turn had to be shortened to accomodate completion of the ramp at the desired elevation before intersecting the ore zone - as indicated from new information.

The decline was advanced 388 feet plus 35 feet of south ramp extension for a total of 423 feet of advance - the best month of the entire programme. Ground support consisted of 730-6 foot bolts, 221 straps, and some small sections of screen. Ramp widening consisted of 2303 cubic feet of slash including 2 safety bays and the slash for the south ramp extension.

October 1980

The ramp started encountering slate and quartzite beds in the

Conglomerate and during the second week of the month we had passed completely into the Slate horizon of the Sediments. As a result, back and wall conditions became tricky and required much time and extra material (including rebars) to make them safe. The ramp passed the 2000 foot mark during the second week of October and was down approximately 300 feet in elevation. Numerous faults were encountered this month compounding the problems of ground control. Water flow became prominent in the face once more for the last two weeks of October, but was not severe enough to require grouting. The final settling sump was excavated this month also. We were preparing to winterize the ramp for the oncoming cold weather but stopped short of completion due to a head office decision to stop development for this year on October 31, 1980. The final turn (approximately 70 degrees) was completed on this date and left the ramp face perpendicular to the ore zone and 2225 feet from the portal entrance and 337 feet down in elevation from the collar. This was at a point just above the projected Keewatin Basement contact. The Keewatin rocks were not evident in the face.

The decline advanced 333.5 feet this month. Increased ground support consisted of 565-6 foot bolts, 242-8 foot bolts, 136-8 foot resin rebar, 11-10 foot resin rebar, 238 straps, and 1491 square feet of screen. Ramp widening consisted of 5556 cubic feet of slash which was used as a muck transfer bay and the final ramp sump.

November 1980

The contractors cleaned up and finished ground support by November 7, 1980 at which time all the miners were laid off. A small crew was kept on the property until December 22, 1980 to service the diamond drill crews underground. After this date MacIsaac began demobilization procedures which ended on January 28, 1981.

During the month of November the crews installed 65-6 foot bolts, 4 straps, and 1580 square feet of screen to complete the ground support work.

At this stage, development to the ore zone had been completed.

General Comment

A greater knowledge was gained by Teledyne and MacIsaac as a result of driving this Access Decline in the Cobalt Camp. Large, heavily blasted rounds had to be shyed away from in this area due to the ground conditions. Generally the ramp excavation progressed well once the 'Cobalt' ground had educated us. Much more ground support was used than was originally planned for, thus adding an unexpected additional cost burden.

