# GEOLOGICAL REPORT 1975 WORK PROGRAM JUBILEE MOUNTAIN BRITISH COLUMBIA 5 MILES N. W. OF SPILLMACHEEN LAT. 50° 55' N LONG. 116° 27' W

## **PROPERTY FILE**



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BY

DEKALB MINING CORPORATION

CALGARY, ALBERTA

### GEOLOGICAL REPORT

## JUBILEE MOUNTAIN PROSPECT

#### BRITISH COLUMBIA

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#### PAGE

#### INTRODUCTION

As a follow-up to the 1974 exploration program on Jubilee Mountain, additional diamond drilling on the prospect was done in the vicinity of the discovery holes.

The 1974 drilling program had encountered sulfide intersections in two of the 18 drill holes (Reference No. 6). Hole 15 intersected 27.5 feet of lead-silver-barite mineralization, while hole 17 encountered 61 feet of similar mineralization.

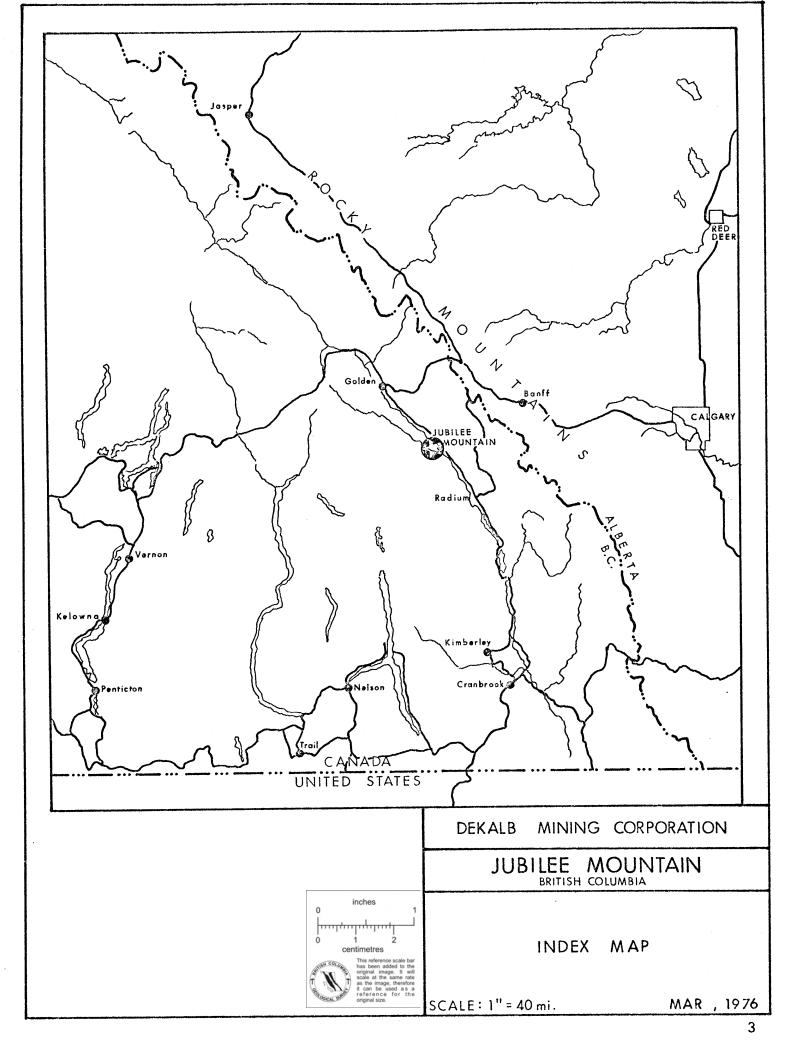
The host for the mineralization appears to be a carbonate breccia in the Upper Cambrian Jubilee Mountain Formation, while the control for the brecciation appears to be regional fracturing.

The Jubilee Mountain Formation consists of clean unmetamorphosed carbonates. Outcroppings of the formation indicate that the rock was deposited in a quiet water environment with local areas where reef building had taken place. Associated with the reefing (Figure 4 and Figure 5), such textures as pelletoid carbonates (Figure 6) and breccias (Figure 7) have been mapped.

#### GEOGRAPHIC LOCATION

The index map locates this prospect as being in the southeastern portion of British Columbia, approximately 25 miles north of Radium Hot Springs. The nearest village, Spillimacheen, is located on paved highway No. 95. The C.P.R. rail line passes through this valley and is the main haulage route for coal between the Crowsnest Pass and Vancouver.

The prospect lies in a small valley near the top of Jubilee Mountain. Access is via a gravel road from Spillimacheen across the Columbia River to the hydro power plant, then by the forestry road that leads up to the fire lookout tower on Jubilee Mountain, a distance of five miles.



#### REGIONAL GEOLOGY

Jubilee Mountain is an isolated mountain located immediately west of the Rocky Mountain Trench Fault.

The mountain itself consists of a succession of Upper Cambrian carbonates, Cambro-Ordovician shales and Silurian carbonates.

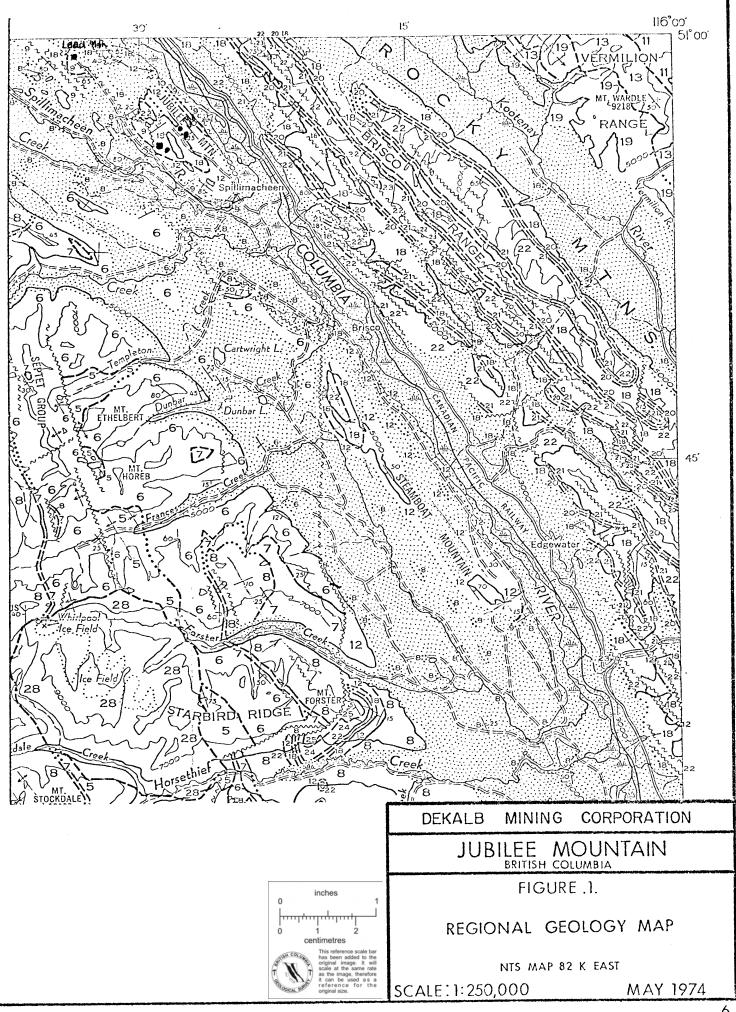
Regional folding stresses have folded the formations into a gentle syncline mapped by Reesor (Mem. 369 G.S.C.) as the Purcell Boundary Syncline. The prospective horizon, the Jubilee Mountain carbonates, crop out on both the east and west side of the mountain, indicating that the syncline is approximately one mile across.

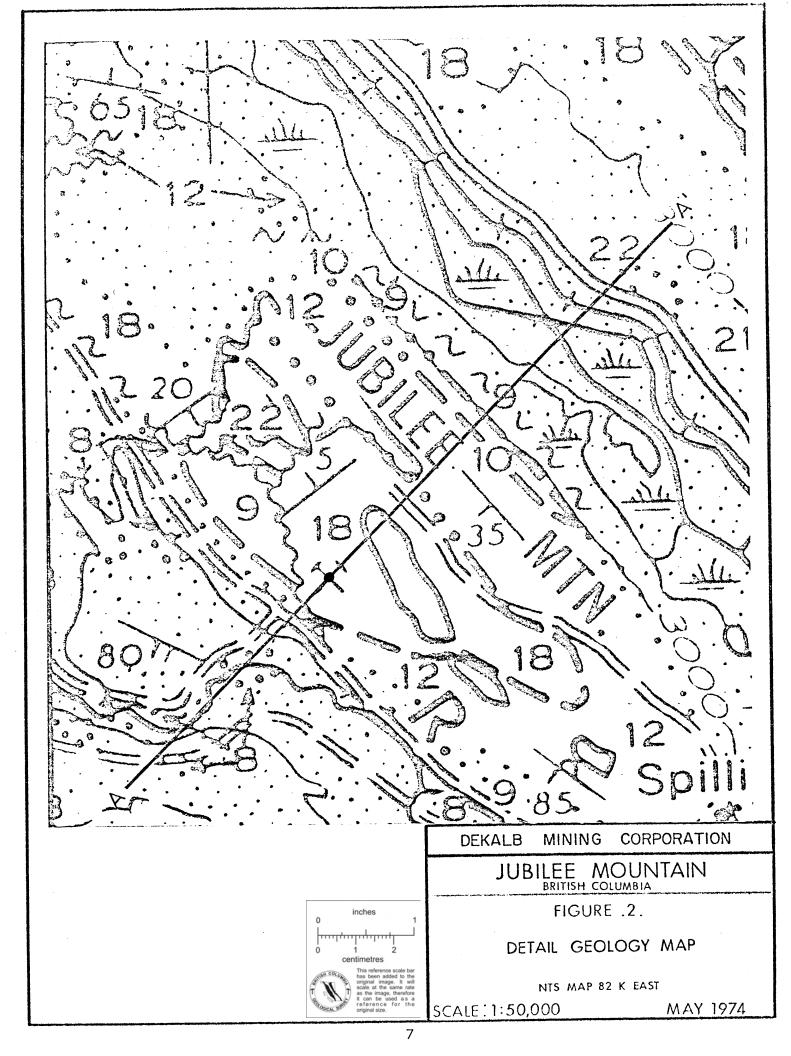
#### GEOLOGY OF THE PROSPECT AREA

Mineral prospecting has been active in the valley since before the turn of the century (1883). The only productive mine within 30 miles of this prospect is the Silver Giant Mine, slightly over one mile to the west on the western limb of the Purcell Boundary Syncline.

