

# GeoSpark Logger ~ Drill Log

**Project:** KZK **Hole Number:** K97-180

Prospect:	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Ron Voordouw
Grid: NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	4/18/2016
UTM Easting: 418481.531	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	4/22/2016
UTM Northing: 6815055.281	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m): 1463.882	Casing Depth (m):		Length (m):	206.8	Drill Rig:	
Local Easting:	Stored?:	Yes	Claims Title:	KZK	Drill Started:	
Local Northing:	Cemented?:		Core Storage Loc.:	KZK Camp	Drill Completed:	
Local Elev. (m):			Hole Completed?:		Purpose:	
Comments:					Parent Hole:	

**Downhole Surveys:**

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				<input checked="" type="checkbox"/>	
206	-60	180		180	SS				<input checked="" type="checkbox"/>	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>0.00</b>	<b>9.10</b>	<b>OVBN Overburden</b>									
<b>9.10</b>	<b>14.11</b>	<b>MDSl Rhyolite tuff dominant mudstone</b>	<b>dark grey</b>	<b>FG</b>							
<p>9.1 - 14.11: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture</p> <p>&lt;&lt;Alt: 9.1 - 14.11 Weak Muscovite&gt;&gt; 1-2 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff layers and oriented at an angle to bedding</p> <p>&lt;&lt;Vein: 13.6 - 14.11 70% Quartz-Carbonate 50 deg. &gt;&gt; Fairly massive quartz-ankerite vein interleaved with host MDSl</p> <p>&lt;&lt;Struc: 11.9 - 11.91 Moderate-Strong Foliation&gt;&gt; Bedding-parallel foliation in graphitic mudstone and rhyolite tuff</p> <p>&lt;&lt;Struc: 11.9 - 11.91 Moderate-Strong Bedding&gt;&gt; Alternations between graphitic mudstone and rhyolite tuff</p>											
<b>14.11</b>	<b>18.04</b>	<b>RHYvl Lapilli tuff</b>	<b>grey</b>	<b>FMG</b>							
<p>14.11 - 18.04: Relative massive interval of granular-textured rhyolite lapilli tuff (Cominco logged as quartzite); tuff contains thin bands of muscovite-rich, graphitic and black mudstone</p> <p>&lt;&lt;Alt: 14.11 - 18.04 Moderate Muscovite&gt;&gt; 1-3 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>18.04</b>	<b>20.40</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>									
<p>18.04 - 20.4: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture</p> <p>&lt;&lt;Alt: 18.04 - 20.4 Weak Muscovite&gt;&gt; 1-2 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff layers and oriented at an angle to bedding</p> <p>&lt;&lt;Vein: 19.7 - 26.2 15% Quartz-Chlorite-Carbonate 20 deg. &gt;&gt; Fairly massive quartz-ankerite veins with chlorite- and muscovite-rich selvages; partially hematized</p> <p>&lt;&lt;Struc: 19.5 - 19.51 Moderate-Strong Foliation&gt;&gt; Bedding-parallel foliation in graphitic mudstone and rhyolite tuff</p> <p>&lt;&lt;Struc: 19.5 - 19.51 Weak-Moderate Bedding&gt;&gt; Alternations between graphitic mudstone and rhyolite tuff</p>											
<b>20.40</b>	<b>25.40</b>	<b>FLZ Fault Zone</b>									
<p>20.4 - 25.4: Heavily fractured, partially hematized fault zone with significant stretches of fault gouge; also contains thick quartz veins</p> <p>&lt;&lt;Alt: 25.3 - 26.56 Weak Muscovite&gt;&gt; 1-2 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff layers and oriented at an angle to bedding</p> <p>&lt;&lt;Struc: 20.4 - 25.3 Strong Fault&gt;&gt; Extensive fracturing, brecciation, fault gouge development and oxidation; well-developed and prominent fault zone</p>											
<b>25.40</b>	<b>26.56</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>									
<p>25.4 - 26.56: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture</p>											
<b>26.56</b>	<b>27.90</b>	<b>RHYvl Lapilli tuff</b>									
<p>26.56 - 27.9: Relative massive interval of granular-textured rhyolite lapilli tuff (Cominco logged as quartzite); tuff contains thin bands of muscovite-rich, graphitic and black mudstone</p> <p>&lt;&lt;Alt: 26.56 - 27.9 Moderate Muscovite&gt;&gt; 1-3 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff</p> <p>&lt;&lt;Alt: 27.5 - 27.9 Weak-Moderate Calcite&gt;&gt; Patches of yellowish calcite alteration associated with interleaved mudstone layers</p>											
<b>27.90</b>	<b>29.61</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>									
<p>27.9 - 29.61: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture</p> <p>&lt;&lt;Alt: 27.9 - 29.61 Weak Muscovite&gt;&gt; 1-2 mm thick layers of muscovite (+/-graphite) cutting rhyolite tuff layers and oriented at an angle to bedding</p> <p>&lt;&lt;Vein: 28.69 - 29.61 60% Quartz 75 deg. &gt;&gt; Massive quartz veins with only minor carbonate</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>29.61</b>	<b>35.06</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
<p>29.61 - 35.06: Finely laminated graphitic mudstone; laminations include yellowish-grey calcite rich bands; also some biotite-rich (pelitic?) layers</p> <p>&lt;&lt;Alt: 29.61 - 35.06 Weak-Moderate Calcite&gt;&gt; Scattered patches and bands of yellowish-grey calcite</p> <p>&lt;&lt;Alt: 29.61 - 40.44 Weak-Moderate Biotite&gt;&gt; Up to 5 cm thick bands of biotite-rich alteration; possibly pelitic layers within mudstone?</p> <p>&lt;&lt;Vein: 33.65 - 46.1 10% Quartz-Carbonate 70 deg. &gt;&gt; Scattered massive quartz-ankerite veins ranging from 5-20 cm in core width and generally with high angle TCA</p> <p>&lt;&lt;Struc: 31 - 31.01 Moderate-Strong Foliation&gt;&gt; Bedding-parallel foliation defined by biotite-calcite layering within graphitic mudstone</p>											
<b>35.06</b>	<b>40.44</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>									
<p>35.06 - 40.44: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture</p>											
