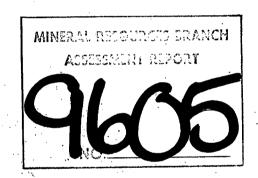
DIAMOND DRILL REPORT RED, CODE 6, CODE 7, CODE 21FR CLAIMS RECORD NOS. 315, 30319, 30320, 55646 OMINECA MINING DIVISION



NTS 93L3 127°00'W, 54°08'N

OWNERS:

VITAL MINES LIMITED/MATTAGAMI LAKE EXPLORATION LIMITED -

OPERATOR: MATTAGAMI LAKE EXPLORATION LIMITED

AUTHOR:

W. MERCER

DATE:

OCTOBER 1980

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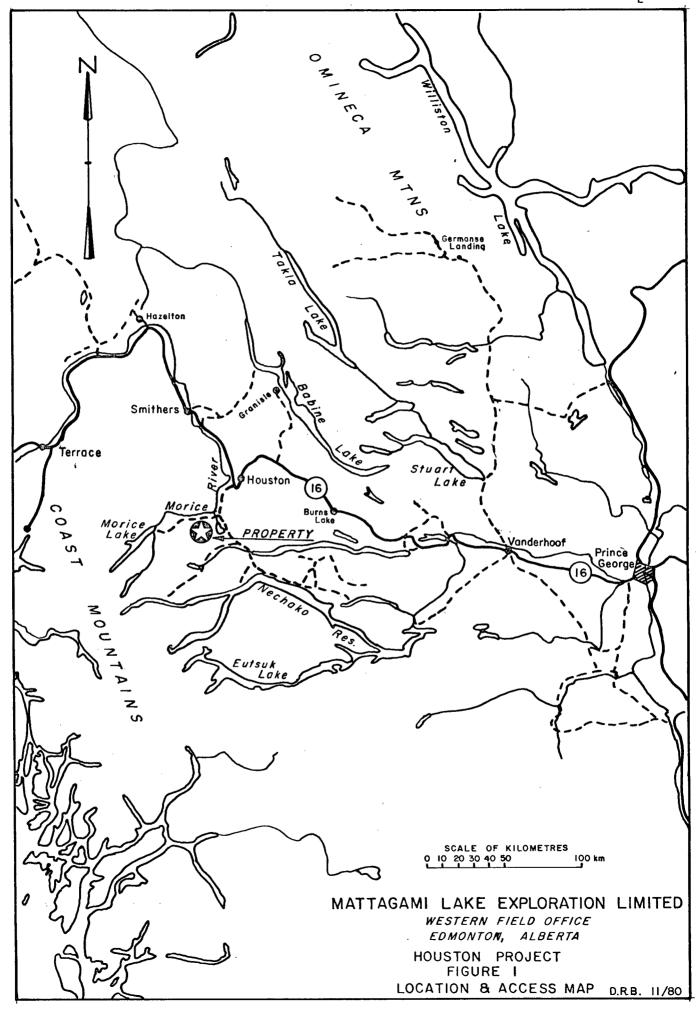
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LOCATION AND ACCESS (Figure 1)

The claims are located 37km northwest of Houston, B.C. Access is via a good gravel road from Houston, along the Morice River to Mile 26 (sign posted). A logging road leads south from Mile 26, past a small lake locally called Frypan Lake, for 9km onto the property. For a further 6km a poor road, four-wheel drive only, with deep holes, mud and water, leads to the area of drilling. The last 1.5km is walking or bulldozer only.

Camp was established beside a small creek crossing this last road (Figure 2). The core was stored at this location following completion of the program.

Average altitude of the property is 900m above sea level. Terrain is rolling to steep hills, with maximum elevation changes of the order of a few hundred metres.



PROPERTY DEFINITION

The claims drilled on are as follows:

NAME	RECORD NO.	DATE OF RECORD	OWNER
RED	315	June 4th	Vital Mines Limited
CODE 6	30319	June 8th	Mattagami Lake Exploration Limited
CODE 7	30320	June 8th	Mattagami Lake Exploration Limited
CODE 21FR	55646	Nov. 8th	Mattagami Lake Exploration Limited

HISTORY

The property was originally investigated by Anaconda and Helicon, following the discovery of stream sediment anomalies and a mineralized float boulder. No mineralization was obtained in drilling except one 5-foot intersection in Anaconda Hole No. 9, containing sphalerite and galena.

Mattagami has been investigating the area since 1977. Work has included IP, Crone Shootback, Radem, EM16R VLF, and soil surveys. A very limited drill program to investigate IP anomalies on the JAY 2 claim encountered considerable overburden and was unsuccessful in locating mineralization (1978).

GEOLOGY

The geological units in the area are summarized in Table 1. The only unit we are concerned with here is the Hazelton Group, Telkwa Formation, as described by Tipper. Tipper and Church agree with the name and location of this unit.

					<u> </u>						
TABLE ONE:	GEOLO	GICAL UNITS									
A	UTHOR	CHURCH			TIPPER						
AGE	\	B.C. Dept. of GEM 1972	Mines	Geological Survey of Canada Open File (1976) #351							
TERTIARY		nton Creek Volcanics	Rhyolite, tradyte breccia and lava								
		ck Creek Volcanics	Fresh brown andesite	Eocene- Oligocene	Buck Creek Volcanics						
MESOZOIC	Upper	Tip-Top Volcanics Sedimentary R	Dacite ocks	Maetrich- tianeo- cene	Ootsa Lake Group	Rhyolite, dacite tuffs and breccia					
	Lower- Hazelton		Maroon, brown grey-green andesites	Hazelton Group Sinemur- ian=L. Pliens- bachian	Telkwa Formation	Red, maroon, grey-green breccia, tuffs flows of basalt to rhyolite					

WORK DONE

The work consisted of diamond drilling using a BBS-1 diamond drill from N. Morrisette Diamond Drilling Ltd. of Haileybury, Ontario. Geologists present were J. Helsen (first part) and W. Mercer (second part).

