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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K16-418

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	PLND-LiDAR	Logged By:	Oscar Nielsen
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Oscar Nielsen	Date Logging Start:	9/18/2016
UTM Easting	415360	Core Size:	HQ3	Azimuth:	213.8	Date Logging Complete:	9/30/2016
UTM Northing:	6815332	Casing Pulled?:	Yes	Dip:	-76.7	Drill Company:	New Age
UTM Elev. (m):	1502	Casing Depth (m):	10.5	Length (m):	475.5	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	9/16/2016
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	9/28/2016
Local Elev. (m):				Hole Completed?:	Completed	Purpose:	Resource Definition
						Parent Hole:	

Comments:

K16-418 was designed to expand the Krakatoa resource downdip. The hole intersected two 0.35 m blocks of massive sulphide within a fault structure, but no in situ massive sulphide was intersected. Wind Lake formation mudstones and mafic tuffaceous sediments are present within the first 159.50 m. The KZK formation below this is a mixed volcano sedimentary package with only one coherent unit from 212.00 - 222.00 m. Moderate-strong muscovite alteration begins at ~342 m and continues through the rest of the hole. The two blocks of massive sulphide present are within the fault from ~433.00 - 437.00 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-76.7	212.4	1.4	213.8	TN14	Oscar Nielsen	9/18/2016		☑	
0.01	-77.29064	212.6	1.4	214	Gyro	Oscar Nielsen	9/28/2016		☑	100
5	-77.29174	211.12966	1.4	212.52966	Gyro	Oscar Nielsen	9/28/2016		☑	99.14056312271
10	-77.30118	210.9565	1.4	212.3565	Gyro	Oscar Nielsen	9/28/2016		☑	99.781549208963
15	-77.33936	210.85959	1.4	212.25959	Gyro	Oscar Nielsen	9/28/2016		☑	100
15.01	-77.4	186.7	22.1	208.8	ReflexEZS	New Age	9/15/2016	5758	☐	
20	-76.98388	210.85116	1.4	212.25116	Gyro	Oscar Nielsen	9/28/2016		☑	99.5132033781532
25	-76.72369	210.81034	1.4	212.21034	Gyro	Oscar Nielsen	9/28/2016		☑	99.12616227242
30	-76.68356	210.85098	1.4	212.25098	Gyro	Oscar Nielsen	9/28/2016		☑	99.6188597375024
35	-76.72663	211.15738	1.4	212.55738	Gyro	Oscar Nielsen	9/28/2016		☑	99.5042836447466
40	-76.45593	211.22404	1.4	212.62404	Gyro	Oscar Nielsen	9/28/2016		☑	99.3390269834365
45	-76.09926	211.74362	1.4	213.14362	Gyro	Oscar Nielsen	9/28/2016		☑	99.0123056526868
45.01	-76.5	190.5	22.1	212.6	ReflexEZS	New Age	9/18/2016	5742	☐	
50	-75.82928	211.75351	1.4	213.15351	Gyro	Oscar Nielsen	9/28/2016		☑	99.2331139137794
55	-75.5983	211.82515	1.4	213.22515	Gyro	Oscar Nielsen	9/28/2016		☑	100
60	-75.54674	211.93703	1.4	213.33703	Gyro	Oscar Nielsen	9/28/2016		☑	100
65	-75.01813	212.39479	1.4	213.79479	Gyro	Oscar Nielsen	9/28/2016		☑	99.375233480075
70	-74.83307	212.4256	1.4	213.8256	Gyro	Oscar Nielsen	9/28/2016		☑	99.3567697478384
75	-74.54243	212.2764	1.4	213.6764	Gyro	Oscar Nielsen	9/28/2016		☑	99.6615714440145

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Project: KZK **Hole Number:** K16-418

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
75.01	-74.8	192.2	22.1	214.3	ReflexEZS	New Age	9/18/2016	5749	☐	
80	-74.49836	211.84691	1.4	213.24691	Gyro	Oscar Nielsen	9/28/2016		☑	100
85	-74.55168	211.45439	1.4	212.85439	Gyro	Oscar Nielsen	9/28/2016		☑	99.982269952736
90	-74.27977	211.51709	1.4	212.91709	Gyro	Oscar Nielsen	9/28/2016		☑	99.844083632768
95	-74.08046	211.20862	1.4	212.60862	Gyro	Oscar Nielsen	9/28/2016		☑	99.6318066
100	-73.8261	211.1065	1.4	212.5065	Gyro	Oscar Nielsen	9/28/2016		☑	99.809233393898
105	-73.65607	211.17886	1.4	212.57886	Gyro	Oscar Nielsen	9/28/2016		☑	99.9127152903585
105.01	-73.7	190.3	22.1	212.4	ReflexEZS	New Age	9/19/2016	5749	☐	
110	-73.525	210.66699	1.4	212.06699	Gyro	Oscar Nielsen	9/28/2016		☑	100
114	-73.4	190.5	22.1	212.6	ReflexEZS	New Age	9/19/2016	5726	☐	
115	-73.43336	210.61677	1.4	212.01677	Gyro	Oscar Nielsen	9/28/2016		☑	100
120	-72.91561	210.9986	1.4	212.3986	Gyro	Oscar Nielsen	9/28/2016		☑	99.0162441966038
120.01	-73.3	189.4	22.1	211.5	ReflexEZS	New Age	9/19/2016	5745	☐	
125	-72.70413	210.58172	1.4	211.98172	Gyro	Oscar Nielsen	9/28/2016		☑	98.895992724896
129	-72.9	190.2	22.1	212.3	ReflexEZS	New Age	9/19/2016	5754	☐	
130	-72.65388	210.38855	1.4	211.78855	Gyro	Oscar Nielsen	9/28/2016		☑	99.7752353648862
135	-72.67215	210.19729	1.4	211.59729	Gyro	Oscar Nielsen	9/28/2016		☑	100
138	-73.2	190	22.1	212.1	ReflexEZS	New Age	9/20/2016	5744	☐	
140	-72.62466	210.02302	1.4	211.42302	Gyro	Oscar Nielsen	9/28/2016		☑	100
145	-72.67589	209.78416	1.4	211.18416	Gyro	Oscar Nielsen	9/28/2016		☑	100
150	-72.71289	209.73381	1.4	211.13381	Gyro	Oscar Nielsen	9/28/2016		☑	100
155	-72.65687	209.66378	1.4	211.06378	Gyro	Oscar Nielsen	9/28/2016		☑	100
156	-72.6	189.5	22.1	211.6	ReflexEZS	New Age	9/20/2016	5766	☐	
160	-72.18414	210.40128	1.4	211.80128	Gyro	Oscar Nielsen	9/28/2016		☑	99.3051405211264
165	-72.06538	210.32577	1.4	211.72577	Gyro	Oscar Nielsen	9/28/2016		☑	99.1780012372096
165.01	-72.2	190.7	22.1	212.8	ReflexEZS	New Age	9/21/2016	5738	☐	
170	-71.86412	210.48238	1.4	211.88238	Gyro	Oscar Nielsen	9/28/2016		☑	99.6257265212468
174	-72	188.1	22.1	210.2	ReflexEZS	New Age	9/21/2016	5734	☐	
175	-71.78544	210.78338	1.4	212.18338	Gyro	Oscar Nielsen	9/28/2016		☑	100
180	-71.69478	210.78298	1.4	212.18298	Gyro	Oscar Nielsen	9/28/2016		☑	100
185	-71.7095	210.71446	1.4	212.11446	Gyro	Oscar Nielsen	9/28/2016		☑	100
186	-71.6	188.8	22.1	210.9	ReflexEZS	New Age	9/21/2016	5742	☐	
190	-71.72792	210.75458	1.4	212.15458	Gyro	Oscar Nielsen	9/28/2016		☑	100
195	-71.71753	210.80457	1.4	212.20457	Gyro	Oscar Nielsen	9/28/2016		☑	100

