

**Project:** FWZ

**Hole:** JS18-001

<b>Prospect:</b>	Jason South	<b>Survey Type:</b>	DGPS	<b>Logged By:</b>	K.Skipper	<b>Hole Type:</b>	DDH
<b>UTM Grid:</b>	NAD83_09	<b>Survey By:</b>	C.Allessandrini	<b>Date Started:</b>	2018-08-12	<b>Hole Diameter:</b>	
<b>UTM East:</b>	436670.681	<b>Date Surveyed:</b>	2018-09-08	<b>Date Completed:</b>	2018-09-04	<b>Core Size:</b>	HQ3
<b>UTM North:</b>	7002472.958	<b>Survey Accuracy:</b>		<b>Drill Company:</b>	New Age	<b>Casing Pulled?:</b>	<input type="checkbox"/>
<b>UTM Elevation (m):</b>	1204.48	<b>Grid Convergence:</b>	-1.12	<b>Drill Rig:</b>		<b>Casing Depth (m):</b>	5.87
<b>Local Grid:</b>		<b>Azimuth:</b>		<b>Drill Started:</b>		<b>Reduced (m):</b>	
<b>Local East:</b>		<b>Dip:</b>	-68	<b>Drill Completed:</b>		<b>Reduced Size:</b>	
<b>Local North:</b>		<b>Length (m):</b>	678	<b>Approved By:</b>		<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>				<b>Geotech?:</b>	<input type="checkbox"/>
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>							

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
0	COLL	C.Allessandrini	2018-08-12	-68	217				<input checked="" type="checkbox"/>	
26	SSC	Vic	2018-08-12	-66.8	217.8			58505	<input checked="" type="checkbox"/>	
56	SSC	Vic	2018-08-13	-66.3	216.4			57943	<input checked="" type="checkbox"/>	
86	SSC	Al	2018-08-14	-65.6	215.1			57867	<input checked="" type="checkbox"/>	
116	SSC	Vic	2018-08-14	-65	213.5			57971	<input checked="" type="checkbox"/>	
146	SSC	Al	2018-08-15	-64.7	212.6			58040	<input checked="" type="checkbox"/>	
176	SSC	Vic	2018-08-15	-64.7	211.9			57920	<input checked="" type="checkbox"/>	
206	SSC	Vic	2018-08-16	-63.7	210.6				<input checked="" type="checkbox"/>	
236	SSC	Vic	2018-08-17	-62.4	207.6			57788	<input checked="" type="checkbox"/>	
266	SSC	Al	2018-08-19	-60.6	206.3			57799	<input checked="" type="checkbox"/>	

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Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
296	SSC	Vlc	2018-08-19	-58.6	205.5			57748	<input checked="" type="checkbox"/>	
326	SSC	Vlc	2018-08-21	-56.6	203.5			57851	<input checked="" type="checkbox"/>	
374	SSC	Vlc	2018-08-24	-55.9	203.1			59295	<input checked="" type="checkbox"/>	
404	SSC	Vlc	2018-08-25	-55.5	204.3			57698	<input checked="" type="checkbox"/>	
434	SSC	Steve	2018-08-25	-54.6	204.8			57996	<input checked="" type="checkbox"/>	
464	SSC	Steve	2018-08-26	-54	205.5			57831	<input checked="" type="checkbox"/>	
494	SSC	Vic	2018-08-28	-54.2	204.3			57846	<input checked="" type="checkbox"/>	
524	SSC	Vic	2018-08-29	-53.7	203.4			57742	<input checked="" type="checkbox"/>	
593	SSC	Vic	2018-09-01	-53.2	204.5			57434	<input checked="" type="checkbox"/>	

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
0.00	5.87	CASE Casing									
5.87	46.45	BMST Black mudstone									
<p>Black mudstone with light grey siltstone and sandstone interbeds, and 1-50 cm thick debris flows/diamictite. Sand and silt interbeds within the mudstone are 1 - 5 mm thick. The poorly sorted polymictic diamictite is supported by mud and silt matrix. Clasts within the diamictite are subrounded and range in size from sand to pebble. Pyrite replacement is observed in the clasts of the diamictite, replacement is observed in 25% of the clasts and replaces ~25% of the clast.</p> <p>&lt;&lt;Alt: 19.43 - 44.87: Moderate hematite&gt;&gt; Rusty brown hematite alteration is observed within the silt and sand interbeds within the mudstone (~50% of bed is altered).</p> <p>&lt;&lt;Struc: 19.06 - 19.06: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 20.65 - 20.65: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 26.1 - 26.1: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 28.16 - 28.16: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 32.66 - 32.66: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 35.29 - 35.29: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 37.42 - 37.42: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 40.26 - 40.26: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 42.6 - 42.6: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 44.1 - 44.1: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 45.08 - 45.08: bedding&gt;&gt;</p>											
46.45	91.49	DIAM Diamictite									
<p>Poorly sorted polymictic diamictite interbedded with black mudstone. The diamictite is supported by mud and silt matrix. Clasts within the diamictite are subrounded and range in size from sand to pebble. Pyrite replacement is observed in the clasts of the diamictite, with ~ 25% of the clasts having undergone replacement, with up 50% replacement occurring. Disseminated pyrite is observed within the mud beds. Interbeds or clasts (?) of black silicious pinstripe mudstone occur throughout. Mudstone is interbedded with grey silt and sand beds. Bedding is more prevalent in these sections, however, orientation maybe be obscured if clasts.</p> <p>&lt;&lt;Struc: 46.64 - 46.64: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 47.32 - 47.32: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 49.61 - 49.61: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 52.21 - 52.21: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 54.39 - 54.39: bedding&gt;&gt;</p>											

