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Drill Hole Cover Sheet

Hole	**FTD027**
Date	Nov-06
Section No	445950mE
Geologist	D. Evans
Tenement No	EL26/2004
Project	Fire Tower
Prospect	Fire Tower

Collar Details

Locational Accuracy	+/- 0.1m		
AMG Zone	AGD66	Grid Name	
AMG Easting	445947.5	Grid Easting	
AMG Northing	5405113.7	Grid Northing	
AMG Azimuth	177	Grid Azimuth	
AMG RL	630.3	Grid RL	

Inclination	-50
Total Depth	60.1

Drilling Company	Boart Longyear		
Rig Type	Onram 1000 (diesel pack)		
Drill Type	diamond	Drill diameter	NQ2
Start Date	2/11/2006	Finish Date	10/11/2006

Reason for Drilling	Infill drilling, difficult access on spur point. Same pad as FTD026
Reason for Termination	Reached design depth.
Summary	0-20.55m: Intense silicic altered quartz vol'genic sandstone. 20.55-28.45m: Black-grey, altered, veined, siltstone/shale. 28.45-29.5m: weathered puggy shear zone. 29.5-50.0m: Cream and grey silicified, tuffaceous silty sandstone. 50.0-60.1m: Grey, quartz 'greywacke' volcaniclastic. Most Au associated with part oxidised sulphidic veins, especially around lithologic contacts..
Water level	
Water Flow	Nil return all hole.
Gear remaining in hole	3m HQ collar casing
Downhole surveys	Survey method: Reflex Instrument digital multi-shot (corrected for 14 degree mag deviation)

Depth	Azimuth	Inclination	Depth	Azimuth	Inclination
60.00	176.70	-49.8			

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Geological Log

HoleID	FTD027		
Project	Fire Tower	East	
Prospect	Fire Tower	North	
Grid	AGD66	RL	
		Proj.	AMG

Azimuth		Boart Longyear
Inclination		NQ2 Diamond
Total Depth		

Logged by	DAE	
Drilled By		
Drill Type		
Drill Date		

		massive
		hatch
		pervassive
		stipple
		disseminated
		swiggle
		narrow vein

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA°	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsize	Description	Alteration: Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
RUBBLE/SCREE								0-0.7m: Rubble, core loss zone; few fragments of weathered, qtz-rich volcaniclastics; overdrilled.												
0	1																			
1	2	Py. vein at 2.2m			= 27°			0.7-20.55m: Completely to partially weathered, oxidised, broken veined, colour-mottled, medium to dark brown, reddish-brown, light green, strongly silicified, sericitised fine-grained, qtz-rich ± qtz-phyric volcanogenic sandstone; massive, indistinctly bedded throughout with original lithology frequently obscured by silicification and sericitisation; grading irregularly into fine to very fine-grained, altered volcaniclastic siltstone to rhyolitic tuff; sandstone lenses are matrix-supported with sub-rounded clasts up to 1mm in diameter; common dark brown to red-brown Fe-oxides partially to completely replacing generally as selvedges around fractures/veins of Py.; vein selvedge contacts with fresh/el rock are sharp, undulating; minor red to red-brown hematite associated with Fe-oxide staining and selvedges; sparse black ? Mn oxides in and adjacent to fractures; strong supergene Fe oxide alteration to 11.4m, then Fe oxides generally related to pyrite vein selvedges and as thin coatings on joint planes.								1% Py. as thin veins				
1	2	Boco = 2.6m																		
2	3																			
3	4																			
4	5															Tr. Py. as diss/agg.				
5	6																			
6	7																			
7	8																			
8	9	8.4m Fe oxide infilled fracture			= 35°															
9	10															Trace Py. ± Apy?				
10	11															0.2-0.5% Py. as microveins				
11	12															0.3-0.5% Py. as microveins + aggregates.				
12	13							Patchy, locally strong, texturally-destructive K-spar alteration.												
13	14							Sparse white-cream carbonate ± qtz. in microveins and stringers from 13.15-14.2m.												
14	15															Trace Py. as veins + microveins				
14.6-14.8m Py. veins					= 0-10° to CA											1-2% Py. in veins ‖ to CA				
15	16																			
16	17																			
17	18							Tending to increasingly K-spar altered, semi-pervasive texturally destructive.								0.3-0.5% Py. veins/microveins				
18	19							Tending to coarse-grained, matrix-supported, volcanogenic sandstone to conglomerate near down hole contact.								Black Mn oxides? replacing				
19	20							Conformable sharp irregular contact.								Trace Py. ± Apy. veins.				
20	21							20.55-25.1m: Partially weathered, partially oxidised, micro-fractured veined, darkest black-grey, stained brown, variably sericite ± carbonate-? sphene spotted very fine-grained carbonaceous siltstone-shale; poorly preserved bedding laminae; deformed, disrupted with strong fine Py. veining, usually with Fe oxides as selvedges; minor carbonate ± qtz. microveins.								2-3% Py. as thin microveins in fractures and locally as fine disseminations; rare traces of Apy ± ? Galena; rare Cpy blebs				
21.1m Bedding = 50°																				
21	22																			
22	23																			
23	24																			
24	25	24.9m ? Bedding			55°			Brittle deformation hydraulic breccia from 23.8-24.4m. Fractured, microveined near down hole contact												
								25.1-25.35m: Ductile shear with soft clay + sheared wallrock.								Fe oxides in vughs.				
25	26							25.35-28.45m: Weakly weathered, broken, micro-fractured veined, brecciated darkest grey to black-grey structurally deformed carbonaceous siltstone-shale; possibly volcaniclastic breccia lenses; strong vein overprint; patchy increasing K-spar alteration; puggy clay shear from 27.3o-27.35m; minor open, vughy microfractures								0.5% Py. as thin microveins; fine disseminations and clusters; rare trace ? Apy				
26	27																			
27	28																			
Sheared, fractured contact																				
28	29	Shearing			= 35°			28.45-29.5m: Weathered, oxidised, Fe oxide stained and partially replaced, cataclasite; thin puggy clay shears								3-5% Py. as disseminations/veins				
Broken at contact																				
29	30	Fe oxides | Hematite alt'n. diffuse & irregular contact						29.5-30.7m: Hard to very hard fresh, veined, structurally deformed, strongly silicified, black, fine-grained, silty volcaniclastic, with rafts of cream rhyolitic tuff					Hematitic alt'n.			Trace 0.1-0.3% Py. ± Apy. as ultra fine dissem.				
30	31							30.7-49.0m: Hard to very hard fresh to locally weakly weathered, veined, micro-fractured, grey-green to cream-grey, strongly silicified, devitrified, qtz-rich fine-grained, rhyolitic tuff; irregular black silty lens from 32.6-33.0m.												
31	32	Chlorite ± qtz veinlets			86°											Minor brown Fe oxides staining				
32	33																			