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K16-418

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
200	-71.55208	210.95108	1.4	212.35108	Gyro	Oscar Nielsen	9/28/2016		☑	99.8883840746179
204	-71.5	191.2	22.1	213.3	ReflexEZS	New Age	9/21/2016	5744	☐	
205	-71.23871	211.28488	1.4	212.68488	Gyro	Oscar Nielsen	9/28/2016		☑	98.8763758882127
210	-71.09392	211.28558	1.4	212.68558	Gyro	Oscar Nielsen	9/28/2016		☑	100
215	-70.96803	211.26155	1.4	212.66155	Gyro	Oscar Nielsen	9/28/2016		☑	100
216	-71.1	191.6	22.1	213.7	ReflexEZS	New Age	9/22/2016	5741	☐	
220	-70.82995	211.11658	1.4	212.51658	Gyro	Oscar Nielsen	9/28/2016		☑	100
225	-70.76488	211.35294	1.4	212.75294	Gyro	Oscar Nielsen	9/28/2016		☑	100
230	-70.72199	211.26396	1.4	212.66396	Gyro	Oscar Nielsen	9/28/2016		☑	100
235	-70.61226	211.41629	1.4	212.81629	Gyro	Oscar Nielsen	9/28/2016		☑	100
240	-70.60355	211.23621	1.4	212.63621	Gyro	Oscar Nielsen	9/28/2016		☑	100
240.01	-70.8	188.4	22.1	210.5	ReflexEZS	New Age	9/22/2016	5745	☐	
245	-70.54413	211.53963	1.4	212.93963	Gyro	Oscar Nielsen	9/28/2016		☑	100
250	-70.47021	211.70636	1.4	213.10636	Gyro	Oscar Nielsen	9/28/2016		☑	100
255	-70.45082	211.63948	1.4	213.03948	Gyro	Oscar Nielsen	9/28/2016		☑	100
260	-70.40727	211.80334	1.4	213.20334	Gyro	Oscar Nielsen	9/28/2016		☑	100
264	-70.5	192.2	22.1	214.3	ReflexEZS	New Age	9/22/2016	5739	☐	
265	-70.34332	211.8162	1.4	213.2162	Gyro	Oscar Nielsen	9/28/2016		☑	100
270	-70.26079	211.97956	1.4	213.37956	Gyro	Oscar Nielsen	9/28/2016		☑	100
275	-70.32893	211.76169	1.4	213.16169	Gyro	Oscar Nielsen	9/28/2016		☑	100
280	-70.26302	211.90385	1.4	213.30385	Gyro	Oscar Nielsen	9/28/2016		☑	100
285	-70.22222	212.13262	1.4	213.53262	Gyro	Oscar Nielsen	9/28/2016		☑	100
288	-70.4	190	22.1	212.1	ReflexEZS	New Age	9/23/2016	5751	☐	
290	-70.18076	212.13895	1.4	213.53895	Gyro	Oscar Nielsen	9/28/2016		☑	100
295	-70.17863	212.26776	1.4	213.66776	Gyro	Oscar Nielsen	9/28/2016		☑	100
300	-70.13173	212.31049	1.4	213.71049	Gyro	Oscar Nielsen	9/28/2016		☑	100
305	-70.12934	212.45729	1.4	213.85729	Gyro	Oscar Nielsen	9/28/2016		☑	100
310	-70.02104	212.49016	1.4	213.89016	Gyro	Oscar Nielsen	9/28/2016		☑	100
312	-70.1	191.6	22.1	213.7	ReflexEZS	New Age	9/24/2016	5763	☐	
315	-69.92546	212.47311	1.4	213.87311	Gyro	Oscar Nielsen	9/28/2016		☑	100
320	-69.92038	212.63015	1.4	214.03015	Gyro	Oscar Nielsen	9/28/2016		☑	100
325	-69.88613	212.50858	1.4	213.90858	Gyro	Oscar Nielsen	9/28/2016		☑	100
330	-69.82371	212.69565	1.4	214.09565	Gyro	Oscar Nielsen	9/28/2016		☑	100
335	-69.74412	212.96428	1.4	214.36428	Gyro	Oscar Nielsen	9/28/2016		☑	100

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Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
336	-70	192.8	22.1	214.9	ReflexEZS	New Age	9/25/2016	5718	☐	
340	-69.70975	213.1191	1.4	214.5191	Gyro	Oscar Nielsen	9/28/2016		☑	100
345	-69.64511	213.20957	1.4	214.60957	Gyro	Oscar Nielsen	9/28/2016		☑	100
350	-69.61694	213.10708	1.4	214.50708	Gyro	Oscar Nielsen	9/28/2016		☑	100
355	-69.51022	213.25694	1.4	214.65694	Gyro	Oscar Nielsen	9/28/2016		☑	100
360	-69.46889	213.17382	1.4	214.57382	Gyro	Oscar Nielsen	9/28/2016		☑	100
360.01	-69.7	190.7	22.1	212.8	ReflexEZS	New Age	9/25/2016	5728	☐	
365	-69.42693	213.38426	1.4	214.78426	Gyro	Oscar Nielsen	9/28/2016		☑	100
370	-69.31923	213.57564	1.4	214.97564	Gyro	Oscar Nielsen	9/28/2016		☑	100
375	-69.2671	213.51832	1.4	214.91832	Gyro	Oscar Nielsen	9/28/2016		☑	100
380	-69.29957	213.64519	1.4	215.04519	Gyro	Oscar Nielsen	9/28/2016		☑	100
384	-69.3	192.3	22.1	214.4	ReflexEZS	New Age	9/25/2016	5742	☐	
385	-69.18932	213.81808	1.4	215.21808	Gyro	Oscar Nielsen	9/28/2016		☑	100
390	-69.1698	213.90924	1.4	215.30924	Gyro	Oscar Nielsen	9/28/2016		☑	100
395	-69.0841	214.11107	1.4	215.51107	Gyro	Oscar Nielsen	9/28/2016		☑	100
400	-69.05321	213.94584	1.4	215.34584	Gyro	Oscar Nielsen	9/28/2016		☑	100
405	-69.03291	214.1496	1.4	215.5496	Gyro	Oscar Nielsen	9/28/2016		☑	100
408	-68.9	197.5	22.1	219.6	ReflexEZS	New Age	9/26/2016	5727	☐	
410	-68.93986	214.01794	1.4	215.41794	Gyro	Oscar Nielsen	9/28/2016		☑	100
415	-69.03499	213.68643	1.4	215.08643	Gyro	Oscar Nielsen	9/28/2016		☑	100
420	-68.8796	213.42404	1.4	214.82404	Gyro	Oscar Nielsen	9/28/2016		☑	100
425	-68.70652	213.3213	1.4	214.7213	Gyro	Oscar Nielsen	9/28/2016		☑	100
430	-68.60655	213.37995	1.4	214.77995	Gyro	Oscar Nielsen	9/28/2016		☑	100
435	-68.60544	213.13492	1.4	214.53492	Gyro	Oscar Nielsen	9/28/2016		☑	100
435.01	-68.6	191.2	22.1	213.3	ReflexEZS	New Age	9/27/2016	5297	☐	
440	-68.62126	213.46274	1.4	214.86274	Gyro	Oscar Nielsen	9/28/2016		☑	100
445	-68.51843	213.60155	1.4	215.00155	Gyro	Oscar Nielsen	9/28/2016		☑	100
450	-68.34734	213.8834	1.4	215.2834	Gyro	Oscar Nielsen	9/28/2016		☑	100
455	-68.3202	214.15476	1.4	215.55476	Gyro	Oscar Nielsen	9/28/2016		☑	100
459	-68.3	190.3	22.1	212.4	ReflexEZS	New Age	9/27/2016	5720	☐	
460	-68.27176	214.31996	1.4	215.71996	Gyro	Oscar Nielsen	9/28/2016		☑	100
465	-68.1388	214.55638	1.4	215.95638	Gyro	Oscar Nielsen	9/28/2016		☑	100

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

0.00 10.50 OVBN Overburden

0 - 10.5: Casing to 10.5 m

10.50 44.79 MAFt Mafic Volcaniclastics grey-green FMG

10.5 - 44.79: Grey green sandy/granular bands of tuffaceous mafic derived sediment, interbedded with thin units (<10 cm) of grey-blue to black mudstone (MDS). In the top 10 m there is significant oxidation and 1-2m intervals of a biotite porphyroblast bearing, subtly banded rock. This may represent thin intermediate dykes or bleached/altered zones of mafic tuff however, the oxidation present and faulting obscures the relationship between the two domains.