The drill was skid mounted and moved from site to site using a John Deer 550 hp bulldozer from Madigan Equipment, Prince George.

The purpose of the drilling was mainly to test Crone Shootback EM anomalies in the vicinity of known soil geochemical anomalies for Pb, Zn and Ag.

Drill holes completed are summarized in Table 2.

TABLE	$TWO \cdot$	DIAMOND	DRILL	HOLE	SUMMARY
INDLL	ino.	DIMMOND	DUTEE	HULL	JUNINANI

Hole No.	Claim (Grid Location	Total Metres	Target
HG-80.1 HG-80.2 HB-80.3 HD-80.4 HG-80.5 HG-80.6 HH-80.7 HH-80.7A	CODE 6 CODE 7 CODE 6 CODE 6 CODE 6 CODE 6 RED RED CODE 21FR	1050N/275E 1050N/275E 1000N/550E 1200N/300E 1307N/260E 1307N/260E 1500N/300W 1500N/300W	102.7 105.8 75.3 102.7 90.5 136.2 12.4 10.0	Geological Geological CEM anomaly CEM anomaly Geological Geological CEM anomaly CEM anomaly Geological
TOTAL			745.3	

RESULTS AND CONCLUSIONS

The results of the diamond drilling programme are given in the diamond drill logs in Appendix One. To summarize:

- 1. CEM anomaly B (Hole #HB-80-3; see report by Mercer and Sutherland, 1980) is probably caused by a chloritized fault zone.
- 2. CEM anomaly D (Hole #HD-80.4) has no explanation from the drilling.
- 3. CEM anomaly H, on the side of "Mineral Hill" was not tested as the drill was unable to penetrate particularly bouldery overburden.
- 4. The remainder of the drill holes investigated interesting geological structures. Holes 5, 6 and 8 followed a zone of low grade disseminated and veinlet pyrite-sphalerite-galena associated with quartz-clay alteration in grey-green tuffs and breccias.

APPENDIX ONE
DIAMOND DRILL HOLE LOGS

MATTAGAMI	LAKE MINES	LIMITED - EXPLORATION DIVISION - DIA	MOND DRILL HOLE REC	ORD									Pag	• 1/2	
PROPERTY	HOUSTON	LATITUDE 1050N	ST	TARTED	1 September 1980		Metres	Corrected		PTEST	Corre	eted			rrected
IOLE NO.	HG-80.1	DEPARTURE 275E	. FI	INISHED	3 September 1980		45.7	-47°						1.	
BEARING	045°	ELEVATION	LE	ENGTH	102.7m (337 ft.)		102.7	-46°							
DIP-COLLAR	-45°	CLAIM CODE 6	LC	OGGED BY	J. Helsen										
METR	ES		CRIPTION		%	SAMPLE	T	METRES			L	ASSA	rs		
From	To		CRIFITION		Mineralization	NO	From		Length						
0	6.1	OVERBURDEN													
6.1	14.3	ALTERED ANDESITE													
		Porphyritic with few visible mafic mine	rale Foldenane altoro	d to clave		· · · · · · · · · · · · · · · · · · ·		ļ							
	····	Amygdules with digrite rims and zeolite	fillings present. Rus	ty stained		· · · · · · · · · · · · · · · · · · ·		 							
		alteration zones along fractures occur	at intervals throughout	. A little											
		disseminated pyrite present. 6.9- 7.1: Lithic tuff layer.										·			
		6.9- 7.1: Lithic tuff layer.													
14.3	26.5	LITHIC TUFF													
		Altered (kaolinized) with rusty fractur	as and walled ablants	and Camundulas											
		Often chlorite rims around lithic fragm						-				<u>-</u>			
		Thin Andesite bands occur occasionally.													
		23.5: Kaolinized zone, 5cm wide	, possibly fault zone.												
26.5	32.6	ALTERED ANDESITE													
		Porphyritic, medium grey, altered andes	ito with occasional lit	hic fragments										·	
		altered to clay and ?calcite.	ite_with_occasional_fit	nic rragillenes											
32.6	53.9	ANDESITE, LITHIC TUFF, BRECCIA													
			2/4// 2 56 /6												
		Alternating beds of medium grey andesit and volcanic breccia. Accessory amphib	e, lithic turr (fragmen	ts up to 3.5cm)				·}						j: 	
		present.	ore present. Dissemina	cco_pyrrec								[
		L										ļ ·	ļ	,	1
53.9	63,1	LITHIC TUFF						·				t	,		
		Light grey lithic tuff in andesitic mat	rix. Occasional brecci-	a sections								[]		i i	i
		Joints at 40° to core axis filled with	claySporadic_dissemi	nated pyrite			_					i 1		į 1	1
63.1	86.3	ANDES ITE. TUFF						-		· ·		-		1 1	1
												[]	, ,	-	i
		Fine andesite tuff cominating over lith	ic tuff and andesite? f	lows. Layering								_ 1	, !	į į	
		at 30° to core axis. Rounded to angula nodules with up to three concentric rea	ction rims of diasev ma	menus appear as terial. Dissem											ł
		inated pyrite throughout.										· · · · · · · · · · · · · · · · · · ·		(!	İ
86.3	^^ ′					i						(j	, !	()	i
86.3	93.6	LITHIC TUFF					ļ								
		Lithic tuff mixed with lapilli tuff and visible. Nodules present, glassy when present.	l porphyritic andesite. small. Sporadic dissem	No layering											
		исти.				L		<u> </u>				اـــــا		l	1

