

drill log cover sheet

575165

Project **ELLIOTT BAY** Prospect **WART HILL** Hole **EBT-89-WH12A**
 Co-ordinates **13050 mN 9850 mE** Logged by **G Twomey/R Poltock**

AMG reference
 County
 Parish
 Portion
 Elevation **150.7m**
 Declination **-70°**
 Direction **090°G 077M T**
 Commenced **4.3.89**
 Completed **20.3.89**
 Total depth **359m**

Drilling company **Diamond Drilling Tasmania P/L**
 Rig type **Longyear 38**
 Drilling type **Diamond**
 Hole size
 Core size **HQ:0-83.6m, NQ:83.6-359m**
 Depth of casing
 Assay sample type **Half core**
 Water table
 Water yields

Borehole survey

			Type: Eastman								
Depth	Dip	Brg.	Depth	Dip	Brg.	Depth	Dip	Brg.	Depth	Dip	Brg.
0m	70.0	077	83m	64.0	049	169m	61	042.5	256m	56.5	039.5
30m	68.0	065	103m	63.0	045	190m	59	041	277m	55.5	038
45m	67.0	057	118m	62.0	045	214m	58.5	040	301m	54.0	038
59m	67.0	054.5	148m	62.0	044	235m	57.5	039.5	325m	53.5	037
									359m	53.0	040

Notes

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From To Code Description mineralization in bold type

0.0	136.0	RHYOLITE QUARTZ PORPHYRY
<p>Fine grained (aphanitic), weakly schistose, slightly weathered to fresh, light greenish grey, non magnetic rhyolite which contains 5% rounded quartz phenocrysts up to 3mm in diameter.</p>		
<p>A pervasive, moderately strong sericite/silica alteration has given the rhyolite a bleached appearance. Elongate 'wispy' phenocrysts of probable biotite/<u>±</u>hornblende have been replaced by sericite/chlorite.</p>		
<p>Except for fracture density the rock appears homogenous over the 136.0m interval.</p>		
<p>Several vein types occur throughout the unit, including coarse crystalline quartz, microcrystalline laminated quartz and quartz calcite. Veins are scattered, variably orientated and contain traces of sulfides.</p>		
<p>The weakly developed schistosity as defined by the elongate, sericite replaced phenocrysts is orientated approximately 30° to the core axis.</p>		
<p>0-11m: Oxidized. 11-20m: Partly oxidized. 20m: Fresh.</p>		
<p>0-13m: The core is moderately to highly fractured with a typical fracture density being 10/m. Minor highly broken zones up to 20cm wide are scattered throughout.</p>		
<p>39.8-41.8m: More highly broken section cut by numerous networking calcite/clay veinlets. Trace GALENA/PYRITE/±SPHALERITE is associated with the veining and on weakly sheared fracture surfaces. Possible fault zone.</p>		
<p>54.5-62.5m: Highly broken section containing crystalline calcite veins up to 4cm wide. Trace of galena/sphalerite is associated with the veining. Increase in sericite carbonate alteration is reflected in more intense foliation. Foliation surfaces are frequently coated with fine pyrite. Possible faults occur at 59.5m at 40° to core axis.</p>		
<p>61.70-62.50m: 45° at core axis.</p>		
<p>67-75m: Laminated microcrystalline quartz veins, <20mm thick, variable orientation 0-90° to core axis,</p>		

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			<p>occasionally with fine pyrite, galena and sphalerite. The veins have in some cases been deformed by the foliation.</p> <p>79-83m: Quartz calcite veins and hydrothermal breccias with a carbonate matrix.</p> <p>131.5-136m: Core is very broken with pug zones, sericitic shears and quartz chlorite galena sphalerite veins.</p>
136.0	138.4		<p>EPICLASTIC</p> <p>Fine to medium grained, composed predominantly of quartz and feldspar crystals with scattered lithics ($\leq 5\text{mm}$), grey/green color. Compositional layering and foliation is at 30° to core axis.</p> <p>Moderate chlorite/sericite, carbonate alteration with fine grained pyrite stringers ($<1\%$).</p>
138.4	150.5		<p>EPICLASTIC - PUMICE TUFF</p> <p>Predominantly a matrix supported pumice tuff with lens of carbonate and shale. The tuff matrix is similar to the above unit, pumice clasts are chloritized and $\leq 40\text{mm}$.</p> <p>140.8m: Carbonate lens 4cm thick, fine grained white with scattered blebs of pyrite. The lens is at 40° to core axis.</p> <p>147.8-148.2m: Sericitic/chloritic shale lens or zone of intense alteration. The interval is associated with shearing and quartz calcitic sericite veining.</p>
150.5	185.9		<p>EPICLASTIC - PUMICE TUFF</p> <p>Coarse grained, matrix supported pumice tuff. Pumice fragments are dark green (chloritized) $\leq 6\text{cm}$ set in a medium grained crystal tuff matrix. Moderate chlorite/carbonate alteration occurs throughout the unit.</p> <p>Scattered quartz/calcite veinlets.</p> <p>154.8-155.2m: Minor pyritic fragments $\leq 5\text{mm}$ in a tuffaceous sandstone lens.</p> <p>155.8-156m: Well sorted quartz rich tuffaceous sandstone with pyrite blebs, bedding at 35° to core axis.</p> <p>165m: Tuffaceous sandstone bed, 35° to core axis.</p>