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Geological Log

HoleID	FTD027			Logged by	DAE
Project	Fire Tower	East		Drilled By	
Prospect	Fire Tower	North		Drill Type	
Grid	AGD66	RL		Drill Date	
		Proj.	AMG		

Azimuth	Boart Longyear
Inclination	NQ2 Diamond
Total Depth	

massive / hatch / pervassive / stipple / disseminated / swiggle / narrow vein

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsize	Description	Alteration: Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
33	34							COHERENT, MODERATELY SILICIFIED, SERICITIC, LIGHT TO MEDIUM GREEN TO GREEN-CREAM, FINE TO VERY FINE-GRAINED, SILTY TO FINE SANDY, QTZ. RICH ± PHYRIC, RHYOLITIC TUFF OR IMMATURE VOLCANOGENIC SANDSTONE TO SILTSTONE; DEVITRIFIED, SERICITISED VERY FINE-GRAINED MATRIX, SUPPORTING SUB-ROUNDED QTZ. AND ALTERED VOLCANOGENIC CLASTS; SPOTTY TO CLOUDED ALTERATION THROUGHOUT.											
		2-3mm CHLORITE ±QTZ VENLETS			80°											TRACE PY. IN LATE-STAGE VEINS AT 40° TO CA. BROWN FE OXIDES IN VEINS AND AS SELVEDGES ‖ TO CORE AXIS; TRACE PY. REMNANTS IN FE OXIDES.				
34	35																			
35	36																			
36	37					Fe														
		37.7m CARB. VEINS			50°	Fe														
37	38																			
38	39																			
39	40																			
		40.15m CARB ± QTZ VEINS			50°			40.3 – 42.1M FINER GRAINED, DOMINANTLY SILT-GRADE, DARK GREY, VOLCAN CLASTIC LENS, WITH COMMON THIN VEINLETS OF CARBONATE ± QTZ; TENDING TO OXIDISED, WITH BROWN FE OXIDES PARTIALLY REPLACING.										40.3m UV FL. SCHEELITE GRAINS IN PY APY. VEIN + SELVEDGE.				
40	41																			
41	42																			
		42.7m CARB, CRACK SEAL VN,			55°			42.1 – 49.0m COHERENT FRESH, HARD TO VERY HARD MICRO-FRACTURED, VEINED TO SHATTERED, DEVITRIFIED, MODERATELY SILICIFIED, SERICITISED, LIGHT GREEN TO GREEN-CREAM, LOCALLY DARK GREY, FINE TO VERY FINE-GRAINED, ~~QTZ-RICH ± QTZ-PHYRIC~~ RHYOLITIC TUFF OR VOLCANOGENIC SILTSTONE TO SANDSTONE; 2-3% CREAM ~~CARBONATE ± QTZ IN THIN CRACK-SEAL VEINS AND~~ STRINGERS; SPARSE FE OXIDES AS SELVEDGES AROUND MICROVEINS, POSSIBLY AFTER PY.											
42	43																			
43	44																			
		45.2m FE VN / SELVEDGE			28°															
44	45																			
		45.95m CARB, VEINS			65°											46.06 – 46.15m UV FL SCHEELITE GRAINS				
45	46																			
46	47															SPARSE FE OXIDES IN FRACTURES AND SELVEDGES.				
47	48																			
48	49	POSSIBLY FAULTED CONTACT.						VERY BROKEN FROM 47.5M; DECOMPOSED, VUGHY, WITH FE OXIDES REPLACING AND AS DENDRITIC GROWTHS.												
		?SLATY CLEAVAGE S1			20°			49.0 – 50.0M: FRACTURED, VUGHY, OXIDISED, FE OXIDE STAINED, BANDED, BLACK-GREY, FINE-GRAINED SILTSTONE-SHALE.									3-5% PY. IN BANDS/VEINS, FE OXIDES.				
49	50																			
50	51							50.0 – 60.1m: VERY WEAKLY WEATHERED TO FRESH, HARD, JOINTED, VEINED, MICRO-FRACTURED, DARK GREY, STREAKED AND VEINED CREAM, POORLY SORTED, IMMATURE, COARSE-GRAINED, QUARTZ-RICH VOLCAN CLASTIC GREYWACKE; POORLY BEDDED THROUGHOUT; OCCASIONAL BLACK ~~GREY~~ SILTSTONE-SHALE CLASTS, UP TO 25-30MM IN LENGTH, SUB-ANGULAR TO SUB-ROUNDED; ABUNDANT SUB-ANGULAR QUARTZ CLASTS UP TO 2MM IN DIAMETER, SUPPORTED BY FINE TO VERY FINE-GRAINED SERICITIC AND LOCALLY SILICIFIED MATRIX; WEAKLY ALTERED THROUGHOUT; MINOR CREAM CARBONATE ± QTZ. VEINS AND MICROVEINS ~~THROUGHOUT; TRACE FE OXIDES AS STAINING IN~~ AND ADJACENT TO MICRO-FRACTURES.											
		CORE LOSS ZONE 51.03-51.22m																		
51	52															TRACE FE OXIDES AS SELVEDGES AROUND FRACTURES.				
		52.45m CARB. VEIN 35°																		
		52.45m PUGGY CLAY SHEAR																		
52	53															53.1m TRACE CPY. TRACE FE OXIDES COATING JOINTS.				
53	54																			
54	55															54.6m QTZ. VN. WITH PY + CPY.				
55	56																			
56	57																			
57	58							COARSE GRAINED, ALTERED, POORLY SORTED, VOLCAN CLASTIC ~~CHIP WACKE TO BRECCIA.~~									57.8m RARE TRACE CPY. BLEBS.				
58	59							POSSIBLE CORE LOSS ZONE FROM 58.8 – 59.0m.									58.8m TRACE CPY. AS RARE BLEBS				
		58.55m ? BEDDING =			52°															
59	60																			
								EOH @ 60.1m CONFIRMED.												