The Silver Giant Mine produced small quantities of mineral during the first half of the century, finally going into production in 1947. After producing from nine levels and an open pit, operations for sulfides ceased. Limited mining for barite, both underground and in open pits, and the re-concentration of the mill tailings to recover barite as an additive for drilling mud has continued during the summer months to the present by the Baroid of Canada Company.

Figure 1 is a reproduction of the preliminary geology map of the area (Reference No. 17). Figure 2 is an optical enlargement of the Jubilee Mountain portion of the preliminary map showing details of the syncline and the location of the prospect with respect to the Silver Giant Mine.





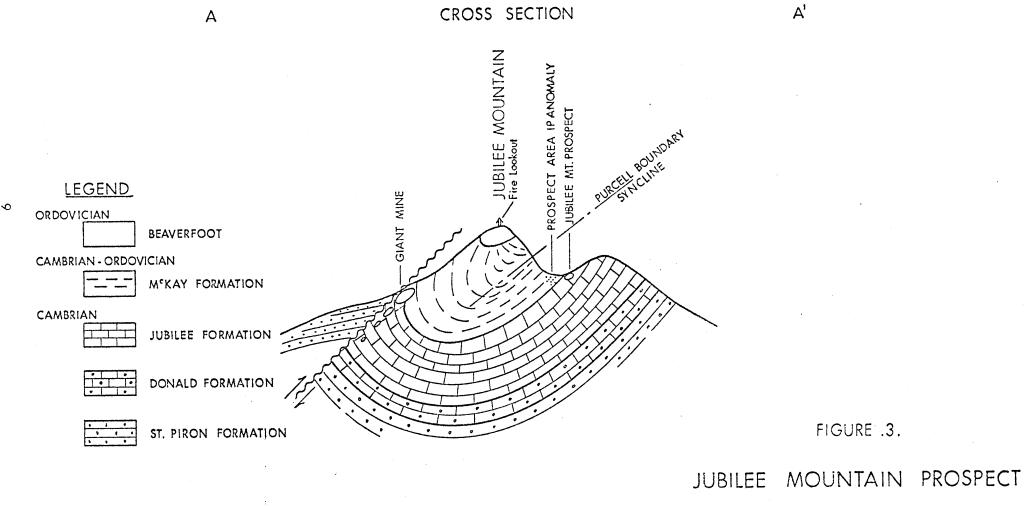
The schematic cross section (Figure 3) passes through the Silver Giant Mine, over the mountain peak and through the Jubilee Mountain prospect. By inspection of this cross section, the regional geology and the basis of this prospect can be envisaged.

The same geological features that crop out on the west side of Jubilee Mountain where the Silver Giant Mine is located crops out on the east side of the mountain where this prospect is located.

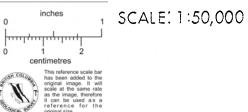
Various reports (Reference Nos. 2, 3, 4, 5, 11, 16) indicate that the ore bodies of the Silver Giant Mine occur at the top of the Jubilee Mountain Formation carbonate on the contact between the carbonate and the overlying McKay black pyritic shale.

Regional air photo mapping confirms the literature as well as indicating that the mine lies on a major north-south fracture. Although not indicated in the literature, the writer is of the opinion that the ore body of the Silver Giant Mine is associated with a reef system and a major fracture system. This fracture would provide a passageway for mineralizing solutions as well as a location for reef growth. The literature in one instance indicates that the ore body extends upward into the McKay shale which the writer interprets as

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being a reef knob or buildup into the shale (McKay) formation.

Having this understanding of the geology of Jubilee Mountain and the origin of the Giant reef ore body, it seemed natural that exploration should be carried out on the eastern portion of the syncline.

Air photos were examined and an air photo geological map was constructed. Several fractures were mapped in the vicinity of reefoid Jubilee carbonates lying under the Crown Grants. Coincident with these fractures and reefoid rocks, a weak Induced Polarization anomaly had been mapped. A decision was, therefore, made to pattern drill these features to evaluate the sulfide potential on this side of the syncline.

The original thesis was that sulfide mineralization would be associated with reef structures, with the sulfides occurring in the vug or void spaces of the carbonate in a manner similar to the sulfides at Pine Point, N.W.T.

Drilling during the 1974 season indicated, instead, that sulfide mineralization occurred in a carbonate breccia and the reef texture rocks were barren.

## DISCUSSION OF THE PARAGENESIS OF THE SULFIDE MINERALIZATION

In late Cambrian time this region was covered by a shallow sea which deposited relatively clean carbonates mapped today as the Jubilee Formation.

The sea floor, however, did exhibit a pattern of north-south fractures. Movement occurred on some of these fractures, providing escarpments on the sea floor. Reef building began on these escarpments and is mapped today as beds and mats of stromatoidal limestone as photographed in Figure 4 and Figure 5. The back reef environment is represented by pelletoidal limestone as photographed in Figure 6. This rock represents a quiet environment on the ocean floor where lime from the sea water was deposited on small particles. Continued agitation by water currents and wave action gently rolled these fragments around which produced a sub-rounded pellet. The pellet grew in size with additional precipitation, eventually coming to rest and forming a rock unit.

Slight movements continued along the old basement fault structures throughout Jubilee and McKay time keeping channelways open along the fault planes. As time progressed it appears that solutions capable of dissolving the carbonates



FIGURE 4 STROMATOPOROID-LIKE LIMESTONE AND BARITE



FIGURE 5

CLOSE-UP OF STROMATOPOROID-LIKE STRUCTURES



FIGURE 6 PELLETOID LIMESTONE



FIGURE 7 SPECIMEN OF SURFACE OUTCROPPING OF A BRECCIA were actively creating caverns along the fault zone and within the more porous reefs. As these caverns reached a size where the rock was unable to support such an opening, the cavern caved, resulting in a quantity of broken rock or breccia. The interfragmental space was then infilled with sulfides derived from and precipitated by hydrothermal solutions passing up along the original predepositional fault planes.

Figure 8 is a photograph of a fracture zone that appeared in one of the diamond drill cores. This represents in a miniature scale the process of a fracture zone being enlarged by solution to the point where a small cavern has been developed. If this process were to continue, eventually a larger cavern aligned with the fracture system would be The collapse of such a cavern would produce a developed. form of Karst topography on the stratigraphic top of the Jubilee Formation. The overlying McKay shale beds would then demonstrate abrupt changes in dip as illustrated in drill holes JM 17, 18, 19 & 20 on the cross section in Figure 9 (back pocket).

An abrupt change in the structural elevation of the Jubilee Formation is illustrated in drill holes JM 15, 16 and 21 as shown in the cross section of Figure 10 (back pocket). This cross section probably best illustrates the possibility of Karst topography with mineralization occurring at the boundary of the subsidence where maximum crushing and



FIGURE 8

VUG DEVELOPMENT ALONG A FRACTURE DUE TO THE ACTION OF LIME-DISSOLVING SOLUTIONS brecciation would occur. The collapse of caverns has been well documented in the Mississippi Valley type deposits of Missouri and Tennessee.

Although carbonate breccias as a rock type appear similar, their geneology is quite different. Collapse breccias as discussed above are the type of breccia most likely to be encountered at Jubilee Mountain. The second most likely type is a reef frontal breccia, formed on the seaward side of reefs as talus. The talus consists of fragments of the adjoining reef that has broken free and rolled down the depositional slope.

Other breccias are formed during the deposition cycle as a result of turbidity currents associated with submarine slides. Tectonic breccias formed during folding and faulting have also been recognized in certain areas. Examples of the last two breccias are usually small in areal extent and not usually connected with mineralizing solutions. This category, therefore, is not of a size or grade to be of economic interest as a metallic mine.

A structure contour map (Figure 13, back pocket) has been constructed on top of the Jubilee Mountain formation. This map represents today's surface structure on top of the Jubilee Carbonate. The purpose of such a map is to determine

if such features as Karst topography, fault zones, solution collapse, etc., could be mapped.

Contouring indicates that extreme differences in elevation occur on the Unconformity but the control data is too widely spaced for the contours to delineate such features that would lead to a possible mineral location. With more control points (i.e. more drilling) some of these features could be mapped.

#### DISCUSSION OF DRILL RESULTS

Drill hole JM 19 was drilled to follow up the 1974 intersection of sulfides in JM 17 (Figure 9, back pocket). Although this hole encountered lead sulfides and similar breccia it did not sample the same quantity of lead as intersected in JM 17.

