



# DIAMOND DRILL HOLE LOG

Company Normin Mining Co.

## SURVEY

Footage	Bearing	Inclination
Ø	360°	-45°
100	360°	-41°
588	360°	-44°

## LEGEND

_____	_____
_____	_____
_____	_____
_____	_____

Property INT'L. FALLS - SEATTLE SLEW Hole No. SS-1  
 Location NW 1/4 SW 1/4, SEC. 1 - 70N-24W Bearing at Collar GRID N, 343° AZM  
KOOCHICHING CO. - ST. THOMAS CHURCH LEASE Inclination at Collar -45°  
 Coord. - Collar N 1 + 65 So.  
 E 9 + 00 E Length 588'  
 Elev. - Collar 1165' Core Size NQ  
 Date started 10-18-87  
 Completed 10-23-87 Logged by H. Slavik

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval	Au ppb				
→ Ø = 11" Overburden														
→ 11-59.5: Dk. gray, v. f. grained andesitic/dacitic meta-tuff. w/ tr. - 5% dissemin. py. & po. po. py	10													
Mod. actinolite dev. along foln. w/ 2ndary Ca <sub>2</sub> CO <sub>3</sub> veins	20		± 17' foln. ± 30° to CA		2.0	2.2		2014580	11-15	65				
					7.0	6.2		14581	15-20	65				
					2.0	1.8		14582	20-25	5				
	30							14583	25-30	5				
					9.0	6.11		14584	30-35	75				
	40		± 11.8' foln. ± 40° to C.A.		5.0	5.4		14585	35-40	65				
→ ± 39.5-59.5: Interfingering of silica/chertite, exhalite, minor to mod. Ca <sub>2</sub> CO <sub>3</sub> intercalated w/ andesitic/dacitic unit	50		± 16-49 SiO <sub>2</sub> - vns(?) 0.5" - 2.0" wide. Exhalites? 11" to foln.					14586	40-45	65				
								14587	45-50	65				
								14588	50-55	65				

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval	Au ppb				
	50							14588	50-55	<5				
								14589	55-59.5	<5				
								14590	59.5-60.5	<5				
								14591	60.5-65	<5				
								14592	65-70	<5				
								14593	70-75	<5				
								14594	75-80	<5				
								14595	80-85	<5				
								14596	85-90	<5				
								14597	90-95	<5				
								14598	95-100	10				
								14599	100-105	10				
								14600	105-110	10				
								14601	110-115	15				
								14602	115-120	20				

Sulf. vs. Ox  
Sulf. content  
Ca<sub>2</sub>CO<sub>3</sub>  
Chlorite

59.5-60.5: As @ 11-59.5' but strong Ca<sub>2</sub>CO<sub>3</sub> & brecciation  
Strongly contorted w/ clots of chlorite w/ actinolite needles.  
Foln. varies from near L to near H to C.A.  
60.5-120: Dk to med. grn, f. grained, interfingering interbedded siliceous & chloritic exhalite w/ actinolite xls & xl. fragments in chlorite clots.  
(Foln.?) Lamination of actinolite xls. varies widely. Generally ~45° to C.A. Py. generally lenticular along foln, Po dissem. Po. & Py.  
Ca<sub>2</sub>CO<sub>3</sub> both primary, as groups of thin layers, & secondary filling & minor fractures.

Poorly formed garnet xls. to 0.5"  
Ca<sub>2</sub>CO<sub>3</sub> occurrences stronger in vicinity of garnet xls.

101.1' Po & Py interstitial to actinolite, ~20%  
Also siliceous x-cutting fracs.

115-116 Brecciated

5' - 11' (locally) Po & Py  
Weak - Mod. locally strong  
Mod - locally strong

Sulf. v. Or  
Sulf. Content  
% CO<sub>2</sub>  
Chlorite

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL								BOX
				Run	Run length	Core	%	Sample	Interval							
→ 120-190' : A <sub>2</sub> at 60.5-120'	120		125.8 massive garnet					14602	115-120	20						
			127. Massive interstitial py. w/ garnet xls to 0.5"					14603	120-125							
	130							14604	125-130							
								14605	130-135							
	140		± 139' lineation 35° to CA					14606	135-140							
								14607	140-145							
	150							14608	145-150							
								14609	150-155							
	160							14610	155-160							
			± 168' lineation ± 35° to CA					14611	160-165							
	170							14612	165-170							
								14613	170-175							
	180		± 170.5' lineation 50° to CA					14614	175-180							
								14615	180-185							
	190							14616	185-190	2765	185	246				

Sulf. vs Ox.  
Sulf. Carbide  
Ca<sup>2+</sup> CO<sub>3</sub>  
Chlorite

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval	Au ppb				
<p>→ 190' - 260' - Same as (a) 60.5' - 120'</p>	190							14616	185-190	2765	185	240		
								14617	190-195	15				
								14618	195-200	5				
	200							14619	200-205	30				
								14620	205-210	5				
	210							14621	210-215	15				
			215' possible minor fold w/ N.P. 70° to C.A. May be soft sed. deform. feature					14622	215-220	15				
	220		222' lineation 70° to C.A.					14623	220-225	10				
								14624	225-230	15				
	230							14625	230-235	110				
			-235' & 247' pyrite clots to 0.25" x 0.25"					14626	235-240	475				
	240							14627	240-245	35				
								14628	245-250	115				
	250							14629	250-255	15				
	260		-260' lineation 45° to C.A.					14630	255-260	5				