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Drill Hole Cover Sheet

Hole	**FTD028**
Date	Nov-06
Section No	445925mE
Geologist	D. Evans
Tenement No	EL26/2004
Project	Fire Tower
Prospect	Fire Tower

Collar Details

Locational Accuracy	+/- 0.1m		
AMG Zone	AGD66	Grid Name	
AMG Easting	445934.4	Grid Easting	
AMG Northing	5405053.3	Grid Northing	
AMG Azimuth	319	Grid Azimuth	
AMG RL	587.8	Grid RL	

Inclination	-40
Total Depth	136.0

Drilling Company	Boart Longyear		
Rig Type	Onram 1000 (diesel pack)		
Drill Type	diamond	Drill diameter	NQ2
Start Date	10/11/2006	Finish Date	23/11/2006

Reason for Drilling	Infill drilling, in area of difficult access
Reason for Termination	Extended beyond design depth due to weak sulphides then lithology change.
Summary	0-5.75m: scree. 5.75-18.25m: Lt green, serictie-felds altered volcanogenic m.g. sandstone, siliceous rafted pebbles. 18.25-35.0m: Lt green, sericite-snowflake felds altered siltstone/vitric ash (-possibly correlative of meta-quartzite in FTD019), sheared contact. 35.0-54m: Cream, sericite altered rounded m.g. qtz crystal sandstone with sparse sub-round rhyolite-siltstone pebbles, fining down hole(nil pebb 54-62.95m: Cream, quartz-lithic K-spar altered vol'genic sst-siltstone. 62.95-66.8m: Healed, altered, cataclasite o'printed by scheelite-py-cpy,fau 66.8-74.7m: Green-cream, fol., qtz-lithic c.g. altered vol'genic sandstone. 74.7-83.6m:as above with shale-siltstone bands. 83.6-105.55m: Lt green, fol., altered polymictic pumiceous sandstone grading to weak altered pebbly conglomerate. 105.55-126.25m: Green-grey, strong fol., pumiceous lithic vol'genic sandstone, alteration incr. to scheelite bearing base. 126.25-136m: black shale, (slumped?), Fault crush shear 131-132m pyrite veins 11-12.5m, py veins 49.5-50.5m, scheelite-py-cpy(-asp) 62.95-66.8m, asp. 125.2-125.5m.
Water level	
Water Flow	Return all hole.
Gear remaining in hole	3m HQ collar casing, cement grouted to 7m
Downhole surveys	Survey method: Reflex Instrument digital multi-shot (corrected for 14 degree mag deviation)

Depth	Azimuth	Inclination	Depth	Azimuth	Inclination
20.00	319.80	-40			
136.00	320.60	-37.4			

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Geological Log

HoleID	FTD 028		
Project	Fire Tower	East	
Prospect	Fire Tower	North	
Grid	AGD66	RL	
		Proj.	AMG

Azimuth	315° AMG	Boart Longyear	
Inclination	−40°	NQ2 Diamond	
Total Depth			

Logged by	DAE		massive
Drilled By		hatch	pervassive
Drill Type		stipple	disseminated
Drill Date		swiggle	narrow vein