JM 20, collared to the east and drilled back under these intersections, did not encounter any sulfides. The rock under the sulfide zone, however, is extremely porous, exhibiting the highest amount of porosity and permeability of any sections mapped to date (Figure 9, back pocket). It appears that this section would correlate with the lower section of Hole JM 18. A portion of this hole is photographed on page 33 of the 1974 report (Reference 6). These porous stratigraphic sections illustrated in these two holes demonstrates that a carbonate reef has been penetrated. The relationship of the lithology and the overlying sulfides is unclear.

The breccia containing the sulfides of Hole JM 17 and Hole JM 19 is a result of reef collapse or of cavern collapse. Either process could occur near or in a reef and only additional exploration will provide the final answer.

An additional follow-up hole, JM 22, 130 feet to the

northwest, intersected 17 feet of lead-barite mineralization. The lead in this hole occurs as disseminated sulfides associated with barite. Therefore, the relationship of the mineralization in this hole and that encountered in JM 17 and JM 19 is not known. If this mineralization is related to the IP anomaly, then additional intersections can be expected to the northwest and southeast.

Diamond drill hole JM 22 (Figure 11, cross section, back pocket) encountered several possible fault or fracture zones where the drill rods dropped several feet. Air photo mapping places a strong north-south fracture in this region. It was probably encountered in this hole at 252 feet.

A vertical hole, JM 21, was located to evaluate the 27 foot intersection of JM 15 drilled in 1974. Mineralization was not encountered although the hole should have penetrated nearly the same rock as recovered in JM 15.

Two features of these holes are quite diagnostic of the events which occurred in this region.

- The abrupt change in elevation of the Jubilee Mountain Formation.
- The increased thickness of the Detrital Zone in the McKay Shale.

By inspection of the cross section (Figure 10) displaying diamond drill holes JM 15, 16 and 21, it is noted that the elevation of the Jubilee Formation changes drastically between JM 15 and JM 21. It would be possible to interpret a collapse zone in the vicinity of these holes based on the structural elevation of the Jubilee Mountain Formation Unconformity. Since the Detrital zone is abnormally thick in the JM 21 hole it could be concluded that the hole does in fact occupy a zone that experienced a higher rate of subsidence (several periods of collapse ?) than the surrounding rock sequence.

The next drill hole to test this structure, JM 23, was drilled to the southwest to examine the rock between JM 15/16 and JM 13/14. This hole encountered several mineralized zones - 135-143 (8 feet), 173-176 (3 feet), 203-212.5 (9.5 feet), and 228.5-238 (9.5 feet). These zones are nearly 100% barite with traces of lead, silver and copper.

#### CONCLUSIONS

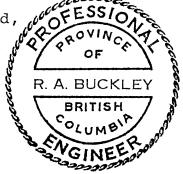
The intersections in the JM 23 hole (Figure 12, back pocket) although scattered over a 103 foot zone, probably correlates with the intersection drilled on JM-15. This zone, being much higher in its barite content, is currently not being correlated with the intersections of holes JM 17, 19 and 22, which are primarily lead. It is, therefore, concluded that two exploration targets exist on this prospect, one being the above-described JM 15/23 barite prospect, and the other, the lead-silver-barite JM 17/19/22 prospect.

#### RECOMMENDATIONS

- A gravity survey is recommended over this prospect. Approximately 2 line miles would cover the prospective areas.
- Additional diamond drilling is recommended to evaluate the presently mapped sulfide intersections.

Respectfully Submitted,

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R.A. Buckley, P. Eng.

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#### QUALIFICATIONS

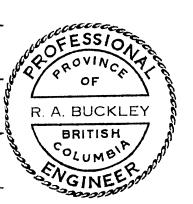
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- A. I, Ronald A. Buckley, am by profession a Geologist, residing in the City of Calgary, in the Province of Alberta.
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- C. I graduated in the year 1959 from McGill University, Montreal, in the Province of Quebec, with a Master of Science Degree in Geology.
- D. Since graduation, I have been employed by a Mining Company, a Provincial Department of Mines, and three Oil Companies in the search for oil, gas and metallic minerals.
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### APPENDIX

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## APPENDIX

### SUMMARY OF DRILL HOLES

HOLE	AZIMUTH	DIP	ELEVATION	LATITUDE	DEPARTURE	LENGTH
JM 19		Vertical Hole	4952.7	1297.5N	1423.6E	422'
JM 20	223 <sup>0</sup>	62 <sup>0</sup>	4933.6	1429.3N	1560.5E	457 <b>'</b>
JM 21		Vertical Hole	4940.1	1595.8N	1354.OE	368'
JM 22	180 <sup>0</sup>	50 <sup>0</sup>	4940.1	1595.8N	1354.0E	373'
JM 23	240 <sup>0</sup>	58 <sup>0</sup>	4960.0	1643.8N	1380.7E	267

### DIAMOND DRILL HOLE CORE DESCRIPTIONS

FOR

HOLES JM 19 to JM 23 INCLUSIVE

Hole No.	JM-19	Project No.	4029	Page	elof6		
Property J	ubilee Mountain	Length	422'	Lat.	1297.5 N	Hor, Comp.	 Ver. Comp
District		Bearing		Dep.	1423.6 E	Etch. at	Total Recovery %
Commenced	September 19/75	Dip	Vertical Hole	Elev.	4952.7	True Dip	 Logged by R.A. Buckley
Completed	September 22/75					Location	 Date Logged September 22,1975

Footag	ge		Description	Assay No.	Length Feet	Analysis		·	·			Mineralized Zor Length-Grade
Run	From	То			reet				ļ			
	0	36	Overburden									
	36	52	Mackay Shale, limestone lenses @ 2/ft 1/2" thick.									
			Apparent dip 60 <sup>0</sup> to core axis.									
	52	59	As above, lenses @ 1/ two ft.									
	59	65	As above									
	65	67	As above, one foot core lost; blocky.									· · · · ·
	67	70	As above, slightly less blocky.			ļ						
_	70	81	As above, lenses @ 4/ft.						ļ			
	81	106	As above, no lenses. Apparent dip to core axis 60°.									
	106	118	As above						ļ			
	118	119	As above, lime lenses @ 2/ft.						<u></u>			<u></u>
	119	127	As above, blocky, Six ft. core lost. Mud seam.			ļ			ļ			
	127	137	As above, lime lenses @ 3/ft. 3/4" thick.			ļ						
	137	161	As above, no lenses, dip to core axis same.					· ·		ļ		<u> </u>
	161	167	As above	ļ			ļ					<u> </u>
	167	178_	As above, sharp increase in dip - almost parallel to core					<u> </u>				<u> </u>
			axis, lime lenses 1/2" thick, lime bed @ 168' w/scattered		ļ				 	ļ		<u> </u>

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Hole No.	JM-19	Cont'd	Project No.	4029			
Property J	Jubilee	Mountain	Length	422'	Lat.	Hor. Comp.	Ver. Comp.
District			Bearing		Dep.	Etch. at	Total Recovery %
Commence	d Septem	ber 19/75	Dip	Vertical Hole	Elev.	True Dip	Logged by R.A. Buckley
		ber 22.75				Location	Date Logged September 22,1975

otag	e		Description	Assay No.	Length	Analysis	nalysis				Mineralized Zon
in	From	То			Feet						Lengui-Grade
	167 Contir	178 ued	1/4" blebs of pyrite.								
	178	185	As above, pyrite blebs mostly in limelenses. Lenses @ 3/ft.								
	185	187	As above, bedding decreases to 60° to core axis @ base of								·····
	ļ		interval.								
	187	191.5	As above, no lenses.								
	191.5	192	As above, with 3" bed massive pyrite - conformable to bedding								
	192	195	As above, lighter colored beds.								
	195	197	Lime bed with disseminated pyrite.								
	197	200.5	Mackay shale. Lime lenses @ 3/ft. Varved beds.								
	200.5	201	3" seam of massive pyrite, similar to 191.5 above.								
	201	205	Mackay shale, slightly darker beds, lime lenses @ 1/ft.		ļ						
			1" thick.		ļ						
	205	206	As above, "chowdered".		ļ						
	206	221	As above, beds 45 <sup>0</sup> to core axis, pyrite seam @ 209', _ small								
			seams 1/32" @ 220', conformable to bedding. local sections	 							
			of heeled breccia.		<b>_</b>	<u> </u>	. 				<u>.</u>
	221	223	As above, darker, occasional pyrite seam 1/4", conf. to beddi	ng.							

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Hole NoJM 19 Cont'd	Project No.	4029				
Property Jubilee Mountain	Length	422'	Lat.	Hor. Comp.	Ver. Comp.	
	Bearing		Dep.	Etch. at	Total Recovery %	
Commenced September 19/75	Dip Vert	ical Hole	Elev.	True Dip	Logged by	R.A. Buckley
Completed September 22/75	Objective	<u> </u>		Location		September 22/75
Sompletta Deptember 22/15						

ootag	e		Description	Assay No.	Length	Analysis		·	1r	·····	Mineralized Zo
ev	From	То		L	Feet						
	223	224	Detrital zone, knots of pyrite.								
28.7	224	227	Jubilee Formation. (limestone) light grey carbonate.					ļ			
			stylolitic structures, black shale section 3" thick.								
	227	228	As above, of clastic origin.			ļ					
	228	229	As above, occasional vug 1/2", with quartz crystals.		ļ			ļ			
	229	234	Jubilee; carbonate, light grey, stylolitic.								
	234	236	Similar to above, slightly brecciated in part, galena								
			mineralization 1%.								
	2 36	240	As above, slightly more brecciated, < 1% sulfides.								
	240	242	As above, vein brecciated, up to 3/4" fragments in black								
			matrix, vugs up to 1/2", 1% galena.								
	242	243	As above, no breccia, massive.								
	243	247	Carbonate, slightly darker color, massive, several small								
			veins containing barite, pyrite, chalcopyrite, galena.								
	247	251	Lighter carbonate, vein (blob ?), barite and galena, small			<u> </u>	ļ				
			brecciation associated with feature. Galena occasionally,		ļ	<b>_</b>					
			mostly at boundary of barite, also disseminated in breccia.								