Respectfully submitted

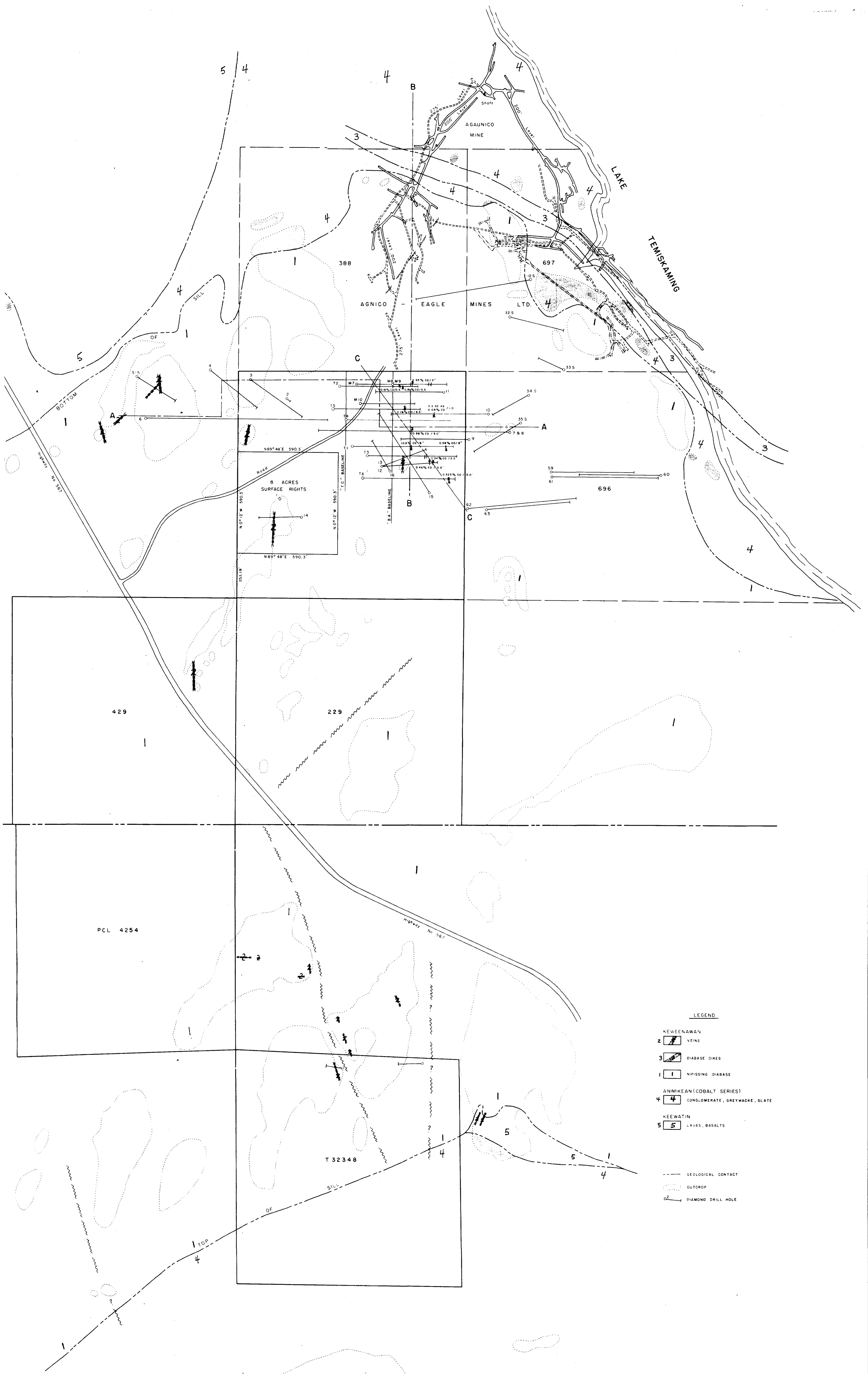
TELEDYNE CANADA LIMITED

R. Bresee

R. E. Bresee
Project Engineer

Cobalt, Ontario

May 25, 1981



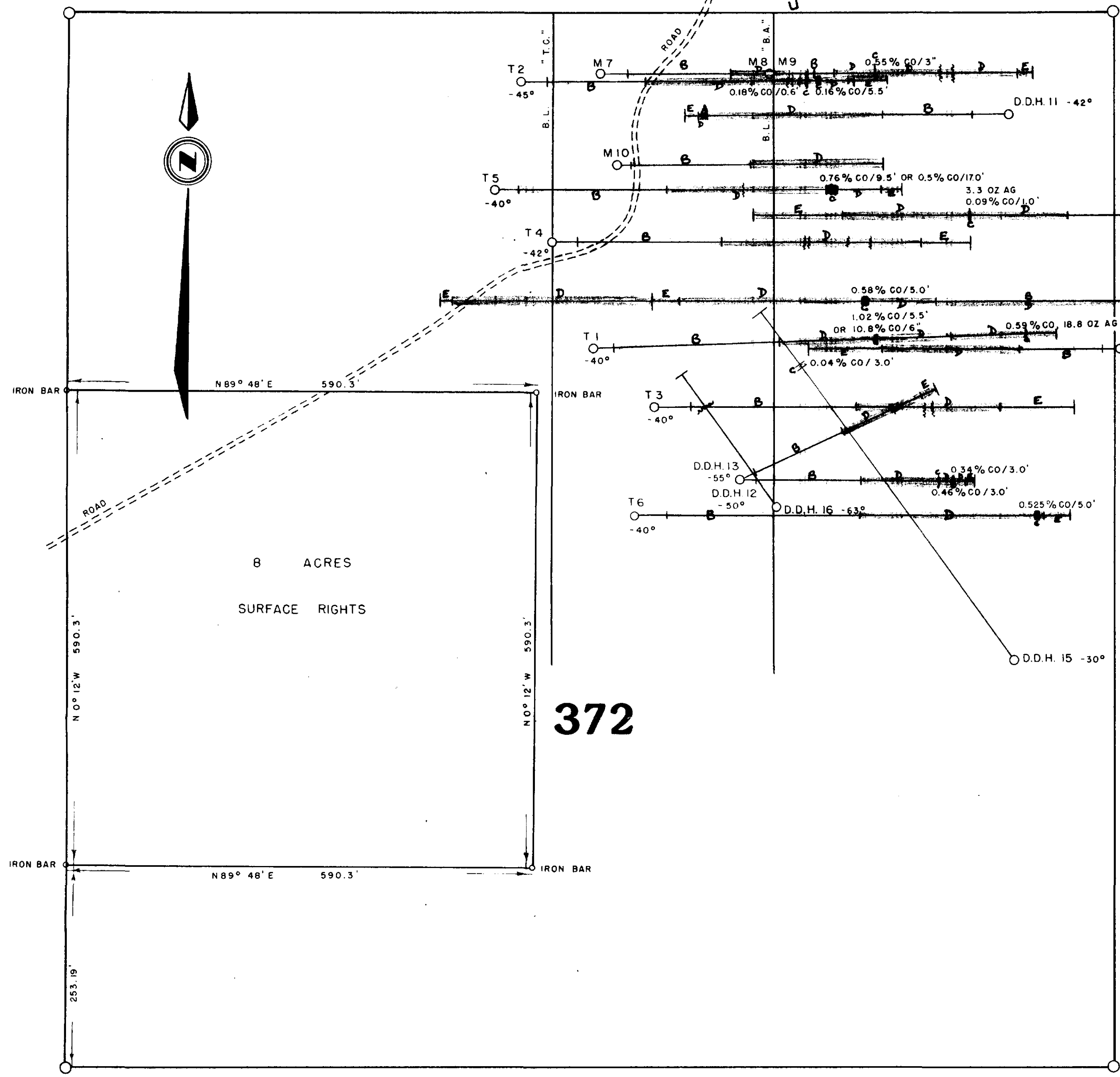
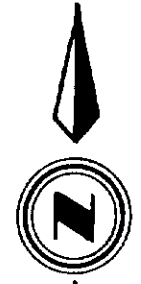
LEGEND

- KEWEENAWAN
- 2 [Symbol] VEINS
- 3 [Symbol] DIABASE DIKES
- 1 [Symbol] NIPISSING DIABASE
- ANIMIKEAN (COBALT SERIES)
- 4 [Symbol] CONGLOMERATE, GREYWACKE, SLATE
- KEEWATIN
- 5 [Symbol] LAVAS, BASALTS
- GEOLOGICAL CONTACT
- OUTCROP
- DIAMOND DRILL HOLE