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			170-171.5m: Tuffaceous sandstone bed.	
185.9	196.2		TUFFACEOUS SANDSTONE Gradational contact with the above pumice tuffs. The sandstone is medium grained, cream-grey color, consisting of quartz grains ≤ 3 mm and scattered rhyolite lava fragments ≤ 10 mm. The rock is massive to weakly foliated, foliation is more intense between 188.5-190.5m. Sericitization occurs throughout but is more intense between 188.5-190.5, associated with numerous quartz calcite veins at 80° to core axis. Coarsely crystalline quartz, calcite chlorite/sericite veining is common throughout the sandstone.	
196.2	217.5		PUMICE TUFF Gradational contact with above tuffaceous sandstone. The tuff consists of pumice fragments ≤ 40 mm set in a tuffaceous sandstone matrix. Alteration is mainly chlorite and lesser carbonate. Foliation is moderate at 55° to core axis. Minor quartz calcite veining occurs throughout.	
217.5	259.1		TUFFACEOUS SANDSTONE Medium grained, cream color, consisting of quartz crystals set in a fine matrix. Quartz grains are bimodal, 1mm and 4mm diameter. The sandstone is massive to weakly foliated 65° to core axis lens of carbonate or intense carbonate alteration occurs throughout. The pervasive alteration is sericite carbonate. Calcite veinlets ≤ 1 mm occur throughout. 225.75-226.10m: Intense carbonate alteration or fine grained marble lens. Minor pink manganiferous? carbonate. 227-227.1m: Carbonate lens. 232.2-233.3m: Carbonate lens, white.	

geology

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			<p>237.3-238.5m: Brecciated with an increase in calcite veinlets and a sericitic shear at 45° to core axis.</p> <p>253.5-257.5m: Patches of intense carbonate alteration with some pink manganese carbonate?</p>
259.1	259.8		<p>CONGLOMERATE/BRECCIA</p> <p>The conglomerate is coarse grained <50mm, matrix supported (matrix tuffaceous quartz sandstone). Clasts consist of chloritized pumice, carbonate, silicified volcanics.</p> <p>Minor pyrite galena sphalerite occurs as fine grained coatings on clasts.</p> <p>Weak sericite alteration occurs throughout.</p>
259.8	263.0		<p>TUFFACEOUS SANDSTONE</p> <p>Fine-medium grained, equigranular, well sorted quartz grain sandstone, possibly younging down hole (east facing).</p> <p>The rock is massive to weakly foliated at 60° to core axis, bedding at 45-60° to core axis. Weak sericite alteration.</p>
263.0	268.55		<p>TUFFACEOUS SANDSTONE WITH CHERT, SHALE AND CARBONATE LENSES</p> <p>Fine-medium grained, poorly sorted, quartz grains <3mm set in abundant matrix. Scattered lenses of shale marble and chert occur between 266-268.55m.</p> <p>Alteration predominantly sericitic.</p> <p>Calcite and quartz veinlets occur throughout.</p> <p>Foliation weak at 65° to core axis.</p> <p>266-267m: White marble lens with minor very fine pyrite and galena.</p> <p>267.4-267.48m: Grey cherty marble lens 60° to core axis.</p> <p>268.5-268.55m: Sericitic shale.</p> <p>Sequence is fining downhole, contact with the overlying unit at 268.55m is sharp.</p>

