CLEVELAND TIN N.L.

CATEGORY: MINE EXPL.

HOLE No.: C631

GENERAL DATA

Objective: HALLS LODE 17-20 LEVEL

Area of Operation: ..... Location: G.A SECTION, SURFACE, EAST OF DEEP CREEK

Collar R.L.: 397.4 Co-ordinates: 15205.4 N, 11015.5 E.

Bearing of Hole: ..... Angle of Hole: ..... Final Depth: ~~377.03~~ 489.8 m.

Drilling Commenced: ..... Completed: ..... Logged by: K.G PALMER.

DRILLING DATA

Drilled by: LONGYEAR. Non Coring: .....

Drilling Rig: 38. Coring: .....

Driller(s): .....

Core Recovery: .....

HOLE SURVEYS

CAMERA SURVEY.
TROPARI
ACID.

HOLE No.: .....

N.W.P.S.

ABMINCO N.L. - Cleveland Mine

Hole No. C631
Sheet No. 1

DIAMOND DRILL HOLE DATA

PROGRAM DATA				SURVEY DATA				INTERPOLATED DATA		
				Instrument Type	Depth	Dip	Azimuth	Depth	Dip	Azimuth
1	Attitude	CHS	(+) (-)		0	60	312	0	60	312
					45.7	59	315	12.5	60	312.5
2	Hole No.	631			91.44	59	322	37.5	59.4	314.2
					182.88	58	322	62.5	59	320.7
3	Down Hole Interval	25			274.32	57	322	87.5	59	321.9
					365.76	53	322	112.5	58.8	322
4	Collar	15205.4	N		449.58	49	319	137.5	58.3	322
					489.8	45	319	162.5	58	322
5	Co-ords.	11015.5	E					187.5	58	322
								212.5	57.9	322
6	Collar R.L.	397.4						237.5	57.4	322
								262.5	57.2	322
7	Halls Sect.	15432.8	N					287.5	56.8	322
								312.5	55.5	322
8	Intersect Point	10762.0	E					337.5	54.5	322
								362.5	53	322
9	Battery Sect.		N					387.5	52	321.5
								412.5	50.7	320.3
10	Intersect. Point		E					437.5	49.7	319.3
								462.5	48	319
11	Start Plot (Depth)	0	ϕ = Collar					487.5	45.4	319
								512.5		

DOWN HOLE PLOT

Hole No: C 631

Sheet No: 1

	PLAN			CROSS SECTION		LONG SECTION					PLAN			CROSS SECTION		LONG SECTION			
DEPTH	N	E	RL	Dist. from H.R.P.	Dist. from B.R.P.	Dist. from Halls	Sect. Ga	Dist from Batt.	Sect.	Depth	N	E	RL	Dist. from H.R.P.	Dist. from B.R.P.	Dist from Halls	Sect.	Dist. from Batt	Sec
0	15205·4	11015·5	397·4	340·54		2·26		1813											
25	15213·84	11006·28	375·75	328·04		2·31													
50	15222·72	10997·16	354·23	315·32		2·74	Ga												
75	15232·68	10989·01	332·80	302·58		4·62													
100	15242·81	10981·06	311·37	289·89		6·78													
125	15253·02	10973·09	289·99	277·13		8·96													
150	15263·37	10965·0	268·72	264·18		11·18													
175	15273·81	10956·84	247·52	251·12		13·42													
200	15284·25	10948·69	226·32	238·06		15·66													
225	15294·72	10940·51	205·14	224·97		17·90	G												
250	15305·33	10932·22	184·0	211·69		20·18													
275	15316·0	10923·88	163·06	198·34		22·47													
300	15326·79	10915·45	142·14	184·85		24·78													
325	15337·95	10906·73	121·54	170·9		27·17													
350	15349·39	10897·79	101·19	156·59		29·63													
375	15361·25	10888·53	81·22	141·76		32·17													
400	15373·29	10878·95	61·52	126·57		34·64													
425	15385·47	10868·83	42·17	110·85		36·85	H	1887·8											
450	15397·73	10858·29	23·11	94·84		38·82													
475	15410·36	10847·32	4·53	78·22		40·78													
500	15423·61	10835·80	−13·27	60·79		42·84													