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval	Au ppb				
→ 260' - 330': As @ 60.5-120 Starting at ± 320 sporadic intercalated layers. ← 2.0" of Fe-Fm start occurring.	260							14630	255-260					
								14631	260-265	<5				
	270		-270' lineation 30° to CA					14632	265-270	<5				
								14633	270-275	<5				
								14634	275-280	<5				
	280		-285' lineation 40° to CA					14635	280-285	<5				
								14636	285-290	<5				
	290		-292" lineations 30° to CA					14637	290-295	25				
								14638	295-300	10				
	300							14639	300-305	<5				
								14640	305-310	<5				
	310		-310 lineation 45° to CA					14641	310-315	10				
								14642	315-320	30				
	320							14643	320-325	10				
			± 326" v. thin layers finely dissem. py.					14644	325-330	125				
	330													

Sulf. vs Ox.  
Sulf. Content  
CaCO<sub>3</sub>  
Chalcite

3 sulfide  
py - 15% (locally)  
Weak - Mod. (locally)  
Weak - Mod. (locally)

Both

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval	Au ppb				
→ 330-400: As @ 260'-330'	330							14644	325-330	125				
W/ thin layers of v. finely dissemin. py & or po								14645	330-335	15				
- Increased (strong) Siliceousness	340		- 335-342.5 Mod. Primary brecciation. Frac. filled w/ $\text{SiO}_2$ , chl. $\text{Ca}_2\text{CO}_3$					14646	335-340	15				
- Minor biotite & Hdb., locally								14647	340-345	15				
	350							14648	345-350	5				
			355 lineations 25° to CA					14649	350-355	10				
	360							14650	355-360	15				
								14651	360-365	10				
	370							14652	365-370	10				
			371 lineations 40° to CA					14653	370-375	10				
	380							14654	375-380	5				
			382 lineations 40° to CA Intercalated Refm					14655	380-385	15				
	390							14656	385-390	15				
								14657	390-395	5				
	400		400 lineations 55° to CA					14658	395-400	5				

Sulf vs Ox  
Sulfide Carb.  
 $\text{Ca}_2\text{CO}_3$   
Chlorite

Both Fe-Fm layers locally  
Weak-Mod. (locally)  
Weak-Mod. (locally)

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX		
				Run	Run length	Core	%	Sample	Interval	Au ppb	Ni ppm	Cu ppm	Zn ppm		Pb ppm	
400-470': As (2) 330-400'	400							14658	395-400							
								14659	400-405	<5						
	410		410 - lineations 30° to CA Intercalated $\text{CaCO}_3$ w/ finely dissemin. py FeM layers to 2.0"					14660	405-410	5						
								14661	410-415	5						
	420							14662	415-420	<5						
								14663	420-425	5						
	430		430 - lineations 33° to CA					14664	425-430	<5						
								14665	430-435	<5						
	440		442 - lineations 45° to CA					14666	435-440	<5						
								14667	440-445	<5						
	450		449-450.5 brecciated w/ $\text{CaCO}_3$ frac. filling					14668	445-450	5						
								14669	450-455	15						
	460							14670	455-460	20						
								14671	460-465	5						
	470		470-470.5 FeM					14672	465-470	10						

Sulf. as Qz  
 Sulf. content  
 Calc. Qz  
 Chlorite

LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL							BOX
				Run	Run length	Core	%	Sample	Interval						
→ 470' - 540' : As @ 330' - 400'	470							14672	465-470	10					
								14673	470-475	20					
	480		480' lineation (bldg?) 40° to CA					14674	475-480	25					
								14675	480-485	10					
	490		490' lineation 37° to CA					14676	485-490	5					
								14677	490-495	10					
	500		498' lineation (bldg?) 37° to CA					14678	495-500	5					
								14679	500-505	5					
	510		508' Fe Em 2.0" wide, contorted, slump feature?					14680	505-510	10					
								14681	510-515	10					
	520		522.5' Healed Fract. 45° to CA, offset					14682	515-520	5					
								14683	520-525	5					
	530		534' lineations (bldg?) 35° to CA					14684	525-530	5					
								14685	530-535	5					
	540							14686	535-540	5					



LITHOLOGY, ALTERATION, MISC.	FT.	GRAPHIC LOG	MINERALIZATION	RECOVERY				ANALYTICAL						BOX
				Run	Run length	Core	%	Sample	Interval					
→ 540-588': As @ 330-400'	540							14686	535-540					
			545-547: Fe.FM. layers abundant & closely spaced w/ actinolite & chloritic layers					14687	540-545	10				
	550		550.5-551.5 brecciated primary					14688	545-550	5				
								14689	550-555	<5				
	560							14690	555-560	5				
			564-565.5 primary brecciation					14691	560-565	10				
	570		570: lineations 37° to CA					14692	565-570	5				
								14693	570-575	10				
	580		582.5-583.5 secondary brecciation, bleaching					14694	575-580	<5				
								14695	580-585	<5				
								14696	585-588	<5				
588' T.D.														

Subs. vs. Ox.  
Subs. Content  
CaCO<sub>3</sub>  
Chertite