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M.L.M. EXP	LORATION DI	VISION, D.D.H. RECORD		PROPERTY H	OUSTON			HOLE NO	. HG-80	.1	Pege	2/2	
MET	RES		%	SAMPLE	T -	METRES				ASSA	YS		
From	T•	DESCRIPTION	Mineralization	NO.	From	To	Length						
93.6	102.7	BRECCIA				_							
		Gradational from unit above. Fragments basaltic to granitic in composition and surrounded by chlorite reaction rims. Sporadic disseminated pyrite.											
	102.7	END OF HOLE			 								
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MATTAGAM	I LAKE MINES	LIMITED - EXPL	ORATION DIVI	SION - DIAMOND DR	RILL HOLE RECO)RD							•		Page	1/2	
PROPERTY	HOUSTON		LATITUDE	1,050N	ST	ARTED	4 September 1980		Metres	Correcte		DIP TEST	Corre	rted		c.	rrected
HOLE NO.	HG-80.2		DEPARTURE	275E	FII	NISHED	5 September 1980		45.7	-47.5	,						
BEARING	315°		ELEVATION		LE	NGTH	105.8m (347 ft.)		105.77	-48.5	,						
DIP-COLLAR	-45°		CLAIM	CODE 6	Lo	GGED BY	J. Helsen										
ME1 From	TRES		·····	DESCRIPTION			% Mineralization	SAMPLE	· · · · · · · · · · · · · · · · · · ·	Metres	Length		1	ASSA	YS		
0		OVERBURDEN					Mineralization	NO.	From	18	Lengin						
6.1	29.6	ANDESITE TUFF, L	APILLI TUFF.	ANDESITE PORPHYRY								-					
				te tuff with buff al	Iteration on cra	cks Sporadic											
		di	sseminated py	vrite.													
				s with lapilli tuff. Nodules with glass													
	-	py 9.1- 12.8: Al	rite. tered andesit	te porphyry. Buff a	a)tered fracture	zones.		<u> </u>			ļ						
		12.8- 14.3: La	pilli tuff wi rite.	ith kaolinized fragn	ments. Sporadio	disseminated											
		14.3- 15.0: Al	tered andesit	te_tuff_with_glassy	layers and diss	eminated pyrit	ė.										
		15.0 <u>-</u> 20.4: La	ipilli tuff wi thic fragment	ith abundant nodules ts up to 2cm long.	s with reaction Sporadic dissen	rims, and ninated pyrite.											
		20.4-29.6; Al	ternating lap	oilli_tuff_and_andes altered_to_clays,_	Site tuff, Lith	nic fragments						-					
		Sp	oradic_disser	ninated pyrite.	b j se i i ce i a year												
29.6	30.8	BRECCIA															
		Fragments up to	5cm matrix s	similar_to_andesite	above.			<u> </u>			<u> </u>						
30.8	37.5	ANDESITE TUFF. L									 		ļ.———				
				ndesite tuff showing	a adulas ulth s	lace nime and											
		fragments of bas	ic to acidic	composition Disse	eminated pyrite.										† - · · †		
37.5	37.7	BRECCIA									<u> </u>						
	-	l								<u> </u>	 -		+				
27 7	47.9	ANDESITE THEE	ADTILIT THEE														
	473	I															
		As above 39.9-41.5: Li	thic fragment	ts up to several cm	in size, altere	d to clays and			I		1						
		41 8 42 8 43 A	oidote. Litti	le disseminated pyr fragments(?).of mai	ite.	to clays, 27cm				_ }		- l			} - }		•
		l 5c	m and llom wi	ide respectively. (Contains minor o	ovrite.										-	-
		1 .		rades into lighter of	grey, coarser bi	reccia.											;
47.9	50.9	ANDESITIC TO DAC	ITIC TUFFS														,
				e with ?amphibole phayers present.				<u> </u>									
								A SATE AND ADDRESS OF THE PARTY.									

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									. HG-8	0.7		2/2	
		VISION, D.D.H. RECORD			OUSTON			HOLE NO	. пи-о	ASSA	Pege		
MET. From	RES To	DESCRIPTION	% Mineralization	SAMPLE NO.	From	Metres T•	Length			A35A	<u>""</u>	r	
50.9		PORPHYRITIC ANDESITE		HO.	1101		auy						
		TON THREE MIDESTE			 								
		Altered, with occasional lapilli nodules and lithic fragments.											
					ļ	ļ							
57.0	81.4	ANDESITE TUFF, LAPILLI TUFF		<u> </u>	 		 						
		As above, with disseminated pyrite. Often well layered.			 	 	 						
		65.8- 69.2: Increase in lithic fragments of several cm diameter.			 	 	 						
		71.0: Vein of quartz-pyrite (1mm thick).											
		72.2- 75.3: Alternating lapilli and andesite tuffs.			ļ								
	····	77.1; Hairline veinlet and O.lcm pyrite vein.			 	<u> </u>							
81.4	84.4	COARSE LAPILLI TUFF, BRECCIA			1	 	 						
		THE PROPERTY OF THE PROPERTY O		 	 		 	 					
		Fragments up to 20cm across and rimmed. Sporadic disseminated pyrite					1						
		1					Į						
84.4	87.5	LAPILLI TUFF, ANDESITE TUFF			<u> </u>	ļ	ļ	ļ	<u> </u>				
		Alternating layers of lapilli and andesite tuff with disseminated pyrite in						ļ					
		clay zones.			·	 	 					·	
				_	 	 	 						
87.5	92.6	COARSE LAPILLI TUFF, BRECCIA											
		Similar to lapilli tuff above but larger fragments with layers of varying fragment size.					 	<u> </u>		ļ		 	
		irrayment size.				 							
93.6	102.7	LAPILLI TUFF, ANDESITE TUFF											
						<u> </u>						<u> </u>	
		As 84.4-87.5 above.			·	 		 		 		 	
102.7	105.8	COARSE LAPILLI TUFF						 		 			
102.7		COMSC CATICLE TOTAL				1		T					
		As 87.5-93.6 above.											
									<u> </u>				
	105,8	END OF HOLE		_		ļ		ļ					
									 	 			