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Hole No. JM-19 Cont'd	Project No. 4029			
Property Jubilee Mountain	Length 422'	Lat.	Hor. Comp.	Ver. Comp.
	Bearing	Dep.	Etch. at	Total Recovery %
CommencedSeptember 19, 197	Dip Vertical Hole	Elev.	True Dip	Logged by R.A. Buckley
Completed September 22,1975			Location	Date Logged September 22, 195

Footag	le		Description	Assay No.	Length Feet	Analysis	 1	T	1	r	Mineralized Zon Length-Grade
Run	From	То	1		reel		 			ļ	
	251	252	As above.				 				
	252	254	Mottled appearance, looks like healed breccia,				 				
	254	256	Carbonate, massive, light grey.		 		 				
	256	258_	Similar to mottled section above.				 			·	
	258	260	Similar to above but with 3% sylfides, galena and malachite,				 				
			azurite.				 				
	260	263	Carbonate, massive, grey, traces of vugs.				 				
	263	266	Veins containing galena, chalcopyrite, malachite, azurite,				 				
			barite.				 		+		
	266	269	Carbonate, massive, @ 269' 4" blob of barite.				 				
	269	273	Carbonate, massive, somewhat mottled, darker grey.				 				
	273	275	As above, slightly lighter.		L	<u> </u>	 				
	275	280	Breccia, trace of galena in matrix.	 			 				
	280	282	Breccia, increase in sulfides.				 				
	282	286	Mottled, zones of disseminated galena and barite patches.				 				
	286	293	Carbonate, light grey, mottled, vuggy, pyrite in fractures,				 	+	+		
			rust stains on fractures.	<u> </u>		<u> </u>	 				

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Project No. 4029 Hole No. JM-19 Cont'd Ver. Comp. Hor. Comp. Lat. Length 422' Property Jubilee Mountain Total Recovery % Etch. at Dep. Bearing District Logged by R.A. Buckley True Dip Commenced September 19, 1975 Dip Vertical Hole Elev. Date Logged September 22, 1975 Location Completed September 22, 1975 Objective

Footag	e		Description	Assay No.	Length Feet	Analysis	i T	Analysis			r	Mineralized Zon Length-Grade
lun	From	То			reet		ļ	-				
	293	297	Darker grey, sandy look, disseminated sulfide, galena, pyrite									
	297	299	Fine-grained, light grey massive carbonate.									<b></b>
	299	301.5	Light grey, vuggy.						4			+
	301.5	303	Darker grey, sandy appearance, 10% sulfides, galena, mottled	·								
			barite.		ļ							
	303	326	Lighter grey, massive carbonate, vuggy, mottled, 1/16"									
			scatted vugs.									<u> </u>
	326	330	As above, slight increase in vugs, pinkish cast.		ļ							
	330	340	As above, more reddish.									
	340	345	Light grey, vuggy, 3 ft. core lost.		ļ	ļ						
	345	354	Darker grey, mottled.			<b>_</b>						
	354	355	Much darker.									
	355	365	Lighter grey, mottled.								<u> </u>	
	365	368	As above.		<u> </u>	<b>_</b>					ļ	
	368	382	Light grey, increased vugs 1/8"-1/4" diameter, 2% porosity.		ļ							+
	382	387	Darker grey, mottled.									
	387	407	Lighter grey, vuggy.									

DEKALB MINING CORPORATION

Hole No. JM-19 Cont'd	Project No. 4029			
Property Jubilee Mountain	Length 422'	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
	75 Dip Vertical Hole	Elev.	True Dip	Logged by R.A. Buckley
Completed September 22,19	75 Objective		Location	Date Logged September 22,1975
completed Depechater 22,11		· · · · · · · · · · · · · · · · · · ·		

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Footag	e		Description	Assay No.	Length	Analysis			<b>T</b>	•		Mineralized Zor Length-Grade
	From	То			Feet				ļ			Lengin-Grade
	407	422	Deploy may restand mus									
	407	422	Darker grey, scattered vugs.						1			
	422		End of Hole.									
		+										
				· · ·					ļ			
		1							1			
		1		<u> </u>					1			
						<b> </b>			<b>_</b>			
		+		1		<u> </u>						
									+			
						ļ	ļ	ļ				
		+										
								+	+	+	+	
1001 -						ļ	ļ		<b>_</b>			
·		+		1	T	1	1					1

Page 1 of 3

Hole No. JM 19	Project No.			
Property	Length	Lal.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
Commenced	Dip	Elev.	True Dip	Logged by
Completed	Objective		Location	Date Logged

Foota	ge		Description	Assay No.	Length	Analysis		T	r		· · · · · ·	Mineralized Zor Length-Grade
Run	From	То	DETAIL OF ASSAYED SECTION		Feet	Au	Ag	Cu	Pb	Zn	BaSO	
	233	235	Jubilee Mountain Carbonate. Light grey, dense with stylo-	75-15	2.0	Tr	.06	.02	.20	.02	NA	
			litic structures. Galena knots 1/32" on stylolitic						ļ		ļ	
		-	structures occasionally as isolated knot in carbonate.			ļ			ļ			
			Also occasional isolated knot of pyrite in carbonate.									
	235	237.5	As above, slight increase in galena.	75-16	2.5	Tr	Tr	.02	.37	.01	NA	
	237.5	2 3 9	As above, slight decrease in galena.	75-17	1.5	Tr	.06	.02	.15	.02	NA	
	239	241	Rock type as above. Vein brecciated. Matrix black mud.	75-18	2.0	Tr	.04	.06	.42	.02	NA	
			Trace galena pyrite.								ļ	
	241	243	Crushed and brecciated, healed with darker limestone.	75-19	2.0	Tr	.04	.01	.08	.01	NA	
			Less galena.			<b>_</b>	ļ				· · · · ·	<u></u>
	243	245	Rock type as above. Slightly darker. Barite veins (?)	75-20	2.0	Tr	.26	.26	.12	.03	2.68	3
			indistinct boundaries or replacement blob. Galena									
			associated with barite.			<u> </u>						
	245	247	Dark grey with rounded pellets, 1/2". Galena on boundary	75-21	2.0	Tr	.14	.06	3.65	.01	23.01	1
			of barite.									
	247	248.5	Light grey. Fine vuggy carbonate. Trace galena.	75-22	1.5	Tr	.06	.03	.12	.02	4.05	5
	248.5	250	Light grey, some breccia. Trace galena.	75-23	1.5	Tr	. 80	.69	.57	.03	26.1	7

### Diamond Drill Record Page 2 of 3

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Hole No. JM-19	Project No.			
Property	Length	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
Commenced	Dip	Elev.	True Dip	Logged by
Completed	Objective		Location	Date Logged