<<Min: 24 - 105.82 0.1% Min: Pyrite>> Isolated clots and blebs of pyrite, sometimes associated with quartz-carbonate veins

<<Min: 24 - 105.82 0.1% Min: Pyrrhotite>> Small, finely disseminate blebs along foliation planes

<<Alt: 10.5 - 12.25 Moderate Albite>> Bleached white area of rock, interpreted provisionally as albite alteration

<<Alt: 10.5 - 12.79 Weak-Moderate Biotite>>

<<Alt: 12.25 - 15.05 Weak-Moderate Calcite>>

<<Alt: 12.79 - 15.05 Weak Biotite>>

<<Alt: 15.05 - 17 Weak-Moderate Biotite>>

<<Alt: 15.05 - 17 Moderate Albite>> Bleached white area of rock, interpreted provisionally as albite alteration

<<Alt: 17 - 31.33 Weak Biotite>>

<<Alt: 17 - 62.05 Weak-Moderate Calcite>>

<<Vein: 14.41 - 15.05 90% Quartz-Carbonate>>

<<Struc: 17.67 - 19.3 Weak-Moderate Fault>> Zone of broken/crushed rock, with minor gouge. Strongly oxidized

<<Struc: 27 - 27 Weak-Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

<<Struc: 31.52 - 31.98 Weak-Moderate Fault>> Zone of faulting with thin (~10cm) zones of gougy materi\al

<<Struc: 43.95 - 43.95 Moderate dominant foliation>> Foliation defined by alignment of micaceous (chloritie) minerals.

44.79 50.57 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

44.79 - 50.57: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone with thin 1cm chloritic mafic tuff beds.

50.57 51.57 MAFt Mafic Volcaniclastics green MG

50.57 - 51.57: Green, chloritic, moderately to well sorted sandy, medium grained mafic tuff

51.57 59.74 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FMG

51.57 - 59.74: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone with thin 1cm chloritic mafic tuff beds.

<<Vein: 55.7 - 56.03 45% Quartz-Carbonate 80 deg. >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

59.74 62.05 MAFt Mafic Volcaniclastics grey-green FMG

59.74 - 62.05: Thicker beds of chloritic, sandy mafic tuff with finely interbedded dark grey carbonaceous mudstone.

<<Struc: 60.08 - 60.08 >> Axial plane of folding in the Wind Lake group

62.05 86.19 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

62.05 - 86.19: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone with thin 1cm chloritic mafic tuff beds.

<<Alt: 62.05 - 105.82 Moderate Calcite>>

<<Vein: 62.05 - 62.98 85% Quartz-Carbonate 70 deg. >>

<<Vein: 72.92 - 92.91 20% Quartz-Carbonate 75 deg. >>

<<Struc: 71.94 - 71.94 Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

<<Struc: 72.79 - 86 Weak-Moderate Fault>> Zone of weak to moderate faulting parallel to the dominant foloiation plane

86.19 88.10 MAFt Mafic Volcaniclastics grey-green FG

86.19 - 88.1: A thick bed of chloritic, silty mafic tuff

88.10 105.82 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

88.1 - 105.82: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone with thin 1cm chloritic mafic tuff beds.

<<Struc: 90 - 94.22 Weak-Moderate Fault>> Zone of weak to moderate faulting, parallel to the dominant foliation plane. Gougy zones common due to the friale host rock.

<<Struc: 95.98 - 95.98 Moderate-Strong dominant foliation>> Foliation defined by alignment of micaceous minerals.

<<Struc: 98.92 - 98.92 Moderate-Strong dominant foliation>> Foliation defined by alignment of micaceous minerals.

105.82 119.15 MAFt Mafic Volcaniclastics grey-green FMG

105.82 - 119.15: Thicker beds of chloritic, silty mafic tuff with finely interbedded dark grey carbonaceous mudstone.

<<Min: 105.82 - 119.15 0.1% Min: Pyrite>> Associated with carbonate veins

<<Min: 105.82 - 119.15 0.5% Min: Pyrrhotite>> Patches and bands of blebs of pyrrhotite, cocordant with the dominant foliation.

<<Alt: 105.82 - 133.9 Moderate-Strong Calcite>>

<<Struc: 111 - 111 Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

<<Struc: 113.1 - 113.1 Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

119.15 133.90 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

119.15 - 133.9: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone.

<<Min: 119.15 - 133.9 0.5% Min: Pyrite>> Disseminated in the mudstone and in thin stringers

<<Min: 119.15 - 133.9 0.1% Min: Pyrrhotite>> Typically associated with thin MAFt beds

<<Struc: 120.42 - 120.54 Weak-Moderate Fault>> Gouge filled fault within the mudstone unit.

<<Struc: 122.81 - 122.81 >> Axial plane of folding in the Wind Lake group

<<Struc: 122.86 - 122.86 Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

<<Struc: 132.32 - 132.54 Moderate Fault>> Fault zone comprising gouge

<<Struc: 133.2 - 133.2 Bedding>> Contact between a bed of MAFt and MDS

133.90 134.77 MAFt Mafic Volcaniclastics grey-green FMG

133.9 - 134.77: A thick bed of chloritic, silty mafic tuff

<<Min: 133.9 - 134.77 0.5% Min: Pyrrhotite>> Foliation parallel blebs within MAFt beds

<<Alt: 133.9 - 134.77 Moderate Calcite>>

134.77 149.10 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

134.77 - 149.1: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone with chloritic mafic tuff interbeds, up to 30 cm thick.

<<Min: 134.77 - 149.1 0.5% Min: Pyrite>> Foiation parallel blaebs concentrated in carbonaceous beds.

<<Min: 134.77 - 149.1 0.1% Min: Pyrrhotite>> Typically associated with thin MAFt beds

<<Alt: 134.77 - 137.32 Moderate-Strong Calcite>>

<<Alt: 137.32 - 142.55 Weak-Moderate Calcite>>

<<Alt: 142.55 - 148.16 Moderate-Strong Calcite>>

<<Alt: 148.16 - 149.1 Trace Calcite>>

<<Struc: 142.89 - 143.32 Weak Fault>> Fault zone comprising gouge, crushed rock, and rubble.

<<Struc: 148.42 - 148.65 Weak-Moderate Fault>> Fault zone comprising gouge and crushed rock.

149.10 151.47 SED undifferentiated Sediment light grey MG

149.1 - 151.47: A light grey, bedded/banded granular unit comprising quartz and minor mica layers. Appears to be a quartzite or sandstone. the lowest 0.5m is finely interbedded with carbonaceous mudstone.

<<Min: 149.1 - 151.47 0.1% Min: Pyrite>> On fracture planes

<<Min: 149.1 - 151.47 1% Min: Pyrrhotite>> Foliation parallel blebs

<<Vein: 149.97 - 149.98 100% Quartz 68 deg. >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

151.47 155.98 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black FG

151.47 - 155.98: Dark grey to black fine grained, well sorted carbonaceous mudstone/siltstone

<<Min: 151.47 - 159.5 0.5% Min: Pyrite>> In thin stringers

<<Vein: 153.82 - 155.09 100% Quartz 26 deg. >>

155.98 157.98 RHYva Coarse grained to ash tuff light grey FMG

155.98 - 157.98: Light grey-green, well sorted fine grained felsic volcaniclastic sediment.