<b>40.44</b>	<b>41.51</b>	<b>RHYc Rhyolite coherent volcanics</b>									
<p>40.44 - 41.51: Granular- to glass-textured rhyolite that could be a composite tuff-coherent interval; cut by numerous 1-3 mm thick muscovite-rich bands</p> <p>&lt;&lt;Alt: 40.44 - 41.51 Moderate Muscovite&gt;&gt; 1-3 mm thick layers of muscovite (+/-graphite) cutting coherent rhyolite</p>											
<b>41.51</b>	<b>43.46</b>	<b>MAFt Mafic Volcaniclastics</b>									
<p>41.51 - 43.46: Distinctly green (i.e. chlorite-rich) fine-grained and relative massive; abundant bands and patches of yellowish calcite alteration; also locally interlayered with RHYvl and graphitic mudstone</p> <p>&lt;&lt;Min: 43.1 - 43.46 5% Min: Pyrite&gt;&gt; Euhedral pyrite in quartz-tourmaline vein</p> <p>&lt;&lt;Alt: 41.51 - 43.46 Strong Muscovite&gt;&gt; Patches of very strong biotite-muscovite alteration; associated with interleaved mafic and rhyolite tuff, as well as mudstone</p> <p>&lt;&lt;Alt: 41.51 - 43.46 Moderate-Strong Chlorite&gt;&gt; Pervasive alteration of mafic protolith to chlorite and, locally, biotite</p> <p>&lt;&lt;Alt: 41.51 - 43.46 Strong Biotite&gt;&gt; Patches of very strong biotite-muscovite alteration; associated with interleaved mafic and rhyolite tuff, as well as mudstone</p> <p>&lt;&lt;Vein: 43.1 - 43.46 100% Quartz-Tourmaline-Sulphide 75 deg. &gt;&gt; Massive quartz-tourmaline vein with 5% pyrite</p> <p>&lt;&lt;Struc: 41.8 - 41.81 Moderate-Strong Foliation&gt;&gt; Calcite layers within chloritized mafic tuff</p>											
<b>43.46</b>	<b>44.50</b>	<b>RHYvl Lapilli tuff</b>									
<p>43.46 - 44.5: Short interval of granular-textured rhyolite</p> <p>&lt;&lt;Alt: 43.46 - 47.18 Moderate Silicification&gt;&gt; Patchy silicification over MDSt and RHYvl units immediately overlying chert interval</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>44.50</b>	<b>47.18</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>	<b>dark grey</b>	<b>FG</b>							
44.5 - 47.18: Alternating bands of black graphitic mudstone and grey rhyolite lapilli tuff; Cominco logged the tuff layers as quartzite, likely on the basis of their granular texture											
<b>47.18</b>	<b>49.96</b>	<b>CHT Chert</b>	<b>grey</b>	<b>VFG</b>							
47.18 - 49.96: Fine to coarsely laminated grey to white chert and silicified graphitic mudstone; overall, rock is very hard; planar laminated to complexly folded and disrupted texture											
<<Alt: 47.18 - 64.21 Strong Silicification>> Strong pervasive silicification of graphitic mudstone intervals and layers closely associated with chert											
<b>49.96</b>	<b>51.86</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>	<b>black</b>	<b>VFG</b>							
49.96 - 51.86: Interval of strongly silicified mudstone within much longer interval of chert; complexly folded and disrupted texture											
<b>51.86</b>	<b>59.16</b>	<b>CHT Chert</b>	<b>grey</b>	<b>VFG</b>							
51.86 - 59.16: Fine to coarsely laminated grey to white chert and silicified graphitic mudstone; overall, rock is very hard; planar laminated to complexly folded and disrupted texture											
<<Min: 53.59 - 53.67 10% Min: Pyrite>> Blebs and veins of pyrite associated with ankerite-rich interval (exhalative?) within chert											
<<Struc: 53.5 - 53.51 Strong Bedding>> Well-defined bedding between chert and graphitic mudstone											
<b>59.16</b>	<b>60.81</b>	<b>CHT Chert</b>	<b>grey-brown</b>	<b>FG</b>							
59.16 - 60.81: As above but with three 5-30 cm ankerite-rich intervals (carbonate exhalative?)											
<<Min: 59.16 - 60.81 3% Min: Pyrite>> Pyrite bands and veins; typically associated with ankerite-rich (exhalative?) intervals but also cutting chert											
<<Alt: 59.16 - 60.81 Strong Ankerite>> Possibly exhalative; three 5-30 cm thick ankerite-rich bands within chert											
<b>60.81</b>	<b>62.05</b>	<b>MDSt Rhyolite tuff dominant mudstone</b>	<b>dark grey</b>	<b>FG</b>							
60.81 - 62.05: Strongly silicified interval of tuffaceous graphitic mudstone											
<<Min: 60.81 - 63.63 1% Min: Pyrite>> Scattered veins and blebs											
<<Struc: 61 - 61.01 Strong Bedding>> Well-defined bedding between chert and graphitic mudstone											
<b>62.05</b>	<b>64.21</b>	<b>CHT Chert</b>	<b>grey</b>	<b>VFG</b>							
62.05 - 64.21: Weakly magnetic and locally brecciated chert that is interbedded with graphitic mudstone; layering ranges from finely laminated to complexly folded and chaotic											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Min: 62.05 - 63.8 1% Min: Pyrrhotite&gt;&gt; Imparts weakly magnetic characteristic to the rock</p> <p>&lt;&lt;Min: 63.63 - 63.8 5% Min: Pyrite&gt;&gt; Large blebs in basalt part of chert breccia interval</p> <p>&lt;&lt;Vein: 63.63 - 73.02 5% Quartz-Carbonate 45 deg. &gt;&gt; Massive 5-30 cm thick quartz with minor ankerite veins</p> <p><b>64.21 66.82 MAFi Mafic Intrusions (primarily green FMG footwall mafic intrusion)</b></p> <p>64.21 - 66.82: Relatively massive and distinctly green; pervasively altered with biotite and ankerite porphyroblasts, as well as muscovite along hairline fractures</p> <p>&lt;&lt;Alt: 64.21 - 66.82 Moderate Silicification&gt;&gt; Overall lower intensity of silicification relative to surrounding rocks</p> <p>&lt;&lt;Alt: 64.21 - 66.82 Strong Chlorite&gt;&gt; Abundant in the groundmass</p> <p>&lt;&lt;Alt: 64.21 - 66.82 Weak Biotite&gt;&gt; 5-10 cm intervals with 10-20% biotite porphyroblasts</p> <p>&lt;&lt;Alt: 64.21 - 66.82 Moderate Ankerite&gt;&gt; 1 mm sized porphyroblasts</p> <p>&lt;&lt;Struc: 64.21 - 64.22 Contact&gt;&gt; Sharp contact between mafic and chert