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsiz	Description	Alteration: Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
0	1							0-4m: SCREE - NO CORE RECOVERED; COLLAR PIPE CEMENTED IN; CEMENT DRILLED OUT WITH NQWL; HOLE WASHED OUT AT BOTTOM OF COLLAR PIPE IN CAVING GROUND.												
1	2																			
2	3																			
3	4																			
4	5							4-5.75m: SCREE/CORE LOSS; MINOR RUBBLY FRAGMENTS RECOVERED; DRILLING ACTION WASHED OUT HOLE AT BOTTOM OF COLLAR PIPE; CAVING GROUND.												
5	6	BOCO=5.75m VEINING ⇒ 20° GRADATIONAL BASE						5.75-6.45m: ~~STRONGLY WEATHERED BROKEN VEINED~~ ALTERED MEDIUM-GRAINED VOLCANICLASTIC SST.								COMMON BROWN FE OXIDES IN VEINS.				
6	7	SW						6.45-18.25m: WEAKLY WEATHERED TO FRESH, INITIALLY BROKEN, BECOMING SOLID, VEINED LIGHT GREEN-GREY, CREAM-GREY, POORLY SORTED, IMMATURE, COARSE-GRAINED QTZ + K-FELDSPAR PORPHYRIC ALTERED VOLCANOGENIC SANDSTONE; POORLY BEDDED THROUGHOUT; STRONGLY SERICITISED WITH TEXTURALLY DESTRUCTIVE SERICITE ± CARBONATE THROUGHOUT. 10.5-10.55 BROKEN RUGGY, FE OXIDE COATED FRAGMENTED CORE.								MINOR FE OXIDES IN VEINS AND AS SELVEDGES. TRACE PY. AS FINE BLEBS.				
7	8	(FR) 7.8m CARB/K SPAR VEINS + FOLIATION			45°															
8	9	FR																		
9	10	SW																		
10	11	SW																		
11	12	(FR) 11.92m PY. VEIN ⇒ 25°						11.9m 1-2 cm HYDRAULIC BRECCIA VEIN, WITH STRONGLY ALTERED SERICITISED GROUNDMASS. GRADUAL INCREASE IN SIZE OF K-SPAR AND LITHIC CLASTS FROM 11.3m; SCATTERED SUB-ANGULAR LITHIC CLASTS UP TO 15MM IN LENGTH; MINOR CLASTS OF ORANGE-BUFF K-SPAR; K-SPAR ALSO AS VEINS AND MICROVEINS; ~~COMMON EQUANT SUB-HEDRAL QTZ~~ EYES THROUGHOUT, GENERALLY 1-2MM, IN STRONGLY ALTERED, SERICITISED GROUNDMASS; POSSIBLE ALTERED, SERICITISED PUMICEOUS CLASTS; VERY WEAK TO ABSENT PREFERRED ORIENTATION FABRIC. DIFFUSE GRADATIONAL CONTACT; GRADUAL LITHOLOGICAL CHANGE.								0.5-1% PY. IN VEINS, WITH FE OXIDES PARTIALLY REPLACING 12.55				
12	13	FR																		
13	14	FR 12.55m PY. VEIN ⇒ 35°																		
14	15	(FR)																		
15	16	FR 16.5m FE OXIDES VEIN ⇒ 35°																		
16	17	(FR)														17.5m 0.5-1% PY. IN CORE OF FE OXIDE VEINS				
17	18	FR CARBONATE-KSPAR VEINS ⇒ 40°						DIFFUSE GRADATIONAL CONTACT; GRADUAL LITHOLOGICAL CHANGE.												
18	19	(FR) QTZ ± K SPAR VEIN ⇒ 5-10°						18.25-21.04m: FRESH TO WEAKLY WEATHERED, RELATIVELY HARD, VEINED, MICRO-FRACTURED, LIGHT TO MEDIUM GREEN, GREEN-GREY LOCALLY CREAM, FINE TO VERY FINE-GRAINED VOLCANICLASTIC SILTSTONE; POORLY BEDDED, MASSIVE TEXTURED; STRONGLY SERICITISED ± CHLORITIC THROUGHOUT; VEINED, FRACTURED AT DOMINANT CONTACT.						0.5-1%	FE OXIDES VEINING RARE TRACES CPY. AS BLEBS 0.2-0.5% PY. WITHIN BROWN FE OXIDE VEINS				
19	20	(FR)																		
20	21	(FR) FE OXIDE VN			40°															
21	22	MW FE OXIDE VEINS/SHEARING			30°	Fe		21.04-22.3m: MODERATELY TO STRONGLY WEATHERED, FE OXIDE VEINED, SHEARED, BROWN, YELLOW-BROWN AND GREEN, ALTERED VOLCANICLASTIC.								COMMON FE OXIDES IN VEINS AND STAINING				
22	23	(FR)						22.3-27.55m: WEAKLY WEATHERED TO FRESH, RELATIVELY SOFT, MICRO-FRACTURED, VEINED, LIGHT TO MEDIUM GREEN, CREAM-GREY, FINE TO VERY FINE-GRAINED VOLCANICLASTIC SILTSTONE; MODERATELY SERICITISED, WITH SNOWFLAKE TO LOCALLY TEXTURALLY DESTRUCTIVE ALTERATION; INCREASING VEIN-LIKE K-SPAR + ?CARBONATE ALTERATION; IRREGULARLY ORIENTED BEDDING. BROKEN CORE FROM 26.3m, WITH FE OXIDES COATING FRACTURE PLANES; SMALL SHEAR, WITH FE OXIDES, AT 27.0m. SHARP PLANAR CONTACT WITH FE OXIDES STAINING								RARE TRACES OF CPY ± ?GALENA BLEBS. 0.3-0.5% PY. AS IRREGULAR STREAKY VEINS, WITH QTZ. TRACE PY. VEINLETS WITHIN K-SPAR ALTERATION				
23	24	FR 23.4m BEDDING			40°															
24	25	FR																		
25	26	FR																		
26	27	SW CONTACT ⇒			30°															
27	28	BOPO=28.1m						27.55-28.1m: BROKEN, STRONGLY WEATHERED FE OXIDES ~~POSSIBLY A FAULT ZONE~~; SILICEOUS; ~~TOURMALINE MX. BRECCIA AT BASE~~.								30-40% FE OXIDES!				
28	29	FR TOURMALINE?						28.1-35.0m: FRESH TO VERY WEAKLY WEATHERED, MICRO-FRACTURED, LIGHT CREAM TO GREENISH-CREAM, STRONGLY SERICITISED, VERY FINE-GRAINED VOLCANICLASTIC SILTSTONE.								SPARSE FE OXIDES VEINING. TRACE PY. IN VEIN AT 29.95m.				
29	30	FR CHLORITE VEINS			45°															

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Geological Log

HoleID	FTD028		
Project	Fire Tower	East	
Prospect	Fire Tower	North	
Grid	AGD66	RL	
		Proj.	AMG