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 56.93 - 56.93:	bedding>>										
<<Struc: 60.57 - 60.57:	bedding>>										
<<Struc: 62.15 - 62.15:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 76.01 - 76.01:	bedding>>										
<<Struc: 77.74 - 77.74:	bedding>>										
<<Struc: 78.65 - 78.65:	bedding>>										
<<Struc: 81.8 - 81.8:	bedding>>										
<<Struc: 85.69 - 85.69:	bedding>>										
<<Struc: 85.76 - 85.76:	bedding>>										
<b>91.49</b>	<b>131.70</b>	<b>BMST Black mudstone</b>									
Thinly bedded black carbonaceous mudstone with thin beds (mm size, less than 1% > 1 cm) of siltstone and sandstone. Beds are sharp and parallel and fairly low angle, varying from 18-35°. 10-50 cm sections of diamictite occur throughout disrupting bedding. Diamictite is mud matrix supported with approx 10-15% clasts. Less than 1% of clasts have been altered to pyrite-barite. Diamictite obscures bedding. Diamictite is poorly sorted and subrounded. Clast size ranges from sand to pebble and up to boulder (less than 1%) and are composed of sand, silt, mud, pinstripe member and chert. Pyrite-barite nodules cm in scale (>1%) 50/50 parallel with bedding and in random orientations. Large (pebble-boulder) size laminated pinstripe clasts causing incongruent bedding.											
<<Alt: 94.5 - 110:	Weak hematite>>	Less than 1% of sand/silt beds hematite altered. Also found on broken surfaces (<1%) Hematite is rusty red/brown									
<<Struc: 98.35 - 98.35:	bedding>>										
<<Struc: 99.1 - 99.1:	bedding>>										
<<Struc: 100.6 - 100.6:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 102.15 - 102.15:	bedding>>										
<<Struc: 116.9 - 116.9:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 122.6 - 122.6:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 125.7 - 125.7:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 128.2 - 128.2:	bedding>>	Orientation line was drawn at drill as top line -180°									
<<Struc: 130.2 - 130.2:	bedding>>	Orientation line was drawn at drill as top line -180°									

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
131.70	151.00	<b>DIAM Diamictite</b> Black mudstone dominated by poorly sorted diamictite with interbedded or large clasts (?) of pinstripe mudstone (thinly bedded with light grey siltstone and sandstone beds). Diamictite is matrix supported and poorly sorted comprised of siltstone, sandstone, mud, pinstripe and chert sub-rounded clasts in a muddy matrix. Some clasts (<1%) have been replaced by pyrite-barite. Clasts increase in abundance (from ~10% to ~20-25%) at 140 m. Laminated pinstripe member is found in pebble - boulder sized clasts, and larger units could be clasts or beds. <<Struc: 131.8 - 131.8: bedding>> Orientation line was drawn at drill as top line -180° <<Struc: 135.5 - 135.5: bedding>> Orientation line was drawn at drill as top line -180° <<Struc: 144.6 - 144.6: bedding>> Orientation line was drawn at drill as top line -180°									
151.00	153.20	<b>BMST Black mudstone</b> Black pinstripe mudstone as above with small muddy debris flows, as above. <<Struc: 151.25 - 151.25: bedding>>									
153.20	178.85	<b>DIAM Diamictite</b> Diamictite similar as above. Clast abundance varies from 10-40% throughout. Subrounded polymictic clasts consisting of chert, mud, sand, silt and pinstripe. Approx 1% are being replaced by pyrite-barite. Poorly sorted in a muddy matrix. Interbedded (?) sections of pinstripe ranging from 10 cm - 1 m. Bedding can be consistent but in some cases is random and disrupted. Smaller beds could be large clasts within diamictite. <<Alt: 178.8 - 220: Weak hematite>> Rusty brown-red hematite replacing silt/sand beds and clasts (likely due to porosity) and matrix in diamictite and in matrix of chert pebble conglom. Also found on fracture surfaces. <<Struc: 155.8 - 155.8: bedding>> Orientation line was drawn at drill as top line -180° <<Struc: 161.8 - 161.8: bedding>> Orientation line was drawn at drill as top line -180°									
178.85	185.25	<b>BMST Black mudstone</b> Black carbonaceous thinly laminated mudstone interbedded with grey silt/sand mm size layers, little to no diamictite content. Hematite often replacing siltstone layers, likely due to porosity of lith. Rock is more siliceous than previous mudstone interbeds and bedding is higher angle (60-65°) compared to lower angle (20-30°) bedding from previous sections, hints that this may be a large clast or different unit (?). <<Struc: 182.7 - 182.7: bedding>> Orientation line was drawn at drill as top line -180°									
185.25	203.44	<b>DIAM Diamictite</b> Diamictite similar to above, clast abundance increasing up to 50% polymictic lithic clasts in a muddy matrix. Clast composition as above. Larger section of interbedded pinstripe 1 m long at 188 m. Pinstripe is within clasts (mm-cm scale). Diamictite becomes clast supported at 199.7. Clasts are poorly sorted and sub-rounded composed of chert, mud, silt, and pinstripe in a muddy matrix. Hematite selectively replaces less than 1% of matrix. <<Struc: 188.6 - 188.6: bedding>> Orientation line was drawn at drill as top line -180°									