BIG AGAUNICO MINES LTD.
BUCKE & LORRAIN TOWNSHIPS, ONTARIO

SCALE 1 INCH = 200 FEET
 JANUARY 10, 1973
 SEPTEMBER 1979
 63-3927
 0114 PA2C 80 N. HUNT

275' LEVEL, AGAUNICO MINE



8 ACRES
SURFACE RIGHTS

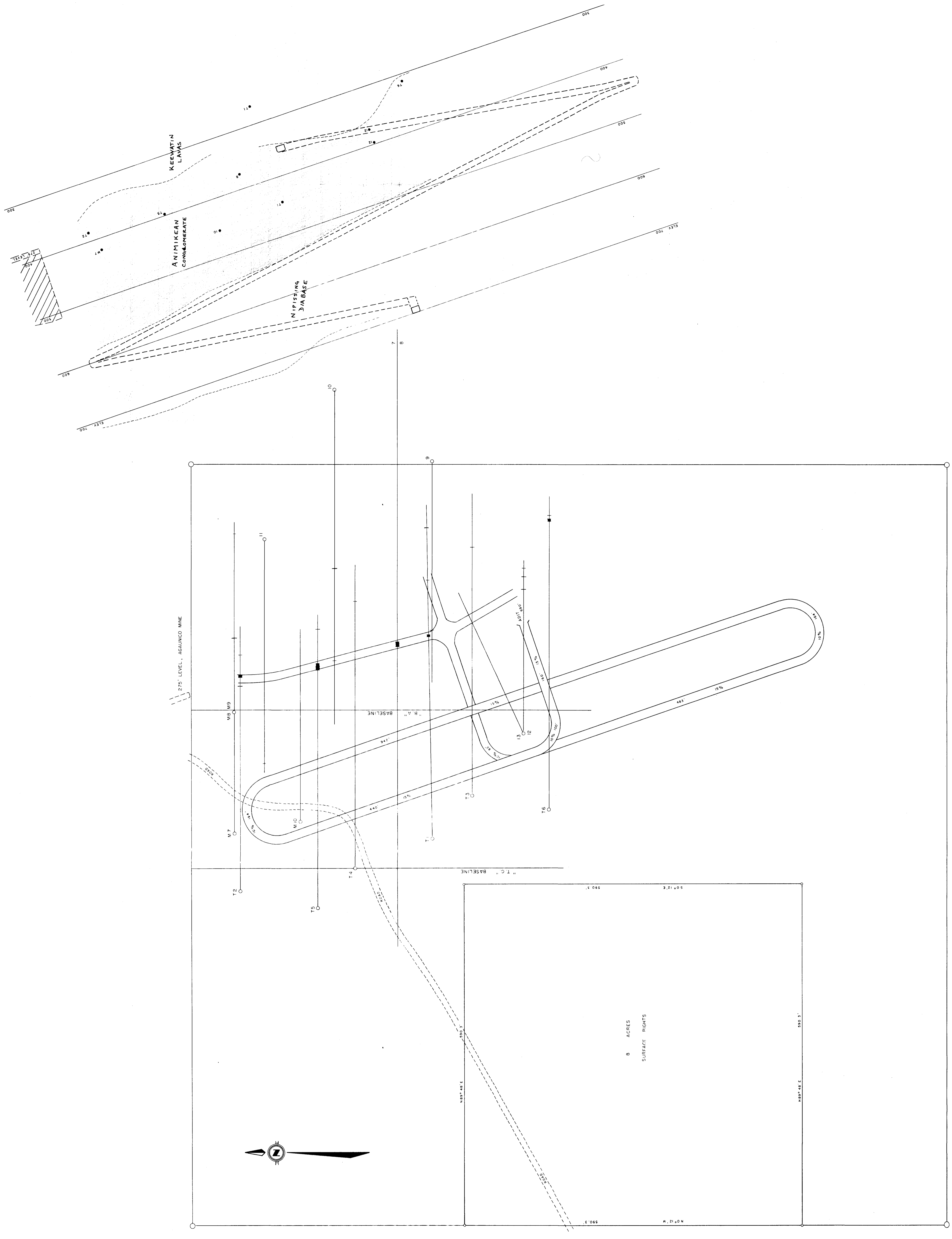
372

- KEWEENAWAN
- C VEINS
 - A DIABASE DIKE
 - B NIPISSING DIABASE
- ANIMIKEYAN (COBALT SERIES)
- D CONGLOMERATE, GREYWACKE, SLATE
- KEEWATIN
- E LAVAS, BASALTS

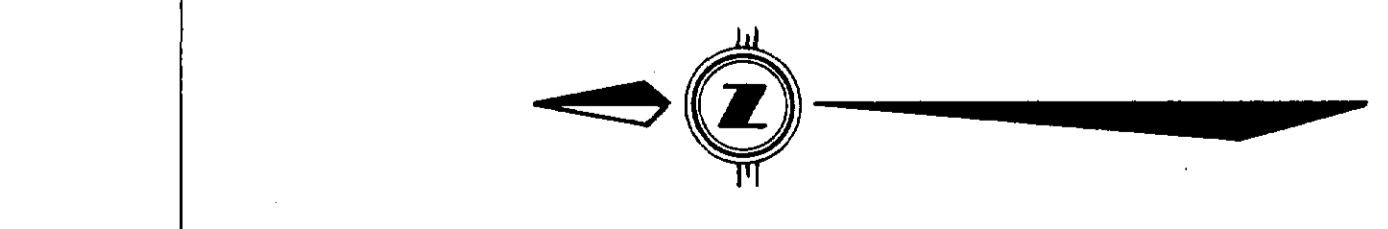
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TELEDYNE CANADA LIMITED
 BUCKE TWP. PROJECT-ONTARIO
 PLAN OF DIAMOND DRILLING
 SCALE: 1" = 100' 1979