HOLE No.: C631

SAMPLE DATA

SHEET No.: 1

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu		Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu	
	113755	LODE		352·55	353·56	1·01	0·32	0·05	0·13					
	113756	"		353·56	354·28	0·72	0·26	0·03	0·15					
	113757	"		354·28	354·61	0·33	0·22	0·05	0·05.					
	113758	"		354·61	355·48	0·87	0·22	0·03						
	113759	"		355·48	356·19	0·71	0·27	0·04						
			Σ	352·55	356·19	3·64	0·48	0·04						

HOLE No. : C631

SAMPLE DATA

SHEET No. : 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu		Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu	
	113840	LODE		413·55	414·55	1·00	0·06	0·04	0·02					
	113841	LODE		414·55	415·71	1·16	0·14	0·10	0·05					
			Σ	413·55	415·71	2·16	0·10	0·07	0·04					

N.W.P.S. COCKINGTON PRINT

HOLE No. : C 631

SAMPLE DATA

SHEET No. :

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu		Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu	
	113830	LODE		462·08 1516'0"	463·07 1519'3"	0.99	0·26		0·12					
	31	LODE		1519'3"	464·04 1522'5"	0·97	0·42		0·07					
	32	LODE		1522'5"	465·04 1525'10"	1·04	0·05		0·13					
	33	LODE		1525'10"	466·24 1529'8"	1·16	0·06		0·08					
		Chert		1529'8"	466·48 1530'5"	0'9" 0·24								
	34	LODE		1530'5"	466·88 1531'9"	1'4" 0·40	0·04		0·01					
		Shale		1531'9"	467·27 1533'1"	1'4" 0·39								
	35	LODE		1533'1"	468·01 1535'5"	2'4" 0·74	0·04		0·01					
		Shale.		1535'5"	468·27 1536'4"	0'11" 0·26								
	36	LODE		1536'4"	469·38 1539'11"	1·11	0·08		0·61					
	37	LODE		1539'11"	470·44 1543'5"	3'6" 1·06	0·06		0·60					
	38	LODE		1543'5"	471·69 1547'7"	4'2" 1·25	0·04		0·14					
		Shale		1547'7"	472·06 1548'9"	1'2" 0·37								
	113839	LODE.		1548'9"	472·21 1549'3"	0'6" 0·15	0·04		0·04.					
			Σ	462·08	472·21	10·13	0·10		0·19					

N.W.P.S. COCKINGTON PRINT

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
0	4.10	0.37	0	38.28	38.28	40°	BROWN SHALE.	Very broken core. Chocolate to reddish			
4.10	4.86	0.09						brown shale. Very rarely bleached			
4.86	5.64	0.80						to pale grey. Occasionally fine bedded.			
5.64	6.41	1.02						Cleaves readily parallel to bedding.			
6.41	7.47	1.20						Get colour variation - dark brown and			
7.47	8.54	1.32						rare greyish bands from 28.0 metres onwards			
8.54	9.75	1.22						Rarely contains very fine bands of brown			
9.75	10.20	0.66						and brownish grey sandy material.			
10.20	11.12	1.04						Chaotic around 32.0 metres.			
11.12	11.58	0.74	38.28	40.32	2.04		LITHIC GREYWACKE	Sedimentary massive rock composed of			
11.58	11.89	0.29						fragments of rock of variable size and			
11.89	14.32	0.24						colour. Colour varies from whitish grey through			
14.32	14.93	0.33						green to red brown. Fragments are sub rounded			
14.93	15.56	0.24						to angular and range in size from sand to			
15.55	15.85	0.25						gravel. Size sorting evident with biggest fragments			
15.85	16.00	0.20						towards the bottom. Conglomerate at 39.00			
16.00	16.31	0.28						to 39.70 m.			
16.31	16.61	0.24	40.32	43.24	2.92	39°	Siltstone	Purplish grey and brown fine bedded siltstone.			
16.61	16.92	0.22						Greenish brown to grey in fresh section.			