Azimuth 315° AMG — Boart Longyear
Inclination −40° — NQ2 Diamond
Total Depth

Logged by DAE
Drilled By
Drill Type
Drill Date

hatch — massive
stipple — pervassive
swiggle — disseminated
narrow vein

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Description	Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
30	31	FR					PERVASIVE SNOW-FLAKE SPOTTED TO TEXTURALLY DESTRUCTIVE		X		/		/		30.2m TRACE				
31	32	FR					SERICITE ALTERATION; PATCHY AGGREGATED TO SEMI-				/		/		PY, MICROVEINS				
32	33	FR	32.6m PY. VEINS		13°		PERVASIVE, STRUCTURALLY DESTRUCTIVE K-SPAR ALTERATION				/		/		WITH FE OXIDES.				
33	34	FR	32.8m FOLIATION (KSPAR)		54°		IN PLACES; SPARSE BLACK ? TOURMALINE-CHLORITE-QTZ.				/		/		31.9m 1-2% PY.				
34	35	FR					BRECCIA INFILLING SMALL VEINS AND IRREGULAR PATCHES						X		IN VEINS.				
							TO 29.55m; SPARSE CARBONATE ± QTZ VEINS AND				/		X		32.3-32.5m				
							MICROVEINS; POORLY BEDDED TENDING TO SLUMPED AND						/		SPARSE PY.				
							MICRO-FAULTED THROUGHOUT; RARE TRACES OF PY, IN VEINS.						/		MICROVEINS.				
							SHARP PLANAR CONTACT AT 50 DEGREES TO CA.						/						
35	36	(FR)	35.55m VUGGY QTZ-CARB VEIN		25°		34.0-44.1M: FRESH, HARD GENERALLY MASSIVE, IN				/								
36	37	FR					PLACES VEINED (CARB ± QTZ) LIGHT TO MEDIUM CREAM,								RARE TRACE				
37	38	FR	36.9m CARB/QTZ VEIN 1CM		25°		GREENISH-CREAM TO CREAM-GREY, STRONGLY ALTERED,				/				PY. BLEBS				
38	39	FR					MEDIUM TO COARSE-GRAINED VOLCANOGENIC SANDSTONE;												
							INDISTINCTLY BEDDED THROUGHOUT, WITH ONLY VERY WEAK								37.2m TRACE				
							FOLIATION; PERVASIVELY ALTERED, WITH TEXTURALLY								PY. VEINS				
							DESTRUCTIVE SERICITE ± SILICA AND SPARSE K-SPAR												
39	40	FR	39.75m VUGGY CARB-QTZ VEINS		54°		IN IRREGULAR PATCHES; COMMON SUB-ROUNDED QTZ.				/		/		39.5m TRACE				
40	41	FR					EYES THROUGHOUT, WITH VARIABLE, MINOR ROUNDED TO				/				PY. VEINS/				
							SUB-ROUNDED SILTY LITHIC CLASTS UP TO 8-10MM IN				/				MICROVEINS				
41	42	FR					DIAMETER; ABUNDANT FINE TO VERY FINE-GRAINED				/								
							ALTERED SERICITIC GROUNDMASS; INCREASING				/				41.9m TRACE				
42	43	FR	LATE STAGE CARB-QTZ. VEINS		32°		ALTERATION INTENSITY AND LATE-STAGE CARBONATE ±				/				PY. VEINS.				
							QTZ VEINS AND MICROVEINS.				/				RARE TRACE				
43	44	FR					GRADATIONAL FINING DOWN HOLE; CONTACT GRADATIONAL				/				SCHEELITE AS				
							TO FINER GRAINED, MORE INTENSELY ALTERED LITHOLOGY.				/				GRAINS @ 43.04m.				
															SWL UV FL.				
44	45	FR	VUGGY QTZ. VEIN 44.4m		20°		44.1-62.95M: FRESH TO LOCALLY WEAKLY WEATHERED,				/			TR. 44.4m					
45	46	FR					MICRO-FRACTURED, VEINED TO MASSIVE, CREAM, CREAM-GREY,				/								
46	47	FR					GREENISH-CREAM LOCALLY MEDIUM TO DARK GREY,				/								
							STRONGLY ALTERED, FINE TO COARSE-GRAINED,				/								
							QTZ.-PHYRIC, IN PLACES LITHIC-RICH, VOLCANOGENIC				/								
							SANDSTONE; INDISTINCTLY BEDDED THROUGHOUT, WITH				/								
47	48	FR	47.6-48.35m ? CHLORITE/QTZ + CARB VEINLETS		20°		GENERALLY WEAK TO VERY WEAK FOLIATION; VERY STRONGLY				/								
							PERVASIVELY ALTERED THROUGHOUT, WITH SERICITE AS				/				47.6-48.7m				
48	49	FR					SNOWFLAKE SPOTTING AND COMMONLY TEXTURALLY				/				1-2% PY. AS				
							DESTRUCTIVE; FABRIC FREQUENTLY CROSS-CUT BY				/				FINE VEINS AND				
49	50	FR					SERICITE MATRIXED HYDRAULIC BRECCIA VEINS AND				/				VEINLETS.				
			PY. VEINING		30°		MICROVEINS; IRREGULAR VEIN AND SEMI-PERVASIVE				/				50.0-50.7m				
50	51	FR					PATCHY K-SPAR ALTERATION MINOR OVERALL; MINOR				/				3-5% PY. IN				
							TO COMMON SUB-ROUNDED QTZ EYES, UP TO 2-4MM				/				VEINS, ULTRA				
51	52	FR					IN DIAMETER, BECOMING FINER DOWN HOLE; INITIALLY				/				FINE-GRAINED.				
			VUGGY FE OXIDE VEINS		15°		CONSPICUOUS SUB-ROUNDED CLASTS OF BLACK-GREY				/				52.2-52.65m				
52	53	SW					SILTSTONE, TO APPROX. 59.6M; MEDIUM TO DARK GREY				/				COMMON FE OXIDES				
							ALTERED SILTY LENS FROM 53.5-54.1M; INTENSELY				/				AS VEINS AND				
53	54	FR					VEINED AND MICRO-FRACTURED FROM START OF INTERVAL TO				/				COMPLEX				
							50.2M; WITH THIN CARBONATE ± QTZ. AND HAIR-LINE				/				SELVEDGES ± PY				
54	55	FR					? CHLORITE-QTZ ± CARBONATE VEINS AND MICROVEINS.				/				54.64m PY ± APY				
											/				CARBONATE VEIN.				
55	56	FR									/		/		UVFL				
			56.4m KSPAR CARBONATE VEIN SELVEDGE		15°						/		/		56.35m Trace				
56	57	FR									/		/		Scheelite as				
											/		/		small grains				
57	58	FR					GRADUAL DECREASE IN GRAINSIZE DOWN HOLE,				/		/		57.77m RARE				
			58.2m KSPAR ± SCHEELITE VEIN		32°		TENDING TO VERY FINE-GRAINED ALTERED				/		X		TRACE SCHEELITE				
58	59	FR					QTZ ± LITHIC VOLCANOGENIC SANDSTONE TO				/		X		GRAINS.				
59	60	FR					SILTSTONE; LOCALLY KSPAR FLOODED, TEXTURALLY DESTRUCTIVE				/		X						