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 189.5 - 189.5: bedding>> Orientation line was drawn at drill as top line -180°											
203.44	207.30	<b>BMST Black mudstone</b>									
Black carbonaceous mudstone interbedded with grey silt/sand layers. Interbeds are mm in scale. Bedding is parallel and sharp. Approx 5% of silt/sand layers are being selectively replaced by hematite.											
<<Struc: 204.95 - 204.95: bedding>>											
<<Struc: 205.65 - 205.65: bedding>>											
207.30	210.50	<b>DIAM Diamictite</b>									
Diamictite similar to above, clast supported with a muddy matrix. Clasts composed of mud, chert, sand and silt. Interbed of black massive mudstone. Mudstone has fine mm size laminations of pyrite.											
<<Struc: 209.55 - 209.55: bedding>>											
<<Struc: 210.15 - 210.15: bedding>>											
210.50	219.48	<b>MDST Mudstone</b>									
Black carbonaceous mudstone interbedded with grey silt/sand layers. Bedding is thicker than previous sections. Interbeds are mm scale, approx 5% are over 1 cm. Sections of diamictite are interbedded throughout again. Diamictite is matrix supported and poorly sorted with sub rounded clasts, approx 20-30% lithic clasts composed of silt, sand, chert, pinstripe and mud.											
<<Struc: 211.25 - 211.25: bedding>>											
<<Struc: 211.85 - 211.85: bedding>> Orientation line was drawn at drill as top line -180°											
<<Struc: 212.5 - 212.5: bedding>>											
<<Struc: 213.97 - 213.97: bedding>>											
<<Struc: 215.15 - 215.15: bedding>>											
<<Struc: 215.6 - 215.6: bedding>>											
<<Struc: 216.9 - 216.9: bedding>>											
<<Struc: 218 - 218: bedding>>											
219.48	220.60	<b>CONG Conglomerate</b>									
Clast supported polymictic chert pebble conglomerate with 80% subrounded to subangular lithic clasts consisting of chert, mud, silt, and sand. Matrix is silica cemented and weakly being altered to hematite. Clasts range from course sand to pebble in size.											
<<Struc: 219.48 - 219.48: contact>> top contact with pinstripe and chert pebble conglom											

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
220.60	271.00	<b>MDST Mudstone</b> Black carbonaceous mudstone with interbedded silt/sandstone layers as above. Fine grained brassy pyrite within silt/sand beds. Siltstone beds appear to be coarsening downhole indicating a topping up direction. Diamictite interbedded throughout as above as well. Diamictite remains mud matrix supported with polymictic clasts (20-25% clasts) throughout mudstone. Some clasts (1%) are partially replaced by pyrite. At 228.2 m, two small rectangular pyrobitumen (organic) are present. <<Struc: 220.6 - 220.6: contact>> bottom contact with chert pebble conglomerate and pinstripe <<Struc: 224.9 - 224.9: bedding>> <<Struc: 226.1 - 226.1: bedding>> <<Struc: 226.75 - 226.75: bedding>> <<Struc: 227.8 - 227.8: bedding>> <<Struc: 229.4 - 229.4: bedding>> <<Struc: 231.4 - 231.4: bedding>> Orientation line was drawn at drill as top line -180° <<Struc: 238.1 - 238.1: bedding>> <<Struc: 242.7 - 242.7: bedding>> <<Struc: 262.4 - 262.4: bedding>> <<Struc: 263.9 - 263.9: bedding>> <<Struc: 266.2 - 266.2: bedding>>									
271.00	273.40	<b>DIAM Diamictite</b> Polymictic clast supported poorly sorted diamictite with sub rounded clasts in a muddy matrix, similar to above. Clasts make up approx 55/60% of rock. Clasts consist of mud, silt, clay, pinstripe and chert									
273.40	396.80	<b>BMST Black mudstone</b> Black carbonaceous mudstone with interbedded silt/sandstone layers as above with interbeds of matrix supported diamictite, as above. Muddy matrix supported diamictite with sub rounded poorly sorted clasts consisting of chert, silt, sand and mud. Approx 1% of clasts are replaced by pyrite - barite. Wider (greater than 1 cm) siltstone beds appear to be fining uphole giving normal topping indication. Other soft sediment features are subtly present as well to indicate topping up direction, ie subtle scours indicating normal topping up direction. Large faulted area beginning at 299 m obscures and deforms bedding through to 317 m. Powdery green mineral begins appearing around 340m. Mineral appears on fracture surfaces typically within blocky broken zones. Ends around 381 m. <<Min: 394 - 394.1: >> Trace red fine grained sphalerite within silty lamination <<Struc: 276.85 - 276.85: bedding>> <<Struc: 280.7 - 280.7: bedding>>									

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 286.2 - 286.2:	bedding>>										
<<Struc: 290.6 - 290.6:	bedding>>										
<<Struc: 294.4 - 294.4:	bedding>>										
<<Struc: 297.8 - 297.8:	bedding>>										
<<Struc: 319.7 - 319.7:	bedding>>										
<<Struc: 326.4 - 326.4:	bedding>>										
<<Struc: 340.6 - 340.6:	bedding>>										
<<Struc: 340.9 - 340.9:	bedding>>										
<<Struc: 353 - 353:	bedding>>										
<<Struc: 356.4 - 356.4:	bedding>>										
<<Struc: 362 - 362:	bedding>>										
<<Struc: 364 - 364:	bedding>>										
<<Struc: 380.9 - 380.9:	bedding>>										
<<Struc: 381.2 - 381.2:	bedding>>										
<<Struc: 390.65 - 390.65:	bedding>>										
<<Struc: 391.55 - 391.55:	bedding>>										
<<Struc: 392.4 - 392.4:	bedding>>										
<<Struc: 394 - 394:	bedding>>	silt lamination has trace red sphalerite									
			360.00	362.00	2.00	3209337	0.006	1	66.3	200	500
			362.00	364.00	2.00	3209338	0.008	0.9	72.3	200	500
			364.00	366.00	2.00	3209339	0.009	1	77.5	200	500
			366.00	368.00	2.00	3209340	0.006	0.6	72.3	50	200
			368.00	370.00	2.00	3209341	0.006	1.4	109.7	200	100
			370.00	374.00	4.00	3209342	0.012	1.7	71.1	100	50
			374.00	377.00	3.00	3209343	0.01	1.7	73.6	100	50
			377.00	379.00	2.00	3209344	0.009	1.9	119.1	50	50
			379.00	381.00	2.00	3209345	0.007	1.5	70.8	50	50
			381.00	383.00	2.00	3209346	0.009	2	98.8	100	50
			383.00	385.00	2.00	3209347	0.007	1.7	47.4	200	50