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
16·92	17·07	0·33	43·24	49·81	6·57	53°	Tuff, Shale Siltstone.	Interbedded green tuff and purple and greenish brown shale. Tuff is minor at start but becomes dominant. Last 0·30 note is all greenish tuff. Tuff sections are sometimes chert and rarely contains disseminated euhedral pyrite. Shale sections are normally purple brown and rarely are silty.			
17·07	17·37	0·45									
17·37	18·18	0·37									
18·18	18·29	0·31									
18·29	18·90	0·50									
18·90	19·35	0·36									
19·35	20·73	1·49									
20·73	21·34	0·76	49·81	73·33	23·52		Basalt.	Massive dark green, fine grained basalt.			
21·34	21·80	0·33									
21·80	22·10	0·36									
22·10	22·56	0·53	73·33	83·45	10·12	48°	LITHIC TUFF	Normally massive but rarely fine ~~grained~~ bedded tuffaceous rock. Major component is fine grained grey green groundmass but contains variable quantities of brown to grey rock fragments - amygdular.			
22·56	23·47	0·83									
23·47	23·93	0·37									
23·93	24·23	0·33									
24·23	24·84	0·66									
24·84	26·51	1·48									
26·51	27·28	0·45						Vein at 73·83 0·02 metre wide. Quartz, chalcopyrite, galena, pyrite.			
27·28	28·80	1·62.									
28·80	29·73	0·83						~~Core~~ Coarse lithic fragments. 76·48 to 77·34			

HOLE No. C 631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
29.73	32.61	2.93	83.45	84.42	0.97		Brown SHALE	Purplish brown massive shale. Minor bed of lithic tuff in early section. Minor cherty veh.			
32.61	34.44	1.68.									
34.44	35.66	1.32	84.42.	85.32	0.90	33°	Tuff	Purplish green fine bedded tuff and tuffaceous shale.			
35.66	38.10	2.19									
38.10	38.71	0.95	85.32	86.13	0.81		Brown Shale.	As above. Rarely has cherty units.			
38.71	39.62	1.09	86.13	92.55	6.42	30°	Tuff.	Green, greyish green and in early sections brownish green tuff. Normally chaotic and rarely fine bedded. Often cherty. Occasionally contains very rare euhedral pyrite. Rarely lithic tuff.			
39.62	41.75	1.88									
41.75	44.80	3.04									
44.80	47.09	2.47									
47.09	48.77	1.63									
48.77	50.90	2.05	92.55	143.08	50.53		Basalt.	Massive dark green, fine grained basic volcanic. Commonly fractured along chloritic partings. Extensive quartz veining rarely with sphalerite Vein at 112.76m. Pyrite, chalcopyrite, sphalerite, arsenopyrite. Vein at 118.60 Vuggy pyrite, chalcopyrite sphalerite arsenopyrite.			
50.90	53.95	3.00									
53.95	57.00	3.09									
57.00	60.04	3.12									
60.04	63.09	3.04									
63.09	64.91	1.88									
64.91	67.97	2.89									
67.97	69.34	1.58									
69.34	72.23	2.00									

HOLE No. C631

GEOLOGICAL LOG

SHEET No.

From To

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
72.23	73.76	1.47	143.08	149.52	6.44		LITHIC TUFF	Commonly fine grained but often contains coarse fragments of lithic material. Grey to greenish grey. Often massive and rarely fine bedded. Chaotic in places. Extensive white and colourless carbonate veining (calcite) Section crossed 145 fractures and some clay. Very chloritic. Becomes less chloritic and more even grained towards the bottom. Some fragments of chert.			
73.76	75.28	1.52									
75.28	78.33	2.90									
78.33	79.86	1.30									
79.86	81.38	1.78									
81.38	83.52	2.21									
83.52	86.57	3.10									
86.57	89.62	2.87									
89.62	90.68	1.32									
90.68	91.44	0.85	149.52.	152.08	2.56		Greywacke.	Fine grained pale greenish grey lithic greywacke. May be a less tuffaceous version of the tuff above. Appears to be a gradational contact.			
91.44	93.57	1.99									
93.57	96.62	3.04									
96.62	99.62	3.04									
99.62	102.71	3.05	152.08	154.22	2.14	35°	Shale.	Pale greenish grey rarely fine bedded shale. Minor greywacke sections.			
102.71	105.76	3.14									
105.76	108.81	3.15	154.22.	158.54	4.32		Greywacke.	Fine grained pale greenish grey lithic greywacke. Common carbonate veins. Coarse fragments near the top.			
108.81	111.86	3.01									
111.86	114.91	3.00	158.54	161.14	2.60	36°	Shale.	Grey shale. Rare fine bedding. Quartzoid veins with pyrite. No carbonate.			
114.91	117.96	3.07									