					-	· · · · · · · · · · · · · · · · · · ·							
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TTAGAMI	LAKE MINES	LIMITED - EXPL	ORATION DIVISIO	IN - DIAMOND DRII	LL HOLE R	ECORD									Peg	• 1/1	
PERTY	HOUSTON		LATITUDE 1.0	DOON		STARTED 6 Septer	mber 1980					IP TEST	T				
						<u> </u>				Carrette	•		Corre				*******
E HO.	HB-80.3		DEPARTURE !	550E	·	FINISHED 17 Septer	nder 1980										
RING	270°		ELEVATION			LENGTH 75.3m (2	47 ft.)							1			
COLLAR	-450		CLAIM COI	DE 7		LOGGED BY J. He	lsen										
METR		T.	1	DESCRIPTION			%	SAMPLE		_Metres			J	ASSA	Y5 (ppm)		
From	T•	1	<u> </u>	DESCRIPTION	<u> </u>	·	Minorelization	но,	Frem	Te	Length	Мо	Pb	Zn	Cu	_Ag	
0	42.7	OVERBURDEN								 						[
42.7	46.8	ANDESITE TUFF								1					, }	· I	
		Pornhyri Elc to	Tanilli in orati	n size. Core very	broken and	Euff very clavey		ļ									
			74P1111 3141														
46.8	57.0	RHYOLITE															
		Banded Thyolite,	light grey in	coloured, with qua	rtz filled	hairline fractures	•										~-
		Some dark opaque	minerals on ra	re occasions.													•
57.0	75.3	BRECCIA AND TUFF	• ••···• •• ••· · · · · · · · · · · · ·	angan ing a singgap dipanggan dan manangan panggan													
		Brocklaiwith dan	b'arau ta Klack	andoelfic mately	"U(Fh"a"foW	fractures filled		:									٠.
		with oreen clav	minerals.														
		57.9-59.7: Fine	er grained, tuff	aceous band with a	ltered plag	loclase phenocrys	S	1				-					
		65.35-66.1: ?Fau	ilt zone. Very	highly altered lit fractured quartz a Albite + Epidote	nd light gr	een soft material			-		1-11				1		-
	·	(75a	ussuritization	= Albite + Epidote ff.	alteration)											-
		72.2-75,3: Alte	ered andesice tu	FF	*****											·	į
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			T				1			0	IP TEST					
PROPERTY	HOUSTON		LATITUDE	1200N	STARTED	18 September 1980		Metres	Correcte			Correc	ted		С	orrected
IOLE NO.	HD-80.4		DEPARTURE	300E	FINISHED	18 September 1980		44.8m	-47.5°	,						
SEARING	270°		ELEVATION		LENGTH .	102.7m (337 ft.)		102.7m	-48.5°	,						
IP-COLLAR	-45°		CLAIM	CODE 6	LOGGED BY	C. Stewart	l									
MET				DESCRIPTION		%	SAMPLE	E	METRES				ASSA	YS		
From	To			DESCRIPTION		Mineralization	NO.	From	То	Length	ļ <u>.</u>					<u> </u>
00	3.7	OVERBURDEN								ļ						ļ
3.7	20.4	ANDCETTE LADILLY	TUES						 	 						
3./	20.4	ANDESITE LAPILLI	1011						+	 						
		Medium to dark or	ev anhanitic	to fine grained grounds	mass_containing_subrounde	,				 	l					
		to angular fragme	nts (2 to 26m	m) predominantly of fel	dspar with minor lithic	1			T	1						1
***************************************		content (5%). Fi	nely dissemin	nated_pyrite_throughout.	Minor_alteration_to											
		clay. Gradationa	1 bedding pre	sent.						ļ						
		8.2- 11.2: Mino	r dark grey s	pheroids plus large (60	cm)_cream_coloured_lithic	:				ļ	ļ					
		frag	ment_altered.	to_clay												
		16.4- 16.6: Clay	<u>alteration</u> r	resulting_in_friable_roo	:k	-			-		 					
20.4	37.8	INTERREDUEN SOUED	OLDAL AND LAD	ILLI ANDESITIC TUFF						 						
		THICKDEDOLD SPILER	DIONE AND LAF	TECT MIDESTITE TOFF					-	<u> </u>						
		Lapilli tuff as a	bove. Sohero	idal andesite is dark o	rey finely banded with.											
		darker grey spher	oids and mino	or angular to subangulai	lapilli fragments.											.
		Spheroids are 0.1	to lcm in di	ameter. Minor dissemir	nated pyrite.	<u> </u>										.
		29.6- 32.6: Lith	ic fragments	up to 5cm.												
37.8	45.3	ANDESITE LAPILLI	Thee							 	ļ			ļ		
37.0	43.3	ANDESTIE CAPILLI	TUFF								 					+
		As described above	e with grade	d hade Im thick Thin	(1cm) fine grained beds.	-				·	 					
		Disseminated pyri	te is minor.	d beds Im Crick. IIII	Tionit Time diamed beas.											
45.3	47.9	INTERBEDDED ANDES	ITE AND LAPIL	LI TUFF												Ī
														k		1 .
		Interbedded thin	fine grained	beds_and_lapilli_tuffs.	with fragments to 5cm				_	.		1				
		Disseminated pyri	te_is minor													
47.9	102.7	ADILLI THEE AND	DECCIA THE				ļ <u>.</u>		1	· 						i
7/		LAFILLI TOFF AND	DRECCIA TOFF										-		i	İ
		As described above	e but with fr	agments generally loce	than 5cm but greater tha				1					i	1	1
		10cm on occasion.	Clav altera	tion common. Bedding r	resent. Disseminated										1	į
		pyrite is minor.								ļ		1			1	į.
		67.5- 69.2: Mino	r zoned.spher	oids 0.5cm across	and the same and t									-	1	ļ
		B4.4- 87.5: Brec	cia. with fra	igments to 10cm diameter	·	_	ļ <u>-</u>								ł	1
		93.6- 96.6:Brec	cla, with fra	igments to 10cm diameter	\$										1	1
		8rec - אנק	c1a. with fra	igments.to 10cm diameter	· • • • • • • • • • • • • • • • • • • •		ļ - 					j			1	ŀ
	102 7	END OF HOLE					 					1		ŀ	1	i
	102.7	FIID OF HOLL		_	· · ·			1		i	1	İ	İ		i	1
		1		a sale and the second of						i	i	1	i	i ·	I	ĺ
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ATTAGAMI	LAKE MINES	LIMITED - EXPLORATION	N DIVI	SION -	DIAM ON D	DRILL H	OLE REC	ORD										Pege 1	1/2
PERTY	HOUSTON	LATIT	UDE	1307N	1	· · · · · · · · ·	3.	TARTED	19 September	1980		Metres	Corrected	DIP	TEST	Corrected			
.E NO,	HG-80.5	DEPA	TURE	264E	:			INISHED	21 September	1980		60m	-65°	-		Correction			Corrected
RING	045°	ELEV	TION					ENGTH	90.5m (297 ft				1	 			_		
-COLLAR	-65°	CLAII		CODE	6			OGGED BY		••1		90.5m	-65°	- -			-		
MEI			<u> </u>		DESCRIPTI	15 M		OGGED BY	J. Helsen		SAMPLE		HETRES				ASSAT		l
Frem	T• 3.7	DVERBURDEN			DESCRIPTI		<u> </u>	 	Minorelizati	••	NO.	From	To L	engih Pb	2 (%)	Zn (%) C	(%)	g PPI Au	PPM
	5:2	PORPHYRITIC ANDESITE TO										•	• • • •	•	.1		<u>-</u> -	h	l
3.7	3.6				****														
		Medium grey altered poi coarsens towards bottom		IC WITH	rerospar	phenocry	SES. NO	layering but											
···-5.2	8.2	BRECCIA																	
		Altered andesitic breco	fa"wit	h granit	te compos	iftion lit	hĩc frag	ments with											
		?glass or chlorite rims inated pyrite.	The	fragmen	nts are a	ltered to	clay.	Sporadic disse	n-										
8.2	38.7	PORPHYRITIC ANDESITE "TI	FF ALT	ERNATING	G 'WITH" BR	RECCIA													
		Porphyritic andesite to	ff is	gradatio	onal into	and inte	rlayered	with breccia											
		similar composition. I	dic di	sseminal	ted pyrit	te.		i present,											
		10.7-13.9: Some veins 17.1-18.3: Quartz vein	in fra	ctures 1	filled wi	th clavs.	on .												
		23.5-35.7: _Coarse gra	ned_se	ction w	ith broke	en_and_cla	yey sect	lons											
38.7	60.0	FINE TO COARSE GRAINED	ANDES	TIC TUF	<u> </u>														
		Tuffs with varying gra	n size	s as in	terbeds o	or graded.	bedsM	lineralization											
		present as disseminate 44.5:One vein o	pyrii	e-sphale	erite-dal	lena.													
		'A7.9-50.9:Few hairli .53.6-56.8:Five hairl	ie veir Ine vei	ilets pyi Inlets w	rite-7sph 1th 7spha	halerite-1 alerite.	?galena.												
		56.8-57.3: Two veins 57.3-60.0: Two veins.	rith sp	sha leri to	e and gal	lena, one	1s 0.5cm	ı thick			•								
60.0	69.3					•		•											
00.0		Light grey very altere																	
		pyrite, 7sphalerite, a 60.0-63.1: Veinlets m	i oreco id ?gai iiniy i	lena. less tha	n larye d n 1mm exc	cept one a	25mm. Py	//sseminated /rite-sphalerit	e	.									
		galena. 63.1-66.1: Clay-chlor 66.4: One 5mm py	te-spi	halerite	-pyrite v	veinlets v			ŀ	.									
69.3	79.2	LIGHT GREY TUFF		•	-			• • .											
. •		Very altered light gre	y tuff	with di	ffuse bl	ack bands	and diss	seminated pyril	.e	<u> </u>			1 1			1_	i	*** 1	