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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
396.80	400.55	DIAM  Diamictite									
			385.00	386.75	1.75	3209348	0.01	2.7	83.8	400	1400
			386.75	388.65	1.90	3209349	0.021	3.2	59.3	500	500
			388.65	390.00	1.35	3209350	0.013	3	66	300	500
			390.00	392.00	2.00	3209351	0.014	2.6	57	200	400
			392.00	394.00	2.00	3209352	0.009	2.8	52.9	400	800
			394.00	396.00	2.00	3209354	0.012	2.6	39.4	500	600
			396.00	398.00	2.00	3209356	0.014	5.9	80	1900	2000
Poorly sorted mud matrix supported diamictite with polymictic subrounded clasts consisting of mud, silt, sand, and chert. Diamictite as above.											
400.55	429.40	MDST  Mudstone									
			398.00	399.30	1.30	3209357	0.008	0.9	44.2	200	50
			399.30	400.93	1.63	3209358	0.01	0.8	57	50	50
Black massive carbonaceous mudstone with rare, fine siltstone and sandstone laminae. These laminations have dropped off in frequency from above and are rare, bedding is hard to distinguish. Pyrite-barite-trace pyrrhotite veins (mm wide) begin appearing at 419.7 until 422.44.											
<<Min: 419.7 - 422.44: >>    mm size pyrite-barite-pyrrhotite (trace) veins											
<<Struc: 411.1 - 411.1:    bedding>>    Bad bottom mark, hard to trace across to core = low confidence in bottom mark											
400.55	429.40	MDST  Mudstone									
			400.93	403.00	2.07	3209359	0.009	1	64	50	50
			403.00	405.00	2.00	3209360	0.01	0.9	55	50	50
			405.00	407.00	2.00	3209361	0.012	1.5	60.9	50	50
			407.00	409.00	2.00	3209362	0.015	1.9	71.8	50	50
			409.00	411.00	2.00	3209363	0.019	2	51.7	50	50
			411.00	413.00	2.00	3209364	0.019	2.3	58.3	100	50
			413.00	415.00	2.00	3209365	0.012	2.1	99.4	100	50
			415.00	417.00	2.00	3209366	0.012	1.7	70.5	50	50
			417.00	419.00	2.00	3209367	0.012	1.6	89.4	50	50
			419.00	421.00	2.00	3209368	0.01	3.1	274.5	200	50
			421.00	423.00	2.00	3209369	0.012	3	228.4	100	50
			423.00	425.05	2.05	3209370	0.01	1.3	73.7	50	50

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
			426.00	428.00	2.00	3209274	0.005	1.4	124.9	100	50
			428.00	429.40	1.40	3209275	0.008	1.5	132.8	50	50
<b>429.40 431.67 GABR Gabbro</b> Highly altered dyke (?). Alteration makes it hard to discern. Hydrothermal quartz, chlorite and ankerite brecciating rock. Mudstone clasts (?) throughout are highly silicified. Section is mineralized with pyrite - pyrrhotite - chalcopyrite. Sharp, undulating top and bottom contact. <<Min: 429.4 - 431.67: >> Hydrothermal fluids bringing in mineralization (?) brassy brown fine grained pyrrhotite, fine grained chalcopyrite often visible on broken surfaces, associated with pyrite. <<Alt: 429.4 - 431.67: Strong Quartz / Moderate Carbonate>> Quartz-chlorite-ankerite alteration. Hydrothermal alteration brecciating host rock associated with mineralization. Mudstone clasts have been silicified. <<Struc: 429.4 - 429.4: contact>> Top contact with mudstone and altered dyke (?)											
			429.40	430.40	1.00	3209276	0.007	3.8	662.8	50	50
			430.40	431.67	1.27	3209277	0.008	5.2	872.4	100	50
			431.67	433.00	1.33	3209278	0.006	1.5	216.6	100	50
			433.00	434.50	1.50	3209279	0.012	1.9	318.6	50	50
<b>431.67 449.90 CONG Conglomerate</b> Polymictic clast supported poorly sorted chert pebble conglomerate with clasts consisting of chert, mud, silt and sand. Clasts are often silicified. Matrix is silicified, sometimes composed of ankerite (approx 10%) replaced to pyrite. Approx 5% late hydrothermal quartz veining. Cm up to 15 cm wide. <<Min: 434 - 453: >> Patchy fine grained brown brassy pyrrhotite.											
			439.00	440.00	1.00	3209280	0.008	2.2	327.2	100	50
			440.00	442.00	2.00	3209371	0.009	2.9	344.7	100	50
			442.00	443.00	1.00	3209372	0.008	2	227.8	50	50
			445.00	446.00	1.00	3209281	0.007	1.8	186.7	50	50
			446.26	447.50	1.24	3209373	0.007	1.3	110.9	50	50
			447.50	449.17	1.67	3209374	0.005	1.7	142.9	100	50
<b>449.90 498.10 BMST Black mudstone</b> Black carbonaceous mudstone with interbeds of matrix-supported polymictic diamictite, as above conglomerate. Silicification until 454.4 shows highly disrupted mudstone and diamictite. After fault zone beginning at 454.4 almost impossible to discern due to large rubble and gouge zones. Silicified sections at 482 show mud matrix-supported polymictic diamictite. Pyrite-barite found in trace veins and nodules in rare silicified sections. Ankerite within disrupted diamictite matrix until 454 (rare). High content of late hydrothermal quartz veining throughout faulted zone. After 490 m pyrite is more commonly occurring in disrupted veins (mm up to 2 cm wide), about 35% of the time occurring with barite. <<Struc: 466.75 - 466.75: fault>>											
			450.00	451.00	1.00	3209282	0.005	1.5	269.6	50	50