<<Vein: 157.94 - 157.98 100% Quartz-Carbonate>>

157.98 159.50 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black VFG

157.98 - 159.5: Black, carbonaceous fine grained sediment with bands of calcite.

<<Alt: 157.98 - 159.5 Weak-Moderate Calcite>>

159.50 160.66 RHYva Coarse grained to ash tuff light grey FMG

159.5 - 160.66: light grey-green, gritty lapilli (or possibly deformed crystal?) bearing felsic volcanic derived sediment

<<Min: 159.5 - 170.8 0.5% Min: Pyrrhotite>> Foiation parallel blebs.

<<Alt: 159.5 - 170.8 Weak Calcite>>

<<Struc: 159.86 - 159.86 Weak-Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

160.66 164.66 RHYvl Lapilli tuff light grey FCG

160.66 - 164.66: Light grey green lapilli (15-20%) tuff. Lapilli are 5-10 mm, subrounded, white clasts.

<<Struc: 163.8 - 163.8 Weak-Moderate dominant foliation>> Foliation defined by alignment of micaceous minerals.

164.66 167.63 RHYva Coarse grained to ash tuff light grey FCG

164.66 - 167.63: Light grey green lapilli bearing (5-10%) tuff. Lapilli are 5-10 mm, subrounded, white clasts.

<<Vein: 165.81 - 166.16 100% Quartz 20 deg. >>

<<Struc: 166.1 - 166.7 Weak-Moderate Fault>> Fault zone made up of crushed quartz

167.63 170.80 RHYva Coarse grained to ash tuff light grey FMG

167.63 - 170.8: light grey green fine grained tuffaceous volcaniclastic rock with very rare lapilli (1-2%), and a mm sclae bandingbetween light grey and light grey green domains.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

170.80 171.38 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

170.8 - 171.38: Light grey brown, fine grained, well banded(bedded?), carbonate porphyroblast bearing pelitic sedimentary rock.

<<Alt: 170.8 - 171.38 Moderate Calcite>>

<<Alt: 170.8 - 171.38 Weak-Moderate Ankerite>>

<<Struc: 170.9 - 170.9 Bedding>> Internal bedding in pelitic unit

171.38 174.87 RHYva Coarse grained to ash tuff grey-green FMG

171.38 - 174.87: light grey-green lapilli bearing (5%) felsic tuffaceous rock.

<<Min: 171.38 - 174.84 0.5% Min: Pyrrhotite>> Foiation parallel blebs.

<<Alt: 171.38 - 177.05 Weak Calcite>>

<<Struc: 174.37 - 174.37 Weak dominant foliation>> Foliation defined by alignment of micaceous minerals.

174.87 176.32 RHYva Coarse grained to ash tuff grey-green FG

174.87 - 176.32: light grey green, well sorted fine grained ashy tuff with rare lapilli sized clasts.

176.32 180.01 RHYva Coarse grained to ash tuff grey-green FMG

176.32 - 180.01: light grey green lapilli bearing (10-15%, 5-20mm) ash tuff. Lapilli are monomict.

<<Min: 176.32 - 180.01 0.5% Min: Pyrrhotite>> Foiation parallel blebs.

<<Alt: 177.05 - 183 Weak-Moderate Calcite>>

<<Struc: 179.55 - 179.55 Weak dominant foliation>> Foliation defined by alignment of micaceous minerals.

180.01 180.54 PEL Equigranular biotite + calcite +/- quartz rock medium grey FG

180.01 - 180.54: medium green-grey, well banded, carbone porphyroblast bearing epiclastic sediment. Contains fine black lithic clasts(?) or possibly porphyrolasts

<<Alt: 180.01 - 180.54 Trace Ankerite>>

180.54 190.15 RHYva Coarse grained to ash tuff grey-green FG

180.54 - 190.15: Light grey-green lapilli bearing ash tuff with thin interbds of pelitic material. lapilli make up ~10% of the rock and are smaller than typical (2-6mm)

<<Min: 180.54 - 212.94 0.1% Min: Pyrrhotite>> Foiation parallel blebs.

<<Alt: 183 - 183.3 Moderate-Strong Calcite>>

<<Alt: 183.3 - 212.94 Weak-Moderate Calcite>>

<<Struc: 182.89 - 182.89 Weak dominant foliation>> Foliation defined by alignment of micaceous minerals.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

190.15 212.94 RHYva Coarse grained to ash tuff grey-green FCG

190.15 - 212.94: Light grey-green lapilli bearing tuff (35-40%, 5-15mm)

<<Struc: 190.81 - 190.81 Weak dominant foliation>> Foliation defined by alignment of micaceous minerals.

212.94 222.53 RHYc Rhyolite coherant volcanics light grey FG

212.94 - 222.53: Light grey, massive, aphanitic and aphyric, siliceous rock, interpreted as a coherent rhyolite. Upper contact has a zone of clasts of the same material 1 m wide, possibly a flow top breccia?

<<Min: 212.94 - 222.53 0.01% Min: Pyrite>> Also in hairline veins

<<Alt: 212.94 - 222.53 Weak-Moderate Silicification>>

<<Alt: 212.94 - 222.53 Trace Calcite>>

<<Vein: 218.52 - 218.92 50% Calcium carbonate/Carbonate 20 deg. >> Carbonate breccia cutting host RHYc

222.53 223.24 RHYva Coarse grained to ash tuff medium grey FCG

222.53 - 223.24: Medium grey, ash supported, lapilli bearing ((3-10mm, 5%) ash tuff.

<<Min: 222.53 - 223.24 0.1% Min: Pyrite>> Foiation parallel blebs.

<<Alt: 222.53 - 223.24 Weak Calcite>>

223.24 228.29 RHYc Rhyolite coherant volcanics light grey FG

223.24 - 228.29: Light grey, massive, aphanitic and aphyric, siliceous rock, interpreted as a coherent rhyolite. This unit is centered on a massive quartz vein, could be silicification of a volcaniclastic unit

<<Min: 223.24 - 228.29 0.1% Min: Pyrrhotite>> Small disseminations.

<<Alt: 223.24 - 228.29 Weak-Moderate Silicification>>

<<Alt: 223.24 - 228.29 Trace Calcite>>

<<Vein: 225.37 - 226 100% Quartz-Sericite/White mica 42 deg. >>

228.29 231.00 RHYvl Lapilli tuff grey-green FCG

228.29 - 231: Medium grey-green clastic unit incorporating lapilli and angular clasts of coherent rhyolite.

<<Min: 228.29 - 237.2 0.1% Min: Pyrite>> Hairline veins filled with pyrite.

<<Alt: 228.29 - 231 Weak Calcite>>

<<Struc: 229.57 - 229.57 Weak Crenulation cleavage>> plane defined by crenulations

<<Struc: 230.14 - 230.21 Weak-Moderate Fault>> Thin fault filled with gouge an crushed rock

<<Struc: 230.77 - 230.77 Weak dominant foliation>> Foliation defined by alignment of micaceous minerals.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

231.00 232.32 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

231 - 232.32: Banded brown and medium to light grey, gradational internal contacts between more pelitic and more ashy internal domains.

<<Alt: 231 - 232.32 Moderate-Strong Calcite>>

<<Alt: 231 - 232.32 Moderate Biotite>>

232.32 232.86 RHYvl Lapilli tuff grey-green FCG

232.32 - 232.86: Medium grey-green ash supported lapilli (3-25mm, 25%) tuff with brown, euhedral biotite porphyroblasts, suggesting pelitic input.

<<Alt: 232.32 - 232.86 Weak Calcite>>

232.86 233.82 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

232.86 - 233.82: Banded brown and medium to light grey, gradational internal contacts between more pelitic and more ashy internal domains.