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MIN EYD	LORATION DIV	YISION, D.D.H. RECORD		PROPERTY HO	HSTON			HOLE HO	, HG-	-80.5		. 2/2	
MET	RES	DESCRIPTION	7	SAMPLE	1	METRES	·····	HOLE H	, .,	ASSA			
79.2	₹• 90.5	TRACHYANDESITE	Minorelization]	,							•	
				-							•		
		Flow oriented, altered feldspar phenocrysts in fine grained light grey matrix Feldspars are replaced by fluorite and clay. Disseminated pyrite, ?sphalerit and ?galena, but low grade.		•									
		and Tgalena, but low grade.											
	90.5	END OF HOLE		1									
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MATTAGAM	LAKE MINES	LIMITED - EXPLO	ORATION DIVIS	ION - DIAMOND	DRILL HOLE R	ECORD											Page	1/2
ROPERTY	HOUSTON		LATITUDE	1307N		STARTED	22 September 1980			tres	Correcti		DIP TEST		ected.			
DLE NO.	HG-80.6		DEPARTURE	264E		FINISHED .	23 September 1980			7.9m	-63°	-			-	 		- (6,7,11,10)
EARING	315°		ELEVATION			LENGTH	136.2m (447 ft.)			5.9m	-67°			+		1:		
P-COLLAR	-65°		CLAIM	CODE 6		LOGGED BY J. He	elsen, C. Stewart		1	2 3111	-07_	- -		1		<u> </u>		
From	RES Y•	,		DESCRIPTI	ON :		% Minerelization	SAMPL NO.		From	METRES	Length	Pb (%)	70 7		ASSAYS	PPMI AII	DDN'T
0	4.9	OVERBURDEN											10 (2)		/	72/ 74		
4.9	8.1	ANDESTTE BRECCIA	AND TUFF					<u>.</u>	'		'	ı	ı	1	ſ	1	'	
		Alternating medi	um grey alter	ed andesitic tu	ff and breccia.	Some layering o												
		Disseminated pyr		d, composed of	reisic material	and black shale.												
8:1	23.5	ANDESITE TUFF AN	ID LAPILLT TUF	<u>F</u>	,,													
		As for descripti																
		12.5-19.5: Or th	eccia present ian 10cm acros	on occasion wi s. Quartz-feld	th granitic fra spar veining.	gments greater Disseminated pyrit k lithic fragment												
-		19.5- 23.5: Po	or core recovi	ery, 90-60%. I	ncrease in blac vrite. Joints	k lithic fragment present filled												
			th clay.								1					—		
23.5	26.5	BRECCIA						-	'	•	١	1	1	1	•	٠.	•	
		Andesite matrix. ?sphalerite-?gal	Three fracti	ures filled wit	n clay. Hairli	ne quartz-pyrite-		-} }										
26.5	35.2	ALTERNATING ANDE						-									•	
		As above. Disse			nhout.) 										-
						er grained tuffs.												
		29.6:Ha	irline pyrite	-galena veinlet	•	er sydney syllisi												
		32.0-35.2: Se	even hairline.	veinlets with p	yrite-?sphaleri	te-7galena. Dis-		: .										,
36 4	136 2			atizacion may a	iso be present.	along layering.												•
	136.2	ALTERED GREY-GRE			1 6 2 2 2 3 2 2 2 2 2 2													
		35.2- 35.7: Qu	uartz flooding	with ?sphaler!	te present.	na with minor dis		· ·-										
		38.6- 41.8: Fo	eminated pyrit our veins of p	e. yrite-galena-?s	phalerite, two	hairline, one is												
		2n 44.8: Ifa	nm thick and f airline veinle	ourth ranges fr ts. Disseminat	om 2-10mm (39.8 ed pyrite-?spha	m). 1erite-7galena												
		47.9- 53.9: 01 53.9- 54.2: Fe	isseminated py ew veins, 3mm	rite-7galena-7s thick, sphaleri	phalerite. te and ?carbona						•							
	1	P	veite and Toal	ens present at	disseminations.		<u></u>								_			