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
			452.57	454.00	1.43	3209375	0.005	1	108.5	50	50
			454.00	456.00	2.00	3209376	0.019	2.6	76.7	100	50
			456.00	458.00	2.00	3209377	0.019	2.2	81.5	100	50
			458.00	460.00	2.00	3209378	0.021	2.9	77.2	100	50
			460.00	462.00	2.00	3209379	0.022	4.4	105.8	200	300
			462.00	464.00	2.00	3209380	0.027	4.8	64.2	200	50
			464.00	466.00	2.00	3209381	0.025	3.1	48.3	200	500
			466.00	467.80	1.80	3209382	0.024	2.2	54.2	200	50
			467.80	470.00	2.20	3209383	0.02	1.6	76.4	100	300
			470.00	472.00	2.00	3209384	0.018	3.6	328	200	50
			472.00	474.00	2.00	3209385	0.024	3.4	74.9	200	50
			474.00	476.00	2.00	3209386	0.015	12.5	3420.7	100	200
			476.00	478.00	2.00	3209388	0.022	2.3	67.4	100	600
			478.00	480.00	2.00	3209389	0.013	1.4	57.2	50	50
			515.15	516.50	1.35	3209284	0.008	0.25	59.5	50	200
<b>498.10</b>	<b>525.00</b>	<b>BMST Black mudstone</b>									
<p>Dark grey-black very fine siliceous and carbonaceous mudstone with &lt;10% polymictic diamictite subintervals. Mudstone is very hard and fractured, breaking into mm-cm scale sections; where competent, often resembling sugar cubes. Bedding is apparent parallel or at low angles to core axis, defined by hairline graphitic laminae and rare stylolite development aligned at similar angles. Diamictite subintervals consist of a mud matrix hosting unsorted mm-cm scale rounded chert pebbles with mm-cm scale angular-sub angular fragments of grey-dark grey silicified mudstone. Diamictite generally forms beds between 5-20 cm at low angles to core axis. Cm-m scale sections of silicification have bleached core to a light grey color. Entire interval is strongly deformed and structurally disrupted, with varying m-scale sections of fault gouge, crackle breccia, erratic stockwork veining and heavy jointing. All visible fracture surfaces are shiny and graphitic, with many being coated in a blue-green fine grained powdery mineral. Adjacent to larger fault gouge intervals, stylolite development is common both parallel and normal to apparent bedding. Veining is prevalent moving downhole, with disrupted mm to cm-scale quartz ankerite veins shattered internally by translucent light grey mm-scale quartz. Veins have been offset and broken due to structural events, with rare boudins along presumed bedding plane. From 510.3 - 510.86, mudstone is intensely silicified by quartz-ankerite crackle breccia, with wider veins hosting red-dark red medium grained anhedral sphalerite. From 514.70 to ~ 520, cm-scale quartz ankerite veins are parallel to core axis and contain 1% pyrrhotite with some pyrite and trace fine grained red sphalerite. 1% pyrite throughout interval as mm-scale very fine grained dull brassy blebs roughly following bedding, disseminated coarse grained euhedral brassy crystals, minor vein mineral and as laminae in strongly silicified mudstone. Interval terminates in m-scale fault gouge.</p> <p>&lt;&lt;Min: 510.3 - 510.86: &gt;&gt; Fine grained dark red sphalerite within veins, could have been picked up somewhere within fault</p>											
			516.50	518.00	1.50	3209285	0.008	0.25	71.6	50	1900