<<Alt: 232.86 - 233.82 Moderate-Strong Calcite>>

<<Alt: 232.86 - 233.82 Moderate Biotite>>

<<Vein: 233.04 - 233.82 15% Quartz-Carbonate 65 deg. >>

233.82 237.20 RHYvl Lapilli tuff medium grey FCG

233.82 - 237.2: Medium grey, ash supported, lapilli (3-10mm, 15%) tuff with biotite porphyroblasts, suggesting pelitic input

<<Alt: 233.82 - 237.2 Weak-Moderate Calcite>>

<<Alt: 233.82 - 237.2 Weak Biotite>>

237.20 244.20 RHYvx Quartz and/or feldspar crystal tuff light grey FCG

237.2 - 244.2: Light grey, quartz eye and feldspar crystal bearing tuff, with possible lithic fragments, especially in the upper half of the unit. lower contact is gradational.

<<Min: 237.2 - 244.2 0.5% Min: Pyrite>> Foliation parallel disseminations

<<Min: 240.69 - 250.15 0.5% Min: Pyrrhotite>> Bands and patches of, typically foliation parallel) pyrrhotite

<<Alt: 237.2 - 270.09 Weak Calcite>>

<<Vein: 237.2 - 238.04 20% Quartz-Carbonate 68 deg. >>

<<Struc: 243.36 - 243.36 Weak dominant foliation>> Foliation plane defined by alignment of sulphide blebs

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

244.20 247.74 RHYva Coarse grained to ash tuff medium grey FMG

244.2 - 247.74: Medium grey quartz eye bearing (0.5-1.5mm, 1-3%) and flatened lapilliup to 15mm long, 2-3mm wide.

<<Min: 244.2 - 250.15 0.1% Min: Pyrite>> Fine disseminations of pyrite, often with pyrrhotite

247.74 250.85 RHYvl Lapilli tuff medium grey FCG

247.74 - 250.85: Medium grey, quartz crystal (1-2mm, 1-2%) lapilli tuff. Lapilli are 15%, 3-7mm, carbonate bearing.

250.85 253.29 RHYva Coarse grained to ash tuff medium grey FG

250.85 - 253.29: Medium grey, fine grained ash tuff with porhyroblasts of black euhedral biotite porphyroblasts representing pelitic input.

<<Alt: 251.74 - 253.29 Weak Biotite>>

<<Vein: 252.3 - 252.51 100% Quartz 80 deg. >>

<<Struc: 251.41 - 251.41 Weak dominant foliation>> Foliation plane defined by the alignment of lapilli.

253.29 253.97 RHYvl Lapilli tuff light grey CG

253.29 - 253.97: light grey, clast supported (lapilli stone) lapilli tuff. Clasts are tightly packed with minimal matrix. Lapilli are 10->64mm and make up 50-60% of the rock.

<<Min: 253.29 - 263.47 0.1% Min: Pyrite>> Disseminations and in bands with pyrrhotite

253.97 256.64 RHYva Coarse grained to ash tuff medium grey FG

253.97 - 256.64: Medium grey, fine grained ash tuff with porhyroblasts of black euhedral biotite porphyroblasts representing pelitic input.

<<Min: 255.75 - 258.66 1% Min: Pyrrhotite>> Patches of disseminated pyrrhotite

<<Alt: 253.97 - 256.01 Weak-Moderate Biotite>>

<<Vein: 256.01 - 256.64 95% Quartz 60 deg. >>

256.64 258.66 RHYvx Quartz and/or feldspar crystal tuff light grey FCG

256.64 - 258.66: Light grey quartz and feldspar bearing crystal tuff. Matrix supported with 5-10% crystals.

<<Alt: 256.64 - 259.6 Moderate Albite>> Min veins cut altered rock, suggesting OR

<<Alt: 256.64 - 259.76 Weak-Moderate Silicification>> Min veins cut altered rock, suggesting OR

258.66 263.47 RHYva Coarse grained to ash tuff light grey FG

258.66 - 263.47: Light-medium grey fine grained ash tuff. Some sections have been altered to appear igneous however, there is a gradation of alteration from less altered, identifiable ash tuff to what appears to be a coherent rhyolite. Some sections also display pseudoclastic texturesdue to partial alteration. Bands of euhedral brown biotite suggest pelitic input.

<<Min: 258.66 - 261.52 0.1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

<<Min: 261.52 - 263.47 1% Min: Pyrrhotite>> Aggregates in band form.

<<Alt: 260.82 - 260.86 Moderate Biotite>>

<<Alt: 261.53 - 265.28 Weak-Moderate Muscovite>> Associated with patches/bands of pyrrhotite and pyrite

263.47 265.28 RHYvl Lapilli tuff medium grey FCG

263.47 - 265.28: Massive, moderately sorted lapilli (3-10mm, white, siliceous) tuff. Rock has been silicified along with the lapilli.

<<Min: 263.47 - 270.09 0.5% Min: Pyrrhotite>>

265.28 270.09 RHYva Coarse grained to ash tuff medium grey FG

265.28 - 270.09: Medium grey, generally fine grained, ash tuff with 3-5% thin (1-2mm), flattened lapilli, giving the rock a streaked look. Throughout the unit there are euhedral black biotite porphyroblasts, non-aligned with the dominant foliation.

<<Alt: 265.28 - 270.09 Trace Biotite>>

<<Alt: 267.5 - 270.09 Trace Tourmaline>> Associated with tourmaline earing veins

<<Vein: 267.5 - 270.09 1% Tourmaline 45 deg. >>

<<Struc: 270.03 - 270.09 Moderate Fault>> Thin fault, almost entirely filled with gouge

270.09 273.56 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

270.09 - 273.56: Grey-brown, banded pelite, with more grey ashy layers and ankerite porphyroblasts.

<<Min: 270.09 - 273.56 0.1% Min: Pyrrhotite>> one patch of disseminated pyrrhotite

<<Alt: 270.09 - 273.56 Moderate-Strong Calcite>>

<<Alt: 270.09 - 273.56 Moderate Biotite>>

<<Alt: 270.09 - 273.56 Weak-Moderate Ankerite>>

273.56 276.00 RHYva Coarse grained to ash tuff light grey FMG

273.56 - 276: Light grey lapilli bearing (3-8mm, white, calcite bearing) ash tuff with rare biotite porpyroblasts.

<<Min: 273.56 - 279.86 0.01% Min: Pyrite>>

<<Min: 273.56 - 279.86 0.1% Min: Pyrrhotite>>

<<Alt: 273.56 - 279.86 Weak-Moderate Calcite>>

<<Struc: 273.56 - 273.56 Trace Bedding>> Contact between PEL and RHYva

276.00 278.06 RHYva Coarse grained to ash tuff grey-brown FMG

276 - 278.06: Light grey brown lapilli bearing pelitic ash tuff. Lapilli are small (3-8 mm) and make up 2-5% of the rock. Bands or brown biotite suggest pelitic input.

<<Alt: 276 - 276.72 Weak Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

278.06 279.86 RHYva Coarse grained to ash tuff light grey FG

278.06 - 279.86: This RHYva initially looks like a coherent rhyolite, however without any defined contact, it grades into a massive, granular RHYva, suggesting that the coherent looking portions have been altered .

<<Alt: 278.06 - 279.86 Weak-Moderate Silicification>>

279.86 280.04 PEL Equigranular biotite + calcite +/- quartz rock brown FG

279.86 - 280.04: Grey-brown mottled biotite bearing pelitic sedimentary rock.