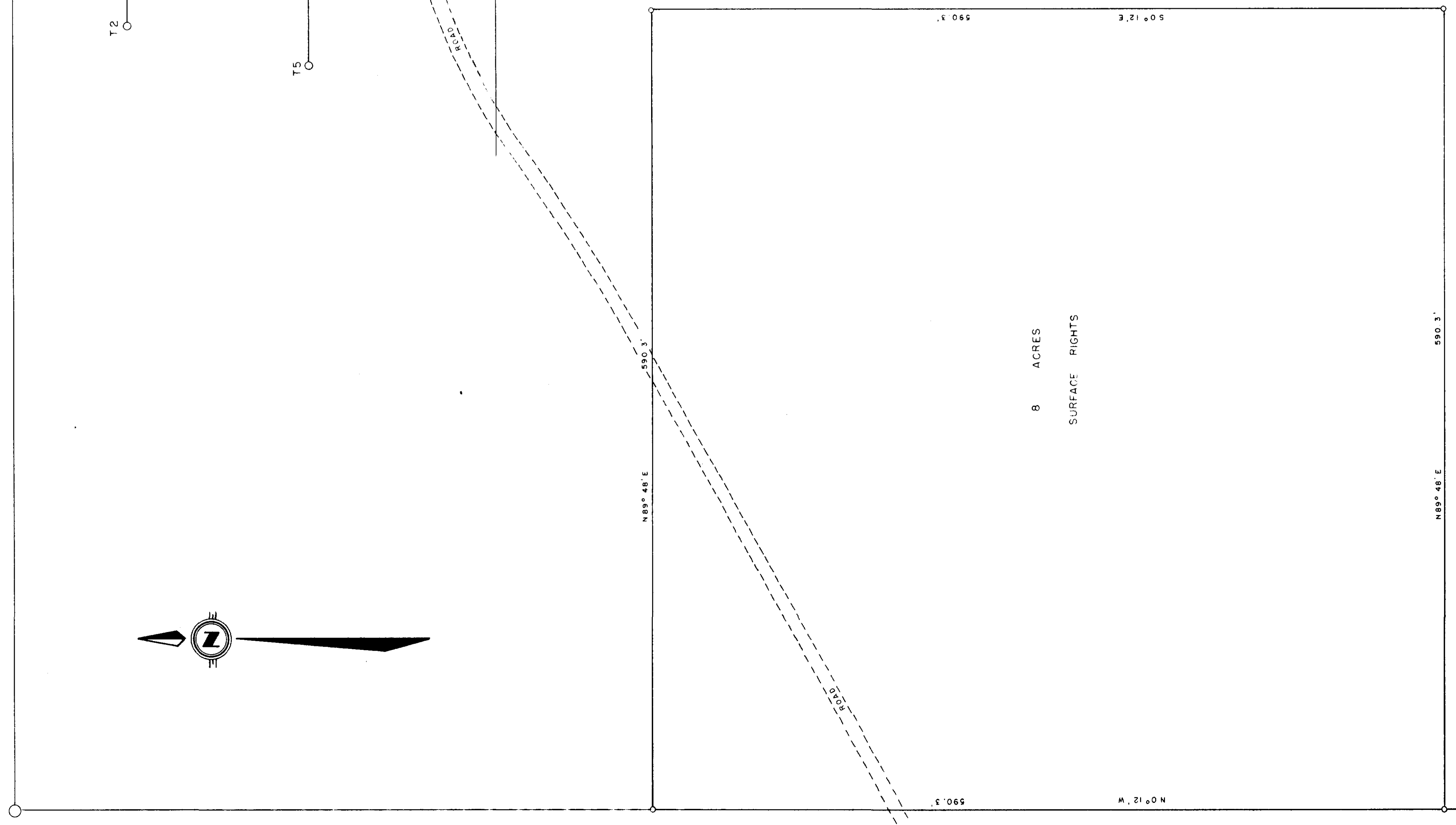




275' LEVEL - AGAURICO MINE



8 ACRES
SURFACE RIGHTS



T.C. BASELINE

R.A. BASELINE

M.0

M.7

T.2

T.5

T.4

T.3

T.6

148

141

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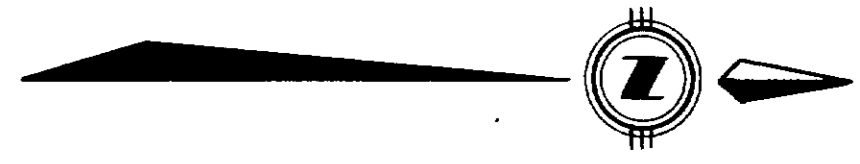
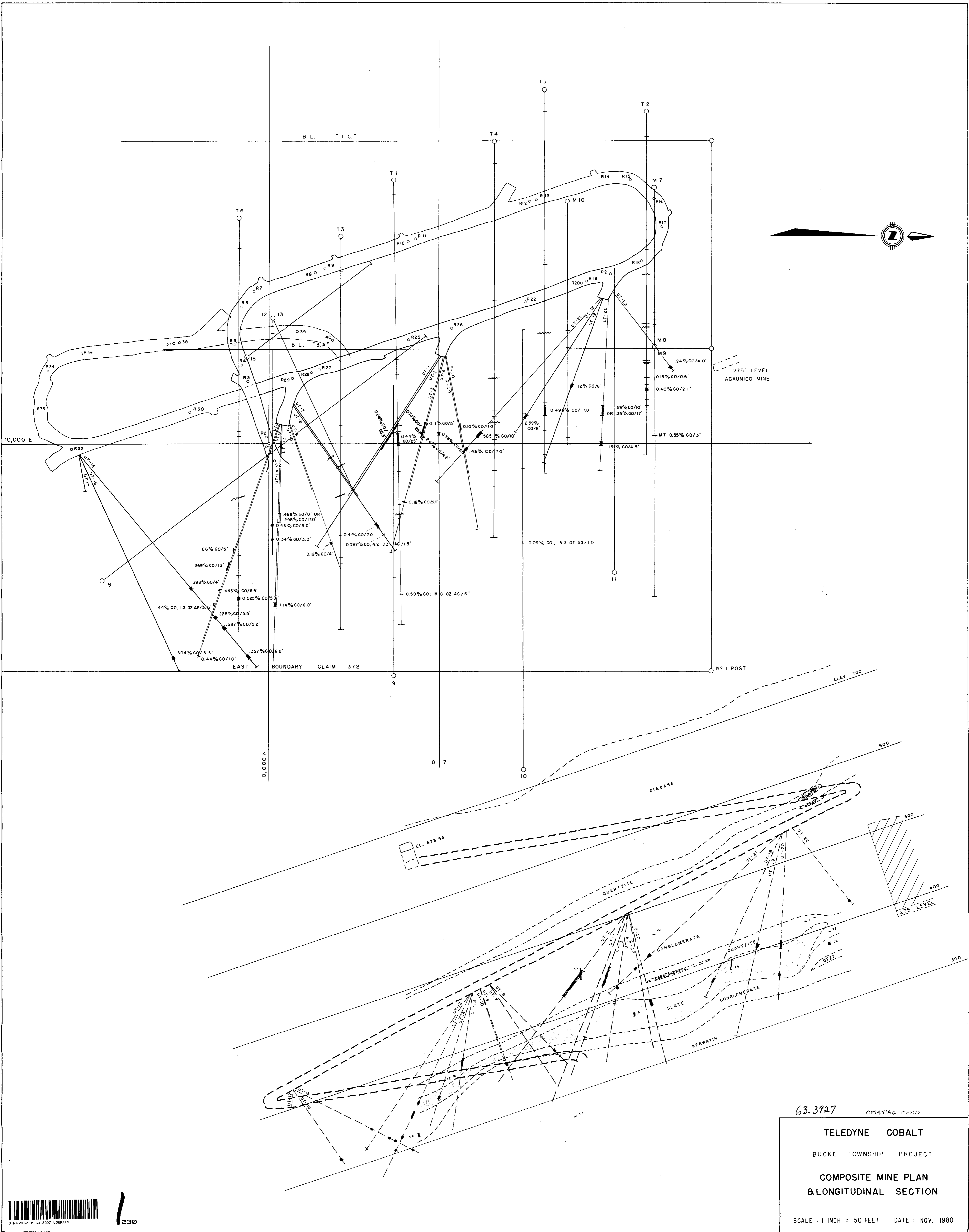
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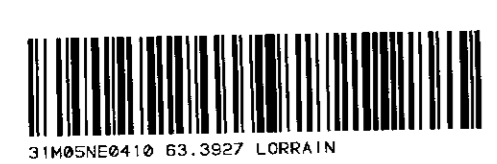