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M.L.M. EXP	LORATION DIV	ISION, D.D.H. RECORD		PROPERTY HOUSTON		HOLE NO. HG-80.6	P*** 2/2
METR			%	SAMPLE	METRES	ASSA	
From	7.	DESCRIPTION	Mineralization	JAMPLE			
		58.1- 60.0: Hairline veinlets.		7			
		60.0- 65.2; Abundant clays as alteration.		-			
		69.2-80.2: Increase in quartz flooding downhole associated with pyrite.			•		
		?galena and ?sphalerite.		7			
		72.2- 72.6: One veinlet pyrite-7sphalerite.					
		85.9: Two veinlets, 0.5-0.7cm thick, pyrite-galena-sphalerite-quartz.		1			
		92.0: Minor veinlet, pyrite-qalena-?sphalerite,					
		98.3- 98.4: Concentration of veinlets.		4			
		99.7-102.4: Disseminated pyrite and galena present.	<u> </u>	4			en the same
		108.8-114.6: Clay rich section. Core soft and crumbly. 118.9-119.1. 119.7-120.1: Andesite, light grey indurated.		-			
		120.5: Minor veinlet		-			
		120.8-121.1: Grey andesitic lapilli tuff.		ጎ			-
		126.0. 126.2: Minor veinlets. 0.4cm thick and 0.2cm thick respectively.	1% dis. pyrite.	 			
		TEXAMETERS TO THE TENTION OF THE PARTY OF TH	Tr-1% ?sph. + gal	-}			
		131.0-131.7: Light coloured section, less sulphide present.	TIPLE ISHIT T WAT	4			
		132.3. 132.6. 134.9: Hairline veinlets sphalerite-galena-pyrite with less		7			
		than 0-5% total disseminated sulphide. Veinlets are at 30° and	,	-			
		20° to core axis.		<u>-</u>			
	136.2	END_OF_HOLE					
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MATTACAL	(I LAKE MINES	LIMITED - EXPL	מיטות ממודמת	SION - DIAMOND T	JRIII HOIF RE	CORD									Pag	• 1/	1
		E	1			· · · · · · · · · · · · · · · · · · ·	1000					IP TEST					
PROPERTY	HOUSTON		· }	1,500N			otember 1980			Corrected			Corre	ted		C	erreeted
HOLE NO.	нн-80.7		DEPARTURE	312.5E		FINISHED 26 Sep	otember 1980										
BEARING	090°		ELEVATION			LENGTH 12.2m	(40 ft.)										
DIP-COLLAR	-45° .		CLAIM	RED		LOGGED BY W. Mei	rcer										
۲	IETRES	<u> </u>	102//01/	DESCRIPTION			%	SAMPLE		METRES				ASSA	YS		
From	12.2	OVERBURDEN					Mineralization	NO.	From	То	Length	<u> </u>					
	-	Hole abandoned b	ecause casing	jammed in boulde	rs.			 									
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						07.6	1 1000				D	IP TEST					
ROPERTY	HOUSTON		LATITUDE	1,500N	STARTED	2/ Septer	nber 1980			Correcte			Cerre	1 e d			
DLE NO.	HH-80.7A		DEPARTURE	312.5E	FINISHED	27 Septer	nber 1980										
ARING	090°		ELEVATION		LENGTH	9.8m (32	ft.)										
P-COLLAR	-75°		CLAIM	RED	LOGGED BY	W. Merce	·										
	TRES			DESCRIPTION			%	SAMPLE		METRES				ASSA	YS	,	
From ()	т. 9.8	OVERBURDEN					Mineralization	NO.	From	То	Length					<u> </u>	
	1							 		<u> </u>							-
		Hole abandoned	because casing	g jammed in boulders.													
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OPERTY		LATITUDE 1365N		STARTED	28 September 1980		Mahasa	Corrected		P TEST	Corrected		Cornico
	HOUSTON						Metres		_		Cornella	 	
LE HO.	HG-80.8	DEPARTURE 200E		FINISHED	30 September 1980		45.7m	-44°					
EARING	180°	ELEVATION		LENGTH	109.7m (360 ft.)	<u> </u>	102.7m	-46°	_				
P-COLLAR	-45°	CLAIM CODE 21		LOGGED BY	W. Mercer								
MET		DE	SCRIPTION		% Mineralization	SAMPLE NO.	From	METRES	-	65 (V) T		x) Cd (z) A	a Dom Lating
Frem	T•	OVERBURDEN			Mineralisation	NU.	Fram		Congr.	70 (2)	ZII (A) CU (-1	
5.5	7.0	DARK GREY BRECCIA									•	, ,	١
3.3	7.0				111								-
		Consisting of fragments from 1 to 20cm edges. Matrix composed of fine fragme	nts similar to the abo	nded with smooth ve plus dark fine	LIX dis. pyrite								
		fragments. No bedding visible. 6.2- 6.5: Few hairline veinlets wi											
			th pyrice plus isphale	rice.									
7.0	13.9	LIGHT GREY BRECCIA											
		Very similar to Dark Grey Breccia, exc	ept matrix lighter in	colour. Measure	d L1% dis. pyrite								
		15 hairline veinlets between 7.3 and 1 11.5, 11.9, 12.4, 12.9, 13.3; Networ	0.4m. k of quartz-ovrite vei	nlets over about									
		0.1m of core.	,			1							,
	ļ	12.5: 2mm veinlet quartz-pyrit	te-sphalerite, nlets, 1mm_thick, with	no visible sphal									· · · · · · · · · ·
		13.4. 13.5. 13.6: Pyrite-quartz vein erite or galena, at 35°	and 50° to core axis.	and 95° to each						 	- 	 .	
		other.											
13.9	20.7	DARK GREY BRECCIA	.*		<u> </u>	-							
		As above, with fragments up to 28cm ac	cross. Numerous bright	.green fragments	, Up_to_3%_dis.	-[-							
		averaging 0.5cm across. Pyrite occurs	s as disseminations and	patches U.I.to	pyrite .	1						•	
		0.5cm.across. _14.317.7: Twenty hairline quartz-	pyrite veinietsNo <u>v</u> i	s1b]e_spha <u>leri</u> te		-}-							
		17.7-20.7: Two veinlets pyrite-quar	rtz			- -							
20.7	21.0	BLUE-GREY PORPHYRITIC INTRUSIVE				- [-							
		Light green phonocrysts, probably alto				. 1							
		mass 0.03m chill margin on either s	ide	grained ground		-							
	35.7					-							
21.0	33.7.	As above, with 0.5% disseminated pyri											
	, .	leneate (Zephalomite and Zgaloma)			LU.54 Spn. and ga	1.							
<u> </u>		25.4: Pyrite-sphalerite-galen	a vein. U.5 cm wide. 53	5 CO COPE dais.	_								
\ .		ac no Duelto-enhalarito-galon	a volo. O.3 cm wide. 40	n° to core axis.	_								
		27.6: Pyrite-sphalerite-galen	a vein. 1.0 cm wide. 50	0° to core axis.									
		NOTE: Although core recovery is appa	rently 100%, a subject	ive impression i	s	1							