units</p> <p><b>66.82 69.55 CHT Chert grey VFG</b></p> <p>66.82 - 69.55: Massive to laminated chert; the most massive chert interval seen yet; graphitic mudstone is interbedded with chert</p> <p>&lt;&lt;Min: 66.82 - 74.11 0.5% Min: Pyrite&gt;&gt; Scattered blebs in chert and silicified mudstone</p> <p>&lt;&lt;Min: 66.82 - 74.11 0.5% Min: Pyrrhotite&gt;&gt; Scattered blebs in chert and silicified mudstone</p> <p>&lt;&lt;Alt: 66.82 - 69.55 Intense Silicification&gt;&gt; Strong to intense silicification of graphitic mudstone associated with chert</p> <p><b>69.55 70.26 MAFi Mafic Intrusions (primarily green FG footwall mafic intrusion)</b></p> <p>69.55 - 70.26: Strongly biotite-muscovite-ankerite altered mafic intrusion</p> <p>&lt;&lt;Alt: 69.55 - 70.26 Strong Chlorite&gt;&gt; Abundant in the groundmass</p> <p>&lt;&lt;Alt: 69.55 - 70.26 Moderate-Strong Ankerite&gt;&gt; Abundant 1 mm ankerite porphyroblasts overgrowing chloritized groundmass</p> <p>&lt;&lt;Alt: 69.55 - 71.05 Moderate-Strong Silicification&gt;&gt; Silica-dominant blebs and bands</p> <p>&lt;&lt;Alt: 69.55 - 71.05 Moderate Muscovite&gt;&gt; Hairline fractures filled with hematite and muscovite</p> <p>&lt;&lt;Alt: 69.55 - 71.05 Weak-Moderate Biotite&gt;&gt; Bands with 10-30% biotite porphyroblasts</p> <p><b>70.26 71.05 RHYvl Lapilli tuff grey FG</b></p> <p>70.26 - 71.05: Ankerite-altered rhyolite tuff with fine interbeds of silicified graphitic mudstone</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>71.05</b>	<b>72.59</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
71.05 - 72.59: Strongly silicified mudstone with complexly folded and disrupted texture											
<<Alt: 71.05 - 88.87 Moderate-Strong Silicification>> Moderate strong to strong pervasive silicification in graphitic mudstone and mafic units underlying chert interval											
<b>72.59</b>	<b>74.11</b>	<b>CHT Chert</b>									
72.59 - 74.11: Finely laminated chert and silicified graphitic mudstone, with relatively high mudstone content											
<<Struc: 73.1 - 73.11 Moderate-Strong Bedding>> Laminated graphitic and calcic mudstone											
<b>74.11</b>	<b>83.01</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
74.11 - 83.01: Finely laminated, locally sheared, silicified graphitic mudstone with thin calcite-rich bands											
<<Min: 74.11 - 83.01 2% Min: Pyrite>> Mostly as blebs and vein-like pyrite-pure veins											
<<Struc: 82 - 82.01 Weak Bedding>> Weakly defined bedding between graphitic and silicic layers											
<b>83.01</b>	<b>87.58</b>	<b>SEDC calcareous Sediment</b>									
83.01 - 87.58: Relatively massive to weakly bedded quartz-muscovite-ankerite rock; dark grey colour, mostly massive character and interbedded graphitic mudstone distinguish it from rhyolite units											
<<Alt: 83.01 - 88.87 Weak Muscovite>> Mostly within hairline veins											
<<Alt: 83.01 - 89.12 Moderate Ankerite>> Ranges from disseminated blebs to thick bands											
<<Vein: 84.73 - 112.75 5% Quartz-Carbonate 70 deg. >> Massive 1-10 cm thick quartz +/- ankerite veins											
<<Struc: 83.01 - 83.02 Contact>> Sharp contact between graphitic mudstone and wacke											
<b>87.58</b>	<b>88.87</b>	<b>CHT Chert</b>									
87.58 - 88.87: Strongly silicified graphitic mudstone to chert with carbonate-rich blebs and bands											
<<Min: 87.58 - 88.87 2% Min: Pyrite>> Associated with silicification and ankerite alteration											
<b>88.87</b>	<b>89.12</b>	<b>INT undifferentiated (granitic) intrusive rocks</b>									
88.87 - 89.12: Pervasively altered to beige muscovite with quartz grains and biotite porphyroblasts; sharp contacts and lithological transition suggest a dyke											
<<Alt: 88.87 - 89.12 Intense Muscovite>> Near total replacement of protolith with muscovite overgrown by biotite and ankerite porphyroblasts											
<<Alt: 88.87 - 89.12 Moderate-Strong Biotite>> Near total replacement of protolith with muscovite overgrown by biotite and ankerite porphyroblasts											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>89.12</b>	<b>94.60</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
<p>89.12 - 94.6: Strongly silicified graphitic mudstone; minor development of chaotic chert-like texture</p> <p>&lt;&lt;Min: 89.12 - 94.6 0.5% Min: Pyrite&gt;&gt; Scattered pyrite-dominant veins</p> <p>&lt;&lt;Alt: 89.12 - 94.6 Strong Silicification&gt;&gt; Moderate to intense silicification, including 30 cm interval of chert</p> <p>&lt;&lt;Alt: 89.12 - 95.23 Moderate Ankerite&gt;&gt; Blebs and bands of ankerite with minor calcite</p> <p>&lt;&lt;Vein: 93 - 93.6 100% Quartz 55 deg. &gt;&gt; 60 cm wide (core width) quartz vein with minor ankerite and strongly chlorite-altered selvages</p> <p>&lt;&lt;Struc: 92.7 - 92.71 Moderate-Strong Bedding&gt;&gt; Between cherty and graphitic mudstone layers</p>											
<b>94.60</b>	<b>95.23</b>	<b>MAFt Mafic Volcaniclastics</b>									
<p>94.6 - 95.23: Silicified and fragmental mafic units; green chlorite is considered distinctive; mafic intrusive and tuff appear somewhat similar, though intrusive generally more massive; could be intrusive with peperitic contact?</p> <p>&lt;&lt;Alt: 94.6 - 95.23 Weak-Moderate Muscovite&gt;&gt; Pervasive alteration of mafic unit to chlorite, muscovite and ankerite</p> <p>&lt;&lt;Alt: 94.6 - 95.23 Moderate-Strong Chlorite&gt;&gt; Pervasive alteration of mafic unit to chlorite, muscovite and ankerite</p> <p>&lt;&lt;Struc: 94.6 - 94.61 Contact&gt;&gt; Sharp contact between graphitic mudstone and MAFi</p>											
<b>95.23</b>	<b>96.83</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