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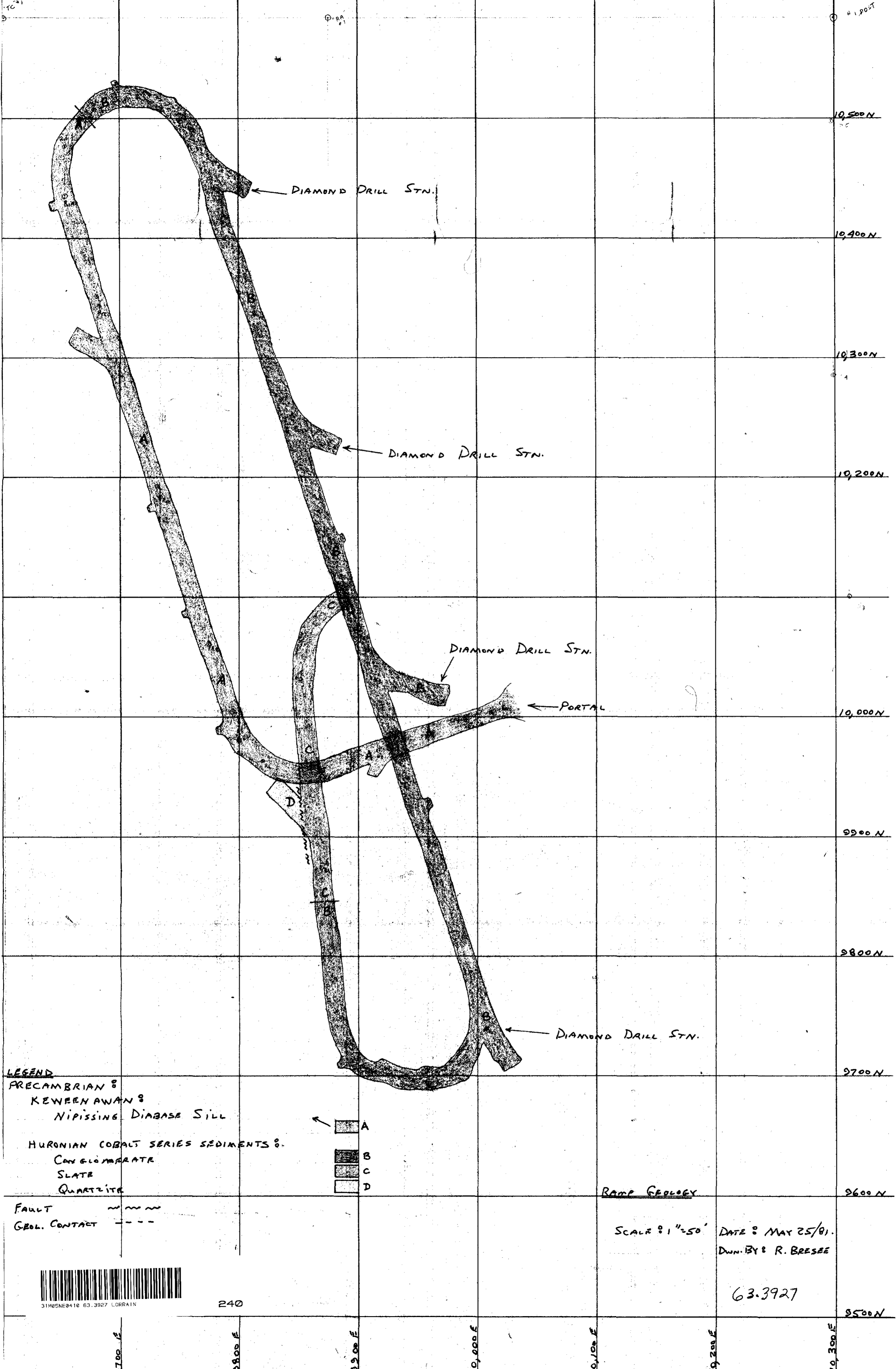
TELEDYNE COBALT
 BUCKE TOWNSHIP PROJECT
**COMPOSITE MINE PLAN
 & LONGITUDINAL SECTION**

SCALE : 1 INCH = 50 FEET DATE : NOV. 1980

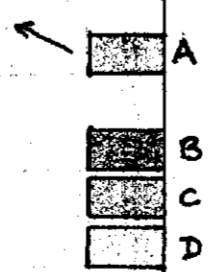
BY PIONEER CONSULTANTS LIMITED, TORONTO