<<Min: 280.03 - 287.04 0.1% Min: Pyrite>>

<<Min: 280.03 - 287.04 0.01% Min: Pyrrhotite>>

<<Alt: 279.86 - 280.04 Moderate-Strong Calcite>>

<<Alt: 279.86 - 280.04 Moderate Biotite>>

280.04 287.03 RHYv Rhyolite volcaniclastic medium grey FG

280.04 - 287.03: Light grey-pink patchy, massive unit. The unit grades within itself between more and less altered volcaniclastic rock.The more altered portions have been altered by albite and/or silica and have pseudoclastic textures, with the clasts appearing to be coherent rholite. No sharp contacts exist between these portions of the rock and the zones that look to be massive volcaniclastic, suggesting the alteration interpretation, however, these rocks could easily be logged a RHY as well.

<<Alt: 280.06 - 287.03 Weak Calcite>>

<<Alt: 281.52 - 283.76 Weak-Moderate Albite>>

<<Alt: 283.76 - 287.03 Moderate Albite>>

287.03 287.95 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

287.03 - 287.95: Grey brown mottled and banded ashy pelitic sediment.

<<Alt: 287.03 - 287.95 Moderate-Strong Calcite>>

<<Alt: 287.03 - 287.95 Weak-Moderate Biotite>>

287.95 295.85 RHYv Rhyolite volcaniclastic light grey FG

287.95 - 295.85: Light grey, siliceous, massive, unit. Alteration (silica, albite) has created a pseudoclastic texture resembling a coherent rhyolite breccia however, this texture fades out internally, suggesting the alteration explanation for these features.

<<Min: 287.95 - 295.85 0.1% Min: Pyrite>>

<<Min: 287.95 - 295.85 0.1% Min: Pyrrhotite>>

<<Alt: 287.95 - 288.91 Moderate Albite>>

<<Alt: 287.95 - 291.05 Weak-Moderate Silicification>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

<<Alt: 287.95 - 295.85 Weak Calcite>>

<<Alt: 288.91 - 290.1 Weak Albite>>

<<Alt: 290.1 - 292.3 Moderate Albite>>

<<Alt: 291.05 - 294.7 Moderate Silicification>>

<<Alt: 292.3 - 294.09 Weak Albite>>

<<Alt: 294.7 - 295.85 Weak Silicification>>

295.85 296.60 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

295.85 - 296.6: Grey brown banded ashy pelitic sediment.

<<Alt: 295.85 - 296.6 Moderate-Strong Calcite>>

<<Alt: 295.85 - 296.6 Moderate-Strong Biotite>>

<<Alt: 295.85 - 296.6 Weak Ankerite>>

<<Alt: 296.3 - 305.74 Weak Biotite>>

<<Struc: 296.55 - 296.6 Weak-Moderate Fault>> Gouge filled fault

296.60 313.87 RHYva Coarse grained to ash tuff medium grey FCG

296.6 - 313.87: Streaked, medium grey, brown, and green, lapilli bearing (3-10mm, some are bcqlpl, others are light grey carbonate bearing lapilli) ash tuff. Weak muscovite alteration in patches.

<<Alt: 296.6 - 313.87 Weak-Moderate Calcite>>

<<Alt: 305.89 - 313.87 Weak Muscovite>> does not appear to be related to any mineralization

<<Vein: 297.5 - 297.51 10% Tourmaline 5 deg. >>

<<Vein: 305.74 - 305.89 95% Quartz>>

<<Struc: 307.83 - 313.37 Weak-Moderate Fault>> Zone of thin faults, mainly filled with micaceous gouge

313.87 316.81 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

313.87 - 316.81: Mottled, grey-brown, carbonate porphyroblast bearing, strongly veined ashy pelite

<<Min: 315.91 - 316.57 1% Min: Pyrite>> Associated with tourmaline-carbonate alteration

<<Alt: 313.87 - 316.81 Moderate-Strong Calcite>>

<<Alt: 313.87 - 316.81 Weak-Moderate Biotite>>

<<Alt: 314.84 - 320.52 Moderate Biotite>>

<<Alt: 315.91 - 316.57 Moderate-Strong Ankerite>>

<<Vein: 315.2 - 316.28 35% Quartz>> Associated with a zone of strong TML/CB alteration in the host rock

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

316.81 318.84 RHYv Rhyolite volcaniclastic grey-green

316.81 - 318.84: Grey-green muscovite altered unit, most likely an interval of RHYva that has been altered.

<<Alt: 316.81 - 318.84 Weak Calcite>>

318.84 320.50 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

318.84 - 320.5: Mottled, grey-brown, carbonate porphyroblast bearing, strongly veined ashy pelite

<<Min: 320.43 - 323.82 0.5% Min: Pyrrhotite>> disseminations aligned with the dominant foliation

<<Alt: 318.84 - 320.52 Moderate-Strong Calcite>>

<<Alt: 318.84 - 320.52 Weak Ankerite>>

<<Alt: 320.48 - 323.82 Weak Muscovite>>

320.50 323.82 RHYva Coarse grained to ash tuff grey-green FG

320.5 - 323.82: Weakly muscovite altered, fine grained, apparently well sorted ashy tuff

<<Alt: 320.52 - 323.82 Weak Calcite>>

323.82 324.98 FLZ Fault Zone grey-green

323.82 - 324.98: Gougy, muscovite bearing fault zone.

<<Alt: 323.82 - 324.98 Weak Calcite>>

<<Struc: 323.82 - 324.98 Moderate-Strong Fault>> Thick fault composed of gouge and crushed rock

324.98 341.08 RHYva Coarse grained to ash tuff grey-green

324.98 - 341.08: Moderately to strongly altered interval of rhyolitic volcaniclastic rock, relict banding in less altered areas.

<<Min: 324.98 - 325.41 0.1% Min: Pyrite>> also dis

<<Min: 325.41 - 326.14 0.1% Min: Pyrrhotite>>

<<Min: 326.14 - 327.47 1% Min: Pyrite>>

<<Min: 328.83 - 330 0.1% Min: Pyrite>>

<<Min: 328.83 - 337.2 1% Min: Pyrrhotite>> foliation parallel blebs

<<Min: 337.2 - 337.9 2% Min: Pyrite>> associated with carbonate patches

<<Min: 337.2 - 337.9 2% Min: Pyrrhotite>> associated with carbonate patches

<<Min: 337.9 - 340.44 0.5% Min: Pyrrhotite>>

<<Min: 340.44 - 341.08 1% Min: Pyrite>>

<<Min: 340.44 - 341.08 5% Min: Pyrrhotite>>

<<Alt: 324.98 - 325.41 Moderate Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

<<Alt: 324.98 - 333.53 Weak Calcite>>

<<Alt: 325.41 - 326.14 Weak Muscovite>>

<<Alt: 326.41 - 327.47 Moderate Muscovite>>

<<Alt: 327.47 - 328.83 Weak Muscovite>>

<<Alt: 328.83 - 333.53 Weak-Moderate Muscovite>>

<<Alt: 333.53 - 334 Weak Chlorite>> Relict chlorite in muscovite altered rock

<<Alt: 333.53 - 334 Weak Biotite>> relict biotite with chlorite

<<Alt: 333.53 - 334 Moderate Calcite>>

<<Alt: 333.53 - 334.98 Weak Muscovite>>

<<Alt: 334 - 337.2 Weak Calcite>>

<<Alt: 334.98 - 337.2 Weak-Moderate Muscovite>>

<<Alt: 337.2 - 337.9 Weak-Moderate Biotite>> OP???

<<Alt: 337.2 - 337.9 Moderate Calcite>>

<<Alt: 337.2 - 337.9 Trace Chlorite>> on slip planes, replacing something disseminated in the rock

<<Alt: 337.9 - 341.08 Weak-Moderate Muscovite>>

<<Alt: 337.9 - 341.08 Weak Calcite>>

<<Struc: 335.68 - 335.71 Weak-Moderate Fault>> Gouge filled minor fault

341.08 342.48 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

341.08 - 342.48: Mottled mdium grey-brown, with blebs of white, carbonate material, possibly boudinaged veins?