N.W.P.S. COCKINGTON PRINT

HOLE No. C 631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
117·96	121·10	3·10	161·14	170·28	9·14		Shale.	Grey shale with minor greywacke. Rarely fine bedded. Extensive (tension?) fractures particularly towards the bottom always filled with chlorite. Minor carbonate in portions.			
121·10	124·05	3·06									
124·05	127·10	2·50									
127·10	130·15	3·07									
130·15	133·19	3·16									
133·19	134·32	1·09	170·28	175·72	5·44		BASALT TUFF	Section of mixed dark green fine to medium grained basic volcanic with light greyish green cherty tuff which is very fine grained. Individual basalt sections vary from 1cm to about 50 cm. No evidence of chilled margins. May be flow top.			
134·32	137·47	2·99									
137·47	139·29	1·81									
139·29	142·34	3·03									
142·34	142·65	0·58									
142·65	145·39	2·53									
145·39	145·70	0·21									
145·70	146·00	0·27	175·72	208·79	35·07		Basalt.	Dark green fine to medium grained basic volcanic. Amygdaloidal from 164 to 192. Sub parallel vein 182·10 to 183·19. Quartz chlorite, pyrite, sphalerite and rare chalcopyrite			
146·00	146·15	0·14									
146·15	147·82	0·33									
147·82	148·43	0·62									
148·43	148·58	0·15									
148·58	149·04	0·12						Sub parallel vein from 191·78 to 192·89.			
149·04	149·36	0·50						Some mineralogy.			

HOLE No. C 631

GEOLOGICAL LOG

SHEET No.

From To

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
149·36	150·27	0·70	208·79	210·53	1·74	53°	TUFF.	Greyish green fine grained, fine bedded tuff. Common chloritic partings. Cherty in part sections.			
150·27	150·57	0·22									
150·57	150·88	0·31									
150·88	151·34	1·24	210·53	258·45	47·92		Basalt.	Massive fine grained basic volcanic.			
151·34	152·46	0·33						Irregular sections of v.f.g. grey green tuffaceous material occasionally brecciated. Common chloritic partings. Looks slumped?			
152·46	153·01	0·39									
153·01	155·91	3·03									
155·91	157·12	0·80									
157·12	159·26	2·22						Numerous insignificant veins containing quartz, chlorite, pyrite sphalerite pyrrhotite.			
159·26	160·63	1·47									
160·63	162·76	1·90	258·45	261·45	3·00	42°.	Tuff.	Fine to very fine grained grey to greenish grey and green tuff. Fine bedded but commonly slumped involving disturbed and mini folded bedding.			
162·76	163·67	1·08									
163·67	164·59	0·69									
164·59	164·90	0·14									
164·90	166·72	2·13									
166·72	169·77	3·03	261·45	265·16	3·71		Basalt.	Fine grained green and brownish green massive basic volcanic.			
169·77	170·53	0·83									
170·53	172·82	1·39	265·16	270·08	4·92	58°	Tuff.	Fine bedded greyish green tuff. Chloritic in places.			
172·82	174·04	1·25									

N.W.P.S. COCKINGTON PRINT

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
174·04	175·87	1·80	270·08	288·48	18·40		Basalt.	Very fine grained massive green to brownish green basic volcanic			
175·87	177·80	2·01									
177·80	180·85	3·12	288·48	293·85	·537	48°	Tuff.	Fine grained greyish green and brownish grey ~~tuff~~ tuff and tuffaceous shale.			
180·85	183·19	2·00									
183·19	186·24	3·16						Fine bedded and sometimes chaotic			
186·24	188·09	1·67	293·85	300·28	6·43		Basalt.	Fine grained greyish green and brown massive basic volcanic. Last 10 cm is mineralised with Chl, CO_3, Py, Cpy. Qtz.			
188·09	189·00	0·97									
189·00	191·12	2·15									
191·12	194·17	3·03	300·28	326·18	25·90		Shale.	Grey, brownish grey and rocky greenish grey massive and chaotic shale.			
194·17	197·20	3·02									
197·20	197·81	0·65						Contains rare small seltions of brownish grey sandy material and occasional small clasty patches.			
197·81	200·25	2·44									
200·25	203·30	2·99									
203·30	206·35	2·99						Some greenish coloured patches are slightly coarser grained and may be tuffaceous.			
206·35	209·40	2·88									
209·40	212·45	3·10									
212·45	215·49	3·07	326·18	328·16	1·98		Sandstone.	Massive brownish grey to greenish grey sandstone.			
215·49	218·54	3·01									
218·54	219·15	0·60									