ALTERATION.

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Geological Log

HoleID	FTD028		
Project	Fire Tower	East	
Prospect	Fire Tower	North	
Grid	AGD66	RL	
		Proj.	AMG
Azimuth	315°AMG	Boart Longyear	
Inclination	−40°	NQ2 Diamond	
Total Depth			
Logged by	DAE		
Drilled By			
Drill Type			
Drill Date			

massive / pervassive / disseminated / narrow vein / hatch / stipple / swiggle

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsize	Description	Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
60	61	FR						STRONGLY ALTERED VERY FINE-GRAINED, VOLCANOGENIC SILTSTONE, WITH SERICITE-KSPAR ± CARBONATE VEINS AND BRECCIA VEINS. INCREASING K-SPAR ALTERED SEMI-PERVASIVELY, TEXTURALLY DESTRUCTIVE TOWARDS DOWNHOLE CONTACT. SHARP PLANAR CONTACT @ 42° TO CA.													
61	62	61.9m PY. VEINLET			65°											61.0-62.95m TRACE 0.3-0.5% PY IN HAIRLINE VEINLETS.				
62	63	62.8m ?BEDDING			28°															
63	64	63.15m BEDDING (ROTATED)			14°			62.95-66.8m: FRESH, HARD TO VERY HARD, MICRO-FRACTURED BRECCIATED, MEDIUM TO DARK GREEN, GREEN-GREY TO BLACK, STRONGLY ALTERED, SILICEOUS CATACLASITE; REMNANT DISRUPTED BEDDING AND CLASTIC TEXTURES; STRONG SWL UV FLUORESCENCE THROUGHOUT, CONSPICUOUS SCHEELITE; SPARSE, CONSPICUOUS SULPHIDE MINERALISATION. SHARP IRREGULAR, MICRO-FAULTED CONTACT @ 35° TO CA.						?TOURMALINE/QTZ ALTERATION	SPARSE 0.5-1% PY + TRACE CPY. ± APY. AS SPIDERY VEINLETS; SPARSE CONSPICUOUS 0.5-1% SCHEELITE.				
64	65	64.5 FOLIATION/ SHEARING			25°															
65	66	FR																		
66	67	FR THIN CARB + KSPAR VEINLETS			15°			66.8-74.7m: FRESH HARD VEINED IN PLACES MASSIVE, MEDIUM CREAM, GREAM-GREY TO GREENISH-CREAM, STRONGLY ALTERED, COARSE TO VERY COARSE-GRAINED, QTZ-RICH + QTZ-PHYRIC, PLUS LITHIC, VOLCANOGENIC SANDSTONE; WEAKLY FOLIATED TO MASSIVE, SPOTTED TO SPECKLED, PERVASIVELY SERICITISED GROUNDMASS. SOME SNOWFLAKE SPOTTING WITH 3mm CLOTS OF SERICITE; MINOR TO LOCALLY COMMON K-SPAR ALTERATION, WITH ASSOCIATED TRACE PY ± CPY. BLEBS; COARSEST GRAINED AT START OF INTERVAL, WITH BLACK SILTSTONE-SHALE CLASTS, SUB-ROUNDED, UP TO 12-15mm IN DIAMETER; RARE ALTERED PUMICEOUS FRAGMENTS, BECOMING FINER GRAINED FROM 70.5M, WITH ONLY RARE LITHIC CLASTS.								RARE TRACE PY, ± CPY. BLEBS, WISPS. 67.65-68.0m 3-5% PY, IN VEIN PARALLEL TO CA. TRACE PY BLEBS. 69.4-70.25m 2-3% PY. ± APY. IRREGULAR VEINS. 70.6-71.4m 5% PY. ± APY. VEINS/MICROVEINS				
67	68																			
68	69	68.76m 1cm CARB-KSPAR VEIN			35°															
69	70	PY. VEINS SUB-PARALLEL TO CA																		
70	71																			
71	72																			
72	73	WEAK FOLIATION			24°															
73	74	PY. VEINS																		
		FR AT BASE			20°			SHARP DOWNHOLE CONTACT @ 20 DEGREES TO CA												
74	75	FR SHARP IRREGULAR.						74.7-75.4m: FRESH HARD MASSIVE TO MICROVEINED, BLACK VERY FINE-GRAINED, PYRITIC, CARBONACEOUS SHALE-SILTSTONE.								1-2% PY VEINLETS.				
75	76	FR						75.4-77.9m: FRESH HARD, SLUMPED TO MASSIVE, LIGHT TO MEDIUM CREAM TO GREY-CREAM, ALTERED, SERICITISED, FINE TO LOCALLY COARSE-GRAINED QTZ.-PHYRIC ± LITHIC VOLCANOGENIC SANDSTONE; FEW LARGE LITHIC CLASTS. PUGGY SHEAR FROM 77.3-77.4M. ?FAULT AT DOWNHOLE CONTACT-BROKEN, RUBBLY ZONE								TRACE PY ± APY AT START OF INTERVAL.				
76	77																			
77	78	FR																		
		FR SI CLAY.			32°			77.9-78.6m: BLACK, PYRITIC, CARBONACEOUS SHALE-SILTSTONE								5-7% PY ± APY CPY VEINLETS.				
78	79	FR						78.6-83.6M: FRESH RELATIVELY HARD, MASSIVE TO MICRO-FRACTURED, MEDIUM CREAM TO GREENISH-CREAM, ALTERED, IMMATURE, POLYMICTIC, QUARTZ-RICH + CRYSTAL PHYRIC, COARSE-GRAINED, VOLCANOGENIC SANDSTONE; WEAKLY FOLIATED TO MASSIVE WITH COMMON SEMI-PERVASIVE TEXTURALLY DESTRUCTIVE SERICITE ALTERATION; FEW SUB-ROUNDED CLASTS TO 5mm OF BLACK SILTSTONE-SHALE; ABUNDANT QTZ. EYES AND DEVITRIFIED, GREEN, ALTERED, PUMICEOUS CLASTS; RARE BLACK SILTSTONE-SHALE IN IRREGULAR INTERBEDS OR BANDS.								80.0m RARE TRACE PY. AS VEINLETS, WISPS. 82.6M RARE TRACE PY ± APY VEINLETS. TRACE PY. MICRO-VEINS AT CONTACT.				
79	80																			
80	81																			
81	82																			
82	83																			
		FR						GRADATIONAL LITHOLOGICAL CONTACT.												
83	84	FR						83.6-89.5m: FRESH HARD MASSIVE TO LOCALLY VEINED, IN PLACES BROKEN, LIGHT TO MEDIUM CREAM, GREENISH-CREAM TO CREAM-GREY, STRONGLY ALTERED, IMMATURE, PUMICEOUS QTZ-RICH AND CRYSTAL-PHYRIC, COARSE TO VERY COARSE-GRAINED, VOLCANOGENIC SANDSTONE; MASSIVE TO MODERATELY FOLIATED FABRIC, WITH ABUNDANT, PERVASIVE, TEXTURALLY DESTRUCTIVE SERICITE ± CHLORITE/QUARTZ ALTERATION; MINOR PATCHY K-SPAR ALTERATION; ABUNDANT WISPY, ALTERED PUMICEOUS CLASTS; COMMON QTZ. EYES AND RARE LITHIC CLASTS, UP TO 10mm IN DIAMETER; MINOR QTZ/CARB VEINS.								BROKEN CORE FROM 85.0-85.15m. RARE TRACE PY. 86.0m WITH VUGHY QTZ.				
84	85	79.9-80.1m CARB/QTZ VNS			25°															
85	86	86.1m FOLIATION/ ?TRANSPOSED BEDDING			27°															
86	87																			
87	88																			
88	89																			
		FR						GRADATIONAL ALTERATION/POSSIBLY LITHOLOGICAL CONTACT.												
89	90	FR						89.5-105.55: SEE NEXT PAGE.												