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268.55	269.7		<p>CONGLOMERATE/TUFFACEOUS SANDSTONE</p> <p>Medium to coarse grained, cream colored, massive to weakly foliated, bedding at 50° to core axis. The unit grades/youngs downhole into a well sorted sandstone with increasing carbonaceous shale partings.</p> <p>Clasts in the conglomerate comprise:</p> <ul style="list-style-type: none"> - Rhyolitic quartz porphyry, subrounded <60mm. - Sericitized pumice, wragged outline.
269.7	271.0		<p>SHALE</p> <p>The shale is carbonaceous, calcareous and pyritic with fine tuffaceous sandstone interbeds.</p> <p>Bedding is at 65° to core axis, load structures occur at 269.8m indicating a downhole facing (east facing).</p> <p>Pyrite content <3% occurs as discontinuous lenses.</p>
271.0	272.5		<p>TUFFACEOUS SANDSTONE</p> <p>Fine to medium grained, grey-green color, well sorted with occasional subrounded clasts.</p> <p>Alteration - Patchy carbonate veining - 50mm quartz calcite vein at 271.3m.</p> <p>Pyrite occurs as scattered blebs <5mm.</p>
272.5	274.2		<p>LIMESTONE</p> <p>Dark grey carbonaceous with disseminated pyrite and lenses of weakly sericitized tuffaceous sandstone.</p> <p>The rock is massive to jointed rather than foliated.</p>
274.2	275.8		<p>MARBLE</p> <p>A mixed sequence of cream marble, marble conglomerate, tuffaceous sandstone and vitric tuff.</p> <p>The marble conglomerate consists of lenticular fragments ranging in size from 3-40mm. The conglomeratic texture may be due to soft sediment deformation.</p>

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			Alteration is mainly sericitic, best developed in sandstone lenses.
			274.5m: 100mm lense or clast of hematitic sinter?, irregular vuggy texture, minor pyrite is concentrated on the fragment matrix interface.
275.0	278.75		TUFFACEOUS SANDSTONE Fine to medium grained sandstone with lenses of fine siltstone/vitric tuff. Dark grey limestone occurs as discontinuous lenses/blocks ≤ 130 mm and may represent disrupted beds.
278.75	279.4		MARBLE and MARBLE CONGLOMERATE Fine grained, white, with a conglomerate texture which may be due to soft sediment deformation.
279.4	282.2		CONGLOMERATE Coarse grained with clasts ≤ 150 mm, matrix supported. Clasts are angular to sub-rounded and include: Silicified quartz porphyritic rhyolite; Pumice; Banded chert and pyrite; Pyrite ≤ 10 mm. Foliation is weak at 70° to core axis, bedding $75-80^\circ$ to core axis.
282.2	291.0		PUMICE TUFF and TUFFACEOUS SANDSTONE The rock is poorly sorted, medium grained, consisting of quartz and feldspar grains in a finer tuffaceous matrix, with scattered pumice fragments. Weak sericitic alteration occurs throughout, more intense in pumice fragments. Intense silicification and quartz veining occurs between 283.25-283.50m. Bedding ranges between $20-65^\circ$ to core axis, foliation is weak 65° to core axis.
291.0	322.5		TUFFACEOUS SANDSTONE Well sorted equigranular sandstone, composed of quartz and feldspar grains in the size range 1-3mm. Bedding at 294.3m is at 52° to core axis, foliation is weak. Silicification is greater than sericitization throughout the interval, intense

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322.5	343.2	<p>silicification is associated with quartz stock working at 299-302.70m, 307-308m, 310-311m, 319-319.5, 323.2-323.7m. Very minor pyrite is associated with the silicification.</p>
		<p>PUMICE TUFF</p>
		<p>Similar to 282.91-291m.</p>
		<p>Silicification is greater than sericitization and is most intense between 323.2-323.7m, 327.85-329m.</p>
		<p>Sphalerite/galena mineralization is confined to a 1cm quartz vein.</p>
		<p>Crush and shear zones occur at:</p>
		<p>324.75-324.85m: 70° to core axis. 342.60-343.20m: Associated with intense sericite alteration.</p>
343.2	359.0 (EOH)	<p>QUARTZ PORPHYRITIC RHYOLITE</p> <p>Medium grained quartz porphyritic with sericitized mafics, phenocrysts (2mm) in a fine grained silicified ground mass.</p> <p>The porphyry is massive to weakly jointed. Mineralization, is restricted to minor disseminated pyrite and scattered quartz veinlets with a trace of galena/sphalerite.</p>