From				Length							Mineralized Zone Length-Grade
	То	DETAIL OF ASSAYED SECTION continued		Feet	Au	Ag	Cu	Pb	Zn	BaSO	rendm-diage
250	251	As above. Open vugs 1".	75-24	1	Tr	2.62	2.25	.56	.09	11.4	)
251	254	Heated breccia, barite infill. Trace galena, pyrite.	75-25	3	Tr	.04	.09	.08	.03	.3	<b>)</b>
254	255.5	Dark grey, fragmental. No galena noted.	75-26	1.5	Tr	.04	.01	.01	.01	.0	L
255.5	258.5	Breccia infilled with barite.	75-27	3.0	Tr	.20	.08	. 05	.02	4.5	1
258.5	260	Breccia, as above. Trace galena.	75-28	1.5	Tr	. 40	.17	1.57	.01	.1	7
260	261.5	<b>F</b> ragmental and irregular bedding at 75 <sup>0</sup> to core axis.	75-29	1.5	Tr	. 42	.26	1.44	.01	3.6	9
		Barite veinlet with azurite-malachite.									
261.5	264	Fragmental cut with veinlets 1/4 inch.	75-30	2.5	Tr	.22	.13	.20	.02	.0	2
264	267	Veinlets of barite, barite vein 5" at 267'.	75-31	3.0	Tr	.20	.13	.05	.01	13.7	<b>p</b>
267	269	Fragmental carbonate, dark grey. Barren of sulfides.	75-32	2.0	Tr	.04	.02	.03	.01	.1	P
269	272	As above, barite veinlet 2" at 272'. Some fractures rusty,	75-33	3.0	.005	.10	.03	.15	.01	7.1	5
		barren of galena except at barite veinlet.			-					ļ	
272	273	Fragmental, tightly cemented.	75-34	1.0	Tr	.06	.05	. 80	.01	.0	4
273	277	As above but more highly fragmental. Barren of sulfides	0651	4.0	Tr	.04	.12	.04	.01	.0	3
277	280	Fragmental. Trace Galena.	0652	3.0	Tr	.08	.03	. 20	.01	.0	\$
280	282	Fragmental, rounder particles. Trace galena as scattered	0653	2.0	Tr	. 46	.12	2.07	.03	.0	<b>\$</b>
	254 255.5 258.5 260 261.5 264 267 269 272 273 277	254     255.5       255.5     258.5       258.5     260       260     261.5       261.5     264       264     267       267     269       269     272       272     273       273     277       280	<ul> <li>254 255.5 Dark grey, fragmental. No galena noted.</li> <li>255.5 258.5 Breccia infilled with barite.</li> <li>258.5 260 Breccia, as above. Trace galena.</li> <li>260 261.5 Fragmental and irregular bedding at 75° to core axis.</li> <li>Barite veinlet with azurite-malachite.</li> <li>261.5 264 Fragmental cut with veinlets 1/4 inch.</li> <li>264 267 Veinlets of barite, barite vein 5" at 267'.</li> <li>269 272 As above, barite veinlet 2" at 272'. Some fractures rusty, barren of galena except at barite veinlet.</li> <li>273 277 As above but more highly fragmental. Barren of sulfides</li> <li>277 280 Fragmental. Trace Galena.</li> </ul>	251254Netect Freedom, Farmer and Freedom, 11254255.5Dark grey, fragmental. No galena noted.75-26255.5258.5Breccia infilled with barite.75-27258.5260Breccia, as above. Trace galena.75-28260261.5Fragmental and irregular bedding at 75° to core axis.75-29Barite veinlet with azurite-malachite.75-30264267Veinlets of barite, barite vein 5" at 267'.75-31267269Fragmental carbonate, dark grey. Barren of sulfides.75-32269272As above, barite veinlet 2" at 272'. Some fractures rusty, barren of galena except at barite veinlet.75-34273277As above but more highly fragmental. Barren of sulfides0651277280Fragmental. Trace Galena.0652280282Fragmental, rounder particles. Trace galena as scattered0653	251254255Dark grey, fragmental. No galena noted.75-261.5255.5258.5Breccia infilled with barite.75-273.0258.5260Breccia, as above. Trace galena.75-281.5260261.5Fragmental and irregular bedding at 75° to core axis.75-291.5261264Fragmental cut with veinlets 1/4 inch.75-302.5264267Veinlets of barite, barite vein 5" at 267'.75-313.0269272As above, barite veinlet 2" at 272'. Some fractures rusty, barren of galena except at barite veinlet.75-333.0272273Fragmental, tightly cemented.75-341.0273277As above but more highly fragmental. Barren of sulfides06514.0277280Fragmental. Trace Galena.06523.0280282Fragmental, rounder particles. Trace galena as scattered06532.0	251254Inductor Drecentry Database infrant ratio prime (1)71254255.5Dark grey, fragmental. No galena noted.75-261.5Tr255.5258.5Breccia infilled with barite.75-273.0Tr258.5260Breccia, as above. Trace galena.75-281.5Tr260261.5Fragmental and irregular bedding at 75° to core axis.75-291.5TrBarite veinlet with azurite-malachite.75-302.5Tr264267Veinlets of barite, barite vein 5" at 267'.75-313.0Tr269272As above, barite veinlet 2" at 272'. Some fractures rusty, barren of galena except at barite veinlet.75-341.0Tr272273Fragmental, tightly cemented.75-341.0TrTr273277As above but more highly fragmental.Barren of sulfides06514.0Tr277280Fragmental. Trace Galena.06523.0Tr280282Fragmental, rounder particles. Trace galena as scattered06532.0Tr	251       254       255       Dark grey, fragmental. No galena noted.       75-26       1.5       Tr       .04         255.5       258.5       Breccia infilled with barite.       75-27       3.0       Tr       .20         258.5       260       Breccia, as above. Trace galena.       75-28       1.5       Tr       .40         260       261.5       Fragmental and irregular bedding at 75° to core axis.       75-29       1.5       Tr       .40         261.5       264       Fragmental cut with veinlets 1/4 inch.       75-30       2.5       Tr       .22         264       267       Veinlets of barite, barite vein 5" at 267'.       75-31       3.0       Tr       .20         267       269       Fragmental carbonate, dark grey. Barren of sulfides.       75-32       2.0       Tr       .04         269       272       As above, barite veinlet 2" at 272'. Some fractures rusty,       75-33       3.0       .005       .10         272       273       Fragmental, tightly cemented.       75-34       1.0       Tr       .04         273       277       As above but more highly fragmental. Barren of sulfides       0651       4.0       Tr       .04         277       280       Fragmental. Trace G	254       254       1000000000000000000000000000000000000	254       254       1000000000000000000000000000000000000	254       Redeed Drecert, Journe and the provide an order provide provide and the provide and the provided provided and the provided and theprovided and the provided and the provided and	254       255       Dark grey, fragmental. No galena noted.       75-26       1.5       Tr       .04       .01       .0

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Hole No. JM-19	Project No.			
Property	Length	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
Commenced	Dip	Elev.	True Dip	Logged by
Completed	Objective		Location	Date Logged

Foota	ge		Description	Assay No.	Length	Analysis				Mineralized Zon Length-Grade		
Run	From	То	DETAIL OF ASSAYED SECTION continued		Feet	Au	Aq	Cu	Pb	Zn	BaSO	Lengui-Grade
	2 82	284	Fragmental in part. 3" barite vein, disseminated galena	0654	2.0	.005	1.04	. 32	1.22	.05	6.7	
			in adjoining rock. Malachite, azurite in vein.									
	284	286	Fragmental. Disseminated galena. Barite stringers/veins.	0655	2.0	.005	. 52	.24	1.75	.03	5.7	ł
			Colliform structures - stromatoporoids (?).								ļ	
	286	288	Fragmental, somewhat vuggy. Galena along fractures.	0656	2.0	Tr	.10	.02	. 39	.01	.02	2
	288	290	Fragmental, less so than above. Trace galena, several 1"	0657	2.0	Tr	.06	.01	. 09	.01	0;	2
			openings with terminated quartz coating.	_		ļ						
	290	292	Mottled appearance, healed fragments. Barren of sulfides.	0658	2.0	Tr	Tr	.01	.08	.01	.0	l
	292	294	Fine-grain, fragmental, black argillaceous sections,	0659	2.0	.005	. 34	.24	. 87	.04	1.3	3
			scattered galena crystals.									ļ
	294	296	Fragmental, disseminated galena.	0665	2.0	Tr	.98	.76	2.44	.06	3.74	1
	296	297	Bedded fragments, disseminated galena	0666	1.0	Tr	.54	• 35	. 31	.06	2.9	1
	297	299	Mottled carbonate, dark grey, barren of galena.	0667	2.0	Tr	.06	.02	.03	.02	.04	1
	299	301	Mottled, light grey.	0668	2.0	Tr	.04	.01	.02	.02	.0	3
	301	30 3	Fragmental, 10% galena.	0669	2.0	Tr	1.44	.49	5.36	.05	.94	1
	303	308	Mottled carbonate, light grey. In part fragmental.	0670	5.0	Tr	.06	.02	.04	.01	.04	<u> </u>

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Hole No. JM-20	Project No.	4029				
Property Jubilee Mountain	Length	457'	Lat.	1429.3 N	Hor. Comp. 214.5!	Ver. Comp. 403.5
District	Bearing	2230	Dep.	1560.5 E	Etch. at 65 <sup>0</sup> @ 180' & 457'	Total Recovery %
Commenced Sept. 23,1975	Dip	62 <sup>0</sup>	Elev.	4933.6	True Dip	Logged by R.A. Buckley
Completed Sept. 26,1975	Objective .				Location	Date Logged Sept. 24,1975

ootag	e		Description	Assay No.	Length	Analysis	Mineralized Zon Length-Grade					
un	From	То			Feet					ļ		Lengaronaue
	0	28	Overburden									
	28	51.5	Mackay Shale; dark grey, occasional 1/32" pyrite "beds";									ļ
			banded; dip to the core axis 30 <sup>0</sup> ; conformable to bedding.									
	51.5	67	As above; black; soft; crushed; healed.									
	67	71	As above; banded dark grey; (as in 28-51.5 interval);						<u> </u>			
			dip to core axis 25 <sup>0</sup> .					ļ				
	71	77	As above; Detrital zone; pyrite knots; chowdered; healed.									
	77	88	Detrital zone - shale-carbonate 50/50; mottled texture,		ļ							
			occasional pyrite knot.				<u> </u>				<u> </u>	
	88	94	Jubilee Formation; carbonate light grey; stylolitic structure	s;								
			occasional vug. At 92.5' dark reworked shale band 6" wide.									
	94	122	As above; crushed, fractured, healed with calcite, reddish							-		
			cast, light grey; fractures painted with limonite.									
			At 114' vuggy quartz-filled vein with galena, rusty, drusy									
		<u> </u>	vein.									
	122	138	As above, less fractures; slightly vuggy.									
	138	147	As above but with increase in vuggy porosity; vugs 1/4",1% Ø.									