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
219.15	221.59	2.52	328.16	329.11	0.95		Shale.	Grey and brownish grey massive chaotic shale. Has been intensely fractured and fracture infilled with quartz and minor carbonate. Rare small patches of veined sandstone.			
221.59	224.64	2.95									
224.64	227.69	3.03									
227.69	230.73	2.97									
230.73	232.46	1.78									
232.46	235.61	3.12	329.11	329.98	0.87		Sandstone.	Grey and greenish grey massive nodular grained sandstone.			
235.61	238.66	3.01									
235.66	241.71	3.09	329.98.	330.74	.76		Chert.	Dark grey chaotic massive chert. Minor included sandstone.			
241.71	244.76	3.09									
244.76	247.96	3.08	330.74	338.37	7.63		Sandstone	Grey and greenish grey fine grained massive sandstone.			
247.96.	251.09	3.15									
251.09	252.07	0.83	338.37	338.67	0.30		Shale.	Mid greenish grey massive shale.			
252.07	255.12	2.99	338.67	338.89	0.22		Sandstone	As above.			
255.12	258.17	3.07	338.89	339.22	0.33		Shale	As above.			
258.17	260.05	1.84	339.22	344.57	5.35		Sandstone	Identical to sandstone above but has minor shale inclusions			
260.05	262.13	2.25									
262.13	265.16	2.94	344.57	352.55	7.98		Shale.	Mid grey chaotic massive shale.			
265.16	266.22	0.94						Minor cherty patches, particularly towards			
266.22.	269.27	3.10						the bottom. Very rare stringers and patches of			

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
269.27	272.32	3.09						Pyrrhotite chalcopyrite chlorite minor tourmaline Some minor veinlets.			
272.32	275.38	3.09									
275.38	278.59	3.07	352.55	354.28	1.73		LODE	Chloritic lode with pyrrhotite, minor chalcopyrite and rare visible cassiterite.			
278.59	281.64	2.99									
281.64	283.77	2.10						Sulphides are normally minor			
283.77	286.82	3.06	354.28	354.61	0.33		LODE	Tourmaline and minor chert with rare pyrrhotite and less chalcopyrite.			
286.82	289.87	3.03									
289.87	290.18	0.20	354.61	356.19	1.58		LODE	Pyrrhotite, chalcopyrite, chlorite quartz, cordierite with rare tourmaline and cassiterite			
290.18	291.70	1.52									
291.70	292.01	0.44									
292.01	294.75	2.34	356.19	358.64	2.45		Shale.	Dark grey chaotic Shale, greenish colour in places. Massive.			
294.75	297.49	2.66									
297.49	299.46	1.93	358.64	361.17	2.53		Sandstone	Grey and greenish grey sandstone. Massive but considerable variation in grain size from very fine to medium to coarse.			
299.46	302.51	3.13									
302.51	302.97	0.40									
302.97	305.26	2.39	361.17	361.46	0.29		Shale	Dark grey massive spotted shale Brownish tinge when broken.			
305.26	305.87	0.61									
305.87	309.07	3.12.	361.46	363.06	1.60		Sandstone	Light to mid grey sandstone. Minor argillaceous content.			
309.07	312.12	3.09.									