1230



LEGEND
 PRECAMBRIAN :
 KEWEENAWAN :
 NIPISSING DIABASE SILL
 HURONIAN COBALT SERIES SEDIMENTS :
 CONGLOMERATE
 SLATE
 QUARTZITE
 FAULT ~~~~~
 GEOL. CONTACT - - - -



RAMP GEOLOGY

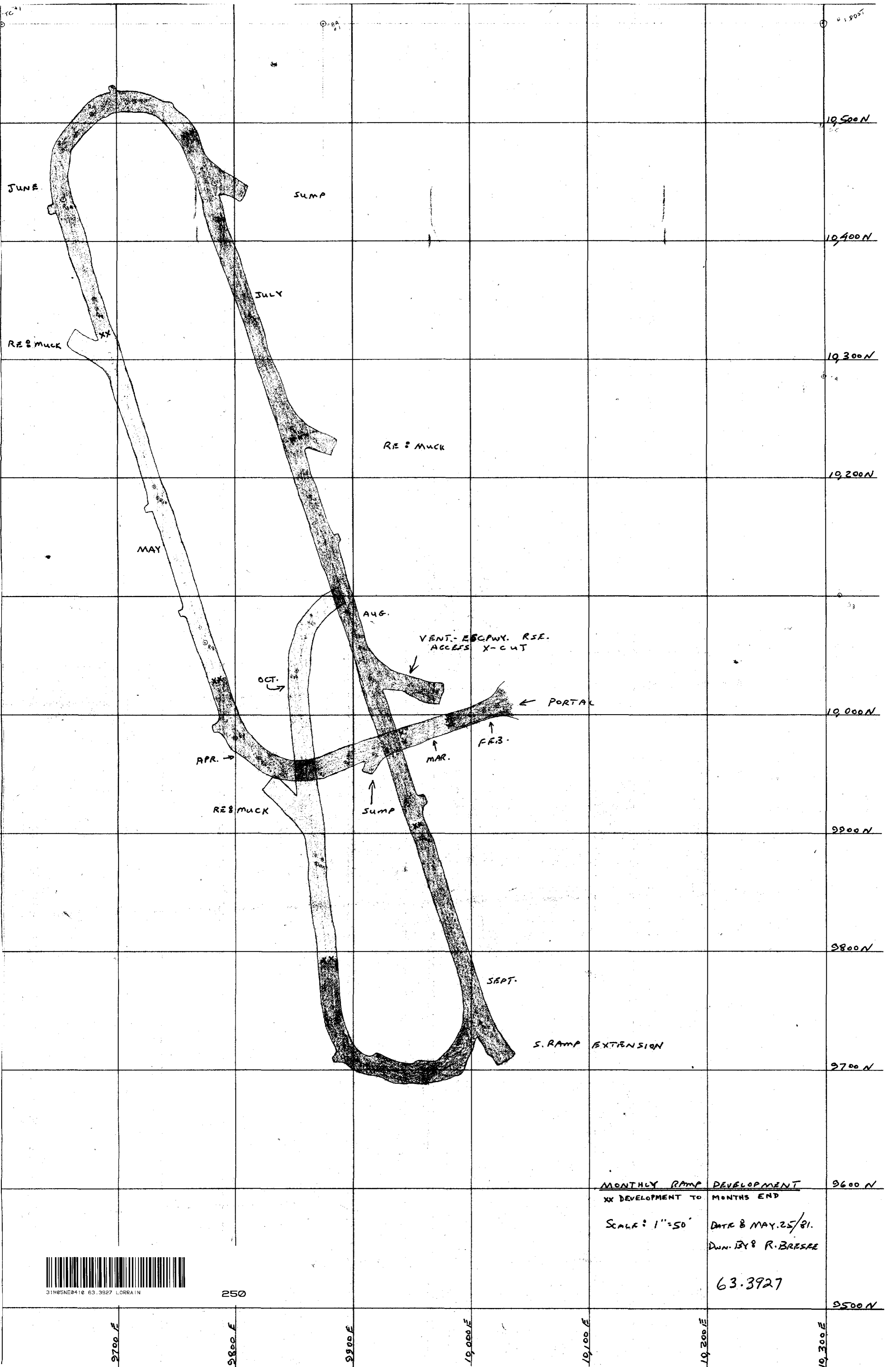
SCALE : 1" = 50' DATE : MAY 25/81.
 DRAWN BY : R. BRESSE