.L.M. EXPLO	ORATION D	VISION, D.D.H. RECORD		PROPERTY	HOUSTON		··· 5/3
MEIRES		DESCRIPTION	% Mineralization	SAMPLE	METRES -	ASSAYS Pb (%) Zn (%) Cu (%) Cd (%)	Tan pouran peur
35.7	50.9	ALTERED DARK GREY BRECCIA	MINOVELLEGISM	HO.	From 10 Langin	PO (2) 211 (2) Ca (2) Ca (2	I hay renighe the
-55.7	30.5	ALTERED WARE GREET		 			
		As above, but with very dark coloured sections. May be dark coloured clays.	2-5% dis. pyrite				•
		Some fragments are intensely altered to clays that swell with water. Includes					
		2-5% disseminated pyrite. 40.8: Pyrite-sphalerite-galena-quartz vein.		- i			-
		37.8-38.7, 41.1-43.9, 47.6-48.2, 48.6-50.4: Lighter coloured sections with	<u> </u>	- 			_
		a few discontinuous hairline quartz-pyrite veinlets and 1% dis-					
		seminated pyrite.					
		49.7: Pyrite-sphalerite-galena veinlet, almost completely eroded in					_
		drilling.		-			_
50.9	56.2	LIGHT GREY BRECCIA		+(-
		Erom one one of					•
		See 7.0m-13.9m above					
		0.5% disseminated pyrite plus 0-5% metallic dark specks, particularly on					·
		sections 55.4 and 56.7-57.3. 51.5: Possible bedding as dark and light bands at 25° to core axis.		- -			
	·	51.5. Fossible bedding as dark and right bands at 25 to core axis.					-
56.2	62.4	TUFF		-			
		Light coloured, grey and fine grained. 0.5% pyrite and 0.5% dark mineral	0.5% pyrite +				÷.
		(?sphalerite_and_galena) as disseminations and hairline veinlets.	0.5% sph. + gal.				
62.4	71.4	GREY-GREEN BRECCIA		- 			-
		30 M. J. 10 M. J. M. M. J. L.		- 			-
		Subordinate_blue_grey_matrix_contains_0.5_to_10cm_light_green.intensely					
		altered_fragmentsLess_than_1%_pyrite_plus_7sphalerite		· · · · · · · · · · · · · · · · · · ·			·
 }-		65_468_6:_Six_patches_of_pyrite=?spha)erite=quartz_as_irregular_veinscovering_5_cm_of_core_on_average					
		70.6: irm thick veinlet of pyrite-sphalerite-quartz.					
							•
71,4	109.7	GREY BRECCIA					
		White coloured fragments, up to 15 cm across set in blue-grey fine grained		-			
		matrix. From 87.5 to 109.7 there is a gradual, down hole, increase in green		- - 			
		lalteration as patches and alteration of feldspars. Less pyrite and black		- 			-
		specks than above unit, in general. Irregular discontinuous hairline vein-			•		
		lets with pyrite common. Contact with above unit is sharp and marked by a			••		
		1.5cm fine grained pale green coloured section at right angles to core axis. 73.4: Ihin pyrite-sphalerite veinlet.					•
		77.4: Possible bedding at 50° to core axis.					•
		77.7: Pyrite-sphalerite vein partially eroded by drilling.					-
		78.1-78.3: Pyrite-quartz-sphalerite_irregular_thin_veinlets_parallel					
		core axis.					
		84.4-85.9; Pyrite-quartz-7sphalerite halfline veinlets. 93.3-93.6; Dark patches in rock 0.2 cm across. 7Sphalerite.		-			
		31.9-95.5: Green alteration intense.					
		96.5: Pyrite-clay-quartz vein_0.5cm, 35° to core axis.					-
		98.8: Pyrite-quartz yein, 0.5cm, 35° to core axis.					
1		99.7: Pyrite-quartz veinlet, 0.2cm, 45° to core axis.	1	. F. i			•