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Hole No. JM-20	Project No.	4029			
Property Jubilee Mountain	Length	457'	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	223 <sup>0</sup>	Dep	Etch. at	Total Recovery %
Commenced Sept. 23,1975	Dip	62 <sup>0</sup>	Elev.	True Dip	Logged by R.A. Buckley
-	Objective			Location	Date Logged Sept. 24,1975

otage	e		Description	Assay No.	Length Feet	Analysis						Mineralized Zon
n	From	To			reet			ļ			ļ	Lengui-Grade
	147	160	As above; practically no vugs. Mottled appearance,									
		_	fractured with rust in fractures.			ļ					<u> </u>	
	160	171	As above.									
	171	182	As above in texture, slightly darker colour.					-				
	182	204	As above, vuggy vein 1" thick at 183'.		ļ							·
	204	222	As above but grading with depth to lighter colour.						<u></u>			
	22Ż	227	As above, slightly more mottled and with 1/4" vugs. 1% Ø.			ļ					ļ	
	227	2 39	As above, mottled.									
	2 39	243	As above in colour, vuggy, mottled $1/4$ " vugs. 0.5% Ø.								ļ	<u> </u>
	243	251	As above without vugs.						<u> </u>			
·	251	257	As above with vugs $1/8" < 0.5$ % Ø. Brownish areas where									
			fractured.									·
	257	272	Carbonate, sandy appearance, not a clastic rock though.									
			Slightly brown cast due to limonite.									
	272	293	As above. Some vuggy areas, mostly pinpoint << 0.5% Ø,									
			Portions of core of mottled variety.		<b> </b>							
	293	297	Grading to darker grey.		ļ	<u> </u>	<b>_</b>					

## Diamond Drill Record Page 3 of 4

Hole No.	JM-20	Project No.	4029	_		
Property	Jubilee Mountain	Length	457	Lat.	Hor. Comp.	Ver. Comp.
District		Bearing	223	Dep.	Etch. at	Total Recovery %
	Sept. 23,1975	Dip	62 <sup>0</sup>	Elev.	True Dip	Logged by R.A. Buckley
	-	Objective			Location	Date Logged Sept.25,1975

ootag	le		Description	Assay No.	Length Feet	Analysis	,	T	T	· · · · · · · · · · · · · · · · · · ·		Mineralized Zor Length-Grade
un	From	То			reel							
	297	304	Light grey; mottled; slight indication of bedding by slight									
			colour changes. 30 <sup>0</sup> to core axis.									
	304	314	As above. Vuggy, 1/8" < 0.5% Ø. brown/limonite cavity lining	•								
	314	321	As above without vugs.	·		ļ		+			· · · · · · · · · · · · · · · · · · ·	
	321	328	As above with scattered large vugs @ 3/4", limonite coated.									
			< 0.5% Ø.									
	328	337	Grey mottled. Some stylolitic structures.									
	337	347	Dark grey, sandy appearance although rock not of clastic									
			origin. Barite seam at 345', 3" thick. Trace galena at sear	•				4				
	347	358	Light grey, vuggy, 1/4"-1/2". 2% Ø. Most vuggy section		<b> </b>	ļ						
			mapped to date in holes JM-1 - JM-20. Bedding (colour change	s)			ļ					
			60 <sup>0</sup> to core axis.				<u> </u>					
	358	360	As above, non-porous.				ļ					
	360	364	Vuggy as above 347-358. 1.5% Ø.									
	364	369	Dark grey, mottled.							· ·		
<u></u>	369	374	Dark grey/black argillaceous material; 1/32" "clastic"		<u></u>	-				ļ		<u> </u>
			fragments. 60 <sup>0</sup> to core axis bedding. Barite knots.		ļ	ļ	ļ	· · · ·				<u> </u>

# Diamond Drill Record Page 4 of 4

Hole No.	JM-20	Project No.	4029	_		
Property Jul	oilee Mountain	Length	457'	Lat.	Hor. Comp.	Ver. Comp.
District		Bearing	223 <sup>0</sup>	Dep.	Etch. at	Total Recovery %
Commenced	Sept.23,1975	Dip	62 <sup>0</sup>	Elev.		Logged by R.A. Buckley
		Objective			Location	Date Logged Sept. 26/75