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9500 N



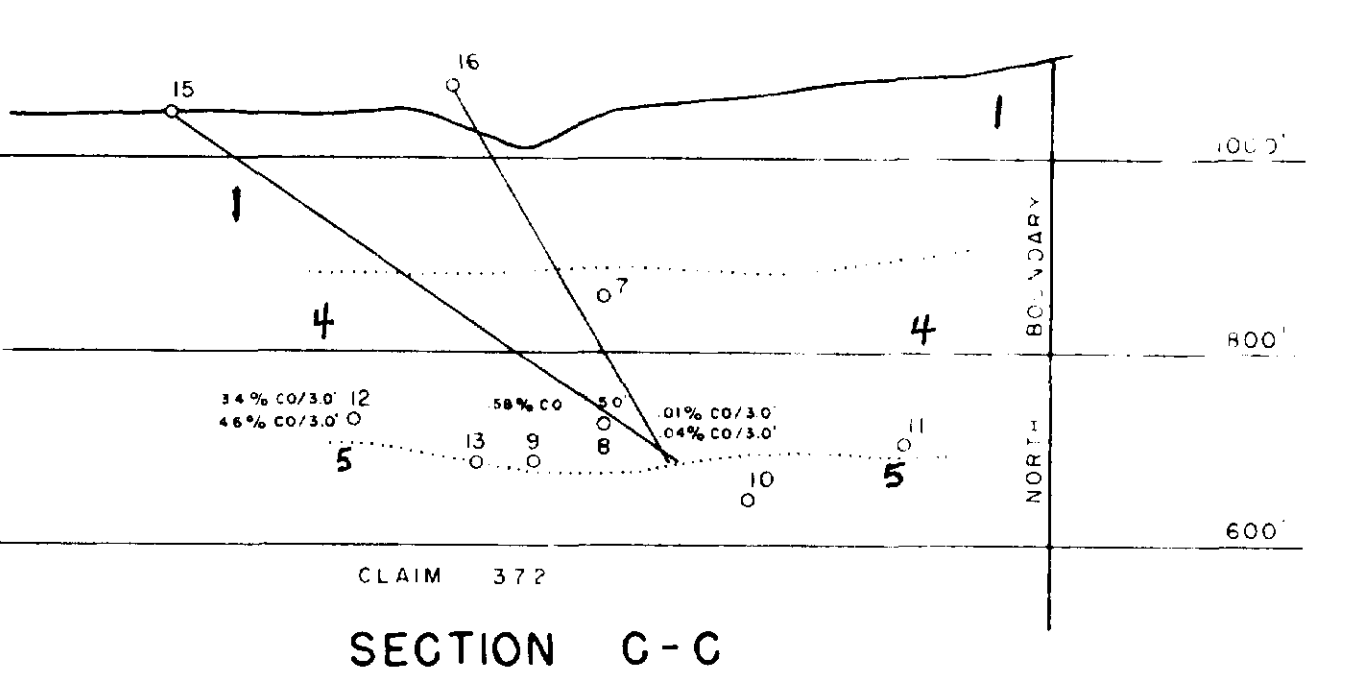
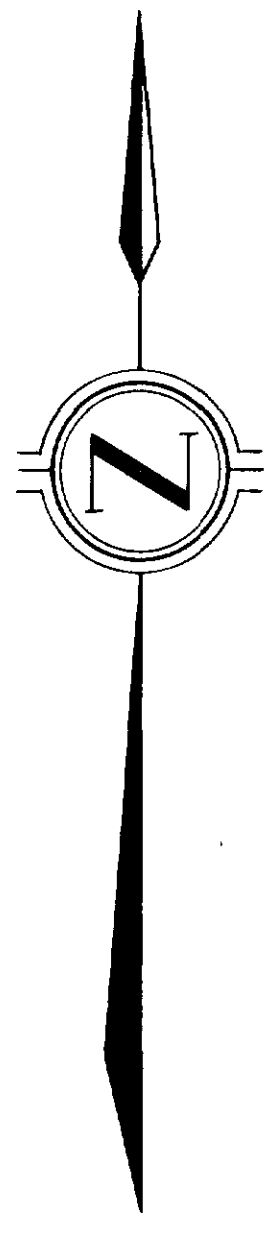
MONTHLY RAMP DEVELOPMENT
 XX DEVELOPMENT TO MONTHS END
 SCALE: 1"=50'
 DATE: MAY. 25/81.
 DRAWN BY: R. BRESSE