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Min: 514.7 - 520: >> Cm-scale quartz-ankerite veins hosting Po and Py			518.00	519.50	1.50	3209286	0.007	0.25	74.1	50	1100
<<Alt: 502.5 - 510.86: Strong Quartz>> Silicification of mudstone in footwall of large fault			519.50	521.00	1.50	3209287	0.009	0.7	38.8	50	4200
<<Alt: 520.6 - 522: Moderate Quartz>> Stockwork hairline veinlets of quartz-ankerite have silicified mudstone			521.00	523.00	2.00	3209288	0.011	2.1	196	100	2300
<<Struc: 504.7 - 504.7: bedding>>			523.00	526.20	3.20	3209289	0.018	4.2	395.1	200	300
<<Struc: 508 - 508: bedding>>											
<<Struc: 511.79 - 511.79: bedding>>											
<<Struc: 518.6 - 518.6: vein>> quartz ankerite vein											
<b>525.00</b>	<b>541.30</b>	<b>BMST Black mudstone</b>	526.20	527.00	0.80	3209290	0.019	5.5	607	300	3200
Structurally deformed soft graphitic black mudstone with distorted and disrupted bands/intervals of semi massive pyrite. Black mudstone is very fine grained and deformed, presenting as gouge material, healed fault matrix, small competent silicified sections and as ductile sheared graphite-rich laminae/beds either parallel or at low angles to core axis. Entire interval is intensely deformed, showing meter-scale sections of fault gouge and at least two separate structural events. First, apparent shearing in more competent graphitic/ductile mudstone has stretched and boudinaged pyrite laminae/beds near parallel to core axis. These deformed beds were then variable faulted/folded resulting in rotated, broken and rounded mm-cm scale pyrite clasts hosted in graphite-rich healed gouge, with shattering and cracking of laminae on contacts of gouge zone. Pristine graphite slickenlines on a small piece of oriented core at @537.50 m show near vertical fault movement, whether up or down is not apparent. <1% minor erratic quartz-ankerite veining with possible rare barite has silicified small cm-sections of mudstone to a lighter grey color. Pyrite is the only visible sulphide, varying from dull brassy to bright brassy very fine grained-medium grained anhedral crystals. Within pyrite, trace amounts of a very fine grained grey metallic mineral is apparent under hand lens in sporadic areas. Portable XRF analysis shows anomalous V, As, Ni, Cu and Mo in these spots. Pyrite is mostly contained in boudinaged and disrupted laminae/beds, with a single 40 cm subinterval of massives centered at 526.20 m. <0.1% milky white barite is associated with some cm-scale sections of bedded pyrite. Interval end is marked by absense of pyrite laminations.											
<<Min: 525 - 541.3: >> see Lithology tab			527.00	528.40	1.40	3209291	0.018	2.9	281	50	200
<<Struc: 534.56 - 534.56: bedding>>			528.40	530.00	1.60	3209292	0.019	3.8	267.9	100	50
<<Struc: 535.45 - 535.45: fault>>			530.00	531.40	1.40	3209293	0.016	4.1	346.2	200	100
			531.40	533.00	1.60	3209295	0.012	3.2	354.3	50	50
			533.00	534.50	1.50	3209296	0.012	2.6	122.6	50	50
			534.50	536.00	1.50	3209297	0.015	2.5	140.3	50	50
			536.00	537.60	1.60	3209298	0.011	1.9	116.6	50	50
			537.60	539.00	1.40	3209299	0.013	2	135.4	50	50
			539.00	540.50	1.50	3209300	0.011	1.6	89.6	50	50
			540.50	542.00	1.50	3209301	0.009	1.8	80.2	50	50

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
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## 541.30 553.30 BMST Black mudstone

Well bedded to massive black very fine siliceous and carbonaceous mudstone with up to 1% quartz-ankerite veins. Mudstone is variably bedded to massive, with mm-cm scale bedding defined by faint pyrite or light colored laminae near top of unit in faulted sections. Mudstone has been bleached grey by silicification in proximity to larger rubble/gouge sections. Entire interval is strongly jointed, with m-scale sections of black rubble and gouge. Two apparent joint sets are present, one following bedding and one normal to bedding. Upper and lower contacts of fault zones are marked by quartz-ankerite crackle breccias hosting small amounts of sphalerite. Visible fracture surfaces are shiny with black graphite. Mm scale white-cream quartz ankerite veinlets are erratic throughout the unit, concentrating and crackle brecciating at the contacts of a fault from 554.10-546.50. Sphalerite in veins is fine grained to medium grained and orange-red in color, representing less than 5% of vein material. Subhedral-euhedral medium grained-coarse grained pyrite cubes occur sporadically throughout the mudstone and in veinlets, with rare fine grained dull brassy laminae following bedding. Interval terminates in fault gouge.

<<Min: 544.1 - 546.75: >> see Lithology tab

<<Alt: 541.3 - 553.1: Moderate Quartz>> Pervasive bleaching/silicification of black mudstone in proximity to fault.

<<Alt: 553.1 - 556.48: Strong Clay, argillic>> See Lithology Tab, broken out as separate unit.

<<Struc: 549 - 549: bedding>>

542.00	543.50	1.50	3209302	0.01	1.4	72.7	100	50
543.50	545.00	1.50	3209303	0.009	1.8	247.5	50	1900
545.00	546.50	1.50	3209304	0.008	3.7	1113.9	50	50
546.50	548.00	1.50	3209305	0.008	1.1	180.8	50	1300
548.00	549.50	1.50	3209306	0.008	0.6	37.7	50	200
549.50	551.00	1.50	3209307	0.008	0.25	19.5	50	50
551.00	552.00	1.00	3209308	0.009	0.7	29.6	50	50
552.00	553.30	1.30	3209309	0.01	0.7	58.3	50	50

## 553.30 556.48 GABR Gabbro

Strongly sheared and clay/talc/fuchsite altered tan-grey mafic dyke. Composition is roughly 90% tan-grey mottled clay/talc mineral, 5% emerald green fuchsite and 5% aligned/rotated subhedral-euhedral medium grained-coarse grained amphibole crystals. Broken surfaces feel waxy/talc-like, and overall texture is fuzzy/mottled/subdued. Rock is very soft, being easily scratched into white powder. Upper contact occurs at a fault, but is sharp at 40° to core axis; lower contact is sharp, with a chill margin, at 31° to core axis. Fuchsite presents as waxy green mm-cm clots aligned with shearing or as mm scale veinlets cutting across shear plane. Amphiboles are black specks aligned roughly along shearing plane, identified when euhedral by cleavage/crystal habit and hardness. A 1 cm wide disrupted fine grained dull brassy pyrite band occurs at 154.5, following shearing.