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Geological Log

HoleID	FTD028			Logged by	DAE
Project	Fire Tower	East		Drilled By	
Prospect	Fire Tower	North		Drill Type	
Grid	AGD66	RL		Drill Date	
		Proj.	AMG		

Azimuth 315° AMG — Boart Longyear
Inclination −40° — NQ2 Diamond
Total Depth

massive | hatch | pervasive | stipple | disseminated | swiggle | narrow vein

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsize	Description	Alteration: Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
90	91	FR						89.5–105.55m: FRESH, RELATIVELY HARD, VEINED, MASSIVE TO MODERATELY FOLIATED, MEDIUM TO DARK GREY, CREAM-GREY, PERVASIVELY ALTERED, POORLY SORTED, IMMATURE, POLYMICTIC, PUMICEOUS, CRYSTAL-LITHIC VERY COARSE-GRAINED VOLCANIC BRECCIA; STRONG PERVASIVE TO SEMI-PERVASIVE SERICITE-CHLORITE ALTERATION, TEXTURALLY DESTRUCTIVE IN DARK GREY PATCHES; ABUNDANT RAGGED, ANGULAR TO SUB-ANGULAR, REWORKED PUMICEOUS AND ALTERED VOLCANIC CLASTS, RANGING UP TO 40–50 MM LONG; ALTERED GREEN SERICITISED PUMICEOUS CLASTS; MINOR QUARTZ EYES IN FOLIATED, DEVITRIFIED GROUNDMASS; CLASTS FREQUENTLY STRETCHED OUT, ELONGATE; STREAKY, IRREGULARLY ORIENTED, RARELY PLANAR FOLIATION.	SERICITE-CHLORITE ALTN.						NIL SULPHIDE MINZN.				
91	92																			
92	93	92.8m CARB/QTZ VEIN			0°															
93	94																			
94	95	94.95m FOLIATION			47°															
95	96																			
96	97	96.8m FOLIATION			36°															
97	98	97.1m QTZ KSPAR-SERICITE VEIN			20°															
98	99																			
99	100	99.4m KSPAR VEIN 2-3cm THICK			60°			SPARSE, IRREGULARLY SPACED AND ORIENTED, THIN (1–2 cm) QUARTZ-KSPAR-CARBONATE VEINS AND VEINLETS.	SERICITE-CHLORITE ALTN.											
100	101																			
101	102	102.5m FOLIATION			60°			NO SULPHIDE MINERALIZATION NOTED.												
102	103																			
103	104	104.75m KSPAR/QTZ VEIN			25°			TENDING TO FINER-GRAINED NEAR DOWN HOLE CONTACT. SHARP, CROSS-CUTTING VEINED CONTACT AT 35° TO CA; 1–2cm BRECCIA/CARBONATE VEIN.												
104	105	FR																		
105	106	FR 106.38m 2CM QTZ-KSPAR VEIN			37°			105.55–126.25 m: FRESH, RELATIVELY HARD, VEINED, MODERATELY FOLIATED TO MASSIVE, MEDIUM CREAM, CREAM-GREY, LOCALLY MEDIUM TO DARK GREY SEMI-PERVASIVELY ALTERED, PUMICEOUS, CRYSTAL-LITHIC RICH, MEDIUM TO COARSE-GRAINED VOLCANOGENIC SANDSTONE; MODERATE SEMI-PERVASIVE SERICITE ALTERATION OF DEVITRIFIED GROUNDMASS; RARE SUB-ANGULAR CLASTS TO 10MM IN DIAMETER OF BLACK SILTSTONE-SHALE; COMMON QTZ. EYES AND STRETCHED OUT, DEVITRIFIED, ALTERED PUMICEOUS CLASTS UP TO 4–5MM; PATCHY, IRREGULAR VEIN AND DESTRUCTIVE K-SPAR ALTERATION WITH RARE BLEBS OF PY ± CPY; 2–5% QUARTZ-KSPAR ± CARBONATE VEINS, MICROVEINS AND RARE IRREGULAR PATCHES; WEAK TO MODERATE STREAKY PREFERRED ORIENTATION IN GROUNDMASS AND FROM ELONGATION OF PUMICEOUS CLASTS; IRREGULAR, PATCHY, MINOR CHLORITE-SERICITE-QTZ. ALTERATION.							2–5%				
106	107																			
107	108	108.04 — 108.9m CORE LOSS																		
108	109	109.45m FOLIATION			32°															
109	110	109.8m 5cm QTZ-KSPAR VEIN			22°											110.6m RARE TRACE PY. SPECKS.				
110	111																			
111	112																			
112	113	113.0m FOLIATION			38°															
113	114	113.85m QTZ/KSPAR VEIN			52°															
114	115	114.8m FOLIATION			40°											115.3m KSPAR FLOODING/RARE TRACE CPY. SPECKS.				
115	116																			
116	117																			
117	118	118.75m FOLIATION			42°			TENDING TO FINER GRAINED DOWN HOLE, LOCALLY MODERATELY TO STRONGLY FOLIATED.												
118	119	HEALED SHEAR			27°			BLACK CHLORITE-?TOURMALINE-SILICA ± KSPAR IN HEALED SHEAR FROM 119.05–119.4M.								1–2% PY. IN HEALED SHEAR				
119	120	FR																		