<<Min: 341.08 - 342.48 0.5% Min: Pyrrhotite>>

<<Alt: 341.08 - 342.48 Moderate Calcite>>

<<Alt: 341.08 - 342.48 Moderate Biotite>>

<<Struc: 341.33 - 342.92 Moderate Fault>> Several 5-15 cm thick gougy faults

342.48 346.08 RHYva Coarse grained to ash tuff grey-green FG

342.48 - 346.08: Mottled light grey green, moderately to strongly muscovite altered rhyolitic volcaniclastic rock with small patches of relict banded rock.

<<Min: 342.48 - 358.1 1% Min: Pyrrhotite>> commonly foliation parallel diseminations, rare patches up to 5% PO

<<Min: 343 - 343.23 1% Min: Sphalerite>> Associated with a quartz vein

<<Alt: 342.48 - 345.54 Moderate-Strong Muscovite>>

<<Alt: 342.48 - 348.85 Weak Calcite>>

<<Alt: 345.54 - 348.85 Moderate Muscovite>>

<<Vein: 344.07 - 344.32 90% Quartz 80 deg. >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

346.08 348.85 MDSt Rhyolite tuff dominant mudstone grey-green FG

346.08 - 348.85: Light green grey and black banded rock. Black bands are composed of carbonaceous material, less than 15% of the rock. Light grey-green domains are muscovite altered rhyolitic rock, unclear if it is coherent or clastic.

<<Struc: 347.54 - 347.54 Moderate dominant foliation>> Aligned muscovite

348.85 356.51 RHYva Coarse grained to ash tuff grey-green FG

348.85 - 356.51: Light grey-green, fine grained, well foliated, muscovite altered rhyolitic volcaniclastic rock.

<<Min: 356.5 - 358.1 0.1% Min: Pyrite>>

<<Alt: 348.85 - 354.85 Moderate-Strong Muscovite>>

<<Alt: 348.85 - 357.45 Weak Calcite>>

<<Alt: 354.85 - 356.74 Moderate Muscovite>>

356.51 359.45 MDSt Rhyolite tuff dominant mudstone dark grey FG

356.51 - 359.45: Dark grey and light green interbedded carbonaceous mudstone and rhyolitic tuff. Rhyolitic domains have been altered to light green muscovite chaotically folded.

<<Min: 358.1 - 359.45 1% Min: Pyrite>>

<<Alt: 356.74 - 357.48 Weak Muscovite>> pervasive within the rhyolitic domains of the MDSt

<<Alt: 357.48 - 358.1 Moderate Muscovite>> pervasive within the rhyolitic domains of the MDSt

<<Alt: 357.48 - 380.96 Trace Calcite>>

<<Alt: 358.29 - 359.45 Weak Muscovite>> pervasive within the rhyolitic domains of the MDSt

<<Vein: 358.1 - 358.29 100% Quartz 60 deg. >>

359.45 360.98 RHYva Coarse grained to ash tuff light grey FG

359.45 - 360.98: Light grey, foliated rock with abundant disseminated pyrite.

<<Min: 359.45 - 360.42 5% Min: Pyrite>>

<<Min: 360.42 - 402 0.5% Min: Pyrite>> MU

<<Alt: 359.45 - 365.25 Weak-Moderate Muscovite>>

360.98 365.13 MDSt Rhyolite tuff dominant mudstone grey-green FG

360.98 - 365.13: Light green-grey with thin black bands, predominantly muscovite altered rhyolitic tuff with a minor mudstone component.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

365.13 396.32 RHYva Coarse grained to ash tuff grey-green FG

365.13 - 396.32: Light grey greenfine grained, well foliated, muscovite altered rhyolitic tuff.

<<Alt: 365.25 - 372.61 Moderate Muscovite>>

<<Alt: 372.61 - 377.51 Weak-Moderate Muscovite>>

<<Alt: 377.51 - 380.96 Moderate Muscovite>>

<<Alt: 380.96 - 388.25 Moderate-Strong Muscovite>>

<<Alt: 388.25 - 402 Moderate Muscovite>>

<<Vein: 381.29 - 381.36 90% Quartz 75 deg. >>

<<Vein: 386.01 - 386.71 95% Quartz 75 deg. >>

<<Struc: 365.65 - 365.66 Weak-Moderate Fault>> Gouge filled thin, foliation parallel fault

<<Struc: 371.59 - 371.61 Weak-Moderate Fault>> Thin gouge rich fault.

<<Struc: 371.92 - 371.92 Moderate dominant foliation>> Aligned mscovite in an alteration band

<<Struc: 383.84 - 385.38 Moderate Fault>> Fault zone consisting of multiple gougy faults.

396.32 399.14 RHYvl Lapilli tuff grey-green FCG

396.32 - 399.14: Light grey green, siliceous, muscovite altered lapilli (5-20mm 15-20%) tuff. Lapilli are diffuse, white, and siliceous.

<<Alt: 396.32 - 399.14 Weak Calcite>> within lapilli

<<Alt: 397.16 - 402 Weak-Moderate Silicification>>

<<Struc: 398.62 - 398.62 Weak dominant foliation>> Foliation defined by alignment of lapilli

399.14 409.90 RHYv Rhyolite volcaniclastic grey-green FG

399.14 - 409.9: Light grey green, siliceous, muscovite altered, weakly banded, granular textured, tuff. Patchy silica altereation cut by muscovite alteratio ngives the diffuse and mottled look.

<<Min: 400 - 401 0.5% Min: Sphalerite>>

<<Min: 402 - 409.9 1% Min: Pyrite>> MU

<<Alt: 401 - 419 Moderate-Strong Muscovite>>

<<Alt: 402 - 409.1 Weak-Moderate Silicification>>

<<Vein: 400.74 - 400.75 60% Massive Sulphide/Sulphides undifferentiated 80 deg. >> SUL - 75% Spalerite, 25% pyrite

<<Struc: 401.32 - 402 Weak Fault>> Pooly developed fault

409.90 410.47 FLZ Fault Zone light grey

409.9 - 410.47: Gougy, well developed fault zone.

<<Struc: 409.9 - 410.47 Moderate Fault>> Gougerich fault

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
410.47	**416.77**	**PEL**	**Equigranular biotite + calcite +/- quartz rock**	**green-brown**	**FG**									
410.47 - 416.77: Sheared, strongly chlorite-muscovite altered, brown biotite porphyroblast bearing pelitic sediment. <<Alt: 410.47 - 416.08 Weak Biotite>> <<Alt: 410.47 - 416.77 Weak-Moderate Chlorite>> <<Alt: 416.08 - 416.77 Moderate Biotite>> <<Struc: 410.47 - 416.08 Moderate Shear>>														
416.77	**428.74**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	**FG**	425.77	427.27	1.50	D00005693	-0.005	1.9	0.05	0.01	0.43
416.77 - 428.74: Strongly muscovite altered, difficult to discern primary texture beyond banding. lower contact with PEL is gradational. <<Min: 416.77 - 421.84 0.5% Min: Pyrite>> <<Min: 419 - 421.84 1% Min: Pyrrhotite>> <<Min: 420.01 - 421.84 0.5% Min: Sphalerite>> <<Min: 420.01 - 421.84 1% Min: Chalcopyrite>> <<Min: 421.84 - 425.77 0.1% Min: Sphalerite>> <<Min: 425.77 - 428.74 1% Min: Pyrite>> <<Min: 425.77 - 428.74 0.1% Min: Chalcopyrite>> With PO <<Min: 425.77 - 431 2% Min: Pyrrhotite>> <<Alt: 416.77 - 428.77 Weak Biotite>> <<Alt: 419 - 421.84 Moderate Muscovite>> <<Alt: 425.77 - 428.74 Moderate Muscovite>> <<Vein: 417.14 - 419.49 15% Quartz>> <<Vein: 420.14 - 421.22 30% Quartz-Carbonate>> Tourmaline may actually be actinolite. Sulphide is chalcopyrite <<Vein: 421.84 - 425.77 100% Quartz 45 deg. >> Tourmaline may be actinolite. Sulphide is sphalerite. <<Vein: 426.01 - 428.67 20% Carbonate-Biotite>>						427.27	428.74	1.47	D00005694	-0.005	0.6	0.02	-0.01	0.02
428.74	**433.41**	**PEL**	**Equigranular biotite + calcite +/- quartz rock**	**green-brown**	**FG**	432.00	433.50	1.50	D00005695	-0.005	-0.3	0.01	-0.01	0.02
428.74 - 433.41: Chlorite-muscovite-bitotite altered, fine grained, well sorted, pelite. <<Alt: 428.74 - 435 Weak-Moderate Muscovite>> Muscovite in fault zones too <<Alt: 428.74 - 435 Moderate Calcite>> Carries into fault <<Alt: 428.77 - 433.41 Moderate Biotite>> <<Alt: 431.2 - 435 Moderate Chlorite>>														