<p>95.23 - 96.83: Strongly silicified graphitic mudstone; minor development of chaotic chert-like texture</p> <p>&lt;&lt;Min: 95.23 - 96.83 1% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Alt: 95.23 - 96.83 Strong Silicification&gt;&gt; Pervasively silicified graphitic mudstone</p>											
<b>96.83</b>	<b>100.80</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
<p>96.83 - 100.8: Relatively massive, greenish, chlorite- and muscovite-altered mafic dykes with inclusions of sedimentary rock; sharp contacts; biotite porphyroblasts</p> <p>&lt;&lt;Min: 100.3 - 100.8 1% Min: Pyrrhotite&gt;&gt; Small lenticular blebs that help define foliation</p> <p>&lt;&lt;Alt: 96.83 - 100.8 Strong Muscovite&gt;&gt; Predominant alteration mineral together with dolomite</p> <p>&lt;&lt;Alt: 96.83 - 100.8 Moderate-Strong Dolomite&gt;&gt; Imparts characteristic greyish tint to groundmass; replaces chlorite?</p> <p>&lt;&lt;Alt: 96.83 - 100.8 Moderate Biotite&gt;&gt; Patches with 10-20% biotite porphyroblasts</p>											
<b>100.80</b>	<b>101.30</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
<p>100.8 - 101.3: Strongly silicified graphitic mudstone</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Min: 100.8 - 103.45 1% Min: Pyrite&gt;&gt; Mostly as pyrite-pure veins            &lt;&lt;Alt: 100.8 - 103.45 Strong Silicification&gt;&gt; Pervasively silicified graphitic mudstone            &lt;&lt;Alt: 100.8 - 106.93 Weak-Moderate Ankerite&gt;&gt; Prominent downward decrease in intensity            &lt;&lt;Struc: 100.8 - 100.81 Contact&gt;&gt; Weakly bedding/foliation discordant contact between mafic and graphitic mudstone</p>											
<b>101.30</b>	<b>101.40</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
		green									
		<b>FG</b>									
101.3 - 101.4: Thin interval of mafic dyke similar to larger interval above											
<b>101.40</b>	<b>103.45</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		black									
		<b>VFG</b>									
101.4 - 103.45: Strongly silicified, locally cherty-like, graphitic mudstone with 1-10 cm thick layers of wacke near lower contact											
<p>&lt;&lt;Struc: 102.1 - 102.11 Weak-Moderate Bedding&gt;&gt; Weakly defined between graphitic and ankerite-rich layers</p>											
<b>103.45</b>	<b>106.93</b>	<b>SEDC calcareous Sediment</b>									
		dark grey									
		<b>FMG</b>									
103.45 - 106.93: Massive, granular-textured rock consisting mostly of quartz and muscovite; likely silicified											
<p>&lt;&lt;Min: 103.45 - 106.93 0.1% Min: Pyrite&gt;&gt;            &lt;&lt;Alt: 103.45 - 106.93 Moderate Silicification&gt;&gt; Slight decrease in silicification intensity across wacke unit            &lt;&lt;Struc: 105 - 105.01 Weak-Moderate Bedding&gt;&gt; Narrow graphitic mudstone layer in wacke</p>											
<b>106.93</b>	<b>108.69</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
		black									
		<b>VFG</b>									
106.93 - 108.69: Strongly silicified, locally cherty-like, graphitic mudstone with 1-10 cm thick layers of wacke near lower contact											
<p>&lt;&lt;Min: 106.93 - 109.42 1% Min: Pyrite&gt;&gt; Mostly as veins cutting both mudstone and mafic rock            &lt;&lt;Alt: 106.93 - 108.69 Strong Silicification&gt;&gt; Silicified graphitic argillite with proto-chert like textures            &lt;&lt;Struc: 106.93 - 106.94 Contact&gt;&gt; Sharp contact between wacke and mudstone</p>											
<b>108.69</b>	<b>108.87</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
		grey-brown									
		<b>MG</b>									
108.69 - 108.87: Completely altered to chlorite, muscovite, biotite and ankerite											
<p>&lt;&lt;Alt: 108.69 - 108.87 Moderate-Strong Muscovite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite            &lt;&lt;Alt: 108.69 - 108.87 Moderate-Strong Dolomite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite</p>											



From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Alt: 108.69 - 108.87 Moderate-Strong Biotite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite</p> <p><b>108.87 109.42 MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b></p> <p>108.87 - 109.42: Strongly silicified, locally cherty-like, graphitic mudstone with 1-10 cm thick layers of wacke near lower contact</p> <p>&lt;&lt;Alt: 108.87 - 109.42 Moderate-Strong Silicification&gt;&gt; Silicified graphitic argillite</p> <p>&lt;&lt;Alt: 108.87 - 109.42 Weak-Moderate Ankerite&gt;&gt; Scattered ankerite crystals to 1 mm in size</p> <p><b>109.42 109.87 MAFi Mafic Intrusions (primarily grey-brown MG footwall mafic intrusion)</b></p> <p>109.42 - 109.87: Completely altered to chlorite, muscovite, biotite and ankerite</p> <p>&lt;&lt;Min: 109.81 - 110.9 2% Min: Pyrite&gt;&gt; Lenticular to massive blebs</p> <p>&lt;&lt;Alt: 109.42 - 109.87 Moderate-Strong Muscovite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite</p> <p>&lt;&lt;Alt: 109.42 - 109.87 Moderate-Strong Dolomite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite</p> <p>&lt;&lt;Alt: 109.42 - 109.87 Moderate-Strong Biotite&gt;&gt; Short interval of mafic rock that is strongly altered to biotite, muscovite and dolomite</p> <p><b>109.87 110.19 MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b></p> <p>109.87 - 110.19: Strongly silicified, locally cherty-like, graphitic mudstone with 1-10 cm thick layers of wacke near lower contact</p> <p>&lt;&lt;Alt: 109.87 - 110.9 Strong Silicification&gt;&gt; Proto-chert like textures</p> <p>&lt;&lt;Alt: 109.87 - 110.9 Weak-Moderate Ankerite&gt;&gt; Scattered blebs and fracture-fills</p> <p><b>110.19 110.29 MAFi Mafic Intrusions (primarily grey-brown MG footwall mafic intrusion)</b></p> <p>110.19 - 110.29: Completely altered to chlorite, muscovite, biotite and ankerite</p> <p><b>110.29 110.90 MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b></p> <p>110.29 - 110.9: Strong biotite and muscovite overprint</p> <p>&lt;&lt;Struc: 110.85 - 110.86 Moderate Bedding&gt;&gt; Between silicic and graphitic layers</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>110.90</b>	<b>111.73</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>	<b>green</b>	<b>FMG</b>							