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Geological Log

HoleID	FTD028		Logged by	DAE	massive
Project	Fire Tower	East	Azimuth	Boart Longyear	Drilled By	hatch	pervassive
Prospect	Fire Tower	North	Inclination	NQ2 Diamond	Drill Type	stipple	disseminated
Grid	AGD66	RL	Total Depth		Drill Date	swiggle	narrow vein
		Proj.	AMG				

From	To	Colour Weathering	Structure type 1	Structure type 2	Angle CA	Graphic structure (0.062, 1/4, 1, 4, 16)	Log grainsize	Description	Alteration: Sil.	Ser.	Py	CO3	W	K-spar	Vein Qtz %	Mineralization Assemblage	%	V	S	P
120	121	FR						105.55–126.25m (CONTD): GRADUALLY FINING DOWN HOLE; MODERATELY TO STRONGLY FOLIATED, ALTERED, SERICITISED DEVITRIFIED MEDIUM TO COARSE-GRAINED, PUMICEOUS, VOLCANOGENIC SANDSTONE TO TUFF; INCREASING, STREAKY ELONGATED, DEVITRIFIED PUMICEOUS BANDS, POSSIBLY ASHY REMNANTS.								NIL SULPHIDE NOTED.				
121	122																			
122	123		122.6m FOLIATION		32°															
123	124															TRACE 0.3–0.5% APY? GALENA IN KSPAR VEIN. 125.2–125.5m MINOR, CONSPICUOUS SCHEELITE AS GRAINS IN KSPAR VEIN.				
124	125		124.75m FOLIATION		35°			5–10% SCHEELITE OVER 30CM INTERVAL												
125	126	FR	125.9m FOLIATION		35°			STRONG SWL UV RESPONSE 125.2–125.5m; SCATTERED UV FLUORESCENCE FROM 125.8–126.55m (SCHEELITE) SHARP IRREGULAR LITHOLOGICAL CONTACT AT 35° DEG, TO CA.												
126	127	FR						126.55–136.0m: FRESH, HARD, BROKEN, LOCALLY FRAGMENTED, MICRO-FRACTURED, VEINED, CREAM-GREY BECOMING DARKEST GREY-BLACK, VERY FINE-GRAINED CARBONACEOUS SHALE-SILTSTONE; WEAKLY ALTERED NEAR START OF INTERVAL; SLUMPED, DISRUPTED BEDDING NEAR START OF INTERVAL, OTHERWISE COMMONLY MASSIVE TO LOCALLY FINELY LAMINATED, WITH THIN MILLIMETRIC LAMINAE OF GREY SILTSTONE; SPARSE QTZ-KSPAR ± CARBONATE VEINS AND VEINLETS; TRACE TO SPARSE PY. STRINGERS AND VEINLETS; CORE VERY BROKEN TO COMPLETELY FRAGMENTED IN PLACES.								WEAK SWL UV FLUORESCENCE SCHEELITE VEINLETS. 0.5–1% PY. AS STRINGERS, IRREGULAR VEINS AND VEINLETS; PARTLY RECRYSTALLIZED, REMOBILISED.				
127	128		127.85m BEDDING		35°															
128	129																			
129	130		129.55m LAYERED QTZ-KSPAR VEIN 15mm WIDE		24°															
130	131																			
131	132																			
132	133																			
133	134		133.45m SLUMPED BEDDING		58°															
134	135							Fault crush between 131–132m												
135	136	FR	135.9m BEDDING		30°															
								EOH @ 136.0m CONFIRMED.												