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
433.41	**435.00**	**FLZ Fault Zone grey-green**	433.50	435.00	1.50	D00005696	-0.005	-0.3	-0.01	-0.01	0.03
433.41 - 435: Muscovite-chlorite rich fault zone with blocks of the overlying pelitic rock within it.											
<<Struc: 433.41 - 437.47 Moderate-Strong Fault>> Gouge/low friction mineral rich fault zone containing two blocks of massive sulphide.											
435.00	**435.36**	**OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite brown FMG**	435.00	435.50	0.50	D00005697	0.05	36.9	0.34	0.59	7.18
435 - 435.36: Massive sulphide block, a large zone of pyrrhotite is present, accounting for 35% of the unit, Pyrite is the dominant sulphide outside of this blob, making up another 20% of the unit. Sphalerite is present with the pyrite, accounting for 15%, and chalcopyrite makes up another 5% of the rock. The primary gangue mineral is chlorite, which makes up 20% of the unit, with calcite and quartz making up 5% of the rock. The edges of the sulphide have slickenslides, suggesting that this is a fault block.											
<<Min: 435 - 435.36 15% Min: Sphalerite>>											
<<Min: 435 - 435.36 20% Min: Pyrite>>											
<<Min: 435 - 435.36 35% Min: Pyrrhotite>>											
<<Min: 435 - 435.36 5% Min: Chalcopyrite>>											
<<Alt: 435 - 435.36 Moderate-Strong Chlorite>> Gangue in OB											
435.36	**436.36**	**FLZ Fault Zone grey-green**	435.50	436.36	0.86	D00005698	-0.005	5.4	0.07	0.06	0.77
435.36 - 436.36: Gougy fault zone, very little solid rock.											
<<Alt: 435.36 - 436.36 Weak-Moderate Chlorite>> In fault											
<<Alt: 435.36 - 436.66 Moderate-Strong Muscovite>> Muscovite in fault zone											
436.36	**436.71**	**OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite brown FMG**	436.36	436.86	0.50	D00005699	0.039	42.3	0.71	0.56	9.46
436.36 - 436.71: Block of massive sulphide. Dominant minerals are pyrite (30%) present as clasts and as part of the net-texture minerals in the body with pyrrhotite (35%) present as blebs or clasts(?). The primary gangue mineral is chlorite (30%)interstitial to the clasts of sulphide as well as lesser chalcopyrite (5%) present in with the pyrite. The edges of the sulphide have slickenslides, suggesting that it is a fault block.											
<<Min: 436.36 - 436.71 30% Min: Pyrite>> Also present as clasts in the sulphide body											
<<Min: 436.36 - 436.71 35% Min: Pyrrhotite>> Clasts???											
<<Min: 436.36 - 436.71 5% Min: Chalcopyrite>>											
<<Alt: 436.36 - 436.71 Moderate Chlorite>> Gangue in OC											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
436.71	**437.47**	**FLZ Fault Zone grey-green FMG**	436.86	437.47	0.61	D00005701	0.005	13.9	0.12	0.19	2.44

436.71 - 437.47: Muscovite-chlorite rich fault zone with blocks of quartz, likely from the quarz vein below entrained within it.

<<Alt: 436.71 - 437.47 Moderate-Strong Muscovite>> Muscovite in fault zone

<<Alt: 436.71 - 437.47 Moderate Chlorite>> In fault zone

<<Alt: 436.71 - 437.47 Weak Calcite>>

437.47	**465.74**	**RHYv Rhyolite volcaniclastic green-brown FG**	437.47	438.97	1.50	D00005702	-0.005	0.8	-0.01	-0.01	0.01

437.47 - 465.74: Banded, mottled, altered rock. Domains of muscovite surround isolated patches of chlorite, biotite and quartz (BCQLPL?) Alternately, could be a sheared Pelitic sediment, where the shear network has been altered to muscovite.

<<Min: 437.47 - 438.62 1% Min: Pyrite>>

<<Min: 438.62 - 460.38 0.5% Min: Pyrrhotite>> foliation parallel blebs

<<Min: 459.39 - 462.04 0.5% Min: Pyrite>>

<<Min: 460.38 - 466.85 1% Min: Pyrrhotite>> foliation parallel blebs

<<Min: 464.11 - 465.75 0.5% Min: Pyrite>>

<<Alt: 437.47 - 453.13 Trace Calcite>>

<<Alt: 437.47 - 465.71 Moderate Muscovite>>

<<Alt: 437.47 - 475.5 Weak-Moderate Chlorite>> BCQlpl?

<<Alt: 437.47 - 475.5 Weak-Moderate Biotite>> BCQlpl?

<<Alt: 453.13 - 457.73 Weak-Moderate Calcite>>

<<Alt: 457.73 - 465.74 Weak Calcite>>

<<Vein: 437.47 - 438.62 100% Quartz>> Tourmaline may be actinolite

<<Vein: 447.58 - 447.86 100% Quartz 45 deg. >>

<<Vein: 449.12 - 451.44 10% Quartz>>

<<Vein: 452.6 - 452.83 15% Carbonate-Chlorite>>

<<Vein: 457.73 - 460.02 35% Quartz>>

<<Vein: 460.38 - 460.53 90% Quartz 50 deg. >>

<<Vein: 460.46 - 460.49 80% Tourmaline 25 deg. >> Tourmaline fibres parallel to extension direction

<<Struc: 440.6 - 446 Weak-Moderate Fault>> A sseries of pooly developed blocky faults with gouge.

<<Struc: 454.94 - 454.94 Moderate dominant foliation>> Foliation defined by biotite and muscovite grain alignment

<<Struc: 463.07 - 463.43 Weak-Moderate Fault>> Blocky, rubbly fault.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

465.74 466.85 PEL Equigranular biotite + calcite +/- quartz rock grey-brown FG

465.74 - 466.85: Finely banded, biotite and chlorite bearing pelitic sediment. 1-2mm disseminated black clots are present, possibly tourmaline porphyroblasts?

<<Alt: 465.74 - 466.85 Weak Muscovite>>

<<Alt: 465.74 - 466.85 Moderate Calcite>>

<<Struc: 466.32 - 466.32 Bedding>> Bedding within pelitic unit

466.85 475.50 RHYv Rhyolite volcaniclastic green-brown FG

466.85 - 475.5: Banded, mottled, altered rock. Domains of muscovite surround isolated patches of chlorite, biotite and quartz (BCQLPL?) Alternately, could be a sheared Pelitic sediment, where the shear network has been altered to muscovite.

<<Min: 466.85 - 475.5 0.5% Min: Pyrite>>

<<Min: 466.85 - 475.5 0.5% Min: Pyrrhotite>> foliation parallel blebs

<<Alt: 466.85 - 475.5 Moderate Muscovite>>

<<Alt: 466.85 - 475.5 Weak Calcite>>

<<Struc: 472.27 - 472.37 Weak-Moderate Fault>> Fault filled with crushed rock and gouge.

End of Hole @ 475.5