Foota	ge		Description	Assay No.	Length	Analysis				,	 Mineralized Zon Length-Grade
Run	From	То			Feet	L					Lengin-Grade
	374	376	Rock as above; barite knots; possibly veins. Trace galena.								 
<u></u>	376	378	Rock similar to above, sandy, except stained brown(limonite).								
	378	384	Grey, dense, somewhat mottled, stylolitic structures.								
	384	390	Dark grey, speckled with white limestone fragments. Appears								
			to be a fragmental limestone. Trace vuggy Ø. < 0.5%.								 
	390	407	Grey, mottled, stylolitic structures - 395-405'. 55 <sup>0</sup> to core								 
			axis.								 
	407	410	As above, slightly darker.		ļ						 
	410	420	Light grey, vuggy. 1.5% Ø, 1/8"-1/4" vugs, limonite coated.								 
	420	429	As above without vugs, some portions mottled.								 
	429	442	As above, scattered vugs.								 
	442	449	Darker grey, scattered vugs.			<b>_</b>					 
	449	457	Dark grey. Very vuggy, 1/4" vugs. 2% Ø. Sample taken.			<u></u>					 
	457		End of hole.			<u> </u>					 
		-	1								 
			``````````````````````````````````````		<u> </u>						 
	1	I		I	1	1	1	l .	1	1 1	I

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Hole No. JM-21	Project No. 402	9'	_					
Property Jubilee Mountain	Length 36	8'	Lat.	1595.8 N	Hor. Comp.		Ver. Comp.	
District	Bearing		Dep.	1354.0 E	Etch. at		Total Recovery %	
Commenced September 27/75	Dip Vertica	l Hole	Elev.	4940.1	True Dip	vertical hole	Logged by T.	Morris
Completed September 29/75			_		Location		Date Logged Sept	ember 28,1975

Footag	je		Description	Assay No.	Length Feet	Analysis		1			····	Mineralized Zone Length-Grade
Elev	From	То			reet			ļ	ļ			L'endui-diane
	0	9	Overburden					ļ				
	9	14.5	Mackay Shale, dark grey, bedded, angle to core axis 60 <sup>0</sup> .					ļ	ļ			ļ
_	14.5	15	Lime bed; light grey									
	15	26	Mackay Shale; bedded, lime lenses @ 1 per 3 ft. Pyrite bed 1	/8".		ļ						<u> </u>
	26	28	Mud seam. Lost core.			l						
	28	38	Mackay Shale, bedded, dark grey, with pyrite beds 1/16"-1/8"	wide.								
	38	40	As above; pyrite knots and disseminated pyrite.									
	40	42	As above; healed.									
	42	43	Lost core.									
	43	50	Detrital Zone; healed.			ļ	ļ		-			
	50	51	Lost core - tube not locked.			L				ļ		
4889	51	60	Jubilee Formation; light grey, well fractured, "rusty"									
			carbonate; some fractures infilled with barite.									
	60	78	As above; less fractured; more massive.							ļ		
	78	80	As above; small, 1/8" to 1/4" vugs. At 82' malachite stain				L				· · · · ·	<u></u>
			in barite.						<u> </u>			
	80	86	As above; more fractures, rusty, infilled with quartz.						<u> </u>			

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Hole No.	JM-21	Project No.	4029			
Property	Jubilee Mountain	Length	3681	Lat.	Hor. Comp.	Ver. Comp.
District		Bearing		Dep.	Etch. at	Total Recovery %
	September 27/75		Vertical Hole	Eley.	True Dip	Logged by T. Morris
	September 29/75		ertrar note		Location	Date Logged September 28, 1975

Footag	je		Description	Assay No.	Length Feet	Analysis		1	1	r		Mineralized Zone Length-Grade
Run	From	То			reet	ļ						
	86	101	As above; less fractures; massive, light grey, chowdered,									
			occasional vug 1/8" to 1" with quartz crystals.									
	101	107	As above, increased number of vugs.									
	107	146	Darker grey; "healed" or chowdered breccia; tiny fractures,									
	ļ		rusty, occasional barite vein.		ļ			+				
<b>.</b>			@ 132', vein breccia with barite and malachite.									
	· .		@ 136', barite vein with galena knot and pyrite.					+				· · · · · · · · · · · · · · · · · · ·
	146	147.5	Barite vein; brecciated; with malachite stain.						ļ			
	147.5	5 148	Shale bed, dark grey (?)						+			
	148	166	Jubilee; medium grey, "mottled", pinkish cast, small		<u> </u>							
		ļ	fractures; rusty; occasional barite blob.		<b>_</b>							
	166	185	As above; light grey; vugs 1/8" to 1/4"; small fractures,		ļ							
			rusty.									
	185	189	As above; darker grey; chowdered zone.						+	ļ		
	189	204	As above; same as in 166-185 section above.	1		ļ				ļ		
	204	210	Darker grey; massive; no vugs, no reddish color.		ļ					ļ		
	210	224	the state is a state with the sector winds up to	3/4";		ļ			<u> </u>	ļ		ļ

# Diamond Drill Record Page 3 of 4

Hole No. JM-21	Project No.	4029			
Property Jubilee Mountain	Length	368'	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing		Dep.	Etch. at	Total Recovery %
Commenced September 27/75	Dip V	Vertical Hole	Elev.	True Dip	Logged by Tony Morris
	Objective			Location	Date Logged September 28, 1975

Footag	e		Description	Assay No.	Length Feet	Analysis	r	·····	T	Mineralized Zon Length-Grade		
Run	From	То			reet							
	210 Cont'	224 d.	@ 213' - 6" barite vein, brecciated. @ 219' 3" barite vein,								-	
			brecciated.			ļ						
	224	236	Slightly darker; more fractures; "healed" look, less vugs									
			(relatively few); pinkish.						+			<u>_</u>
	2 36	244.5	Darker grey; mottled; no vugs; stylolitic structures.									
			Angle to core axis - 60 <sup>0</sup> .							<u> </u>		<u> </u>
	244.5	249	Light grey carbonate; massive; many small vugs 1/16" - 1/2".				<b> </b>	+				
	249	259	As above; no vugs; orange weathered bands at 252' and 253'.			+						
			@ 253' blob of barite with galena and malachite; azurite.					+	+			+
	259	263	As above; darker grey with light grey blebs; small fractures	;					+			
			reddish.									
	263	267	Light grey; fractured; healed with barite. @ 264' pink cast			+		+	+	1		
	267	276	Dark grey; 1/64" vugs scattered. Trace porosity. Light									
			coloured blebs, 1/8".		+		1		+	1		+
	276	285	Light grey; increase in vugs; Trace porosity.						1			
	285	295	Dark grey; mottled appearance. Trace stylolitic structures.				1		+	+		
<del>4</del>	<u> </u>		1/2" vugs. Bands of dark carbonate. 60° to core axis.		+	+	+	+	+	+	+	+

# Diamond Drill Record Page 4 of 4

Hole No.	JM-21	Project No.	4029				
Property J11	bilee Mountain	Lenath	368'	Lat.	Hor. Comp.	Ver. Comp.	
District		Bearing		Dep.	Etch. at	Total Recovery	%
				Eley.	True Dip	Logged by	T. Morris
	September 27/75 September 29/75		rtical hole		Location	Date Logged	September 29/75
Completed	September 29/15	Objective			LUCATION		

Footag	je		Description	Assay No.	Length Feet	Analysis	·	1	1	1	· ····	Mineralized Zon Length-Grade
Run	From	То			reet			ļ	-			
	295	318	As above, becoming lighter with depth. Lower 5 ft. very fin	e								
			vugs - fossiliferous ?						+			· · · · · · · · · · · · · · · · · · ·
	318	328	As above, more of the fine porosity filigree texture.									
			Fossil origin(?)		<u> </u>					+		<u> </u>
	32.8	336	Darker. Porosity as above and scattered vugs 1/2".		 						 	+
	336	338	Light grey. 2% porosity. Fossil origin.			ļ						
	338	342	As above. 318-328.					<u> </u>		-		+
	342	350	Darker grey, larger scattered vugs up to 1/4". Trace									
			porosity. Banded. 60 <sup>0</sup> .									
	350	357	Slightly lighter, massive, fractured with rust on fractures.			<u> </u>						
	357	359	Fractured breccia section; highly weathered with limonite		<u> </u>					+		
			matrix.									+
	359	362	Light grey, massive, 1/16" vugs, hairline fractures with									
			limonite (pink_cast).							-		
	362	368	Slightly darker than above. Rusty vugs up to 1/4".		<u> </u>	_						
	368		End of Hole						·			
					ļ						ļ	

# Diamond Drill Record $_{\tt Page 1 \ OF 5}$

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Hole No. JM-22	Project No.	4029					0.07 5
Property Jubilee Mountain	Length	373'	Lat.	1595.8 N	Hor. Comp.	239.7	Ver. Comp. 285.7
District	Bearing	1800	Dep.	1354.0 E	Etch. at		Total Recovery %
Commenced September 30/75	Dip	500	Elev.	4940.1	True Dip		Logged by R.A. Buckley
Completed October 1/75	Objective				Location		Date Logged October 2/75

Footag	je		Description	Assay No.	Length	Analysis	1		·····	· · · · · ·	1	Mineralized Zon Length-Grade
Elev	From	То			Feet	ļ						Lengui-Graue
	0	14	Overburden									
	14	67	McKay Shale. Dark grey, typical. Bedding 30 <sup>0</sup> to core axis									
			Lime member; grey at 29'; ] foot thick. Rest varved bedding							ļ		<u> </u>
			No lenses. Occasional lime bed with blebs of pyrite.			+						
	67	83	As above; occasional 1/64" bed of Pyrite and conformable									· · · · · · · · · · · · · · · · · · ·
			with varves.									
	83	97	Detrital Zone. Mottled limestone marbilized with black									
			argillaceous material, similar to JM-20.				<u> </u>	· · ·				
4866	97	112	Jubilee Formation. Limestone, light grey, slightly mottled			-						
<u> </u>			occasional vug. @ 99' 3' barite vein. Also massive zones.							<u> </u>	<u> </u>	
	112	126	Dark grey - argillaceous beds associated with stylolitic									
			structures. 30° to core axis. Rest of rock light grey.							<u> </u>		
	126	131	Rock type similar to above but fractured; some angular						<b> </b>			
			fragments with barite infill.			+			·	+		
	131	143	Light grey, more highly fractured with 4" barite blebs;		·			<u> </u>	+			·
<u></u>			could be veins; chowdered core.			+			-	+		
	143	157	Dense limestone, light grey, fractured with hairline fractured	res.								

DEKALB MINING CORPORATION

Hole No.	JM-22	Project No.	4029	_		
-	Jubilee Mountain	Length	373'	Lat.	Hor. Comp.	Ver. Comp.
District		Bearing	1800	Dep.	Elch. at	Total Recovery %
Commence	September 30/75	Dip	50 <sup>0</sup>	Elev.	True Dip	Logged by R.A. Buckley
Completed	<b>-</b>	Objective			Location	Date Logged October 2/75

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Footag	je		Description	Assay No.	Length Feet	Analysis		1	1	<u>,                                     </u>		Mineralized Zon Length-Grade
Run	From	То										
	143 Cont'	157 d.	Cream coloured fractures similar to crush zone in JM 10 at 1	83'								
	157	186	Similar to above but not as highly fractured. Dense, hard,				· · ·					
			tends to break up to angular fragments during coring.		+	<u> </u>			+			
. <u></u>	186	195	As above, more highly fractured with limonite painted fracs.									
			Drillers report sand seam. 5' of core lost in this interval	ļ					-			
	195	202	Similar to above, not as highly fractured. 3' of core lost.									
	202	208	Light grey, hard, dense, fractures as above at 186-195.									· · · · · · · · · · · · · · · · · · ·
	208	220	Colour similar to above, hard, dense, but 1" mottling.									ļ
			(Reworked during lithification ?)		ļ					<u> </u>		<b></b>
	220	223	Fracture, healed with barite, wine-pink cast.			<b>_</b>			-			<b>_</b>
	223	2.30	As above, more wine-pink cast in with barite.									
	230	233	Darker grey, mottled and fractured.									<u> </u>
	233	234	Barite vein, with galena 1/4" thick on boundaries.		<u> </u>							<u> </u>
	234	236	Dark grey, as at 230-233.			<u> </u>	ļ					<u></u>
	236	240	As above, 35' core lost.									
	240	242	Rock as above, broken to 2-inch.	ļ		4						<u> </u>