<p>110.9 - 111.73: Banded and altered mafic intrusions; bands are silicic or calcite-rich; silicic bands altered to chlorite, muscovite and biotite</p> <p>&lt;&lt;Min: 110.93 - 113.45 1% Min: Pyrrhotite&gt;&gt; Blebs and veins</p> <p>&lt;&lt;Alt: 110.9 - 111.73 Moderate Silicification&gt;&gt; Blebs and vein-like aggregates</p> <p>&lt;&lt;Alt: 110.9 - 111.73 Moderate-Strong Calcite&gt;&gt; Pervasive replacement of groundmass by chlorite and ankerite</p> <p>&lt;&lt;Alt: 110.9 - 111.73 Moderate-Strong Ankerite&gt;&gt; Rock has a reddish tint and 1 mm sized ankerite porphyroblasts</p>											
<b>111.73</b>	<b>113.45</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>	<b>black</b>	<b>VFG</b>							
<p>111.73 - 113.45: Strongly silicified graphitic mudstone with minor chert intervals</p> <p>&lt;&lt;Alt: 111.73 - 129.57 Weak-Moderate Silicification&gt;&gt; Pervasive silicification of graphitic to calcareous mudstone; at least two 30-40 cm intervals of strong silicification</p>											
<b>113.45</b>	<b>119.51</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>	<b>black</b>	<b>FG</b>							
<p>113.45 - 119.51: Typical silicified graphitic mudstone with 15% calcareous bands</p> <p>&lt;&lt;Min: 113.45 - 129.57 0.5% Min: Pyrite&gt;&gt; Mostly lenticular to massive blebs; scattered veins</p> <p>&lt;&lt;Min: 113.45 - 129.57 0.5% Min: Pyrrhotite&gt;&gt; most massive to lenticular blebs</p> <p>&lt;&lt;Struc: 118 - 118.01 Moderate-Strong Bedding&gt;&gt; Well-defined bedding between graphitic, siliceous and carbonate-rich layers</p>											
<b>119.51</b>	<b>126.50</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>	<b>black</b>	<b>VFG</b>							
<p>119.51 - 126.5: Moderately strong to intensely silicified graphitic mudstone, locally passing into well-laminated chert; 1-10 cm thick layers of wacke also occur, showing sharp contacts with surrounding mudstone</p> <p>&lt;&lt;Struc: 122.4 - 122.41 Moderate-Strong Bedding&gt;&gt; Well-defined bedding between graphitic, siliceous and carbonate-rich layers</p> <p>&lt;&lt;Struc: 125.2 - 125.21 Moderate-Strong Bedding&gt;&gt; Well-defined bedding between graphitic, siliceous and carbonate-rich layers</p>											
<b>126.50</b>	<b>129.57</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>	<b>black</b>	<b>FG</b>							
<p>126.5 - 129.57: Typical silicified graphitic mudstone with 15% calcareous bands</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>129.57</b>	<b>129.89</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
<p>129.57 - 129.89: Massive mafic dyke (or lamprophyre?) consisting of biotite, dolomite and muscovite; either completely altered mafic dyke (i.e. where is chlorite?) or lamprophyre</p> <p>&lt;&lt;Alt: 129.67 - 129.89 Weak Muscovite&gt;&gt; Scattered occurrence of muscovite flakes</p> <p>&lt;&lt;Alt: 129.67 - 129.89 Moderate-Strong Dolomite&gt;&gt; Pinkish grey mineral that dominates the groundmass</p> <p>&lt;&lt;Alt: 129.67 - 129.89 Moderate-Strong Biotite&gt;&gt; Abundant 1 mm-sized porphyroblasts</p> <p>&lt;&lt;Struc: 129.57 - 129.58 Contact&gt;&gt; Sharp contact between mudstone and rhyolite tuff</p>											
<b>129.89</b>	<b>131.64</b>	<b>RHYvl Lapilli tuff</b>									
<p>129.89 - 131.64: Relatively fine-grained and light coloured lapilli tuff, compared to interval underneath it; scattered quartz eyes, relatively high abundance of quartz-dominant lapilli to 5 mm in length; matrix predominantly muscovite and quartz</p> <p>&lt;&lt;Alt: 129.89 - 131.64 Moderate Silicification&gt;&gt; Appears to overprint muscovite and ankerite alteration</p> <p>&lt;&lt;Alt: 129.89 - 131.64 Moderate Muscovite&gt;&gt; Groundmass dominated by fine-grained to flakey muscovite</p> <p>&lt;&lt;Alt: 129.89 - 132.94 Moderate Ankerite&gt;&gt; Forms blebs and porphyroblasts up to 1 mm in size</p>											
<b>131.64</b>	<b>132.94</b>	<b>RHYvl Lapilli tuff</b>									
<p>131.64 - 132.94: Flattened lapilli up to 3 cm in length in a relatively dark matrix of muscovite and biotite</p> <p>&lt;&lt;Min: 131.64 - 132.94 0.1% Min: Pyrite&gt;&gt; Scattered blebs in biotite-rich groundmass</p> <p>&lt;&lt;Alt: 131.64 - 132.94 Moderate Biotite&gt;&gt; Mostly biotite, rather than muscovite, in the groundmass</p> <p>&lt;&lt;Struc: 132 - 132.01 Moderate-Strong Foliation&gt;&gt; Strong foliation defined by flattened lapilli and biotite in the groundmass</p>											
<b>132.94</b>	<b>133.64</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
<p>132.94 - 133.64: Massive mafic dyke (or lamprophyre?) consisting of biotite, dolomite and muscovite; either completely altered mafic dyke (i.e. where is chlorite?) or lamprophyre</p> <p>&lt;&lt;Alt: 132.94 - 133.64 Moderate Dolomite&gt;&gt; Near total replacement of mafic protolith with biotite and dolomite; or lamprophyre?</p> <p>&lt;&lt;Alt: 132.94 - 133.64 Strong Biotite&gt;&gt; Near total replacement of mafic protolith with biotite and dolomite; or lamprophyre?</p> <p>&lt;&lt;Vein: 132.94 - 133.64 15% Quartz-Carbonate-Sulphide 80 deg. &gt;&gt; Swarm of 0.5-1 cm thick calcite-pyrite-quartz veinlets within strongly biotite-altered mafic dyke (lamprophyre?)</p>											