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
312·12	313·34	1·10	363·06	363·47	0·41		Shale.	Dark brownish grey massive Shale.			
313·34	316·08	2·80	363·47	364·81	1·34		Sandstone	Light grey massive sandstone.			
316·08	319·13	2·95	364·81	365·17	0·36		Shale	As above with minor sand content.			
319·13	322·17	3·09	365·17	368·91	3·74		Sandstone	As above, some medium grained.			
322·17	325·22	3·02	368·91	369·25	0·34		Shale	As above. Massive.			
325·22	328·27	2·90	369·25	375·77	6·52		Sandstone	Mid to light grey, massive. Variable argillaceous content. Changes occasionally to sandy shale.			
328·27	330·09	1·80									
330·09	333·14	3·14									
333·14	336·04	3·01						Becomes lighter coloured (to cream) and finer grained from ~~372~~ 372·40 onwards.			
336·04	339·09	3·00									
339·09	342·14	3·10	375·77	376·43	0·66		Shale.	Light grey chaotic shale.			
342·14	343·51	1·31	376·43	376·86	0·43		Sandstone	Cream coloured massive fine grained			
343·51	346·56	3·00						sandstone.			
346·56	349·61	3·11	376·86	376·88	0·12.		Shale	As above.			
349·61	351·74	1·69	376·88	377·03	0·15		Sandstone.	Creamy grey massive sandstone.			
351·74	354·79	3·04						fine grained.			
354·79	357·53	3·06									
357·53	360·63	3·11			END	OF	HOLE	(EXTENDED)			
360·63	363·68	3·09									

HOLE No. CG31

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
363·68	366·52	3·09									
366·52	369·72	3·12									
369·72	372·47	2·25									
372·47	373·08	0·71									
373·08	373·69	0·73									
373·69	375·51	1·57									
375·51	377·03	1·83									

HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS From	LIFTS To	LIFTS Recovery	DRILL INTERVAL From	DRILL INTERVAL To	Length	BEDDING Angle to Core Axis	ROCK TYPE	DESCRIPTION	ASSAYS % Snt	ASSAYS % Sns	ASSAYS % Cu
1237	1247'0"	10'4"	377·03 1237	377·31 1237'10½"			Sandstone	Light grey fine grained massive sandstone			
1247'0"	1257	11'2"	1237'10½"	1248'6"			Shale.	Mid to dark grey massive shale. Minor			
1257'0"	1263	4'8"		378·41 380·41				inclusion of sandstone.			
1263'0"	1272	9'6"	1241'6"	1248'1"			Sandstone	As above.			
1272'0"	1282	16'3"	1248'1"	380·88 1249'7"			Shale	As above.			
1282'0"	1292	10'3"	1249'7"	416·51 1366'6"			Sandstone	As above			
1292'0"	1301	8'6"						Vein at 1253'6". Quartz, fluorite,			
1301'0"	1311	9'10"						Talc chlorite, actinolite, sphalerite and			
1311'0"	1317	5'11"						molybdenite.			
1317'0"	1327	9'11"						Minor but not uncommon patches			
1327'0"	1337	10'0"						of dark grey shale.			
1337'0"	1347	10'1"						Vein at 1301'0" Quartz, carbonate			
1347'0"	1357	10'7"						chlorite, talc and or sericite, chalcopyrite			
1357'0"	1367	9'3"						fluorite and coarse grained cassiterite			
1367'0"	1377	10'0"		419·57				with rare sphalerite.			
1377'0"	1387	9'9"	1366'6"	1376'7"			Shale.	Dark grey massive shale. Softy and			
1387'0"	1389	2'9"		422·10				rarely chloritic			
1389'0"	1397	8'0"	1376'7"	1384'10"			LODE.	Chlorite quartz carbonate actinolite			
1397'0"	1407	10'8"						brown mica, and very rare sulphides, Po, Py.			

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HOLE No. C631

GEOLOGICAL LOG

SHEET No.....

From.....To.....

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
1407	1426	19'1"									
1426'0"	1435'6"	9'5"									
1435'6"	1445'6"	10'0"									
1445'6"	1455'0"	9'6"									
1455'0"	1465'0"	9'6"									
		~~E4~~"									

HOLE No. C631

GEOLOGICAL LOG

SHEET No.

From To

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
								Axial section is cherty and is grey piece which may have coniferite.			
								Some sections look as though they may be related to a sub parallel vein.			
				423.75							
			1384'10"	1390'3"			Shale.	Chaotic section of micaceous shale (dark grey) with minor mixed in chert.			
				429.54							
			1390'3"	1409'3"			Sandstone.	Mid grey fine grained sandstone.			
				448.36							
			1409'3"	1471'0"			Shale.	Mid grey micaceous (possibly rarely bedded) shale. Disturbed in places. Occasionally cherty.			
			1471'0"				Chert.	Mid to light grey chert.			