	242	244	As above, broken to ½", recovered as crushed gravel.									

### Diamond Drill Record Page 3 of 5

Hole No.	JM-22	Project No.	4029				
Property	Jubilee Mountain	Length	373'	Lat.	Hor. Comp.	Ver. Comp.	· · · · · · · · · · · · · · · · · · ·
District		Bearing	180 <sup>0</sup>	Dep.	Etch. at	Total Recovery %	
	September 30/75	Din	500	Elev.	True Dip	Logged by	R.A. Buckley
	October 1/75	Objective			Location	Date Logged	October 2/75
Completed	october 1/75	Objective					

tage		Description	Assay No.	Length	Analysis	s					Mineralized Zo
n From	То			Feet			ļ				
244	252	As above, more highly, broken, 6' core lost. Fractures									
		highly limonited.									
252	257	Recovered 1' crushed rock only. 4' core lost. Drillers		<u> </u>							
		reported fault zone at 257', open hole, drill rods dropped									
		+ 3 feet.									
257	267	As above, dark grey, highly fractured, hard, dense, rock.								<u> </u>	+
		5' core lost.			+			+			
267	274	As above, slightly less fractured.					-	+		+	
274	278	As above, less fractured than above, grading to mottled					+	+		<u> </u>	+
		texture.			-						
278	286	Mottled, dark grey, occasional vug. Mottling could be of			1		+	+			
		fracture origin.						1	1		
286		As above with brown patches. Rock could be of algal origin.				1			-	1	
290		2 inch barite seam.									
290	296	As above, brown, irregular patches more common, barite ½" patches, perhaps replacing something sub-spherical.									
-		As above, increasing in fractures, not as organic looking aa.									
- 296	304	As above, increasing in fractures, not us organic in									

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### Diamond Drill Record Page 4 of 5

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Hole No. JM-22	Project No.	4029	-			
Property Jubilee Mountain	Length	373'	Lat.	Hor, Comp.	Ver. Comp.	
District	Bearing	180 <sup>0</sup>	Dep.	Etch. at	Total Recovery %	
		500	Elev.	True Dip	Logged by	R.A. Buckley
Commenced September 30/75				Location	Date Logged	October 8/75
Completed October 4/75	Objective			Location		

Footag	je		Description	Assay No.	Length Feet	Analysis	 1	T	<u>,                                     </u>		Mineralized Zon Length-Grade
Run	From	То			+	+	 				
	304	312	Medium grey, appears to be of organic origin, white				 ļ	ļ	-		
. <u></u>			sub-spherical ½" shapes, often with vug center.		<b> </b>		 				· · · · · · · · · · · · · · · · · · ·
	312	318	Medium to light grey. Dense, fractured. 2" barite veins				 				
			at 316' and at 318'.				 			· · · · ·	
	318	32.4	As above, vuggy sections, stained with limonite at 318-320.				 				
·			Rest of section dense, fractured.								
	324	32.8	Medium grey, organic appearance as above, somewhat mottled.				 _				
	32.8	329	Similar with limonite stain and purple cast.				 				
	329	335	Grey, dense, many small fractures painted with limonite.				 	-	<u> </u>		
	<u> </u>		At 335' small patch fractured carbonate with galena barite		+		 				
	<u> </u>		matrix. 30 <sup>0</sup> to core axis.			+	 				
	335	339	Grey, stained with limonite. Dense, hard as above @ 329-335	•			 	-			1
	339	343	Barite, massive galena zone.			-					+
	343	345	Grey, dense, hard, highly fractured with limonite on			+	 		1.		
			fractures. No mineralization.				 				<u></u>
	345	347	Purple stain and limonite crushed zone. Trace galena.			-	 	+			· · · ·
	347	349	Grey, a scattering of galena crystals.				 				

### Diamond Drill Record Page 5 of 5

Hole No. JM-22	Project No.	4029				
Property Jubilee Mountain	Length	373	Lat.	Hor. Comp.	Ver. Comp.	
District	Bearing	1800	Dep.	Etch. at	Total Recovery %	6
Commenced September 30/75	Dip	50 <sup>0</sup>	Elev.	True Dip	Logged by	R.A. Buckley
Completed October 4/75	Objective			Location	Date Logged	October 8/75

Footag	je		Description	Assay No.	Length Feet	Analysis		 	Mineralized Zone Length-Grade
Run	From	То			reel		 		 
	349	355	Barite vein, some galena.		ļ	ļ	 	 	 
	355	361	Highly fractured. Rock has sand-like texture although				 	 	 
			composed of carbonate. Barite vein at 360' with galena.		ļ			 	 
	361	363	Sandy appearance as above. Not fractured. No limonite.			ļ			 · · · · · · · · · · · · · · · · · · ·
	363	367	Grey-tan, dense section. Fine texture.				 		
	367	373	Medium grey. Organic-clastic texture.						
	373		End of hole.		ļ		 		 
			Drill stem stuck in hole and twisted off 10 feet off			<b>_</b>	 		
			bottom of hole.						 
	1						 		
	1	+			1 .				5

Hole No. JM-22	Project No.			
Property	Length	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
Commenced	Dip	Elev.	True Dip	Logged by
Completed	Objective		Location	Date Logged

Foota	ge		Description	Assay No.	Length	Analysis					•	Mineralized Zone Length-Grade
Run	From	То	DETAIL CORE DESCRIPTION		Feet	Au	Ag	Cu	Pb	Zn	BaSO	Length-Grade
	340	342.5	Barite-Galena vein.	0660	2.5	.005	1.06	.26	16.02	.02	28.3	5
-	342.5	343.5	Carbonate, somewhat fragmental, disseminated galena.	0661	1.0	Tr	.56	.59	1.24	.01	.2	5
	343.5	345	Carbonate, mottled texture, hard, dense. Rusty on	0662	1.5	Tr	.04	.02	.10	.02	.2	5
			fractures giving overall limonite colour. Pink/wine colour		ļ						ļ	
			near base.		<u> </u>							
	345	347	Carbonate as above but pink/wine colour. Not assayed.									
	347	349	Carbonate, light grey. Mottled. Barite knots.	0663	2.0	Tr	.68	.48	.04	.02	17.1	8
	349	355.5	Barite 100%.									
	355.5	357	Carbonate, dark grey. Mottled appearance. Barren of	0664	1.5	Tr	.06	.02	.12	.01	.0	5
			sulfides.									
	357	360	As above. Core badly broken up. One foot lost.									
	360	361	As above, 6" barite section. Some galena associated with		ļ							
	19		barite.									
	361	366	As above but some fragmental carbonate.									
	366	373	Fragmental carbonate, dark grey. Sample polished at 370'.		ļ							
					ļ		L					
				ļ	<b>_</b>	ļ						
	1	1		1	1	1	1	1	1		1	1

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Hole No. JM-23 Pro	roject No. 4029						
Property Jubilee Mountain Le	ength 267'	L	.at.	1643.8 N	Hor. Comp.	Ver. Comp.	
	earing 240	azimuth r	Dep.	1380.7 E	Etch. at 61 <sup>0</sup> @ 204	Total Recovery %	
Commenced October 5, 1975 Di	F 0	·	Elev.	4960	True Dip	Logged by	R.A. Buckley
Completed October 7, 1975 Of					Location	Date Logged	October 8,1975

Footage			Description	Assay No.	Length Feet	Analysis					1	Mineralized Zone
Elev	From	То	-		reel	<b> </b>	ļ					
	0	38	Overburden containing McKay shale.									
4928	38	67	Jubilee Formation, light grey, fine grain, dense, scattered									
			small hairline fractures.									
	67	70	Similar to above, but vuggy. Stylolitic structures.									
	70	77	Similar to above but blue-grey/medium grey without vugs.				ļ		+			-
			Some healed fractures 1/4".			ļ						
	77	91	Grey with 1/2" vugs with calcite and brown staining in vugs.		ļ							<u></u>
			Porosity 2%. Sample taken at 82' to identify layering and									
			vug filling.									+
	91	112	Grey, without vugs.			+						+
	112	135	Light grey, vuggy, porosity 1.5%, 1/8" vugs. Rock probably									+
			of reefal origin.					-	+			
	135	142	Barite zone with galena. Mottled appearance. Does not			+						
			appear to be a vein. Also contains pyrite.				· ·					
	142	145	Similar to above. No mineralization.							+		
<u> </u>	145	174	Mild crackled appearance with mostly old healed fractures.				+					
	174	176	Barite-calcite zone. Scattered szurite-malachite stain.					+		+		

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Hole No.	JM-23	Project No.	4029			
	Nubilee Mountain	Length	267'	Lat. 1643.8 N	Hor. Comp.	Ver. Comp.
District		Bearing	240° azim	nuth Dep. 1380.7 E	Etch. at 61 @ 204	Total Recovery %
	d October 5,1975	Dip	580	Elev. 4960	True Dip	Logged by R.A. Buckley
	October 7,1975	Objective			Location	Date Logged October 8,1975

Footage			Description		Assay No.	Length Feet	Analysis			 1	T	Mineralized Zone	
Run	From	То				reet	ļ		+	 			
	176	202.5	Light grey, hard crackled appearance, healed with	h calcite.							<u> </u>		
			Organic appearance.				ļ		· · ·	 			
(	202.5	205.5	Barite vein or patch with disseminated galena. )	·····				ļ		 			
(	205.5	206	Grey, dense, some stylolitic structures.	See		ļ				 	ļ	<u> </u>	
(	206	209	) Barite vein, trace galena.	Detailed									
(	209	210	Limestone, grey, dense.	Section			ļ						
(	210	211.5	Barite vein, trace galena.				ļ			 	ļ		
	211.5	228	Dark grey, vuggy sections at 212-213; 223-224;						-				
			227-228 badly broken with limonite.					ļ		 			
	228	235	Barite. Trace galena, malachite.							 			
	235	237	Limestone, grey.					ļ		 			
	237	238	Barite seam.							 			
	238	248	Grey-brownish, sandy appearance.					<u> </u>		 			
	248	267	Darker grey, hard, dense, mottled, organic appearing	gs.						 	ļ		
			Stylolitic structures. 30° to core axis.							 			
		267	End of hole.				<u> </u>	<u> </u>		 	+		
					<u></u>					 			

Hole No. JM-23	Project No.	<u>_</u>		
Property	Length	Lat.	Hor. Comp.	Ver. Comp.
District	Bearing	Dep.	Etch. at	Total Recovery %
Commenced	Dip	Elev.	True Dip	Logged by
Completed	Objective		Location	Date Logged

Footage			Description		Length	Analysis	i ,		<del>.</del>	<b>T</b>	Mineralized Zone	
	From	То	DETAIL CORE DESCRIPTION		Feet		Ag	Cu	Pb	Zn	BaS04	Lengin-Grade
	135	136	Boundary of Barite-Galena vein, contains pyrite, tr. galena.	0672		Tr	.10	.13	.01	.02	3.27	
	136	138	Barite vein, disseminated galena, pyrite. HCl etch				ļ					
			indicates barite vein contains 10% calcite.	0673		Tr	.50	1.19	.01	.06	53.79	
	138	140	Barite vein as above.	0674		Tr	.70	. 87	.01	.04	58.69	
	140	142	Barite vein as above.	0675		Tr	.46	. 40	.005	.02	50.43	
	143	143	Barite vein as above.	0676		Tr	.62	.51	.01	.05	29.43	<b>×</b>
	173	176	Barite zone, no sulfides noted.	0677		Tr	.06	.11	.04	.01	84.78	8
	203	204	Barite material and carbonate breccia with galena in	0678		Tr	.36	.23	.53	.01	46.21	
	_		breccia matrix.							<b> </b>		
	204	206	Barite zone. Tr. galena.	0679		Tr	.14	.10	.47	,005	64.38	
	206	207	Carbonate. No sign of sulfides.									<u> </u>
	207	210	Barite 100%.			_						
<u></u>	210	211	Carbonate.	0680		Tr	.06	.02	.45	.005	5.83	<u>.                                    </u>
	211	212.5	Barite zone with scattered disseminated galena.	0681		Tr	.04	.01	. 37	.005	78.91	
	212.9	5 228.5	Fragmental carbonate.									<u> </u>
	228.	5 235	Barite 100%. Trace malachite, azurite on fractures.								<u> </u>	

### Diamond Drill Record Page 2 of 2

Hole No. JM-	-23	Project No.			
Property		Length	Lat.	Hor. Comp.	Ver. Comp.
District		Bearing	Dep.	Etch. at	Total Recovery %
Commenced		Dip	Elev.	True Dip	Logged by
Completed		Objective		Location	Date Logged

Footage Description		Description	Assay No.		Analysis						Mineralized Zone	
Run	From	То	DETAIL CORE DESCRIPTION Continued		Feet				ļ			
	235	237	Carbonate.			ļ						
	237	238	Barite 100%.									
											·	
	1											
	1											
·		-										
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