<<Struc: 553.3 - 553.3: contact>> Upper contact of altered mafic dyke with faulted mudstone

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 555 - 555: foliation>> Shear											
			553.30	554.90	1.60	3209310	0.003	0.6	160.2	50	200
			554.90	556.48	1.58	3209311	0.003	0.6	145.7	50	50
<b>556.48 571.00 BMST Black mudstone</b>											
As from 541.3-553.3 m, with slightly more quartz-ankerite-sphalerite veining and silicification of host mudstone. Pyrite laminae in places are undulating/wavy, rarely brecciating mudstone in mm-scale sections. Sphalerite is orange red, and is present in most veins in varying concentrations. <0.1% chalcopyrite as localized mm-scale clots.											
<<Min: 561 - 571: >> see Lithology tab											
<<Struc: 556.48 - 556.48: contact>> Lower contact of altered mafic dyke with mudstone..chill margin											
<<Struc: 559.4 - 559.4: bedding>>											
<<Struc: 565.85 - 565.85: bedding>>											
			556.48	558.85	2.37	3209312	0.009	1.5	114.4	50	3000
			558.85	560.50	1.65	3209313	0.01	1.5	52	50	1900
			560.50	562.00	1.50	3209314	0.008	1.6	48.5	50	12400
			562.00	563.50	1.50	3209316	0.01	1.8	158.9	50	400
			563.50	564.90	1.40	3209317	0.009	3.4	636.4	50	2500
			564.90	566.60	1.70	3209318	0.006	1.1	116.5	50	10500
			566.60	568.00	1.40	3209319	0.009	1.8	69.1	50	1200
			568.00	569.50	1.50	3209320	0.007	1.5	76.3	50	1300
			569.50	571.00	1.50	3209321	0.008	1.2	94.2	50	1700

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
571.00	593.30	<b>BMST Black mudstone</b> Dark grey-black siliceous and carbonaceous bedded very fine mudstone. Mudstone has bedding defined by slightly lighter colored laminae within massive black mudstone at low angles or parallel to core axis. Bedding is often weakly disrupted by soft sediment deformation, showing mm-scale sinistral offset by core-scale listric faults and weak pressure solution development parallel to apparent bedding planes. Moderate silicification within final few meters of interval, presented as a glassy appearance on core surface and as mild bleaching. Overall, less jointed than the previous interval, with a couple cm-scale sections of fault gouge. A hydrothermal matrix-supported monomictic breccia occurs from 592.90-593.30 m, with milky white-light blue very fine grained quartz matrix material and angular/rotated mm-cm scale clasts of silicified mudstone. Contacts of breccia are irregular, with mm-scale rounded mudstone fragments possessing hairline white quartz halos along the edges inside the host mudstone; no visible sulphides. Veining throughout rest of interval is minor, representing <0.1% and composed of erratic mm-scale quartz +/- ankerite +/- pyrite veinlets. Interval is differentiated from previous by abrupt lack of veining and absence of sphalerite as vein mineral. <1% pyrite is present as dull brown mm-scale laminae, brassy fine grained subhedral crystals in veins, and as rare mm-cm scale clots roughly aligned with bedding. Single mm-scale laminae of chalcopyrite at 573.40 m. Single mm-scale clot of orange-pink fine grained sphalerite at 570.20 m. Interval terminates in well jointed zone and previously mentioned breccia.	571.00	572.50	1.50	3209322	0.007	1.4	99.1	50	50
		<<Alt: 585.5 - 593.3: Moderate Quartz>> Pervasive bleaching/silicification of black mudstone in hangingwall of rubble zone.	572.50	574.00	1.50	3209323	0.01	2.9	538.3	50	100
		<<Struc: 576.48 - 576.48: fault>>									
		<<Struc: 580.72 - 580.72: bedding>>									
		<<Struc: 582.65 - 582.65: bedding>>									
		<<Struc: 585.61 - 585.61: bedding>>									
		<<Struc: 591.85 - 591.85: bedding>>									
593.30	620.35	<b>BMST Black mudstone</b> Dark grey silicified and carbonaceous bedded very fine mudstone with up to 5% erratic quartz veining and disrupted/irregular pyrite laminae. Mudstone shows apparent bedding ranging from parallel to 45° to core axis, undulating and displaced in places by mm-scale dextral/sinistral microfaulting. Up to 10% light grey chert bands and cm-scale fragments are present within a sheared/faulted interval from 595.95-603.7. Chert is very hard, with conchoidal fractures and pinhead sized pitting from drill-ripped pyrite crystals on core surface. This same structure zone contains abundant shiny black graphite on all fracture surfaces and rare (<0.1%) mm-scale quartz-filled tension gashes roughly normal to shearing/foliation plane in more competent sections. In both hanging wall and footwall of the structure, mudstone is weakly to moderately silicified to a slightly lighter grey color. Up to 5% erratic and chaotic milky white to very light blue mm-scale quartz veinlets are scattered throughout the entire interval, often with pyrite and trace sphalerite. Up to 3% pyrite is present, predominately as disrupted bands/laminae as seen from 525-541.3m. XRF analysis indicates Ni/Cu/As/Mo enrichment within these bands. Pyrite also presents as bright brassy medium grained-coarse grained sub-euhedral crystals within larger quartz veins; dull brown and fine grained in smaller veins. Cm-scale regular laminations of dull brown very fine grained pyrite with possible barite (very fine grained soft white-grey mineral) appear at 611.0 m. One single instance of red-orange fine grained sphalerite in a mm-scale quartz vein around 603.0 m.									
		<<Min: 593.3 - 620.35: >> see Lithology tab									

Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Alt: 604 - 610: Moderate Quartz>> Silicification of mudstone in footwall of large fault											
<<Struc: 599.2 - 599.2: bedding>>											
<<Struc: 601.82 - 601.82: bedding>>											
<<Struc: 612 - 612: bedding>>											
614.00	615.50	1.50	3209324	0.013	1.7	134.6	100	50			
615.50	617.40	1.90	3209325	0.017	1.4	96	50	50			
617.40	618.90	1.50	3209326	0.022	2.9	126.6	500	50			
618.90	620.35	1.45	3209327	0.011	0.9	61.4	50	50			

## 620.35 631.09 DACT Dacite

Light green siliceous altered porphyritic volcanic. Composition is predominately very fine grained silica, with <10% porphyritic medium grained to coarse grained anhedral to euhedral white feldspar and minor milky white silica blebs. Rock is very competent, with a repeating non-mechanical fracture/fault set at 15° to core axis; chattermarks and slickenlines show reverse faulting at a steep angle. Upper contact is faulted but sharp at roughly 43° to core axis, producing black gouge in overlying mudstone and fine soft talcy powder in the volcanic. Lower contact is irregular and wavy, with apparent cm-dm scale rotated rip-up clasts of underlying black mudstone. Natural fracture surfaces are coated in beige waxy talc, with rare (<0.1%) emerald green micaceous fuchsite. Hairline white milky quartz veinlets are erratic across core surface, with mm-scale bleached contact halos. Some natural fractures/faults host wider mm-scale translucent light grey quartz veins with galena, sphalerite and pyrite. Galena is amorphous dull grey-silver and very fine grained. Sphalerite is very fine grained, anhedral and red-orange. Pyrite is brassy yellow, occurring as fine grained to medium grained euhedral cubes in veins, and as <0.1% disseminations within the matrix of volcanic.

<<Min: 620.35 - 631.09: >> see Lithology tab

<<Alt: 620.35 - 631.09: Strong Quartz / Weak Clay, argillic>> See Lithology Tab, broken out as separate unit.

<<Struc: 620.35 - 620.35: contact>>

<<Struc: 624.22 - 624.22: fault>> Slickenlines and chatter marks on plane of well oriented core

620.35	622.00	1.65	3209328	0.006	12.7	32.1	4700	1000			
622.00	623.50	1.50	3209330	0.001	0.25	5.4	50	50			
623.50	625.00	1.50	3209331	0.003	3	12.9	1600	50			
625.00	626.50	1.50	3209332	0.002	0.25	3.8	50	50			
626.50	628.00	1.50	3209333	0.001	0.25	3.1	50	50			
628.00	629.50	1.50	3209334	0.001	0.25	9.7	50	50			
629.50	631.09	1.59	3209335	0.001	0.25	3	100	50			
631.09	632.50	1.41	3209336	0.012	1	48.6	50	50			



Hole: JS18-001

From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
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## 631.09 644.30 BMST Black mudstone

Well jointed and faulted very fine black siliceous mudstone with long intervals of fault gouge. Mudstone is very hard, with a wavy and changing laminated fabric at low angles to core axis. Random lighter grey colored cherty fragments and bands with mm-scale quartz veinlets comprise up to 5% of the mudstone. unit. Core is well jointed and fractured, with many surfaces coated in shiny black graphite and a very fine grained powdery white mineral. Apparent shearing is defined in cm-scale sections by thin graphite laminae and hairline quartz veins following fabric. Lower third of interval is predominately rubble and fine black gouge, showing an upper contact with black mudstone at 35° to core axis. < 1% white mm-scale quartz veins occur outside of shears also following the low angle fabric; 5cm section of quartz rubble within fault gouge mentioned above. Trace pyrite (<0.1%) is present as anhedral-subhedral fine grained brassy vein mineral.

<<Struc: 639 - 639: fault>>

## 644.30 678.00 MDST Mudstone

Thinly bedded grey-dark grey mudstone with hairline to cm scale sandy/silty laminae and beds. Pinstripe appearance as in footwall of Tom deposit. Rock is very hard, gradually softening downhole away from contact with overlying fault. Beds/laminae are repeated throughout the interval, with alpha angles steepening from 31° to ~65° downhole away from fault. Larger silty/sandy beds fine uphole and show scour marks indicating tops right way up. A bleached light grey zone of silicification occurs from 649.50-650.62 m surrounding a small interval of mm-scale low angle quartz veins. Veining is otherwise nearly absent, occurring in singular mm crosscutting hairline fractures. Within the first two meters of upper contact, mm blebs of dull bronze very fine grained pyrite occur elongated along bedding planes, equating to <1% of the subinterval. Pyrite also occurs as trace (<0.1%) fine grained euhedral brassy crystals within quartz veins.

<<Alt: 649.5 - 650.62: Strong Quartz>> Silicification of mudstone in small quartz vein zone

<<Struc: 647.65 - 647.65: bedding>>

<<Struc: 650 - 650: bedding>>

<<Struc: 652.15 - 652.15: bedding>> suspect bottom line

<<Struc: 655.2 - 655.2: bedding>>

<<Struc: 662.5 - 662.5: bedding>>

<<Struc: 667.8 - 667.8: bedding>> might be top line....

<<Struc: 669.65 - 669.65: bedding>>

<<Struc: 670.85 - 670.85: not recorded>> graded sandy-silty bed

<<Struc: 672.05 - 672.05: bedding>>

End of Hole @ 678