<b>133.64</b>	<b>136.44</b>	<b>RHYvl Lapilli tuff</b>									
<p>133.64 - 136.44: Flattened lapilli up to 3 cm in length in a relatively dark matrix of muscovite and biotite</p> <p>&lt;&lt;Min: 133.64 - 136.44 0.1% Min: Pyrite&gt;&gt; Scattered blebs in biotite-rich groundmass</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Alt: 133.64 - 136.44 Weak-Moderate Muscovite&gt;&gt; Generally more biotite than muscovite in the groundmass, though ratio flips downwards</p> <p>&lt;&lt;Alt: 133.64 - 136.44 Moderate-Strong Biotite&gt;&gt; Generally more biotite than muscovite in the groundmass, though ratio flips downwards</p> <p>&lt;&lt;Alt: 133.64 - 139.63 Weak-Moderate Silicification&gt;&gt; Patches of harder and softer material</p> <p>&lt;&lt;Alt: 133.64 - 139.63 Trace Ankerite&gt;&gt; Scarce and restricted to lapilli</p> <p><b>136.44 139.63 RHYv Rhyolite volcanoclastic grey MG</b></p> <p>136.44 - 139.63: Somewhat finer-grained (in terms of lapilli) and lighter lapilli tuff, comprising mostly a muscovite-rich groundmass with biotite porphyroblasts; contact with adjacent RHYvI is gradational</p> <p>&lt;&lt;Alt: 136.44 - 139.63 Strong Muscovite&gt;&gt; Near total replacement of groundmass with greenish-grey muscovite/sericite</p> <p>&lt;&lt;Alt: 136.44 - 139.63 Moderate Biotite&gt;&gt; Around 20% biotite porphyroblasts across most of this interval, increasing to 30% in the bottom 40 cm</p> <p>&lt;&lt;Struc: 137.3 - 137.31 Moderate-Strong Foliation&gt;&gt; Strong foliation defined by flattened lapilli and biotite in the groundmass</p> <p><b>139.63 140.62 MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b></p> <p>139.63 - 140.62: Silicified graphitic mudstone</p> <p>&lt;&lt;Min: 139.63 - 140.62 0.5% Min: Pyrite&gt;&gt; Blebs within hairline calcite vein</p> <p>&lt;&lt;Alt: 139.63 - 140.62 Moderate-Strong Silicification&gt;&gt; Relatively hard graphitic argillite but lacking siliceous layers</p> <p>&lt;&lt;Vein: 140.2 - 140.31 100% Quartz 70 deg. &gt;&gt; Massive quartz-dominant vein with minor ankerite; similar to more abundant veins further up hole</p> <p>&lt;&lt;Struc: 139.63 - 139.95 Weak-Moderate Fault&gt;&gt; Heavily fractured interval with minor development of fault gouge</p> <p><b>140.62 141.02 PEL Equigranular biotite + calcite dark grey FG +/- quartz rock</b></p> <p>140.62 - 141.02: Finely interlaminated grey chert and black silicified mudstone with coarser laminations of biotite-ankerite-rich pelite (?)</p> <p>&lt;&lt;Alt: 140.62 - 141.02 Moderate Biotite&gt;&gt; Biotite-ankerite-rich metapelite bands interbedded with silicified graphitic argillite</p> <p>&lt;&lt;Alt: 140.62 - 141.02 Moderate Ankerite&gt;&gt; Biotite-ankerite-rich metapelite bands interbedded with silicified graphitic argillite</p> <p>&lt;&lt;Struc: 141 - 141.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>141.02</b>	<b>159.29</b>	<b>SLT Siltstone - fine-grained sedimentary rock</b>									
<p>141.02 - 159.29: Silicified and intercalated grey siltstone and black graphitic mudstone</p> <p>&lt;&lt;Min: 141.02 - 159.29 0.1% Min: Pyrrhotite&gt;&gt; Scattered blebs</p> <p>&lt;&lt;Alt: 141.02 - 159.29 Weak-Moderate Silicification&gt;&gt; Still somewhat hard graphitic argillite and siltstone layers, though not as hard as overlying intervals</p> <p>&lt;&lt;Alt: 141.02 - 159.29 Weak-Moderate Muscovite&gt;&gt; Greenish-grey patches</p> <p>&lt;&lt;Struc: 145.5 - 145.51 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p> <p>&lt;&lt;Struc: 151 - 151.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p> <p>&lt;&lt;Struc: 157 - 157.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p>											
<b>159.29</b>	<b>159.71</b>	<b>CHT Chert</b>									
<p>159.29 - 159.71: Either chert interlayered with mudstone or intensely silicified mudstone; finely laminated with chaotic and folded texture</p> <p>&lt;&lt;Min: 159.29 - 159.71 1% Min: Pyrrhotite&gt;&gt; Slightly elevated pyrrhotite content associated with chert interval</p> <p>&lt;&lt;Alt: 159.29 - 159.71 Intense Silicification&gt;&gt; Very strong silicification on chert interval</p> <p>&lt;&lt;Vein: 159.29 - 178.35 7.5% Quartz-Carbonate 80 deg. &gt;&gt; Massive to foliation parallel quartz-ankerite veins ranging from 0.1-25 cm in core width</p>											
<b>159.71</b>	<b>161.39</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b>									
<p>159.71 - 161.39: Mostly silicified graphitic mudstone with lesser amounts of siltstone</p> <p>&lt;&lt;Min: 159.71 - 179.96 0.1% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Min: 159.71 - 179.96 0.1% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 159.71 - 161.39 Weak-Moderate Calcite&gt;&gt; Manifested as a swarm of 1-5 mm wide bands</p> <p>&lt;&lt;Alt: 159.71 - 163.28 Moderate Silicification&gt;&gt; Ranges from weakly to strongly silicified</p>											
<b>161.39</b>	<b>163.28</b>	<b>SED undifferentiated Sediment</b>									
<p>161.39 - 163.28: Strongly silicified greenish-grey wacke; greenish tint likely related to sericite alteration</p> <p>&lt;&lt;Alt: 161.39 - 163.83 Weak-Moderate Muscovite&gt;&gt; Pervasive muscovite alteration in the groundmass provides a greenish tint</p> <p>&lt;&lt;Struc: 163 - 163.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>163.28</b>	<b>163.83</b>	<b>PEL Equigranular biotite + calcite +/- quartz rock brown MG</b>									