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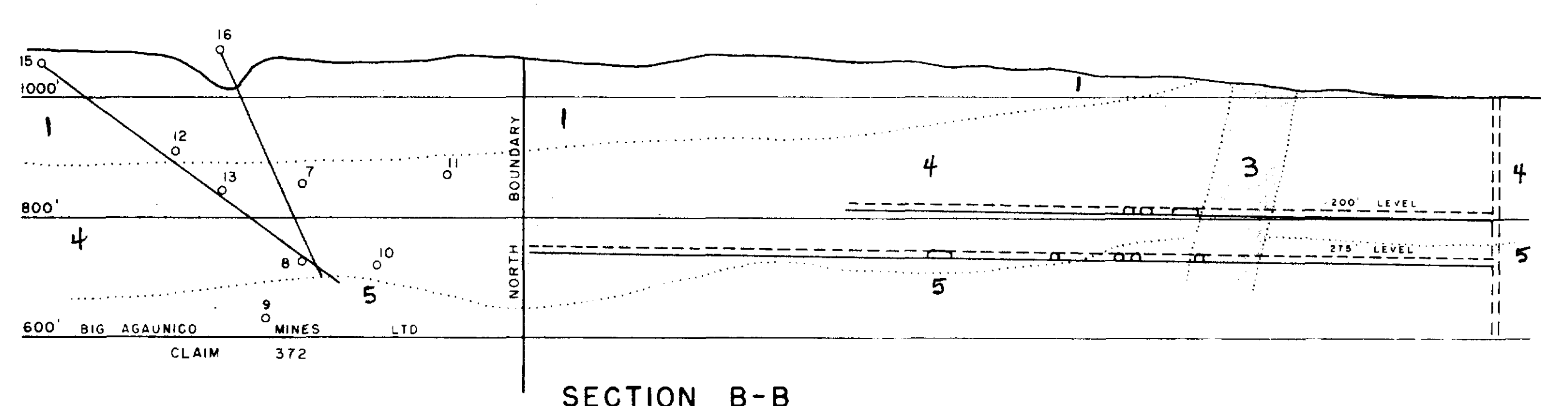


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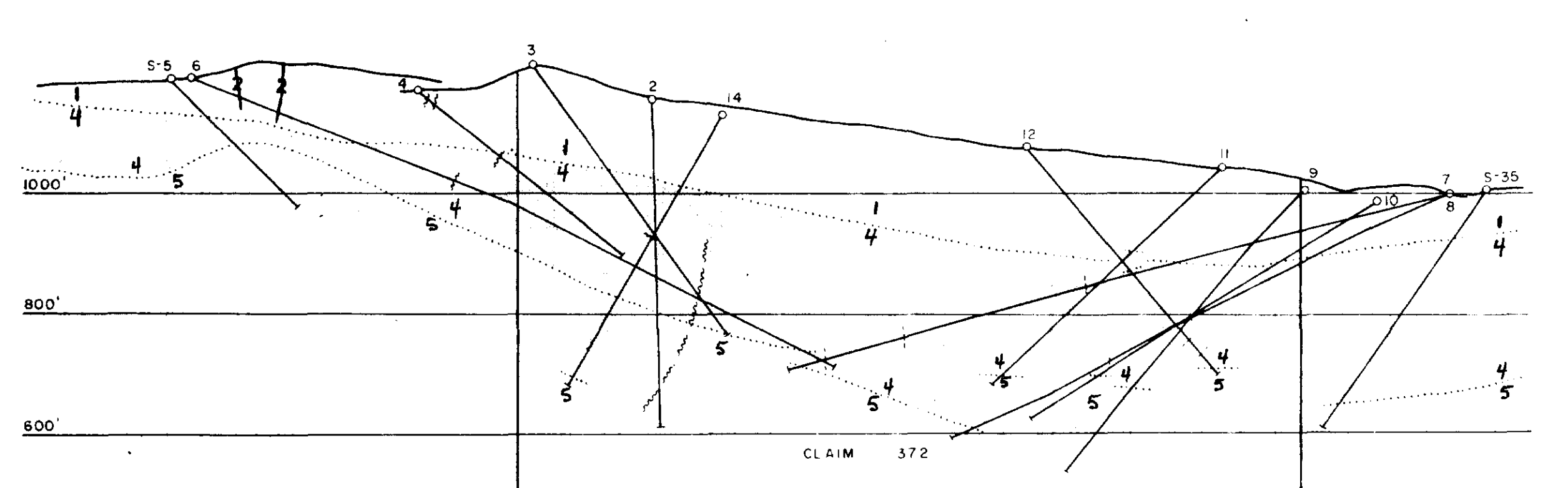
9700 E 9800 E 9900 E 10000 E 10100 E 10200 E 10300 E
 9500 N 9600 N 9700 N 9800 N 9900 N 10000 N 10100 N 10200 N 10300 N 10400 N 10500 N



SECTION C-C



SECTION B-B



SECTION A-A