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HG-80.8 P-y- 3/3 M.L.M. EXPLORATION DIVISION, D.D.H. RECORD HOUSTON PROPERTY METRES ASSAYS SAMPLE METRES DESCRIPTION Frem Mineralization 100.6: Pyrite-quartz-?sphalerite vein. 0.1cm, 40° to core axis.
101.3: Pyrite-quartz-?sphalerite vein. 0.1cm, 45° to core axis.
102.1-102.7: Numerous hairline veinlets of pyrite-quartz.
105.1-105.7: Banding of light and dark layers-possible bedding-0.5cm thick.
10° to core axis.
106.8: Pyrite-sphalerite-galena veinlet. 0.3cm thick. 20° to core axis. 108.8-109.1: Numerous hairline veinlets. 109.4: Two pyrite-quartz-?sphalerite veins. Q.2cm. 15° to core axis. 109.7 END OF HOLE

APPENDIX TWO

STATEMENT OF COSTS and CERTIFICATE: W. Mercer

STATEMENT OF COSTS

Diamond Drilling, Houston Project, 1980

Contractor Fees, Morrisette	\$ 56,955.48
Core boxes	699.25
Miscellaneous items from J.T. Thomas, Smithers	405.60
Bulldozer rental, Madigan Equipment, Smithers	3,270.57
Food and miscellaneous camp supplies	3,563.19
TOTAL DRILL COST	\$ 64,894.09

Total drilled Cost per metre (foot) 745.3 metres (2445 feet) \$ 87.07/metre (\$ 26.54/foot)

Signed

W. Mercer Regional Manager

CERTIFICATE

- I, William Mercer, of the City of Edmonton, Province of Alberta, do hereby certify that:
 - 1. I am a geologist residing at 6814 110 Street, Edmonton.
 - 2. I am a graduate of Edinburgh University, Scotland, with a B.Sc. Hons (1968) in geology and McMaster University, Ontario, with a Ph.D. (1975) in geology.
 - I have been practicing my profession since 1974 and am at present Regional Manager for Mattagami Lake Exploration Limited in Edmonton.
 - 4. I am a fellow of the Geological Association of Canada and a member of the Society of Economic Geologists and the Canadian Institute of Mining and Metallurgy.
 - 5. I supervised the work that is described in this report.