<p>163.28 - 163.83: Biotite-rich metapelite (or lamprophyre?) with numerous carbonate-quartz bands; carbonate includes both ankerite and calcite, and is much more abundant than quartz; matrix consists mostly of quartz</p> <p>&lt;&lt;Alt: 163.28 - 163.83 Moderate-Strong Calcite&gt;&gt; Manifested as a swarm of 1-5 mm wide bands</p> <p>&lt;&lt;Alt: 163.28 - 163.83 Moderate-Strong Biotite&gt;&gt; Near total alteration of (pelitic?) protolith to biotite and muscovite</p>											
<b>163.83</b>	<b>167.95</b>	<b>SLT Siltstone - fine-grained dark grey FG sedimentary rock</b>									
<p>163.83 - 167.95: Silicified and intercalated grey siltstone and black graphitic mudstone; hosts 5-10% carbonate +/- quartz rich bands</p> <p>&lt;&lt;Alt: 163.83 - 182.14 Moderate Silicification&gt;&gt; Ranges from weakly to strongly silicified</p> <p>&lt;&lt;Alt: 163.83 - 182.14 Moderate Muscovite&gt;&gt; Most abundant within sub-intervals of wacke, which generally has a greenish tint</p> <p>&lt;&lt;Alt: 163.83 - 182.14 Weak-Moderate Calcite&gt;&gt; Manifested as a swarm of 1-5 mm wide bands</p>											
<b>167.95</b>	<b>178.35</b>	<b>SEDC calcareous Sediment grey FMG</b>									
<p>167.95 - 178.35: Fairly diverse looking wacke with greenish-tinted intervals indicating sericite alteration, reddish intervals reflecting oxidation and ankerite, and then the more typical stretches of grey wacke</p> <p>&lt;&lt;Alt: 176.4 - 182.66 Weak-Moderate Ankerite&gt;&gt; Increases in abundance towards the chert layer</p> <p>&lt;&lt;Struc: 169 - 169.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between wacke and mudstone layers</p> <p>&lt;&lt;Struc: 170.75 - 171.09 Weak-Moderate Fault&gt;&gt; Fractured interval of which 50% is gravel to clay-sized fault gouge</p> <p>&lt;&lt;Struc: 175 - 175.01 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p>											
<b>178.35</b>	<b>182.14</b>	<b>SLT Siltstone - fine-grained dark grey FG sedimentary rock</b>									
<p>178.35 - 182.14: Interbedded mudstone, siltstone and wacke with individual beds ranging from 0.1-20 cm thick; wacke forms the thickest beds; also notable for relatively abundant quartz veining as well as increased oxidation</p> <p>&lt;&lt;Min: 179.96 - 184.52 0.5% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Vein: 178.35 - 182.63 15% Quartz-Carbonate 80 deg. &gt;&gt; Quartz-ankerite veins with chlorite selvages and associated with faulting and relatively strong oxidation</p> <p>&lt;&lt;Struc: 178.4 - 178.85 Weak-Moderate Fault&gt;&gt; Fractured interval of which 50% is gravel to clay-sized fault gouge</p> <p>&lt;&lt;Struc: 181.5 - 181.51 Moderate-Strong Bedding&gt;&gt; Well-developed foliation-parallel bedding between siltstone and mudstone layers</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>182.14</b>	<b>182.63</b>	<b>CHT Chert</b> 182.14 - 182.63: Massive grey to finely laminated  <<Alt: 182.14 - 182.66 Intense Silicification>> Very strong silicification on chert interval									
		<b>grey VFG</b>									
<b>182.63</b>	<b>184.52</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> 182.63 - 184.52: Relatively massive interval of silicified graphitic mudstone  <<Alt: 182.66 - 184.52 Moderate-Strong Silicification>> Strongly silicified and very hard graphitic mudstone									
		<b>black VFG</b>									
<b>184.52</b>	<b>184.78</b>	<b>RHYcf Feldspar &amp; feldspar quartz porphyry</b> 184.52 - 184.78: Short interval of pervasively ankerite- and greenish sericite-altered rhyolite (?); scattered quartz and feldspar eyes (<1%) suggest felsic protolith; quartz patches suggest silicification; sharp lithological and mineralogical contacts with surrounding sedimentary rock  <<Min: 184.52 - 184.78 10% Min: Pyrite>> Increased pyrite in associated with narrow felsic unit that is strongly altered to ankerite and muscovite <<Alt: 184.52 - 184.78 Weak-Moderate Silicification>> As small patches and pseudo-veins <<Alt: 184.52 - 184.78 Moderate-Strong Muscovite>> Near total replacement of felsic dyke by muscovite and ankerite <<Alt: 184.52 - 184.78 Moderate-Strong Ankerite>> Near total replacement of felsic dyke by muscovite and ankerite <<Struc: 184.52 - 184.53 Contact>> Sharp contact between mudstone-siltstone unit and pervasively altered felsic									
		<b>red FMG</b>									
<b>184.78</b>	<b>188.11</b>	<b>MDS Carbonaceous Mudstone &amp; Tuffaceous Mudstone</b> 184.78 - 188.11: Relatively massive interval of silicified graphitic mudstone  <<Min: 184.78 - 188.84 0.5% Min: Pyrite>> Calcite-pyrite hairline veins appear to extend of altered felsic intervals <<Alt: 184.78 - 188.11 Moderate Silicification>> Ranges from weakly to strongly silicified <<Vein: 185.67 - 185.81 100% Quartz 60 deg. >> Quartz vein with minor ankerite and chlorite selvage <<Struc: 184.78 - 185.67 Weak-Moderate Fault>> Heavily fractured with local development of in situ fault gouge									
		<b>black VFG</b>									
<b>188.11</b>	<b>188.23</b>	<b>RHYcf Feldspar &amp; feldspar quartz porphyry</b> 188.11 - 188.23: Short interval of pervasively ankerite- and greenish sericite-altered rhyolite (?); scattered quartz and feldspar eyes (<1%) suggest felsic protolith; quartz patches suggest silicification; sharp lithological and mineralogical contacts with surrounding sedimentary rock  <<Alt: 188.11 - 188.23 Weak-Moderate Silicification>> As small patches and pseudo-veins <<Alt: 188.11 - 188.23 Moderate-Strong Muscovite>> Near total replacement of felsic dyke by muscovite and ankerite									