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GEOLOGICAL LOG

SHEET No.

From To

LIFTS From	LIFTS To	LIFTS Recovery	DRILL INTERVAL From	DRILL INTERVAL To	Length	BEDDING Angle to Core Axis	ROCK TYPE	DESCRIPTION	ASSAYS % Snt	ASSAYS % Sns	ASSAYS % Cu
1465'0"	1475	10'1"		1510'3"			Chert.	Initially mid grey massive chert but becoming whiter and more fractured.			
1475'0"	1476'6"	1'4"		460·32				Last sections are intensely fractured, rare bedding is discerniable. Fractures are filled			
1476'6"	1486'0"	10'8"						with quartz, rare chlorite, rare brown mica			
1486'0"	1496'6"	9'5"						and possibly tourmaline, imparting a			
1496'6"	1507'0"	10'1"						dark grey colour.			
1507'0"	1517'0"	10'2"									
1517'0"	1527'0"	10'7"									
1527'0"	1537'0"	9'11"	1510'3"	1516'6"		45°.	Altered Chert.	Dark grey ½ brown rock, texture as some as chert.			
1537'0"	1547'0"	9'11"		462·08				Softer than chert, does not fizz with HCl.			
1547'0"	1557'0"	10'2"						Sometimes fine bedded. May be tourmaline			
								but definitely include some chlorite. Particularly			
								towards the end of the section. Considerable v.fg. brown mica.			
			1516'0"	1529'8"			LODE.	Pyrrhotite, chalcopyrite extensive chlorite			
				466·24				with some brown mica, minor quartz.			
								Veins within the section include common			
								apparent blade shaped crystals with possibly			
								a hexagonal section.			
			1529'8"	1530'5"	0'9"		Chert.	Greenish white chaotic fine bedded chert			
				466·48				with much chlorite			

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GEOLOGICAL LOG

SHEET No.

From To

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
			1530'5"	1531'9"	1'4"		LODE	Mostly chlorite, brown mica and very rare sulphides			
				466·88							
			1531'9"	1533'1"	1'4"		Shale.	Mid brownish grey massive shale with minor chlorite.			
				467·29							
			1533'1"	1535'5"	2'4"		LODE	Pyrrhotite, chalcopyrite, chlorite, quartz carbonate + brown mica. Sulphides ore			
				468·01							
				468·27				lore.			
			1535'5"	1536'4"	0'11"		Shale.	Brownish grey massive shale.			
			1536'4"	1547'7"	11'3"		LODE	Pyrrhotite, chalcopyrite, quartz chlorite carbonate, minor pyrite.			
				471·69							
			1547'7"	1548'9"	1'2"		Shale.	Brownish grey massive shale. Very hard ~~at~~ in early section.			
				472·06							
				472·21							
			1548'9"	1549'3"	0'6"		LODE	Mostly chlorite, brown mica (v.f.g.) and quartz.			
			1549'3"	1550'6"	1'3"		Chert.	Chaotic white and grey chert.			
				472·59							
			1550'6"				Sandstone.	Fine grained massive brownish grey Sandstone.			
								Mineralisation at 1553'4" may be vein.			
								ie. 4" wide. Py, Cpy chlorite and quartz.			

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SHEET No.

From To

LIFTS			DRILL INTERVAL			BEDDING	ROCK TYPE	DESCRIPTION	ASSAYS		
From	To	Recovery	From	To	Length	Angle to Core Axis			% Snt	% Sns	% Cu
1557	1567	9'4" 2'8"		1566			Sandstone	Medium to fine grained massive			
1567'0"	1568	0'10"		477.32				sandstone. Common veins with cassiterite			
1568'0"	1578	9'7"		478.08				molybdenite, sphalerite quartz.			
1578'0"	1587	10'0"	1566	1568'6"			Shale	Mid to dark grey massive shale.			
1587'0"	1597	10'0"		484.04							
1597'0"	1607	10'0"	1568'6"	1588'1"			Sandstone	As above - with minor included shale.			
			1588'1"	1591'0" 484.94			Shale	As above.			
			1591'0"	1607'0" 489.81			Sandstone	As above. Note the vein at 1592'6"			
								Extensive SnO_2 with molybdenite and sphalerite			
								in quartz and chlorite.			
					END	OF	HOLE.				

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