		<b>red FMG</b>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Alt: 188.11 - 188.23 Moderate-Strong Ankerite&gt;&gt; Near total replacement of felsic dyke by muscovite and ankerite</p> <p><b>188.23 188.84 MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b></p> <p>188.23 - 188.84: Relatively massive interval of silicified graphitic mudstone</p> <p>&lt;&lt;Alt: 188.23 - 188.84 Moderate-Strong Silicification&gt;&gt; Ranges from weakly to strongly silicified</p> <p><b>188.84 189.18 RHYcf Feldspar &amp; feldspar quartz red FMG porphyry</b></p> <p>188.84 - 189.18: Short interval of pervasively ankerite- and greenish sericite-altered rhyolite (?); scattered quartz and feldspar eyes (&lt;1%) suggest felsic protolith; quartz patches suggest silicification; sharp lithological and mineralogical contacts with surrounding sedimentary rock</p> <p>&lt;&lt;Min: 188.84 - 189.18 2% Min: Pyrite&gt;&gt; Increased pyrite in associated with narrow felsic unit that is strongly altered to ankerite and muscovite</p> <p>&lt;&lt;Alt: 188.84 - 189.18 Weak-Moderate Silicification&gt;&gt; As small patches and pseudo-veins</p> <p>&lt;&lt;Alt: 188.84 - 189.18 Moderate-Strong Muscovite&gt;&gt; Near total replacement of felsic dyke by muscovite and ankerite</p> <p>&lt;&lt;Alt: 188.84 - 189.18 Moderate-Strong Ankerite&gt;&gt; Near total replacement of felsic dyke by muscovite and ankerite</p> <p><b>189.18 190.75 CHT Chert dark grey VFG</b></p> <p>189.18 - 190.75: Finely laminated grey to dark grey chert with silicified graphitic mudstone</p> <p>&lt;&lt;Min: 189.18 - 190.75 1% Min: Pyrite&gt;&gt; Hosted in pyrite +/- calcite veins</p> <p>&lt;&lt;Alt: 189.18 - 190.75 Intense Silicification&gt;&gt; Very strong silicification on chert interval</p> <p>&lt;&lt;Struc: 190.4 - 190.41 Moderate-Strong Bedding&gt;&gt; Well-defined laminations between chert and graphitic mudstone</p> <p><b>190.75 193.13 MDS Carbonaceous Mudstone &amp; black FG Tuffaceous Mudstone</b></p> <p>190.75 - 193.13: Nearly a 50:50 split between graphitic mudstone and siltstone</p> <p>&lt;&lt;Min: 190.75 - 206.8 0.5% Min: Pyrite&gt;&gt; Mostly stretches of 0.1% pyrite with short intervals of pyrite-bearing veins and/or blebs that locally average 1-2% over 10-40 cm</p> <p>&lt;&lt;Alt: 190.75 - 196.6 Weak-Moderate Silicification&gt;&gt; Ranges from weakly to strongly silicified</p> <p>&lt;&lt;Alt: 190.75 - 196.6 Weak-Moderate Ankerite&gt;&gt; Patches of disseminated to blebby ankerite alteration</p> <p>&lt;&lt;Vein: 192.29 - 194.75 3% Quartz-Carbonate 80 deg. &gt;&gt; Quartz +/- ankerite veins with muscovite-pyrite selvages</p> <p><b>193.13 196.60 SLT Siltstone - fine-grained dark grey FG sedimentary rock</b></p> <p>193.13 - 196.6: Similar to the above interval but with slightly more siltstone than mudstone</p>											



From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>196.60</b>	<b>196.88</b>	<b>MAFi Mafic Intrusions (primarily green FMG footwall mafic intrusion)</b>									
<p>196.6 - 196.88: Dark greenish-grey tinted, biotite-altered, interval; fairly abundant calcite as veins and disseminated as blebs in the matrix; greenish tint appears to be due to chlorite (but could be sericite too); sharp contacts with adjacent rocks suggest mafic dyke; could be pelite too</p> <p>&lt;&lt;Alt: 196.6 - 196.88 Moderate Chlorite&gt;&gt; Pervasive replacement of mafic (or pelitic?) protolith with biotite, calcite and chlorite</p> <p>&lt;&lt;Alt: 196.6 - 196.88 Moderate Calcite&gt;&gt; Pervasive replacement of mafic (or pelitic?) protolith with biotite, calcite and chlorite</p> <p>&lt;&lt;Alt: 196.6 - 196.88 Moderate Biotite&gt;&gt; Pervasive replacement of mafic (or pelitic?) protolith with biotite, calcite and chlorite</p>											
<b>196.88</b>	<b>201.99</b>	<b>SLT Siltstone - fine-grained dark grey FG sedimentary rock</b>									
<p>196.88 - 201.99: Finely bedded sedimentary rock containing slightly more siltstone than graphitic mudstone</p> <p>&lt;&lt;Alt: 196.88 - 206.8 Weak Silicification&gt;&gt; Mostly weakly silicified with narrow intervals of moderate to strong silicification</p> <p>&lt;&lt;Alt: 196.88 - 206.8 Weak-Moderate Ankerite&gt;&gt; Patches of disseminated to blebby ankerite alteration</p> <p>&lt;&lt;Vein: 201.52 - 201.99 80% Quartz-Carbonate 80 deg. &gt;&gt; Interval of four quartz-ankerite veins that are interleaved with host rock</p> <p>&lt;&lt;Struc: 197 - 197.01 Moderate Bedding&gt;&gt; Interbedded wacke and siltstone</p> <p>&lt;&lt;Struc: 200.05 - 200.36 Weak-Moderate Shear&gt;&gt; At high angle TCA but in opposite direction to bedding; also several notable deflections in foliations as well as 5 cm of fault gouge</p> <p>&lt;&lt;Struc: 200.28 - 200.33 Moderate-Strong Fault&gt;&gt; Short interval of fault gouge in the middle of shear zone</p>											
<b>201.99</b>	<b>205.58</b>	<b>MDS Carbonaceous Mudstone &amp; black VFG Tuffaceous Mudstone</b>									
<p>201.99 - 205.58: Graphitic mudstone with thin layers and wisps of grey siltstone</p> <p>&lt;&lt;Struc: 202 - 202.01 Moderate Bedding&gt;&gt; Interbedded graphitic argillite and siltstone</p> <p>&lt;&lt;Struc: 203.05 - 203.1 Moderate Fault&gt;&gt; Fault gouge at top of shear zone interval</p> <p>&lt;&lt;Struc: 203.05 - 203.35 Weak-Moderate Shear&gt;&gt; Notable deflection in foliation away from bedding/foliation at 80-90; shear zone starts with 5 cm of fault gouge</p> <p>&lt;&lt;Struc: 205.5 - 205.51 Moderate-Strong Bedding&gt;&gt; Well-defined foliation-parallel bedding between siltstone and graphitic mudstone</p>											

# GeoSpark Logger ~ Drill Log

**Project:**

**KZK**

**Hole Number:**

**K97-180**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>205.58</b>	<b>206.80</b>	<b>SLT Siltstone - fine-grained sedimentary rock</b>									
<p><b>dark grey FG</b></p> <p>205.58 - 206.8: Finely bedded sedimentary rock containing slightly more siltstone than graphitic mudstone</p> <p><b>End of Hole @ 206.8</b></p>											